Kookaburra Gully Mining Lease Application

Request for Response Document Letter

Attachment 03

24 Public Submissions (excluding confidential public submissions)

Contents Page

Submission Number	Public Submission Name	Page Number
1	MD & SR Sheehan	3
2	Carole Wetherby	6
3	District Council of Tumby Bay	7
4	*Name and Address Withheld*	10
5	*Name and Address Withheld*	16
6	*Name and Address Withheld*	19
7	*Name and Address Withheld*	21
8	*Name and Address Withheld*	26
9	Caryll Cabot	30
10	Anne Daw	35
11	John & Janet Moore	46
12	*Name and Address Withheld*	48
13	*Name and Address Withheld*	53
14	*Name and Address Withheld*	58
15	*Name and Address Withheld*	60
16	*Name and Address Withheld*	62
17	*Name and Address Withheld*	67
18	*Name and Address Withheld*	72
19	*Name and Address Withheld*	77
20	*Name and Address Withheld*	84
21	*Name and Address Withheld*	90
22	Tumby Bay Residents and Ratepayers Association Inc.	91
23	Stop Invasive Mining Group	249
24	Emie Borthwick	257

MD&SR Sheehan
Box156
Cummins 5631
26th October 2015

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Dear Sir/Madam

We are writing this letter as concerned primary producers who live on Lower Eyre Peninsula.

We are extremely concerned about the potential for damage to be caused to the groundwater on Lower EP. If this is in any way contaminated or damaged the effect would be disastrous for all people living on Eyre Peninsula. See: GROUNDWATER (Vol 1 Section7.4)

We also have grave concerns about the DUST (Vol1 Section4pp 106.7 Section 7.4) and the effect it will have on the surrounding district.

We also note that the TRANSPORT ROUTE (Vol1 Section 7.9) raises serious issues for the area.

We trust that these concerns will be taken seriously and acted upon as we are just two of a large number of people seriously concerned about many issues in regard to this project.

Yours faithfully

Mark and Sharon Sheehan

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large

(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372*, *nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Submission 02

Business Support Officer, Mining Regulation Branch,
Dept of State Development, GPO Box 320,
Adelaide SA 5001 October 23, 2015

The Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application will need a magical Editor to fix all the inaccuracies and deficiencies that are in this report. A committee of 5 have reviewed the entire report and I attended the meeting to observe the inconsistencies and inaccuracies that are all through the report. Following are listed a few –

Transport Route (Volume 1: Section 7.9)

1. In various sections of this part of the report, the number of heavy vehicles using the road differs in a number of paragraphs.
2. There is no agreement with the District Council of Tumby Bay as to the actual transport route.

Dust (Volume 1:Section 4, pp106-7: Section 7.4)

1. This report has nothing mentioned to the major impact upon agricultural businesses within the fallout cloud of contaminated dust due to constant very windy conditions that will contaminate Eyre Peninsula's huge grain deliveries. (The mining company have said there is nothing to worry about, we breathe in graphite dust particles all the time!! What an outrageous statement to make!!)
2. One of the most outstanding missing section in the report is the potential contamination of rain water which happens to be the Eyre Peninsula's main source of drinking water.

Groundwater (Volume 1: Section 7.4)

1. The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.
2. The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.
3. (Section 4.7.7.4 pp 198)
   There are significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that no data exists for MC4372, nor does the geo-hydrology or hydrology review exist beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the Lower Eyre Peninsula. (In view of this part of the document, the whole project needs to stop).

Community members have been informed there would be limited blasting. However, the lease application document states there will be a huge amount of explosives and dangerous toxic chemicals stored on site. This is a direct conflict to what the mining company had originally informed the community.

The report on the Kookaburra Graphite Mine has obviously been very carelessly put together. The report, as is, lacks a knowledgeable, educated approach and definitely a non-convincing reason to rip or blow up completely good viable farm land.

Signed by -
Carole Wetherby
PO Box 59
Cleve, SA 5640 (08 8628 5038)

Submission 03

All correspondence
to be addressed to the
Chief Executive Officer

DISTRICT COUNCIL of TUMBY BAY

PO Box 61, TUMBY BAY
Mortlock Street
TUMBY BAY, SA 5605
P: 08 8688 2101
E: dctumby@tumbybay.sa.gov.au

Our File: 16.71.2.8 – R25736
Your File: T02981
Contact: Trevor Smith, CEO

27 October 2015

Greg Smith
Mining Assessments
Department of State Development
Mineral Resources Division
GPO Box 320
Adelaide SA 5001

Dear Greg

Re: Invitation to the District Council of Tumby Bay to make a submission.

Kookaburra Gully Graphite Project
Mining Lease Proposal
September 2015

The District Council of Tumby Bay (DCTB) is responding to a request from the Department of State Development (DSD) to make a submission regarding the Mining Lease application by Australian Graphite Limited (AGL).

This submission is made on the understanding that the Council will also have an opportunity to input to the Program for Environment Protection and Rehabilitation (PEPR) the key elements for that process having been defined by Ministerial Determination 005 dated 12 July 2012.

Employment and Business Development
Mining Lease Proposal Sections 5.1.1, 5.1.2 and 5.2

Having regards to the scale of the proposed development (after construction) the overall impact on the economy and communities of the DCTB is not expected to be of significance in terms of increased demand for services or impact on housing stock. A permanent workforce of 30 employees will not be solely drawn from Tumby Bay and would be expected to be shared with other communities including Port Lincoln and surrounds.

RDAWEP estimated the FTE employment for DCTB in 2012/2013 to be 975 with 52 jobs in the mining sector. An additional 30 jobs overall is a small percentage increase and there is a possibility that some of the current 52 jobs are FIFO or DIDO thereby creating the opportunity for skilled mine workers to obtain employment closer to home.

The employment demand during construction is anticipated at 60 employees however as the construction phase is estimated at six months while there may be a sharp peak in rental demands there would be minimal long term impacts.

The benefit to the local business economy during construction and then during normal operations is yet to be determined however the DCTB would be encouraging or facilitating AGL to use local businesses where possible.

The increase in population would be unlikely to create a demand for new business, however there should be a slight increase in demand for existing retail and other services, including State provided services such as education and health. While a small of amount of land development and housing construction may be generated there is unlikely to be an increase in demand for local government services that would impact on Council's service delivery.

Traffic Management
Mining Lease Proposal Sections 5.1.4 and 7.9

Traffic generated from the site can be divided into two phases. The construction phase will see greater volumes of light vehicles and contractor movements with an estimated construction employment of 60. There will be some irregular heavy vehicle movements to and from the site however not significantly greater than may occur through local farming activities.

> *AGL will need to provide the DCTB with a traffic management plan for the construction period including an upgrade/maintenance plan with financial considerations for the preferred access routes including vehicles originating from Port Lincoln (or generally south of the site) where the Lincoln Highway/Bratten Way route would not provide the shortest or most direct access.*

The operational phase of the mine will not generate significant light vehicle or commuter traffic with an estimated 30 employees. Of concern is the estimated six heavy vehicles (probably semi-trailer) loads exiting the site each day. The expected route will be north along Pillaworta Road to Bratten Way and then to the Lincoln Highway.

While Pillaworta Road is already designated to take this type of heavy vehicles the increased volume will impact on the road surface and maintenance requirements. Additionally the frequency of use of the Pillaworta Road/Bratten Way intersection for trucks leaving the site and entering Bratten Way to head east to the Lincoln Highway will be a safety concern for local residents and school buses.

> *AGL will need to provide the DCTB, and DPTI (Main Roads) with a traffic management plan for the operational life of the mine including an upgrade/maintenance plan with financial considerations for Pillaworta Road and the Pillaworta Road/Bratten Way intersection.*

The traffic management plans for the construction and operational phases of the mine would be expected to be either agreed to by the DCTB and Main Roads prior to the Mining Lease being granted by DSD or be acknowledged that agreement is reached prior to the approval of the PEPR.

Stakeholder and Community Engagement
Mining Lease Proposal Section 6

The extensive consultation undertaken by AGL is noted as is their recent engagement of a community liaison consultant. The actions of AGL within the community, especially those relating to drilling programs, have generally been an improvement on previous experiences with other companies.

Other Matters
There are other matters for consideration identified in the Mining Lease proposal documentation prepared for AGL by Parsons Brinkerhoff however the majority of these considerations are State Government responsibilities which the DCTB does not have the expertise or resources to comment on.

Summary
While the DCTB expects AGL to maintain its commitments in the Mining Lease Proposal, especially those contained in Section 5 "Description of Potential Benefits" the matters relating to traffic management are the greatest immediate concern to the DCTB.

To reiterate two paragraphs from the letter:

AGL will need to provide the DCTB with a traffic management plan for the construction period including an upgrade/maintenance plan with financial considerations for the preferred access routes including vehicles originating from Port Lincoln (or generally south of the site) where the Lincoln Highway/Bratten Way route would not provide the shortest or most direct access.

AGL will need to provide the DCTB, and DPTI (Main Roads) with a traffic management plan for the operational life of the mine including an upgrade/maintenance plan with financial considerations for Pillaworta Road and the Pillaworta Road/Bratten Way intersection.

Should DSD have any concerns with or queries regarding the submission please do not hesitate to contact the undersigned.

Kind Regards

Trevor J Smith
Chief Executive Officer

Submission 04

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningregrehab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

The Applicant is seeking a social licence to operate within the vicinity of Koppio, Tumby Bay, Port Lincoln and Cummins.

Unfortunately, experience has provided the following detractors to the claim of social licence as sought in the Application (Vol 1: Sections 5 & 6 and Vol 2: Appendix A) inclusive of:-

(a) Lack of specific information provided throughout the so called consultation process.
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond.
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file.
(d) The fact that some people do not have computers.
(e) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided.
(f) The complete inflexibility of DSD with respect to an extension of time in which to respond.
(g) The lack of any public presentation either by DSD or the Company with respect to the Application.
(h) Demographic data that is FOUR years out of date.
(i) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect.
(j) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry.
(k) The oft stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided.
(l) There is no recognition of the costs to the agricultural industry through contamination dust arising from the mining operations.
(m) There are no agreements with the District Council of Tumby Bay with respect to costs , inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue.
(n) The significant lack of information in respect to the potential health impacts of fugitive dust on the community.

Transport Route and Road Usage:

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015 which I attended).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members nor the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The Application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.
(h) Dependent upon which section of the Application one reads, the impact of road use in the proposal varies

Dust:

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Manganese, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans. Also included are Copper, Magnesium and Zinc which are known growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the Application. This includes the lack of information in relation to requirements of the National Residue Monitoring Scheme –(http://www.agriculture.gov.au/ag-farm-food/food/nrs).

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals which ingest these contaminants over a period of time.

The Application is devoid of information pertaining to the economic losses attributed to the impact of Copper, Magnesium and Zinc (in excess of trace levels) on grain production taken over the period of mining operations, or, as suspected, over the life of the processing facility

should its life be extended to cater for Kookaburra Gull extension and the original Koppio Mine.

The Application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries. No reference has been made to the issue of bio-security and the risk to grain exports due to dust contamination, especially in the context of the Australian Department of Agriculture requirements.

The Application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The Application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay. This is of particular concern when considering the distance PM1.0 particles potentially can travel.

Surface Water:

The Application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

The pollution pathways from the mine site are outlined, but reference to the northern WRSF and its resultant runoff is not discussed.

Given that Pillaworta Creek flows into the Tod River which eventually flows to the sea, the Application is lacking in any consideration of the pollution pathway over the full course of the Creek and the River to the sea. It should be noted that this area of coast also caters for the Marine Park and Aquaculture Zones.

Groundwater:

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the Graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the Application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is of significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372*,

nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula.

Noise :

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF:

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to "*insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant.*

Approval should not be granted until all relevant data is available and the design reflects this.

The Application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant. Failure of the Applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for which legal liability can be established in the future should there be a catastrophic failure of the wall.

The rehabilitation of the TSF in the long term is of concern. The Applicant has described an outline of the rehabilitation of this area, but the question remains as to its suitability in the long term, long after the Applicant has left the area?

Leaching into the aquifer and also into the Pillaworta Creek environs is of paramount concern, one which is not readily satisfied by the proposed treatment of the TSF. The migration of Chromium, Copper, Manganese, Uranium etc into the groundwater and to the Pillaworta Creek environs will have significant consequences.

Environmental impacts:

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the Application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (Marine Park and Aquaculture Zones), has been given within the application.

The Explosives magazine:

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The Application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What are the risks to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The Application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The Application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain Mercury Fulminate, what is the environmental risk of such a large amount of Mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, noting ammonium nitrate is a precursor to many Improvised Explosive Devices. Presumably South Australian Police, Australian Police and ASIO have been informed as to the location and contents of the proposed magazine and the security of its contents.

Admissibility of data tendered in the application:

There are significant concerns as to the short cuts apparently taken in the development of this application.

It appears data has been cut and pasted from information generated by Eyre Iron Pty Ltd for the purpose of mining activities associated with the iron ore Project Fusion, as opposed to the conduct of site specific data (over a twelve month period) for the location of Kookaburra Gully Graphite Mine.

The data so imported was obtained by another company and not under the care and control of Australian Graphite Pty Ltd, the Applicants of this Mineral Lease.

The excuse for errors and omissions could well be 'they did not include it in their data'. The fact remains AGL did not carry out sufficient research to ensure the studies were verifiable for the site of Kookaburra Gully.

Clearly data integrity must rest with Australian Graphite Pty Ltd and not some other mining company.

Long term issues:

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand-alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the Application an overarching Application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two** ?

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Caveat to the use of the material provided:

The response, with **name and address redacted**, may be published by the Department or provided to the Company for the purpose of the Response Document.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author.

Yours faithfully

[redacted]

Submission 05

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide SA 5001

Email: dsd.miningregrehab@sa.gov.au

25th October 2015

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application.

Social licence (Volume 1: Section 5 and 6: Appendix A)

Deficiencies with the approach include:
a) Lack of specific information provided throughout the so called consultation process
b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file.
d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided.

Deficiencies in the data presented include:
a) Demographic data that is FOUR years out of date
b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre Iron) has left the area is totally incorrect
c)There are no agreements with the District Council of Tumby Bay with respect to costs, inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue.
d) There is no recognition of the costs to the agricultural industry through contamination dust arising from the mining operations.

Transport Route (Volume 1: Section 7.9)
a) The impact upon native vegetation and EPBC listed species is not recognised in the Application.
b) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council (as evidenced by discussions at the Council Meeting of 13th October 2015)
c) The impact upon native vegetation and EPBC listed species is not recognised in the Application.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)
a) An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Rare Earths, Strontium, Thorium and Uranium. These materials are potential carcinogens and or neurotoxins in human and growth inhibitors in plants.
b)The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.
c)The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

Environmental Impacts (Volume 1 Section7)
In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

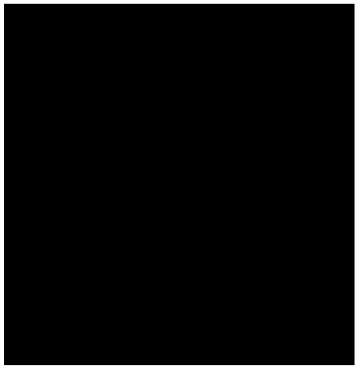
The Explosives magazine: (Volume 1 Section 4.5.7
It is noted the application is seeking approval to construct and operate an explosives magazine on site.
It is further noted that up 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.
It is also noted that there is a significant supply of diesel on-site.
It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.
What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

I am a CFS volunteer and I WILL NOT be attending any fire at a mining company site on Eyre Peninsula.

Caveat to the use of the material provided:
The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the authors.

Yours faithfully



For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide SA 5001

Email: dsd.miningreghab@sa.gov.au

24th October 2015

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application.

Social licence (Volume 1: Section 5 and 6: Appendix A)

Deficiencies with the approach include:
a) Lack of specific information provided throughout the so called consultation process
b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file.

Deficiencies in the data presented include:
a) Demographic data that is FOUR years out of date
b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre Iron) has left the area is totally incorrect
c)There are no agreements with the District Council of Tumby Bay with respect to costs, inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue.

Transport Route (Volume 1: Section 7.9)
a) The impact upon native vegetation and EPBC listed species is not recognised in the Application.
b) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council (as evidenced by discussions at the Council Meeting of 13th October 2015)
c) As well as a land owner in the Hundred of Koppio, I work [redacted] in the Tumby Bay Health services. As I frequently travel along the Bratten Way Highway I am very concerned in the traffic load that will be put on the Pillaworta /Bratten Way Intersection. This intersection is on a sweeping bend with double white lines with hills crest on both ends. This road is the responsibility of the Federal Government and NOT our Local Council. It will be very dangerous for loaded semi trailers to enter out into this intersection.

Dust (Volume 1: Section 4,pp106-7: Section 7.4)
a)The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

b)At present, our farm produces cereal crops, fat lambs and wool. This year the wool that we produced had a yield of 75.9 % with a micron of 19.9 and in 2014 our yield was 73.7 % with a micron of 21.1. We are proud to be an Australian business that is able to produce a clean product that is exported from our country. Remember that the proposed graphite mine is across the road from where these breeding ewes graze.
We are concerned about how the graphite mine/dust will contaminate our clean wool. Is the mining company going to compensate the loses that we may occur from their dust affecting the wool, meat and grain that we produce?

Groundwater (Volume 1: Section 7.4)
a)The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.
b)The water that our livestock drink comes from nature soaks, creeks and dams. I am very concerned what will happen to our underground water system if this mining company is allowed to make an open pit mine. In May, June & July 2014 we received 353 mils of rainfall which became extremely wet. I am worried how this mining company is going to cope with their waste water during winter. Is this water going to leak into our natural creek systems and poison our natural vegetation and habitat?
c)We do not have any mains water supply to any of our properties so we rely on the rainwater that we catch on our roof tops and dams. This includes our water that we drink, cook in and bath in. Is this going to be contaminated by the dust produced from the graphite mine?

Environmental impacts (Volume 1: Section 7)
a)Also located on [redacted] is 80 ha of natural woodland which has not been stock for 30 years. So we have a wonderful native flora and fauna including kookaburras, superb fairy wrens, 17 different species of orchids, Eucalyptus Petiolaris (EP Blue Gum) and Olearia Pannosa (Silver Daisy Bush). Just to mention a few species.
The Silver Daisy Bush is on the vulnerable list for EP which we have a significant pollution covering 3.75 ha of this species in our woodland area. This area was not burnt out in 2005 bushfires and thus the natural woodland is very healthy. We are extremely concerned for our natural vegetation with the dust and noise contamination due to the mining activity with the extra traffic that will be in our area.
b) Agriculture has been apart of Eyre Peninsula farming for hundreds of years producing clean green products to feed our country and the rest of the world (and will continue to produce food for the next hundred years). I feel that it is unjust that our government can give a mining company the approval to destroy our land with a mine with a life span of 8 to 10 years.
c)Our wish is to be able to pass onto our grand children a parcel of land with natural vegetation that has NOT been tarnished with Mining Dust. Please consider our environment.

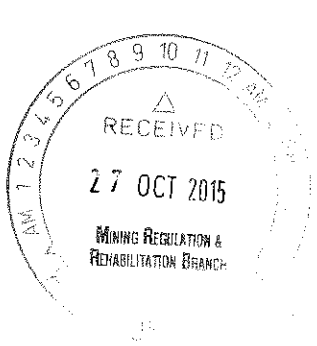
Caveat to the use of the material provided:
The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the authors.

Yours faithfully

[redacted]

Submission 07



For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningreghab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

(a) Lack of specific information provided throughout the so called consultation process
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file
(d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided
(e) The complete inflexibility of DSD with respect to an extension of time in which to respond
(f) The lack of any public presentation either by DSD or the Company with respect to the Application

Deficiencies in the data presented include:

(a) Demographic data that is FOUR years out of date
(b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect
(c) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry
(d) The oft stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided
(e) There is no recognition of the costs to the agricultural industry through contamination dust arsing from the mining operations
(f) There are no agreements with the District Council of Tumby Bay with respect to costs , inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372, nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Noise (Volume 1:Section 7.7)

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to *"insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant*.

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1:Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1:Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original**

Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two ?

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

[redacted]

RECEIVED
29 OCT 2015
MINING REGULATION & REHABILITATION BRANCH

Submission 08

28th October 2015
For Attention:
Business Support Officer
Mining Regulation Department
Department of State Development
GPO Box 320
Adelaide SA 5001

Email: dsd.miningregrehab@sa.gov.au

Dear sir/Madam

SUBMISSION - KOOKABURRA GULLY GRAPHITE MINE.

I am writing in response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of great concern and do not appear to be adequately addressed in the application.

- WATER
  This proposed Mine site is within the Tod River Catchment area. The Tod River Wetland System is of national importance. I understand that Australian Graphite Ltd intends having ponds of kerosene and diesel to float the graphite off. They have no true understanding of the local rainfall which can occur in this area. In June 2014 (just last year there was a 12 hour rainfall event overnight Thursday 15th June to Friday 16th June 2014) where over 85 mm fell and resulted in creeks and fords overflowing and residents being unable to leave their properties. The Tumby Bay District Council has now erected 2 metre high flood markers at these crossings. Photos taken at approx 4pm on 16th June 2014, after floodwaters show the road damage on Pillaworta and Bailla Hill Road junctions, and debris caught on the fence up at head height. This debris has since been removed, strangely, and the locals wouldn't and couldn't be bothered. The force of this rainfall event was so huge that the pipeline across the Tod River below the Reservoir, was such that the pipeline was swept off its' concrete supports south of the causeway. If a Tailings Dam had been constructed where proposed, would have contaminated the Tod River all the way down to the Tod mouth at the sea, into Fish farming and breeding areas, affecting the Clean, Green Fish farms and our many beautiful beaches. Rainwater is the only source of water catchment for many residents in the Koppio Hills and beyond. They are totally reliant on the rainwater collected from house and shed roofs. The data provided indicates the existanc4 of a significant number of minerals within the ore body that are potentially harmful to human health, animal and plant health. These include not only the graphite but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.
  Would you want to drink your rainwater, caught on roofs contaminated with this potentially deadly dust, give it to your children and grandchildren and visitors, children?

- AIR QUALITY AND DUST

Another major concern to me is breathing air with radioactive and heavy metal particles in it. The dust would also contaminate our rain water, our pastures, our stock that ate the pastures, drank water from our dams with contaminated runoff from catchment areas, and our crops, GMO Free crops in demand worldwide, especially from Japan, China and Europe. Imagine drawing a line along the Bratten Way from Mount Hope in the West all across to Tumby Bay, and no grain being able to be delivered into the silo system for exporting and state income due to contamination. Glencore Grain are ALREADY considering the pollution and contamination issues. Imagine the disaster when our grain is rejected at the silos and our cattle and sheep, fat lambs are rejected for sale. A massive area of Lower Eyre Peninsula with its highly productive land and high rainfall will be contaminated and polluted forever. The Koppio Hills watershed area not only flows into the Tod catchment area but also West, through highly productive farming land, valued at over $3,000/acre NOT per hectare. This water flows down into Lake Wangary and then into Coffin Bay. A beautiful holiday area for thousands and the famous Coffin Bay Oysters. How many millions of Tourist Dollars and outstanding Aquaculture state income are at risk? Sustainable agriculture has existed here for over 100 years and has the potential to continue for over hundreds of years. Even miners have to breather drink and eat! None is this is included in the Mining Lease Application. Our farming land will be worthless and non viable. This Mineral Lease application is for approx 7 - 8 years balance that against feeding thousands of people for over another 100 years. ABS show that 1 Australian farmer feeds 600 people, 150 in Australian and 450 overseas.

- ROADS AND TRANSPORT

The Pillaworta Road is used mainly by cars and utes, and a very small number of trucks (mainly for carting stock and grain at harvest time). This road is too narrow for the size and number of trucks proposed by Australian Graphite Ltd. It is also heavily lined with protected EPBC varities of trees including the protected Eyre Peninsula Blue Gum (Eucalyptus petiolaris). and the road is not suited to widening. The junction of the Bratten Way and Pillaworta Road is on a sweeping downhill bend and slow moving graphite transport trucks entering a road with over 6 kms of double white lines has potentially fatal consequences. It is noted that the transport route has been determined in the absence of consultation with the community and elected members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).

There is no agreement with The District council of Tumby Bay as to the actual transport route. There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond. Assumptions have been made on the part of the works Manager as to the transport route, but these are not transparent to elected members nor the community at large. The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI.

The impact upon native vegetation and EPBC listed species is not recognised in the Application.

- EXPOLSIVE MAGAZINE STORAGE SITE

This is in a Bushfire prone area. I understand this storage site will located near the mine site. 60 tonnes of explosives and 1 tonne of detonators. Also a significant supply of diesel on site. There appears to be no risk assessment to this facility in the

event of a bushfire. What safety precautions for local residents, employees and CFS fire fighters. Being located in a gully would channel the blast impact over a huge area. The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?
What about any increase in Insurance Risk to neighbouring properties as a result of the magazine location? Is this potential increase in Insurance, or even refusal of Insurance, subject to compensation from the company?
What is the chemical composition of the Detonators? Do they contain Mercury Fulminate? What is the environmental risk of such a large amount of Mercury being released during the mining operations (dust and groundwater implications)?
What about security of the magazine contents? (note Ammonium Nitrate is a precursor to many IED's)

- DEFICIENCIES IN THE DATA PRESENTED Include:
  Demographic Data that is 4 - FOUR years out of date.
  What data is the availability of jobs for the local community based upon?
  The job profiles of the proposed positions are not identified and there is a glut of mine employees unemployed due to the significant down turn in the Mining Industry.
  What are the stated ' benefits' to the community? They have not been quantified nor have the costs. No mention has been made of the LOSS OF JOBS in a highly productive farming and Tourism area, due to dust contamination through mining activities. Where is the costs benefit analysis? None has been provided.
  Rference to 52 mining jobs currently in the Tumby Bay township , noting that the previous mining employer (Centrex Metals/Eyre Iron) has left the area, in totally incorrect.

- LONG TERM ISSUES
  It is noted through company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development od the project inclusive of Kookaburra Gully extension (for which the company has received a $3,000,000.00 grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.
  I ask, is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two?
  There are also local suggestions that this development may also enable some symbolic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.
  Interestingly, Valance (Uley) Graphite have made significant job cuts as announce recently in the Port Lincoln Times. Comments from other personnel within the mining industry include "graphite mines are the filthiest, dirtiest of all mines" "they must be crazy to be mining in such high rainfall and productive country", "NO mining should be allowed in that country" , "we come out from Lincoln and it is dead calm, in the Koppio Hills the gully winds nearly blow our heads off".
  Australian Graphite Ltd(Lincoln Minerals Ltd) have NO PROOF and NO independent data (using Eyre Iron's data which we know has not been independently collected, in sealed, tamper proof containers).

Australian Graphite Ltd have NO environmental history and NO social licence in the community to proceed with this proposal. What redress and compensation for the community and the environment is shown in this application?
The fact that there are such glaring deficiencies which do not appear to have been addressed include:

- Lack of specific information provided throughout the so-called consultation process.
- To expect the ordinary person to have to pay $250 just to get a copy to respond to the application.
- There are many people without a computer and internet facilities and the inability to access such a huge document.
- to expect a lay person to be able to access, read and formulate a response within such a rigid and short time frame.
- No extension of time in which to lodge a submission.
- No public presentation by the Company or DSD with respect to the Application.
- What about the Kookaburras of Kookaburra Gully?
  No consideration appears to have been given to them, beyond "fauna have the ability to relocate up to 10 kms away"

Caveat to the use of the material provided.

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than sought on behalf of the Minister for the purposes of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

Submission 09

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningreghab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application and are of great concern to me and my family:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

(a) Lack of specific information provided throughout the so called consultation process
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file
(d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided
(e) The complete inflexibility of DSD with respect to an extension of time in which to respond
(f) The lack of any public presentation either by DSD or the Company with respect to the Application

Deficiencies in the data presented include:

(a) Demographic data that is FOUR years out of date
(b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect
(c) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry
(d) The oft stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided
(e) There is no recognition of the costs to the agricultural industry through contamination dust arsing from the mining operations
(f) There are no agreements with the District Council of Tumby Bay with respect to costs , inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372*, *nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Noise (Volume 1:Section 7.7)

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to "*insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant*.

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1:Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1:Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two ?

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Caveat to the use of the material provided:

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

Caryll Cabot

Contact details: Ph 08 86885063

Postal address: 'Yallunda Flat' Private Bag 127, Port Lincoln SA 5607

Email address: caryllc@skymesh.com.au

Submission 10

Submission from **Anne Elizabeth Daw**
16 A Kitchener Street,
Netherby 5062
annedaw@bigpond.com
mobile 0435 030 998

Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningregrehab@sa.gov.au

To whom it may concern,

I wish to comment on various aspects of concern I have, in relation to the Australian Graphite Limited, Kookaburra Gully Graphite Mine - Mineral Lease Application.

GEOLOGICAL HAZARDS

EARTHQUAKES

The impact on mining induced earthquakes in the Kookaburra Gully area should be taken into serious consideration. This may impact the soil, air and water and have detrimental affects, causing a threat to agriculture and fishing, as well as on residents and other businesses of Eyre Peninsula. Earthquakes impact roads, buildings, infrastructure such as housing, sheds, bridges, pipes, power lines, and may also impact wells if they are close to the epi-centre. There are a number of active seismic areas in South Australia. We cannot control these sort of events from occurring under the ground.

Many earthquakes have been recorded on Eyre Peninsula. This year, 2015, earthquakes have been recorded at Cowell on 29th September, Cummins on 2nd September, and Cleve on 19th June. The Cleve magnitude was 2.7 with a depth of 10 km. I won't list all of them here but will name a few others.

2.3 near Port Lincoln 29th Jan. 1979.
2.1 Wanilla 31st Jan 1979
3.3 Port Neill 17th July 1991
4.5 near Port Lincoln 9th June 1996 – this affected a large area of lower Eyre Peninsula
4.5 Cummins 9th June 1996
5.0 Cleve 5th June 2010
3.9 Cleve Jan 16th 2011

Please see the map below from the Queensland University Advanced Centre for Earthquake Studies. You will note a number of earthquakes in the lower half of Eyre Peninsula above 4 magnitude.

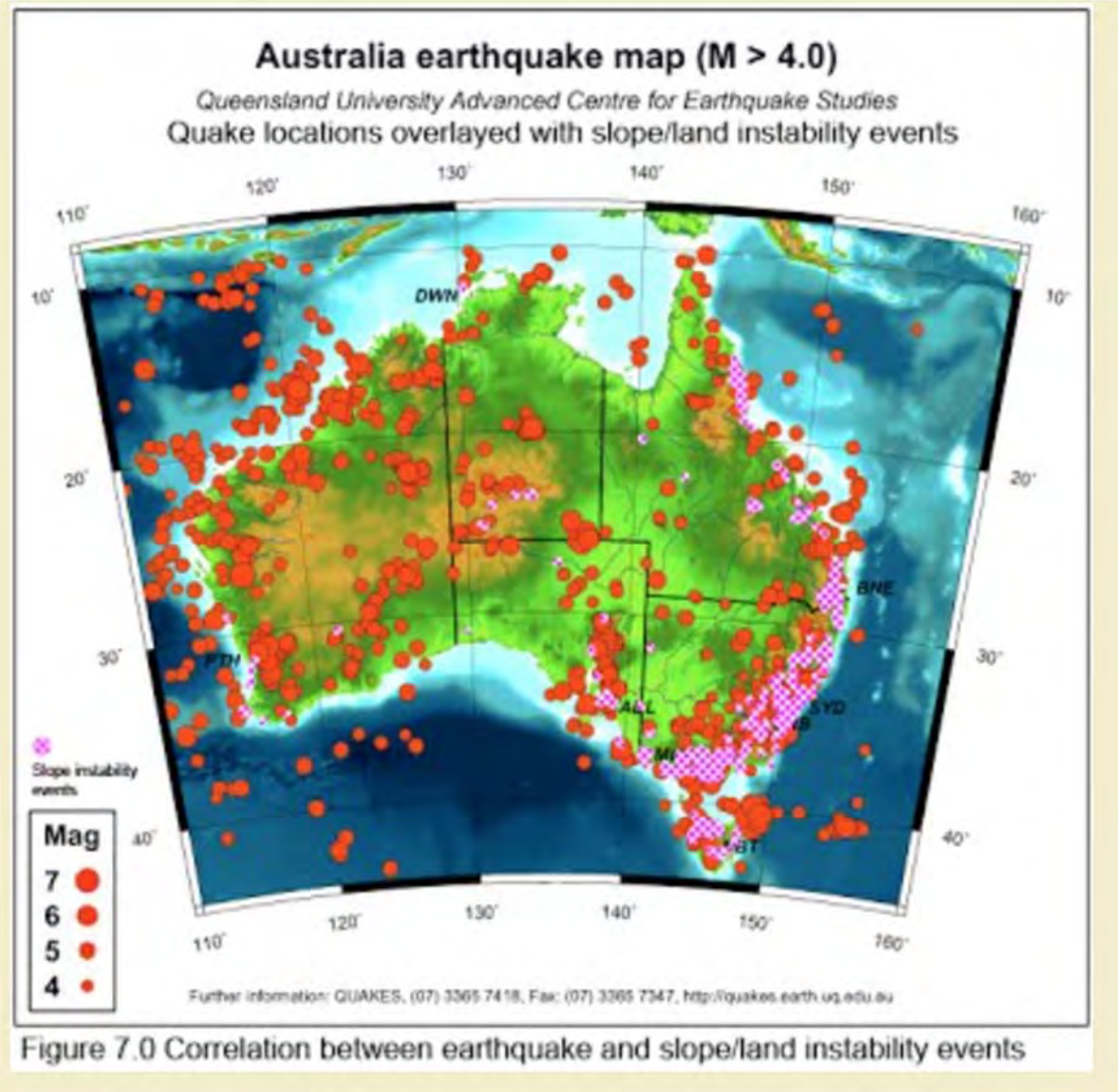


Figure 7.0 Correlation between earthquake and slope/land instability events

The map below shows the four most seismic areas of South Australia and includes Eyre Peninsula. This map came from the Mining Department of South Australia, now known as Department of State Development.

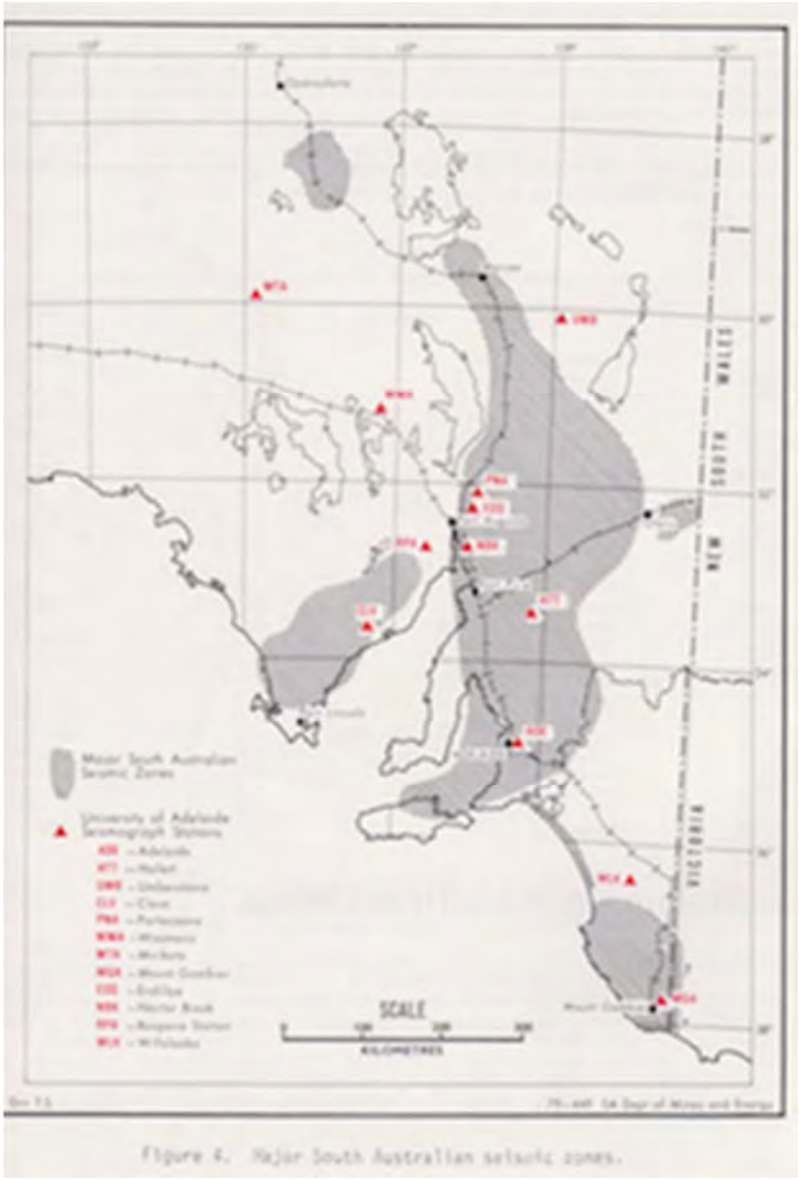


Figure 4. Major South Australian seismic zones.

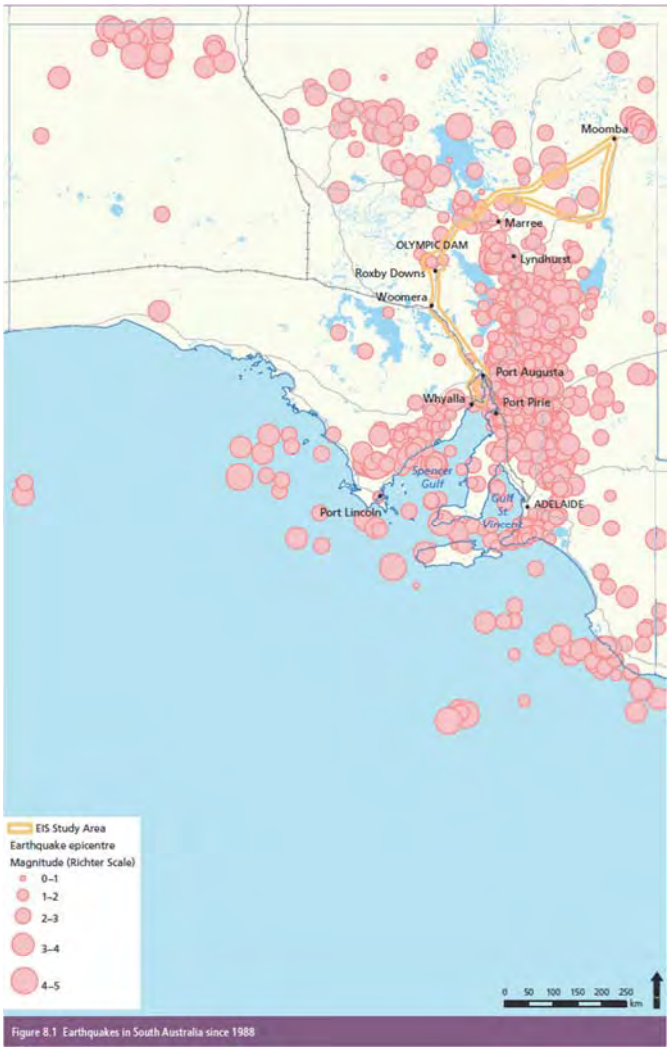
http://www.earthquakes24.com/en/p_7839432.html

EARTHQUAKES MAY BE TRIGGERED BY MINING AND DRILLING.

Mining induced earthquakes are recognised by the United States Geological Survey that is recognised as an authority in Australia. Mining induced earthquakes are mentioned along with oil and gas inducement of earthquakes in the document USGS Induced Seismicity in the 2014 National Seismic Hazard Model – Results of the 2014 Workshop and Sensitivity Studies.

Historically, in USA, earthquake insurance has excluded earth movement resulting from human activities such as mining, explosives and oil and gas exploration. How many insurance policies cover mining induced earthquakes in Australia, and does this mean that farmers and residents on Eyre Peninsula have to fork out more for their insurance to cover incidents as the result of mining activities? With unconventional gas activities such as shale or coal seam gas, there are no insurance companies in Australia that want to cover

properties where these activities are taking place.



Picture showing earthquakes including on Eyre Peninsula – taken from the the Olympic Dam Expansion Supplementary Environmental Impact Statement 2011

According to the **'Olympic Dam Expansion Supplementary Environmental Impact Statement 2011, Chapter 8 on Mining Induced Seismicity'**, the 4 main causes of man made induced seismicity are the following:

- Injection induced seismicity for oil and gas.

- Reservoir induced seismicity because of the filling of water storage reservoirs **(holding ponds for dewatering and waste water come into this category and are required for this proposed project).**

- Mining and quarrying induced seismicity from both open pit and underground mining.

- Seismicity induced by nuclear explosions – particularly underground.

When an excavation is performed in rock, such as during mining activities, the pre-existing stresses in the rock are redistributed. This can lead to seismicity.

Detonation of explosives are also responsible for triggering seismic activity. Australian Graphite Limited is seeking approval to construct and operate an explosives magazine on site. I understand that 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex. This is a risk in itself, of an accidental blast creating toxic dust that may impact the soil, air and water with disastrous consequences.

Mining induced earthquakes can vary in nature and be complex, producing liquefaction and landslides. The Lower Eyre Peninsula, including the Kookaburra Gully area have hills 300 metres high.

DEWATERING TO ACCESS GRAPHITE

Dewatering of the area to obtain the graphite may cause earthquakes and subsidence. The 2008 Gippsland Coastal Board reported that land subsidence has occurred over 40 years because of the **extraction of underground water for dewatering for mining, and oil and gas activities resulted in a relatively rapid collapse (compaction) of underlying strata**. Pages 4 and 32 - COASTAL SUBSIDENCE ALONG THE GIPPSLAND COAST.

Some areas in Morwell in Victoria have experienced subsidence up to 2.8 metres closest to the mine impacting the Morwell township. This subsidence is resulting in gradual tilting of the land surface with the primary impact on rivers and creeks as well state owned utilities of water, sewerage and gas pipelines.

SEAWATER INTRUSION

http://www.groundwater.com.au/media/W1siZiIsIjIwMTMvMTIvMTgvMjNfMjVfMDRfMzUxX1NXSV9maW5hbC5wZGYiXV0/SWI_final.pdf

According to a **document 'Seawater Intrusion, by the National Centre for Ground Water Research and Training'**, it states that Eyre Peninsula is highly vulnerable to seawater intrusion. If the seawater intrudes far enough inland, it can reach bores, making the water too salty to be usable. Remediation of aquifers affected by seawater intrusion is extremely costly. It may be impossible for the aquifers to be remediated from seawater intrusion.

http://www.nwc.gov.au/__data/assets/pdf_file/0014/23162/85-Seawater-intrusion.pdf

According to the document by the National Water Commission, **'National-Scale Vulnerability Assessment of Seawater Intrusion Summary Report' August 2012:**

Other areas potentially vulnerable to SWI include the Adelaide region's confined aquifers, Willunga Basin, and groundwater basins in Eyre Peninsula hydraulically connected to the sea, such as Uley South.

https://www.waterconnect.sa.gov.au/Content/Publications/DEWNR/ki_dwlbc_report_2007_04.pdf

THREAT TO POTABLE GROUND WATER

The threat to potable ground water in the Lower Eyre Peninsula may occur as the result of overflowing of waste-water holding pond. Climate change needs to be taken into account – both because of lack of rainfall and also extreme weather conditions such as a 100 year flood. We have seen examples of extreme weather conditions with high rainfall in Queensland in 2011.

http://www.australianmining.com.au/news/queensland-s-flooded-coal-mines-still-impacting-ec

this next link is from flooding in 2013
http://www.australianmining.com.au/news/toxic-mine-water-released-during-qld-flooding

Coal pits became full of water and dewatering of the pits were dealt with by emptying the contaminated water into rivers and aquifers – this should have never occurred. Overflowing waste-water may impact the Pillaworta Creek.

This link is a report on a dis-used mine pit in Mt Morgan in 2013.
http://www.abc.net.au/radionational/programs/breakfast/contaminated-mine-water-fears-in-queensland/4490488

The Pillaworta Creek joins the Tod River and flows into the sea, Spencer Gulf, at Poonindie and the Port Lincoln Harbour is just around a land point to the south. The Southern Right Whales are known to be in the sea at Port Lincoln and Spencer Gulf each year. The sea area, in close proximity to the mouth of the Tod River, supports abalone nurseries, mussel farms and tuna farms. Port Lincoln is a very important fishing industry port.

I understand that this proposed project requires taking a pipeline for potable water from the Uley Basin to the mine site for amenities and the final wash of graphite products. This is putting extra pressure on the requirements of potable water for the lower Eyre Peninsula area. The water from the washery has to be dealt with. This may lead to contamination through spillage. Even if this waste water is 'purified' the concentrated sludge (heavy metals, brine etc.) is still left behind, and always a problem.

I understand that a second pipeline is to have water from the Tod Reservoir. The Tod Reservoir use ceased in 2002 because of contamination, and yet it is planned with this project to use it for dust suppression. This may environmentally open up a can of worms. This water would leach through into the soil, and possibly into water that is used for stock, putting pressure on the farmers to source other water, adding to their expenses and farming uncertainty.

According to the document **'Uley Basin Groundwater Modelling Project Volume 2: Groundwater Flow Model' :**

'An increase in extraction of ~10% or 1000 ML/y should not be of a great concern and it should not have detrimental impact on the groundwater resource in Uley South. However, it would cause a 2–3 m drawdown in Uley East, which in turn might affect current users and limit future development in this lens. The results should be used with caution, because the model is not able to predict impacts of increased extraction to the seawater–groundwater interface for the modelled scenarios. In addition, it is impossible to predict the future rainfall, and therefore accurately estimate potential recharge, which is a driving mechanism of this groundwater system.

If scientific water-tracing results confirm that there is groundwater recharge being received into the Uley Basin (SA Water's Uley South and Uley Wanilla borefields) which includes rainfall catchment and hydrogeology provided by the Koppio Hills, then open-cut mining and de-watering will without doubt present a significant threat to the sustainability of the environment that supports not only the drinking water supply for Port Lincoln but also for a large area of Eyre Peninsula – 30,000 people and 1.5 million head of stock.'

According to the '**TECHNICAL REPORT - NON-PRESCRIBED GROUNDWATER RESOURCES ASSESSMENT – EYRE PENINSULA NATURAL RESOURCES MANAGEMENT REGION PHASE 1 – LITERATURE AND DATA REVIEW 2011/16**

'There is only limited understanding of groundwater resources in most non-prescribed regions across the State. Current knowledge gaps regarding the occurrence, storage and quality of groundwater resources present significant barriers to the management and future development of many groundwater systems.'

Risks arise out of uncertainty due to insufficient information and incomplete understanding of the mechanics involved, especially around ground water resources. These uncertainties prevent accurate predictions.

The pressure to access new water resources will also increase. The impacts of land use change such as mining and energy operations may go undetected unless suitable monitoring and assessment is in place (Government of South Australia 2009). New pressures are likely to be realised for non-potable resources that traditionally have not been utilised or managed.

In the Eyre Peninsula Natural Resources Management (EPNRM) Region, water resources are important for sustaining agriculture, industry, mining and rural townships, but non-prescribed regions have traditionally been poorly understood due to limited monitoring and investigation programs.

The EP region is one of the driest in Australia, where surface water resources are scarce due to low rainfall, high evaporation and relatively flat topography (Eyre Peninsula Catchment Water Management Board 2005). Only small amounts of mean annual rainfall occurs as runoff, to collect in rivers located towards the east and south of the EPNRM Region.

Across EP land is used for primary production, dense urban centres, commercial and industrial activities and significant areas of remnant native vegetation amongst a large number of land use classes. There are many wetlands across EP and the region also contains nearly 100 parks, from large national parks such as Coffin Bay National Park, to smaller conservation parks and reserves (Eyre Peninsula Natural Resources Management Board 2009). Many areas that are important for biodiversity conservation are also important for water resources management (Eyre Peninsula Catchment Water Management Board 2005). Social and economic development is closely correlated to the availability of potable water.'

If groundwater salinity increases or becomes contaminated (because of impacts of this proposed mining project), coupled with an increasing demand for water, this would act as a major risk to the region's water supply security, development and economic growth. Already availability of potable water on Eyre Peninsula is in a precarious position.

'Data suggests that the demand for water, from the currently identified ventures, will more than double over the next decade. DFW (2011) reports that mining activity projections will increase water demand in 2050 by approximately 14.7 GL, a level currently not available without private augmentation.'

Farmers would not be prepared to sacrifice their own water allocation at the expense of the mining industry, and risk their own very important agricultural industry that includes cropping (an export market) and sheep.

De-salination presents its own set of problems with what to do with the concentrated brine that would also contain other contaminants.

'The Southern Basins PWA is the major source of groundwater delivered through the Eyre Peninsula Water Supply Network (EPWSN). '

This should not be put at risk for rural communities and Port Lincoln.

'Water resources are climate dependent and climate changes may pose future limitations on groundwater resources on Eyre Peninsula. Regional climate change scenarios for the EPNRM Region have been developed, based on statewide climate modelling conducted by the CSIRO Marine and Atmospheric Research Group (Suppiah et al. 2006). Projected impacts on annual temperature, rainfall and evaporation rates for the Eyre Region are summarised in SA Water's Long Term Plan for Eyre Region (2008), concluding:

By 2030, annual temperature will likely increase between 0.4-1.2°C

By 2070, annual temperature will likely increase between 0.9-3.5°C

Annual rainfall will likely decrease by 1-10% by 2030 and by 2-30% by 2070

Annual evaporation predicted to increase by 1-5% by 2030 and by 4-14% by 2070'

https://www.waterconnect.sa.gov.au/Content/Publications/DEWNR/EP_NRM_Non-prescribed_GW_Assessment_2011.pdf

I asked the South Australian EPA at a public meeting if contaminated aquifers are able to be cleaned up. The response was that if a large contamination of a potable aquifer occurred, it would be impossible to clean up. This should be taken seriously.

DIESEL

The mining machinery requires diesel to fuel and work it. The levels of diesel are much higher at an industrial mining site than in other areas. Diesel has an ultra – fine particulate – Ultra-fine particles have diameters smaller than 0.1 µm. It is so ultra-fine, that the particulate can be absorbed through the skin, into the blood stream and into the organs with dire consequences. When Beach Energy were drilling in the South East, I experienced the smell of diesel from a considerable distance. This is not a welcoming odour, and no doubt, would impact neighbours and animals adjacent to the mine.

According to an Australian Federal Government document, **'Health Impacts of Ultrafine Particles -Desktop Literature Review and Analysis'**

'Diesel exhaust emissions contain hundreds of chemical compounds, which are emitted partly in the gaseous phase and partly in the particulate phase of the exhaust. The major gaseous products are carbon dioxide, oxygen, nitrogen, and water vapour; carbon monoxide, sulfur dioxide, nitrogen oxides, and hydrocarbons and their derivatives are also present. Benzene and toluene are present in the lower range (percentage weight) in the gaseous part of the hydrocarbon fraction. The particles are composed of elemental carbon, organic compounds adsorbed from fuel and lubricating oil, sulfates from fuel-sulfur, and traces of metallic components. Most of the total particulate matter occurs in the submicrometre range, between 0.02 and 0.5 µm.

In 1988 the US National Institute of Occupational Safety and Health (NIOSH) published Criteria Bulletin No.50 (NIOSH, 1988) which proposed a potential link between occupational exposure to diesel exhaust and lung cancer. The NIOSH finding was based on the consistency of toxicological studies in rats and mice and limited epidemiological evidence, mainly from railroad workers.

The IARC evaluation 2A (probable human carcinogen) was based on limited evidence in humans and sufficient evidence of carcinogenic risk in animal studies (IARC, 1989).

https://www.aioh.org.au/documents/item/15

According to the **United States Occupational Health and Safety Administration,**

'Short term exposure to high concentrations of diesel exhaust and diesel particulate matter can cause headache, dizziness, and irritation of the eye, nose and throat severe enough to distract or disable miners and other workers.

Prolonged diesel exhaust and diesel particulate matter exposure can increase the risk of cardiovascular, cardiopulmonary and respiratory disease and lung cancer. In June, 2012, the

International Agency for Cancer Research (IARC) classified diesel exhaust and diesel particulate matter as a known human carcinogen (Group 1).'

https://www.osha.gov/dts/hazardalerts/diesel_exhaust_hazard_alert.html

DUST

I understand that analysis of the data provided for the graphite indicates a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts on both humans and animals from these metals is extremely concerning. Unfortunately, due to lack of time, I am unable to go into the health hazards of these materials. It is not only the immediate area of the mine that would be affected, but would go down the food chain to anyone that eats produce from this area, both in South Australia and overseas. Grain and pasture would be contaminated – resulting in animals and crops being contaminated. People consume the animals. The health impacts of mining on high yielding agricultural land on Eyre Peninsula, I believe, have not been studied or taken into account. This shows poor vision for the future, when our state is already under budget stress. Putting more stress on the health system is not beneficial to our state's economy, nor is putting at risk the water and high yielding agriculture on Eyre Peninsula.

NOISE AND LIGHTING

Excessive noise during the day and noise in the sheds at night in high yielding agricultural areas is not acceptable. It has been observed in the South East of South Australia, the noise through drilling disturbed the animals. Normally placid animals became jumpy and took off when anyone entered their paddocks. This would not be good for the best condition of adjacent sheep. One wonders how lambing would also be impacted, as well as the quality of the wool, if it is discoloured by the dust. Explosives going off would be an annoyance to neighbours and animals. The processing plant which would be operating 24 hours a day. would be lit up at night for security measures. Again, this is detrimental to humans and animals.

LOSS OF VALUATION OF PROPERTY

It is well known that where mining takes place, because of all the issues mentioned in my submission, adjoining properties become devalued or worthless. They are often impossible to sell. No one wants to live next to a dusty mine that may threaten their livelihood or be at risk of having their water, soil and air contaminated. No one wants to put animals near this sort of environment. As mentioned before, insurance may be hard to come by. Is the government prepared to foot the bill that may add up to a massive sum, if things go wrong in this area of high yielding agriculture. Has the local government got masses of money

behind them for repair of roads, because of overuse by trucks and traffic associated with the mine.

CONCLUSION

I believe I have enough evidence here to cast many doubts on why this graphite project should be allowed to go ahead. South Australia only has 4.6% high yielding agricultural land. There will be concerning issues with water and dust contamination. This project, as I understand, has no social licence from adjoining neighbours. I believe our agricultural and fishing industry in South Australia must be protected.

Anne Daw 29th October 2015

Submission 11

29th October 2015

John and Janet Moore
22 Wishart St
Tumby Bay SA 5605

Mining Regulation Branch

Department of State Development

G.P.O. Box 320

Adelaide S.A. 5000

Att : Business Support Officer

Re - Response to Australia Graphite Pty Ltd Kookaburra Gully Graphite mining Mineral application

The Following Issue is of concern and don't appear to be adequately addressed in the application

My Wife and I have just moved to the Lower Eyre Peninsular area and have come from Mining communities throughout WA. We have grave concerns of the effects the mining operation will have within the Koppio farming district and surrounding areas.

Any contamination to the fragile water ways and eco system will have a direct impact on the farming community and their lively hoods not to mention the long term issues that can and do arise from open cut operations.

All households use water tanks which are filled from the runoff from their roofs directly into their tanks. As Graphite dust will be generated from the mining operation ,the prevailing winds will blow this dust throughout the surrounding communities onto their roof's which in turn will flow into their water tanks.

Graphite dust contamination directly into the local water supplies raises major concerns for the health and well being of current and future generations within these areas.

The method to try to suppress the dust within the mining operation is to spray non potable water onto the road systems and operational areas of the mine, this can lead to contaminated water leaching into the waterways. Which in turn will have a direct effect on the surrounding land.

A recent serious dust contamination in Esperance WA caused the death of thousands of birds , contaminated the local water supply and also the local population of the town.

The contamination was a direct link to the dust generated from the handling within the town and then the loading of the ore onto ships.

As mines have only a limited life span , once a mine has exhausted viable mineral deposits, this mine will be abandoned leaving the local community to deal all the ramifications from the mining operation.

Once the operation is abandoned the fence surrounding the pit will fall into disarray ,the pit will fill with water , wildlife and animals will fall into the pit/s and drown. Worse of all children could access the area fall from a great height into the pit and drown.

This operation if allowed to proceed could have a devastating effect on the local farming community and the supporting industries/businesses .

We implore you to reconsider the granting of a mining lease to Australia Graphite Pty Ltd

Thank you for the opportunity to present our case on this matter

Yours faithfully

John Moore

John & Janet Moore

Submission 12

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningregrehab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

(a) Lack of specific information provided throughout the so called consultation process
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file
(d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided
(e) The complete inflexibility of DSD with respect to an extension of time in which to respond
(f) The lack of any public presentation either by DSD or the Company with respect to the Application

Deficiencies in the data presented include:

(a) Demographic data that is FOUR years out of date
(b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect
(c) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry
(d) The oft stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided
(e) There is no recognition of the costs to the agricultural industry through contamination dust arsing from the mining operations
(f) There are no agreements with the District Council of Tumby Bay with respect to costs , inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue
(g) Neighbouring properties will suffer a huge reduction in capital value. Landholders should be eligible for compensation with regard to loss of value of property. This needs to be addressed before any mining operations begin.

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

A comprehensive survey is needed to gauge the effect of dust from the mine site. The local grain receival authority have become very strict with regard to any contaminate being delivered. We would suggest that the dust will have a potential to contaminate the grain to such an extent that the grain will become non deliverable. This scenario could become worse if an end user of grain rejected a ship load and refused to pay. A whole boat load of grain could be worth between 10-20 million dollars. Many farmers have experience first- hand scenario when their grain deliveries have had lumps of fertilizer detected. They have then become liable for the purchase & resale of large quantities of grain at huge loses.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372*, *nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

As previous owners of section 196 HD of Koppio we have experienced vast difference of quality of water that was used to supply livestock. In one case I can remember 2 water supply points within 100 metres of one another where one was saltier than sea water and the other was of quite good quality.

Noise (Volume 1:Section 7.7)

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to "*insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant*.

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1:Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1:Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two** ?

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningregrehab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

(a) Lack of specific information provided throughout the so called consultation process
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file
(d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided
(e) The complete inflexibility of DSD with respect to an extension of time in which to respond
(f) The lack of any public presentation either by DSD or the Company with respect to the Application

Deficiencies in the data presented include:

(a) Demographic data that is FOUR years out of date
(b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect
(c) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry
(d) The oft stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided
(e) There is no recognition of the costs to the agricultural industry through contamination dust arsing from the mining operations
(f) There are no agreements with the District Council of Tumby Bay with respect to costs , inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372, nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Noise (Volume 1:Section 7.7)

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to *"insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant.*

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1:Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1:Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original**

Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two ?

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

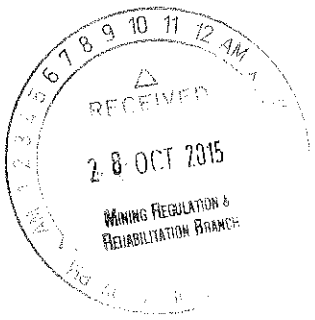
Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

[redacted]



Submission 14

For Attention

Business Support Officer

Mining Regulation Branch

Department of State Development

GPO Box 320

Adelaide 5001

Email: dsd.miningreghab@sa.gov.au

Dear Sir /Madam

In response to the Australian Graphite Limited, Kookaburra Graphite Mine, Mineral Lease Application.

Thank you for sending hard copy of the Application.

It is most unfortunate, persons seeking a copy would need to pay $250.

Internet on Lower Eyre Peninsular is unable to download a 139 MB File

The time period to read and make a judgment on the Application is way too short.

The Application does not provide costs or possible benefits to make even a starting point.

Entry to Kookaburra Gully is via Pillaworta Road.

The Pillaworta Road follows the valley floor on the eastern side of Pillaworta Creek and run off from rainfall on sloping ground on the east multiplies the water on Pillaworta Road. In the winter time and on occasions in the summer this road can be very wet, slippery and boggy in some places.

With a very large increase in traffic and heavy trucks compared to its present norm where is the budget coming from to keep this road in reasonable condition.

The amount of dust generated by vehicles in the dry period will threaten native vegetation and listed species.

Properties next to the mine site and further afield will devalue if dust containing a significant number of minerals potentially harmful to human, animal and plant health is detected.

Most of Eyre Peninsulas Grain is transported to Port Lincoln. If harmful residues are detected in grain samples, Eyre Peninsula's multimillion dollar grain industry may be at risk.

Many People rely on rainwater for human consumption and water in dams for both domestic and native animals and birds are at risk from the potential harmful dust cloud.

The possibility of ground water contamination, water run-off from mining operations and of particular concern regarding the embankment due to a lack of information and as identified by the consultant.

If the embankment fails or there is leakage of potentially contaminated water it will enter Pillaworta Creek enter the sea and possibly damage sensitive Aquaculture areas.

The explosive magazine and diesel fuel has no assessment regarding the possibility of fire or an explosion and the possible increase in insurance risk for properties next door.

This application does not contain enough relevant information, there are too many maybe's and requires much more public scrutiny.

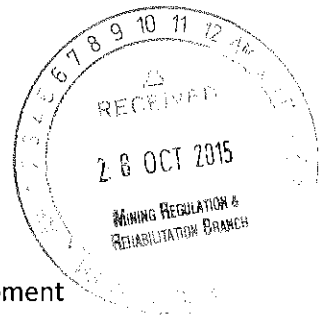
Caveat to the use of material provided.

The response, with name, address and Email redacted maybe published by the department.

The response is to be used for no other purpose than that sought on behalf of the Minister for the purpose of assessing the application without the express permission in writing of the author's.

[redacted]

Page2of2



FOR ATTENTION;
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningregrehab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application.

TRANSPORT ROUTE (Volume 1: Section 7.9)

Given that the selected transport routes are on public roads and even allowing for the conflicting numbers of predicted volume of mining related traffic throughout the Mineral Lease Application everyone would agree that this would mean an automatic rise in the chances of an incident on the routes that have been indicated, both traffic related & product spills. As the Country Fire Service is one of the first responders to such incidents it is critical that the first arriving crews (likely to be non Compressed Air Breathing Apparatus equipped brigades) should be aware of the risks that they may face in such circumstances. Information such as the possible presence of Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc in the dust generated from all facets of the mining process should be included in all representations from AGL regarding this project so that Emergency Services volunteers are not putting their lives at risk unnecessarily should they be exposed to the product dust and the dust from mining operations. The aforementioned minerals are potential carcinogens and or neurotoxins in humans and yet the application is devoid of any information in relation to them.

THE EXPLOSIVES MAGAZINE (Volume 1: Section 4.5.7)

It is noted that the Applicant is seeking approval to construct and operate an explosives magazine on site. It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex along with a significant supply of diesel on the mining site. These materials are commonly recognised as ingredients for many IED's. Given that the proposed Kookaburra Gully Graphite Mine is located in an area that is susceptible to the impacts of bushfire (as evidenced by the Wangary bushfire in 2005) what is the risk to the Emergency Services Volunteers of the Country Fire Service should the magazine be exposed to a bushfire. The application appears to be devoid of any assessment of the resultant impacts of bushfire or a catastrophic explosion (such as occurred in the fireworks factory in the Mid North of South Australia several years ago). Is this proposed magazine to be built to specifications to withstand the blast of radiant heat generated from a catastrophic bushfire so as to prevent an explosion? What would be the chemical composition of the plume of smoke? This is a risk to both firefighters and the general public that should be publicly available before any type of incident not during or after it. Should the magazine be impacted to such an extent that an explosion does occur what is the expected blast zone radius so firefighters are not

unwittingly caught in a potential death trap? Then there is the potential creation of spotfires starting from such an explosion increasing the potential for further damage to both the environment and private property.

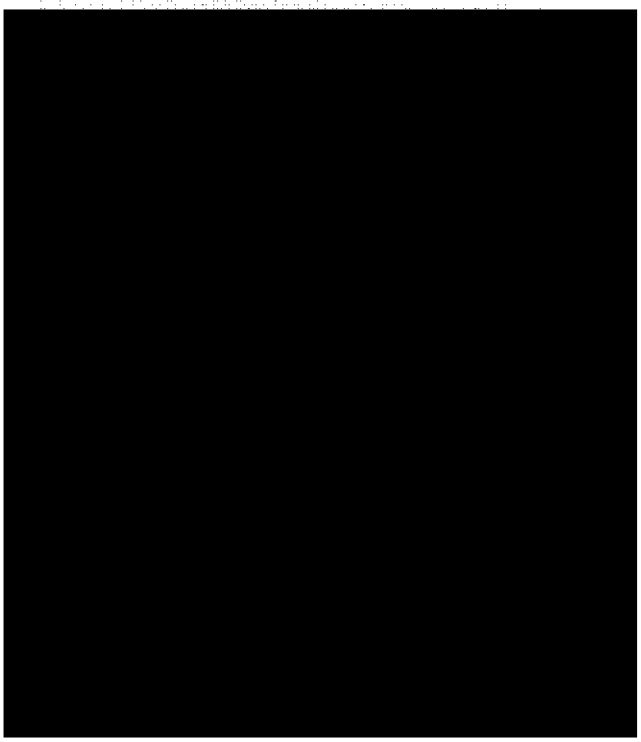
SOCIAL CONSEQUENCES

My concern is that the application has overlooked and not adequately responded to the consequences of the risks as outlined above. With no obvious identified plan in the application by the Company to both prevent and minimise the consequences from bushfires/industrial accidents would automatically mean that their default plan is to call the closest Emergency Services Agency – in this case the South Australian Country Fire Service. As the CFS is almost entirely reliant on volunteers in its response, the obvious conclusion is that there will be higher expectations on the volunteer's time and their families while they are attending incidents and upgrading their level of training to cope with the new identified risks. Then there is the associated risk to their health and wellbeing, as identified above, whilst they are providing this highly important public service. The final thing to consider is the time they spend away from their employment to be volunteers – as they are called upon more and more they also potentially forfeit more and more income. Surely this is not sustainable.

CAVEAT TO THE USE OF THE MATERIAL PROVIDED

This response, with name and address withdrawn, may be published by the Department.

This response is to be used for no other purpose than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author.



Submission 16

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningreghab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

(a) Lack of specific information provided throughout the so called consultation process
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file
(d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided
(e) The complete inflexibility of DSD with respect to an extension of time in which to respond
(f) The lack of any public presentation either by DSD or the Company with respect to the Application

Deficiencies in the data presented include:

(a) Demographic data that is FOUR years out of date
(b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect
(c) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry
(d) The oft stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided
(e) There is no recognition of the costs to the agricultural industry through contamination dust arsing from the mining operations
(f) There are no agreements with the District Council of Tumby Bay with respect to costs , inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372, nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Noise (Volume 1:Section 7.7)

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to *"insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant.*

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1:Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1:Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original**

Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two ?

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

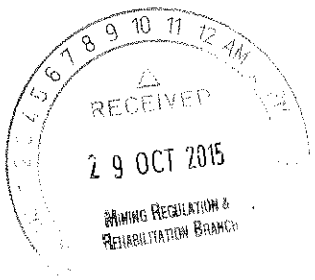
Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

Submission 17



For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001
26.10.15
Email: dsd.miningreghab@sa.gov.au

File No: T0298.1
Doc No: A2585454

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

1. Is the short term gain of mining minerals in the Kookaburra Gully worth the risk of loosing productive agricultural land forever?
2. How much is this beautiful country really worth?
3. How much will this beautiful country produce in the next 100 years if it is not mined?
4. If the mining goes ahead, how much will the community of Lower Eyre Peninsula benefit? Answer: Royalties minis contamination, lost agriculture, lost vegetation, cost of roads and potential damaged water supplies.
5. If our pastures and crops are contaminated by mining dust from prevailing winds over Kookaburra Gully, will our beef, wool, lamb and grain be condemned with a potential cost of Millions of Dollars to the Economy?

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

(a) Lack of specific information provided throughout the so called consultation process
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file
(d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided
(e) The complete inflexibility of DSD with respect to an extension of time in which to respond
(f) The lack of any public presentation either by DSD or the Company with respect to the Application

Deficiencies in the data presented include:

(a) Demographic data that is FOUR years out of date
(b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre Iron) has left the area is totally incorrect
(c) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry
(d) The oft stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1:Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1:Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372, nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Noise (Volume 1:Section 7.7)

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to *"insufficient geotechnical, geohydrology and hydrology of the site" as identifled by the Consultant*.

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

(e) There is no recognition of the costs to the agricultural industry through contamination dust arsing from the mining operations
(f) There are no agreements with the District Council of Tumby Bay with respect to costs , inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **Is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two ?**

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

[redacted]

RECEIVED
29 OCT 2015
MINING REGULATION & REHABILITATION BRANCH

File No: T0298.1
Doc No: A2585550

For Attention:
Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningregrehab@sa.gov.au

29.10.2015

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Native Title (Volume 1: Section 1.5.3) and Heritage (Volume 1: Section 3.15)

The document fails considerably to recognise that the project area is not entirely upon freehold land. Between sections of freehold land is a 20metre corridor of vacant crown land (Road Reserve) upon which the council has provided licence for that land to be accessed by one of the adjoining freehold land owners.

The area where the project does not lie entirely upon freehold land is vacant crown land (Road Reserve) and native title remains without extinguishment.

What consultation did the company have with the local (Port Lincoln) Barngarla community? Were the Barngarla representatives mentioned in the document from the local registered group based in Port Lincoln, or from elsewhere?

Without proper consultation with the local Barngarla community group then proper consultation with the native title claimants has not been met prior to the release of the application.

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)
Deficiencies with the approach include:

(a) Lack of specific information provided throughout the so called consultation process
(b) Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond
(c) Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file
(d) The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided
(e) The complete inflexibility of DSD with respect to an extension of time in which to respond
(f) The lack of any public presentation either by DSD or the Company with respect to the Application

Deficiencies in the data presented include:

(a) Demographic data that is FOUR years out of date
(b) Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect

[redacted]

(c) The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry
(d) The oft stated 'benefits' to the community have not been quantified nor have the costs.
(e) At what cost is the proposal to the community (Koppio, Yallunda Flat, Cummins, Port Lincoln, Tumby Bay) that are currently and sustainably relying on agriculture and its associated employment and will continue to do so for 100's of years
(f) There is no cost benefit analysis provided
(g) There is no recognition of the costs to the agricultural industry through contamination dust caused from the mining operations
(h) There are no agreements with the District Council of Tumby Bay with respect to costs, inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue

Transport Route (Volume 1: Section 7.9)

(a) It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
(b) There is no agreement with the DCTB as to the actual transport route
(c) Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not to mention the Community at large
(d) The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI
(e) The impact upon native vegetation and EPBC listed species is not recognised in the Application
(f) The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
(g) There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372, nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Noise (Volume 1:Section 7.7)

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to *"insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant.*

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1:Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1:Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?
The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two ?**

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

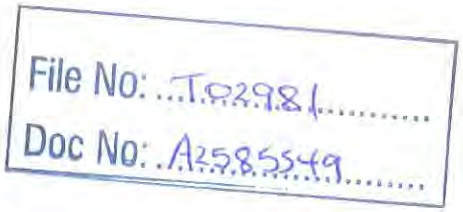
This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Yours faithfully

[redacted]

[redacted]

Submission 19



Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningreghab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

- The BOM at Port Lincoln Airport (35kms to the south) and Cummins Airport (approx. 27kms to the north-west) do not accurately relate to the weather at the proposed mine site in the Koppio Hills. The two BOM are not in the close proximity to the proposed site.
- Does MT Lofty in the Adelaide Hills have the same weather as Two Wells or Gawler?
- Locals certainly know of the strong winds in the Koppio Hills.
- Has there been true and accurate community consultation by AGL/LML?
- Lack of specific information provided throughout the so called consultation process.
- In my opinion presentations by AGL/LML have tended to be of the attitude of "we are right, we are good for you and no you are wrong."
- Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond.
- These hard copies should have been supplied by the mining company to local communities.
- Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file.
- The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided.
- The complete inflexibility of DSD with respect to an extension of time in which to respond.
- The lack of any public presentation either by DSD or the Company with respect to the Application.

Deficiencies in the data presented include:

- Weather modelling is questionable as the two areas for data collection are not applicable to the mine site. (The two BOM sites are not in question.)
- The local community knows that the weather patterns in the Koppio Hills are vastly different to what has been used by Australian Graphite Ltd.
- AGL have also used data from a weather station that Eyre Iron/Centrex Metals erected in a gully near Koppio Museum, and this one was self-monitored by Eyre Iron and not independently assessed/recorded, very questionable data from this site.
- Demographic data that is FOUR years out of date.
- Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect.
- The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry.

- The often stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided.
- There is no recognition of the costs to the agricultural industry through contamination dust arising from the mining operations.
- There are no agreements with the District Council of Tumby Bay with respect to costs, inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue.

Dust (Volume 1: Section 4, pp106-7: Section 7.4)

- Weather data collected from the BOM at Port Lincoln Airport and the BOM at Cummins Airport and not in the vicinity of the mine site.

In my opinion it would be like Two Wells/Gawler having the same weather as Mt. Lofty in the Adelaide Hills.

- When you live in the Koppio Hills as I do then you know the weather is very different to those two recording stations.
- The weather station at Koppio that was established by Eyre Iron/Centrex Metals was located in a gully, near two dirt roads and was self- monitored/recorded by the exploration and mining company, hence very questionable data.
- The potential contaminated dust will travel a lot further than the modelling suggests.
- Air Quality Impact Assessment maps show the Predicted cumulative impacts for annual average PM2.5 concentrations do not spread as far as PM10. This is strange as would not finer particles travel further?
- Questionable as AGL nearly have the dust confined within their mine site. Impossible with the winds we have in the Koppio Hills.
- Contaminated dust has the potential of reaching our farm which would contaminate our drinking rain water collected off farm buildings roofs and stored in tanks.
- We have no mains water supply so our stock water could also be contaminated in our dams and creeks.
- Living in the Koppio Hills you know of the strong gully winds that blow up Kapperna Creek to our property.
- Our pastures and crops are at risk of contamination from the dust.
- AGL/LML stated the dust coming out of the mine pit is the same as what occurs naturally from the farmer's paddocks.
- What about the heavy metals indicated in the below paragraph?

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc.
These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.
The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.
The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay, also towards Cummins and Port Lincoln.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)
I live at the headwaters of Kapperna Creek which flows into the Pillaworta creek that flows past the proposed mine site. In 2013 and 2014 we had rainfall of 12 inches over a six-week period in both years. The proposed mine site will be a lot wetter than the modelling.

An AGL/LML rep stated that the flood of 13th June 2014 was a one in one hundred- year event, when questioned where he obtained the data it was stated, "I read it in the paper ". Is this the sort of accurate and reasonable data that AGL/LML rely on? Local records show that this statement is wrong.
The Pillaworta Creek joins the Tod River and flows into the sea, Spencer Gulf, at Poonindie and Port Lincoln Harbour is just around a land point to the south. The Southern Right Whales are known to be in the sea at Port Lincoln and Spencer Gulf each year.
The sea area, in close proximity to the mouth of the Tod River supports abalone nurseries, mussel farms and tuna farms. Port Lincoln is a very important fishing industry to South Australia.

I seem to recall at a public presentation by AGL, Lincoln Minerals, they stated they have spoken to EPNRM and this water, by then including kerosene and other processing agents, will not harm the environment if it overflows into the adjacent area.
Perhaps AGL should use this water for its' potable water supply as they say it is not harmful.

We use a bore on our property for stock water and this proposed mine is approx. 10kms south of the farm. Not enough is known about the hydrology in the area to be sure this mine will not affect the underground water supplies in the Koppio Hills.

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.
These heavy metals could easily pollute/contaminate our water resources.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372, nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Transport Route (Volume 1: Section 7.9)

The intersection of Pillaworta Road and Bratten Way, is downhill, has very limited vision due to Sugar Gums and Wattles plus a bend in either direction of the Bratten Way bitumen road. A huge expensive upgrade required. This intersection also has a double white line, means no overtaking, for approximately 5.2kms to the east and 3.9kms to the west in the Koppio Hills.
This intersection, in my opinion could be very dangerous, to the public traffic, if this upgrade goes ahead. The present intersection has a huge camber that slopes the wrong way for loaded trucks turning and travelling to the east Tumby Bay, as the loaded Graphite trucks will go.

The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI.
Bratten Way is a busy road connecting Tumby Bay to Cummins.
Road Train trucks are always using this road whether it be for stock or grain transport.
Many tourists travel this route as they travel around Lower Eyre Peninsula, and it is a popular way to get to Coffin Bay.
I live near this road as is within approx. 300 metres of our house so are very aware of the amount of traffic and the potential danger of the Pillaworta Road intersection on Bratten Way if that is used for graphite transport.

It is noted that the transport route has been determined in the absence of consultation with the community and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
There is no agreement with the DCTB as to the actual transport route
Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large

The impact upon native vegetation and EPBC listed species is not recognised in the Application
The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
There is no economic benefit statement to the community pertaining to the proposed road- upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Noise: (Volume 1: Section 7.7)

I expect, under certain weather conditions, to hear noise from the proposed mine site. My house is at the top of Kapperna Creek and that gully goes all the way to the mine site. I have lived here for eleven years and did not expect the "extreme" weather patterns that we have. There can be rain clouds to the south and south west and when several get to about the Tod Reservoir they turn and follow up the Kapperna Gully to my farm.

With the strong sea breezes one can taste the salt air as anything metal rusts very quickly here where I live, even in open sheds.

Noise and contaminated dust will travel much further than AGL modelling.

What is on a computer screen does not always relate to the real environment. The modelling is only as good as the data put into it.

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF: (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to *"insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant.*

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts: (Volume 1: Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc.) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1: Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

I think that Australian Graphite Ltd, Lincoln Minerals Ltd, should be detailing their entire plans for the area as per their Quarterly Activities Report – June 2013 that is stated to the ASX. This is not just one potential mine although they are only wanting to start with this one.

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand- alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two?**

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Summary:

The weather data used is not applicable to the proposed mine site and makes the modelling for dust, noise etc., used for AGL modelling, very questionable.
In my opinion there is incomplete data obtained and presented by AGL/LML.
Has there been true community consultation?
As I recall their presentations being "how good we are for you, what we are saying is right and you are wrong," without any independent documentation to support their speculation.
As I recall when questioned about a social licence the reply was the" Tumby Bay Council want the mine to proceed."
AGL true community consultation is very questionable.
18 hectares is not the footprint of the mining operation, and local community members are very concerned for damage by contaminated dust, to the environment and water resources in the Koppio Hills and surrounding areas.
I believe rehabilitation of all but the 18 hectares to its' original use will not happen.
This is not just a small mine as so often indicated by AGL.
This mine should not be approved.

Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

Submission 20

Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001.

Email: dsd.miningregrehab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)
Deficiencies with the approach for MLP proposal include:

- Weather data collected from the BOM at Port Lincoln Airport and the BOM at Cummins Airport, not in the vicinity of the mine site, do not accurately relate to the weather, wind and rainfall in the Koppio Hills.
- When you live in the Koppio Hills as I do then you know the weather is very different to those two recording stations. Local knowledge seems to be ignored.
- The weather station at Koppio that was established by Eyre Iron/Centrex Metals was located in a gully and was self- monitored/recorded by the exploration and mining company, hence very questionable data.
- Data, especially dust, should to be independently monitored.
- Lack of specific information provided throughout the so called consultation process.
- Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond.
- Lack of knowledge of the inadequacies of internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file.
- The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided.
- The complete inflexibility of DSD with respect to an extension of time in which to respond.
- The lack of any public presentation either by DSD or the Company with respect to the Application.
- Where is the true community consultation?

Deficiencies in the data presented include:

- Demographic data that is FOUR years out of date.
- Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect.
- The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry.
- The often stated 'benefits' to the community have not been quantified nor have the costs. There is no cost benefit analysis provided.
- There is no recognition of the costs to the agricultural industry through contamination dust arising from the mining operations.
- There are no agreements with the District Council of Tumby Bay with respect to costs, inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue.

Dust (Volume 1: Section 4, pp106-7: Section 7.4)

Weather data collected from the BOM at Port Lincoln Airport and the BOM at Cummins Airport and not in the vicinity of the mine site.

When you live in the Koppio Hills as I do then you know the weather is very different to those two recording stations.

The weather station at Koppio that was established by Eyre Iron/Centrex Metals was located in a gully and was self- monitored/recorded by the exploration and mining company, hence very questionable data.

The potential contaminated dust will travel a lot further than the modelling suggests.

Contaminated dust has the potential of reaching our farm which would contaminate our drinking rain water collected off farm buildings roofs and stored in tanks.

We have no mains water supply so our stock water could also be contaminated in our dams and creeks.

Living in the Koppio Hills you know of the strong gully winds that blow up Kapperna Creek where our house is situated.

Our pastures and crops are at risk of contamination from the dust that could have heavy metals in it as AGL have indicated some of different minerals below.

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.

In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike. There is no consideration given to the impact upon pastures and thence animals whom ingest these contaminants over a period of time.

The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.

The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.

The application is devoid of information pertaining to the potential contamination of rain water, the main source of drinking water for the area.

The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards Tumby Bay, also Cummins and Port Lincoln.

The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4)

I live at the start of Kapperna Creek which flows into Pillaworta Creek that flows past the mine site. A lot of water flows from our property and in 2013 and 2014 rainfall was 12 inches over a 6-week period on both years. The proposed mine site will be far wetter than the modelling.

An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include not only the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.

The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.

The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long term health impacts associated with contaminated ground water.

It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372, nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Transport Route (Volume 1: Section 7.9)

The intersection of Pillaworta Road and Bratten Way, is downhill, has very limited vision due to Sugar Gums and Wattles plus a bend in either direction of the Bratten Way bitumen road. A huge expensive upgrade required. This intersection also has a double white line, means no overtaking, for approximately 5.2kms to the east and 3.9kms to the west in the Koppio Hills.
This intersection, in my opinion could be very dangerous, to the public traffic, if this upgrade goes ahead. The present intersection has a huge camber that slopes the wrong way for loaded trucks turning and travelling to the east Tumby Bay, as the loaded Graphite trucks will go.

It is noted that the transport route has been determined in the absence of consultation with the community, ratepayers and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
There is no agreement with the DCTB as to the actual transport route.
Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members not the Community at large.
The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI.
The impact upon native vegetation and EPBC listed species is not recognised in the Application.
The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.

Noise: (Volume 1: Section 7.7)

Living at the top of Kapperna gully/creek, under certain weather conditions I expect to hear some of the noise from the mine site, especially the blasting.

It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations which not only generate audible noise but also infrasound.

The lack of actual site specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF (Volume 1: Section.....Volume 2: Appendix H)

Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to *"insufficient geotechnical, geohydralogy and hydralogy of the site" as identified by the Consultant.*

Approval should not be granted until all relevant data is available and the design reflects this.

The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.

It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for whom legal liability can be established in the future should there be a catastrophic failure of the wall.

Environmental impacts (Volume 1: Section 7)

In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc.) that may (will) reach the confines of Pillaworta Creek and beyond.

Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

The Explosives magazine: (Volume 1: Section 4.5.7)

It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's)

Long term issues:

The risk to the environment for this seven- year mine life is too far great to allow this graphite mine to proceed.
An Australian Graphite Limited/Lincoln Minerals Limited representative has publically stated "if he had the money and over time would mine the other deposits in the Koppio Hills".
Is this the start of many mines for AGL?
The company refer to a small mine of some 18 hectares but the footprint for contaminated dust and damage to the local water resources is a much bigger area.

It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand- alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.

The question being, **is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two?**

There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Caveat to the use of the material provided:

The response, with name and address redacted, may be published by the Department.

This response is to be used for no other purposes than that sought on behalf of the Minister for the purpose of assessing the application without the express permission, in writing, of the author(s).

The risk of contamination to the environment including our limited water resources should not allow this mine to proceed.
In my opinion there is incomplete data and thorough research has not been done.
Data from the BOM at Port Lincoln and Cummins cannot be used as indicative weather for the mine site in the Koppio Hills.
The footprint of the proposed mine is far bigger than AGL are indicating.

Yours faithfully,

[redacted]

Smith, Greg (DSD)

[redacted]

From: [redacted]
Sent: Thursday, 29 October 2015 4:48 PM
To: DSD:MiningRegRehab; [redacted]
Subject: Re. Australian graphite limited mineral lease application submission

To whom this may concern,

I would like to make a submission to question the lease for Australian graphite limited. kookaburra flat mine site. In the application they have identified the presents of uranium in the proposed site and yet have made no mention of any form of monitoring or exclusion zones in relation to rayon gasses being released in to the atmosphere or environment (either as gasses or leached into water courses in the tod river catchment area through drilling),

I would like to ask why it is that when "Mamota" had a public meeting in Cummins a few years ago about the extraction of uranium in our district, they talked about the importance of monitoring and exclusion zones of up to 5km's of extraction areas to protect food production from contamination and public safety concerns, and yet AGL feel that it's not worth mentioning, I hardly feel that this could be an example of best possible practices on AGL's behalf, the results of not having any consideration of this issue could have serious potential to not only harm persons within the immediate local area, but future generations as well due to the carsonagenic properties of this gas, livestock and cropping are also at risk of becoming contaminated and unsafe for human consumption risking the livelihood of our agriculturally dependant businesses in our region,

I look forward to getting an opportunity to investigate this further with you if you require me to and I am including my contact details so as to be further assistance if required, I would ask that you please respect my privacy by not releasing any of my contact details to the public domain.

[redacted]

[redacted]

Tumby Bay Residents & Ratepayers Association Inc.
P.O. Box 95, Tumby Bay, S.A. 5605
Telephone / Fax: 8688 4218
www.tbrara.com.au
secretary@tbrara.com.au

Submission 22

RESPONSE TO AUSTRALIAN GRAPHITE PTY LTD KOOKABURRA GULLY GRAPHITE MINING LEASE PROPOSAL

OCTOBER 2015

This public comment submission is in association with

Port Lincoln Residents & Ratepayers Association Inc.

CONTENTS & INDEX

1. INTRODUCTION 4
1.1. Availability Of Documents 4
1.2 Public Meeting 8
1.3 The Pipeline 8
1.4 Public Meeting 8
1.5 Financial 8
1.6 Agreement 8
1.7 Variations 8
1.8 Risk Management 8
1.9 Agricultural Land 9
1.10 Fugitive Dust 9
1.11 Environmental Survey 9

2 COMMENTS SPECIFIC TO THE MINERAL LEASE APPLICATION 9
2.1 INTRODUCTION 9
2.1.1 Statement 9
2.1.2 Relationship 10
2.1.3 Native Title 10
2.1.4 MD006 10

2.2 LEGISLATIVE FRAMEWORK 11
2.2.1 Referring to MLA 2.1.2.1 11
2.2.2 Referring to MLA 2.1.3.1 11
2.2.3 EPBC Referral 11

2.3 THE EXISTING ENVIRONMENT 12
2.3.1 Local Towns 12
2.3.2 Out Of Date Data 12
2.3.3 Validity Of Data 12

2.4 SOCIAL INFRASTRUCTURE 12
2.4.1 Referring to MLA 3.1.7.1 12
2.4.2 Referring to MLA 3.1.7.2 13
2.4.3 Referring to MLA 3.2.2 13
2.4.4 Referring to MLA 3.2.3.1 13
2.4.5 Referring to MLA 3.2.4.2 14
2.4.6 Referring to MLA 3.3.2 14
2.4.7 Referring to MLA 3.3.3.1 14
2.4.8 Referring to MLA 3.3.4 15
2.4.9 Referring to MLA 3.4 15
2.4.10 Referring to MLA 3.5 16
2.4.11 Referring to MLA 3.6 16
2.4.12 Referring to MLA 3.7 17
2.4.13 Referring to MLA 3.8 17
2.4.14 Referring to MLA 3.9.3 18
2.4.15 Referring to MLA 3.10 18
2.4.16 Referring to MLA 3.11 19
2.4.17 Referring to MLA 3.12 19
2.4.18 The Hon G Hunt, MHR 20
2.4.19 The Hon G Hunt, MHR 31
2.4.20 EPBC And Roadside Vegetation 39
2.4.21 Referring to MLA 3.12.3 49
2.4.22 Referring to MLA 3.13 49
2.4.23 Referring to MLA 3.14 50

2.4.24 Referring to MLA 3.14.2.2 50
2.4.25 Referring to MLA 3.15 50

2.5 DESCRIPTION OF OPERATIONS 50
2.5.1 General Description 50
2.5.2 Project Characteristics 51
2.5.3 Waste Storage Facilities 51
2.5.4 Offsite Processing 51
2.5.5 Site Access 51
2.5.6 Local Geology 51
2.5.7 Mineral Resources 52
2.5.8 Testing Program 52
2.5.9 Results 52
2.5.10 Asbestos Minerals 52
2.5.11 Exploration Activities 53
2.5.12 Proposed Exploration Program 53
2.5.13 Mining Operations 53
2.5.14 Rehabilitation Operations For Open Pit 53
2.5.15 Workforce 53
2.5.16 Use Of Explosives 54
2.5.17 Type Of Equipment 54
2.5.18 Mine Dewatering 54
2.5.19 Processing 55
2.5.20 Processing Plant 55
2.5.21 Flocculent Dosing System 56
2.5.22 Product Storage 56
2.5.23 Process Chemicals 56
2.5.24 Process Plant And Site Water Balance 56
2.5.25 Rehabilitation Operations 57
2.5.26 Slope Stability 57
2.5.27 Methods Of Stabilisation And Erosion Control 58
2.5.28 Tailings Management 58
2.5.29 Embankment Details 58
2.5.30 Rehabilitation Operations For The TSF 60
2.5.31 Detailed Design For TSF 60
2.5.32 Wastes 61
2.5.32 Oils And Storage Of Chemicals 61
2.5.33 Supporting Surface Infrastructure 62

2.6 DESCRIPTION OF POTENTIAL BENEFITS 66
2.6.1 Social 66
2.6.2 Community Support 66
2.6.3 Provision Of Infrastructure 67
2.6.4 Tourism 67
2.6.5 Economics 67
2.6.6 Environment 68

2.7 STAKEHOLDER AND COMMUNITY ENGAGEMENT 69
2.7.1 Stakeholder Identification 69
2.7.2 Shareholder Engagement Tools And Activities 69

2.8. ENVIRONMENTAL COMPONENTS 85
2.8.1. Referring to MLA 7.1 85
2.8.2. Referring to MLA 7.2 85
2.8.3 Fauna 94

2.9 MINE CLOSURE AND REHABILITATION 137
2.9.1 Referring to MLA 8.1 137

3 APPENDIX 143
3.1 Road Usage Calculations 143
3.2 Issues Pertaining To The District Council Of Tumby Bay 146
3.2.1 Traffic Issue AGL Proposal 146
3.2.2 Agenda Item Re: AGL Application 148
3.2.3 Fate Of Existing Council Quarry-Borrow Pit 150
3.2.4 Mayor Sam Telfer, District Council Of Tumby Bay 151
3.3 References 156

1. INTRODUCTION

1.1. Availability Of Documents

It is noted in the AGL proposed Mineral Lease for Kookaburra Gully Graphite Mine, reliance has been placed, by the applicant, upon environmental data related to the Eyre Iron Pty Ltd, Project Fusion, an iron ore project in the Koppio area.

The Association has significant concerns whereby AGL has used data not in their care and control for the purpose of the Mineral Lease Application.

The Association raised concerns about the veracity of the data submitted by Eyre Iron Pty Ltd in relation to the Project Fusion environmental assessment to the EPBC *(Referral 2013/6919)*.

Accordingly, given that AGL has relied upon data within the aforementioned EPBC Referral as the basis for Kookaburra Gully, we have included those shortcomings in the environmental assessment that need to be considered.

Comment upon the Eyre Iron Pty Ltd EPBC Referral for the Fusion *(Koppio)* Heritage Agreement Drilling Program - May 2012, as managed by Coffey Environmental Australia Pty Ltd, the erroneous material included:

a. Page 6, 2.4
"Given the local groundwater conditions experienced with previous drilling activity, some drill holes may encounter large volumes of groundwater. Where excessive groundwater conditions are encountered and the water is fresh and uncontaminated, the water may be released into local waterways."

b. Page 7
DENR's Eyre Peninsula Biodiversity Plan *(Matthews, et al, 2001)* identifies the Koppio Hills as a threatened habitat area.

c. Page 30
3.3 (b) Hydrology, including water flows.
"There is potential for artesian conditions in fractured rock environments in steeper terrain settings and several of the recent drilled holes in the vicinity of HA 1206001/2 have encountered such conditions, holes within the vicinity of HA 310 have not encountered similar conditions."

Tod River Wetland System is recognised by the DSEWPaC as a wetland of national importance in recognition of its ecological importance *(Environment Australia 2001)*.

d. Page 22, 2.3.2 Groundwater
Recent drilling by Eyre Iron in the immediate vicinity of the application area has also encountered groundwater at the following locations:

i. Adjacent to the northeast corner of HA 310 - Standing water at: 3.9 metres *(KPDD 025)*
ii. Adjacent to the northwest corner of HA 310 - Standing water at: 24.5 metres *(KPDD 023)*
iii. On the western boundary of HA 310 - Standing water level at: 20.8 metres *(KPDD 016)*

These mining company records call into dispute the records being selectively presented by AGL to indicate the Standing Water Level to be a singular body of groundwater at least 20 metres below the surface. There are Eyre Iron Pty Ltd records of multiple aquifers *(having differing Standing Water Levels)* in the immediate region of the proposed Kookaburra Gully Graphite Project.

As a matter of principle, the Associations are of the very strong opinion that environmental assessments must be undertaken by AGL so as to thereby be accountable for the accuracy of the data contained in the MLA and not being able to claim errors and omissions as a result of another party.

It is noted that AGL has signed a declaration with respect to the accuracy of the data contained in the MLA, but the question is; how can that declaration have legal standing to another company's data?

Significant commentary with respect to the impact of fugitive dust has been made in the body of the response. Given the potential for contamination of food resources *(grain and meat)* as a consequence of the nature of the contaminants, it appears no reference has been made to the National Residue Monitoring Scheme managed by the Commonwealth Department of Agriculture.

It is understood with agricultural products - grains, meats, etc, the Department's role is in testing these products to ensure they are not contaminated with toxic residues.

If the department is aware of a particular risk *(such as from mining)*, that can assist in targeting our testing of products *(see National Residue Monitoring Scheme - http://www.agriculture.gov.au/ag-farm-food/food/nrs)*

The Department's role is also in the certification of agricultural products for export based on sanitary and phytosanitary measures demanded by importing countries.

They also have involvement in vendor declaration systems whereby farmers legally declare that the agricultural products they are selling aren't contaminated with drugs, pesticides, or other chemicals.

Following the Announcement in the Government Gazette of the release of the Mineral Licence Application for Kookaburra Gully Graphite Proposal, the Association, on behalf of the nominated stakeholders listed below:

a. Tumby Bay Residents and Ratepayers Association Incorporated *(TBRARA)*

b. Saving Our Sustainability *(SOS)*

c. Eyre Peninsula Community Mine to Port Consultative Committee *(EPCMPCC)*

d. Country Fire Service *(CFS)*

e. Port Lincoln Residents & Ratepayers Association Incorporated *(PLR&RA)*

f. The Barngarla community are not listed as Stakeholders *(page 225)*, however the document does mention that the Barngarla community have been consulted in the project *(page 229)*, A representative of Barngarla has recently been in contact with our Association and asked us for information as they know nothing of the proposal being released.

Have sought hard copies of the Mineral Lease documentation to facilitate analysis and commentary upon, together with an extension of time, given the 1169 page document and the deadline of 29th October 2015.

The correspondence with and from the Department of State Development hereunder clearly is designed to limit community discussion and analysis of the said document.

_____

From: Querzoli, Andrew (DSD) [mailto:Andrew.Querzoli@sa.gov.au]
Sent: Tuesday, 29 September 2015 6:02 PM
To: Tumby Bay Residents and Ratepayers Association
Subject: RE: Kookaburra Graphite Project - proposal

Dear Ms Berryman,

Re: Kookaburra Gully - Mining Proposal - Statutory Public Consultation

Thank you for your email below.

In response to your request for copies of the Kookaburra Gully Mining Proposal document, I am pleased to advise that DSD are very happy to provide an electronic copy to you. An electronic copy of the Mining Proposal and all appendices has been posted to your post office box today. I trust this will address the concern you have raised in relation to the document being too large to download.

Unfortunately, printed copies are not provided free of charge by DSD. Due to the cost and time required to produce the Mining Proposal document, printed copies are limited to those people who would receive a copy in line with our usual practice, being the relevant councils, landowners, adjacent landowners and sub-lessees.

I would like to point you to the following DSD website (http://minerals.statedevelopment.sa.gov.au/mining/public_notices_mining/making_a_submission) which sets out DSD's process in regards to requesting electronic and hard copies of Mining Proposal documents. If your require a hard copy, a charge will be made to cover the cost of copying and postage.

The cost of the Mining Proposal and all appendices printed in colour and delivered to you will be $250 for each copy. The cost of the Mining Proposal and all appendices printed in black and white and delivered to you will be $100 for each copy. It will take 2 to 3 days for Mining Proposal copies to be produced and posted.

Please contact Mining Regulation Customer Services on 84863 3000 if you would like to purchase one or more copies.

In relation to the extension to the statutory consultation period, the length of time for the consultation period is dependent on numerous factors, including (but not limited to), complexity and scale of the project and the level of public interest in the project. The usual period for consultation on Mining Proposals is 4 weeks. Hence the consultation period of 6 weeks for the Kookaburra Gully Project is considered adequate given the size and scale of the project. There is additional information about this topic at the website address provided above.

In relation to the Court action within the Warden's Court, this will not have any implications for the content of the Mining Proposal document which cannot be changed now that the document has been put out to statutory public consultation. Any issues or concerns raised during the statutory consultation process will need to be responded to by the applicant in a public response document (see the website address provided above for additional information about the process for a response document). Hence, if you have further questions relating to the project I would encourage you to make a formal submission to DSD as part of the statutory public consultation process.
Regards,

Andrew Querzoli
Manager Mining Assessments

Mineral Resources
Department of State Development

T – +61 (8) 8226 1928
F – +61 (8) 8463 3268
M – +61 (0) 402 240 680
E – andrew.querzoli@sa.gov.au.

_____

From: Tumby Bay Residents and Ratepayers Association [mailto:secretary@tbrara.com.au]
Sent: Monday, 28 September 2015 12:34 PM
To: Querzoli, Andrew (DSD)
Cc: secretary@tbrara.com.au

Subject: Kookaburra Graphite Project - proposal
Importance: High

Dear Andrew,
I am contacting you regarding the Kookaburra Graphite Project mining lease proposal on behalf of Tumby Bay Residents and Ratepayers Association Inc, along with various other 'stakeholders'.

As registered stakeholders (page 225) we request 6 hard copies of the aforementioned document for the following groups/organisations which we liaise with:-

Tumby Bay Residents and Ratepayers Association Incorporated (TBRARA)
Saving Our Sustainability (SOS)
Eyre Peninsula Community Mine to Port Consultative Committee (EPCMPCC)
Country Fire Service (CFS)
Port Lincoln Residents & Ratepayers Association Incorporated (PLR&RA)

The Barngarla community are not listed as Stakeholders (page 225), however the document does mention that the Barngarla community have been consulted in the project (page 229), A representative of Barngarla has recently been in contact our Association and asked us for information as they know nothing of the proposal being released.

Being that this document is too large to download and the above list of Stakeholders have not yet been provided with a hard copy to date, we request an extension of at least 3 weeks in order to accommodate the time it will take to receive the copies and thence to review the contents.

Further, we note that the site is subject to Court action within the Warden's Court and current indications that this action will not be completed by the due date (29th October 2015). The outcomes of the Court action may impact upon the contents of the application and is further evidence for an extension of time for our members to assess the application having regard to all the facts pertaining to the proposal.

Kind regards,

Rochelle Berryman
Secretary TBRARA
0429 884 218

_____

It should be noted that internet access on Eyre Peninsula is limited and unreliable. We do not have the benefit of fibre optic, 4G or 3G wireless access and the downloading of a 136Mb file is problematic if not impossible.

In addition, the expectation of the Department and the company for the individual to bear the cost of access to the documents is again designed to limit the capacity to respond. Very few have the capacity to print the 1169 page document, let alone the personal expense.

Further, some in the community do not have computers. The assertion that the document is available at the District Council of Tumby Bay's office is true if one considers that two hard copies were made available to Council *(of 7 elected members and 4 senior managers)*, let alone, if a member of the community sought to loan one for the time it would take to read it.

The availability of the document on a CD is noted, but to undertake a comprehensive review of the document in this format is somewhat difficult and time consuming, something which the deadline does not allow.

1.2 Public Meeting
At a public meeting held by the District Council of Tumby Bay with respect to its financial planning, questions were put by members of the audience in relation to the costs to Council of the proposed Kookaburra Gully Mine.

The Chief Executive Officer stated, in public, that there are significant difficulties being experienced by Council in communicating with the company, let alone the opportunity to develop a Memorandum of Understanding between Council and the Company with respect to potential impacts upon Council and the ratepayers it represents. Indeed, the CEO stated at the District Council of Tumby Bay meeting on the 13th October 2015, "that a MoU would be not worth the paper it was written on."

1.3 The Pipeline
It is noted that the proposal includes a pipeline from the Tod Reservoir. It should be noted that in all consultation sessions with the Company, whilst water from the Tod Reservoir was 'being negotiated' no discussion of the route of pipeline or its impact upon the environment was offered was identified in the information being provided.

The Associations have raised concerns relating to the quality of the water from the Reservoir being saline and contaminated with other substances and the transportation of contaminated water through a primary production area.

No satisfactory answer was obtained concerning these risks.

It should also be noted that the construction of the pipeline will, with a high degree of probability, spread the known infestation of cape tulip, a noxious toxic weed.

1.4 Public Meeting
It is noteworthy that no public meetings have been scheduled by either the Department for State Development OR Australian Graphite Pty Ltd to present or discuss the application for the Mineral Lease, yet it is understood that DSD will be undertaking such presentations for the proposed Central Eyre Iron Project. The question being, why the difference in approach?

1.5 Financial
Has the Company *(AGL)* the financial resources to meet the required compliance obligations, and in particular those of rehabilitation?

1.6 Agreement
The Associations raise the question of the validity of the licence and seek Crown Law certification that the Company has a valid claim, i.e. the Mineral Claim is a valid claim and thereby the application for a mineral licence upon the Mineral Claim is valid.

1.7 Variations
Given the frequent variations of information between The Proposal, Volume 1, and Volume 2 Supporting Documents, *(data apparently in support of the proposal)*, the reader is left with the dilemma of deciding exactly what is the proposal for which approval is being sought?

1.8 Risk Management
It is apparent the risk management is geared to mitigate the liability of the Department to uphold the interests of the landowner and the environment. A local identification of questionable risk and impacts is known to be deflected to become a responsibility that is to be borne by the direct and/or neighbouring landowner. Whereupon when unresolved the onus of proof is placed at the landowner's feet and is therefore distant from the government compliance obligations that had underpinned the approval process for the development.

1.9 Agricultural Land

Given that the proposal is within agricultural land, the application is severely lacking in its identification and control of 'declared weeds' in the area. It is recommended the application contain specific reference to weeds as outlined in 'Weed Control handbook for Declared Plants in South Australia: Biosecurity SA, PIRSA'.

1.10 Fugitive Dust

Significant commentary with respect to the impact of fugitive dust has been made in the body of the response. Given the potential for contamination of food resources (grain and meat) as a consequence of the nature of the contaminants, it appears no reference has been made to the National Residue Monitoring Scheme managed by the Commonwealth Department of Agriculture.

It is understood with agricultural products - grains, meats, etc, the Department's role is in testing these products to ensure they are not contaminated with toxic residues.

If the Department is aware of a particular risk (such as from mining), that can assist in targeting our testing of products (see National Residue Monitoring Scheme - http://www.agriculture.gov.au/ag-farm-food/food/nrs)

The Department's role is also in the certification of agricultural products for export based on sanitary and phytosanitary measures demanded by importing countries.

They also have involvement in vendor declaration systems whereby farmers legally declare that the agricultural products they are selling aren't contaminated with drugs, pesticides, or other chemicals.

Without adequate disclosure as to the composition of the fugitive dust such certification/declaration is impossible to make.

1.11 Environmental Survey

Given the deficiencies in the environmental survey, we have included our response to the Australian Graphite Pty Ltd EPBC Referral of April 2015 *(2015/7470)*. Our response also highlights the issues of native vegetation *(including listed species)* on Pillaworta Road as one travels from Bratten Way to the proposed mine site.

As the photographs show, the roadway is tree lined with some trees being of significant size; has limited room for upgrading to the desired minimum 12 metre width without the removal of some very significant trees and under-croft apart from the actual alignment of the road.

This gives rise to the question upon which criteria has it been 'determined' that this section of the roadway is the most appropriate?

2 COMMENTS SPECIFIC TO THE MINERAL LEASE APPLICATION

The commentary provided in this response follows the general layout of Volume One being interpreted as 'the proposal' and Volume Two being interpreted as the 'supporting documentation'.

The response also contains supporting documentation with respect to involvement of the Association with the District Council of Tumby Bay to further demonstrate the lack of consultation the proponent has had with the community. As such the claim for a community/Social Licence to Operate *(SLO)* cannot be achieved.

2.1 INTRODUCTION

2.1.1 Statement

It is noted that the statement was signed on 7th September 2015 in the advanced knowledge of the judicial determination by the Warden's Court of South Australia.

The application has been lodged before final determination.

The application has also been lodged in the knowledge that access to the property MC 4372 had not been achieved and in the knowledge that the Environmental Impact Assessment had not been undertaken.

2.1.2 Relationship

The relationship between South Australian Iron Ore Group, Centrex Metals Limited, Lincoln Minerals Limited and Australian Graphite Pty Ltd is principally undisclosed in this document. Thereupon the overarching responsibility any other principal might have for the actions or inactions of AGL are also undisclosed.

This is complicated by the fact that information provided in the MESA Journal 75 Issue 4-2014, page 82, table 5: Production tenements granted, states:

a. MC 4372 AGL, Commodity/Purpose: Co, Au graphite, magnesite, Mn, Ag, uranium oxide and vanadium with the location listed as Yallunda Flat.
b. MC 4373 AGL, Commodity/Purpose: Co, Au graphite, magnesite, Mn, Ag, uranium oxide and vanadium with the location listed as Koppio

But the two Mineral claims are joined.

There is inconsistency as to the actual life of the mine with different life cycles recorded in this application. Cross-referenced to the EPBC referral *(2015/7470, 30 April 2015)* and material made available on the Australian Securities Exchange *(ASX)* reference is made to Kookaburra Gully extension and Koppio. This causing a direct consideration for this application to be not for a single mine project but a conjoined stage for a greater project?

It is noted that Lincoln Minerals Ltd *(LML)* undertook a drilling program in 2013, however, it must be recognised that NO drilling program has been undertaken on MC 4372 as access to the property has been unable to be achieved, despite the registration of the Mineral Claim over the land, which at the date of registration included 90 per cent of that land being land maintaining its Exempt Land status.

Table 1.1 identifies a number, but not all of the minerals contained in the ore body. The analysis contained on pages 106-7 of Volume 1 provides greater understanding of the nature of the ore body, including a significant number of Rare Earth minerals; chromium, copper, manganese, strontium, thorium and uranium to name a few, together with their respective concentrations in parts per million *(ppm)*. The question now being whether the Company *(AGL)* has a right of access to these minerals under the terms of the agreements between the parties (South Australian Iron Ore Group, Centrex Metals Limited, Lincoln Minerals Limited and Australian Graphite Limited)?

2.1.3 Native Title

It is the Associations' understanding that the unmade road located on the project site is Crown Land over which Native Title has not been extinguished. Formal clarification of this fact is required, given that there is a network of unmade roads in the vicinity which may be used by the Company in mining operations associated with this project or beyond (Kookaburra Gully extension).

2.1.4 MD006

It is noted that this document has been prepared using MD006 clearly with the emphasis being on 'minimum information required to be provided..... *(excluding extractive minerals, coal and uranium)*', but uranium mining has been identified (pp. 107) as a component of the project with little reference to the practices and procedures required to be undertaken to gain an approval for such to occur.

2.2 LEGISLATIVE FRAMEWORK

2.2.1 Referring to MLA 2.1.2.1

There is no dispute of the fact that the project area is contained within the Tod River Water Protection Zone which is fully described in the District Council of Tumby Bay's Development Plan.

The principle concern being contamination of the water through surface run off or through contaminated ground water with its origin within the proposed Mineral Lease, in the knowledge of the hazardous nature of a significant number of minerals involved in the mining and processing operations. It is known that some have carcinogenic properties whilst another has significant neurotoxicity.

What has not been established is the regional impact of this potential contamination, given that the regional hydrogeology and hydrology is not established whereby the aquifers within the project site may be linked to those within the Southern Basin Prescribed Wells Area to the South.
There has been NO hydrogeological or hydrology assessment undertaken on MC 4372 due to the inability of AGL or its agents to achieve legal entry upon the land.

Given the paucity of information pertaining to regional hydrogeology & hydrology and the limitation within the actual project site, any impact suggested in this AGL MLA bares little relation to actuality, thereby warranting further investigation prior to any approval being granted.

2.2.2 Referring to MLA 2.1.3.1

"In addition to the various lease conditions that will be applied to the project area...." leads to the question what are the undisclosed 'lease conditions' and what impact do these have upon the project? Clearly there is a lack of transparency or incompleteness in the application.

It is noteworthy the consideration 'must' be taken into consideration ....the nature of the pollution or potential pollution .....', but, as this response will demonstrate, the nature of the pollution has not been taken into consideration.

2.2.3 EPBC Referral

It is noted that an EPBC referral has been lodged *(2015/7470 30th April 2015)* but at the time of writing of this response, no approval has been granted. The Commonwealth Department is aware of the legal action before the Warden's Court.

It is noted that within the referral, the Company has indicated that the action (Kookaburra Gully) is not part of any other action. It would appear that this declaration is at odds with the information obtainable from the Australian Securities Exchange *(ASX: LML)* and the granting of additional drilling program under the Governments' sponsored PACE programme for Kookaburra Gully extension.

It is also noted that at the time of submitting the application, the environmental impact assessment for the project had not been completed due to the landowner not authorising entry upon the land. Limited duration (daylight) and partial area *(10 per cent)* entry under the conditions agreed by the Warden's Court from invitation by the landowner to enable the environmental assessment over a portion of MC 4372 to be completed *(on 9/9/2015)*.

It is assumed that the outcomes of the daylight site visit on the designated day will be conveyed to the Commonwealth Department *(EPBC)* as well as an amendment to this Application *(with the assumption that the findings would be subject to public scrutiny prior to any approval being granted).*

Further discussion on the limitations of the survey will be provided in the body of the response. Table 2.1 outlines a raft of additional legislative requirements to be met. Of significant note is the reference to the Safe Work Health and Safety Act 2012 "to secure the health safety and welfare of persons at work; to protect the public against risks to health or safety arising out of, or in connection with the activities of persons at work..."

It is apparent that the risk identification associated with the hazardous materials identified is less than adequate, especially in the knowledge of the existence of known carcinogens and neurotoxins in the ore.

The complete lack of any reference to the generation of infrasound as a consequence of activities on the site and the implications thereof is of concern and is further evidence of the 'minimum' approach taken in the preparation of the application.

2.3 THE EXISTING ENVIRONMENT

2.3.1 Local Towns

With the exception of the last sentence the description of the local environment is adequate. The focus of the existing environment should centre on the townships of Port Lincoln, Cummins and Tumby Bay, being the 'region'.

"The main coastal towns are reliant on mineral processing" is clearly misleading. The economies of the lower Eyre Peninsula, the region of concern, are primary industries (agriculture and fishing), industries that rely upon contamination free environments in order to protect export markets, together with the tourism industry.

It is noteworthy that population figures are taken from the Regional Development Australia *(RDA)* an organization which sponsors mining development, rather than those of the recognised authority, the ABS. The issue of bias arises and may need to be addressed.

2.3.2 Out Of Date Data

It is noted that the figures presented are FOUR years out of date. The reality of today is that employment in the mining industry has slumped as evidenced by the retrenchments by BHP at Roxby Downs; the imminent closure of Leigh Creek coal mine; the completion of exploration work by Eyre Iron Pty Ltd *(Project Fusion)*; the announcement to the ASX in a letter to Shareholders, of the write down in value of the Wilgerup Mine *(an 'approved' mine)* near Lock by Centrex Metals *(noting that this mine was to be the start up mine for Port Spencer)*, the sale of the proposed Carrow deposit site *(Centrex);* the rumoured sale of the land acquired for the Centrex Port Spencer site.

The claimed 52 employees in mining are highly questionable at today's date.

The impression created by paragraph three in this section is completely misleading.

2.3.3 Validity Of Data

It is noted that the authority for data is the RDA not ABS.

It is also noted that the data relates to a period 2006 to 2011 which do not reflect the reality of 2105.

2.4 SOCIAL INFRASTRUCTURE

2.4.1 Referring to MLA 3.1.7.1

The reality is the Port Lincoln Hospital upgrade is completed, but there is no reference to the capacity of the hospital to deal with industrial accidents/emergencies that might arise from a proposed mine at Kookaburra Gully.

In the same manner, the Tumby Bay Hospital's capacity to deal with a similar event is not discussed.

No reference has been made to the evacuation capacity of the Royal Flying Doctor Service.

2.4.2 Referring to MLA 3.1.7.2

Here again (para. 1) the focus is on the large picture in 2011, being the whole of Eyre Peninsula.

What is the educational capacity within the towns of Port Lincoln, Tumby Bay and Cummins to meet an hitherto undefined educational program sought by the Company to ensure adequate training for its employees at Kookaburra Gully as well as prospective employees within the District given the statement the Company will seek local employees?

2.4.3 Referring to MLA 3.2.2

It is noted that the onus of proof of exempt land belongs to the landowner.
It is noted that the Mining Act *(section 9)* does not provide a definition of a cultivated field, spring, etc., nor does it define where exempt land starts and finishes. These provisions have been defined in part by the Warden's Court of South Australia, but are not generally available to the landowner, and not contained within MG4.

It is known that all 'exempt land' pertaining to this Mineral Lease application has not been subjected to verification by DSD, landowners or the Warden's Court.

It is known that the identified areas of exempt land have not had the required waiver of exemption achieved by the Company. It is noted that ongoing legal action by three landowners has not been completed and the waivers of exemption not achieved. There still remains one other landowner that the Company currently has ignored.

It is noted that no mining operations *(of any kind)* is permitted upon Exempt Land. Entry to land is a mining operation. The issuing of a Mining Act authorised Prescribed Notice is also a mining operation. The registration of the Mineral Claims require compliance obligations to have been maintained *(Mining Act 1971, section 20)* and whilst the legislation denies the creation of a 'tenement within a tenement' *(Mining Act 1971, section 80, 'Conditions under which land may be simultaneously subject to more than one tenement')* it is whilst the existence of Exempt Land *(Mining Act 1971 part 1 Section 9 para 1)* continues that there is challenge to the legality of the Registration of the Mineral Claim 4372. The approval of the Mining Lease should not be given until all waivers of exemptions have been achieved; an audit for the compliance obligations is reported, and registration of the Mineral Claim is confirmed.

Table 3.3 identifies the parties concerned with the status of waiver of agreement applicable to each entity also identified. There are no disclosed and/or confirmed agreements in place at this point in time.

Enquiries of the Mayor, District Council of Tumby Bay suggest no formal agreements exist in relation to the road reserve. As noted previously, this is Crown land and Native Title, and so far as the Associations have been able to determine, has not been extinguished.

Figure 3.2 land use exemption details with respect to MC 4372 require to be reviewed in light of the Warden's Court determination.

2.4.4 Referring to MLA 3.2.3.1

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective

1, notes that activities liable to cause pollution in the zone should not be established" (underlining added)

This response will identify significant issues relating to the potential pollution of the Zone as a consequence of the mining operations proposed. It will identify the potential pollutants/contaminants and highlight the inadequacies of the approach taken by the applicant in addressing these issues. In short there exists the potential contamination of the local environment *(Pillaworta Creek)* by heavy metals, manganese, uranium, thorium, strontium and rare earth minerals in addition to kerosene and other chemicals used in the processing of the ore.

2.4.5 Referring to MLA 3.2.4.2

Principles expressed in 'a plan' are just that, principles. What is not in evidence is the cost benefit analysis supporting these principles.

The analysis pertaining to the economic benefit derived by agriculture in the region under consideration versus the cost to be borne by the destruction of the agricultural industry through the development of the mine taken not over the proposed 7-8 years of the life of the mine, but over a number of generations is not provided.

What is the net economic benefit for the local community (i.e. Lower Eyre Peninsula) and in particular, the community of Tumby Bay within whose Council boundary the development lies?

It is noted there is a small benefit to the State through royalties, but if the common practice of Government is applied, these royalties may not be receive until after the first five years of operation.

What is the net economic benefit for the State?

The issue of rehabilitation of a mine, once production has ceased is of major concern. As principle 6.5 indicates, "return the ground disturbed.....to a suitable standard...etc.", sounds fine as a principle, but everyday practice would suggest otherwise as evidenced in the Eastern States. What would be the potential cost to Government for the rehabilitation of a contaminated water catchment that arose from the mining operations on the proposed site?

2.4.6 Referring to MLA 3.3.2

Despite the investigation and findings alluded to in this application, the major issue now confronting this region is the fate of the power supply as a consequence of the closure of Port Augusta power station.

These concerns are in addition to the fact that the system is already at capacity and additional demands of the order required by the proposal would place the supply to existing residences in doubt. Blackouts and or brown outs are not welcomed.

It is noted that the option of on-site power generation has been chosen partly on the basis of cost.

The use of a 24/7 diesel power generation system and the pollution arising there from requires consideration from a public *(and employee)* health aspect *(due to the carcinogenic nature of the particulate emissions, etc.),* one which appears not to occur in the body of the application.

2.4.7 Referring to MLA 3.3.3.1

It must be recognised that all roads except Bratten Way and the Lincoln Highway are 'dirt' roads.

It must also be recognised that in winter, despite the contention of the applicant that this is a low rainfall area *(average rainfall in excess of 50.8 cm),* a number of the dirt roads become impassable, and a condition that appears to have escaped the applicant. A seven semi-trailer per day impact on these roads will present a significant maintenance liability to the District Council of Tumby Bay and its ratepayers, given no Memorandum of Understanding *(or other agreement)* exists between the Company and Council as to who bears these costs.

In light of these potential costs, the Associations are of the opinion that the company has no social licence to operate, as this cost *(as it currently stands)* is directly attributed to the ratepayers.

In addition to the condition of the proposed transport road, there exists the significant native vegetation on the roadside, the fate of which is not, in our opinion, fully disclosed. This vegetation contains listed species *(EPBC and State)* being not only trees but grasses and native orchids which appear not to have been recognised in the limited environmental studies undertaken for this project.

It is also noted that a pipeline is proposed to be constructed from the Tod Reservoir to the site using the road verge. There appears to have been no environmental impact assessment done for this development.

It should also be noted here, that the water being piped to the site is contaminated water, water that has been declared saline by SA Water, but the chemical composition of the water is known to contain other contaminant such as insecticides, herbicides, nickel and benzo-pyrenes to name a few.

The Associations are concerned at the transportation of contaminated water through an agricultural producing area, particularly in the context of the environmental and economic impact of a breach in the pipe on the local agricultural and fishing industry (noting that the Tod River system flows to the sea and into a marine park/aquaculture zones.

2.4.8 Referring to MLA 3.3.4

Whilst it is true that a Telstra cable passes along Pillaworta Road, it is understood that it is at capacity for a copper wired system.

Mobile phone reception in the area is limited due to the topography *(very large 'black spots' occur across the area due to hills).*

A community benefit would be achieved if the mobile network is upgraded at the Company's cost to wireless broadband capability.

2.4.9 Referring to MLA 3.4

"The eastern ridge may have a moderate role of steering and channelling the wind such that the spatial distribution of wind patterns across the region can be localised. Wind patterns in the study area are considered to be broadly similar across the project area"

The crux of the matter being that the assumptions implied above are just that, assumptions. The wind distribution pattern for the actual site has not been determined through actual empirical measurements on the site.

The channelling of wind as a consequence of the topography is critical in determining the dispersion of contaminated *(fugitive)* dust emanating from the mining operations; the dispersion of noise and the overlooked dispersion of infrasound arising from the 24/7 operations of the processing plant.

One of the critical issues not addressed is the potential contamination of cereal grain which historically will be rejected at the silo resulting in a considerable economic impact for the affected cereal growers.

This response will deal with dust pollution in more detail.

2.4.10 Referring to MLA 3.5

No matter what is presented, the fact remains visual amenity of the mine, the waste rock dump and associated dust emanating from the mining operations diminishes the visual amenity of the area as demonstrated by the photographs *(re: MLP photographs 3.1; 3.2; 3.3 and 3.4).*

What is not illustrated is the superimposition of a photographic representation of the rock dump, the tailing dam and the pit operations for readers to appreciate the impact.

Visual amenity can be gauged from a view of the operations of the Iron Duke mine from the Lincoln Highway with the proviso of a smaller scale.

It would appear that this issue, whilst present in the DCTB Development Plan is devoid of comment from the Council and the Community at large.

2.4.11 Referring to MLA 3.6

It is noteworthy that data from Eyre Iron Pty Ltd *(Project Fusion)* has been submitted for this application.

The issue here being that the data provided is not data collected for the purpose of this application. The data was not collected under the care and control of the Company submitting the application for Kookaburra Gully Graphite Mine.

The data cannot be verified.

The relevance is questionable, given the reference to 'unknown' and 'un-named'.

What clearly is missing is an appropriate noise survey that is site specific having regard to the actual topographic conditions surrounding the proposed site and thence the establishment of baseline audible noise levels over a period that is representative of the activities of an agricultural area and NOT a week in January 2012 as tendered.

The baseline noise survey as presented on pages 31 and 32 is inadmissible in its current state.

The results of the Resonate Acoustics report *(AGL MLA Appendix 'B')* should have been presented here as evidence of noise levels attributed to the actual site. It is noteworthy that only three receptor sites appear in the discussion provided by Resonate Acoustic *(AGL MLA Appendix B: table 13)* with their locations to the west and south west of the mine site. NO empirical evidence appears to have been ascertained for residences north of the mine site and to the east of Pillaworta Road. It appears that the data does not take into consideration the ACTUAL channelling impact of the wind and its impact upon noise dispersion.

The information provided for consideration is based upon predictions, partly on data which has been provided from a source not under the control of the Applicant and meteorological data which is not site specific.

It is not representative of the seasonal background noise associated with an agricultural community.

It fails to discuss the infrasound impacts likely to be generated by the mining operations within the site.

2.4.12 Referring to MLA 3.7

It is noted *(page 33)* that data submitted for consideration in this AGL MLA was collected by Eyre Iron Pty Ltd for Project Fusion with the caveat "although continuous meteorological, particulate matter and suspended particle data were collected approximately 6 kilometres away".

The applicant is proposing that data relevant to another project, topographically isolated from the proposed site, under conditions relevant to the other project are transferrable to this project.

Such data is considered to be inadmissible given that it was obtained by another entity and is not subject to verification within the context of this application. It is also, as acknowledged, NOT SITE SPECIFIC for this application.

The assumption that this data 'is reasonable to use' is not supported, given that the actual wind dispersion and channelling impact for the proposed site has not been determined.

It is acknowledged that road use dust generation provides the principle source of dust *(outside of the normal farming activities)*, but the amount of dust generated is also a factor of road use. The study is deficient in this respect, the issue being, is the road use attributable to the Eyre Iron data equal to that experienced on Pillaworta Road? There appears to be no evidence in support of this supposition.

The establishment of a baseline for local dust over a twelve month period relevant to the proposed site is not provided.

It is acknowledged that the stability of air quality is dependent upon rainfall. It is noted that the rainfall evidence used in this application is that which was sourced from Eyre Iron Pty Ltd and was not source from actual empirical data obtained from any on-site records.

It is also noted that the data being re-used was in-itself not site-specific for the Eyre Iron project, but that provided by the 'nearest BoM weather stations'. They are many kilometres outside of the catchment and hills region. Cummins 'BoM is 24 km away, Poonindie 'BoM' is 20 km away, Port Lincoln Airport 'BoM' is 22.5 km away and Tumby Bay 'BoM' is 18.5 km from Kookaburra Gully and each are on flat lands outside of the 500 km^2 hills region.
The parameters for air quality monitoring are described on page 34 of the Application. It is noted:

a. PM10 is the measure of particulate matter. There is no PM10 data for the actual site nor is there any mention of PM2.5 or PM1.0 measurement being undertaken.

b. Continuous meteorology with averages logged every 10 minutes, yet this site specific data is non -existent.

c. TSP and dust deposition data for the actual site is non-existent.

Attention is drawn to the admission "<u>there is no site specific weather station that currently operates at the site location</u>" *(3.8: para 1*). (*Underlining added*)

2.4.13 Referring to MLA 3.8

"There is no site specific weather station that currently operates at the site location" *(3.8: para. 1).*

The conclusions drawn as to the climate and meteorology of the actual site are based upon data remote from the site and thus are not representative of the actuality.

As mentioned previously dust and noise dispersion is dependent upon the local meteorological factors, not those of distant BoM sites *(Poonindie, Cummins, Tumby Bay and Port Lincoln Airport).*

Clearly the Company is not presenting the actual data relevant to the site against which impacts of pollution arising from the mining operations can be benchmarked and then compliance enforced.

This is of particular concern given the potential for the finer particulate dust contamination launched from the hills region reaching the downwind township of Tumby Bay.

2.4.14 Referring to MLA 3.9.3

Re: 3.9.3.1to 3.9.3.3

It is noted that uranium is present in the ore body. It is also noted that the concentration reported on page 45 is "readings from zero to 119 ppm". It is also noted on page 107 the concentration of uranium varies from 2.72 to 10.95 ppm. Clearly there exists a significant discrepancy with respect to the concentration of uranium at the site.

Irrespective of the standard *(200 ppm),* the question arises as to the fate of this ore, once mined and thus becoming mobile either in solution or as a component of fugitive dust, an issue that appears not be considered in the bulk of this application. *(Even more significant in the context of the requirements to be met as a consequence of the location of the site within the Tod River Water Protection Zone)*.

Whilst there is an acknowledgement of the presence of uranium, it would appear that other hazardous substances contained in the ore body are conveniently disregarded at this stage. Again reference needs to be made to the information contained within table 4.5 *(pp. 106 - 107)* which identifies the presence (and concentrations in ppm) of a variety of Rare Earth minerals; significant concentrations of chromium, copper, nickel, thorium and strontium; and very significant concentrations of manganese, all of which exhibit various deleterious effects upon humans and animals and potential lead to rejection of cereal grain and meat, if found as a contaminant in these products.

It is also noted the high concentration of vanadium minerals in the ore.

The application is devoid of consideration of the impacts of these hazardous substance as components of fugitive dust; increasing concentrations of these being dumped on the waste rock dumps and increased concentration within the confines of the tailings dam.

2.4.15 Referring to MLA 3.10

It is noted that the proposed site falls not only within the Tod River Water Protection Zone, but also within the Tod River Wetland system which is listed in the Directory of Important Wetlands of Australia.

It is noted that the Kookaburra Gully site(s) does not fall within the Southern Basin Prescribed Wells Area, but what has not been established is the regional hydrogeology & hydrology whereby groundwater interconnection by transmissivity flows from the upper reaches of the Tod River Basin enter the Southern Basin Prescribed Wells Area. The significance of this being potential for long-term plumes of contaminated water as a consequence of the mining operations may well enter the groundwater recharge regions which supply potable water to a 35,000 population and 1.5 million head of stock for which this is the only supply system for Eyre Peninsula.

The application is deficient in not addressing this issue.

The contention that "the impact of the proposed mine infrastructure on drainage into Pillaworta Creek will be negligible" is clearly contestable given that detailed designs have yet to be provided and the nature of said mining operations, especially in light of the potential chemical hazards identified in the previous Section and further identified in table 4.11.

It is also noted *(AGL MLA Vol 2 Appendix 'H')* of the limitations of the hydrogeology and hydrology of the site in respect to the TSF facility.

2.4.16 Referring to MLA 3.11

It MUST be recognised that NO ACCESS has been achieved to MC 4372 to enable hydrological study; therefore all references to groundwater on the 'site' are applicable only to MC 4373.

Re: 3.11.1.2
Site hydrological investigations undertaken and reported by Aldam Geoscience pertain exclusively to MC 4373.

The groundwater potentiometric surface map *(figure 3.26)* indicates surfaces protruding into MC 4372 for which no data exists. The veracity of the model is therefore limited to MC 4373

It is noteworthy "for landholders who did not provide consent to visit or survey...information with regard to water usage *(groundwater use in particular)* were provided by neighbouring landholders".

Such information is 'hearsay' and may well not be a true representation of the facts. It is clearly not permissible in a Court; consequently all information so obtained MUST be deleted from the AGL MLA as must all conclusions derived from such information.

The validity of the data and the conclusions derived there from in these circumstances is invalid.

The claim that "groundwater does not appear to be used on the Borthwick property" is not substantiated by fact.

"DM Smith Australia Pty Ltd *(2015)(pp. 68)* undertook an hydrogeological assessment of features described on the Borthwick property as ephemeral springs and concluded that it is very unlikely the features...are in fact springs". It should be noted that the assessment was conducted between daylight hours on..... and comprised of a walk over the area. NO drilling or collection of samples was permitted as a condition of entry imposed by the Warden's Court. Assuming that this data is singularly reliant upon that one incident it is otherwise without credibility. The presence of ephemeral springs *(by their very nature)* may not have been observed on the solitary occasion of the visit. The conclusions drawn are not conclusive or based upon empirical evidence to the contrary.

As no drilling has been undertaken on the Borthwick property any assertion as to the level of the water table is pure speculation as are the conclusions drawn there from.

It is also noted *(AGL MLA Appendix 'H')* of the limitations of the hydrogeology and hydrology of the site in respect to the TSF facility.

2.4.17 Referring to MLA 3.12

It is noted that data has been source from Eyre iron Pty Ltd and that obtained by EBS Ecology.

It is noted that all surveys were claimed to have been conducted with landowner permission. This fact is clearly misleading, as it is known that no permission has been granted outside of a one-day site visit to a defined section of MC 4372 in daylight hours and under the authority of the Warden's Court in *September 2015*.

The information contained in this AGL MLA is devoid of any comprehensive flora study undertaken over any period of time on the Borthwick properties, inclusive of the land contained within MC 4372. There has not been authorised entry to the land for decades and as such any claimed desktop study is equally flawed. To claim otherwise is a gross misrepresentation of the facts.

To claim that a complete flora study (on-site and desktop) has been undertaken over the site is a misrepresentation of the facts. A one day (daylight hours) visit to a designated portion of MC 4372 does not constitute a thorough assessment of the flora on the site.

With reference to the presence or otherwise of the native orchids identified as likely to be found, the conclusions offered appear to be based upon the premise 'if it was not observed when I (consultant) arrived on day X, then they are not there'. The nature of this flora rests with their fickleness and low visibility. It is suggested more work is required to verify the conclusion drawn.

Advice has been received that the area contains some 30 listed species of native orchids as found during the environmental assessment for the proposed upgrade to the power line in the area. Such information appears to be absent from the assessment tendered.

Given that the EPBC referral 2015/7470 has yet to receive any form of approval, the Associations' interim response is included here to illustrate the shortcomings of the flora and fauna study conducted to date.

It is noted that the State has entered into a bilateral agreement with the Commonwealth with respect to reducing duplication with environmental assessments.

2.4.18

Tumby Bay Residents & Ratepayers Association Inc.

P.O. Box 95, Tumby Bay, S.A. 5605
Telephone / Fax: 8688 4218
www.tbrara.com.au
secretary@tbrara.com.au

11th May 2015

The Hon G Hunt, MHR
Minister for the Environment
PO Box 787
Canberra
ACT 2601

RE: Australian Graphite Limited, Kookaburra Gully Graphite Mine; EPBC referral 2015/7470

Dear Minister,

Further to our recent email, we take this opportunity to lodge an INTERIM submission in response to Australian Graphite Limited proposal for a graphite mine at Kookaburra Gully, near Koppio, South Australia.

We note the notification date of 30th April 2015.

We also bring to the attention of the Minister the fact that no notice of this referral occurred in the local paper, being the Port Lincoln Times. The referral was discovered by a member on the Department's website.

As previously advised, we are aware a number of issues pertaining to this referral are subject to Court proceedings, the outcome of which may have consequences for this referral. Accordingly we seek leave to provide this interim response pending the submission of a final response after the outcome of the Court proceedings is known. At the time of writing, it is known that Court hearings are scheduled through to 9th & 10th June, 2015.

It is known that part of the proceedings relate to access to a portion of the proposed mine site and as a consequence the environmental data relevant to that site has not been available for disclosure in this referral.

At the time of writing, it is known access has been granted by Order of the Warden's Court, for a period of one day and that this has yet to occur.

It is noted in the principle Referral document:
"The vegetation associations in the northern portion of the open pit included Sugar Gum woodland of similar condition, scoring 5:1 SEB ratio (moderate). EBS Ecology did a visual assessment of the property in the northern section of the proposed pit where there are claimed seepages, and found that there was no clear evidence of any water logged ground or riparian flora species which would normally be expected with wet areas such as natural seepage or soaks. The claimed seepages are 25 metres to 40 metres above the natural groundwater level." (pp. 46)

This reference pertains to the property for which access has been granted by the Court in order to undertake the necessary flora and fauna studies over a period of **one** day.

It is noted in the Company's Quarterly Activities Report (March 2015) lodged with the Australian Securities Exchange 28 April 2015:

"As part of its environmental studies, AGL has identified any flora and fauna of National Environmental Significance under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) that might be impacted by its proposed mining and associated activities. Since lodgement of the Kookaburra MLA, Parsons Brinkerhoff completed a detailed EPBC referral outlining environmental features in the area, and specifically potential flora and fauna impacts. This was lodged on 24 April 2015".

The question being, how can a 'detailed EPBC referral outlining environmental features in this area (the mineral leases(x2), when access to the northern lease has been denied prior to the Court Order?

In addition, access has been granted for one day, with the question now being, how much 'detailed information' is able to be sourced from this area?

The material presented in the referral for which public comments are sought would appear to be manifestly deficient in relation to a significant portion of the proposed mining site. Further the veracity of the data gained on a one day survey brings into question the confidence the public has in the actual process of undertaking an environmental impact assessment pertinent to the EPBC, given the fact that some listed species are simply not present at this time of the year. To illustrate, it is known that listed native orchids are to be found in this area and discussed in some detail in Pobke, K 2007, *Draft recovery plan for 23 threatened flora taxa on Eyre Peninsula, South Australia 2007-2012,* Department for Environment and Heritage, South Australia.

It is also noteworthy that the Company has used information sourced from Eyre Iron Pty Ltd, a subsidiary of Centrex Metals Ltd and part of the conglomerate South Australian Iron Ore Group (SAIOG) to bolster the environmental impact statement. The location of the Eyre Iron project is some distance from the Koppio Kookaburra Gully prospect and hence, it is our contention that the information's reliability is questionable in its application to this referral and to this site.

It is noted that the property owner has engaged independent consultants to undertake both fauna, flora and water (ephemeral springs) surveys located on the area of specific interest to the company.

We will be making approaches to the owners for the release of this information to support the position we hold in this matter. Unfortunately this material is currently before the Court.

Points of issue on the information presented in the referral documents include:

1. The proposal claims to be a single action. This is contested on the basis of information provided by the Company to the Australian Securities Exchange (reference: SAREIC Presentation - Emerging new Australian Graphite Mine; slide Upside potential with World Class Assets: "Kookaburra Gully; Koppio Graphite Mine and Kookaburra Gully extended" ASX 14-04-2015)

   It is understood that the project will extend over some 4.5 kilometres, not just the current mine proposal.

2. The question whether radioactive material is present on the site is not addressed, other than an unqualified 'no',

   It is understood that the bedrock identified in this project is of a geological age as to potentially contain uranium and or other radioactive materials. Such occurrences have been reported in the historic files of the South Australian Department of Mines in this general area.

   It is understood that extraction activities in this base rock has the potential to release quantities of Radon.

3. The environmental impact of fugitive dust arising from the proposed activities (mining, processing and transporting) appears not to have been addressed. What therefore is the impact of fugitive dust containing graphite dust and other hitherto undisclosed material at what particle size (PM10; PM2.5 or PM1.0) on the ecosystems within the confines of the mine site and beyond?

   What is not disclosed is a detailed environmental study of the transport route (Pillaworta Road)("an associated activity") from the mine site to the Bratten Way, a route that has significant stands of listed species including native grasses and EP Blue Gum, an affected associated area. This roadway is the property of the District Council of Tumby Bay.

   When this issue was raised at a public meeting called by the District Council of Tumby Bay on Wednesday 6th May 2015 to discuss its asset management and financial management plans, difficulty was expressed by Council in relation to the roadway. It was noted that no Memorandum of Understanding has been entered into between Council and the Company as at this point in time.

   Evidence of the existence of these species is provided in the attachments to this response.

4. It is understood that a number of native orchids have been sighted in this vicinity, yet there appears to be no reference to their occurrence. It is quite possible that the limited time spent on the environmental survey failed to review that flora that may be present, but not sighted due to the time/season of the year.

5. Environmental water
   The Company announced in its Community Update Newsletter February 2015, the extent of water extraction per day over the life of the mine as between 77000litre/day to 554000litre/day by year 8.

It also highlighted the potential water use and source thereof.

Water supply for mine operations
The water supply system has been formulated to supply approximately 1.6 ML of water per day to the proposed Kookaburra Gully Graphite Mine site. This water will be used to process the graphite ore within the plant and to supply all on-site demands including dust suppression, potable water, fire fighting, vehicle wash-down and maintenance purposes.

Several options were identified for the water supply to allow mining and processing at the Kookaburra Gully site.

These included the use of bore-water, seawater, mains water (SA Water) and the Tod Reservoir (SA Water).

Bore-water has been shown to be insufficient within the site and seawater was not considered due to the distance and high salinity. Due to community concerns about water resources on Eyre Peninsula, the existing SA Water mains supplied source for fresh water was not considered for process water or dust suppression. However, small quantities of mains water would be used for final product cleaning and potable office uses (drinking, washing, showers).

Water from the existing Tod Reservoir is suitable for process water use. However, due to salinity levels it will require the product to undergo a separate wash cycle in the final process stream.

AGL is proposing to source water from the Tod Reservoir given its proximity to the site and the water quality would be fit for purpose. The reservoir is located approximately 12 km to the south of the proposed Kookaburra Gully Graphite Mine site. Up to 400 ML may be required during the first year to establish operations but, from then on, due to recycling of water from the proposed tailings storage facility and groundwater recovered from mine dewatering, lesser amounts would be required on an annual basis. While we have commenced looking at the technical feasibility of using Tod Reservoir water, no formal agreements are in place with SA Water.

"All water from the process plant will be discharged into the TSF and recycled."

It is noted that water from the Tod Reservoir is contaminated water.

It is also noted that no reticulated potable water supply exists in this vicinity. Those residents in the area rely exclusively on rain water catchment, are it dams or tanks together with surface water, soaks and bore water.

It is noted that water extracted through the proposed dewatering process is not able to be re-injected into the aquifer (EPA requirement).

There appears to be no scientific evidence supporting or otherwise, the position of the Company that this dewatering will not pose a threat to the remaining ecosystems within or outside of the mine site.

It is noted the immediate proximity of Pillaworta Creek to the West and the considerable vegetation cover to the north and east of the proposed mine site requiring access to environmental water.

In addition to the discussions of the potential impact of dewatering and the consequential reduction in environmental water, there is significant concern with the probability of contaminated water entering the otherwise pristine creek and ground water system through the following:-

(1) It is noted that water will be recycled through the TSF (tailings dam), the location of which appears to be uphill from the mine and the processing plant and of the creek that currently runs into Pillaworta Creek. In the event of a failure of the TSF where do the contents of the facility end up? It is assumed in Pillaworta creek.

(2) In the event of severe weather events that are not that uncommon in this vicinity where significant rainfall is experienced in a short period of time leading to the TSF to overflow. It is presumed that the consequence will be the same as in note (1).

(3) In the event that the TSF leaks, the question then is where does the leachate go? It is presumed to flow into the groundwater environment underlying this prospect.

In these events, the potential for contamination of both surface and ground water exist, the consequences being polluted creek systems and groundwater systems. It is held that the groundwater system, in the absence of scientific evidence to the contrary, interconnect with the systems within the Prescribed Wells Area, from which the Regions supply of potable water is obtained.

Given that no information has been provided as to the chemistry of the TSF, it can be assumed that it would contain waste products from the processing plant, including quantities of the non-aqueous solvent employed being kerosene (or diesel), therein giving rise to significant environmental contamination in the event of the previous identified occurring.

6. The sensitivity of the Flora and Fauna in the location.
Your attention is drawn to the work undertaken by the Department of Environment and Heritage and reported in Pobke, K 2007, *Draft recovery plan for 23 threatened flora taxa on Eyre Peninsula, South Australia 2007-2012,* Department for Environment and Heritage, South Australia.

Executive Summary

Introduction

This is a regionally based multi-species recovery plan for twenty-one nationally listed and two state listed threatened plant species found on Eyre Peninsula, South Australia. Table 1 lists the species addressed in this plan. The recovery plan is prepared within the requirements of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and guidelines produced by Environment Australia (2002).

The plan's strategic, regional approach to threatened flora recovery will provide direction to managers who are planning for and funding the sustainable management of Eyre Peninsula's natural resources (see Sections 4 and 29 - 31 in particular). Individual species sections in the plan (Sections 6 - 28) will be useful for plant enthusiasts wishing to pursue recovery of individual species or groups of species (e.g. orchids or wattles) that are specific to their region or area of interest. The individual species sections present information such as biology and ecology, known threats, and recovery actions for each of the 23 species addressed in the plan.

Goals and Objectives

Two recovery goals form the basis of this plan:
Goal 1 Recover threatened plant species critical habitat on Eyre Peninsula.
Goal 2 Recover threatened plant species populations on Eyre Peninsula.
These are 30 year goals, as they are realistically achievable only over a long-term time frame (i.e. by 2037).

The threatened flora species addressed within this plan (Table 1) are prioritised based on the literature, field observations, formal studies, previous actions and known threats. The recovery of these species, and their critical habitat, will be achieved through the completion of Objectives, Actions and Performance Criteria (Section 4 and Appendix D). Priority Focus Work Areas are identified in Figure 30.1.

Recovery of threatened flora species is defined by five objectives:

Objective 1 Obtain baseline information, including critical and potential habitat, for each threatened flora species.
Objective 2 Increase understanding, appreciation and involvement in threatened flora recovery efforts.
Objective 3 Manage immediate threats and improve threatened flora critical habitat.
Objective 4 Conduct research critical to management by addressing knowledge deficiencies in threatened flora biology and ecology (including threat identification).

Objective 5 Monitor threatened flora populations and evaluate the success of recovery actions.

Actions within the recovery plan are relevant for 5 years, at which point the plan will require review. During review, progress towards the goals should be assessed and actions may subsequently need to be modified. Success will be determined by whether species are either down-listed or stabilised, according to IUCN criteria (IUCN 2001). It is likely that within 5 years some threatened flora species will be successfully down-listed (see targets in Table 1); however, the ability to down-list species is influenced by the species' priority category (Table 29.1) and the corresponding level of allocated resources. (Pobke, K 2007, *Draft recovery plan for 23 threatened flora taxa on Eyre Peninsula, South Australia 2007-2012,*Department for Environment and Heritage, South Australia. pp. 1)

2.1 Critical and Potential Habitat

This document is a regionally based recovery plan for nationally threatened flora occurring on Eyre Peninsula. Critical and potential habitat occurring outside of the Eyre Peninsula Natural Resources Management region is therefore not addressed in this plan.

Under regulation 7.09 of the *Environment Protection and Biodiversity Conservation (EPBC) Regulations 2000,* habitat critical to survival is defined as:

- Sites needed to meet essential life cycle requirements,
- Sites of food sources, water, shelter, fire and flood refuges or those used at other times of environmental stress,
- Essential travel routes between sites,
- Sites necessary for seed dispersal mechanisms to operate or to maintain populations of species essential to the threatened species or ecological community,
- Habitat used by important populations,
- Habitat that is required to maintain genetic diversity, and/or
- Areas that may not be occupied by the species and/or ecological community, but that are essential for the maintenance of those areas where they do occur.

Critical Habitat

Current knowledge of the ecology and biology of nationally threatened flora on Eyre Peninsula is considered insufficient to precisely determine the spatial boundaries of critical habitat required under the EPBC criteria outlined above. For the purpose of this recovery plan, known and historic distribution mapping has been substituted as the interim critical habitat mapping for threatened flora on Eyre Peninsula. Known distribution meets the majority of EPBC criteria and will be used until critical habitat can be determined (Recovery Action 1c)

Potential Habitat

Potential habitat is defined as habitat that is not critical to the current survival of threatened flora species, but that may be important to the long term recovery of a particular species as that species is encouraged to expand in distribution. Two performance criteria in this plan (1c.2 and 1c.3) address mapping of potential habitat. (Pobke, K 2007, *Draft recovery plan for 23 threatened flora taxa on Eyre Peninsula, South Australia 2007 - 2012,* Department for Environment and Heritage, South Australia. pp. 22)

"In comparison with other regions within the state, Eyre Peninsula has one of the highest numbers of threatened flora species in South Australia. (Pobke, K 2007, Draft recovery plan for 23 threatened flora taxa on Eyre Peninsula, South Australia 2007-2012, Department for Environment and Heritage, South Australia. pp. 193)"

In addition to Eyre Peninsula having one of the highest numbers of threatened flora species is the fact that a very small portion of the Peninsula hosts trees (native or otherwise) and their under-crofts due to historical land clearing for agriculture. Not-with-standing this, there is a movement to restore, so far as it is practicable, land to its original state. This, in part has been achieved through private heritage agreements, protecting stands of native vegetation, although these can be subject to clearing under the provisions of the Mining Act and the actions of property owners who have embarked upon their own revegetation programmes.

Due to the lack of consultation with the property owners of the northern mineral lease (Section 125), the referral is deficient in its description of not only what is contained on the Section, but also the impact of the proposed action in the following manner:

1. Farming on the property is managed in an environmentally sustainable manner.

2. One of interested parties has received a State Landcare Award and a finalist in the National Award, together with being a joint winner of the Jill Hudson Award for Environmental Protection (Conservation Council, 2013).

3. The vegetation on the land in question (refer photo #1) together with that to the north and East on the mineral lease boundary, is a seed bank for native vegetation species.

4. The claimed 'no impact' upon the area is not substantiated by any scientific evidence on the part of the company. It is contended that fugitive dust from the proposed action will have an ecological impact upon the vegetation through, in part, diminished ability of the flora to photosynthesise due to the constant layering of dust from the mine, dust potentially containing graphite.

5. There is little evidence to suggest that fugitive dust will not be an issue. It is known that the prevailing winds in winter are from the west to the east, and in summer from the east/south east towards the west.

6. There is no scientific evidence to the existence or otherwise of listed species on this section (the whole of Section 125)

7. The impact of dewatering on vegetation outside of the mining lease is not determined. It is suggested with the proposed rate of dewatering (between 77000 litre/day to 554000 litres/day) will have a significant impact on the availability of environmental water, as well as water availability through bores.

8. One of the interested parties is a sitting member of the South Australian Native Vegetation Council

Developing this point further, it is claimed in the AGL MLA *"...a visual inspection of the subject land from the fence line...."* was undertaken and on the basis of this 'inspection' assumptions made.

As can be seen from the photograph (Photo #1: taken from Pillaworta Road), the extent of the vegetated area is not insignificant. It would also be difficult to see much if one enters the vegetated area on the southern side of the boundary fence, due to the apparent density of vegetation therein.

As mentioned previously, what confidence can the public have in evidence collected on the basis of a one day visit, presumably representing a twelve month study, unless the full facts are subsequently presented in a revised referral for consideration?

The Association would be pleased to review a complete document, not one that is subsequently amended by the proponent, noting that the amended version is not available for public review.

Giving due consideration to the reality of the Eyre Peninsula situation

The Company's approach to this MLA may be illustrated through the following:

> Table 3.5 and 3.6 page 32 of the referral
> *"The Silver Daisy bush and the Tufted Bush-Pea were both identified in the northern section of the project..."*
>
> Apart from the fact that access has been denied to the northern section of the project, the extent of this species on Eyre Peninsula is 18 known populations.
>
> The first paragraph on page 33 argues the Company's position.

The plant is very rare on Eyre Peninsula, a point that is acknowledged.

What is not acknowledged is that the area has been subjected to a significant bushfire (1964 & 2005) and that the plant is very slow to recover.

Whilst the Company's stated position is that the destruction of the identified plants is 'insignificant', any destruction of this species is 'significant' given its rarity.

A similar line of argument is put forward for the Tufted Bush Pea.

The question now posed is, given the rarity of these species (and others) and the lack of information pertaining to the northern aspect of the mining lease AND the neighbouring properties to the north and east, a true statement of the impact of the proposed action is clearly NOT available.

It is noted that the referral pays scant attention to what lies outside of the immediate boundary of the mining lease.

The Company has indicated a preference for Pillaworta Road to Bratten Way being the transport route.

There is scant information pertaining to the impact of this action upon the environment that is the road verge and or land adjacent to the roadway. In fact, to the reader, almost dismissive of the fact that listed species occur in this area and of the work done and being done to rectify generations of removal of these environmental assets and the impact of bushfire.

The Association has undertaken a survey of the proposed transport route with the view to providing photographic evidence of the nature and scope of occurrence of native species on the route that may well be destroyed if the project is approved on the evidence provided thus far.

The diversity of species in the following photographs (with GPS co-ordinates) illustrates our concern. A detailed report will be provided with an amended response upon the outcome of the Court proceedings being known;

SPECIFIC COMMENTS IN RELATION TO THE EBS REPORT, APPENDIX D, as attached to the referral.
5.3.11 Association 11 - Eucalyptus leucoxylon ssp. petiolaris Woodlands +/- Allocasuarina Verticillata (pp. 47)

Primarily restricted to the drainage lines north of the project area this community is a national TEC and endemic to the southern Eyre Peninsula. All areas observed along the potential access route to the north of the project areas were moderately degraded with high weed density in the understorey including some weeds of national significance (*Asparagus asparagoides*). Due to the large size, maturity and density of the trees in this habitat, it is considered that this community is of high conservation value.

As indicated in the body of our response to this referral, every effort must be made to protect remaining examples of listed species and to foster their recovery. In this regard, we support the contention expressed that the Eyre Peninsula Blue Gum is of high conservation value whether as a single tree, within a roadside verge in association with other listed grasses et al or within a defined woodland (albeit degraded due to grazing)

5.6.2 Bats (pp. 65)
Four common bat species were recorded on the Anabats. Due to the weather conditions, low numbers were recorded. The four species are:

- Gould's Wattled Bat (*Chalinolobus gouldii*)
- White-Striped Freetail Bat (*Austronomus australis*)
- Lesser Long-eared Bat (*Nyctophilus geoffroyi)*
- Southern Forest Bat *(Vespadelus regulus)*

Given the limitation of weather, has any further work been undertaken in favourable conditions to assess the true extent of the bat population and hence an assessment made upon the probable impact the action is likely to pose?

5.6.3 Active Searching / Opportune

Four species of common reptiles were recorded across the project area with a total of 15 individuals recorded. Four Elegant Snake-eyed Skinks (*Cryptoblepharus pulcher*), two *Ctenotus* sp, eight Sleepy Lizards (*Tiliqua rugosa*) and one Eastern Bearded Dragon (*Pogona Barbata*) were recorded. All were recorded opportunistically; two Sleepy Lizards and one Eastern Bearded Dragon were recorded within a bird/vegetation survey site. Six eastern brown snakes (*Pseudonaja textilis*) were encountered during the spring targeted survey. Three Western Grey Kangaroos (*Macropus fuliginosus*) and three European Rabbits (*Oryctolagus cuniculus*) were recorded opportunistically.

5.6.4 Spotlighting

Spotlighting was completed across the site in the vehicle and by foot. Fifteen European Rabbits were recorded and two Laughing Kookaburras (*Dacelo novaeguineae*). Conditions for spotlighting were not ideal as it was cold, windy with scattered showers.

5.7 Fauna Habitat

Eucalyptus cladocalyx Woodlands provide high value fauna habitat within the area, where the state vulnerable Diamond Firetail as well as the state rare Gerygone and Shy Heathwren were all recorded.

The mature hollows bearing trees provide suitable habitat for nesting birds and potentially Brush Tailed Possums. The dam located within the proposed mine area provides a good water source which attracts water birds and potentially threatened birds to use as habitat.

The question being, which dam(s) are being referenced in this report, those on Cullen/Harris properties or on Section 125, the area to which access has not been granted at the time of preparation of the Report?

6.1 General flora observations (pp. 66)

Results of the mapping and vegetation surveys show the following key findings;

- There are a number of different vegetation communities present within the study area, mostly fragmented which contain a moderate level of species diversity dependent on level of grazing impacts and disturbance by weed invasion.
- There is one patch of the nationally endangered Threatened Ecological Community (TEC) Eyre Peninsula Blue Gum (*Eucalyptus leucoxylon* ssp*. petiolaris*) Grassy Woodland
- Threatened species are common within these woodland and shrubland communities.
- Declared weeds are widespread throughout the project area.
- *Eucalyptus cladocalyx* Woodlands and associated communities provide high habitat values for a range of species by providing valuable habitat within a variety of vegetation strata.

The proposed vegetation clearance associated with the mining proposal for this area poses a threat to the recorded nationally and state listed flora species which rely on the moderately degraded, but intact woodland communities.

<u>The level of impact will need to be further quantified along with the wider impacts posed to the species' at a local and regional level.</u>

Threatened species recorded at this survey were found to be widespread. A targeted survey conducted in spring 2014 showed that annual herbaceous species, particularly from the family Orchidaceae (Orchids), were present, however none of the species detected were found to be listed under State or Federal legislation.

The large areas which have been previously cleared of vegetation provide little value from an ecological perspective. Utilisation of the cleared areas for associated infrastructure, such as tailings and waste rock

storage facilities and other storage areas would aim to minimise the need for excessive vegetation clearance, thereby reducing habitat destruction and SEB offset requirements under the *Native Vegetation Act, 1991.*

6.2.1 Threatened Ecological Communities (pp. 67)
The patch met the key diagnostic characteristics and condition thresholds for the ecological community, and despite being isolated from neighbouring patches, is considered critical to the survival of the Eyre Blue Gum Woodland under the Commonwealth Conservation Advice. This is because the ecological community has a restricted geographic extent and is highly fragmented (Threatened Species Scientific Committee [2013]). To assist in the preservation of the patch, it is recommended that a buffer zone of at least 15m be maintained from the edge of the canopy cover or outer edge of the patch. The purpose of the buffer zone is to protect and manage the patch and to help avoid potential significant impacts to the ecological community. The buffer zone will help protect the root zone of edge trees and the ecological community from surrounding land use.

Changes in land-use within the buffer zone must not have a significant impact on the ecological community itself, but there are exemptions for continuing use (Threatened Species Scientific Committee {2013]). The community also occurs within the roadside corridor to the north and south of the project area along potential access routes, and along the Pillaworta Creek south of the property. If impacts to these areas are anticipated, a detailed assessment may be required to ascertain whether these communities meet criteria outlined under the Commonwealth Conservation Advice.

In light of the survey conducted by members of the Tumby Bay Residents and ratepayers Association et al (9 May 2015), it is strongly recommended that the suggested survey be undertaken by an independent authority thereby identifying the full environmental impact of the proposal on 'areas in association with the project'.

6.2.2 Nationally threatened flora (pp. 68)
Two species of national significance were recorded within the project area. A summary of these is below.

Olearia pannosa subsp. pannosa (Silver Daisy-bush), EPBC Vulnerable, State Vulnerable
A widespread but rare species occurring also on the Fleurieu Peninsula, South East, Yorke Peninsula, Mid North and Kangaroo Island. Two main sub-populations on EP occurring in the Cleve Hills to Coolanie Range area, north-west of Cowell, and in the Koppio Hills and Greenpatch area, Lower Eyre Peninsula. The perennial, low spreading shrub occurs in the understorey of mallee, woodland and forest communities. The southern population is associated with *Eucalyptus cladocalyx* (Sugar Gum), *Allocasuarina verticillata (*Drooping Sheoak), *Melaleuca uncinata (*Broombush), and less often with *Callitris* sp. (Native Pine). The species was recorded adjacent the proposed pit area and therefore outside the area of impact.

The question being where else does this listed species occur in the 'areas associated with the proposed activity, namely the transport corridor (especially if the roadway requires re-alignment to accommodate B-double semi-trailers as planned), or neighbouring properties which may be affected by fugitive dust?

Pultenaea trichophylla (Tufted Bush-pea), EPBC Endangered, State Rare
Endemic to southern Eyre Peninsula the species only occurs in Eyre Hills IBRA subregion, where it is considered rare but stable (Gillam and Urban 2009, Pobke 2007). Numerous recent records from 20 subpopulations in the Koppio Hills between Tod Reservoir to just north of Ungarra, The species is commonly associated with *Eucalyptus cladocalyx* (Sugar Gum) woodlands, *Eucalyptus peninsularis* (Cummins Mallee) low woodland/mallee, Drooping Sheoak (*Allocasuarina verticillata*) low open woodland over *E. odorata* (Peppermint Box) and *E. angulosa* (Coast Ridge-fruited Mallee) and *E. foecunda* (Hooked Mallee), mostly over *Melaleuca uncinata* (Broombush) understoreys. Also occurs in tall shrublands dominated by *Melaleuca uncinata* (Broombush) and *Acacia* spp. The species was recorded adjacent the proposed pit area and therefore outside the area of impact.

The question being where else does this listed species occur in the 'areas associated with the proposed activity, namely the transport corridor (especially if the roadway requires re-alignment to accommodate B-double semi-trailers as planned), or neighbouring properties which may be affected by fugitive dust?

LIMITATIONS OF THE STUDY
Due to the weather conditions during the survey active searching and opportune recordings of mammals and reptiles across the site were relatively low. It is likely that more species would be recorded during more favourable conditions (pp. 69)

The question being, have any further studies been undertaken to address the limitations of the survey and thereby provide a fully informed view of the flora and fauna present upon the site and areas associated with the proposed action?

6.4 Potential impact of the mine on flora and fauna (pp. 70)
Potential impacts associated with the construction and operation of the proposed mine include:

- direct vegetation clearance for the mine pit, tracks and associated infrastructure
- loss of flora and fauna habitat
- habitat fragmentation/impact on fauna and flora movements locally (i.e. vehicle tracks, mine pit)
- direct fauna mortality (i.e. vehicle collision)
- noise disturbances
- artificial light sources and potential impact on fauna
- dust generation and associated impacts to vegetation
- changes to hydrology and run-off
- accumulation of litter
- introduction and/or spread of pest species

The type and extent of impact cannot be quantified until the infrastructure layout has been confirmed.

The attached list of potential impacts identified within the proposed mine site are significant with answers not forthcoming as to how they may be mitigated.

It is noted that the AGL MLA focuses upon the mine site.
In light of the work undertaken by Pobke (Pobke, K 2007, *Draft recovery plan for 23 threatened flora taxa on Eyre Peninsula, South Australia 2007-2012,* Department for Environment and Heritage, South Australia.) in providing a context in which the community can address the issue of conserving what little listed flora and fauna that exist on Eyre Peninsula, these conclusions support our contention that the environmental impact of this proposal will be significant.

7 Recommendations
The nationally endangered ecological community Eyre Peninsula Blue Gum (*Eucalyptus leucoxylon* ssp*. petiolaris*) Woodland was recorded as potentially occurring within the roadside corridor to the north and south of the project area along potential access routes. A detailed assessment may be required to ascertain whether these additional communities meet criteria outlined under the Commonwealth Conservation Advice, should potential impacts be anticipated.

Any areas where detailed surveys did not occur due to access issues will need to be surveyed in detail if any impacts are to occur.

We strongly concur with these recommendation thereby allowing consideration to be given to the most appropriate transport route should the project be given approval being that with the LEAST environmental impact.

CONCLUSION
The Associations are of the view that the area in question has significant environmental issues be they related to listed Flora and fauna under the EPBC Act, the potential impact upon significant trees within the transport corridor (some of which have an estimated age in the hundreds of years) and the unresolved issues pertaining to the impact on groundwater and hence the future supply of environmental water required to sustain those species whose existence depend upon such water.

There are gaps in the information made available for consideration by the public, and in part highlighted by the ESB consultant Report. We contend these gaps should be required to be addressed prior to any decision being made, and subject to further public scrutiny.

We thank the Minister for the opportunity to provide this interim response, pending the outcome of the legal actions currently in progress.
Yours faithfully,

(Signatures redacted from this reproduction)

Milton Stevens
Chairperson
Tumby Bay Residents and Ratepayers Association Inc

(Signatures redacted from this reproduction)

Glenn Fowler
Chairperson
Port Lincoln Residents & Ratepayer Association Inc.

2.4.19

Tumby Bay Residents and Ratepayers Association Inc.

P.O. Box 95, Tumby Bay, S.A. 5605
Telephone / Fax: 8688 4218
www.tbrara.com.au
secretary@tbrara.com.au

The Hon G Hunt, MHR
Federal Minister for the Environment
PO Box 787
Canberra
ACT 2601
28th October 2015

Dear Minister,

Re: EPBC Referral 2015/7470 Australian Graphite Pty Ltd, Kookaburra Gully Graphite Proposal

Further to our previous correspondence for which a response is yet to be received, please be advised of the following:

a. As the Minister is aware, access to the property owned by Mr C Borthwick (Section 125, Hundred of Koppio) has been before the Warden's Court of South Australia with a decision on confirmation for the location of land exempt from mining under the Mining Act 1971 being now made by Senior Warden Cannon.

b. That having been achieved a limited section of the non-exempt land within the area of the Mineral Claim (MC 4372), which is a small portion of land within Section 125, has had flora and fauna inspection undertaken. The greater sum of the land remaining exempt land or non-exempt land not allowed to be entered upon by AGL due to an order of the Warden's Court that there not be entry.

Please be advised that two representatives of the Company were on that limited site during daylight hours of the 9th September 2015. On the basis of this limited time frame and miniscule area of land able to be inspected, the Company contends that the environmental assessment study is now complete.

The attached map *(Map #1)* defines the area to which access was granted by the landowner, the remainder of the Mineral Claim 4372 (approx. 90 per cent) was not subject to survey as it has been by trial judgement in the Warden's Court ruled to be Exempt Land under the Mining Act 1971, a Waiver of Exemption has not been given.

It should also be recognised that there are significant areas of adjoining land *(Map #2)* to the north, east and south of the boundaries of the Mineral Claims 4372 & 4373 that have not had any Government Agency or Mining Company access for Flora & Fauna surveying and therefore cannot be included in any consideration of the environmental impact of the proposal.

Additionally, the landowner to the south ('Barns'), as identified in the attached map *(Map #3)*, confirmed that there has not been any entry to that land being proposed for Kookaburra Gully Extended to have had any Flora & Fauna surveying. Furthermore, that the land remains Exempt Land and until each entitled landowner (3) has been served a Form 23A the Exempt Land status cannot be waived.

This supports the view that AGL has no legitimate basis to claim to have undertaken Flora & Fauna surveying or current data from a desktop survey as presented in the EPBC Referral or any subsequent provision for the EPBC Referral of site data.

In assessing the Referral, the issue for consideration must be just how can the Minister approve a Referral, supposedly conducted over a twelve month period, on the basis of a one day (during daylight hours) viewing of the significantly limited area of land within MC 4372 and excluding the relevant neighbouring land outside of the boundary of the Claim?

Clearly any reference to the presence of fauna, especially nocturnal fauna found habituating the tall timber in one small area examined on one day, would be purely speculative, as would the ability to determine the presence of listed species (such as the native orchid) which may be present but not necessarily on the 9th of September 2015.

From our perspective, the process undertaken by the Company is less than satisfactory and at worse, a complete farce and an abuse of the system:

a. It is noted that additional information has been provided to the Department over time. It has been identified that the company has also sought to provide in representation to their EPBC Referral the private hydrological survey and testing that remains both confidential and copyright to the landholder from a Court case. The records the company generated by their own hydrology testing of monitoring bores is without credibility as the bore holes had sealed pvc pipes inserted, by the landowner, for overnight stability of new drill holes which the company hydrologist accessed to test for groundwater and which could not provide any credible reading. For the Court action wherein groundwater springs were provided as evidence (including video) it is a specific requirement that the springs, whilst environmentally sensitive and of benefit to the flora, do not gain recognition as a spring for the purposes of the Mining Act if they do not provide a direct commercial benefit to the landholder.

   In light of the fact that the proposal (that area contained within MC 4372) has been subject to legal proceeding and as the findings of the one day survey have not been made public, the Associations seek a copy of the completed referral to enable it to provide a complete response in the context of the full knowledge pertaining to the environmental impact.

b. The Lincoln Minerals Limited 2015 Financial Report to the ASX confirms that the false representation in the EPBC Referral for where the Kookaburra Gully project is claimed to not

be part of a proposed extended project but is in fact a stage of a long-life graphite mining and processing operation for well beyond any short-term 7.5 year project.

Page 3, paragraph 1, second sentence reads:
"A South Australian Government PACE Drilling Grant has been offered to Lincoln Minerals to drill the extension of Kookaburra Gully after harvest in early 2016."

The complete and connected region of mining is identified in page 5, paragraph 3 which read:
"The JORC Mineral Resources at Kookaburra Gully represent 500 m of a 4.5 km long EM target, the remainder of which has not yet been drilled. A South Australian Government PACE Drilling Grant has been offered to Lincoln Minerals to drill the extension of Kookaburra Gully after harvest in early 2016."

c. The Company has, through the Department of State Development, released on 8th September 2015, its Mineral Lease proposal for the Kookaburra Gully Mine for public comment. A copy of the proposal, inclusive of the environmental impact assessment may be obtained from the Department.

Of significant concern in this document is the impact of mining operations on the environment, especially listed species, either through dust deposition and or through contaminated water (either run off or ground water contamination via the tailing dam) given the nature of the chemistry of processing and the nature of the multiple metals and ores to be obtained and those ores being processed.

It is noted in the MESA Journal 75, Issue 4-2014, page 82, Table 5, Production Tenement granted: 4372 and 4373, under the heading of commodity/purpose: Co, Au, Graphite, Magnesite, Mn, Ag, uranium oxide and V.

In documentation relating to the Mining Lease, Volume 1: page 287, reference is made groundwater impacts and noting the consequences as being contamination of groundwater by heavy metals and impact upon existing users and GDE.

The point to make being, that the environmental impact assessment, being documented in a piece meal fashion, has not lead to a full understanding of what is proposed and what the full impact on the environmental ecosystems well be. **Approximately 40 per cent of the area within 5 km and 30 per cent of the area within 10 km of the proposed mine site has not been surveyed for Flora & Fauna.**

Full details of the rehabilitation management plan are not available, leading to the un-answered question of the long term environmental impact of the project, including potential impacts to the groundwater network not only locally around the mine, but regionally.

In addition, the Company proposes to construct a pipeline from the Tod Reservoir to the mine site for the purpose of providing non-potable water. It should be noted that SA Water confirms that the Tod Reservoir water is contaminated water, not just saline water, as suggested by some. Furthermore, it proposed to use the road verge for the laying of the pipeline. It is noted no reference to this occurred in the original EPBC Referral, especially in light of the fact that the roadside is heavily vegetated with native vegetation as no doubt, listed species.

Clearly, more detailed information is required in order to support the proposal.

We thank the Minister for his consideration of the issues contained herein.

Yours faithfully,

(Signatures redacted from this representation)

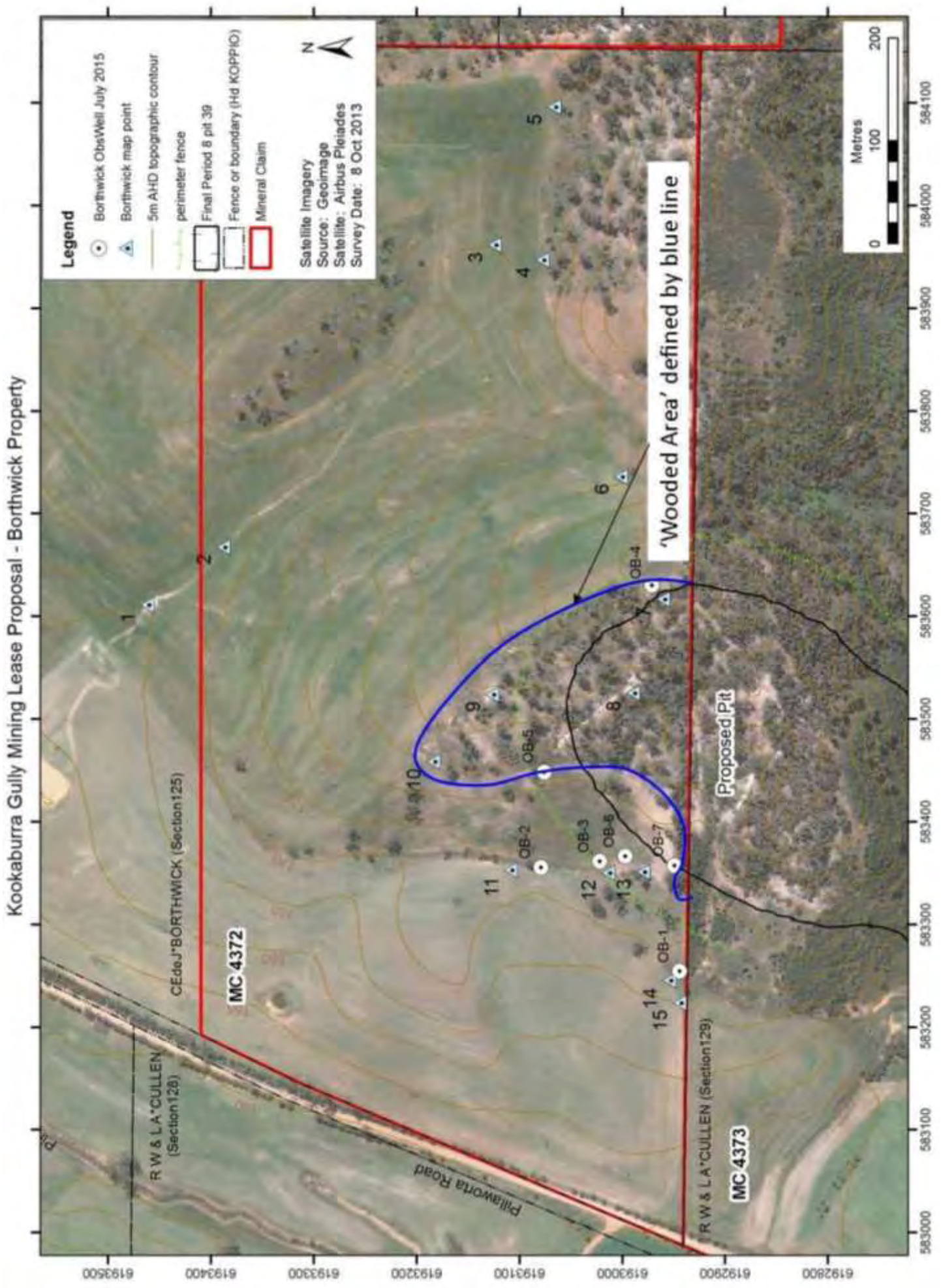
Milton Stevens
Chairperson
Tumby Bay Residents and Ratepayers Association Inc.

(Signatures redacted from this representation)

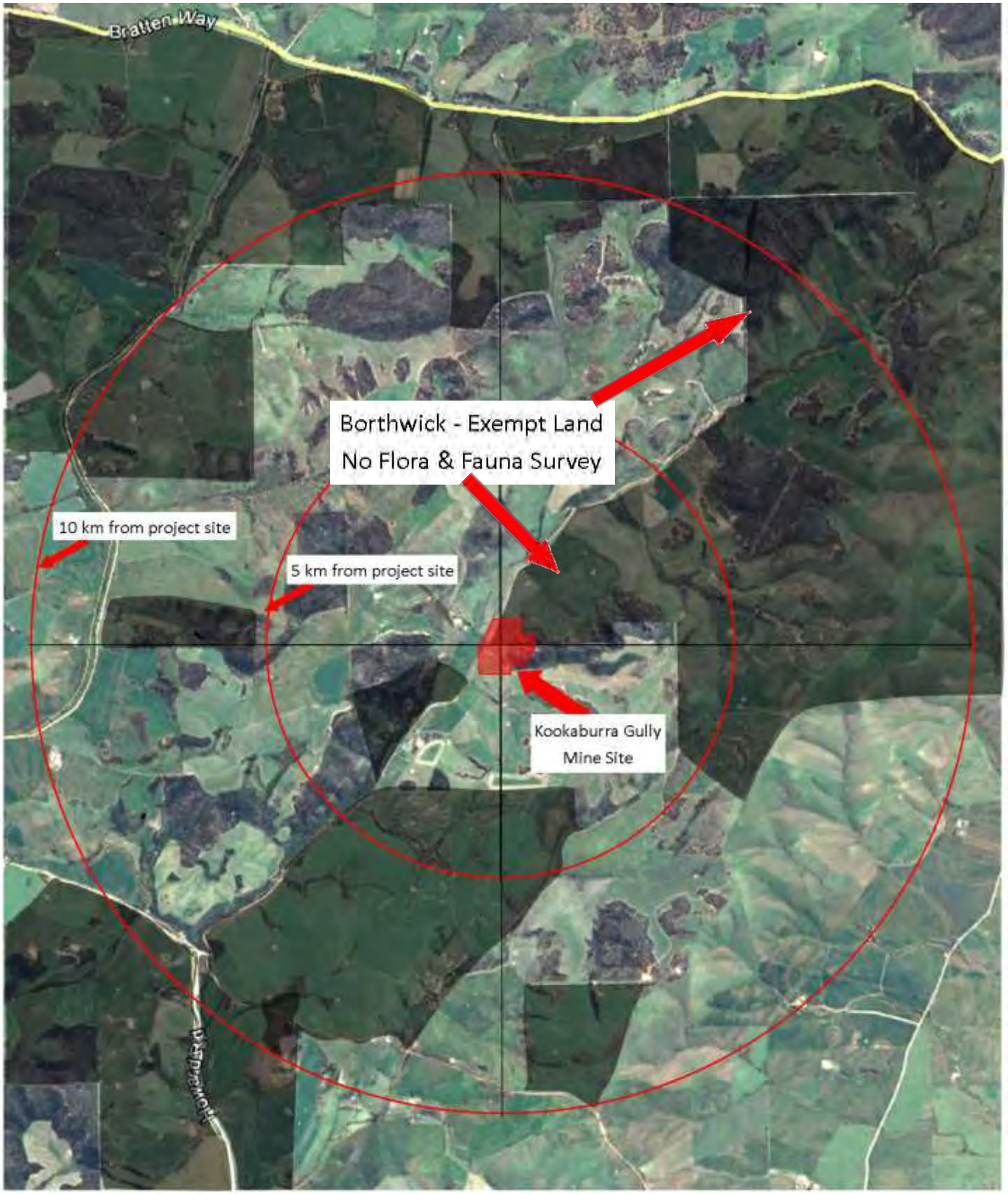
Glenn Fowler
Chairperson
Port Lincoln Residents & Ratepayers Association Inc.

Attachments:
Map #1
Map #2
Map #3
MESA Journal 75, page 82, Table 5

Map #1

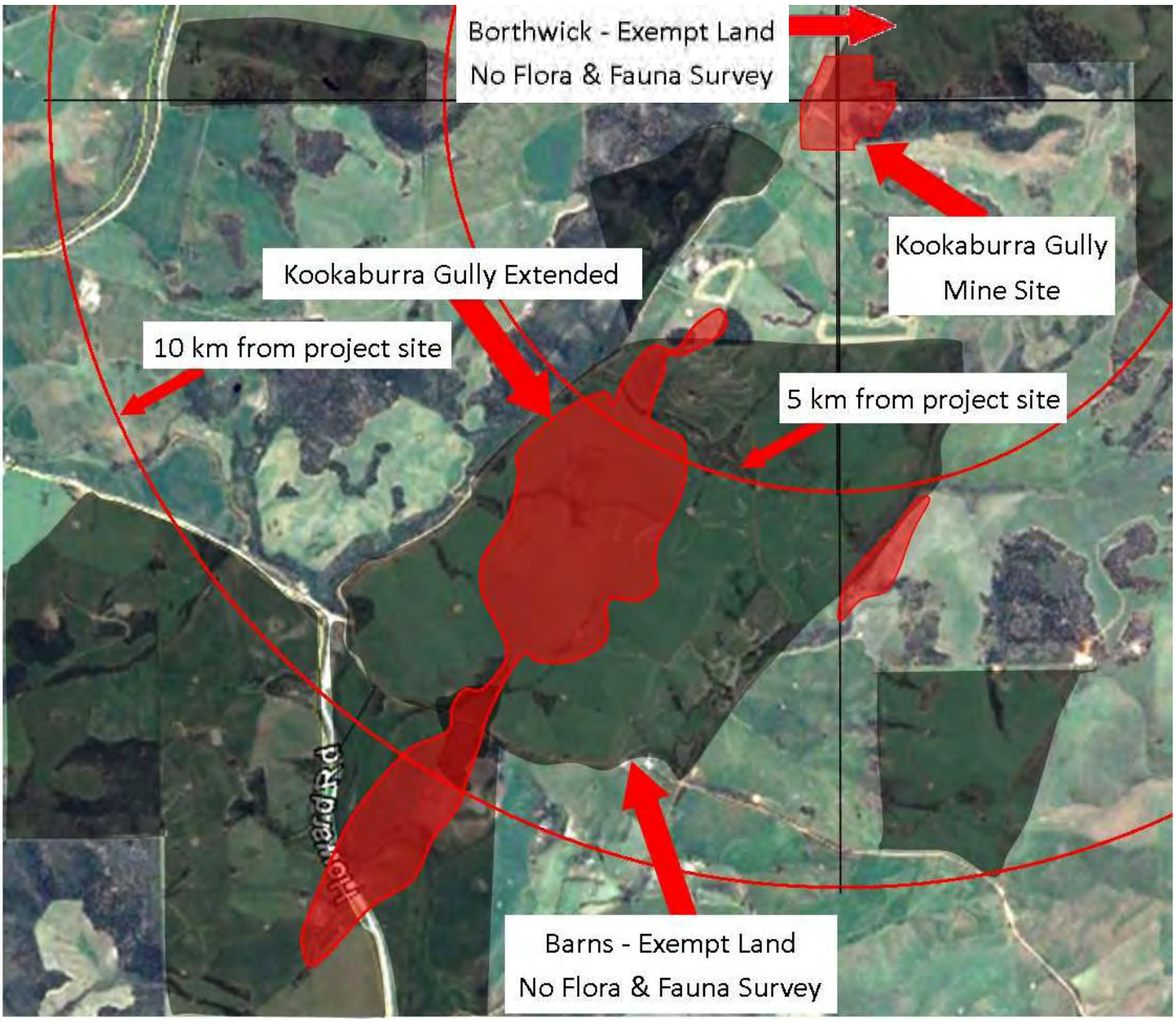

Kookaburra Gully Mining Lease Proposal - Borthwick Property
Legend
Borthwick ObsWell July 2015
Borthwick map point
5m AHD topographic contour
perimeter fence
Final Period 8 pit 39
Fence or boundary (Hd KOPPIO)
Mineral Claim
Satellite Imagery
Source: Geoimage
Satellite: Airbus Pleiades
Survey Date: 8 Oct 2013
N
Metres
0
100
200
'Wooded Area' defined by blue line
Proposed Pit
MC 4372
MC 4373
CEdeJ"BORTHWICK (Section125)
R W & L A"CULLEN (Section128)
R W & L A"CULLEN (Section129)
Pillaworta Road
OB-1
OB-2
OB-3
OB-4
OB-5
OB-6
OB-7
1
2
3
4
5
6
8
9
10
11
12
13
14
15
6192800
6192900
6193000
6193100
6193200
6193300
6193400
6193500
583000
583100
583200
583300
583400
583500
583600
583700
583800
583900
584000
584100

Map #2



No history within previous 15 years for any Government or mining company Flora & Fauna surveys in shaded region.

Map #3



Shaded Area of 'Barns' property. Land Exempt from Mining Activity (Mining Act 1971). No Government agency, Lincoln Minerals Limited/Australian Graphite Pty Ltd entry upon or around site of proposed Kookaburra Gully Extended

Table 5 Production tenements granted

Lease	Lessee	Commodity/ purpose	Location	Expiry	Area (ha)
Mineral claim (MC)					
4370	Sibelco Australia Limited	Dolomite, limestone	Mount Gambier area	05/11/15	99.8
4371	Sibelco Australia Limited	Dolomite, limestone	Mount Gambier area	05/11/15	36.9
4372	Australian Graphite Limited	Co, Au, graphite, magnesite, Mn, Ag, uranium oxide, V	Yallunda Flat	06/11/15	51.2
4373	Australian Graphite Limited	Co, Au, graphite, magnesite, Mn, Ag, uranium oxide, V	Koppio	06/11/15	249.5
4374	TN & BR Modra Pty Ltd	Calcrete	Karkoo	09/11/15	13.5
4375	Montague, Thomas Collins	Gravel (natural), limestone, sand	Ceduna	09/11/15	6.3
Mineral lease (ML)					
6441	OneSteel Manufacturing Pty Limited	Iron ore – hematite DSO, iron ore – hematite feed	Middleback Range	11/10/25	340.6
6442	Southern Iron Pty Ltd	Iron ore – hematite DSO	~60 km SE of Coober Pedy	24/06/22	182.8
Extractive minerals lease (EML)					
6440	Kenneth Eric Jennings	Dolomite, limestone	~5 km NNW of Lyndoch	22/10/35	7.2
Retention lease (RL)					
Nil	—	—		—	—
Miscellaneous purposes licence (MPL)					
147	Southern Iron Pty Ltd	Extended waste rock dump, haul roads, additional buffer area, environmental monitoring, stormwater management infrastructure and operations ancillary to mining.	Block 473, Out of Hundreds (Billa Kalina)	24/06/22	232.0

2.4.20 EPBC And Roadside Vegetation

Given the deficiencies in the environmental survey, we have included our response to the AGL EPBC Referral of April 2015 *(2015/7470)*. Our response also highlights the issues of native vegetation *(including listed species)* on Pillaworta Road as one travels from Bratten Way to the proposed mine site.

As the photographs show, the roadway is tree lined with some trees being of significant size; has limited room for upgrading to the desired minimum 12 metre width without the removal of some very significant trees and under-croft apart from the actual alignment of the road.

This gives rise to the question upon what criterion being 'determined' has that this section of the roadway is the most appropriate. The following photos are from a portion of the Pillaworta Road between Bratten Way and the proposed Kookaburra Gully Processing Plant.

Survey conducted on 9th May 2015 by:

a. Mr M Stevens, Chairperson, Tumby Bay Residents and Ratepayers Association Inc.
b. Mr B March, Member, Tumby Bay Residents and Ratepayers Association Inc.
c. Mr B Gregurke, Member, Tumby Bay Residents and Ratepayers Association Inc.

Copyright of all images in this response remain the property of the Tumby Bay Residents and Ratepayers Association Inc.

Photo#1: Section 125, vegetation in question: 09/05/2015

Photo#2: Indicative of roadside vegetation on eastern side of Pillaworta Road

Photo#3: Regeneration of species *(Golden Wattle)* on western side of Pillaworta Road *(34 21.412 S; 135 57.756 E)*

Photo#4: Sugar Gum

Photo#5: Sugar Gum: foreground tree 3.5 metre circumference; rear 5 metre circumference with nesting holes *(34 21.579 S; 135 57.627 E)*

Photo#6: Proximity of sugar gum to edge of roadway

Photo#7: Nesting facility in loft of tree

Photo#8: Sugar Gum with 5 metre circumference *(34 21.786 S; 135 57.581 E)*

Photo#9:Note proximity of EP Blue gum to roadside.

Photo#10: Feathery Wattle
(34 21.626 S; 135 57.611 E)

Photo#11: Tufted Bush Pea
(South of crest of road at 34 21.733 S; 135 57.581 E)

Photo#12: *(South of crest of road at 34 21.733 S; 135 57.581 E)* east side of road

Photo#13: Variety of species at above location

Photo#14: Kangaroo Thorn

Photo#15:

Photo#16: Sugar Gum with 5 metre circumference
(34 21.786 S; 135 57.581 E)

Photo#17 Sheoak stand

Photo#18: Sheoak under-croft with emerging fern

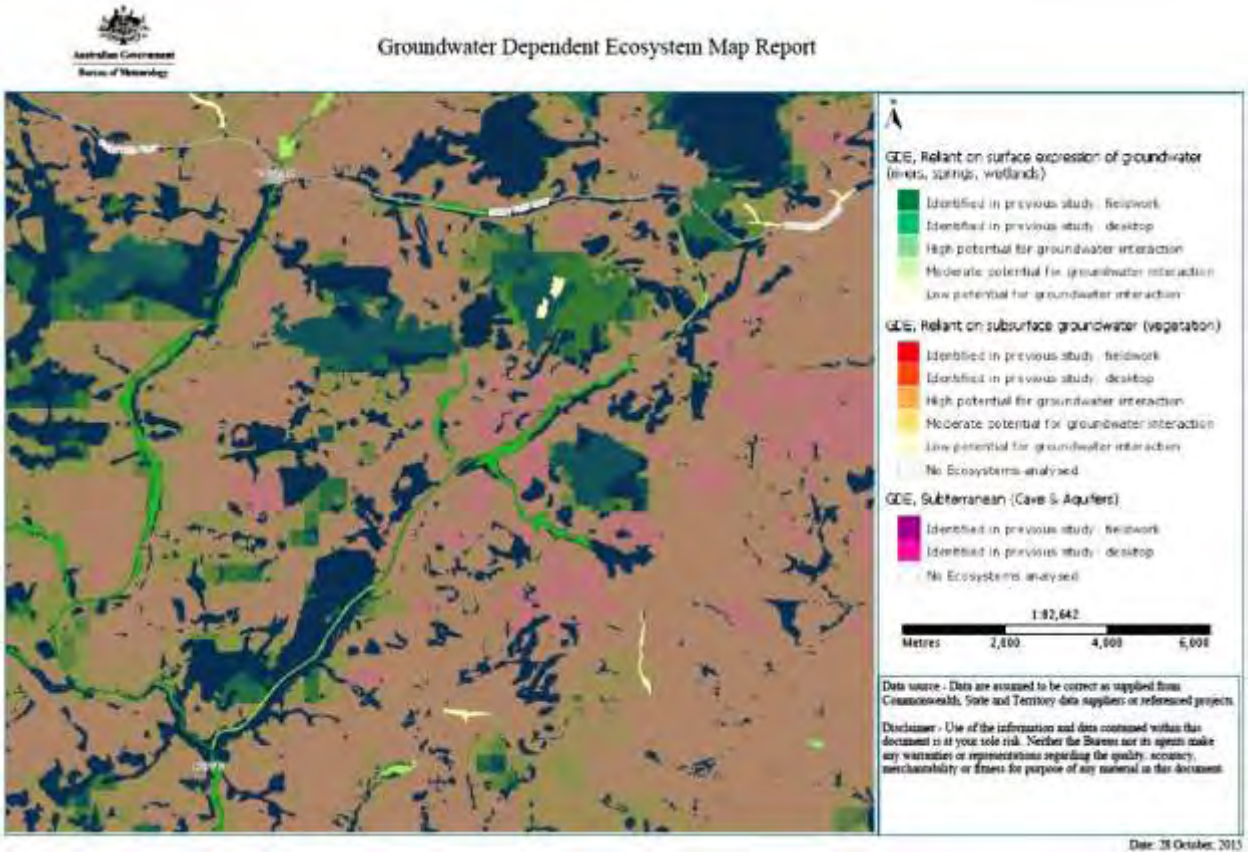
Photo#19: Eyre Peninsula Blue Gum *(commencement of exhibit)*
(34 21.833 S; 135 57.552 E)

Photo#20: Kangaroo Grass

Photo#21: Eyre Peninsula Blue Gum from roadside *(west)* up the hill.
Under-croft grazed within farming property, but restoration of under-croft possible with area fenced off.

2.4.21 Referring to MLA 3.12.3

Attention is drawn to paragraph 4, page 74: "It is recognised that GDE's are not only threatened by..... and pollution". The MLA appears to be devoid of any in depth discussion of the impact of contaminated groundwater arising from the proposed mining operations upon the ecosystems, not the least of which is the known Tod River Wetland System and the Tod River Water Protection Zone. The 'Government Groundwater Dependent Ecosystems Map Report' identifies information that the AGL MLA has not referred to in its considerations or modelling of GDE's and the potential impacts upon the local environmental ecosystems. *(See map below)*



It is noted that "further assessment and consideration suggests that the density of the scattered ... *(EP Blue Gum)* represents a woodland community; albeit a degraded one..."

It is assumed that with the 'further assessment and consideration' due consideration will be given to the potential impact on the species by a potentially contaminated groundwater supply in addition to the impact of fugitive dust *(again carrying contaminants associated with the mining operations)* upon the species.

It would appear *(in the body of AGL's MLA)* that listed species on the roadways affected by this project have not had due consideration with respect to any potential groundwater impact of the project.

The assumptions made in paragraph 4 page 77 with respect to MC 4372 *(over the property boundary)* are based upon no credible evidence, given that at the time of writing, access had not been able to occur.

2.4.22 Referring to MLA 3.13

It should be noted that no authorised entry to land was achieved upon MC 4372 or adjacent northern land. The observations presented in the AGL MLA are devoid of information relating to the Borthwick and wider local properties. The letter provided in 2.4.20 and with the Map #2 provides further details.

Any observations made during the short period (one day, daylight hours) under the auspices of the Warden's Court can only be described as opportunistic and not representative of the fauna residing in the wooded areas contained on MC 4372 or the adjacent northern land.

The observations are incomplete in this regard and the impact not defined.

2.4.23 Referring to MLA 3.14

It should be noted that no entry to the land was enabled by the landowner upon MC 4372 or northern adjacent lands. The observations presented in this MLA are devoid of information relating to the Borthwick properties, other than roadside observations.

The application is wholly based upon that found within MC 4373 and NOT over the proposed Mining Lease area.

2.4.24 Referring to MLA 3.14.2.2

It should be noted that no access was achieved upon MC 4372 or northern adjacent lands. The observations presented in the AGL MLA are devoid of information relating to the Borthwick and northern properties, other than roadside observations.

The full extent of the occurrence of sulphides in the deposit appears not to be disclosed *(especially on MC 4372),* so the extent of potential impact of acid soils is not fully described.

2.4.25 Referring to MLA 3.15

As previously mentions the road reserve is understood to be Crown Land under the control of the DC Tumby Bay. It is suggested that Native Title has not been recognised by AGL and has not been extinguished on this portion of land.

2.5 DESCRIPTION OF OPERATIONS

2.5.1 General Description

Attention is drawn to the last paragraph on page 86 "Rehabilitation will be progressively undertaken..... at the end of mine life, should there be no further mining development proposed...", needs to be read in context with the directions the Company has advised the Australian Securities Exchange *(ASX)* in regard to Kookaburra Gully extension, the Koppio Mine and the PACE program, sponsored by Government, a situation which has not been declared in the context of this application.

2.5.2 Project Characteristics

The validity of the documentation pertaining to this project is an issue currently before the Warden's Court for resolution.

The project characteristics fails to provide a clear understanding of the provisions (environmental impacts and risks associated with its construction and use) for a pipeline from the Tod Reservoir to the site, should negotiations with SA Water be successful.

It is noted that the project will require capital funding to $A40-50M. An examination of the accounts of Lincoln Minerals Limited, the parent Company as disclosed to the ASX reveals a balance of funds available at approximately $440K as at 30th June 2015. The financial position of Australian Graphite Limited, a wholly owned subsidiary of Lincoln Minerals Limited, is unknown. The question being whether the company (ies) has the financial capacity to promote the project, especially, the capacity to meet its current exploration rehabilitation obligations, even before any additional approval is given? As of 28th October 2015 ASX announcement Lincoln Minerals Limited had a projected financial capacity of $44,000 for 31st December 2015.

2.5.3 Waste Storage Facilities

It is noted that the final angle of repose for the WRSF and the TSF embankment will be less than 20 degrees. Given that the ultimate claim is for the land to be restored to agricultural use the following questions require answers:

a. A 20 degree slope would be significant for current machinery to traverse.

b. There appears to be no reference to the final height of the WRSF although the contouring in figure 4.5 would suggest a height of some 50-60 metres above current ground level, which would also impact upon the ability to use the area for agricultural *(arable)* purposes.

c. It is noted that the TSF embankment slope will be reduced. The issue here being what happens to the material removed from the embankment, especially if it has been subject to seepage and thus contains the contaminant held with the TSF?

It is also noted *(AGL's MLA Appendix 'H')* of the limitations of the hydrogeology and hydrology of the site in respect to the TSF facility and its ultimate design. Is it that the Company is seeking approval on the basis of limited knowledge with respect to the construction of the TSF, a structure that would have significant environmental impacts should it fail? Public confidence in the data and limitations identified would suggest there is considerable work to be undertaken AND that the outcomes of this work should be provided for public scrutiny and commentary prior to any approval being given.

Approval should NOT be provided on condition of these outstanding issues being met in the future.

2.5.4 Offsite Processing

It should be noted that Uley Graphite *(Valence Industries)* have recently laid-off 60% of its workforce in part due to problems associated with the processing plant. The suggestion of off-site processing as proposed by the Applicant would appear not to be an option in this instance. However, a reciprocal arrangement may well be the case.

2.5.5 Site Access

"A route assessment considering adjacent landholders.... were undertaken". It would appear that this is a very selective survey as <u>two of the principle landholders</u> have not been consulted over the proposed models.

It is also noted in Section 7.9 that "The transport route has been determined". Determined by whom and agreed to by whom, given that the matter had not been raised in Council (i.e. with the Elected Members) or government approvals obtained from DPTI.

It should be noted that the Administration of Council is NOT representative of the Community, the Elected Members are.

It is also noted in the Minutes of Meetings for the District Council of Tumby Bay *(Meeting 13th October 2015)* issues have been raised with respect to the proposed transport routes.

It appears the application is deficient in the provision of DPTI assessment and approval of the proposed route together with a lack of approval from EPBC and Native Vegetation Council with respect to impact upon listed species along the road verges as significant realignment of the road and vegetation clearance for safety sight-lines will be required to support a safe, all-weather semi-trailer transport route.

2.5.6 Local Geology

Figure 4.10 identifies section 9 traversing the MC 4372 and MC 4373 in a north west/South east direction across the property boundary separating MC 4372 and MC 4373.

Figure 4.12 does not locate the vertical plane representative of the property boundary between the two Mineral Claims. Given that the drill holes featured appear at an angle to the vertical, the question is do the drill holes *(or any of)* traverse the property boundary?

It is also noted *(AGL MLA Appendix 'H')* of the limitations of the hydrogeology and hydrology of the site in respect to the TSF facility.

2.5.7 Mineral Resources

It is understood that the determination of the mineral resource is indicative, but in the instance under scrutiny, the estimation requires a caveat relating to the fact that NO drilling has been undertaken on MC 4372; hence the suggested resource supposedly compliant with JORC Code 2012 is speculative.

2.5.8 Testing Program

Figure 4.17 relates specifically to MC 4373. The data presented provides an incomplete picture, given that no drilling or analyses attributable to samples from MC 4372 are represented in the AGL MLA.

2.5.9 Results

It is acknowledged that the presented results are representative of the location MC 4373. No results can be attributed to MC 4372 as the necessary entry to the land was unable to be achieved and thus data not obtained.

The results are incomplete for the application sought.

Concern has been expressed with respect to the statement *(page 114)* "However there is no unifying acceptable standard" in relation to sulphides and acid soil formation.

The question now being is 'what is the standard to be used for compliance' and thus incorporated in the approval of the application, or is it a case of wait and see and repair the damage once observed?

Given the identification of the minerals *(pages 106 - 107)* and the known hazards associated with some of those identified *(as expanded upon in response to section 7.4 and 7.5)*, the Associations categorically rejects the assertion " while there are some exceedances of some EIL's the proposed groundwater and surface water control and management measures indicated in Section 7.4 and 7.5 respectively would mitigate against potential impacts *(not fully disclosed)* from the ore and low grade stockpiles and ARD drainage from the PAF storage area".

The Associations are of the opinion that to coin the phrase "a little bit over the limit is OK *(MAC)*" is irresponsible and clearly in contempt of the requirements to meet a social licence to operate.

2.5.10 Asbestos Minerals

It is noted that no occurrences of chrysotile asbestos has been observed or recorded in or near the Kookaburra deposit as recognised on MC 4373.

This statement requires the caveat that no asbestos has been found on MC 4372 as access to MC 4372 has not been granted and therefore NO definitive statement can be made with respect to this location.

Clearly before approval can be given, the presence or otherwise of asbestos on MC 4372 needs to be determined, and if found, an acceptable management/control program provided for the community to comment upon *(and accept)*.

2.5.11 Exploration Activities

This is an important section of the AGL MLA as it is indicative of the future aspirations of the Company. It must also be noted that these aspirations *(targets)* have been conveyed to the Australian Securities Exchange and whilst claimed to be conceptual, are designed to attract investment, i.e. the announcements are price sensitive.

In addition, the state Government has sponsored further drilling under the PACE program within what is known as Kookaburra Gully extension *(figure 4.25)* immediately to the southeast of the current proposal. It is understood this program will consist of some 260 holes, provided the land that is exempt from all mining activity is eventually waived of that exemption.

The extent of mining for graphite in this area is highly likely NOT to be confined that area sought within this application. It is a reasonable assumption, given the data currently available, that this mine will be *(subject to funding)* part of an extended mining prospect of some 4.5 kilometres in length.

The approval of this component of the greater plan MUST take into consideration the future directions. For this reason, the application is inadequate in its discussion of and impacts arising from the potential expansion.

2.5.12 Proposed Exploration Program

It is noted on figure 4.27 the locations of further trenching and drill holes on or near the property boundary between MC 4372 and MC 4373.

It is noted that the drill holes will be at an angle of 60 degree to the horizontal. The question being will these drill holes traverse the property boundary?

It is further noted that approval for the drilling and trenching program expired 25 August 2015.

2.5.13 Mining Operations

It is noted that a PEPR is required to be developed post approval that will provide the detail *(that is in part missing from this report)*. It is assumed the public will have the opportunity to scrutinize the PEPR prior to its final acceptance by the DSD.

2.5.14 Rehabilitation Operations For Open Pit

"In order not to sterilise potential future resources it is not proposed to backfill the open pit(s) which will remain as permanent features on the landscape".

The inference being that it is OK to sterilize the remainder of the through the various mining operations as this response will highlight. What the applicant fails to appreciate is that the saline water that will enter the pit post dewatering, will become further contaminated with the remnants of the mining operations which have exposed the minerals identified on pages 106-107 to greater mobility than otherwise would have been the case with the potential to enter the aquifer, thus contaminating it with heavy metals, etc. in solution.

Given the introduction of the word 'Pit(s)' as a plural reference, the application is devoid of any details in relation to the locations of the additional pits upon which the mine site and processing plant is intended to function. How many and where? What is the cumulative impact?

2.5.15 Workforce

Will the workforce be subject to zero tolerance with respect to drugs and alcohol?

It is noted the intention of a well-educated, trained workforce.

What procedures have been put in place to ensure this is the case?

What local educational facilities have been consulted regarding the ability to actually train prospective employees to the level envisaged?

What consultation has commenced with training organizations with respect to on-going training and development likely to be required?

It is noted that a detailed workforce profile has not been provided, thereby not allowing local persons seeking employment, the opportunity to access training in advance. In such circumstances, it is not unreasonable to assume that employment opportunities will not be met from the local community, having regard to the abundance of un-employed skilled as a result of the significant downturn in the mining industry.

2.5.16 Use Of Explosives

It is acknowledged that explosives will be used.

It is noted that 1 tonne of detonator material; up to 60 tonnes of ammonium nitrate and other premade products will be stored on site. Given the worst case scenario, what is the blast radius should the magazine containing this quantity of explosives, explode?

It is noted that a worst case scenario for pit explosions and flying debris is some 306 metres, within the confines of the Mineral Lease.

It is not apparent, but assumed that blasting will not occur on fire ban days.

Given the quantity of ammonium nitrate what are the security risks associated with this facility, having regard to the limited SA Police resources in the area?

What are the increased insurance liabilities that have to be absorbed by neighbours to the facility as a consequence of an explosive magazine of this size?

What are the risks to emergency services in the event of a bushfire in the area?

2.5.17 Type Of Equipment

It is noted that there is an operational risk during mining operations of equipment in use starting a fire. It is noted 'appropriate control' will be in place to negate the risk. It is assumed this implies cessation of activities on fire ban days.

2.5.18 Mine Dewatering

It is noted that potentiometric surfaces have been assigned across the intersects A - B and C - D. It is further noted that these cross the property boundary into MC 4372 no data exists.

The assumptions within the modelling lack credibility, especially in relation to MC 4372, and non- existent data pertaining to water levels from exploration holes in the vicinity of the pit, none of which extend into MC 4372.

It is noted that the 'transient model 'is based upon ONE pumping test in the centre of the proposed pit plus consideration of the geology, Eyre Iron Fusion results *(not applicable to this site)* and from similar rocks on Eyre Peninsula.

An analysis of the methodology used here would conclude:

a. The assumption based on one hole in the middle of the pit area *(one where transmissivity is at the lowest end of the scale)*, hardly a reliable scientific quantity as it could well be 100% wrong.

b. Eyre Iron results *(from what and obtained under what conditions, etc.)* being not under the control of the Applicant. This is not an Eyre Iron Pty Ltd application.

c. 'And from rocks on Eyre Peninsula' hardly inspires the reader with respect to the competency of the process let alone the results. Eyre Peninsula is a large place with a significantly complex geology, but the reader would be forgiven for assuming, on the basis of the approach adopted, otherwise.

Figure 4.51 claims on the basis of flawed or incomplete data to show the impact over MC 4372 to be marginal, despite a complete lack of understanding and data pertaining to the area.

The conclusions reached on page 160 are inconsistent with the stated requirements pertaining to the Tod River Water Protection Zone:

> Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

2.5.19 Processing

Dust from the primary crusher will have a similar composition to the ore, an important disclosure given the nature of the minerals

It is noted that plant operators will be protected from fugitive dust through enclosed cabin loaders *(presumably air-conditioned)*, however, the health issue of fugitive dust to the public needs to be addressed in detail, as outlined further in this response.

The impact of fugitive dust on the environment also needs to be considered at length, having regard to the contaminants and the potential economic loss to neighbouring farmers through contaminated grain and potential plant growth inhabitation etc. *(see later discussion in this response)*.

The discussion is devoid of consideration of fugitive dust with particulate matter PM2.5 and PM1.0, given that the dust will contain not only the hazardous minerals outlined previously, but graphite and possibly free silica *(which to date has not been mentioned).*

Fugitive dust dispersion could impact upon the township of Tumby Bay, dependent upon the climatic conditions *(noting no specific site meteorological data has been tendered)*.

Fugitive dust has the potential to contaminate all rain water catchment in the area, noting rain water is the principle supply of water for this area as it has no reticulated water supply.

2.5.20 Processing Plant

It is understood that the processing plant is a 'noisy' environment which will require a significant management regime under the Safe Work Act to protect the employees. That stated, the issue then moves to the cumulative impact of all machines which operate on a 24/7 basis and the transmission of this noise to the external environment to be dispersed in accordance with the prevailing wind conditions and the topography.

What is not acknowledged is that machinery generates infrasound as well as audible sound. The impact of infrasound so generated has not been addressed, inclusive of the dispersal pattern, which is more far reaching that audible sound.

The acoustic control for infrasound appears not to be included in the application.

It is noted that flotation will be used for the 'refinement' process. Full disclosure of the chemistry and chemicals used in the process and their environmental impact, together with MSDS data is not apparent.

Re: 4.7.2.2.
It is noted that in the cleaning process *(page 168)* excess sodium chloride (salt) is removed from the product. The question being where does all of the sodium chloride end up?

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

2.5.21 Flocculent Dosing System

It is noted that Magnafloc has known high toxicity to freshwater fish and aquatic vertebrates. The problem for this site is the close proximity to Pillaworta Creek which is also supplied with water from the mine site.

Attention is specifically drawn to the Tod River Water Protection Zone (as declared in the Development Plan) which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

2.5.22 Product Storage

The packaging for transportation to a port needs to be within containers that do not allow graphite to escape. It is assumed that the primary packaging ensure this.

However in the event that a bag is rupture in transit, it is expected that the transport vehicle will be sealed to prevent the escape of graphite. Curtained semitrailers would not provide the security of capture in such an event.

2.5.23 Process Chemicals

It is noted that Magnafloc has known high toxicity to freshwater fish and aquatic vertebrates. The problem for this site is the close proximity to Pillaworta Creek which is also supplied with water from the mine site.

Reference is again made to the fact that the proposed mine is located within the Tod River Water Protection Zone and the Tod River Wetlands and the restrictions placed upon pollutants in these areas.

Whilst there is some discussion concerning the levels of kerosene that may enter the environment, the issue remains, kerosene, once in the system cannot readily be removed.

Again the environments of the Tod River Water Protection Zone and the Wetlands are at risk, not to mention the possible contamination of the ground water system beneath the site and beyond.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

2.5.24 Process Plant And Site Water Balance

Whilst negotiations are in progress for the supply on water from the Tod Reservoir, the fact remains that there are no potable water supplies in the vicinity. It is assumed, therefore, negotiations are progressing with SA Water to provide potable water to the site.

That being the case, would this include the supply of permanent potable water to all those in the vicinity of yet another pipeline, this time carrying potable water, as opposed to a metered stand pipe located some distance away.

Should the latter be the case, what is the impact upon the Water Allocation Plan that is apparently soon to be released by the EPNRM Board?

"More detailed water balance estimates will be prepared during the PEPR phase. They will be calculated on a per month basis accounting for variations of average monthly precipitation and evaporation". *(underlining added)*

The inference being the information submitted for this application is insufficient to arrive at an appropriate figure, thus supporting the Associations previous contentions that site specific data is not available to present to the public a real picture of the proposed water usage.

The public is expected to accept unspecified qualification of assumption in regard to water usage, given the significant impact the proposal may have upon the local water supply.

The data should be presented now for scrutiny by the public.

2.5.25 Rehabilitation Operations

What is missing in this section is the detailed time line post cessation of mining activity at this site.

When one considers the future direction of the Company as outlined in releases to the ASX, the time line for cessation of processing could well be longer than mining activity in the pit, with the source material being transported from Kookaburra Gully extension and Koppio Graphite mine.

It is noted that the fence around the mine will be removed exposing the mined area *(up to 100 metres deep)* to people and animal intrusions with the risk of falling in. This would be further complicated in the future when the hole fills with water.

There are claims of ensuring the non-escape of toxic material from the site as described in Section 8.

The aim is to return the waste rock facility to arable land, land with a 20 degree side slope and land under which the toxic waste is buried *(the out of sight syndrome)*, except for the fact that the identified hazardous material will be subject to mobility due to groundwater impacts.

2.5.26 Slope Stability

Failure of the WRSF can be attributed to the nature of the material with which it composed. It is assumed here, that the nature of the rock will provide significant structural strength to the formation.

However, the assertion that the rainfall in Kookaburra Gully is relatively low cannot be substantiated by the Company as site specific rainfall data is non-existent.

Neighbouring landholders would suggest otherwise.

Given that significant infiltration is not expected to occur under the assumed conditions, what is the risk assessment relevant to the actual site rainfall, taken over a twelve month period?

What is the risk assessment of the structure(s) when subjected to the torrential rainfall that can occasional occur in this region *(that leads to flooding of the Tod River and associated creeks in the area)*. Photographic evidence and video evidence exists with respect to the severity of the flooding experienced in the past.

A slope of 20 degrees would pose significant problems should the sides of the WRSF be considered arable.

2.5.27 Methods Of Stabilisation And Erosion Control

It is noted that a surface water drainage scheme will be established. The issue here is the quality of the water so collected, having regard to the hazardous minerals that will be brought to the surface and either processed to form waste for the tailings dam or deposited on the WRSF whereby leaching is highly likely to occur.

It is noted that the water will be subject to silt detention then allowed to discharge to the environment. The potential exists for heavy metals, uranium, thorium, strontium, manganese, copper, Rare Earth minerals, kerosene and other processing chemicals *(inclusive of magnafloc)* and chromium etc to be released into the Pillaworta Creek system.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

It is noted the EPNRM Board has provided advice as to the need for construction of the surface water drainage system. It would appear that correspondence to this fact and any other conditions place upon the Company with respect to pollutants/contaminants entering the waterway has not been included in the application.

It is noted that water spraying will be used to 'control dust'. Two issues require additional detail:

a. What is the chemical composition of the dust and what is its dispersal path, and

b. What is the quality of water used for dust suppression and what is the environmental impact of this water, especially if it contains salt and contaminants?

2.5.28 Tailings Management

The Associations note the performance criteria for the TSF design and management, especially the 'zero discharge of process water to the natural creek system'. However there are reservations with respect to the reuse of water and hence the potential for increased concentrations of the hazardous materials to be contained therein and distributed across the site.

The monitoring of water quality across all processes envisaged to occur on site requires greater clarity both whilst the mining operation are occurring and into the future as a requirement of rehabilitation.

2.5.29 Embankment Details

Concern has been expressed at the staged construction of the tailings dam, one which will be required to retain some 1.6M tonnes of tailings. The concern being that each layer will provide a layer of structural weakness and a potential pathway facilitating seepage due to potentially a differing constituency of the interface.

Whilst there is a significant amount of engineering data related to the construction of the TSF dam *(as would be warranted)* a layperson's explanation pertaining to the safety

concerns of a staged construction dam wall is sought, given the common experience of landholders in the region in constructing water storage dams.

Volume 2: AGL's MLA Appendix 'H' provides details pertaining to the construction of the TSF BUT it also points to a significant lack of detailed geology, hydrogeology and hydrology characteristics of the TSF area, thereby providing considerable lack of confidence in the information provided for this approval.

Re: Management of PAF
The storage of acid forming material is of concern, especially in the long terms as acid soils impede agricultural production, and in this instance, the ability of the TSF to be returned to arable land.

What is not apparent in the application is the actual chemistry that is likely to occur in the TSF facility. Herein the question is what chemical reactions are likely to occur, given the composition of the TSF and what are the results of such chemical reactions. The chemistry should also include potential photochemical reactions that may occur.

The reason for such information relates to the potential contamination of the aquifer below the site and to surface water, especially the Pillaworta Creek system and the Tod River Wetlands.

Attention is specifically drawn to the Tod River Water Protection Zone (as declared in the Development Plan) which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

Re: Diversion Channel
Having disclosed the nature of materials contained in the ore, the task of the company is to prevent contamination of the environment by these minerals.

It is noted two options are proposed for the diversion channel, the rock lined open channel and the HDPE channel.

Without complete details of the construction of the open rock lined channel, it may be assumed that the substrate would allow for absorption of water to occur thereby allowing potentially contaminated water to enter the environment en-route to the aquifer.

In either option, the potential exists for contamination of the Pillaworta Creek, etc. as a consequence of allowing surface water, to exit the site. Monitoring water quality on the channel will clearly document the extent of contamination leaving the site. It is assumed that public access will be granted to review the results of said monitoring.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

Re: Water Balance
"The water balance inputs and outputs included..... Daily rainfall data as obtained from BoM..."

As mentioned previously the data obtainable from BoM *(Poonindie and Cummins)* is not site specific. What are the monthly site specific rainfall figures?

It is noted that "depressurisation wells installed in the downstream toe of the embankment will allow dissipation of elevated pore water pressures within the embankment footings". *(pp. 196)*

The issue arising is the water quality within the wells and the fate of this water. Is this water the result of seepage from the TSF facility and thus containing elevated levels of contaminants of the nature previously identified? If this is the case, where will this water go, into the aquifer and or into the Pillaworta Creek system?

2.5.30 Rehabilitation Operations For The TSF

"The TSF will maintain long term stability, protect the downstream environment and manage surface water. It will be filled with benign rock and covered with materials from the subsoil stockpile and dressed with material from the topsoil stockpile.

The TSF closure plan includes...removing the tailings and reclaim delivery system in totality..."

Having regard to the chemical content of the TSF over the 7.5-8 year operation (assuming this to be the case and that Kookaburra Gully extension is not brought on line), the issue remains to what depth has the contaminants contained with the TSF penetrated the substrate and thus to what depth below the surface does the 'removal of tailing' require?

Where will this contaminated material go, once removed? It is assumed that soil profile analysis prior to construction and prior to removal will be undertaken to determine the actual depth of removal required. It is assumed this data will be made available to the public *(as it is in the public interest to ensure the rehabilitation is undertaken in compliance with the EPA Act and Regulations in order to protect the groundwater beneath the structure and beyond).*

It is noted that the topsoil stockpile will most likely contain seed banks of listed species (pp. 197). That being the case, the Company should ensure that the seed bank is totally protected and undertake the appropriate research to ensure protection and thence regeneration of the species as a condition of approval. A detailed horticulture plan should be required in advance of approval, with consultation with EPNRM, the CFS and the Native Vegetation Council being mandatory requirements. The plan should be inclusive in the PEPR.

2.5.31 Detailed Design For TSF

Given the importance of the TSF from an environmental perspective, "the design of the conceptual design of the TSF is based upon a number of assumptions..... The consultants... **recommended additional site investigations to help further quantify the geotechnical, hydrogeological and hydrological properties of the TSF and WRSF areas."** *(bolding added)*

Clearly insufficient investigations have been undertaken by the applicant especially in the areas of the sites hydrogeology and hydrological properties. The public are being asked for commentary on a project which appears to be founded on a series of assumptions rather than solid empirical evidence. As described in the preceding part of this response, the location is to be constructed over an aquifer, the hydrogeology of the area is not fully understood both within the confines of the proposed Mineral Lease or beyond and the hydrology of the TSF and WRSF appears not to be well understood. This uncertainty gives rise to considerable concern that the risk analyses and risk mitigations offered are based upon incomplete data *(unsubstantiated evidence)*, the consequences of which could lead to significant contamination of the underlying aquifer(s) and the associated potable water system on Lower Eyre peninsula, as well as the contamination of Pillaworta Creek and the Tod River Wetland.

Confidence in the risk assessment, in light of the above recommendation and thus in the application is significantly lowered by this revelation, to the point the Association RECOMMENDS the withdrawal of the application pending further advice from the consultants regarding the "further quantification of the geotechnical, hydrogeological and hydrology properties of the TSF and WRSF areas" is obtained.

It should be noted that no hydrology or hydrogeological information exists for MC 4372 which lies immediately above this area.

2.5.32 Wastes

Re: 4.8.1.1
The claim is "calculated tailings elemental analysis... suggests that the levels of heavy metal that occur are non-hazardous... with the exception of chromium..."

The limitations of the analyses undertaken are disclosed. In short the results published are those applicable to a limited *(if not restricted)* sample and can be considered to be NOT representative of the complete picture of the ore body, given that the 'sample' was taken from the 'Kookaburra Gully trench' at depth of a few metres beneath surface level.

To base the complete application upon the analysis of ore from this limited source and conclusions regarding the hazards contained within this limited sample as being consistent across the whole deposit, is clearly lacking in scientific principles and points to the short cut methodology employed in this application.

Assumptions and suggestions when it comes to the determination of hazardous waste containing elevated levels of copper, chromium, rare earths, uranium, thorium, strontium and manganese, etc. as identified on pages 106 - 107 are unacceptable to the community given the current awareness of the risks these minerals pose.

These residues will accumulate in the TSF, yet no reference to the accumulation rate or concentration appears in the documentation.

It is also '*suggested*' that the WRSF will see an accumulation of these hazardous minerals which are now 'free or mobile' to enter the environment. What is the reality?

2.5.33 Oils And Storage Of Chemicals

It is noted hazardous chemicals will be stored in appropriately designed and bunded facilities.

Unfortunately no reference is made with respect to the flocculants used, noting their declared toxicity in waterways. It is assumed these will be stored under similar constraints as all other hazardous materials.

Re: 4.8.3.1 and 4.8.3.2
It is noted that vehicle wash down facilities will be provided and that the final repository for water used in these facilities will be the TSF.

As a matter of policy, will all vehicles leaving the site be washed down to prevent the transference of contaminated soil/ore to the local roadway and thence to the wider environment?

What control measures will be instigated to ensure that the wastes arising from this facility do not contribute to the spreading of weeds in the area?

Re: 4.8.3.3
It is understood the workforce will be in the vicinity of 30 during the operational stage and up to 60 during construction.

Given the proximity of the facility to Pillaworta Creek and residing over an aquifer, have the necessary approvals been sought from the EPA and the District Council of Tumby Bay with respect to the sewerage system to be employed, especially in the knowledge that limited information appears to exist with respect to the hydrology *(4.7.7.4)*?

The option of installing a suitable sized biocycle system is seen as an environmentally safer option?

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" (underlining added)

2.5.34 Supporting Surface Infrastructure

Re: 4.9.1
It is claimed "A field assessment of the roads between the Lincoln Highway and the mine site was conducted in the company of the District Council of Tumby Bay *(DCTB)* Engineer"

The fact of the matter is that the DCTB does not have an engineer, so the question needs to be posed, with whom from Council was the assessment conducted?

It is also a matter for the record that the CEO of Council has publicly stated his frustrations in dealing with *(or as the case is, not being able to deal with)* the Company in these regards.

It is not evident in recent Minutes of Meeting of Council that such 'consultation' has been undertaken.

It is noted "native vegetation is locally encroaching on the existing alignment" and will have to be removed to enable road widening and particularly to provide adequate sight distance.

It is assumed that the appropriate EPBC and Native Vegetation Council approvals exist for this activity, given the lack of record of the fact within this 'proposed upgrade'.

It is also assumed, due to lack of detail pertaining to Discussions/Agreements with the DCTB, that a full DPTI assessment of the transport route has been undertaken.

It would appear from the text presented, that no appreciation of the fact that these roads are subject to restricted travel in winter due to flooding and subsequent damage to the surface. There appears to be no appreciation of the impact of 6 - 7 loaded semi-trailers per day will have on the existing road network during the winter months or through periods of flooding rains *(that has occurred in the region in recent times during summer storms)*.

Advice provided with Section 7.9 as to the road usage appears to conflict with the semi-trailer use outlined above. The figure quoted is suggestive of 24 semi-trailer movements during daylight hours. This is further complicated by a discussion of additional road usage as outlined in Volume 2: 2.2: Site activities, leading to the question, is this application for a single mine OR that for a combination of mining activities (Koppio original mine and Kookaburra Gully extension)?

It is also noted that the transport route has been determined. But details as to who determined the route and who approved the route are lacking in the submission.

There appears to be no contact/agreement let alone an application for support and approval *(pp. 206)* with DCTB on these matters, especially in light of the anticipated construction costs involved and the ongoing maintenance liability. The assumption being that the ratepayers of the community will be the funding agents for the upgrade and ongoing maintenance, in the absence of any formal agreement to the contrary with Council.

For the record, correspondence from the Tumby Bay Residents and Ratepayers Association Inc to the Council has raised this and other issues pertaining to the Application is submitted in the appendix to this response.

Re: 4.9.2 *(also see appendix - road usage modelling)*
It is noted that an application for approval to construct a crossing across an ephemeral creek on the site will be sought from the EPNRM Board.

Given that planning is supposedly advanced to a point of making application for the Licence, it is not unreasonable to expect that matters such as these *(the crossing)* should have had the required permits for submission within the Application.

This further supports the contention that the Application is attempting to short cut the approval processes.

What is not discussed in the context of this Application is the further activities of the Company in relation to Kookaburra Gully extension and the use of the unmade road network *(part of which is identified within MC 4373)* to access developments upon the Barnes property upon which the Company is seeking to drill an estimated 260 holes as part of the Government sponsored PACE program and the original Koppio graphite mine

If this is the case, then this may represent mining operations upon Crown Land for which Native Title may not have been extinguished.

Re: 4.9.3.4
The inclusion of a laboratory with appropriate analysis capacity is noted.

It is assumed that the laboratory will be capable of monitoring the air and water quality for compliance requirements as well as those activities associated with the mining operations.

It is assumed that on line reporting of air and water quality will be available from this laboratory.

Re: 4.9.5.1
It is noted that the fuel store will be compliant with all legislative requirements.

It is noted that the fuel store will have a capacity of some 30,000 litres.

However, in the full knowledge of the fire risks associated with this area, the Company has seen fit NOT to provide an appropriate foam fire cart 'at this stage', despite the provision of a small fire-fighting unit *(4.9.6.2)*

There is no apparent reference to the capacity of the voluntary CFS units in the vicinity to cope with a fire involving this quantity of diesel.

There appears to be no commentary of the risks incurred should a breach of the tank or pipeline or the involvement of the fuel store in fire and the fire-fighting procedures that would prevent diesel from entering the Pillaworta Creek environment *(or the ground water system)*.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

Re: 4.9.7
It is apparent that the Company has a complete lack of understanding of the communication network in existence in the vicinity of the mine.

The assumption that the existing copper cable system can provide the services sought is complete unrealistic as local landowners will attest.

Mobile phone connectivity is marginal with numerous black spots.

A community benefit would be gained through the installation of a communication tower capable of delivering quality mobile phone and broadband internet services.

Re: 4.9.9
The provisions for erosion control as outlined are noted. Unfortunately water quality associated with the erosion is not addressed.

It is understood the erosion control measures outlined during the initial construction phase may be sufficient to contain particulate matter arising from runoff, but not that which is dissolved.

Whilst the Company intends to design drainage to cope with the 100 year ARI scenario, what provisions have been made for the re-occurring outcomes of the summer rain storms which lead to localised flash flooding, given that no rainfall statistics exist for the actual site?

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

Re: 4.10 / 4.10.2.1
It is noted AGL is considering the use of alternate power sources... wind power, to augment supply.

Have discussions been undertaken with DCTB with respect to erection of wind turbines in this area noting the requirements under the DCTB Development Plan?

Re: 4.10.3
It is noted "the existing SA Water mains supplied source for fresh water was not considered ... for process water. However small quantities of mains water would be used for final product cleaning and potable office uses..."

There is an apparent contradiction in the above.

Further it in known that mains water is not available at this site. It is therefore assumed from the application, that mains water will be provided to this site for processing and for other 'domestic' uses, the former being contrary to Government policy of mining companies being required to source their own water.

The location of a standpipe *(presumably metered)* is not disclosed.

The major issue here is the potential additional drawdown on the available water within the Southern Basin Prescribed Wells Area and whether this drawdown has been included in the soon to be released Water Allocation Plan by EPNRM. No reference to this occurs in the application.

Re: 4.10.3.1
"Water will be pumped to Kookaburra Gully via a buried.... pipeline which follows existing road easements to the site (figure 4.71)"

It is not known whether the appropriate approvals for the use of road easements has been sought or granted.

The pipeline issue was raised in discussion at the DCTB Meeting of 13th October 2015, but little by way of detail was available to Elected Members *(or those in the Gallery)*. The issue of Development Approval for the pipeline was raised and the administration could not provide an answer as to who would be responsible for 'approving' such a development.

It is not known whether the appropriate EPBC, Native Vegetation Council approvals have been sought for the destruction of native or listed species within the 'designated road easements'.

It is not known whether approvals have been sought from the District Council of Tumby Bay for the use of the road easements as proposed.

It is noted that the 'raw water' is contaminated water. The proposal is therefore for the transportation of contaminated water through primary producing agricultural lands.

It is noted *(page 215)* that SA Water is investigating various issues pertaining to the proposed water supply. It is assumed that these investigations would have been undertaken over a period of time and should have been available for inclusion within this application.

Clearly an unsatisfactory response from SA Water would place significant restrictions upon the Company to proceed due to the lack of a guaranteed water supply.

It is assumed that public disclosure of the quality of water to be supplied will be made, inclusive of a complete analysis of mineral, insecticide, herbicide and benzo-pyrene contaminants content.

Re: 4.10.3.4
The issue of concern with the PWD and associated infrastructure is water quality and the potential changes in water quality over time, having regard to the nature of the hazardous materials associated with the mining operations.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes <u>that activities liable to cause pollution in the zone should not be established</u>" *(underlining added)*

Re: 4.11.1.1
It is noted "additional discussions regarding mains water delivered by a purpose-provided standpipe and subsequent water deliveries have been commenced with SA Water."

The question being is this provision contrary to government policy in that mining companies are required to provide their own water supplies?

Not only is the source of water a concern, but run off from these activities is a major concern, given the proximity of the Pillaworta Creek system.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

2.6 DESCRIPTION OF POTENTIAL BENEFITS

2.6.1 Social

The motherhood statements to 'benefits to the community' need to be challenged, due to the lack of a cost benefit analysis as to the actual costs to the community and the benefits accrued not being provided.

Economic benefits to the community are not quantified.

The Company has referred to the so-called 3:1 flow on benefit factor. What it fails to recognise is that the flow on benefit is attributed to anywhere in Australia and not the local community.

The company has made statements about its desire to employ locally, yet the composition of the workforce is not declared thereby denying prospective employees' knowledge as to the types of jobs on offer and any training that might be required to bring their skills to what would be required.

This is further substantiated by the statement "a detailed training needs analysis has not yet been undertaken in relation to the local workforce".

It has however, indicated mining specific training such as Certificate III in Mining; emergency response; occupational health and safety; environmental and community awareness and senior first aid as a minimum. No specific details as to where this training and to what level *(outside the Certificate III)* have been provided which leads to the question of availability of such training in the local environment that may be accessed in preparation for future employment should the project proceed.

2.6.2 Community Support

It is noted that the Company claims to support a number of community entities.

It is noted that 'sponsorship of the Yallunda Flat and Lipson Horticultural Shows' is specifically documented, but it is the understanding of the Associations that this claim is incorrect.

It is noted that the Company supports the EP Local Government Association Annual Meeting. Financial support to stage such an event leads to the question of what expectation does the Company have in return from Councils represented at such a function, notably the District Council of Tumby Bay?

Ongoing support for the Tumby Bay Hospital and the Royal Flying Doctor Service is acknowledged and appreciated.

The provision of work experience opportunities for graduates of Port Lincoln TAFE *(in the mining field)* is acknowledged.

Given the environmental sensitivities of the proposed site, a community benefit for consideration would be the sponsorship of a University graduate in the field of environmental science *(with a specialization in mining and hydrology)* with the view of

employment at the site as the environmental officer. *(A local graduate in this area would be a bonus)*

The conduct of a public meeting in Tumby Bay and surrounding communities likely to be affected by the Application SHOULD have accompanied the release of the document.

As mentioned in the introduction of this response the expectation for the community to download and print a copy of an 1169 page document is a dis-incentive to be involved with the project. Perhaps this was the intention of the Company and the Department for State Development.

2.6.3 Provision Of Infrastructure

Reference is made to the required upgrade of the transport routes to service the project with the caveat that the road will be an all-weather road in conjunction with the DCTB. It is noted that Council has expressed through its CEO considerable frustration and difficulties in communicating with the Company on such matters. Hardly a good start in the so called working relationship with Council, Which has no agreement pertaining to the funding of such upgrades, despite the Company claim that all upgrades will be funded by the Project.

It is now disclosed that one of the criteria for the road is 'to be an all-weather road'.

The claim is now that a pipeline will be constructed from the Tod Reservoir to the site. The language has now changed from negotiations with SA Water *(previous reference)* to an actuality in the absence of any approvals *(see earlier reference)* being disclosed.

Whilst it is stated there is the potential for landowners to access this saline water *(with the non-disclosure of contaminant likely to be in the water)* for stock purposes, the reality exists that the pipeline will be transporting contaminated water through agricultural land without the approval of EPA and without any risk assessment being undertaken.

It is known that the on parts of the proposed pipeline route significant infestations of noxious and toxic cape tulip exist. There is a significant risk that this noxious weed will be further distributed in the area through the proposed construction work associated with a pipeline.

The section goes on to again mention the SA Water standpipe for potable water and its proposed accessibility for fire fighting purposes. None of these suggestions are substantiated in the document and thus are supposition. What is the reality?

2.6.4 Tourism

The company paints an optimistic perspective in regard to tourism, especially in light that the tourist may be employees and contractor. Perhaps a rewording of this paragraph with the focus on tourists, not employees, is in order.

Perhaps the promotion of Kookaburra Gully as a world class graphite mine might need amending in light of the disclosure of the associated hazardous mineral in the deposit and the potential for these to contaminate the surface environment and the groundwater, let alone the loss of amenity of the area due to noise and dust emanating from the mine.

The impression might also be amended to include the possibility of 4.5 kilometre graphite mine in the area and its associated degradation of the amenity of an otherwise pristine area. A tourist attraction - perhaps not!

2.6.5 Economics

"The project will bring both social and economic benefits....", but these have not been quantified apart from the capital expenditure required to construct the mine.

"direct and long term employment of about 30 people" with no definition of long term other than the life of the mine being 7.5 years UNLESS long implies continued work at the processing plant as a consequence of the integration of Kookaburra Gully extension into the project.

"Project royalties to the South Australian Government", without quantification and without any acknowledgement of waiving of royalties *(for an undefined period 3 - 5 years)* by the Government, so the true benefit to the State is what?

"Increased support to local communities.....", but not quantified.

No mention is made of the fact that the mine does not pay Council rates; hence there is a loss of revenue to the DCTB as a consequence of the mining operation.

Mention is made of the potential devaluation of property and the applicant's intent of dealing with this on a case-by case basis, but what is the overall economic impact inclusive of the decline in rate revenue to Council and the high likelihood of rate rises for the remainder of the community to accommodate the shortfall?

At this point in time *(in the absence of any formal agreements between DCTB and the Company)*, the liability for road upgrades etc rests with Council and the ratepayers, but no account of this is made in figure 5.1 Expected Capital Expenditure.

No cost benefit analysis for the project in this regard has been tendered for public consideration.

2.6.6 Environment

"A SEB contribution in accordance with legislative requirement....." i.e. a cash payment for the damage done to native trees and grasses is the way the Company deals with environmental vandalism.

The reality of the cash payment is that it potentially does not return to the community in which the damage is done as suggested in paragraph 2 *(page 223)*. Where is the community benefit in these circumstances?

The environmental management plan *(not drafted or disclosed)* MUST include the establishment of an on-site native nursery and planting program immediately the project commences to ensure the replacement of native *(inclusive of listed species)* trees and grasses lost as a consequence of the mining operations.

Paragraph 4, page 223 appears to be inconsistent with previous advice contained in this application with respect to geotechnical, hydrology and geo-hydrology of the area. It also claims new information on flora and fauna has been obtained, the nature of which is not obvious in the application.

If this claim is in relation to the one day, during daylight hours, the Company was granted a small window and small area *(approx.10 per cent of section 125 whereupon MC 4372 exists)* under the auspices of the Warden's Court after the landowner offered that limitation *(daylight)*, then this needs to be clearly identified.

Given the limitations of understanding with respect to the hydrogeology and hydrology of the site and of the region, and the proximity of the project to Pillaworta Creek; the Tod River Wetlands and the Southern Basin Prescribed Wells Area, the AGL MLA appears to deficient in any detailed response on behalf of the EPNRM Board on the impacts of the project with respect to their management of the NRM Act and the Water Allocation Plan.

2.7 STAKEHOLDER AND COMMUNITY ENGAGEMENT

2.7.1 Stakeholder Identification

It is noted that the authors of this response are acknowledged as 'stakeholders'. The Associations have been involved not only in face to face communications, but also through the provision of written submissions.

Unfortunately, as stakeholders, the organizations thus represented were not afforded the opportunity to receive a hard copy of the Application unless they were willing to pay $250 per copy for the privilege of being able to respond.

It is noted that electronic versions were available either through a CD or via the internet. As previously stated:

a. Internet services on country locations such as farm outside of Tumby bay are not reliable *(no 3G or 4G wireless access; no broadband)* and the expectation of multiple attempts to download a 139Mb file inhibits the user to even try.

b. Whilst an electronic copy has been made available, the reality of preparing a response to such a document *(1169 pages)* is extremely difficult from a portion of a page on a screen. Few private computers have the ability to display A4 pages in their entirety for the ease of reading etc.

c. A number of the community do not have computers.

d. The claim that there are two hard copies at the local Council office defies belief. Clearly the attitude of the Department and the applicant is with a restricted distribution of the document comes a minimal response from the community *(It is all too hard!)*.

Given the time spent in the development of the response, an account has been attached to this response seeking remuneration for work done, which clearly represents work that should have been done by the Department prior to release of the document.

2.7.2 Shareholder Engagement Tools And Activities

Under the heading 'Surrounding landowners and community group meetings' it is claimed from September 2014 to February 2015 numerous interactions with landowners and government stakeholders have taken place which includes DCTB and immediate landowners."

The Minutes of Meeting of the District Council of Tumby Bay, together with the public utterances of the Chief Executive Officer at a public meeting when questioned about matters in relationship to the Project, would not support the assertions made with respect to the Company and Council, particularly Elected Members of Council.

It is also alleged numerous interactions with local landowners. It is known that this interaction with a number of landowners whose property is significantly effect has resulted in contact with the Company via repeated appearances in the Warden's Court. This action continues.

It is also noted that the Company has had "additional liaison with the DCTB throughout the process", yet this is not substantiated by the Minutes of Meetings or in discussions held with the Mayor.

Clearly there is a difference of opinion relating to the level of community engagement.

Re: 6.5 & Table 6.3 Agency Meetings
It is noted that DCTB:

a. Further information sought by Councillors before they endorse the preferred transport route, but this was not evident in the agenda notes for Council Meeting held 13th October 2015, and

b. Council approval has been given for the inclusion of the road reserve in the MC. The question here being was a Form 21 provided to Council? Was a waiver of exemption Form 23 A and B provided to Council? Was the Company advised that the road reserve was Crown Land *(20 metre wide)* under a lease arrangement with the landholder, for which Native Title may not have been extinguished? If the latter is true, have representatives of the Barngarla People been so advised?

   It is our understanding that this may not be the situation, given that the Barngarla Women have had no contact with the Company.

c. It is noted investigation have taken place with Council's engineer, except such a person does not exist and the conclusion drawn "that the transport route has been determined" *(Section 7.9)* but apparently not to the knowledge of Elected Members of the DCTB.

Re: EPNRM Board
Full disclosure of the 'arrangements' with the EPNRM Board are not apparent in the application. There is no reference to the requirement to maintain water quality neither in the Pillaworta Creek/Tod River network nor in the groundwater. It is noted that the hydrogeology and hydrology relating to this project is incomplete and regional impacts not identified despite the potential for contamination of the ground water as a consequence of mining activities.

It is also not apparent the position of the Board with respect to the Water Allocation Plan and water requirements of the project.

There is no reference to the position of the Board with respect to potential surface water contamination from the TSF or WRSF both during mining operations and post mining operations *(rehabilitation)*.

Re: DEWNR
Given the lack of geohydrology and hydrology relevant to the site and beyond, the sharing of information appears to belittle the potential for contamination of the groundwater system due to the activities of mining within the Kookaburra Gully mine, not to mention the prospect of Kookaburra Gully extension and a revitalization of the old Koppio Graphite mine.

It is the contention of the Associations that a full hydrogeological and hydrological study on a regional basis should be required of this project, given its proximity to the Southern Basin Prescribed Wells Area and possible impact upon the water quality held therein.

The view of the Associations is one where the authorities appear to adopt a position where the line delineating the boundary of the Southern Basin Prescribed Wells Area is a line through which water in the headwaters of the Tod River System does not venture.

Re: Native Vegetation Council
The detail of discussions and the SEB offsets considered are not included in the report. As mentioned, any offsets are not necessarily accounted for in the region. They become the province of Government for dispersal where it sees fit.

The question now being, will the SEB be applied to the local community?

Re: EPBC Referral 2015/7470 lodged 30 April 2015

It is normal practice for an approval to be granted within a specified time form the date of lodgement. This has not occurred. Approval has not been achieved.

Re: 6.6 & Table 6.4
Water Management
"Accumulated impacts of dewatering with the Eyre Iron Fusion project" reflects the communities concern with respect to the combined effect of the regional hydrology, a position that is NOT well understood and certainly not addressed in this application.

The applicant's restriction to an impact zone of 1 kilometre radius of the mine is considered irresponsible, if not environmental vandalism, in the context of the hazardous minerals identified in the rock analysis *(pages 106 - 107)*; the potential contamination of the aquifer that lies within this project necessitating dewatering; the lack of hydrogeology and hydrology as declared by the consultants with respect to the site; and clearly the lack of knowledge beyond the confines of the mineral claims.

It becomes and even bigger issue in the context of the future direction of the company as disclosed to the ASX - Kookaburra Gully extension, the Koppio mine.

The impact upon the regional hydrology is clearly not known.

Tod Reservoir and proposed pipeline: To suggest that Tod water is fit for purpose provides the impression that all water required for processing is Tod water, when in fact a quantity of potable water is required for the final 'washing' stage, the latter being contrary to Government policy with respect to water for mining purposes.

What is not disclosed or explained in the context of the application is the nature of the contaminant in Tod water, apart from the obvious cause of the salinity.

It is this non-disclosure coupled with the construction of a pipeline from the Tod to the site through agricultural production land that causes even greater concern.

The construction and route of a pipeline has NOT been subject to community consultation. What has been raised by the applicant is the possible use of the Tod reservoir water.

The conclusions and directions outlined in the summary the figment of the imagination of the authors of the report.

No application has been made *(in the absence of information to the contrary)* for Native Vegetation Council approval for the destruction of native vegetation along the route of the proposed pipeline; no referral to the EPBC has been made in respect of listed species *(trees, native grasses, etc.)* or approval given; no consultation with local property owners; no community consultation entered into; no reference has been made to the presence of noxious/toxic weeds *(cape tulip)* in the area and no development application appears to have been presented to the DCTB, given that this project does not have Major Development status under the Development Act.

It appears the applicant is seeking approval for the aforementioned aspects to be achieved under the 'approval' gained from the Mining Lease Application.

The issues outlined above are clearly another aspect of the failure of the applicant to achieve a community licence to operate.

Re: Aboriginal Heritage
It is noted that the Barngarla Women were not consulted in this process. The conclusion being that this section has not been completed in compliance with the requirement of the legislation.

Re: Traffic
It is noted that some inconsistencies exist in the application as to the actual heavy vehicle usage of Pillaworta Road.

It is also noted in Appendix C: C1.1 "A consequence of the visit being undertaken in fine weather meant that the quality of drainage of the road could only be determined from the reports of others." *(i.e. taken to be hearsay)*.

It is assumed this is the basis upon which the transport route has been determined *(Section 7.9)* for a road that will be required to be an all-weather road capable of traffic usage proposed *(whatever that figure might be)*. It was apparent that the DCTB administration had a view of a light traffic usage rate of 5 - 7 vehicles per day.

Clearly there are questions to be raised as to the expertise of those who undertook the survey for a road that will be required to carry significant tonnages on a 24/7 basis.

Given that the route has been 'determined' by whose authority has the determination been made?

We have included in the appendix, some modelling with respect to road usage based upon the variety of usage rate disclosed in the applicant's proposal, with the question being, what is the actual road usage rate?

Re: Flora and Fauna
It is noted the EPBC 'has been prepared'. The reality being it has been submitted and not yet approved. The Associations' response to the EPBC referral is contained within this response. It highlights deficiencies in the referral and these are translated into this application.

The Flora and Fauna survey for the mineral lease had not been completed at the time of the release of the application for public comment.

A final one day *(daylight hours only)* under the auspices of the Warden's Court, supposedly 'completed' the survey of MC 4372 to which access was not achieved. The veracity of a flora and fauna study purporting to be that relevant to the whole mineral lease *(i.e. encompasses MC 4372 and MC 4373)* based upon a one day survey of a small portion of MC 4372 is clearly non-compliant with the requirement to present a Flora and Fauna study over the claimed area representative of a period of twelve months.

The Flora and Fauna report for MC 4372 appears to have been generated by 'observations over the fence'.

The impact on known orchid species in the area appears to be devoid of a significant amount of pre-existing information relating to some 30 species of native orchids found in an environmental survey for the nearby proposed new power transmission line.

It appears to a matter of convenience that if a species is not evident on the day a survey was carried out, its presence is ignored.

Re: Blasting
The Explosives magazine *(Volume 1: Section 4.5.7)*
It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.

It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.

It is also noted there is a significant supply of diesel on-site.

It is known that the area is subject to significant bushfire impact as experienced during the Wangary Fire *(2005)*. The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.

What is the risk to employee fire-fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?

The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?

The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?

An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations *(dust and groundwater implications)*?

There are other issues pertaining to the magazine, particularly in relation to the security of the contents, *(noting ammonium nitrate is a precursor to the manufacture of IED's)*

The inference in the claim that blasting is not an issue we need to be concerned about *(DK Quarries operate adjacent to Port Lincoln)* is irrelevant and irresponsible on the part of the applicant. The impact upon solid structures *(cracking, etc.)* is not discussed nor is the impact upon normal practices associated with calving or lambing, let alone impacts upon native fauna. The insurance liability for landholder adjacent to, or impacted by, the proposed blasting, will need to be assessed and compensated for, assuming insurance can be obtained in these circumstances.

Re: Air Quality
The baseline assessment of dust is inadequate. It related to data provided by Eyre Iron Pty Ltd and not contractors employed under the control of the applicant. It is limited in it data.

Data relates to PM10 but without any analysis of the actual contaminant contained within the dust, thereby it does not establish a baseline for the purpose of measuring *(monitoring contamination due to fugitive dust generated by mining activities)*.

The discussion to date excludes consideration of the impact of graphite dust from the mine as well as diesel fumes and particulates from the 24/7 operation of machinery and the power station.

The data to date excludes data relevant to P2.5 and P1.0, considered essential for the monitoring of health impacts and contamination of pastures and grain, given the nature of contaminant identified.

No baseline data exists therefore the neighbouring property owners and beyond, are expected to install their own monitoring devices in order to prove liability for contamination exists with the applicant. Who monitors the air quality over Tumby Bay, given the potential for fugitive dust to reach it?

Recognition of the Senate Inquiry regarding Air Quality clearly has not been considered.

Economic losses due to contamination of pasture and grain are not discussed.

Re: Noise
The noise survey is inadequate and dependent upon data from another project not under the control of the applicant.

The survey data is devoid of any reference to infrasound.
The impact of noise upon animal husbandry or native fauna is not discussed.

Re: Safety
The impacts of bushfire upon the magazine is totally ignored as is the safety of workers and residents in the area should a catastrophic explosion occur.

The security of the quantity of ammonium nitrate stored is an issue in the context of robbery and or a source of material for terrorism, given the disclosures made including access to the proposal on the internet.

The applicant has indicated that despite the quantity of diesel on site, a foam unit may not be provided. Who therefore has the capacity to fight a 30,000 litre diesel fire?

Re: Weed Management
"Protocols and procedures are to be in place....." Clearly the application is deficient in this respect given that the mine is proposed to be located in an agricultural area where the spread of weed is of considerable concern. These protocols MUST be disclosed as part of the approval process and not of some future document where landowners may not have input.

The 'how' the company intends to control weeds and the spread of the weeds is important to property owners not only within the context of the mining operations but also in the construction of the pipeline.

Re: Rehabilitation
Experience has shown mines are not rehabilitated in this State; they are mothballed on the pretext that they may start up again at some imaginary date in the future, the case in point being the Angas Zinc Mine near Strathalbyn.

Then there is the ability of the Company to fund the rehabilitation to the level required. Experience again shows that the Government *(through the taxpayer)* has had to fund the rehabilitation of the Nairne Pyrites Mine in the Adelaide Hills to the tune of tens of millions of dollars.

The potential for this mine to create such a legacy exists through contamination of the aquifer that potentially *(insufficient hydrogeology or hydrology on a regional scale to discount)* flow into the aquifers of the Southern Basin Prescribed Wells Area to the south.

The other contamination cycle centres on leaching from the WRSF and the remnants of the TSF together with fugitive dust arising from both.

The control measures proposed and the nature of the substances subject to the proposed control, provide significant cause for concern. The mining operations have exposed concentrations of heavy metals, etc. *(pp.106 - 107)* to potential migration pathways that did not exist when contained in the ore body.

This migration will continue long after the mining operations have ceased. Who therefore accepts liability to 'damage' caused?

The increase in salinity due to mining operations is of significant concern not only in the short term *(dust suppression with saline water)* but in the longer term when the water table re-establishes after dewatering ceases and the formation of 'the lake'. If, as suggested the lake is an evaporation pond, then concentrations of whatever is dissolved increases. If it is salt, then it has the potential to migrate to adjacent soils and the consequences of saline soils are well documented.

It is understood these potential impacts may well not occur in the immediate aftermath of cessation of mining operations. The question of liability for future damage as outlined, needs to be established in order that future economic loss is compensated for. This is of course, outside of the potential environmental damage likely to be caused at the same time. What compensation is suggested for this occurrence?

The suggested use of the 'lake water' as stock water is clearly made without any understanding of the contaminants that may be present in the water as a consequence of mining activities and their impact upon stock. The inference being that water containing chromium, elevated levels of copper and the like is not harmful to stock. Research would suggest otherwise. The problem being the ability of a landowner to prove any effect to a court of law in the absence of baseline data.

What is the long-term *(500 year)* prognosis for the mine site and the lake? The application is devoid of scientific modelling in this regard?

It is noted "DSD is planning to make some information pertaining to exploration PEPR's available to the public." The Ombudsman has ruled that information in the exploration is available to the public. The provisional determination in this matter, 19th May 2015 has been confirmed.

Re: Economic Impacts
The assumption that the mining operation will affect about 100Ha of arable land is totally unrealistic in the context of the activities proposed.

The issues identified in this response are the reality.

Economic loss arising from fugitive dust has been totally underestimated. The application fails to quantify the economic loss associated with contaminated pasture; contaminated grain, potentially contaminated meat; potential impacts upon animal husbandry as a consequence of noise *(lower mating results)*; potential contamination of wool with not only graphite, but other hazardous material identified herein.

The impacts upon public health inclusive of economic loss due to illness arising, is not accounted for.

The impact of devaluation of properties in the area as a consequence of the mining operation, whilst mentioned, is underestimated. Further the impact upon rate revenue is ignored as is the consequence of rate rises for the remainder of the community to manage the short fall thus generated.

The issue of property insurance as a consequence of the magazine is not accounted for.

"The proposed operations will have no impact *(including noise and air quality)* on farming outside those properties immediately affected so land values should not be affected."

Two points arise immediately from the statement - there will be impacts of noise and air quality on farms in the vicinity and secondly, the applicant is suggesting that fugitive dust will be exclusively confined to the immediate environs. Obviously, this assertion is supported by the non-inclusion of PM2.5 and P1.0 monitoring at distances from the centre of mining activities having regard to the actual wind rose for the mine site and the topography. It is probable that fugitive dust could reach Tumby Bay.

The denial of existence of infrasound also contributes to the fact that the noise surveys are inadequate. Infrasound has travel characteristics significantly different to those of audible sound with impacts reaching considerable distances from the source.

Re: Economic Growth
The economic picture presented is referenced to that of four years ago and bears no relationship to the current situation. In the absence of job profiles etc as mentioned previously in the response, clearly any reference to jobs growth in a depressed jobs market is problematic at best.

The social and economic benefits alluded to in Chapter 5 is not quantified by a cost benefit analysis. Motherhood statements are not fact.

The conclusions drawn "environmental aspects are ...." with respect to overseas investment are irrelevant.

Re: Compensation
"Proposed operations will have no impact *(including groundwater, noise and air quality)* on farming outside those properties immediately affected so land values should not be affected".

Given the admissions of consultants in preparation of various aspects of the venture in relation to the paucity of hydrogeology, hydrology and geotechnical data relating to the site, and to the fact that fugitive dust will contain hazardous materials *(identified pp.106 - 107)* the conclusion drawn are without foundation. The words 'immediately affected' does not define an impact radius from the mine, so how far from the mine will properties be affected is the question?

The impact of fugitive dust containing elevated levels of copper, magnesium, zinc and other known growth inhibiting minerals is clearly not addressed in the application. The impact on grain and pasture production is ignored. Again the issue being that proof of the impact is required to be furnished by the grain grower.

It is assumed that contamination of pasture, wool, meat and grain caused by fugitive dust is subject to compensation. The issue will be whether or not the claimant can prove the cause to be that of the mine which comes back to the level of baseline data and the continuance of monitoring.

This would indicate that the landowner should be advised to implement their own monitoring regime in order to establish a causal link to mining for the purpose of court action.

The limitations expose here would suggest that the Company does not have a social licence to operate, given the economic losses potentially suffered by the landowners.

The risk assessment tendered fails to consider the macro position of contaminated grain being delivered to e silo and rejected on grounds of contamination. The immediate impact being a loss of income for the landowner. The greater risk being the placing of a ban on all grain deliveries within a defined area of the mine as a precaution against contaminated grain being delivered and inadvertently mixed so as to contaminated a boat load thereby damaging the exporter's *(and grain grower's)* green credentials on the world export market.

The risk assessment is devoid of consultation with organizations such as the Grain Growers Association in this respect.

The possible issue of compensation due to a leak in the pipeline is not addressed

Re: Social Impacts
"Proposed operations will have no impact *(including noise and air quality)* on homes outside those directly impacted within 1 kilometre of the mine".

This absolute statement is indicative of the lack of knowledge with respect to the dispersion of fugitive dust PM10, PM2.5 and PM1.0 and of noise, inclusive of infrasound from the mines site due to the lack of baseline data relative to the actual mine site. No site specific meteorological data thus no site specific dust dispersion modelling and limited noise monitoring clearly demonstrates the applicant's contempt for a knowledgeable community and further demonstrates that a social licence does not exist.

Re: Behaviour Of Staff
Does the Company have a drug and alcohol free employment regime as this is not evident in the application?

Re: Project Uncertainty
The Company eludes questions of whether the finance required in undertaking the project has been secured; therefore the financial viability of the project is questioned.

Re: Inadequate Government Regulation And Management
Compliance with legislative requirements is the key issue. Non-compliance MUST be penalized, cessation of activities through to the extreme being non approval of an application or a prohibition order to operate.

Re: Community Consultation Processes
It is unfortunate that the applicant claims positive feedback about the level of information provided, when a large number of the issues raised by the Associations over time have not been addressed.

The most concerning being the circular argument with respect to the release of the exploration PEPR's pertaining to these activities. It must be noted that the outcome of an FOI enquiry external review emanating from the non-release of the PEPRs by DSD, conducted by the SA Ombudsman has resulted in the reversal of the Department's position and the release of the PEPRs in the public interest.

The denial of this information by the applicant is also a measure of failure to achieve a social licence.

Re: Human Health
The inept statement by the applicant in this respect is clearly demonstrative of the contempt the applicant shows for a knowledgeable community. The health impacts of the minerals identified are well known and are not to be diminished by the applicant.

The potential human health impact, having regard to the nature of the contaminants may be significant and come at a significant cost to the individual, the community and Government alike.

Re: Table 6.5
Water management: Despite the requirement by Government for mining to provide its own source of water, demands are proposed upon the potable water supply from the Southern Basin Prescribed Wells Area, the only water supply for lower Eyre Peninsula.

It is noted no current plans to install a desalination plant.

"Ground water is a major component of this MLP" yet the data presented in this application is deficient in detail as identified by consultants employed *(incomplete geotechnical data, hydrogeology and hydrology within the site)* let alone the regional impacts of the proposed action.

Re: 4.7.7.4
Given the importance of the TSF from an environmental perspective, *"the design of the conceptual design of the TSF is based upon a number of assumptions..... t**he consultants... recommended additional site investigations to help further quantify the geotechnical, hydrogeological and hydrological properties of the TSF and WRSF areas."** *(bolding added)*

Re: Tod Reservoir
"AGL test on water from Tod reservoir have not identified any contamination above EPA limits".

There appears an obvious contradiction between the SA Water testing and AGL testing, given that the water in the Tod reservoir is saline and contains contaminants rendering it not fit for human consumption.

The assumption herein by AGL appears to be that the water to be piped from the Tod is not an environmental risk in the event of a pipe leak. The contrary position would be the reality.

Re: Flora and Fauna
The inadequacies of the fauna and flora survey(s) have been addressed in this report. Apparently a one day, daylight hours, formal 'assessment' of MC 4372 is considered adequate by the company to meet its requirements under the EPBC/State environmental assessment requirements. Clearly this is TOTALLY inadequate.

The statement "The State Government will require some form of bond.....to ensure rehabilitation...." appears to be completely out of context. *(pp. 235)*

Re: Traffic
The issues raised in the body of this response highlight inconsistencies in the document. The approval processes pertaining to the use of the road under the conditions proposed appear to be missing. The consultation with the community was non-existent and the decision that the route has been 'determined' is considered to be a breach of the social licence to operate.

Without any agreement as to who funds the upgrade and ongoing maintenance of an all-weather road to cater for the requirements, the position at present suggests that the ratepayer accepts this liability. There is no funding allocation in Council budget to meet this cost, and it suggested the ratepayers will not accede to such a situation.

Re: Blasting
The issues pertaining to blasting have been identified in this response inclusive of additional issues relating to the magazine in the context of security and indeed National Security given the quantities of ammonium nitrate proposed to be held on site.

The blast radius of a catastrophic explosion of the magazine is not dealt with.

Re: Air Quality
There are significant issues with respect to air quality raised in this response. Two issues that have been completely ignored is the health impacts of graphite and that of the continuous operation of diesel based machinery *(including the power station 24/7)* and the extent of pollution arising from diesel fumes and particulates which are known to be carcinogenic.

It would appear that the applicant only recognises a fall out zone of about 1 kilometre radius from the pit. Whilst that may be true for PM10 particulates, although the empirical evidence to support this in the application is limited at best, there is no data presented to identify the fallout zone for PM2.5 and PM1.0 or for the dispersion of diesel fumes. The dispersion of diesel fumes cannot be likened to the 'normal' practices of farming, given the nature of the mining and processing operations.

The issue of graphite dust dispersion has been ignored along with the effects of the other contaminants contained in the fugitive dust generated by the mining operations.

Re: Noise
The 'predicted noise profile' of the operation based upon a very limited number of receptors for a very limited period of time and without meteorological data being site specific, would suggest that the noise surveys fail to provide the community with any assurance that the noise impacts are understood and adequately addressed. Further, there is a complete lack of discussion as to the impact of *infrasound* generated by the mining operations.

Re: Safety And Health
It is the Associations contention that this issue has not been adequately addressed. The identification of hazardous materials within the ore body and the subsequent release of these materials onto the surface enabling them to be dispersed either through fugitive dust or in solution into the aquifer or the surface water environment has not been adequately address in terms of health impact for human and livestock, nor in the context of contamination of pastures or grain.

The provision of Material Safety Data Sheets for all hazardous materials on-site is not within the report. Clearly the paucity of information is designed to hide the health and environmental issues known of these substances.

It is also noteworthy that one of the listed flocculants, Magnafloc, whilst claimed to be biodegradable, is also highly toxic to fresh water fish and crustaceans.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes <u>that activities liable to cause pollution in the zone should not be established</u>" *(underlining added)*

Of further note is that the MSDS for graphite has been omitted from the application.

Re: Economic Impacts *(pp. 236)*
Cumulative impacts to agricultural and farming land: "To be negotiated with directly impacted landowners". The issue being upon what basis, given that the baseline data does

not exist. How can a landowner determine the impact short of having his/her own monitoring station for fugitive dust and noise?

Impacts to property value: "proposed operations will have no impact (...) on farming outside those properties immediately affected so land values should not be affected".

The inference being those within a one kilometre radius *(the apparent figure used in the application)* will be affected all others will not. Clearly the application is deficient in its assessment of the deposition of fugitive dust and fumes and noise dispersal given the limitations of the dust and noise surveys included in the application and the absence of meteorological data pertaining to the actual site.

What is also missing is a baseline of property valuations against which any movement can be gauged to either support or deny the supposition of decline of values. Evidence from lending institutions would provide an answer as would an independent property valuer. This information would also support or deny the contention that rate revenue would decrease.

It is suggested, however, the reality is that a farmer would not purchase property at market value if a mineral exploration licence, claim of lease were over the land, simply due to the economic risk associated with the Mining Act and its claim on the land.

Re: Economic Growth, Etc.
As pointed out in the body of the response thus far, the current economic climate does not support the contention of economic growth. The question of local employment opportunity has been addressed, but the reality of the job market and the abundance of skilled un-employed mine workers would tend to negate the ideals of local employment as suggested.

Re: Compensation
As mentioned in the body of the response and above, what are the rules and baselines in order that compensation may be paid to 'affected landowners'? There are significant deficiencies in the processes as to how this might be achieved.

Re: Social Impacts
"Proposed operations will have no impact.....on homes outside those directly affected". Given the inadequacies of the data pertaining to fugitive dust and fume dispersal and noise dispersal, inclusive of the possibility of fugitive dust fall out over Tumby Bay, the categorical denial expressed clearly requires to be retracted. The evidence provided is inconclusive as it stands and fails to take into account actual meteorological data for the site or the dispersal of PM2.5 and PM1.0 particulate matter generated by the mining operations.

Re: Behaviour
It is recognised the normal standards of behaviour are to be promoted and supported. What appears not to be included is a statement to the effect that the worksite is a drug free and alcohol free zone, i.e. zero tolerance to blood alcohol and drugs. It is assumed a testing regime will be in place to enforce these requirements.

Re: Other And Future Mine Growth
The answer to this question is to be found in the context of the legal reporting regime required by the Australian Securities Exchange. *(ASX code LML)*

There would appear to be some inconsistency with that recorded on page 237 and that disclosed to the ASX.

The awarding of a $3M PACE program by the Government for Kookaburra Gully extension *(to the south)* would also suggest a degree of inconsistency in the statement made on pp. 237.

There are also unsubstantiated rumours of an alliance with Valence Industries (*Uley Graphite)* which may impact on the future of the processing plant beyond that which is being proposed in this application.

If these rumours are correct then there are significant issues relating to haul roads, additional noise, potentially additional fugitive dust etc for which the environmental impact of the current assessment does not address.

Re: Table 6.6
Re: Water supply and management
"Impacts are very local.... accumulative impacts are unlikely to be measurable".
Unfortunately the conclusion drawn here is inaccurate given (a) there is a complete lack of knowledge with respect MC 4272, and (b) the limitations identified by the consultants with respect to the "hydrogeology, hydrology within the confines of the site" and the limitations of the hydrogeology and hydrology on a regional basis, especially in the context of the proximity to the Southern Basin Prescribed Wells Area to the south.

Without the baseline data, the measurement of cumulative impacts is not possible.

Re: Safety & Health
The chemistry of the tailings dam, including photochemical reactions with reagents contained therein has not been adequately dealt with in the application.

Given that this exposed area is a source of contamination *(be it fugitive dust or via solution into the aquifer below)*, and given the limited knowledge as disclosed as to the geotechnical, hydrogeology and hydrology of the area, it is not unreasonable to question what are the contaminant to be contained; what is the likelihood of chemical reactions between compounds contained in the TSF; what, if any, photochemical reactions are likely to occur and what are the products of such reactions, especially in the context of their environmental impacts and what cumulative concentration of hazardous material will occur over the life of the TSF?

Re: Waste Rock Storage Facilities
As mentioned previously, the composition of the ore body identifies concentrations of hazardous minerals. Whilst it may be the case to date that the drill logs indicate "no record of radioactive elements above EPA reportable limits", *the fact remains, radioactive material is present in the ore body as identified (pp. 106 and 107). The fact remains these materials will be mined and the question therefore becomes what is the fate of the material as a consequence of the processing of the ore? What is the cumulative effect of these 'waste products' in the tailing dams or on the waste rock storage facilities? What controls, if any, are to be in place to ENSURE these materials do not enter the fugitive dust cycle or into the ground water system?*

Re: Flora And Fauna
An EPBC Referral *(2015/7470)* has been submitted or 30th April 2015, but no approval has been forthcoming. The question being why, given the statutory response times under which the EPBC operates?

Re: Traffic, Transport And Access
A series of emails from the Association *(TBRARA Inc.)* are indicative of the concern the Association has with respect to consultation not only with the community, but also with Council, particularly Elected Members.

Re: Air Quality And Noise
Refer Earlier Responses

Re: Rehabilitation
As well as oral requests for access to exploration PEPRS involved with the activities that ultimately lead to the MC 4372 and MC 4373 being established, the Associations also sought access to these through written requests as part of the 'community consultation process'. Access was denied on the basis of permission had to be sought from DSD. When permission was sought from DSD, access was denied. Following representations to the SA Ombudsman, access to the PEPR's was granted, but yet to be received as this issue is still before the Ombudsman.

Clearly the circular argument with which the applicant sought to deny access to the information is seen as obstructive, not in the interest of the public and as a breach of social licence.

Details contained in the Mineral Lease PEPR are public, but irrelevant to the correspondence under consideration here.

Re: Economic Impact
Re: Cumulative impacts to agricultural and farming land
"The risk of contamination to grain and wool is similar to the existing environment because graphite already exists in the soils in the region which are cultivated and disturbed by farming activities".

Apart from a few trenches dug in search of graphite and the original Koppio Graphite Mine, the contention of the applicant that graphite is present in the soils in the region is based upon what empirical evidence, i.e. soil samples from within the region. It is suggested the assumption is based upon speculation in order to somehow create the impression that a baseline concentration of graphite in surface soils exists and already has an identifiable impact upon wool quality, thereby creating a legal position to deny compensation for damage caused by graphite contamination of wool.

It is suggested that the applicant seek samples of wool from producers in the region and to undertake the required analytical work to verify *(or otherwise)* the statement above. What needs to be determined also is the definition of region, having regard to the fact that fugitive dust dispersion is not confined to a one kilometre radius from the mine.

It is also suggested that soil samples are taken from the region to determine the ambient level of mineral content thereby establishing the baseline against which contamination of the soil from fugitive dust can be determined. The definition of 'region' requires being determined.

It is suggested these process are undertaken by an independent authority.

Re: Social Impacts
"Noise, traffic, air quality impacts will be kept to a minimum and have been shown to be negligible except for two houses".

As pointed out in the body of this response, the impact is clearly NOT NEGLIGIBLE, given the highlighted errors and omissions in the approach described.

To suggest fugitive dust containing known carcinogens and neurotoxins has no impact, besides the health impacts of graphite *(which are not disclosed)* is irresponsible, if not negligent. Or is it the position of the applicant not to disclose this information and thereby deny legal liability in the future?

Re: Other And Communication And Information
Given the commentary provided, perhaps the Company would care to correct the impression given that MC 4372 is in Yallunda Flat, whilst MC 4373 is in Koppio as declared in the MESA Journal 75, pp. 82.

Re: 6.5.6
The risks have been defined, but the question the community has relates to 'confidence' in the control and management measure given the paucity of baseline data.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_29

a. "Hydrological design" not provided: Application of Water Affecting Activities licence "to be sought" on what basis, given no discussion pertaining to MC 4372 exists?

b. Inspections after a flood that has not been "accounted" for as the District has experience in recent time, does not provide any measure of confidence in the "management/control" regime.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_31
Contamination of surface water via various pathways identified is a significant issue and the proposed mitigation "proposal" does not engender confidence that this issue has been adequately recognised. Collection and monitoring of drainage without the definition of control criteria and a method of disposal of the 'collected potentially contaminated water, inclusive of potentially acid forming materials *(presumably the sulphides now identified as being present)*' requires greater attention and disclosure of how the 'control' program will work.

It is assumed an environmental management operational plan will be developed, although the Associations are of the opinion that such an overarching plan should have accompanied the application thus providing community input/scrutiny of the plan.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_33
The Acid Rock Drainage Management Plan should have been an integral part of the Application and subject to public scrutiny.

It would appear that the 'plan' is devoid of any reference to the northern WRSF facility located on MC 4372 *(AGL MLA Appendix 'H') and the potential for acid rock drainage to enter Pillaworta Creek from this storage facility.*

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_34, K_35 & K_36
The Tailings operation and Management Plan should have been an integral part of the Application and subject to public scrutiny, as a failure of this entity will have significant environmental consequences given what is held within the TSF.

Any suggestion that the consequences will be minor is clearly a misconception and misrepresentation of the risk of heavy metal etc contamination of an aquifer or surface waterway within a Water Protection Zone, the Tod River and the Tod River Wetland of National Significance and within a primary production area.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_36
It is noted that the design of the system considers Peak Wet Weather Flow, whatever this is meant to represent, as it has not been defined.

It is noted the compliance regime of the EPA and Department of Health is referred to, but without adequate detail.

What considerations are given to compliance with the District Council of Tumby Bay Development Plan and the location of the system within the Water Protection Zone?

Attention is specifically drawn to the Tod River Water Protection Zone (as declared in the Development Plan) which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" (underlining added)

It is noted watering monitoring will be undertaken in accordance with risks, but no details are included *(7.5.5.8)* with respect to the process or monitoring for what contaminants?

Re: 6.7
It is noted that a Community Relations Officer has recently been appointed.

Re: Table 6.7 And Ongoing Communication With Landowners And Stakeholders
It is strongly suggested that in the event the Mining Lease is approved, that members of the community be invited to participate in the formulation of the various plans identified in the context of this application. There is a wealth of 'local' knowledge available, but clearly not engaged at this point in time.

The use of letters and notices may be a way of communicating, but given the time constraints on the community, the results are usually 'another piece of paper for the bin!" This serves no purpose for the community or the company.

Re: 6.8
Statement One *(pp. 240)*
From the Associations perspective, this statement is somewhat misleading. Members are not against mining provided full compliance with the legislation is achieved.

In this respect, all issues are dealt with in the context of not only the Mining Act, but also all other legislation that impacts upon the proposed activities.

The proposed activities are fully transparent.

The restriction placed upon no adverse impacts to nearby landowners is clearly misleading for the reasons outlined within this response.

Statement Two
It is true that stakeholders were involved and provided input into the process. Unfortunately the answers to the questions raised were not forthcoming.

The recognition of the size of the Kookaburra Gully proposal relative to the perceive impact of Project Fusion is but one factor in the debate. This issue would appear not to be an issue given the announcements of the parent company Centrex Metals Ltd in recent times to the Australian Securities Exchange *(ASX)* and its effective withdrawal from iron ore in this State through the write down of the approved Wilgerup Mine; the sale of the Carrow prospect land; the rumoured sale of the Port Spencer site, to name a few. It is our position, that the application should reflect the current realities of information known in the public arena.

With respect to the size of the proposal, the applicant is less than transparent given the information available on the ASX. Kookaburra Gully, Kookaburra Gully extension and Koppio is the extent of the mining prospect encompassing some 4.5 kilometres of agricultural land not just that defined by MC 4372 and MC 4373.

The question being will the public accept the statement "the impacts *(whatever they may be)* will be less than a nearby proposal *(Eyre Iron/Centrex Project Fusion)* when presented with the facts?"

Statement Three
This is a reasonable expression of concerns in the broad sense.

Statement Four *(pp. 241)*
"The relationship between the community and mining companies is sensitive", is a position to be held for the reasons outlined.

The following statement commencing with "however...." is clearly open to challenge, given the experiences of landowners who have been involved in legal action with the applicant over the past 15 months, actions which are yet to be concluded.

In the wider community *(as has been alluded to)* the issue of Lincoln Minerals Ltd, the parent company to AGL, have caused concern and this concern continues with the subsidiary AGL.

Statement Five
The role of Government is clearly an issue. Compliance with legislation being the most obvious issue on the table, especially compliance with the provisions of the Mining Act. The needs to provide greater explanation in relation to Section 9 and 9AA *(Exempt Land)* of the Mining Act as a consequence of recent Warden Court determinations and especially in the context of the onus of proof resting with the landowner.

It would appear the only way to establish conditions of access under the Act is to have the matter determined by the Warden's Court. The advice provided in MG4 is insufficient in this regard.

The relationship between the applicant and the landowner in this context is clearly adversarial.

Statement Six
Is correct to the extent that it excludes those who are in legal dispute with the applicant and the limitations outlined in the dealings with the Associations.

2.8. ENVIRONMENTAL COMPONENTS

2.8.1. Referring to MLA 7.1

Re: 7.1.5.1
"The likelihood of each event..... known meteorological data/site conditions....." is clearly contestable on the grounds that meteorological data and site conditions are not in existence. Data tendered for Poonindie and Cummins is not site specific. Data borrowed from another project is data not under the control of the applicant and cannot be verified in terms of control, accuracy, purpose, topographic influences etc.

2.8.2. Referring to MLA 7.2

Re: 7.2.1
"Listed species will not be impacted directly by mine activities" implies what? Will not be impacted by machinery? Will not be impacted by fugitive dust? Will not be impacted by dewatering and deprivation of water? Will not be impacted by contaminated water?

They will be impacted in a manner to be determined by the nature of the contamination within fugitive dust and potentially contaminated water run-off from the mining operations.

Re: 7.2.2
The removal of a large area of native vegetation and native orchid species known to exist in the area is of significant concern.

What appears to be missing from the application is the known existence of some 30 species of native orchid identified in a previous environmental survey relating to the proposed new power transmission line located nearby.

Re: 7.2.4.2 - Table 7.7
Waste rock storage facility: It is assumed the location of this facility is upon MC 4372 as outlined in AGL's MLA Appendix 'H', in addition to the South WRSF alluded to in the diagram Figure 7.1. That being the case, and given the fact that access to this site has been denied upon what basis has the vegetation association been determined?

There appears to be some confusion as to the location or locations of WRSF, or does the proposal include both.

What also appears to have been omitted is any reference to listed native grasses other than an overarching 'reduction in native species abundance and diversity'.

What also appears to be omitted in Table 7.7 is a discussion pertaining to the identification of all weeds not only on MC 4373 but the whole of the Mineral Lease AND the surrounding region *(especially that involving the proposed pipeline)*.

Re: 7.2.4.3
"The establishment of a Significant Environmental Benefit either as a direct offset or payment to the Native Vegetation Fund will provide an overall ecological benefit" *(pp. 255)* overlooks the fact that any payment to the Native Vegetation Fund does not necessarily return to the site affected. If that is the case, the Koppio location is disadvantaged.

A more acceptable alternative is for the applicant to establish a native plant nursery on-site to develop tube stock of native vegetation in order to facilitate the progressive revegetation program needed.

Re: 7.2.4.4
Whilst it is acknowledged that African Daisy is common in the area, there are others not identified here.

(See also 7.4.4.2)

Re: 7.2.4.7
The two paragraphs at the bottom of page 255 are significant in respect to:

a. An acceptance that fugitive dust as a result of mining operations will have an impact on native species, *but falls short as to the nature of the impact because of the failure to identify here the nature of the contaminants in the dust that may inhibit growth (vide copper, zinc, magnesium, etc)*

b. The applicant's attempt to limit the sphere of impact to 'close proximity of roadways and cleared areas associated with the facilities'. It fails to recognise the dispersion of dust by wind, given that the impact of this is unknown as a consequence of meteorological data being not site specific.

The baseline for existing dust *(normal agricultural activities and traffic)* measured over a period of twelve months at locations along Pillaworta Road *(transport route)* and adjacent to the mine site appear not to have occurred. A paucity of site data does not assist in the

estimation of probable impact of fugitive dust upon listed species, even more-so when consideration is given to PM2.5 and PM1.0 dispersion profiles

It is suggested that members of the community be included in the development of the native vegetation management plan.

Re: 7.2.4.8
The acceptance that fugitive dust as a result of mining operations may have an impact on crops on adjacent properties is noted, *but falls short as to the nature of the impact because of failure to identify here the nature of the contaminants in the dust that may inhibit growth (vide copper, zinc, magnesium, etc.) and to the extent of the impact due to dispersion of fugitive dust by wind.*

The conclusion "Given this existing condition *(i.e. dust at the time of measurement being combustible and ash dust)* on Pillaworta Road *(locations not identified)* exceeded limits during some months of the year *(not defined)"*is clearly indicative of the errors and omissions being highlighted in this response. The fugitive dust includes dust arising from the mining operation containing those minerals identified on pages 106 - 107 of the AGL MLA, i.e. inclusive of hazardous minerals not combustible and ash dust as reported upon. It is the contaminants that are of significant concern as some of these are known to inhibit plant growth.

The economic loss attributed to fugitive dust and its potential to inhibit crop growth is a gross omission on the part of the applicant.

The economic loss attributed to contaminated grain as a consequence of fugitive dust deposited during harvest is equally a gross omission on the part of the applicant. The contamination of grain may result in refusal of delivery at the silo or an even greater loss, the banning of grain deliveries from an area around the mine site *(source of contamination)* which may be 20 kilometres radius dependent upon the decision of the export body.

'Dust isn't dust' in this context. The composition of the dust is critical to the impact. Dust containing known carcinogenic and neurotoxic minerals requires significantly more investigation than *"dust is unlikely to cause death in plants therefore significant impacts from this project are unlikely to occur"*.

The significance of airborne dust impact has been significantly under-estimated by the applicant. The local conditions and knowledge of the area identifies strong northerlies throughout spring-summer that will predictably transport dust much further than has been assumed.

It is suggested an appropriate research program similar to that established by Iron Road Limited and Minnipa Research to investigate the impact of fugitive dust emanating from mining operations on cropping, etc. be established in the context of the Kookaburra Gully Graphite Mine.

What has not been established in this application is the impact of graphite fugitive dust upon the effectiveness of agricultural sprays *(weedicides and insecticides)* which may incur additional costs to neighbouring farms *(those in the fall out areas of PM10; Pm2.5 and PM1.0 particulate sizes)*

Modelling *(Section 7.6)* indicate impacts restricted to pit and immediate area.

a. Validation of the modelling given no access to MC 4372 and beyond.

b. Scientific evidence in support of "not expected to significantly impact on adjacent cropping land ....." is not included.

It should also be noted:

a. The meteorological data, which is not site specific but relevant to the individual sites the observations were recorded *(Poonindie and Cummins BoM)*, fails to provide any confidence in supporting the conclusions of the Company in this regard.

b. Data sourced from Project Fusion is irrelevant to this location, given the topography of the various iron ore mine sites that data claims to support.

It is strongly suggested that the local topography significantly modifies the wind rose data and consequently the dispersion patterns for fugitive dust deposition.

Clearly the dust modelling provided in this application is deficient due to lack of site specific meteorological data; lack of recognition of the requirement to benchmark PM2.5 and PM1.0 particulate matter and to benchmark baseline diesel particulate matter *(arising from normal agricultural industrial use on an annual basis)*.

It is strongly recommended that weather observations be undertaken at the site in order to accurately establish fugitive dust deposition patterns on surrounding native vegetation and cereal cropping and pastures.

The risk assessment is devoid of any assessment of the health impacts of airborne dust on humans, be they in the area or the workforce.

The acceptance of risks associated with fugitive dust is unacceptable for the reasons outlined in the Associations' response.

Re: 7.2.4.9
The issue to be considered here is the cumulative impact upon the ecosystem from a continuous use of saline water for dust suppression together with the high probability that hazardous minerals associated with the mining operations will eventually be is the dust and thus the fugitive dust will contain not only hazardous minerals but also higher elevations of salt to be dispersed over the ecosystem.

The potential also exists for salt build up in depressions which will ultimately find its way into the Pillaworta Creek ecosystem through run off in the event of normal or excessive rainfall.

What-ever the contamination pathway, the potential exists for additional salinity to enter the environment with the added problem being the presence of hazardous material in solution.

It is noted that the EPNRM salinity records *(2009)* as quoted reference 'upstream of the reservoir in the Tod River' but not that of Pillaworta Creek.

The debate MUST centre on the salinity of Pillaworta Creek and the impacts or otherwise of mining operations thereon.

Attention is specifically drawn to the Tod River Water Protection Zone (as declared in the Development Plan) which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes <u>that activities liable to cause pollution in the zone should not be established</u>" *(underlining added)*

The conduct of annual flora studies for the purpose of detecting impact arising from high salinity, would, in the opinion of the Associations, be too late as the damage would have already occurred, generally in the form of leaf scalding and die off. It is suggested that continuous monitoring is required.

Re: 7.2.4.10
What is noteworthy in the text provided is the timeline for native vegetation recovery as a consequence of the Wangary fire *(9 years ago)*. It is the majority of this regrowth that will be subsumed by the mining operations proposed.

What is not apparent in the application is a discussion of the native vegetation on neighbouring properties that may be 'destroyed or impacted upon' by mining operations including Eyre Peninsula Blue Gum Communities along Pillaworta Creek.

Further, the application is devoid of any discussion with respect to the legal liability of the applicant in these circumstances.

The application acknowledges the provision of a small fire fighting unit but declines the provision of a foam unit, despite the quantity of diesel fuel held on site.

The application is devoid of any consideration to the impact of a catastrophic detonation of the magazine and the impact such an event would have on vegetation *(apart from anything else)*.

It is noted the absence of reference to liaise with local emergency services in the context of a fire in the vicinity of the magazine.

It is suggested that the fire and emergency management plan should have been included in the Application, to allow not only public commentary, but also adequate time for these services to undertake their own risk assessment and thus respond.

Re: 7.2.5
7.2.5.1 & 7.2.5.2
"The clearing of native vegetation cannot be practically avoided". The management strategies are noted, but, with the lack of detail and the future development of 'management plans', the issue is one of uncertainty in the actual direction the applicant intends to take.

The MLA MUST contain the detail of the Native Vegetation Management Plan *(NVMP)*. It MUST contain detail of the proposed seed bank proposition and the results of actual programs where the controlled burning and smoke applications... are demonstrable in rehabilitation of native species in this location.

A 'significant SEB will be established for the project' needs to considered in the context that any monies paid to the native vegetation funds DO NOT necessarily return to the site that gave rise to the source of the funds.

If the applicant is claiming any funds so contributed will return to the site, then this application should have included a written agreement to this effect.

If the applicant is promoting the 'significant environmental benefit' for the project then the application should demonstrate the reality of how the SEB will benefit the environmental amenity of the area under consideration.

Establish native plant nursery plus employment of people to run it for the life of the mine *(if approved)*, in conjunction with EPNRM board & Native Vegetation Council *(considerations include DCTB Environmental Manager)*.

The 'Native Vegetation Management Plan' *(NVMP)* should be part of this application where it is subject to public scrutiny. Further, community representatives should be included in the development of such a proposed plan.

Re: 7.2.5.3 & 7.2.5.4
The control and management strategies outlined should be amended to include the identification of all weeds in the region, inclusive of the proposed pipeline route, where known infestations of the noxious and toxic cape tulip exist.

The fate of the wash water needs to be disclosed, lest the weed seeds removed by washing are spread by the use of this water in dust suppression or other such activity within the mining operations.

Given that the roads traversed will *(with the exception of Bratten Way and Lincoln Highway)* not be bitumen, the issue arises of vehicles travelling on muddy roads and the spread of weeds contained in mud lodged not only with the wheels but elsewhere on the vehicles. This eventuality is not dealt with in the context of weed control/spread.

Experience would suggest that rumble strips/grids are insufficient for the removal of caked mud.

Re: 7.2.5.5
As suggested elsewhere in this response, the use of a biocycle sewerage treatment system is a viable option to septic tanks. The potential to recycle water from this system for horticultural use exists.

The conduct of an annual flora survey is insufficient given the life cycle of weeds in the region. Monitoring of weeds is a continuous process and as such, the management plan must incorporate this fact.

Re: 7.2.5.6
Please refer to previous comments as referenced

Re: 7.2.5.7
Please refer to previous comments as referenced.

Re: 7.2.5.8
The applicant has acknowledged the possibility of impacts upon vegetation by saline water.

Re: 7.2.6 & Table 7.9
NO MENTION OF NATIVE ORCHIDS despite some 30 species being identified in the area as a consequence of an environmental assessment pertaining to the power line.

Re: Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_01
Develop native vegetation management plan MUST be included in the application as this is relevant from day ONE.

Re: Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_02
SEB must be included in the application so that respondents have clear understanding of the ACTUAL impact on the listed species.

Bi annual monitoring of flora survey sites, but does this accommodate the life cycles of all threatened species as evidenced by the lack of information pertaining to some species in the studies tendered with this application.

Baseline needs to be identified. Results need to be published.

It should be recognised that SEB funding might not be returned to this site.

Re: Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_03
Consult with farmers *(and PIRSA)* to identify all weed species not only on the site, but in the region.

Monitor vegetation impacts AGAINST what criteria?

Re: Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_05
Conduct annual flora survey. The issue being internal consistency in the application. What is the monitoring regime having regard to the seasonality of species?

Re: Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_06
Risk associated with dust/native vegetation not articulated, having regard to contaminant produced as a consequence of mining operations.

Re: Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_07
Risk associated with dust/native vegetation not articulated, having regard to contaminant produced as a consequence of mining operations.

Re: Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_08

Our response includes 7.2.4.9

The issue to be considered here is the cumulative impact upon the ecosystem from a continuous use of saline water for dust suppression together with the high probability that hazardous minerals associated with the mining operations will eventually be is the dust and thus the fugitive dust will contain not only hazardous minerals but also higher elevations of salt to be dispersed over the ecosystem.

The potential also exists for salt build up in depressions which will ultimately find its way into the Pillaworta Creek ecosystem through run off in the event of normal or excessive rainfall.

What-ever the contamination pathway, the potential exists for additional salinity to enter the environment with the added problem being the presence of hazardous material in solution.

It is noted that the EPNRM salinity records *(2009)* as quoted reference 'upstream of the reservoir in the Tod River' but not that of Pillaworta Creek.

The debate MUST centre on the salinity of Pillaworta Creek and the impacts or otherwise of mining operations thereon.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes <u>that activities liable to cause pollution in the zone should not be established</u>" *(underlining added)*

The conduct of annual flora studies for the purpose of detecting impact arising from high salinity, would, in the opinion of the Associations, be too late as the damage would have already occurred, generally in the form of leaf scalding and die off. It is suggested that continuous monitoring is required.

The ripping of the soil is seen to not be a satisfactory control measure for highly mobile salt.

Where are the calculations pertaining to the quantity of salt potentially spread over the ML as a consequence of dewatering *(concentration of salt in solution)* and ultimately as the 'lake forms' as a consequence of cessation of mining and subsequent "rehabilitation"?

Re: 7.2.4.10 & Table 7.9
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_09
It is noted the absence of reference to liaise with local emergency services in the context of a fire in the vicinity of the magazine.

It is suggested that the fire and emergency management plan should have been included in the Application, to allow not only public commentary, but also adequate time for these services to undertake their own risk assessment and thus respond.

Re: 7.2.7
Re: 7.2.7.1
It should be recognised that the AGL MLA contains no substantiated data relevant to MC 4372 due to the fact that access to the land had been denied until entry under the auspices of the Warden's Court was invited for a ONE day, daylight hours only, to 'undertake an environmental study on non-exempt land'.

All commentary/evidence in this MLA therefore relates exclusively to MC 4373 except for observations from the boundary fence.

There has been no access to adjacent property to the east.

The reduction of listed/threatened species therefore is limited to the extent of actual surveys undertaken in relation to MC 4373.

It is noted that some 30 species of native orchids have been identified in the area as a consequence of an environmental survey for the power line. These species appear not to be represented herein.

The extent of the 'reduction of listed/threatened species' is problematic given the limited extent of the data provided.

Further to this limitation is the argument presented seeking authority to remove rare and endangered species to the Eyre Peninsula ecosystem. The loss of these species due to mining operations is on top of unknown losses arising from the Wangary fire. The recovery rate of these species is not understood, therefore the assumption that their removal "will not in any way impact upon local, regional or state population", is without scientific substantiation.

Native *(listed)* grasses do not rate a mention, further pointing to the limitations of the survey and the conclusions arising.

The survey does not discuss the impact/reduction of native species as a consequence of the proposed pipeline. It is also noted no EPBC or Native Vegetation referral has been made for this component of the mining operation.

Re: 7.2.7.2
The issue being, the lack of detail in the 'proposed plans' given that this proposal is located within an agricultural environment and weed control is a significant factor in carrying out cereal production.

The identification and control methods MUST be disclosed in detail as the introduction of declared weeds to the area may have significant economic impacts for grain producers.

The identification of weeds *(not specified)* and the continuous monitoring regime needs to be clearly articulated by the applicant.

Re: 7.2.7.3
The comments made in 7.2.7.2 are applicable here, with the addition of the identification of pathogens alluded to in the MLA and thence the control regime.

Again, monitoring is a key control factor, specifics of which need to be disclosed in the application.

Re: 7.2.7.4
It is noted that fugitive dust can cause a reduction in the ability of a plant to photosynthesise.

It is noted that the location of dust monitors are confined to the roadside MC 4373 *(Site Gateway?)* with DDG2 and DDG6 being midway between Borthwick's on western side of Pillaworta Road and no monitors to the east of Pillaworta Road noting the direction of prevailing winds in the region.

It is noted that no standard exists for the measurement of cumulative dust, but a 'Selected baseline of 4g/m2/month' has been incorporated into this application. What is the scientific validity of this 'selection', given no advice as to its accuracy has been referred to by PIRSA.

The assumption that airborne dust is the same as that generated by local traffic is perpetuated in this section. The applicant continues to state that dust from the mining operations will be the same as road dust, despite the nature of the hazardous minerals, in addition to graphite dust, that exist in the ore body and will contribute to the contamination of 'dust' as a consequence of the mining operations.

Attention is drawn to previous comments made on this issue as provided in this response document.

Re: 7.2.7.5
The risk acceptance statement is significantly lacking in an understanding of the migration of salt in an agricultural environment.

The process of ripping does not diminish the problem, if anything, amplifies the situation because water *(rain or dust suppression)* can readily reach the contaminated area and any salt present goes into solution to move to wherever the soil structure will allow. The applicant is reminded of previous commentary contained in 7.2.5.2.

The applicant is also reminded of:
Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes <u>that activities liable to cause pollution in the zone should not be established</u>" *(underlining added)*

Re: 7.2.7.6
The risk acceptance statement is not acceptable given the paucity of information provided in this application to the extent of native vegetation that exists outside of the confines of MC 4373, i.e. within the immediate neighbourhood and thence the region is not addressed.

The application assumes 'co-operation' with nearby farming operations, but provides no evidence of this support.

The application fails to deal with the risks associated with the magazine. It appears that the applicant assumes local emergency services will attend a bushfire in the vicinity of the magazine which may contain up to 60 tonnes of ammonium nitrate and 1 tonne of detonators, in absentia of a detailed emergency response plan, let alone the fate of any native vegetation within the immediate location.

Re: 7.2.9
The monitoring program needs to be modified in the context of issues raised in the preceding points.

Re: Designated Monitoring Sites
What negotiations with local land owners has taken place with respect to the location of monitors *(dust, noise, vibration)* on their properties, even more so, given that access to some areas of the ML have not been secured *(granted through waiver of exemption)*?

Given the suggested program, no statement is made as to whether the community will have access to the data, nor to the bench marks that will result in the Company being required to take corrective action.

Any suggestion that data will be released on an annual basis is clearly indicative of the fact the community being held in contempt *(kept in the dark syndrome)* before the Regulator is forced to act.

Re: 7.2.10
It is noted that preliminary SEB calculations have been made.

It is suggested that these calculations require modification in the context of the limited assessment of native vegetation affected by the proposal. The application is limited to the confines of MC 4373 and an apparent road side assessment of MC 4372, but ignores road side impacts.

The application assumes that any contribution to the Fund automatically returns to the source area. The application is devoid of any formal approach to the Native Vegetation Fund and a guarantee of return of SEB funds to the proposed site.

The application is devoid of reference to the local community input into an environmental or rehabilitation program that is generated.

2.8.3. Fauna

Re: 7.3.1
"This section is based upon autumn and spring flora studies undertaken by EBS Ecology and Donato Environmental Services on behalf of Eyre Iron Pty Ltd."

In the first instance this is an application for a mineral lease lodged by Australian Graphite Limited, and as such any data in relation to another company is irrelevant and without authority.

All data ascertained under the control of Eyre Iron Pty Ltd is in-admissible.

Secondly, data pertaining to a flora study is not what this section of the application is concerned with.

Is this process symptomatic of the applicants due diligence and attention to detail that is required in an application of this nature?

The question now arises as to the veracity of the following statements in this section.

It is noted that NO fauna study was undertaken on MC 4372 or neighbouring paddocks *(woodlands and animal pathway areas)* due to the issue of access being denied. Nocturnal fauna have not been identified or documented in this application.

It appears that the context of this study is limited to MC 4373.

No reference is made to pygmy possum or echidna known to be in the area.

Re: 7.3.2
It is noteworthy that property owners views apparently are not worthy as 'stakeholder' status.

In addition, there is no such officer as 'Biodiversity Officer' within the District Council of Tumby Bay, so with whom did the applicant consult of these matters? Upon what baseline study has DCTB provided advice that there are no concerns?

It should be noted that pygmy possums have been identified, *(recorded)* and notified to the relevant authority, but is conspicuously absent from the current assessment

Evidence to the effect that DEWNR has no concerns does not appear in the content of this report. It is assumed that any report made by DEWNR would be available 'in the public interest' as an attachment to the application.

Evidence to the effect that the EPNRM Board has no concerns does not appear in the content of this report. What baseline study has EPNRM undertaken to provide such advice?

Re: 7.3.4.1
In light of the limited study as outlined above, the impact assessment in itself is limited to impacts relevant to MC 4373. The loss of habitat and the loss of species associated with the habitat are noted.

Re: Table 7.54
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_15
Is noteworthy in its identification of the potential for feral animal increases, but fails to deal with the impact of native fauna.

Re: Table 7.54
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_16
Is acknowledged in its identification of access to the water within the tailings dam being contaminated water and the consequences of consumption by native fauna (land based or birds) through potential poisoning.

Re: 7.3.4.3
Given the 24/7 operation of mining operations and the noise levels likely to emanate from these activities, there may be impacts upon native fauna, the nature of which are not articulated.

What therefore, having regard to the question of validity of noise dispersion, inclusive of dispersion *(air burst)* of blasting/explosion and vibration *(surface and in ground)* and infrasound *(low frequency sound 20 hertz and below human audible limits)*, is the impact on fauna, especially listed fauna in the noise dispersion field of the proposal?

Re: 7.3.4.4
The probable causes of entrapment are identified:
"Entrapment within trenches, dams or pits may result in injury or death of individual animals."

Arising from this statement is the question of clarification of:

a. How many trenches and location thereof?

b. How many dams *(other than the tailing dam)* on the location?

c. How many pits, given the plural are used rather than the singular?

Re: 7.3.4.7
This clause is a statement of the obvious, except the 'pests' are not identified. Is this clause dealing with European Rabbits, foxes, feral cats, non-listed species of birds, Kangaroos, Emus, Echidna, etc. not identified in the context of the Application?

Re: 7.3.5
Re: 7.3.5.1
A number of attributes are identified as control and management strategies, including fencing in consultation with surrounding/affected farmers.

Where is the evidence that this consultation has *(or is)* occurred, given that extent of "unresolved negotiations" with key land owners, as indicated at the commencement of this application?

Re: 7.3.5.2
The clearing of native vegetation and reduction in fauna habitat *(within the mine site)* may be reduced by implementing ..... control and management strategies.

In the absence of any formal plan that is subject to public commentary, the operative word is "may". It would be preferable to have the wording altered to "MUST" and for the Company to have submitted copies of the formal "control and management plan" in advance of any approval given.

The implication as written that any impact is limited to the mine site and ignores potential impact or threats on the other side of the fence due to fugitive dust, noise and light on a 24/7 basis.

The concern with the listed "strategies" is the paucity of information provided. "The devil is in the detail" is particularly applicable. To illustrate:

a. *"Provision of funding to support recovery objectives and actions for threatened species,"* lacks detail as to how much money; employment of specialist staff to carry out the program; over what time period does the 'recovery' take place; identification of threatened special and stock for the recovery program.

b. *"Protect critical habitat for threatened species"*. It would appear the gaps in the survey process as defined in this response would suggest that the identification of critical habitat has not occurred, let alone the identification of threatened species on MC 4372 or the surrounding properties to the east to which access has been denied.

Re: 7.3.5.3
The reality of blasting is obvious. Listed species will be impacted no matter what.

With respect to acoustic treatment for the processing plant, the question to be satisfactorily answered in whether the treatment will *(without the appropriate research being referenced*

in this document) is sufficient so as to have little or no impact on fauna. *(See also reference to noise/vibration impact on residences in the vicinity of the mine.)*

Re: 7.3.5.4 & 7.3.5.5
"These impacts can be reduced by implementing ....."
The question being the reality of the implementation of the strategies proposed, given that the document fails to provide for public commentary the ACTUAL management plan *(or plans)*.

Re: 7.3.5.6
In a similar response to that provided above *(7.3.5.4)*, the reality will be the standing water will attract feral species:

Here again listing strategies that can be implemented bears no relationship to what actually occurs. The non-provision of the 'management plan(s)' for public comment is a significant deficiency in the application.

To illustrate *"implement eradication program"* is far too general. What are the species? Eradicate what - by what means:

a. Having regard to the fact that this is a farming community;

b. The proposed mine is located within the Tod River Water Protection Zone, etc?

Re: 7.3.5.7
In line with previous comments the *"can be"* phrase provides little comfort in the reality of what might or should occur.

Furthermore, the comment *"the high salinity water in the storages (plural) will be a deterrent."*

a. How many "storages", when the discussion suggests only one?

b. The question of *"high salinity"* raises questions relating to:
    - b.1 how high?
    - b.2 contamination of the local ground water network?
    - b.3 risks associated with seepage/overflow into the Pillaworta Creek network?
    - b.4 the levels of contaminants *(heavy metals etc)* in the dam(s)?

Re; 7.3.6
Re: Table 7.54
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_10
Current experience would suggest these "plans" are not subject to public commentary. SEB offset will also be established. Again no document subject to public commentary.

Re: Table 7.54
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_11
EPBC and State listed species impact.

EPBC referral submitted April 2015 but not determined.

It should be noted that the formal study on MC 4372 occurred on ONE DAY; hence its validity must be subject to a credibility test.

The MLA implies that an EPBC referral will be forth coming, which is clearly misleading, as the referral was lodged 28/4/2015.

The EPBC referral is limited to the mine site and excluded reference to the transport corridor and pipe line corridor.

Re: Table 7.54
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_13 & K_15
It is noted that *"provide ramps and escape routes for fauna"* is to be included in the control and management plan. Given that this is the first mention of such a measure, details as to the location and number of such ramps would be useful in the context of their relevance to any established fauna pathways in the area and thus connectivity across the greater area.

As indicated the "design of roads and site drainage to reduce the potential for water pooling" is critical but it also highlights the issue of controlling site run off into the Pillaworta Creek as well as potentially contaminated water entering the ground water systems.

Details as to how this will be controlled/alleviated, needs to be provided and subject to public commentary.

Re: Table 7.54
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_16
Existence of contaminated water on site.

The reality is the risk has been identified, noting that the water in the TSF has "*highly salinity"*.

Fauna will be attracted to standing water, especially in summer, so unless the TSP is covered with bird netting, the outcomes will certainly not be "unlikely" but a reality.

Re: 7.3.7
The problem with the 'conclusions' outlined in this application rests with the limitations of the survey as no access has been granted to properties owned by the Borthwick families to the East and North of the proposed mine.

No night time fauna study has occurred on Section 125 and a Court controlled ONE DAY *(daylight hours)* access was granted on 9th September 2015, the day after the release of this application for public consultation.

The risk assessment conclusions are therefore lacking in credibility and present only a partial picture. They also draw attention to the fact that the so called *"management plans"* are non-existent and are not subject to public commentary.

The claim is the mine will operate for 7.5 years *(7.3.7.2)* after which it will be rehabilitated, but no rehabilitation plan pertaining to flora and fauna is provided for public commentary in this application.

Re: 7.4
Re: 7.4.1
Given that access to Section 125 *(MC 4372)* has not been achieved, the conclusions drawn in this MLA relate exclusively to MC 4373 as absolutely NO exploration work exists for MC 4372.

The Warden's Court determined that Section 125 for the most part, was exempt land and access to the proposed pit area and fenced area was thus denied across Section 125 *(date of determination - 8th September 2015 and clarification sought at a Directions Hearing 16th September 2015 prior to limited access via Cullen's property on the 17th September 2015 for fauna and flora study)*.

Re: Figure 7.5
Groundwater maps showing potentiometric surfaces entering onto MC 4372 are purely hypothetical and lack empirical evidence taken from within Section 125.

Re: Figure 7.6
Modelled groundwater elevations prior to mining are again hypothetical in relation to the lack of empirical data being available to support the model. Access to the East of Pillaworta Road has not been sought or given; hence the validity of the modelling is questionable.

Re: Figure 7.7
It follows that the impact of dewatering on Section 125 and beyond *(to the North and East)* of the mine as outlined in figure 7.7 are questionable given no access has been achieved to the Borthwick's properties for this assessment.

Re: Figure 7.8
It is further suggested that figure 7.8 Modelled groundwater draw down at end of stress period 8 is purely hypothetical and based only upon data ascertained from properties to which access had been obtained, which does not include the Borthwick property *(especially Section 125, MC 4372)*.

"Mismanagement of waste could lead to contamination of ground water" (pp.286) is an understatement, given that full disclosure of the contents of the tailings dam has not been given.

Whilst it is true that the location of this proposed mine is not within the Southern Basin Prescribed Wells Area, it lies within the Tod River Water Protection Zone within the Development Plan, District Council of Tumby Bay *(as amended 2013)* and is subject to its requirements.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes that activities liable to cause pollution in the zone should not be established" *(underlining added)*

It is also appropriate that attention is drawn to the Eyre Iron Winter 2013 public Newsletter, outlining the importance of the ground water system on a Regional Basis, noting that the regional hydrology is suggestive of the connectivity of the Southern Basin Prescribed Wells Area *(SBPWA)* to aquifers beyond its boundaries which were arbitrarily established some decades ago.

It is of further concern that an incomplete assessment of the hydrology relative to the proposed MC's and ultimate Mining Lease may have significant consequences to surrounding properties. There being reliant upon ground water in the absence of a reticulated water supply *(SA Water)*, in addition to environmental water flows to sustain current Native Vegetation and the Tod River Wetland ecosystems.

It is noted Government Agencies discussed environmental impacts of dewatering.
It is noted no reference material is cited in support of these discussions.

Re: 7.4.4
"The work undertook a desk top assessment, a ground water user survey and characterized ground water conditions via a site based drilling program (Section 3.11)."

The site based drilling program was EXCLUSIVE to MC 4373 and was a single drill hole that only penetrated within the graphite resource body. Therein not able to be representative of

the local hydrology. No drilling program has been undertaken on Section 125 *(MC 4372)* due to access being unable to be achieved.

The hydrology outlined in this MLA in inconclusive when considering the "total" area.

Re: 7.4.5.1
This consequence table/summary is significant as it describes the MAJOR concerns the community have identified to the Company throughout the "community consultation" process.

Seepage of contaminants inclusive of the heavy metals, uranium and manganese and chemical associated with the "processing" cycle *(including Kerosene as the principal non-aqueous solvent)* with potential fuels and oil spills *(albeit at a low risk)* into the ground water system which has NOT been completely investigated *(documented)*. Any assumptions "characterized ground water conditions via a site based drilling program *(AGL MLA Appendix 'D')*" pp. 286, made in relation to the complete site are misleading or misrepresenting the reality of the situation.

This is especially relevant to the risk assessment with respect to open pit dewatering *(Table 7.54 - Kookaburra Gully Environmental Aspects and Risk Assessment Register K_18, K_19 & K_20)* in relation to MC 4372 is complete supposition and without empirical evidence in support of claims made.

With respect to seepage into the groundwater environs, this MLA has little credibility, due to:

a. The identification of the ACTUAL chemicals that may *(or most likely)* seep into the ground water system and the environmental risks/hazards thus introduced into the water, water that may be used for domestic and/or stock purposes.

   What are the "acceptable levels" of heavy water contamination for domestic water supplies?

   There is little comfort in the claim that the company will monitor the level of contamination.

   Will the applicant accept the legal consequences of contaminating a water supply, when people and stock health is placed at risk, the consequences of which are well established throughout the world and in legislation?

   This becomes a significant health risk when, by the Company's own documentation and that of the Department *(MESA Journal)*, material containing heavy metals *(Chromium, Arsenic, Cadmium)*, manganese and uranium will be mined in addition to the graphite.

   What is not clear, is the concentration *(hence quantity)* of these substances that will end up in the tailings facility with leaching into the ground water system AND within the waste rock facility, now being exposed to the elements of the weather and undergoing weathering and leaching into both the ground water and surface water environs, as well as becoming wind-blown and dispersed in the dust, over significant areas of prime agriculture land.

b. The risk assessment is void of any recognition of the fact that this area is devoid of a reticulated water supply and hence is reliant upon ground water and surface water. Any form of contamination arising out of the proposed mining activities places this water supply in jeopardy.

c. No mention is made of the potential contamination of meat or grain as a consequence of taking up of heavy metals etc. within contaminated water as a consequence of mining activities.

Re: 7.4.5.2
Four properties occur within the "modelled cone" of depression..... the operative word is "modelled", based upon an NON EXISTENT data-set pertaining to MC 4372 and minimal in MC 4373.

Re: 7.4.5.3
Reduction in ground water availability to maintain GDE's. Again there is NO empirical evidence pertaining to the impact of GDE's held within MC 4372 or to the East of the boundary of the mineral claim leading to the conclusion that the impact is "modelled assumptions".

It is noteworthy that the "pit area" outlined in figure 7 appears to ignore any impact within the 'designated pit area' within MC 4372 which supports the contention the 'modelling' is fundamentally flawed and not representative of the potential impact of the mining operation.

Re: 7.4.5.4
Prediction of loss of flow in Pillaworta Creek is again flawed as a consequence of the lack of information as to the hydrology and hydrogeology of MC 4372 and the impact therein through the dewatering, given that

a. A number of creeks flow through MC 4372 into Pillaworta Creek.

b. There is approximately 500 metres of MC 4372 frontage onto Pillaworta Creek, which may impact on ground water flows to the creek not being accounted for.

The significance of the statement *"After mine closure, the ground water level will rise both in the aquifer and the pit which is expected to reduce the length of water course along which losses could occur. There are no long term impacts predicted for Pillaworta Creek after mine closure",* is clearly conjecture.

a. What is the definition of 'long term', given the evidence revealed in Australian Securities Exchange documentation and State Government approvals for the drilling of Kookaburra Extension *(under the auspice of the PACE program)* and work done and reported on in relation to the Koppio Graphite Mine, whereby production *(processing*) may/will continue for an extended period?

b. It is noted that the pit will fill with water *(to a level stabilized by the Standing Water Table)*, BUT the problem now being the exposure of water to broken rock and thereby chemical contamination by heavy metals, manganese and uranium etc, thus allowing ready contamination of the ground water system inclusive of contaminated ground water entering the Pillaworta Creek for an UNDEFINED period of time.

c. Any reduction of loss of flow constitutes a water affecting activity, noting that the impact of flow of water from MC 4372 has NOT been determined.

d. The proposal ignores the fact that this activity is proposed within the Water Protection Zone for the Tod Reservoir.

Attention is specifically drawn to the Tod River Water Protection Zone *(as declared in the Development Plan)* which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes <u>that activities liable to cause pollution in the zone should not be established</u>" *(underlining added)*

Re; 7.4.5.5
The contamination of ground water from storage and use of chemicals, fuels etc. is a high risk *(despite what precautions the Company proposed)* and is treated with contempt in the conclusion drawn within this section.

It draws upon EPA guidelines etc., but these are not described for the benefit of the community understanding NOR is an emergency plan provided herein, despite the identification of the hazards *(in Table 7.15)* to show how the Company intends to mitigate against the impact.

It is noted that "an emergency plan will be developed after approval is given". In short, the plan is NOT subject to public/community scrutiny, so the worst case scenario may well be "anything goes" with the community suffering the long term carcinogenic consequences of heavy metal contamination; the neurological impacts of manganese and who knows what, with elevated levels of exposure to uranium, let alone the rectification costs that most likely *(as judged by current experience)* would be met by Government *(and hence the taxpayer).*

Re: 7.4.5.6
The Company expects by the wording that ground water will be impacted upon as a result of seepage in the TSF and Waste Rock deposit.

The suggested methodology for the construction of the tailings dam above a known aquifer and above the Pillaworta Creek is not fail safe. It is therefore the Association's view that the project should not be approved until:

a. A full independent assessment of the hydrology and hydrogeology of the site *(MC 4372 and MC 4373)* is undertaken, and

b. Fully documented together with an independent engineering assessment as to the construction of the proposed tailings dam over an aquifer where by seepage is prevented from entering the ground water.

This is also sought in the context of the regional hydrology and hydrogeology being inadequately understood and the connectivity of the aquifers within this area and that of the Southern Basin Prescribed Wells Area *(PWA)* to the south being unknown.

The supposition is that the ground water at the head water of the Tod River *(inclusive of the Pillaworta Creek)* feeds the eastern extremities of the Southern Basin Prescribed Wells Area *(SBPWA)* where the water flow traverses the arbitrary boundary.

Where is the empirical evidence?

It should be noted that Eyre Iron Pty. Ltd. Project Fusion Winter 2013 Newsletter drew attention to the importance of understanding the regional hydrology, yet this does not appear to be the case in this proposal.

Re: 7.4.5.7
The potential for the creation of acid rock drainage exists. The extent of the problem appears to be minimised. Given the estimated 4 - 6% of the total volume of waste rock could be potentially acid rock precursors, the question is what tonnage of rock will form the waste rock pile, thus the estimate source of contamination is an *unknown* tonne of material being subjected to an annual rainfall of above 20 inches, together with a dust suppression regime using saline water *(and other contaminants that may also promote the formation of acid rock contaminants)* results in an unknown quantity of leechants that may reach ground water or run off into Pillaworta Creek and or the surrounding environment.

The risk is real.

It is noted *(pp. 289)* that *"on the basis of the assessment the potential for ARD to impact ground water is not considered likely. After mine closure, the pit will act as an evaporative sink, and any contaminants present will be retained in the pit in perpetuity and hence not leave the site."*

The logic of this assertion escapes the community. If ground water can enter the pit as a consequence of the cessation of dewatering, the contents of the pit can also leave the pit in time, one of the contents being contaminated water.

Re: 7.4.5.8
The Company admits *"if the risk of mobilisation of metals from the ore and low grade stockpiles was not managed properly, it could result in degradation of ground water and subsequent reduction in groundwater availability for use."*

The questions there being:

a. The necessity to have the detailed management (peer reviewed) plans disclosed as part of the application to allow for public scrutiny PRIOR to approval.

b. Detailed regional impact assessment undertaken on the existing regional hydrology and an appropriate risk assessment undertaken *(and peer reviewed)* as to the impact of contamination of the ground water system *(as previously outlined)*.

It must also be recognised that ground water is one of the supplies of water in this area, given that no reticulated water supply exists. The non-availability of this supply would have a significant economic impact on local agricultural businesses.

Given the nature of the contaminants, the other unanswered question relates to potential impacts on GDE in the area and in the region that the aquifer may serve.

The regional contamination of an aquifer system has been well documented through the TCE contamination of aquifers from previous industries in the Tonsley Park area of suburban Adelaide.

Lessons learnt, lead to problem avoided!

Re: 7.4.6
Re: 7.4.6.1
Is it not an expectation that the hydrology of the proposed area and its surrounding areas *(neighbours)* be established and understood (based upon empirical evidence) before the event/approved thereby establishing a BASELINE, from which the monitoring of impact can be determined, not a process basically after the event.

No baseline would suggest there is no position for any negotiation to proceed for compensation as a consequence of dewatering, especially as it would appear, the onus of proof would need to be established by the land owner.

It is recognised that the baseline data would need to be established over at least a 12 month period *(assuming normal average rainfall for the site)* to account for movements within the soil and the hydro-geological nature of the location of the monitoring bores.

Re: 7.4.6.3
"As the ground water that will be removed by dewatering is the same water that would otherwise drain towards the creek, a portion of the dewatering stream could be discharged back into the creek during....." It is the understanding of the Association's that this suggestion is illegal *(as evidenced in the discussion pertaining to ground water and Gum Flat iron ore mine proposal)*.

A loss of flow as a consequence of dewatering *(MC 4372 and MC 4373)* is a loss of flow, period and the consequences MUST NOT be under-estimated, not only to EP Blue Gum Communities, but all listed species in the vicinity.

Re: 7.4.6.4
The document is lacking in the detail required to provide confidence in the *"may be"* caveat. The ALARA principle is paramount and needs to be described in detail.

There are no guarantees that the statements made will be implemented, let alone to what degree!

Re: 7.4.6.5
Experience has shown that compressed clay is not necessarily a low permeably liner, especially in the context that the processes used in separation of graphite from the ore/clay uses surfactant chemistry, the same chemistry that may take place in the TSF with a degradation of the so called 'low permeability layer'.

The local community of Tumby Bay is well aware of the failure of clay based *"liners"* in storage facilities, a situation it does not wish repeated in the Water Protection Zone of the Tod River.

Re: 7.4.6.6
a. If it occurs, it will be captured in the TSF. The TSF will drain into the pit. The pit will fill with ground water. The Acid Rock *(product)* will move into the ground water. The assumption being, the pit is impermeable. If that is the case, how does it fill to a lake?

b. Acid Rock products leach out of waste dump into ground water directly.

There is a complete lack of detail with respect to the quantity of acid forming rock and of the control of this issue; either into ground water or surface run off, noting the close proximity of Pillaworta Creek and neighbouring farms.

Moreover, there is a lack of discussion with respect to the northern WRSF to be located on MC 4372 as per AGL's MLA Appendix 'H', and the migration of leechants from this facility via the depression on MC 4372 that allows water to enter in the dam located on section 125 and thence over the roadway into Pillaworta Creek.

Re: 7.4.6.7
"Re-use of collected water" would suggest the potential exists for concentrating the contamination after each subsequent use. What is not clear is the <u>detail</u> of the controls to be implemented.

It is noted "to implement a ground water monitoring program"

The reality of which has been discussed previously. There is no baseline data over a twelve month period from which any impact can be monitored. What is the consequence for the project, if the monitoring exceeds a predetermined level? The cause/effect is not defined. Who has access to the monitoring data?

Re: 7.4.6.8
It is assumed that the provision of septic system as required by the Tumby Bay Development Plan *(as amended)* will be the position adopted by the Company.

A better option may be to install biocycle technologies and thence to recycle water thus generated.

Re: 7.4.7

a. The impact of dewatering is not limited to the impact of known wells. It has a hitherto undocumented impact upon the spring *(and ephemeral spring)* network in the area *(especially on MC 4372 and property to the east of the Mineral Claim boundary)*.

b. As mentioned previously, there is no baseline data. Is it the intention of the Company to create the baseline post dewatering commencement? *(see earlier comments)*

c. "Work with the EPNRM, SA Water to understand flows in Pillaworta Creek."
It is not a reasonable expectation of the community that a full undertaking of the flows *(including when the Creek is in flood)* PRECEEDS the release of the AGL MLA whereby all the risks and impacts are documented for inclusion in the MLA, not after the event.

The monitoring wells and subsequent data *(depth, salinity, heavy metal content, etc.)* should be included as baseline data in the proposal.

The use of pit water *(Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_20 - contaminated water)* to resupply/return flow to the creek is an illegal activity!

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_22
The flow of contaminants *(seepage, etc.)* into the pit and then to *"use this water to re-establish flows in the Pillaworta Creek"*, is not only illegal, but is a measure of the inadequacy of control/risk management planning on behalf of the applicant.

It further indicates the contempt the applicant has for environmental issues.

The lack of peer assessed/review management plans provides the community with little confidence in the applicant's ability to manage and/or mitigate against factors that could lead to significant health and environmental issues as a consequence of their proposed actions.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_23
Management of Kerosene *(and other non-aqueous solvents/fluids)*.

As previously mentioned, the deficiencies lie with the non-disclosure of the detailed mitigation plans and procedures.

The lessons learnt from the Trichloroethylene *(TCE)* contamination issues have not been applied here.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_24 & K_25
The cyclic argument continues: Acid rock drainage to the pit and thence into the aquifer is not a controlled/management plan.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_26 & K_27
The documentation fails to identify the nature and concentration of the heavy metal, etc., contamination, yet it identifies the risk in Table 7.15 without quantification, whilst in Table 7.16, the risk is unlikely, of minor consequence, etc. A contaminated aquifer is a contaminated aquifer. If that aquifer is used for commercial purposes, e.g. potable water and/or stock water, where are the health and economic losses incurred through the quarantining of the supply? Who is legally liable for the loss? Clearly this is IGNORED in the application. The REGIONAL IMPACT IS UNKNOWN!

Re: 7.4.8
Re: 7.4.8.1
The residual risk is considered to be low." Considered by whom, in consultation with the affected land owners, and against the back drop of no baseline data?

Re: 7.4.8.2
The impact upon the listed EP Blue Gum Community is outlined, but the impact upon native grasses, native orchids and other listed species and the habitat is general, is ignored.

No details as to the impact outside the eastern boundaries of the Mineral Claim *(MC 4372 especially)* appears in the report.

Again the reference to using contaminated pit water to "maintain" environmental ground water is raised without consideration to the legal ramification of discharging contaminated water into a creek within the "Tod River Water Protection Zone".

Yet again, demonstrating the applicant's complete disregard for the law and the environment.

Re: 7.4.8.4
"The proposed design.....for chemicals and waste are considered reasonable to manage...."
The question being, due to the general nature of the information provided herein, are they compliant with the legislative requirements of the day and who will be responsible for ensuring full compliance with the legislation for the design proposals?

Against whom could legal action be taken for proven non-compliance of design and operation/management thereof?

Re: 7.4.8.5
"Seepage analysis was conducted on the TSF embankment." Despite what is referenced:

a. No approval has been granted for the construction of the embankment.

b. As implied, the said embankment has been constructed and analysis undertaken on its *"impermeability"*.

c. The community's expectation is greater than *"the presence of a reasonable thickness of clay"* as the "engineering standard" for the tailings dam wall, a wall that has to have the capacity to withhold its contents from the processing plant, rainfall run-off and the impact(s) of severe rain events that are known to frequent the area.

d. *"The concentration of Kerosene discharged to the tailings is low."* None the less, Kerosene is held in the tailings facility and has the capacity to migrate into ground water.

e. *"Tailings samples were analysed for total petroleum hydrocarbons, etc."* given that this is an application for the Mineral Lease and associated activities, the obvious question arising, as there are no processing plant *(or pilot processing plant)*, or tailings on site, upon what basis are the aforementioned claims made?

It is noted the "levels of chromium" were above National Environment Protection Measure *(NEPM)* standards, but the assumption then made "it is unlikely that hexavalent chromium *(known carcinogen)* would be exceeded".

It is not unreasonable to expect the company to substantiate claims made, especially in relation of Chromium (VI) given the suggested contamination pathway that exist on this site.

It is also noteworthy that there is no mention of the concentration of the heavy metals *(by name)*, nor that of Manganese or Uranium, which have been identified and approval granted to be mined *(MESA Journal 12/2014, pp. 4)*.

The assumption that Chromium, etc., will be confined to the tailings dam is speculation on behalf of the Company.

The water recycling process would indicate the potential transportation of these materials across the site *(dust suppression)*, waste rock dump, etc. The contamination cycle is not limited to the aqueous environment but also includes airborne contamination.

"It is considered that potential seepage from TSF and the open pit into the ground water system to affect water quality and impact ground water dependent ecosystems are low."

The rationale behind this statement appears to defy logic. The pit is below the Standing Water Level; therefore it is within the aquifer. Any water within the pit area has the potential to move into the confines of the aquifer.

Re: 7.4.8.6
On the limited hydro-geological study undertaken thus far *(noting the complete absence of data pertaining to MC 4372 subsequent to the denial of access to exempt land)*, upon what basis is the assertion that *"the salinities in local ground water it is considered that vegetation communities and ecosystems are not totally reliant on ground water from fractured rock aquifers"*, derived.

It is noted that one bore hole in the centre of the pit area registered salinity in the region of 5,800 units.

What empirical evidence, therefore is the aforementioned quotation based?

Upon what hydro-geological evidence is the complexity of the aquifers within the Mineral Claims been established, noting that it is not uncommon to have a number of aquifers *(within the fractured rock network)* that potentially provide environmental water which would contradict the conclusions drawn by the limited investigations to date?

With the known contaminants and a limited knowledge pertaining to the hydrogeology of the total site and its surroundings it is RECOMMENDED that:

a. Complete regional hydrological and geo-hydrological studies are undertaken before any approval is given.

b. The data provided in this application is subject to a PEER REVIEW prior to any approvals being granted.

Re: 7.4.8.7
The impact statement is a copy of the previous *(7.4.8.6)* with the obvious road changes to ARD/WRSF.
The comments provided previously apply equally to this aspect.

Re: 7.4.8.8

a. It is noted that samples for analysis were taken from a limited number of drill holes, all of which are located on MC 4373.

   Issues: Cr(VI) needs to be identified specifically. *(Exceeds limit: no MSDS)* Cr(III) → Cr(VI) is the chemistry conducive to oxidation of Cr(III) → Cr(VI)?

   i. Bismuth *(no MSDS)*
   ii. Cadmium *(no MSDS)*

iii. Sulphur *(as sulphides? → acid rock)*
iv. Selenium *(not accounted for no MSDS)*
v. Copper *(concentration >> trace element = crop impacts: no MSDS)*
vi. Arsenic *(below: no MSDS)*
vii. Uranium *(not listed: no MSDS)*
viii. Manganese *(not listed: no MSDS*)
ix. Zinc >> *(no MSDS)*
x. Nickel >> *(no MSDS)*
xi. Lead 200 ppm *(no MSDS)*

This is an incomplete list of issues relating to the hazardous minerals identified.

The application discusses various 'standards' applicable to residential and ecological areas, but is devoid of any discussions as to the economic impacts *"standards"* pertaining to inhibition of plant growth etc of the contaminants, a sample of which is listed above.

b. Production tenement granted for:
   i. Co, Au, Graphite, Magnesite, Mn, Ag, Uranium Oxide, V on MC 4372 and 4373

Note: MESA Journal 75:4 - 2014, pp. 82
MC 4372 located in Yallunda Flat
MC 4373 located in Koppio

Re: 7.4.9
The claim that NO adverse impact to quantity of water available to users of ecosystem is NOT supported by the document, primarily because there is NO data relevant to MC 4372 included, or studies actually undertaken in concert with EPNRM and SA Water. The inferences drawn are based upon supposition, not empirical evidence.

Whilst it is noted that the *"control strategy"* includes monitoring, the reality of the existence of baseline data against which comparisons can be made, is not evident across the whole of the mineral claim.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_25 is not substantiated on the basis that heavy metal concentrations etc exceed permissible limits.

The use of *"marginally exceed"* is a measure of the contempt the applicant has for compliance standards.

It is akin to *"were only a little bit over the limit"*.

The unanswered question is the ACCUMULATIVE impact of the excesses noting, in particular, that the mining operation now allows:
a. These substances mobility *(i.e. no longer bound is the ore body)*.

b. Subject to weathering due to exposure above ground level.

c. Leaching due to the impact of rainfall through the body of the waste rock dump back into the soil and ultimately the underlying aquifer.

d. In addition, mobility is gained in the form of dust which will be discussed further in this response.

Re: 7.18
Clearly the intent of this table is to develop the baseline after the fact, i.e. approval first, baseline data second in the hope that the data is consistent with the claims of the application.

Re: 7.5
"Stream flow data is commonly used in mine sites for..... However for ungauged, ephemeral streams such as those in the Kookaburra Gully Project site, stream flow data does not exist." (underlining added)

Is this not an admission that the hydrology *(and geo-hydrology)* of the ML is clearly NOT understood as the community would expect adequate on site data collection pertaining to all facts of the environment would have been undertaken. The inference being the application is based upon *"limited or no"* empirical evidence.

It is noted that the AGL MLA uses unsubstantiated evidence from another *company (Eyre Iron Pty. Ltd.)* to establish salinity in the Pillaworta Creek and then makes the claim that source water for the "pools" is "considered to be a combination of surface water and ground water" thereby establishing the link between contamination arising from both surface run off from the site and seepage *(ground water contamination)* into the Pillaworta Creek ecosystem. The MLA draws upon land owner information with respect to flow rates of the creek but where is the 12 month study in concert with EPNRM and SA Water to verify the claims and to establish the base line on an empirical basis?

Re: 7.5.2
"EPNRM Board expressed a desire that water flows to Pillaworta Creek and water depended ecosystems were maintained....."

The questions arising here in, is what compliance regime with the NRM Act is required and how it is:

a. Defined in this application.

b. To be met by the applicant.

c. To be monitored by EPNRM Board.

Secondly, upon what scientific or engineering basis was the *"....acknowledgement that given the open pit is positioned through the existing creek line, this could only be achieved through the implementation of a catch drain or diversion channel"* established by the Board?

In the context of the *"EPNRM Board expressed a desire that water flows to Pillaworta Creek and water depended ecosystems were maintained.....,"* what are the environmental impacts which gave rise to the concerns that the Board necessitating this condition and subsequent *"approval"* being required?

What is the monitoring regime *(benchmarks)* required of the Board to ensure compliance with the direction given by the Board?

Where is the research program implemented by the applicant in concert with the EPNRM Board and SA Water to validate the proposition and to *"approve"* the "water effecting activity Permit" on the basis of established fact.

Re: 7.5.4
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_33 & K_36
Identify potential significant contamination risk given the revelation that concentration of heavy metals *(those identified with the caveat that further identification is required)* exceed

the minimum levels, and the unknown *(undescribed)* cumulative impact of deposition *(concentration)* of these materials on the WRSF dump etc and the continued impact of contaminated water *(saline plus)* for dust control, exposure to the atmosphere *(oxidation)* and rain, all of which facilitates *"escape"* from the site into the ecosystem.

What has been overlooked in the debate to date is the fact that this area is a primary production area.

Water borne *(and dust borne)* high concentration, *(i.e. above 'trace levels')* of copper in particular, has a significant impact on productivity of grain crops.

Apart from all the issues raised with respect to contamination of the ground water *(see previous comments)*, the project now introduces additional concerns through the potential contamination of surface water as well as any silting that may wash from the site *(and potentially contain contaminants)*.

The application fails to discuss any implications arising from mining activities on MC 4372, again noting NO investigative work has been undertaken on this site due to unresolved denial of access to the property.

It is noted that 2 species are discussed in the context of impact. As pointed out in the response to the EPBC Referral 2015/7470 the applicant has, in the opinion of the Association, failed to undertake a thorough review pertaining to the existence or otherwise of listed species across the site and the immediate environment *(neighbouring properties)*.

The Application is deficient in its discussion of the impact of changes to the surface water regime pertaining to the *"complete"* picture.

Re: 7.5.4.7 & 7.5.4.8
"Seepage through the embankment of the TSF and through near surface soils could transport heavy metals contained in within the PAF waste rock and residual sulphides in the tailings and potentially have an impact on surface water quality if not managed."

The applicant now identifies the contamination pathways relating to these significant facilities and in doing so confirms the existence of heavy metal residues *(now in a concentrated environment)* and a hither to undisclosed presence of *"residual sulphides"*.

The question now requiring answers relate to the nature of the chemistry with the tailing dam:

a. What are the concentrations of all substances in the TSF?

b. What potential exists within the TSF for chemical reactions *(e.g. oxidation and reduction)* to occur thereby creating other potentially significant contaminants. It is hypothesized that the Chromium identified in the ore body is Cr(III) not Cr(VI). What potential exists in the TSF for Cr(III) to be oxidized to Cr(VI)?

c. The Applicant has identified the presence of 'sulphides' in the TSF.
    i. What is the precise nature of these 'sulphides'?

    ii. What is the chemistry of the TSF that might impact upon these entities to enhance the production of 'acid rock' products that give rise to 'acid soils' and hence the impact in terms of escape from containment into the surrounding ecosystem and cropping environs?

d. Does the design of the surface water runoff system facilitate fugitive contaminants to enter the surrounding ecosystem? The discussion centres on removing particulate matter, but ignore contamination if the solution form.

e. What legal liability exists relating to the impact on cropping arising from fugitive contaminants from the site?

The answer to this question clearly relies upon the establishment of the baseline data from which impacts can be measured.

The application appears to be devoid of 'baseline' data, leading to the premise that the onus of proof rests with the affected party, thereby requiring neighbours and downstream users to establish, at their expense, the baseline data.

Clearly this is not acceptable from a community perspective and clearly the applicant does not have a community licence to operate in such an environment.

Re: 7.5.5.7
It is noteworthy that consideration has been given to overtopping of the TSF embankment arising from weather events *(excess rainfall and wind)*. It is further noteworthy that no site specific weather observations have been undertaken over a 12 month period, in preference of using data from Poonindie and Cummins Airport in the *"modelling"*.

It is significant concern that NO site specific wind observations have been included, having particular regard to the actual topography of the site and its surrounds.

The relevance of data relating to relatively flat topography of Poonindie and Cummins Airport is questionable in the context of this site.

The use of Eyre Iron Pty Ltd/Centrex Metal Limited data relevant to the Project Fusion site *(located in a different topographic environment)* is not applicable or credible in the context of the applicant's site. The applicant did not have care and control over the generation of the data nor the conclusions arising there-from.

What level of confidence has the community in the modelling when data from remote sites is applied to this site?

What level of confidence has the community in the outcomes of the 'flawed' modelling given the potential risks of contamination to the ecosystems in the location and the region alike?

Re: 7.5.7
Re: 7.5.7.3
"The concentrations of all the relevant elements are with the exception of Chromium below the residential use Human Investigation Levels (HIL's)":

a. The standard National Environment Protection Measure (NEPM) have been developed for three generic land use settings except, it would appear, to the land use setting fails to recognise a land use for primary production inclusive of export capacity for grain and sheep *(i.e. food derivatives)*.

b. The "limits identified *(noting this is not an all-inclusive list)* are indicative *(estimated)* to exceed the so called 'standard', leading to the hypothetical conclusion "Whilst there are some exceedance of some EIL's, the proposed surface water control and management measures would mitigate against potential impacts....". *(pp. 315)*

The Associations again draw the analogy of *"I'm only a little bit over"* syndrome promoted by the Motor Accident Commission. The reality the Application is non-compliant and there are significant doubts on the bases provided that the control/management procedures would adequately provide the *"controls"* required.

The risks and consequences are understated.

Attention is drawn to the growth inhibiting properties of copper, etc., when concentrations are in excess of 'trace' levels.

The risk assessment appears devoid of considerations associated with Cadmium, Manganese, Cobalt, Silver, Gold, Uranium oxide, Vanadium for which 'production tenement status was granted by DSD as reported in the MESA Journal 75 4-2014, page 82'.

There are serious gaps in the information provided pertaining to Chromium, the nature and concentration of 'sulphides'; Uranium and other radio-nuclides present, inclusive of Radon; and the actual chemical residues in the TSF and potential interactions therein.

This concern is further magnified through the 'accumulation' of hazardous materials within the waste rock dump(s) that may now become 'mobile', as outlined previously in this response.

It is noted *(Table 4.5; 4.3.6 pp. 106 - 107)* that there appears to be significant concentrations of Rare Earth compounds *(Ce, Cs, Ga, Hf, In, La, Nb, Rb, Re, Sc, Ta, Th, Te, Y)*, yet these elements/compounds have not been subjected to any form of risk assessment.

It is noted that the concentration of Strontium *(8.5 - 38.7 ppm)*, Thorium *(11.7 - 17.2 ppm)* and Vanadium *(61 - 175 ppm)* fail to attract any *"assessment"* of risk.

The question being what is the environmental impact/contamination arising from concentrations of Strontium *(which isotopic form)* and Thorium *(radio nuclide)* that is not addressed? Where do these 'entities' end up in the proposed ore processing regime?

It is noted that reference is made to an arbitrary standard the GAI *(Geochemical Abundance Index)*, which could for convenience be described as a fudging figure for the purpose of the application, as it is designed to compare the reality *(i.e. actual/empirical concentration)* with some world-wide figure that has little perceived relevance. The concentration in ppm of the particular element/compound etc, on site is the relevant figure that can then be related to actual health/exposure standards thus providing a better understanding of the hazards that are under consideration.

[What is missing is the actual concentration of a compound with the accepted health and safety exposure standard and community standards.]

It is noted pp. 317 *"Following closure the WRSF final surface will be rehabilitated and capped to prevent infiltration of rainfall and mobilisation of heavy metals."* Clearly there will be migration of heavy metals etc not only through-out the mining operations, but beyond. It would appear that the *"capping"* proposed is inconsistent with the stated objective of the rehabilitation plan to return the WRSF to primary production.

These apparent anomalies in the application provides additional impetus for the full disclosure of the so called management plans to be subject to public scrutiny and should have been included in the application, thereby providing the community with a measure of confidence that the issues WILL be dealt with as per *"the plan"* , something against which compliance can be measured.

Re; 7.5.8 &.Table 7.21
"Quarterly water quality monitoring at surface water monitoring locations (or when water is flowing from lease).....", is indicative of the quality assurance model the applicant proposes to adopt, i.e. we will monitor surface water quality only when it is found to be leaving the site of the lease which can only be after it is already polluting Pillaworta Creek, Tod River Catchment System, Tod River Mouth/Spencer Gulf outlet *(aquaculture farm sites)*, etc.

What is not addressed is not only water flow from the lease, but it flows along the public road and thence into Pillaworta Creek. What is the position of DCTB with respect to contaminated water flowing onto the public road and the road verge?

An 'inspection' of drainage containment system will provide a view of the amount of sediment caught, not what is in the water as dissolved contaminants.

For the reasons outlined above, the conclusion drawn by the applicant are far from convincing to the community and should be challenged in the manner outlined AND subjected to external Peer Review to convince the community that the statements made are actually achievable, are capable of being monitored *(compliance regime)* and reflect a time and transparent reflection of the risks associated with the proposal.

Having regard to the omissions identified, the associations recommends that this section of the MLA be rejected and subjected to review and inclusion of all impacts relevant to MC 4372 *(hitherto omitted)* and those relating to inadequate disclosure as highlighted in our response.

The Associations recommends, on the basis of the information provided, that the applicant has failed to gain a social licence to operate, pending the addressing of the issues raised.

Re; 7.6
Re: 7.6.1
The Applicant is well aware that the area under review is a farming community and the generation of dust *(from agricultural activities)* is the norm.

The question therefore being what the background level is of dust generation over a 12 month period for the location of the proposed mine site AND the transport corridor(s) proposed to be used?

What is the composition of the dust so generated over a reference period of 12 months?

It is apparent that this base line *(PM10, PM2.5 and PM1.0)* has not been established.

In establishing the background pollution level, it would be necessary to establish the impact of diesel emissions from agricultural enterprises as currently carried out in order to then compare air quality during mining operations, especially if a 24/7 diesel powered electricity supply is installed, over and above emissions generated by machinery.

The air quality base line needs to be established having regard to the actual meteorological situation in which the mine is located as its topographic location.

It is noted data used in the *"modelling"* has been taken from Cummins Airport (BoM) *(located 24 kms. to the north-west of the site)*; Poonindie (BoM) *(located 20 kms to the south)* and the proposed Project Fusion baseline air quality and monitoring station *(topologically isolated from the Kookaburra Gully proposed site and not verifiable data)*, none of which represent data pertaining to the ACTUAL site.

It is noted that two *(2)* sensitive receptor locations as identified in Figure 7.10 pp. 320, one on the Pillaworta Road *(opposite the Cullen property on MC 4373)*; the other approximately 4 kms to the North *(DDG-6)*.

It is noteworthy that NO receptors have been placed on MC 4372 or properties to the East of Pillaworta Road when travelling towards Bratten Way from the site. Equally there are NO receptors to the South of the proposed site.

It is noteworthy that dust deposition data represented in Table 7.24 has been sourced from Project Fusion data; data which is not publicly verifiable. It is also noted that this data was sourced from receptors identified in Figure 7.11 *(pp. 325)*. It is further noted that R3 and R9 correspond to residences occupied/owned by members of the Borthwick family, who did not consent to receptors being placed on their properties, therefore the legality of information so obtained is clearly one of trespass.

It is noted that the Project Fusion readings were for PM10 particulate matter. No details of the criteria or conditions under which this information was sourced and validated exist and it MUST be noted that the reason for the data collection is also not disclosed.

In short, the applicant did not have control of the process used by the other company and so the data contained herein should not be in-admissible as evidence of dust emissions pertaining to the site.

It is not apparent that the data so presented incorporated particulate emissions from diesel equipment.

Clearly, the baseline data is fundamentally flawed as its collection was not undertaken under the care and control of the Applicant.

Further, the baseline purports to establish a baseline for PM10. The community is aware of the Senate Enquiry "Senate Community Affairs Reference Committee: Impacts on Health of Air Quality: August 2013" where issues relating to health impacts arising from mining operations were clearly articulated. The Enquiry clearly was of the opinion that PM10 data was insufficient in determining the health impacts of air quality with recommendations that PM2.5 and PM1.0 data be included in the data collection regime.

On that basis the Community expectation being not only compliance with the legislation quoted at the commencement of this section but also to a higher standard as outlined in the Senate Enquiry. Accordingly, the material presented by the Project Fusion data is deficient in its recognition of the health implications of PM2.5 and PM1.0 dust particles. This is further complicated by the chemical nature of the dust particles likely to be in fugitive dust emanating from mining operations.

The Associations are also aware of the health impacts of graphite dust in addition to those attributed to heavy metals, Manganese, Uranium, radioactive nuclides and diesel fumes particulates, as documented in the reference material cited at the conclusion of this response.

Having regard to veracity of the data, it is the Associations' view that the modelling provided, fails to represent the baseline situation at Kookaburra Gully.

The modellings fails to account for the:

a. Actual meteorological factor prevalent at the site, inclusive of actual rainfall data which might be significantly different to the 'assumed typically low annual rainfall' *(pp.319)* and stakeholder concerns as expressed in 7.6.2.

b. Establishment of baseline data relating to existing PM10, PM2.5 and PM1.0 levels in the immediate vicinity of the proposed mine AND within the footprint of the prevailing topography of Pillaworta Creek *(both North and South)* and to the surrounding properties, especially to the North and East of the mine site.

Re; 7.6.4.1
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_.46 to K_49
The commentary clearly is dismissive of the actual content of the dust generated by the mining operations and the extent to which this dust will travel having regard to the actual climate conditions and topography of the site. Having ignored the potential health impacts of diesel fume particulates *(carcinogenic)* in addition to those generated by the hazardous minerals *(carcinogenic and or neurotoxins)* identified in the ore body, the consequences described as 'nuisance' and 'impact on human health and amenity' without qualification is considered to be negligent and irresponsible.

The table is also indicative of the view that the sphere of influence of the proposed mine is within a one kilometre 'impact' radius.

Re: 7.6.4.2
"During construction, operation and rehabilitation there could be an increase in dust generation...." It is acknowledged that .... *"the emission of dust has the potential to impact human health as well as impacts upon vegetation."*

Re: 7.6.4.3
Paragraph one *(pp. 320)* outlines the probable source of operational emissions inclusive of wind erosion as well as potential fugitive dust emissions from the TSF facility.

Apparently emissions *(fumes and particulates)* from diesel machinery is not considered to contribute to any impacts despite the fact that the harmful characteristics of diesel fumes and particulates are well documented on a worldwide basis and known to be carcinogenic.

Re: Table 7.24
The basis of the data in this table is sourced from Project Fusion data set apparently recorded over three days in 2013.

It is noteworthy that receptors R3 and R9 appear to be located on properties belonging to the Borthwick family and it is understood they were located without consent.

Not-with-standing this anomaly, the predicted modelling contained in this MLA is based upon someone else's data *(for another purpose)* and undertaken on three days *(Feb 13 and 14; Mar 10)* from which an annual dust impact model has been extrapolated.

It is noted that PM10 data was collected, but the nature/composition of the dust not disclosed.

The dust dispersion model thus generated *(from apparently a single 3 daytime observation)* is displayed in Fig 7.11; 7.12; 7.13; 7.14 and associated tables.

The veracity of this modelling is challenged on the basis of:
a. The lack of site specific meteorological data, especially wind data *(direction and velocity).*

b. An annual predicted model apparently based upon 3 days observations.

c. The lack of any receptors to the north east.

d. No measurement of PM2.5 or PM1.0 particulates.

e. No data relating to the composition of the dust supposedly in the 'baseline'.

f. No reference to the impact of diesel particulates currently in environmental dust from which an assessment of the impact of the mining operations can be gauged. This includes the impact of the transportation of the ore by road as discussed later in the response.

g. The limitation to PM10 deposition, limits the reality of fugitive dust dispersion once mining operations commence. This is the 1 kilometre impact scenario that appears in the application.

h. The data source is from another company in respect to another project and has not been derived by the applicant under its care and control. The data is not publicly verifiable.

The inference being, the dust modelling is a short cut, using someone else's data.

The limitations of the baseline data as outlined clearly indicates a deficiencies in approach, by design, such that the community is deprived of a baseline from which to measure the actual impact of fugitive dust and hence to relate any health *(or environmental impacts)* directly back to the applicant.

Experience has shown the onus of proof rests with the plaintiff. This means that the community would have had to establish the baselines deposition rate in order to instigate any legal action.

If this is the case, then clearly the applicant does not have a social licence to operate.

Re: 7.6.4.4
It is noteworthy that the Applicant has incorporated an estimate of greenhouse gas emissions over the 'planned' life of the mining operation. However, whilst identifying emission from on-site vehicles inclusive of NO2 and particulate matter together with poly aromatic hydrocarbons, no reference is made as to the concentrations aspects; their occupational health impact for on-site personnel, or any health impacts outside the confines of the mineral claims.

The monitoring of these emissions within the worksite and beyond must be included in the approval process, as these contaminants are directly attributed to the mining operations.

Their impact on the environment outside of the mineral claims needs to be established in the context of any legal claims arising from the harmful effects of these emissions over time.

The extent of fugitive dispersion needs to be identified in advance of any operational approval having regard to the actual meteorological conditions prevalent at the site and the topography.

Re: 7.6.4.5
"Given the localized nature of the impacts are considered insignificant." Perhaps the applicant might consider the impact of diesel fumes and particulates arising from the transport corridor on the basis of 24 semi-trailer movements per day during daylight hours. This traffic quantity being more if the applicant succeeds in extending the transport departure and arrival time beyond daylight hours where each vehicle will be passing many residential properties, given that the current usage rate for heavy vehicles for Pillaworta Road might amount to a dozen over the period of a year.

The impact is not 'insignificant' and is further elaborated upon in the appendix – road usage/haulage.

Re: 7.6.5
Having highlighted significant flaws in the baseline data not being relevant to the actual site conditions, or achieved under circumstances whereby the applicant did not have care and control of the processes, there are further concerns with respect to the exact nature of the dust emissions emanating from mining operations.

In addition to determination of fugitive dust migration, it is also a requirement upon the Applicant to monitor particulate matter and the chemical composition of said matter.

To this end, the modelling of PM10, PM2.5 and PM1.0 is considered essential, given the nature of the dust likely to be emitted. Inclusive of dust containing heavy metals, Manganese, Uranium, Thorium, etc, as identified in the bulk of the report, in addition to particulate matter emanating from diesel machinery.

To not undertake this level of monitoring is considered a breach of community licence to operate within an otherwise pristine location.

An area that appears to have been overlooked is the impact of fugitive dust on the neighbouring agricultural properties.

Concerns have been expressed in relation to the:

a. Impact of fugitive dust on cereal crop production through reduced ability for photosynthesis.

b. Impact of fugitive dust containing levels of copper, zinc, potassium and phosphorus, which over time accumulates in the soil to levels much greater than the trace element levels required for production. Excess of these minerals inhibit plant growth.

c. Contamination of pasture with heavy metals, etc. *(previously identified)* which would be ingested by sheep or cattle thus entering the food chain. The reality of rejection of contaminated meat exists.

d. Contaminated grain as a consequence of contaminated dust on ripened grained which is reapt and then transported to the silo for export. Farmers are required to declare residual chemicals that might be present on grain. The potential also exists for contaminated grain to be banned by the silo preventing any deliveries in the designated area, at what economic cost to the growers and the community?

e. Human health impact. The breathing in of contaminated dust as described is clearly not identified. This problem is magnified when the particle size becomes smaller *(PM1.0)*, allowing particulates to enter and congregate in the air sacs of the lungs *(Note WTTO article)*.

f. Distance contaminated dust, especially PM1.0, is able to be carried by the prevailing wind patterns, which have not been determined for the site, being identified to the applicant in the community consultation process remain unanswered. It is possible for fugitive dust to reach the high density residential pollution at Tumby Bay.

g. The chemical composition of dust arising from the pit operations; crushing operations; waste rock storage facility and the tailings dam, needs to be identified and thus an accurate view of the fugitive dust composition provided to the community.

It is noted that the actual mining operation in the pit will be restricted to normal daylight working hours, thus minimizing emissions from this source.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_46 & K_47
The risk assessment is flawed in that the composition of and the distribution of particulate matter has been based upon data from a source not in the care and control of the applicant and not verifiable.

The distribution of particulate matter has been modelled using non-site specific meteorological data and limited to PM10.

The health impacts of contaminated dust are not identified for the prospective workforce *(safe work exposure standards)*.

The application is devoid of any discussion of the health effects of the Rare Earth compounds with the fugitive dust.

This application is devoid of any discussion of the health effects of Manganese compounds *(known neurotoxin)* within the fugitive dust.

The community would suggest the dust emanating from the mining operations would have a significant impact upon the amenity of the area. Photographic evidence can be provided to support the position where for the greater part; the area is “dust contamination free”.

What appears to be overlooked in the application is the cumulative impact of the fugitive dust upon the environment and its amenity and the commercial impact of fugitive dust on primary production is ignored.

The risk assessment is incomplete at best and lacks credibility due to a complete lack of understanding or non-disclosure of the health impacts of dust.

It is noted that the applicant will cease operations in the event of extreme weather and wind conditions. Is this not an admission of the fact fugitive dust *(whatever its hazardous content)* will be distributed over potentially a wide area, that has not been modelled in the context of the application. What constitutes extreme weather and wind?

Re: 7.6.7.1
“It is the intention of AGL to purchase the adjacent property therefore the proposed dust control measures, the residual risk to the community and sensitive receptors has been significantly reduced with the consequence of any health impacts being considered unlikely and the residual risk low.”

Given this control measure, will the same courtesy be given to other property owners who actually work in the area and will, as a consequence, be subjected to health impacts associated with fugitive dust?

Given the limitations of the modelling and the actual pre-Cambrian rock and heavy metal contaminants likely to occur in the fugitive dust, as a consequence of mining operations. It can only be assumed that from the applicant’s perspective, any health issues arising will not be considered to be a responsibility of the applicant.

Re: 7.6.7.3
“Implementation of ... control measures.... will mitigate any adverse impacts due to odour....” In the absence of detail as to how the applicant intends to mitigate against the impact of diesel fumes and particulates as a consequence of the road transport regime, the simple question is how will this be achieved?

Re: 7.6.8
The draft outcomes as outlined in Table 7.30 are unacceptable in light of the existing level of understanding with respect to fugitive *(contaminated)* dust.

It may be a matter of minimum compliance to promote PM10 as to the standard, but community awareness with respect to the hazards associated with contaminated dust requires a higher level of monitoring as proposed by the Senate Committee in 2013.

Given the potential nature of the contaminants *(as discussed)* an annual review of real time PM10 monitoring would be considered a breach of community/social licence in the knowledge that both entities understand the known health impacts of the contaminants present in the fugitive dust.

Re: 7.6.9
It is noted real time monitoring is envisage. What is not disclosed is the location of the receptors; especially in light that access to properties to the north and east of the Mineral Claim has been denied.

Further, will the data be readily available for public scrutiny; e.g. monthly reporting?

Re: 7.7
Re: 7.7.2
It is noted that there is a requirement for more data to be provided with respect to the processing plant *"once more design information is available"*.

Given that this application has been with the Department for a significant period of time in various iterations, the question need to be put as to why the applicant has not addressed the EPA requirement <u>before</u> the public consultation period, after which the public is denied any commentary upon the 'outcomes of this additional information?

It is noted that a conservative approach to audible noise has been taken.

It is also noted that the noise survey appears to have been founded upon 4 receptors.

In addition, the standard applied is 52dBA between 7 a.m. and 10 p.m. What is not clear is the intention of the applicant to operate the transport fleet outside of the 7 a.m. to 7 p.m. timeframe, thus the question of the noise impact upon residence to the north of the proposed mine site after 7 p.m. needs to be established in terms of current baseline and predicted noise and thence a mitigation plan developed.

If the transport noise goes beyond 7 p.m., then the matter requires additional research to determine the impact upon residences so affected. Additional baseline monitoring is required.

However, there appears to be <u>no recognition given to the issue of infrasound</u> *(frequencies below audible level)*, being generated by industrial plant and machinery, which has significant known health implications as well as significant transmission distances.

It is noted that reference is made to the potential impact of vibration on structures. There needs to be a distinction made between airborne vibration and vibration transmitted through the ground and especially through rock.

Re: Figures 16, 17, 18
<u>Predicted</u> noise dispersion patterns are difficult to determine the extent of the issue as the underlying photograph does not have the necessary reference points *(road way, houses, Mining Claim boundaries)* shown.

Table 7.33 provides a view of the 'predicted' noise without mitigation. It is noteworthy the worst case scenario is identified for receptor *(R1)*, the only one.

What appears to be missing is the 'modelling' or predictions for all the other residences previously identified, and plotted on an appropriate topographic map.

What also appears to be missing from the 'discussion' is the impact of the site specific wind pattern calculations for the altered topography due to the WRSF elevations and shape.

Table 7.33 identifies operational noise for night time processing in the audible range, as 45dBLA, but omits any reference to infrasound emanating from the plant or any reference to the area of impact of said sound. It would appear that the applicant is in denial of the existence and impact of infrasound.

Re: 7.7.4.1
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_50 & K_51
The conclusions drawn that these entities will cause 'disturbance and impact upon amenity' are correct, but limited to the restrictions outlined by the applicant. The reality the blast radius and impact zone is undefined due in part to a lack of understanding of the geology, hydrogeology and hydrology as indicated elsewhere in the application.

The unknown impact is that upon fixed concrete troughs and other agricultural industry rigid structures that exist within the region for which no apparent assessment has been undertaken.

A further issue relates to the ability or inability of landowners being able to acquire insurance in the knowledge of blasting occurring in the vicinity.

The impact upon native fauna is completely ignored. *(See also 7.7.5.2)*

Re; 7.7.5
It is noted that the applicant has identified control measures for plant and equipment that generate audible noise in excess of the 'standard'.

However, no such control measures are identified for infrasound, which is known to be associated with plant of the type proposed.

The Associations' would suggest failure to recognise the existence of this known occurrence and to mitigate against its impacts, given that the plant operates on a 24/7 basis, is a breach of the community/social licence to operate and as such approval should not be given until the issue is addressed.

Re: 7.7.5.2
It is noted that blasting will occur.

It would appear that the application is devoid of a discussion of the impacts of blasting on:

a. The fauna and the migratory and resident bird species identified in the area and impact upon nature corridors.

b. The domesticated animals *(horses, sheep, cattle, goats, etc.)* associated with primary production.

c. The residences identified *(not just the Cullen house opposite)*.

d. All solid infrastructures *(tanks, troughs)* associated with current farming practices in the area.

It is understood there will be surface shock waves associated with the blasting, as well as subterranean shock waves transmitted through the rock. The impact of the latter appears not to be taken into account.

The question being what damage will be caused to solid infrastructure house, troughs, tanks, etc., as a result of blasting?

What assessment has been undertaken by the Company to determine the baseline condition of infrastructure likely to be affected?

It is understood that residences within the blast radius will not be able to obtain insurance against damage caused.

What therefore, is the view of the applicant in this respect?

If the view of the applicant is that its responsibility ends at the Mineral Claim boundary, then it is the view of the Associations' that the actions of the applicant breaches its social/community licence to operate and thus should not receive approval.

It is noted that monitoring of noise and vibration impacts by complaints register.
A cynic would suggest the complaints register will sit in a drawer until the squeaky wheel syndrome takes hold. Monitoring of noise MUST be undertaken by the use of receptors placed at residences with a 5km. radius of the site. The monitoring MUST include receptors capable of detailing and recording infrasound *(on a 24/7 basis)*.

Re; Table 7.34
It is noted that noise generated from mining operations in the pit will be restricted to daylight hours. Clarification is sought on the definition of 'daylight' hours in relation to daylight saving time.

It is noted the compliance regime for blasting will be compliance with AS2187-2-2008 with respect to human comfort levels. Compliance with ground vibration over pressure limits needs to be translated to a description of potential impacts on solid infrastructure within a 5 km. radius of the mine.

Monitoring noise and vibration by complaints register is unrealistic. Noise monitoring as described above is the minimum acceptable requirement. Instrumental monitoring of noise will also protect the Company against erroneous claims of noise interference as there will be an appropriate record which will be available for public scrutiny. It is considered to be part of the *"trust"* regime the Company claims to want to establish.

There is no risk assessment attributed to infrasound impacts.

Re: 7.7.7
The 'risk assessment' conclusion is based upon 3 receptors in reasonable proximity to the mine, specifically to the West and South-West.

The conclusion would not appear to take into account noise dispersion to the North or East of the site following the local topography.

The conclusion would also not appear to take into account any infrasound impacts emanating from the mining operations over a 24/7 timeframe.

It is a matter of conjecture as the whether the control measures described *(or planned in the absence of any details)* would actually satisfy the criteria presented, having regard to the nature of the omissions.

Re: 7.7.8
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_50 & K_51
Represents a zero noise tolerance.

It is noted that AGL intends to purchase the adjacent property *(so the problem goes away)*, however, there are other residences and worksites within the immediate vicinity of the mine and these residents and worksites need to be protected from excessive noise *(above the prescribed standard)* emanating from the proposed site.

The measurement criteria outlined would appear to represent a minimum position, especially in the early years of mining operations.

In line with the issues raised above, it is recommended that continuous noise monitoring be undertaken for a period of time during which construction and full time production is brought on line to establish an appropriate baseline and following a review of data so obtained, a revised noise management monitoring regime could be established with the agreement of the local community.

Such a regime will establish whether the proposed control program is adequate or is able to identify previously unrecognised problems.

Re: 7.8
Re: 7.8.1
Adequately describes the flora with MC 4373, but not that of MC 4372.

Re: 7.8.2
Stakeholder views must include advice from local landowners who have practical knowledge with respect to soil management in addition to Government authorities that have a legislative or compliance interest.

It is noted that EPNRM appears to be absent from the list.

Re: 7.8.4.1
Table 7.36 fails to recognise the disturbance of the seed bank *(although previously identified by the Company)* of listed species and the necessity to preserve this.

Kookaburra Gully Environmental Aspects and Risk Assessment Register K_37 to K_42 identify potential causes for soil degradation, but fail to include the potential growth inhibitors that potentially exist in the ore body as identified in this response. This issue revolves around the contamination of the soil with above trace levels of copper etc.

It is suggested that specialist advice be incorporated in the application dealing with plant inhibitors that may be present as a result of the mining operations.

Re: 7.8.4.2
Soil erosion and soil degradation is a real issue with significant consequences over the life of the mining operation and beyond.

It has been dealt with in a piece-meal approach in relation to specific area of operations.

This section briefly brings the issues together, but fails to convince the reader of the necessity to manage this aspect of the operation in a scientific manner that will achieve the stated aim of returning the 'rehabilitated' area to arable use.

The most obvious example of this is 7.8.4.3 and the use of saline water for dust suppression. Clearly the accumulative effect of continuous applications of saline water is not recognised.

The progressive increase in salinity of the soil, whilst not forgetting that the saline water may contain elevated levels of contaminants *(heavy metals)* and Copper, etc., has a growth inhibiting impact when concentrations exceed 'trace element' levels. This being a significant contributor to failed rehabilitation for arable and/or native vegetation purposes.

It is recommended specialist advice is obtained *(and published)* from PIRSA and/or Waite Institute as to the impact of the saline water and probable contaminants of Copper, etc. on cereal and pasture growth *(and health)* thereby assisting in the management of the soil in order to achieve the stated outcome.

Re: 7.8.5.2
The suggestion that *"management procedures for use of saline water for dust suppression will be developed and implemented"* implies development after the fact, when the knowledge already exists and is required to be incorporated in the application as a compliance requirement, given that the mining operation lies with the Tod River Water Protection Zone and the Tod River Wetland system as mentioned on numerous occasions within this response.

Attention is specifically drawn to the Tod River Water Protection Zone (as declared in the Development Plan) which is an integral part of the Eyre Peninsula's water supply, "Objective 1, notes <u>that activities liable to cause pollution in the zone should not be established</u>" (underlining added)

Re: 7.8.5.3
It is noticed that visual inspections of the entire length of the supply pipeline *(from the Tod Reservoir)* will occur, for what purpose as the pipeline is proposed to be buried, unless it is for signs of leakage, in which case the damage has already occurred.

There appears to be insufficient detail pertaining to the design, maintenance and control of the pipeline.

Given that the water in the pipeline is contaminated, saline water, a 24 hour response time is considered to be inappropriate. A 24 hour leak *(even though the pipeline is depressurized, water will continue to flow under gravity)* would discharge how much water with what impact to the environment?

Re: 7.8.5.4
The outline provided, as pertaining to acid forming rock, must also include the periodic chemical analysis of rock samples to accurately identify sources of acid forming rock. Especially in the context of a new rock face exposure *(through blasting)* given that it would appear the extensive drilling and analysis work has not been undertaken over the pit area within MC 4373 and none has occurred on MC 4372.

The unknown factor needs to be 'managed' through empirical analysis of the ore body.

It is well documented that acid soil renders agricultural land useless.

Specific regard needs to be held for the generated changes to the elevations and contours of the land by the placement of a WRSF. Whilst the unknown hydrology or hydrogeology and the existence of the small creek network that culminates in the water dam in the north east corner of section 125 Hundred of Koppio, the impact of placing acid forming rock in this location has not been considered.

In this scenario, what advice has been received from EPNRM Board concerning management of water from this WRSF facility given its potential to reach Pillaworta Creek?

Baseline data may provide evidence to defend a claim that the Company caused acid soil to occur in neighbouring properties.

Re: Table 7.37
It is assumed that the necessary investigative work has been undertaken across the proposed ML to determine the relative depths of 'top soil' and 'subsoil; and their profiles.

It should be noted, that NO investigative work has been undertaken on MC 4372 due to that land being confirmed by judicial ruling to be Exempt Land under the Mining Act 1971.

It must be recognised that there will be adverse effects on soils from the use of saline water.

What research has the Company commissioned to determine the level of tolerance of the soils in question to saline water and/or the level to which no more saline water can be used?

This is a critical question in terms of the impact of increased salinity on the seed bank assumed to be present?

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_39
It is noted that the pipeline will have *"automatic shutdown capabilities"*. In that respect, undertaking of inspections/repairs should be immediate and not *"within 24 hours of observations"*.

It is noted that the location of the top soil/sub-soil storage area is entirely within MC 4373 and down slope of all other facilities.

It has been commented upon on numerous occasions within this response of the complete lack of reference to any activities on MC 4372; yet the proposed Mineral Lease traverses both Mineral Claims.

It is known that the elevations on the North-West corner of MC 4373 and the South-West corner of MC 4372 would be a more conducive location for the soil and sub-soil storage area being now outside of the natural drainage area of the ephemeral creek on MC 4373.

Clearly there is a significant problem with access to MC 4372 that is being ignored by AGL for this project, which may well be deleterious to the overall environmental management plan the Company seeks to have recognised.

It is RECOMMENDED that approval not be given until all issues pertaining to MC 4372 are resolved AND an amended application be provided for public scrutiny of changes arising there from.

Re: 7.8.9
It is RECOMMENDED that these complaints are logged in the Complaints Register which would also include details of actions taken in response.

It is RECOMMENDED that the complaints register be under the care and control of the Mine Superintendent or Manager.

Re: 7.9 *(refer also to road use modelling)*
Re: 7.9.2
"An inspection with the Council Engineers has determined the most appropriate access route and upgrade requirements."

The Associations are concerned that communication with DCTB may be limited to administrative staff and not apparent to elected Members. Accordingly the following issues

have been raised with Council through the Mayor. They are reflective of our concerns with matters pertaining to the so called 'determined route'.

The following comments pertaining to Section 9: Traffic may be of assistance to Council *(as to the assessors of this application)*

Re: 7.9.1
Heavy vehicle traffic at the rate of one 27 tonne load leaving every hour *(7 a.m. to 6 p.m.)* would suggest at least 12 departures and a corresponding 12 arrivals.

The question being can Pillaworta Road sustain this traffic load on an all-weather basis, given local experience to the contrary?

Re: 7.9.2
"An inspection with the Council engineer (person unknown) ***has determined the most appropriate route and upgrade requirements****". (bolding added)*

This infers that the determination has been made by an unknown party within Council.
It infers that the solution is appropriate and acceptable to Council.

Re: 7.9.4.2
"Disturbance to normal behaviour (e.g. sleeping patterns)" would infer that traffic noise during the 24/7 operation will have an impact upon residences within the vicinity of the mining operation *(not to mention the transmission of this noise due to wind and topographical factor not taken into account in previous sections of the application)* which may well be contrary to EPA and DCTB Development Plan requirements.

Alternatively, it may infer that heavy vehicle traffic may be on the roads outside of the 'stated' daylight hours.

Re: 7.9.5.1
It is expected that all necessary liaison relating to traffic and roads would have been undertaken prior to the ML Application being lodged. *(The purpose of a MoU)*

Re: 7.9.5.2
In the absence of any MoU between Council and the Company, this may be inferred to mean 'here are our requirements, make it happen!'

Re: Table 7.40
Clearly there are a significant number of issues that remain unanswered to the point where the table may well be interpreted as meaningless.

Re: 7.9.7.2
The question may well be, what agreed maintenance program exists and with whom is this agreement? Clearly not Council at this point in time.

It would appear that some behind the scenes 'agreements' exist as inferred in 7.9.2, but are not reflected in the current rhetoric of Council to the public *(vide the public finance meeting)*.

The impression given is that, *"we (AGL) will talk to you at our convenience and this is what we want (apparently supported by the council's engineer)"*.

Such an impression may also be construed as the Company's attitude towards a community/Social Licence to Operate which it is required to seek of the community in which it wishes to be accepted for its operations.

It is noted that the issue of funding for the required upgrade(s) and maintenance is not mentioned in the context of this section. Is it therefore expected that Council *(i.e. ratepayers)* fund these requirements?

There is also another significant omission being what happens at the end of the 7.5 to 8 years of mining operations with respect to the roadway(s)?

The Associations clearly are of the opinion that any expense relating to roadways *(inclusive of traffic surveys, condition and suitability assessments by DPTI, EPBC, and Native Vegetation Council approvals for roadside listed species removal)* be met by the applicant.

The Associations are also of the view that any road upgrade must have a community benefit. In this respect, whilst the applicant has sought to have a determination in favour of Pillaworta Road to Bratten Way, the safer alternative may well be inwards from Bratten Way and exit to Lincoln Highway. Such an upgrade would provide a significant community benefit of providing a fully maintained alternate road connecting the Lincoln Highway to the Bratten Way.

It would also reduce the traffic passing any residents by 50%.

Re: 7.10
Re: 7.10.1
"A survey of the proposed Mineral Lease area and associated infrastructure was undertaken by Barngarla representatives in December 2013."

The problem with this statement is:

a. A representative of the Barngarla Women claims no knowledge of the *"survey"*, so the veracity of claims made needs to be questioned.

b. The statement implies the survey was conducted over what is now MC 4372, for which access has not been achieved.

If the survey was conducted on Section 125, Hundred of Koppio *(contains MC 4372)*, and then the activity amounts to trespass.

If the survey was conducted from the roadside, clearly the 'observations' and 'conclusions' made, are speculative.

It is recommended that the conclusions stated in the Aboriginal Heritage survey be reviewed and re-investigated having regard to:

a. The issues of access to the site - remaining no access.

b. Representatives of the Barngarla Women *(Port Lincoln)* are invited to participate and provide commentary.

c. Native Title issues pertaining to the road reserve *(Crown Land)* are resolved/clarified inclusive of consultation with Barngarla Women.

Re: 7.11
The inconvenient fact is that the visual amenity and landscape will be permanently altered by the construction of the WRSF and the TSF embankment.

What is not disclosed in this section is that visual amenity will be impacted upon by dust emanating from the mining operations, the composition of which is also not disclosed, but potentially contain graphite, heavy metals, Manganese, Thorium, Uranium at unknown concentrations and particulate size.

No evidence with respect to PM10, PM2.5 or PM1.0 has been tendered with respect to dust emanating from the mine and mining activities.

Re; 7.12
"No asbestiform minerals have been identified in outcrops or drill samples within the project area." Clearly this is misleading given that NO exploration activities have occurred on MC 4372, inclusive of any drilling program. The statement is only attributable to MC 4373 and the limits of the drilling program undertaken thereon.

It is assumed that the Company is required to report the existence of asbestiform minerals should they be 'discovered' at a future time.

It is assumed that the on-site rock analysis purported to accompany the 'development' would be required to disclose such findings to DSD and thence publicly.

Re: 7.12.2.1
"It is possible that the inhalation of asbestiform materials in dust may cause human health impacts with moderate consequences."

Clearly, the Applicant is dismissive of the known health risks associated with asbestiform materials. Dependent upon the nature of the asbestiform material, the health risks of asbestosis and mesothelioma are hardly 'moderation consequences".

Re: Table 7.49
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_52
Take a more appropriate approach to the issue than the introductory statement.

The concern however, extends beyond the life of the mine and its 'control regime' where asbestiform materials may have been placed within WRSF or other locations on site where continuous exposure due to the normal processes of weathering *(wind, rain)* continue to break down the rock or into encasing material. This is described as a *"moderate residual risk"*.

Re: 7.12.6
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_52
"No risk to human health ....."

At what point does DSD intervene and shut down the operation due to the health risk, not only to employees, but to the public at large *(due to fugitive dust)*, or is it Government policy to allow mining operations to continue and thus create the worst case scenario, another Wittenoom, W.A.

The approval process MUST contain compliance requirements that include shutting down operation in the event of discovery of asbestiform materials pending a full independent Government supervised review that may:

a. Allow the continuation of activities under strict controls.

b. Suspend all mining activities permanently in the area in which the asbestiform material is discovered.

c. Suspend all mining activities permanently.

All such actions must be transparent and reported upon in the public arena.

Re: 7.13
Re: 7.13.2
Issues raised by the community are not presented in this section of the application.

Re: 7.13.4.1
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_58
Has no relevance to the Koppio area. Clearly Tarcoola is not in the neighbourhood.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_60
The applicant has not, to date, made any pronouncement with respect to an alcohol or drug free work environment, and of the testing regime to ensure compliance.

Reference to employee behaviour in the local community needs clarification if the aforementioned compliance regime is in place.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_61
The positive impact anticipated is hypothetical at this point, given the paucity of information concerning the workforce profile.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_63 & K_64
Has a critical incident impact assessment been undertaken on conjunction with emergency services in the area in order to assess their capabilities and to identify short comings requiring attention?

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_66
What is missing is the worst case scenario of a catastrophic detonation of the magazine given the quantities of explosives contained therein.

Clearly a catastrophe of this magnitude needs to be modelled in conjunction with the Emergency Services.

In association with the risk of blasting, come the following issues:

a. Given the quantity of ammonium nitrate *(up to 60 tonnes)* and detonation materials (up to 1 tonne) to be stored on site, there is no reference pertaining to the security of this material in relationship to the requirements of ASIO or the AFP.

b. It is assumed but not documented that SAPOL has been consulted with respect to the security of this quantity of explosives, given that the nearest Police Officer resides in Tumby Bay and the Regional Headquarters are in Port Lincoln.

c. The application appears to be devoid of reference and compliance recognition in the document relevant to the availability and proximity of the processing plant graphite separation material *(Diesel/Kerosene)*; to the electricity generation plant engines, and to the open pit machinery fuel *(Diesel),* such that illegal production ANFO *(Ammonium Nitrate/Fuel-Oil)* is denied.

d. It is noted that 1 tonne of detonators is to be stored. The issue also being the chemical composition of the detonators is not disclosed. Should the detonators contain Mercury Fulminate, the potential risk of Mercury contamination has NOT been address, should this material 'escape' to the environment.

Given the environmental sensitivities of the site, what are the environmental impacts of the detonation of >> 1 tonne of Mercury Fulminate - residue over the life of the mine?

Re: 7.13.4.4
The workforce profile is critical to any debate concerning the potential or real impact upon the social structure of the associated communities.

Without the workforce profile statements made regarding possible employment opportunities for school leavers or others in the community are 'motherhood statements' and are taken as such. Insufficient data is included to draw a positive impact on employment.

A mass influx of single male itinerant employees would have a significant impact upon the social fabric of Tumby Bay, given its demographics.

There will potentially be an impact on health services, simply due the number of additional persons. It is assumed that the existing system has been approached to ensure that it has capacity to cope with the increase.

The issue that may need addition research is the situation surrounding capabilities to respond to a major mine accident.

Inappropriate behaviour could lead to disruption of local amenity is of concern. However, if the Company's drug and alcohol employment policy is well known and compliance enforced, this may mitigate against disruptive behaviour.

Re: 7.13.4.5
Competition for skilled labour may well have an impact upon existing industries, with the most obvious being wage differential between the industries.

Significant disparity in wage levels will have a significant impact on local industries, especially in light of the potential for considerable increases in salaries because of shift work *(later and night shift)* in the processing plant. However this needs to be examined in the context of the number and skill profile required of these employees. It is noted that professional staff may not be able to be recruited locally.

Re: 7.13.4.6
As already identified in our response, the assumptions made as to the community benefits are not substantiated by full economic or cost/benefit analysis.

Assumptions of a *"positive"* impact are just that 'assumptions' in order to create an impression that the project has achievable economic value.

Re: 7.13.4.7
Despite the writings of the applicant, the reality of the market suggest that sales of properties over which Exploration Licences, Mineral Claims and Mineral Leases, will decline in value, purely on a risk basis, given the fact that the Mining Act does not protect the land owner in pursuit of an agricultural business.

The Act is designed to facilitate mining. Any perception that mining and agriculture can exist is a political fantasy as mining depends upon the destruction of an agricultural business *(as is demonstrated in this instance)*.

Re: 7.13.4.8
Refer to previous comments.

Re: 7.13.4.9
"If not managed properly" would appear to be an understatement.

What legal liability does the Company assume for losses incurred by property owners as a result of a fire origination on the Mineral Lease *(whatever the cause)* → given the potential for individual agricultural business to suffer significant losses associated with fencing, cropping, animals, machinery and housing, as evidence as a consequence of the Wangary fire?

What contingent liability funds are held by the Company to provide immediate assistance to property owners in those circumstances?

Re: 7.13.4.11
What contingent liability funds are held to immediately compensate for damages caused by blasting?

What contingent liability funds *(or insurance)* are held by the Company to deal with a catastrophic detonation of the explosives magazine, no matter how small the risk is assessed to be?

Re: 7.13.5
Re: 7.13.5.2
Given that this is a mining operation under the provision of the Mining Act, what compliance regime exists for such entry to occur and what compensation regime applies? If neither, does the provision of fencing come under the Fences Act? Clearly, clarification is sought as to the legal rights of both parties in this respect.

An issue arises when *"alternative access (not defined)"* potentially involves 'exempt land' for which a waiver of exemption may not have been given. *(As it exists in relation to MC 4372 at the time of writing.)*

Re: 7.13.5.3
It is assumed changes in demography are considered to have low to negligible impact in the long term.

The problem lies with the definition of long term especially in the context of the 'Government approved PACE drilling program' to be undertaken on Kookaburra Gully extension and the prospect of opening this area to pit mining in the "near" future given the documentation provided to ASX.

Re: 7.13.5.4
Competition in the workforce market place is a reality and given the reductions in labour forces in the Mining industry of this State, it is assumed that there is an excess of skilled works with mining experience that would most likely fill advertised positions ahead of local *(inexperienced)* competitors.

Market forces and especially the overabundance of ex-mining employees would mitigate the ideals promoted by the Company. The cost of training is considerable and clearly avoidable when employing skilled persons with experience.

The inclusion of employment of apprentices from local school leavers would be seen as an employment benefit for the community.

The employment of a local graduate or the sponsorship of a scholarship for a university graduate in environmental science to oversee the environmental management plan would be seen as an employment benefit for the community. It would also be seen to be a benefit

if local environmentalists were employed on a contractual basis to implement sections *(as relevant)* of the environmental and rehabilitation management plans. The emphasis here is being the engagement of local knowledge to support the development and implementation of the various environmental plans *(inclusive of environmental monitoring)*.

Re: 7.13.5.6
Affected property owners would expectedly understand the implications of EL, MC and ML over their lands. Each give rise to devaluation of the land as an asset, with the ML actually removing productive assets from property.

There is no misconception: mining, or the threat of mining, devalues property.

Transparency with respect to online disclosures, specifically the ASX and the parent Company LML, leaves little doubt as to the future directions of the Company with the obvious caveat of funding to actually achieve the desired outcomes.

None-the-less, the registration of an MC and ML predictably provides more than a causal perception that something 'might' eventuate.

The registration establishes a third party financial interest in the property which the property owner is legally obliged to inform their lending institution of.

This may result in significant revaluations of the risk by the lending authority through a property or asset devaluation with potential significant financial impacts for the landowner including increased interest rates if the risk increases or potentially fore-closure of the loan if the property is subject to acquisition *(in whole or in part)*.

The risk assessment clearly does NOT take these factors into consideration.

Property values decline, Council rate revenue declines with the consequence that all non-affected ratepayers face a corresponding increase to compensate for the loss.

Unfortunately, it doesn't end there because other costs incurred by Council as a consequence of mining are passed on to ratepayer by virtue of the fact mining companies do not pay rates.

Re: 7.13.5.7
It must be recognised that emergency services in the country are for the most part provided by volunteers. Are these services to a standard capable of servicing the mining industry?

Training and development is costly.

What level of financial support is proposed to be forth coming in order that emergency services can meet the expectations generated by the mining operation?

Re: 7.13.6
Re: Table 7.52
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_59
Access to adjoin properties to undertake mining operations *(erection of fences)* fails to deal with access *(or non-access)* over exempt land.

What needs to be established are the legal boundaries for which this activity is permissible.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_60
What level of <u>tangible</u> support is envisaged for the community?

Scholarship fund for university Graduate/Undergraduate.

Provision of a critical care unit and staff at the hospital.

Continued disclosed financial support for RFDS.

Financial support for airfield facilities, e.g. covered emergency departure area for ambulance
Financial support for CFS units commensurate with fire risk associated with the mining operation.

Provision/funding of a doctor, given imminent departure of 2 and an uncertainty of a third.

Establishment and operation of a native nursery in line with environment and rehabilitation management plans.

All these are actual benefits to the community.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_61
Given today's significant downturn in the Mining Industry, increased local employment opportunities in a labour market saturated with unemployed skilled workers may not be achievable.

Against what performance employment benchmark will they be measured, given that the numbers of persons employed in the mining industry in 2011 was claimed to be 52 *(presumably in the area)*, the greater majority of whom are no longer employed locally?

The implied benefit is questionable and thus needs to be substantiated, having regard to 2015 figures.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_62
It is noted that AGL acknowledge the potential for property devaluation and seeks to negotiate compensation on a case by case assessment.

a. The problem being what is the commensurate property value against which loss is determined and thus compensated.

b. Current market value where the valuation is already reduced by virtue of the mining operations.

c. Market Value at a previously determined point in time?

d. Valuation assigned by the mortgage lender as collateral for the mortgage?

e. Any other option?

Given that this devaluation is acknowledge, what compensation is attributed to District Council of Tumby Bay through loss of rate revenue? The application appears to be devoid of information/detail on this issue.

Devaluation of properties is a cost to the community as well as the individual agricultural business.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_63
Pressure on local and emergency services requires additional attention in the context of the imminent reduction of medical services *(at least 2 doctors retiring and a 3rd uncertain)* in the near future.

The presence of significant quantities of explosives, it is suggested, requires its own unique emergency management plan given the potential lack of expertise of local services managing explosives.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_64
Whilst the storage of inflammable substances will be within legislative requirements, the issue of a significant diesel fire without a foam unit constitutes a substantial risk.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_65
Security with respect to the magazine appears to be minimal for the reasons outlined previously.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_66
It is expected that all legislative and Safe Work operating systems will be employed in the handling of explosives. Rock fly is one issue. Within ground shockwaves and their impact, appear to be minimized in the debate.

Re: 7.13.7
Para 5: *"AGL is committed to maintaining good stakeholder relations, have transparent communication and working with and supporting community groups in a co-operative manner."* That being the case:

a. Why is it that District Council of Tumby Bay claims *"having difficulty in communication with the Company*"?

b. Why is it claimed by the CEO that a MoU would not be worth the paper it is written on?

c. Why is it that the transport route has been 'determined', but no one knows about it, including elected Members of Council?

d. Why is it that Council, apparently, has not received a briefing from the Company since that given to the new Council *(September 2014)*?

e. Why is it that no public meeting has been held with respect to the Mineral Lease Application?

It is suggested that the approach taken could hardly be described as informative or transparent.

It is suggested that the community consultation to date, has been orchestrated simply for the purpose of ticking a box in the DSD process.

Re: 7.13.8 & Table 7.53
Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_64 & K_66
It is assumed that incident investigations will be undertaken by independent authorities given the prospect of legal action arising from damage caused as a consequence of mining operations.

Re: 7.13.9
A complaints register and the subsequent investigation and reporting are expected. It is suggested that performance criteria be applied.

Complaints investigated by whom?

Report provided within *(designated number of)* days of the incident.

Noting significant incidents may require greater time scale, therefore a scale of incidents may be able to be generated with appropriate time lines applied.

E.g. Diesel spill - immediate 24 hour
Broken pipeline - immediate 24 hour

It has been noted within this response, the absence of any reference to drug and alcohol in the workplace policy and hence testing regime.

It is assumed a zero tolerance policy would exist, given the nature of work involved.

Re: 7.14
It is most likely that repetition of comments may occur in relation to this table.

Re: Table 7.54
Weeds
Annual surveys would suggest a lack of knowledge as to the occurrence/growth of weeds in this location. A more appropriate performance criteria would be surveys conducted seasonally in the advice of PIRSA or local weed authorities.

The control programs need to be in sympathy with those employed by neighbouring property owners, as incorrect sprays and over-spraying may result in legal action.

Fauna
It has been acknowledged that death of native fauna is a high probability should it be caused by drinking water contained in the TSF in particular.

The problem with the performance criteria being limited to within the confines of the Mineral Lease is that fauna move and death is not likely to be instantaneous at the site of drinking.

The method of accounting for fauna deaths is problematic.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_15
The draft outcome statement *"compared to adjoining land"*, is extremely problematic given that baseline survey data relating to *"adjoining land"* is non-existent. Annual surveys are extremely problematic, given that the pest species may not be present on the day *(or period)* of assessment.

What new pests would be anticipated over and above current baseline data would thus guide the monitoring program?

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_50 & K_51
Noise
The noise surveys as outlined in this application are subject to questions:

The definition of adjacent residents needs to be clarified in the context that AGL intends to purchase the adjacent property and it is assumed that the encumbered residents will vacate it.

24/7 monitoring on properties to the North and East on Pillaworta Road have not consented to 24/7 monitoring, therefore any assumptions of compliance are subject to the qualification *"compliant at the place of measurement"*, not a hypothetical dispersion model.

The draft measurement criteria are devoid of any reference to infrasound emanating from mining operation.

Traffic noise on Pillaworta Road arising from probable transport regime not assessed. No consultation with the resident has occurred.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_55 & K_56
No independent assessment *(DPTI)* has occurred with respect to the proposed transport corridor from Bratten Way along Pillaworta Road to the mine site.

The ability of this road to cater for semi-trailers is problematic, having regard to the terrain, alignment, width and nature of the surface and the existence of native vegetation and listed species.

It is NOT an all-weather road.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_43
Aboriginal Heritage
No conversation appears to have been made with the Women Elders of the Barngarla traditional owners.

It is also noted that the unmade road on MC 4373 appears to not have Native Title extinguished.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_64 & K_66
With the potential for litigation to be undertaken in the event of a mining operation resulting in damage, the reporting and investigation regime needs to be clearly articulated, thereby reducing associated legal expenses.

As mentioned previously, the focus must be on independent investigations and availability of reports.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_46
Air Quality
As mentioned in the body of the response, the application focuses upon the minimum *(PM10)* despite the body of knowledge pertaining to the health impacts of PM2.5 and PM1.0.

The inference being the Company is seeking to minimise legal exposure through the non-provision of baseline data which would most likely be damaging for them in court action.

The further inference being the onus of proof of damage caused outside of the Mineral Lease rests with the claimant. Obligating the public setting up their own accredited monitoring stations in order to protect their interests.

Approving authorities should be cognisant of the Senate Enquiry Air Quality 2013.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_24, K_32, K_34 & K_35
Surface Water
The application has failed to recognise the fact that the proposed mine exists within the Tod River Water Protection Zone and in the Tod River Wetland of National Significance.

It ignores Objection 1 of the District Council of Tumby Bay in respect to the Pillaworta Creek:

a. It is noteworthy the applicant draws attention to no ecosystem impact as a result of contamination from mining operations, yet it fails to recognise.

b. Run-off water contains dissolved salts (not just sodium chloride), the nature of which are not recognised, but could be Copper, Chromium, etc.

c. Run-off may also contain Mangafloc, whilst suggested to be biodegradable, is highly toxic to fresh water fish or crustaceans.

d. Run-off from the northern WRSF located on MC 4372 is not addressed.

e. The change in topography as a consequence of the northern WRSF will potentially impact upon the existing dam on Section 125, the consequences of which have not been assessed.

Ground Water

Given the limitations in knowledge in relation to geotechnical, geo-hydrology and the hydrology of the site *(let alone that outside of the Mining Lease)* as claimed by consultants, statements made in relation to impact upon ground water MUST be subject to the same limitations.

It is noted NO geo-hydrology or hydrology exists for MC 4372 as a consequence of access being denied.

It is further noted the monitoring regime is limited to those elements listed *(pp. 384)* and it not indicative of the hazardous mineral identified *(pp. 106 & 107)*.

It is not readily apparent as to the number and location of the "monitoring wells".

Have Water Permits been sought for these wells?

Will the results be public?

The unanswered question for a 6 monthly monitoring program related to how far contaminated water would "move" in this time period given that the geo-hydrology and hydrology of the site and surrounds is limited.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_53

Amenity

Whilst this is based upon personal perceptions, the creation of a 30-40 metre high rock dump over agricultural land with its accompanying fugitive dust cloud and associated noise is not a desirable picture to paint.

A tourist attraction it is not, in the context of the destruction of the environment inclusive the regrowth *"forest"* and its ultimate replacement with a large hole surrounded by rock dumps with "some measure of rehabilitation".

It is suggested a native vegetation screen be created immediately from the boundary against Pillaworta Road in order to reduce the visual impact, noting that native vegetation, for the most part are not rapid growers.

This is an immediate commencement of the Native Vegetation/Rehabilitation Plan.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_52

Asbestiform Minerals

Compliance with internal management plans is one aspect, the other being the mandatory reporting regime required by Safe Work legislation etc.

Compliance with legislation needs to be identified and articulated in this application.

Transparency with factors that impact upon public health is mandatory.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_41 & K_42
Top Soil and Sub-Soil
The issue of soil salinity having regard to the use of saline water from the Tod Reservoir or from dewatering activities will have a negative impact.

The performance criteria listed *(pp. 386)* fails to recognise this issue.

2.9 MINE CLOSURE AND REHABILITATION

2.9.1 Referring to MLA 8.1

Given the statement that *"planning adapts to further site information as it becomes available"* is of concern on two fronts:

a. The proposed plan contained herein is already deficient by virtue of the errors and omissions already identified by consultants, especially in relation to geotechnical, geo-hydrology and hydrology , and

b. As a consequence of these limitations and the fact NO information exists in relation to MC 4372 impacts relating to closure and rehabilitation of mining operations on MC 4372, are completely lacking in regard to baseline data.

Re: 8.2
The general objectives of the plan are to:

a. Protect the environment and the health and safety of the public.

b. Minimize adverse environmental impacts.

c. Enable agreed post mining land use.

The response to these *"objectives"*, the following comments are provided.

a. To protect the health and safety of the public is paramount, the Application is significantly lacking in the identification of public health risks associated with the proposal.

b. The record of Material Safety Data Sheets is all but non-existent to the point where the health risks associated with graphite are not disclosed, let alone those associated with the other hazardous minerals or particulates emanating from mining operations likely to occur on the proposed site.

The dispersion modelling is seriously deficient in failing to consider PM2.5 and PM1.0 particulate material.

Re: 8.3
The current land use is agricultural.

Some of the landscape is still in a state of recovery from the 2005 Wangary fire.
"Following rehabilitation ..... able to be utilized for at least ongoing grazing if not partly as arable land or pasture."

A detailed Native Vegetation Management Plan should have been included within this MLA.

It is noteworthy that the proposal as outlined in Figure 8.1 identifies the southern WRSF but not the northern WRSF as described in AGL's MLA Appendix 'H'.

It is noted that the resultant pit area will have the fence removed. The issue here is unrestricted access to the pit *(or lake in time)* by fauna in the area.

Where does the responsibility for management of the impact upon native fauna end?

Re: 8.4
It is debatable whether AGL has run an 'active program of consultation' on this specific issue.

This is in part, why the Associations are critical of the process, whereby the applicant or DSD failed to hold public meetings with respect to the application.

It is understood issues pertaining to Native Title have not been resolved.

Re: 8.5
It is noted that the closure plan involves the identification of various components of the lease.

It is noted that AGL will remove all infrastructure, unless otherwise agreed to.

What is missing from the statement, is the timeline resulting in the 'complete removal of infrastructure', given the often quoted life of the mine being 7.5 years.

The time line is significant in the context of additional mining operations alluded to in relation to Kookaburra Gully extension and the original Koppio Mines and the fate of the processing plant and tailings storage facility in this scenario.

The long term picture is not transparent, even more so when considering the information provided by Lincoln Minerals Limited *(the parent company)* to the Australian Securities Exchange *(ASX)*.

Re: 8.6
The concept of progressive rehabilitation as outlined is just that, a concept. What is missing is the detail.

This lack of information is not helped by statements such as *"trials will be undertaken to determine the most appropriate cover materials." "It's most likely the waster rock armouring will be selectively covered with sub-soil and top soil to enable the establishment of vegetation."*

The expectation of the reader is clearly that the applicant is in a position to specify performance criteria against which compliance can be assessed at the time of seeking 'approval' for the Mineral Lease.

The wording used, is not consistent with previous statements pertaining to sub-soil and soil and its end use, having regard to the fact that this material is most likely a seed bank for native vegetation species destroyed as a consequence of the mining activities.

Re: 8.6.2
It is noted the pit will remain open, but fenced *(contrary to the statement "that all infrastructure will be removed")*.

It is noted that ground water levels will recover, assuming all dewatering activities have ceased.

It is noted that it is <u>assumed</u> the water will be slightly saline, similar to the Tod Reservoir.

Upon what basis is the *"assumption that the water will be saline, similar to the Tod Reservoir"*, given that the hydro-geology and the hydrology of the area has significant limitations as disclosed?

It is noted that modelling pertaining to the 'resultant lake' has been undertaken. In such modelling, rainfall surface water run-off is a significant fact as are site related meteorological factors.

Given that no site specific meteorological observations exist and that the hydrology and hydro-geology of the area is limited, the outcomes provided are contestable, and may well not represent the actuality of the situation.

It is further noted run-off salinity is modelled at 100mg/litre. Given that this application has been developed over time, it is not unreasonable to support the *"modelling parameters"*.

In this context, what is the annual rainfall for the site *(at minimum for the period of existence of the Exploration Licence)*?

What is the actual rain water run-off salinity in the vicinity of the proposed pit, given the assumption that run-off water is *"saline"*?

The issue of salinity is described in terms of 'saline water' and not the quality of the water having regard to the mining operations undertaken and the composition of the substrate in which this activity took place.

The modelling overlooks the potential for contamination of water to continue through the disruption of the 'natural order' as a consequence of the mining. Rock formations are now exposed to the ravages of weathering and water, which may well enable the known hazardous minerals opportunity to migrate into solution form and thus be dispersed accordingly.

The modelling does not take into account seepage, etc. that may occur from the TSF above the pit area, given the stated limitations of the hydro-geology and hydrology of the site.

It is noted *(pp. 397) "A water level in the pit of at least 144m AHD is well above the 120m AHD base of oxidation of sulphides so ..... it is unlikely any sulphide would be exposed above water level after mine closure."*

Perhaps a lay person explanation of this is in order, given the pit depth below surface is reportedly 100 metres, presumably at a depth where the sulphides may be exposed, but covered by water in-fill over the course of an unknown period of time during which oxidation could occur.

Re: 8.6.3
"If contaminated, the material will be disposed of in the open pit, TSF or a suitable EPA licensed facility."

The issue here being, the disposal of the *"contaminated material"*, contaminants unknown, into the pit of TSF, where there is a high probability that the unknown contaminant may enter the ground water system.

Re: 8.6.4
TSF facility will be covered i.e. the contaminants therein will be covered by up to 1.8m of material.

Given the limitations of the hydro-geology and hydrology already disclosed, the question remains what is the ultimate fate of the contaminants *"now buried"* in the TSF, especially the potential over time to migrate into the ground water system underlying this area?

Re: WRSF
Of concern is that lack of detail with respect to the northern WRSF as described in Appendix 'H' *(MC 4372)*, in the context of water run-off from the northern face into the creeks on Section 125 and potentially unhindered into Pillaworta Creek.

Re: 8.6.4.1
"During operations, it is proposed to undertake trials of alternative store release covered using available site materials."

It is reasonable to assume, that given the information gained from the drilling program, the nature of site materials are well established which would suggest the *"design of store release covers"* should have been possible to include in the application.
Table 8.6 is devoid of mention of WRSF north.

Re: 8.6.4.2
The claim that the footprint of the TSF..... *"suitable for return to arable land"* would suggest a degree of optimism not supported by scientific fact.

It would appear the assumption of arable land is that it has a soil profile of 0.5 metres.

The concern being the potential for the remnants of the TSF contaminants to migrate/leach to the surface over time, having regard to the previously described contents of this facility.

Re: 8.6.4.3
"Trials will be undertaken to determine ....." To the reader, the issue becomes why is the applicant re-inventing the wheel, given the number of mines in operation or established in Australia or across the world? *(The impression gained, is that the applicant is developing this activity by 'trial and error', hardly a sign of confidence in the approach required.)*

Re: 8.6.4.4
Revegetation will be undertaken in accordance with species found in the flora survey, assumes that the flora survey was all inclusive of the MC 4372 and MC 4373 and the surrounding *(including neighbouring properties)* environs.

Re: 8.6.4.5
The early enclosure model is noted.

Re: 8.6.4.6
It already recognised in the application that there are limits to the geotechnical material properties on the site, especially in relation to the construction of the TSF embankment. It is not unreasonable to assume that these studies are completed prior to the submission of the Mineral Lease Application in order to provide public confidence in the 'design' of facilities etc. associated with the proposal actually meeting required standards.

As previously mentioned, the range of studies proposed, may be construed as a 'trial and error approach' to the complexities that are known and should have been fully addressed in the context of the application thereby affording transparency and the ability of the public to comment upon, rather than a *"to do"* list which appears to becoming significant.

Re: 8.6.5
It is significantly noteworthy of the inclusion of this section in a Mining Lease Application.

It is further evidence that the Mining Lease Application is inclusive of mining operations relating to Koppio Graphite Mine and Kookaburra Gully extension.

It is noteworthy that closure strategies for exploration activities will be included in the appropriate exploration work approvals or PEPR's.

It is also noteworthy that the Applicant has refused to make available explorations PEPR's and opposed such release of information through the process of an FOI upon the Department of State Development.

It is further noteworthy that the release of the information contained in the PEPR was in the public interest as determined by the S.A. Ombudsman.

The issue being, the applicant has chosen to include the statement relating to exploration PEPR's in the application, but the information contained therein is not.

Re: 8.7
Table 8.7 identifies some of the risks associated with the closure regime.

Deficiencies occur in the following:
General project closure:

a. Fauna and Flora *(native species)* diminished or displaced from the area as a consequence of mining operations is noted, with the consequential/potential for increased weed infestation and pest incursion to the site.

   Visual amenity due to the changed topography is noted.

b. Land use has significantly been altered, indicating that mining and agriculture cannot co-exist. Mining is dependent upon the destruction of agricultural land.

Re: Mine Pit
The issues identified are noted, but devoid of reference to dust dispersion as a consequence of the altered terrain and man-made structures.

Re: Infrastructure
The issues identified are noted, particularly in reference to air quality, surface water and ground water.

Re: Tailings Storage Facility
Issues raised are noted, but contaminants must include all hazardous materials identified within the Application, not a selected few.

Re: 8.8
Re: Table 8.9
Given the proposed life span of 7.5 years for the proposal *(but recognising the overarching possibility of an extended operational time as a consequence of incorporating Kookaburra Gully extension and Koppio Graphite mine into this approval by default)* the rehabilitation time scale is the critical performance indicator that is missing.

The reality being is that the establishment time for Native Vegetation is significant. This being evidenced by the recovery duration as a consequence of the Wangary Fire in 2005. What is currently presented is the result of recovery over a 10 year period.

The monitoring and eradication program for weeds has no time line.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_70
In relation to contaminated material *(unknown contaminants)* being placed in the pit or TSF will have *(potentially)* long term consequences, with respect to ground water contamination.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_71
There is insufficient detail pertaining to *"all geo-synthetic lining of water storage ponds will be removed"*, raises the question of the quality and fate of the water held in the ponds. If this is contaminated water, then where does this go?

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_72
This is a critical factor in the closure process, but it appears deficient in time lines. How long will the monitoring be in place, to ensure the system returns to 'normal' after the dewatering activities have ceased and a standard water level reached in the pit?

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_73
Follows on from K_72 in that the monitoring of water quality is essential for a significant period to ensure contamination is not occurring.

This also reinforces the requirements for complete hydro-geology and hydrology for the site and surrounds to be obtained.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_74
The risks have been identified and supposedly mitigated against in the context of the limitations identified in the Application.

There exists no discussion of the risks associated with the northern WRSF as identified in Volume 2.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_75
Given that trials for final cover are incorporated in the application as opposed to actual design criteria *(trial and error approach)*, the performance criteria established is highly questionable, as is the residual risk.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_77
Sediment control measures are noted, except for WRSF North.

The fate of the sediment is not specified, especially in the context that it may contain hazardous material identified in the rock lithology.

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_80
Seepage from the TSP over time, not the life of the operation but 20, 50, 100 years is the issue, not identified or discussed.

Where does the legal liability rest in these circumstances?
(Vide the Nairne Pyrites rehabilitation model.)

Re: Kookaburra Gully Environmental Aspects and Risk Assessment Register K_81
The resultant structure will impact on the dust dispersion characteristics now present and not modelled, having regard to the actual meteorological conditions at the site.

Re: 8.9 & 8.10
Timelines are also critical, especially in the context of the pit lake. A period of 3 years is considered inadequate in the context of migration of contaminants into aquifers; the period of time for the effects of dewatering to 'normalize', the leaching of contaminants from 'covered' terrain, etc. to occur *(or be detectable)*.

Re: Table 8.10
Draft outcomes and completion criteria

The interest is acknowledged and supported; the issue will be the conduct of the audit against the specific criteria, some of which outlined herein.

Ground water quality needs to be monitored on a basis that reflects the hazardous minerals identified on pages 106-7 and not a limited section as proposed. *(Kookaburra Gully Environmental Aspects and Risk Assessment Register K_72-75, K_77 & K_79)*

3 APPENDIX

The information as reproduced below is directly from the proposal document for which there is a 'Declaration of Accuracy' provided in section 1 that is repeatedly conflicted.

"In accordance with Regulation 30(04) of the Mining Regulations 2011, I, Dr (Allan) John Parker of Australian Graphite Limited, have reviewed the mining lease proposal submission related to the proposed operations over Mineral Claims (MCs) # 4372 and # 4373, Version No 04_1, dated 7 September 2015 and declare that all information contained in this document is, to the best of my knowledge, accurate."

3.1 Road Usage Calculations

An estimation of the road usage from data contained in the Mineral Lease Application provides the following figures for the same section of road on an annual basis as:

a. 8,760 or
b. 10,950 or
c. 2,912 or
d. 8,760 or
e. 19,710

Which is the accurate presentation?

An estimation of the road usage from data contained in the Mineral Lease Application provides the following figures for the same section of road on an initial project period of 8 years:

a. 70,080
b. 87,600
c. 23,296
d. 70,080
e. 157,680

Which is the accurate presentation?

This does not say much for the competency and accuracy of knowledge of AGL.

What aspect of the community impact are the community and District Council of Tumby Bay able to comment upon when such discrepancy exists?

The Processing Plant & Pillaworta Road, Bratten Highway, and Lincoln Highway road usages have not been stated to be concluded after 8 years. The Kookaburra Gully processing plant being predictably ongoing due to the recognised graphite resource *(Koppio Mine open-cut pit life and Kookaburra Gully Extended open-cut pit life)* having an otherwise undisclosed functioning life of 30+ years.

The identification of this commercial capacity being denied disclosure or denial by AGL to the community and the District Council of Tumby Bay

The following present extracts from the Kookaburra Gully Graphite Project Mining lease Proposal.

a. Access Roads - Assessment and Budget Cost Estimate
Total of 8,760 semi-trailers per year on Pillaworta Road, Bratten Highway, Lincoln Highway. *(8 yrs. = 70,080)*

"Lincoln Minerals provided information on expected production rates. This translated into transport requirements of 27T payload semi-trailers leaving every two hours during daylight hours. The absolute peak would be one per hour later in the life of the mine."

b. Air Quality Impact Assessment
Total of 10,950 semi-trailers per year on Pillaworta Road, Bratten Highway, Lincoln Highway.
(8 yrs. = 87,600)

"The total area of clearance at the mine and processing plant area is about 103 ha and no road upgrades are required as the access roads to Kookaburra Gully are suitable in their existing condition. It has been estimated that during full operation there are likely to be about 15 semi-trailer loads of graphite concentrate to be taken from the site per day (7 day week)."

c. Mining Lease Proposal (MC 4372 and MC 4373)
Total of 2,912 semi-trailers per year on Pillaworta Road, Bratten Highway, Lincoln Highway.
(8 yrs. = 23,296)

"Up to seven semi-trailers each day are the proposed form of transport between Kookaburra Gully and the export destination. The number of semi-trailers will depend on the total amount of product produced ranging from 25,000 tonnes per annum up to a maximum of 55,000 tonnes per annum. The most likely scenario would be 30,000 to 35,000 tonnes per annum at full operating capacity which would mean, on average, about 24 to 28 semi-trailers per week (or 4 to 5 per day based on transporting 6 days per week)."
Mining Lease Proposal - Social Impact Assessment

"*Increased road traffic and heavy vehicles along Pillaworta Road may create disruptions to local traffic, and may also create "wear and tear" impacts to the existing condition of local roads used to enter and exit the mine site and to the overall road network, including Bratten Way and Lincoln Highway."*

"Without mitigation, the use of Pillaworta Road for semi-trailer movements is expected to generate dust impacts to residential properties along the preferred semi-trailer corridor alignment. There will be 6 to 14 semi-trailer movements per day, and the exact numbers of truck movements is flexible based on the preferred operating days a week. However, reducing the days of truck movements, such as restricting semitrailer movements over the weekend or during school pick up or drop off times, will increase the number of trucks and semi-trailer vehicles required on operational days."

"The community within the secondary study area is heavily dependent on motor vehicles, with 91.5% of dwellings (or 1,056 dwellings) identifying as owning one or more vehicles. Of the 91.5%, approximately 18.8% of dwellings own more than three vehicles which is comparably higher than the State average of 16.5%. Traffic will progressively increase over the next ten years as construction and operations commence at different times, which is expected to commence as soon as the end of 2014 when Kookaburra Gully commences construction. With increased use and users on the local roads, the risk of incident can increase, and the likelihood is accordingly rated as possible, but the consequences are major. The resultant impact assessment is therefore moderate."

"Based on community feedback to date road safety in the Lincoln Uplands is a key concern. One of the commitments AGL will deliver is to schedule the timing of truck movements to avoid busy periods and school drop off times to help minimise the impact local traffic and ensure a safer pedestrian environment for children."

"A Traffic Management Plan that balances the needs of the existing traffic, and future road traffic will be included as part of the Construction Environment Management Plan to

minimise disturbance to traffic flow, and ensure consideration of social events such as school traffic, local events are considered during the management phase. This reduces the likelihood to unlikely, while the consequences remain major. The residual risk is therefore low."

d. Mining Lease Proposal (MC 4372 and MC 4373)
Total of 8,760 semi-trailers per year on Pillaworta Road, Bratten Highway, Lincoln Highway.
(8 yrs. = 70,080)

"Based on expected production rates, this translates into transport requirements of three to seven semi-trailer loads of graphite concentrate leaving the mine site every day. Based on producing 30,000 tonnes of concentrate per annum, this equates to approximately 90–100 tonnes per day or one semi-trailer of product leaving the mine site every 2–3 hours during daylight hours. This could increase to one every hour at a production rate of 55,000 tpa concentrate."

"The access roads to and within the proposed mine site have been designed with a 'fit for purpose' philosophy and it is not proposed to bitumen seal the final surface of the mine roads."

"Trucks (semi-trailers) will be using Pillaworta Road and Bratten Way to access Lincoln Highway. This route is deemed the most economical with respect to upgrade requirements, and the safest option when considering local traffic uses."

"Personal vehicles can use any of the local roads to access the site, however it is preferential to also use the same route as trucks."

"A field assessment of the roads between the Lincoln Highway and mine site was conducted in the company of the District Council of Tumby Bay Engineer. Based on this site inspection, advice on necessary site work is included that would provide safety, amenity and a serviceable pavement for the period of at least seven years of mine operation. Further discussion, and support from council will be required. The detailed report can be found in Appendix J."

(8 October 2014) "A field assessment of the roads between the Lincoln Highway and Mine Site was conducted in the company of Lincoln Minerals Senior Geologist Dwayne Povey and District Council Tumby Bay Engineer Damien Windsor."

"Native vegetation is locally encroaching on the existing alignment and will have to be cleared or trimmed to a reasonable extent from the verges to enable road widening and particularly to provide adequate sight distance."

"No sealing of roads is recommended except for a short distance near the intersection of Bratten Way and Pillaworta Road where trucks heading north will be coming down a relatively steep section to Bratten Way."

"An allowance has also been made for the use of a bitumen based dust suppressant in areas where dust could cause a problem for surrounding neighbours. This involves the use of polymers that have a bitumen base that is worked into the unsealed pavement outside the farm entrances. This is accomplished using a water cart and reworking the pavement with a grader. A length of 100 m is recommended but following discussions with the District Council of Tumby Bay this length may be extended in consultation with landowners and the road design engineer. Maintenance would involve a top up water cart application once per year with an occasional reworking of the surface."

"Upgrade of the intersection of Bratten Way and Pillaworta Road may be necessary for vehicles entering or exiting that intersection. This would require at least some

clearing/pruning of vegetation around the curve immediately west of the intersection but some road widening may also be necessary."

"The proposed road upgrades are based on use of local materials and contractors and receiving approval and cooperation from the local District Council of Tumby Bay, under whose jurisdiction most of the route presides, and the State Government Department of Planning Transport and Infrastructure which manages the Lincoln Highway and Bratten Way."

"The development of the Kookaburra Gully Graphite Project will require some local road upgrades. Transport will be via semi-trailers, which are rated for all roads. As noted above in Section 4, it is proposed that Pillaworta Road will be upgraded and maintained for all-weather use in conjunction with the Tumby Bay District Council and the Bratten Way-Pillaworta Road intersection will be improved to make it safer and easier for access for not only project personnel and contractors but also the local community including school buses, harvest and stock trucks. All road upgrades and improvements will be funded through the Kookaburra Gully Graphite Project."

e. Mining Lease Proposal *(MC 4372 and MC 4373)* - Total of 19,710 mine workers (personal vehicles) & semi-trailers per year on Pillaworta Road, Bratten Highway, Lincoln Highway. *(8 yrs. = 157,680)*

"The mine-related traffic is anticipated to include one 27 tonne payload semi-trailer leaving every two hours in daylight hours, service vehicles and fuel (1–2 per week), and mine workers travelling to/from site (expected 20–30 per day). The preferred access (and sole access for trucks) to Pillaworta Road will be via Bratten Way and the Lincoln Highway."

3.2 Issues Pertaining To The District Council Of Tumby Bay

3.2.1

Tumby Bay Residents & Ratepayers Association Inc.

P.O. Box 95, Tumby Bay, S.A. 5605
Telephone / Fax: 8688 4218
www.tbrara.com.au
secretary@tbrara.com.au

From: [redacted]
Sent: Monday, 12 October 2015 11:57 AM
To: 'Sam Telfer'; 'Trevor Smith'
Cc: [redacted]
Subject: Traffic issue AGL proposal

Mr Sam Telfer,
Mayor
District Council of Tumby Bay

Good Morning, Sam,

Further to our previous email for which acknowledgement has been received from Mr Trevor Smith, the following comments pertaining to Section 9: Traffic may be of assistance to Council.

7.9.1 Heavy vehicle traffic at the rate of one 27 tonne load leaving every hour *(7 a.m. to 6 p.m.)* would suggest at least 12 departures and a corresponding 12 arrivals.

The question being can Pillaworta Road sustain this traffic load on an all-weather basis, given local experience to the contrary?

7.9.2 "An inspection with the Council engineer (person unknown) has **determined** the most appropriate route and upgrade requirements". *(bolding added)*

This infers that the **determination has been made by an unknown party within Council**.

It infers that the solution is appropriate and acceptable to Council.

7.9.4.2 "disturbance to normal behaviour (e.g. sleeping patterns)" would infer that traffic noise during the 24/7 operation will have an impact upon residences within the vicinity of the mining operation (not to mention the transmission of this noise due to wind and topographical factor not taken into account in previous sections of the application) which may well be contrary to EPA and DCTB Development Plan requirements.

Alternatively, it may infer that heavy vehicle traffic may be on the roads outside of the 'stated' daylight hours.

7.9.5.1 "Liaise with DCTB....."
It is expected that all necessary liaison relating to traffic and roads would have been undertaken prior to the ML Application being lodged. (The purpose of a MoU)

7.9.5.2 Road maintenance "Negotiate with DCTB appropriate maintenance requirements...."
In the absence of any MoU between Council and the Company, this may be inferred to mean 'here are our requirements, make it happen!"

Table 7.40 Risk assessment: Control and management measures.
Clearly there are a significant number of issues that remain unanswered to the point where the table may well be interpreted as meaningless.

7.9.7.2 "implementation of an agreed road maintenance program..."
The questions may well be; what agreed maintenance program and with whom does such an agreement exist?

Clearly not Council at this point in time.

In Conclusion
It would appear that some behind the scenes 'agreements' exist as inferred in 7.9.2, but are not reflected in the current rhetoric of Council to the public (vide the public finance meeting).

The impression given is that "we (AGL) will talk to you at our convenience and this is what we want (apparently supported by the council engineer)".

Such an impression may also be construed as the Company's attitude towards a social/community licence which it is required to seek of the community in which it wishes to operate.

It is noted that the issue of funding for the required upgrade(s) and maintenance is not mentioned in the context of this section. Is it therefore expected that Council (i.e. ratepayers) fund these requirements.

There is also another significant omission being what happens at the end of the 7.5-8 years of mining operations with respect to the roadway(s)? *(refer to conditions in the Provisional Development Authority in relation to roads)*

The Association clearly is of the opinion that any expense relating to roadways (inclusive of traffic surveys, condition and suitability assessments by DPTI, EPBC and native Vegetation Council approvals for roadside listed species removal) be met by the applicant.

The Association is also of the view that any road upgrade must have a community benefit. In this respect, whilst the Company has sought to have a determination in favour of Pillaworta Road to Bratten Way, the safer alternative may well be inwards from Bratten Way and exit to Lincoln Highway. Such an upgrade would provide a significant community benefit of providing a fully maintained alternate road connecting the Lincoln Highway to the Bratten Way.

Given the omissions outlined above, the frustration of Council is understandable and this MUST be reflected in council's response to DSD.

We trust these comments will assist council in its consideration of the issues contained within the 1169 page application.

Milton Stevens
Chairperson *(emailed by Brian March with the complete knowledge of Mr Stevens)*

_____

3.2.2

Tumby Bay Residents & Ratepayers Association Inc.

P.O. Box 95, Tumby Bay, S.A. 5605
Telephone / Fax: 8688 4218
www.tbrara.com.au
secretary@tbrara.com.au

From: [redacted]
Sent: Sunday, 11 October 2015 4:23 PM
To: 'Sam Telfer'
Cc: [redacted] 'Tumby Bay Residents and Ratepayers Association'
Subject: Agenda Item re AGL application

Mr Sam Telfer,
Mayor
District Council of Tumby Bay

Dear Sam,

We note the CEO's 'advice' to Elected Members as detailed in the Agenda to the Council meeting 13 October and the apparent dismissive attitude to the real issues relating to the proposed development and the now declared lack of expertise or resources to deal with the issue in order to adequately represent the views of the community Council claims to serve.

Clearly the CEO is not in possession of the whole picture, nor has he recalled his public utterances at the public meeting regarding Council's financial plan earlier in the year, when he expressed his frustration at dealing with the Company. He is also not aware of the continuing legal issue pertaining to access and other issues with some property holders in the area.

Clearly the Council has missed the point of a public response document where Council, it is hoped, responds on behalf of the community it purports to represent and not the wishes of the administration which undertakes background discussions with DSD that to this date are not in the public arena. In referring to

discussion with DSD behind the scenes, will the CEO release all correspondence between Council and the Department, so that we, the community have an opportunity to examine their content affording presumably more information upon which to provide a response.

What is not revealed in the CEO's report is any discussion as to the costs and benefits Council (i.e. the ratepayers) will receive from this proposed venture, especially, the potential for rate revenue decline as a consequence of property devaluation arising. In the absence of a MoU or any documentation to the effect, what financial liabilities are assumed by Council and hence the ratepayers as a consequence of this project?
What is not revealed in the CEO's response ("having regard to the scale of the development..." extract 2) to Elected Members is the fact that, whilst this application is for the Kookaburra Gully mine, the future intent of the Company is NOT disclosed. A full understanding of the extent of the proposition is declared in documentation obtained from the Australian Securities Exchange. The intent is for some 4.5 kilometres of mines moving south of the current proposal and to include the original Koppio Mine. It is assumed that Council is aware of the Government sponsored PACE drilling program (approx. 260 drill holes) on the Barnes' property to the south of Kookaburra Gully and the implications thereof.

It is noteworthy that the application does not disclose a workforce profile thereby verifying those positions which will actually be attributed to the activities at the mine site. It is common practice for companies to indicate workforce totals of which a significant number are 'administrative or professional positions' located in capital cities across Australia. This denies any debate as to the actual impact of the workforce on the local community and its infrastructure.

Council appears to be oblivious to the fact that the pipeline proposed from the Tod Reservoir will be laid on the verge of Council controlled roads. The Council appears to be ill-informed as to the fact that contaminated water will be piped from the Reservoir to the mine site.

Council appears to be ill-informed as to the potential environmental impacts on Pillaworta Creek which lies within the Tod River Water Protection Zone, which is under the control of the DCTB as documented in the DCTB Development Plan. Clearly Council has a responsibility to express its concerns.

Clearly Council is ill-informed as to the potential health risks associated with this mine, particularly in the nature of the contaminant* that may/will be generated, some of which are known carcinogens and or neurotoxins, that may enter the waterway (including the aquifers) as well as the dispersal through fugitive dust emanating from the mining operations. What is also not disclosed is the economic impact upon the agricultural industry of the pollutants contained within the fugitive dust. Contaminated grain and wool being the obvious two, but there is also a need to determine the impact of the contamination on pastures and thence into the meat cycle.

Council's Development Plan includes issues relating to environmental impacts and amenity, yet the response proposed by the CEO to Elected Members is devoid of any reference to these.

Clearly there is an expertise issue.

It is obvious that the administration of Council, being devoid of the necessary expertise to deal with the issues at hand has taken the view that it is someone else's problem and everything will be OK on the day.

It is apparent from the briefing notes provided to Elected Members that the issues raised in the Association's correspondence provided to you have been ignored.

It is apparent from the proposed response that Council is happy with the potential impacts of the proposal, be they contamination of the Pillaworta Creek and thence the environs of the Tod River; the polluting of the country side through fugitive dust containing known hazardous (carcinogenic) substances; the loss of amenity of the area due to fugitive dust and to a large hole in the ground that will eventually fill with (saline) water with significant consequences for the quality of water in the lake and the associated aquifer, given the presence of the contaminants identified. Potentially this would lead to the contamination of water held in

the aquifer, one which may well be connected to the Prescribed Wells Area to the south, given that the lack of regional geo-hydrological data available.

Given this matter will be discussed at Tuesday's meeting; these issues are raised for your consideration.

As an aside, the Association is preparing a formal response to the Application which is likely to exceed 100 pages. The invitation to meet with Elected Members as given at our last meeting still stands.

Yours faithfully

Milton Stevens
Chairperson

Extract 2:

Having regards to the scale of the proposed development (after construction) the overall impact on the economy and communities of the DCTB is not expected to be of significance in terms of increased demand for services or impact on housing stock or land development. A permanent workforce of 30 employees will not be solely drawn from Tumby Bay and would be expected to be shared with other communities including Port Lincoln and surrounds.

(Email 11 October 2015: 4.55pm)
(Acknowledgement: 11 October 2015 6.15pm)

3.2.3

Tumby Bay Residents & Ratepayers Association Inc.

P.O. Box 95, Tumby Bay, S.A. 5605
Telephone / Fax: 8688 4218
www.tbrara.com.au
secretary@tbrara.com.au

From: [redacted]
Sent: Saturday, 10 October 2015 2:34 PM
To: 'Sam Telfer'
Cc: [redacted]
Subject: Fate of existing Council quarry-borrow pit

Good afternoon Sam,

I would take the opportunity to draw your attention to page 83, Volume 1 of the Kookaburra Gully Mineral lease Application.

Section 3.17.2. Mining Activities.

Reference is made to an historic borrow pit located in the south eastern corner of MC4373 that apparently has been used by Council for road aggregate.

The document continues: "The DC Tumby Bay does not have records of the last time the borrow pit was accessed, which suggests it may have been some time ago. However, they have indicated that they would like to retain access to this as a source of future road sheeting materials"

Given the public position of the CEO with respect to this Company and its dealings with council, the following questions arise:

(a) Who in Council has the Company been talking to with respect to this borrow pit and its future use and under what authority has this occurred?
(b) What arrangements has Council entered into with respect to the future use, given that the laws pertaining to extractive materials and the costs associated have changed?
(c) Was Council consulted over the fact that the borrow pit was now within the Mineral Claim MC4373 and ultimately within the Mineral Lease, thereby denying access to the material?
(d) Given no MoU exists between Council and the Company where does Council stand legally, and what is the impact financially for the ratepayers of the district, through the loss of this facility/asset?

It is presumed that the CEO, in providing advice to Council as per the documentation accompanying the Agenda, will have the answers to these questions.

Regards

_____

3.2.4

Tumby Bay Residents & Ratepayers Association Inc.

P.O. Box 95, Tumby Bay, S.A. 5605
Telephone / Fax: 8688 4218
www.tbrara.com.au
secretary@tbrara.com.au

Mr Sam Telfer, Mayor
District Council of Tumby Bay

Dear Sam and Elected Members,

As you are aware, Lincoln Minerals/Australian Graphite Limited (AGL) (the Company) has lodged an application for a mining lease (ML-the document) for the proposed Kookaburra Gully Graphite Mine, with a closing date for public comment being 29 October, 2015.

Council is also aware that the document is some 1100+ pages in length.

The Association will be providing a response to the document in the fullness of time.

Not with standing our position, a number of questions have arisen pertaining to Council's position as described in the document.

We note:

1. Council's response to the Company with respect to the lodgement of a Mineral Claim on 9 September 2014 and the request for continuing consultation.

2. The Mineral Claim 4373 clearly identifies the location of the unmade roadway on Cullen's land and so identified on pages 20 and 21 of the document (copies attached). Earlier correspondence with Council sought clarification whether the Company had issued the appropriate forms, namely Form 21 (Notice of Entry) and Form 23A(Exempt Land), noting that the roadway lies within the 150 metre influence of a well and dams for which no answer has been given.

   Now that the unmade road is clearly identified, what is Council's position on relinquishing the road to the Company in the context of the ML and what compensation has been negotiated for the benefit of ratepayers?

3. Pillaworta Road.
   It is noted in the ML that Mr Damian Windsor has been involved in an assessment of the road with LML/AGL staff. That being the case where is the report to Council, the date of the Council meeting at which the report was tabled and discussed and the decision of Council with respect to the Report?

   It is reported that Council favours Option 3. That being the case, what is the cost to Council and hence the ratepayers, given that Council is responsible for the road and that apparently no Memorandum of Understanding exists between Council and the Company in this regard?

   Issues arising from the lack of a MoU also include:
   a. Who is responsible for the continued maintenance and repair of the road for the life of the mining activities? At this stage, the liability rests with Council and the ratepayers.
   b. Who is responsible for seeking EPBC approval for the transport route, given the number of listed species thereon?
   c. Who is responsible for seeking Native vegetation Council approval for the destruction of Native Vegetation that may occur as a consequence of road works?

   Will the road works require the removal of listed species and signature trees, i.e. trees with a girth exceeding 1 metre?

   Will the road works require the construction of an appropriate number of culverts to manage water run-off? In the event of such work being required, what assurances can be given that the run-off will not damage neighbouring private property?

   It is noted that one option provided a one way in (from Yallunda Flat Road) and exiting to the Lincoln Highway.

   Whilst it is noted that this may be the most expensive option, due consideration MUST be given to the Community Benefit and the safety factor (when entering Pillaworta Road and exiting onto the Lincoln Highway) to be achieved by the one way (ring) route and not just the economic argument.

4. It is noted that the unmade road will be subsumed by the ML. That being the case, what provisions has been made (negotiated) for access to land to the East of the ML for emergency vehicles, particularly CFS vehicles?

5. Will the mine operate on fire ban days?

6. There is significant data provided in the Report with respect to Noise and Dust, although deficient in details pertaining to the nature and impact of the mine dust on surrounding properties and significantly deficient in its discussion on the impact of infrasound arising from the 24/7 operations of the processing plant.

   In these respects, what is the level of compliance the proposal has with the District Council of Tumby Bay Development Plan requirements?

   The Association would be pleased to receive a copy of such an assessment.

7. It is noted on page 21 of the document, reference is made to the Tod River Water Protection Zone and specifically to the fact that the Development Plan "that activities liable to cause pollution in the zone should not be established".

   On the basis of this requirement, what is Council's position with respect to the proposal and to the potential for pollution of the water way given its environmental status?

8. It is noted that the Company seeks to construct a pipeline from the Tod Reservoir to the proposed site. It is assumed that given this is not a major project under the Development Act and therefore not subject to State Government assessment, Council would be the approving body for such a development activity.

   Has a development application been lodged for this activity?

   In this context, it is noted that contaminated water will be supplied to the proposed plant from the Tod. That being the case, will Council be seeking EPA certification that the water is in fact 'safe' to be piped to the site, especially in the circumstances where a breach of the pipe would result in said water entering the catchment.

   Will Council require full disclosure of the quality of water to be piped to the site, inclusive of an appropriate risk assessment attached to each and every contaminant, notably salt concentration; heavy metal concentrations; concentration of nickel and manganese; concentration of insecticides; concentrations of herbicides and concentrations of benzo-pyrenes?

   It is noted that the Company proposes to use the road verge to lay the pipe, and where not suitable, private property. There is no environmental impact statement, nor identification of properties to be affected by the pipeline within the ML proposal.

   The question for Council being, has the proponents provided Council with the 'plan' and has Council approved the use of the roadside verge for the proposed pipeline?

   Has the necessary EPBC and Native Vegetation approvals been sought and recognised by Council?

   Has Council undertaken an environmental assessment in accordance with the DCTB Development Plan, and if so, when was this present to Elected Members for debate and approval?

   Given that the pipeline is proposed to run through private property (albeit unidentified), what is the impact on property valuations as a consequence?

   It is assumed that any MoU entered into between Council and the Company would address these issues.

9. Demographic Profile.
   It is noted that all demographic data elates to 2006 and 2011, some FOUR YEARS out of date and clearly not representative of the actual situation on the ground as of today.

   Here again we are being confronted with out of date data and expected to accept the potential significant errors therein.

   The question for Council is whether it considers four year out of date data as representative of the actuality of the day and accepts the consequences of errors and assumptions made on such bases.

   In today's world, who would be making investments of the order proposed on such data?

10. Independent Advice.
    The Association has made representation to Council on a number of occasions with respect to the way in which Yorke Peninsula Council assessed the impact of the Rex Minerals mine proposition at Ardrossan with the strong suggestion that Council should adopt a similar position and seek an independent review of the proposal.

    It is noted that the Department (DSD) will accept an application for an extension of time in which to respond.

11. It should be noted that the Kookaburra Gully proposed mine is part of an extensive graphite deposit as described by the Company to the Australian Securities Exchange (ASX code LML). It is strongly suggested

that Council review the documentation contained on the ASX site in order to be fully conversant with the direction Lincoln Minerals and Australian Graphite Ltd is heading.

It is not unreasonable to assume, given the declarations on the ASX and the granting of a PACE drilling programme by the State Government, that this application is the forerunner of a considerable mining venture in the Koppio Hills.

The concern being, once approved, an automatic extensions of the ML will be granted by the Department, with total disregard to the environmental impact and no consultation with the community. (The 'Hunter Valley Syndrome' in NSW)

12. Rehabilitation.
    Council is strongly advised to consider carefully the proposed rehabilitation plan and the claims made therein.

    Recent disclosures in NSW indicate the complete inadequacy of Government to the issue of rehabilitation. The Nairne pyrites mine in the Adelaide Hills is a local example of the cost to the State (taxpayers) of rehabilitation.

    The visual and environmental amenity of the area will not be able to be restored to that which we experience today.

    The environmental impact of using contaminated Tod Reservoir water for dust suppression and other activities will be cumulative and not addressed in the documentation.

    The fate of the tailings dam and its contaminants requires careful questioning. Further, the issue of stability of the dam to cope with the rain events in recent years leading to flooding of the Tod River requires careful consideration. If the dam is breached, the contaminated water goes where?

    The ultimate position when mining is completed and the hole fills with water, water quality will be a significant issue. Further, the question needs to be answered as to the impact on the ground water, both locally and regionally, given that the area is one of the headwaters of the Prescribed Wells Area (PWA), i.e. ground water from this area flows into the PWA area.

    Statements by the Company that the water will be a source of stack water, without empirical evidence to support the position, cannot be relied upon.

13. Property devaluations
    Clearly the value of properties surrounding the proposed mine will suffer devaluations and the potential of reluctance on behalf of buyers to purchase.

    The impact for Council is a lowering of rate review to an extent not known at this point in time.

    Further, it is known that mines do not pay rates.

    What therefore is the loss of revenue suffered by Council as a consequence of the proposal?

Concluding Statement

It is noted that Council, through the CEO, has had considerable difficulties communicating with the Company. This was highlighted at a recent public meeting through a remark to the effect by the CEO when answering questions relating to Pillaworta Road.

That being the case, the question of whether the Company has a community licence to operate needs to be debated and declared.

It is our contention that it has not demonstrated that it has a community licence to operate.

The proposal fails to provide a detailed cost benefit analysis of the project which results in a positive benefit to the community per se and as such, should not be supported.

We would re-iterate our offer to discuss the project with Elected Members of Council to assist them in their deliberations on the matter, noting that the only Council meeting in the period is the second week in October.

Yours faithfully

Milton Stevens
Chairperson

27th September 2015

3.3 References

124-map of blue gum protection zone
1969.93.UN land acquisition act
1971.109.UN Mining Act
1971.109.UN Mining Act 1-7-2014
1987.56.UN protection of marine waters (prevention of pollution from ships) Act 1987
1991.16.UN native vegetation act
1991.16.UN native vegetation act 1991
1993.55.UN Development Act
1999.62.UN local government act
2003.173.UN native vegetation regs in word
2003.173.UN native vegetation regulations
2004.34.UN natural resource management act
2005.152.UN NRM act regulations
2012.40.UN work health &safety Act 2012
2012.268.UN Work health & safety Regulations 2013
2012.268.UN Work, Health & Safety regulations
2013 NEPM Schedule B1 site contamination standards
10605039 noise survey in mines thesis
A Review Of Published Research On Low Frequency Noise And Its Effects
article1380209337_Duruibe et al heavy metals
Carbon and Graphite Products msds US standard
Community-Noise
Development Act 1993 sec 46-49
Development Act 1993.55.UN
Dft_EP_Thr_Fl_Rec_Plan_08Feb draft plan for EP flora regeneration
DGS_COP_StorageSolidAmmoniumNitrate
DGS_IS_ExplosiveFacilities_FAQ
DOCS_AND_FILES-7541170-v1-Terms-of-Reference_-_Expert-Panel-on-Planning-Ref...
draft-significant-impact-guidelines epbc water trigger
eh40 UK exposure limits
EPBC publication protecting-rivers
Explosive Regulations (SA) 2011
Explosives Act (SA) 1936
exposure to graphite dust OSHA 1978
EyreIronWinterNewsletter2013
F2013L01565 endangered species blue gum listing
F2013L01565ES explanatory notes blue gum listing
GRAPHITE hsdb database
guidance-note-tph-trh-vapour BTEX
Guidelines-For-Community-Noise-A
Handbook Of Sensory Physiology 1973 (2)
heavy_metals affect in children WHO
http___www.aphref.aph.gov.au_senate_committee_clac_ctte_completed_inquiries_2...
Human Effects Of Infrasound (2)
Human Effects Of Infrasound (2)-1
id142 OSHA determination method for free silica
IMPACTS OF GRAPHITE RESEARCH
INTERNATIONAL PROGRAMME ON CHEMICAL SAFETY infrasound noise
Local Government Act 1999.62.UN
MD001 30 june 2011 Ministerial determination 001
mercury_and_compounds safe handling
MRGMG4 landowners rights V2 1 feb 2013
MRGMG9
nihms257123 occupational exposure to diesel
NRM act commentary
Report of the 'Proceedings of the Conference on Low Frequency Noise'

Report of the 'Proceedings of the Conference on Low Frequency Noise' 2
safe-storage-of-solid-ammonium-nitrate-code-of-practice
silica a known carcinogen
Summary of key discussion LML highlighted issues
T3D0340 mercury fulminate MSDS
TBRARA-Lincoln-Minerals-Limited-Community-Questions-26-February-2014-2
The Effects Of Infrasound On Human Health (2)
toxnet manganese
tp2 arsenic
tp15 TOXICOLOGY NICKEL
tp46 toxicology profile mercury
tp69 polycyclic aromatic hydrocarbons PAH - benzopyrenes
tp151 TOXICOLOGY MANGANESE USA
Uranium and uranium mineral systems in South Australia - Second edition April 2012
WHO - Guidelines For Community Noise 1999 (2)
Workplace_Exposure_Standards_for_Airborne_Contaminants

Submission 23

Business Support Officer
Mining Regulation Branch
Department of State Development
GPO Box 320
Adelaide 5001

Email: dsd.miningregrehab@sa.gov.au

Dear Sir/Madam,

In response to the Australian Graphite Limited, Kookaburra Gully Graphite Mine, Mineral Lease Application, the following issues are of concern and do not appear to be adequately addressed in the Application:

Social licence (Volume 1: Sections 5 and 6: Volume 2: Appendix A)

Deficiencies with the approach include:

- Lack of specific information provided throughout the so-called consultation process.
- Lack of availability of hard copy of the Application, with the expectation that the person seeking a copy would be required to pay $250 for the privilege in order to respond.
- Stop Invasive Mining Group Inc. twice requested hard copies and an extension of time but twice DSD refused. Hard copies were available to be purchased but why should we have the cost. In our opinion the mining company should have supplied to the local community.
- Lack of knowledge of the inadequacies of Internet capabilities on Lower Eyre Peninsula and the inability to download a 139Mb file.
- The expectation that the recipient of the document of 1169 pages will be able to read, comprehend and formulate a response within the period provided.
- The complete inflexibility of DSD with respect to an extension of time in which to respond.
- The lack of any public presentation either by DSD or the Company with respect to the Application.

Deficiencies in the data presented include:

- Weather modelling is questionable as the comparison of the two areas for data collection is not applicable to the mine site. BoM North Shields (Pt. Lincoln airport) is 35km south of the project and BoM Cummins (Cummins airport) is approximately 27km to the north west of the project. The community knows that the weather patterns in the Koppio Hills are vastly different to what has been used by Australian Graphite Ltd for modelling dust, noise etc.
- AGL have also used data from a weather station that Eyre Iron/Centrex Metals erected in a gully near the Koppio Museum, and this one was self-monitored by Eyre Iron and not independently assessed/recorded, very questionable data from this site.
- In our opinion it would be like Two Wells/Gawler having the same weather as Mt. Lofty in the Adelaide Hills.
- Reference to 52 mining jobs currently in the town of Tumby Bay noting that the previous mining employer (Centrex Metals/Eyre iron) has left the area is totally incorrect and an out dated statement by AGL/LML.
- The availability of jobs for the local community is based upon what data, given that the job profiles of the proposed positions are not identified and the glut of mine employees on the market due to the significant down turn in the mining industry.
- The often-stated ‘benefits’ to the community have not been quantified nor have the costs.
- There is no cost benefit analysis provided.
- There is no recognition of the costs to the agricultural industry through contamination dust arising from the mining operations or potential loss of underground water resources.

Transport Route (Volume 1: Section 7.9)

- It is noted that the transport route has been determined in the absence of consultation with the Rate Payers and Elected Members of the District Council of Tumby Bay (as evidenced by discussions at the Council meeting of 13 October 2015).
- There are no agreements with the District Council of Tumby Bay with respect to costs, inclusive of potential decline in revenue due to the devaluation of properties in the vicinity of the proposed mines and the loss of rate revenue.
- There is no agreement with the DCTB as to the actual transport route.
- Assumptions have been made on the part of the Works Manager as to the transport route, but these are not transparent to Elected Members or the Community at large.
- The capability of the 'determined route' appears not to have been subjected to any formal approval process through DPTI.
- The impact upon native vegetation and EPBC listed species is not recognised in the application for the mine site or suggested transport routes.
- The application includes cost estimates from a private contractor as to upgrading the road, but no Council budget exists for this work to be undertaken and no agreement to cost sharing exists.
- There is no economic benefit statement to the community pertaining to the proposed road upgrade, only the potential for continued maintenance and repair liabilities for the life of the mine and beyond.
- This project has to have a road upgrade that will destroy EP Blue Gums or an alternative route has to be used, namely Bailla Hill Road, in our opinion. This Bailla Hill Road, on the southern side, is more central if they ever get approval to mine this and the other deposits. Less vegetation to clear for the first half of distance to Lincoln Highway, the second half is already a wider council road and the intersection onto Lincoln Highway is flat with good vision for motorists.
- The intersection of Pillaworta Road and Bratten Way, is downhill, has very limited vision due to Sugar Gums and Wattles plus a bend in either direction of the Bratten Way bitumen road. A huge expensive upgrade required. This intersection also has a double white line, means no overtaking, for approx. 5.2kms to the east and 3.9kms to the west in the Koppio Hills. This intersection, in our opinion could be very dangerous if this upgrade goes ahead. The present intersection has a huge camber that slopes the wrong way for loaded trucks turning and travelling to east Tumby Bay, as the loaded Graphite trucks will go.

Environmental impacts (Volume 1:Section 7)

- In addition to the issues raised above, the environmental impact of surface water run-off from the activities of mining operations fails to deal with the fact that this water has a high probability of being contaminated water (as a consequence of the activities) and whilst a sediment tank is employed, the application is devoid of information pertaining to the quality of the water (dissolved salts etc.) that may (will) reach the confines of Pillaworta Creek and beyond.
- The Pillaworta Creek joins the Tod River and flows into the sea, Spencer Gulf, at Poonindie and the Port Lincoln Harbour is just around a land point to the south. The Southern Right Whales are known to be in the sea at Port Lincoln and Spencer Gulf each year.
- The sea area, in close proximity to the mouth of the Tod River, supports abalone nurseries, mussel farms and tuna farms. Port Lincoln is a very important fishing industry port.
- Scant recognition as to the environmental sensitivity of this catchment and its ultimate outflow to the sea (marine park and aquaculture zones), has been given within the application.

Dust (Volume 1:Section 4,pp106-7: Section 7.4)

- Weather modelling is questionable as the comparison of the two areas for data collection is not applicable to the mine site. BoM North Shields (Pt. Lincoln airport) are 35km south of the project and BoM Cummins (Cummins airport) is approximately 27km to the north west of the project. The community knows that the weather patterns in the Koppio hills are vastly different to what has been stated by Australian Graphite Ltd.
- AGL have also used data from a weather station that Eyre Iron/Centrex Metals erected in a gully near Koppio Museum, and this one was self-monitored by Eyre Iron and not independently assessed/recorded, very questionable data from this site.
- In our opinion it would be like Two Wells/Gawler having the same weather as Mt. Lofty in the Adelaide Hills.
- An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include the graphite, but also Chromium, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium together with Copper, Magnesium and Zinc.
- AGL/LML stated the dust coming out of the mine pit is the same as what occurs naturally from the farmer's paddocks. What about the heavy metals indicated in the above paragraph?
- These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors in plants.
- The nature and health impacts together with potential agricultural industry impacts of the dust emanating from mining operations are inadequately described in the application.
- In the absence of on-site meteorological data, the dispersion pattern modelled from data remote from the site is of concern, given the potential nature of the contaminant within the dust and their impact upon humans and plants alike.
- 6.2.1 Mining operations.
- The most significant emission of concern is particulate matter, as a result of the development and operation of the open pit, WRSFs and, to a smaller extent, graphite-processing plant. These principal sources have been assessed quantitatively. Mining operations will be performed only during daylight hours. It would be expected that fugitive dust would be generated from activities in the open pit by drilling and blasting in the open pit, which is expected by bulk explosives. A small fleet of mobile equipment for loading/dumping of ore and fresh rock waste will also contribute to dust via movement on haul roads causing wheel generated dust and loading and dumping of product. Wind erosion will generate fugitive emissions from the pits, WRSFs and stockpiles.
- The air quality impact assessment shows maps of predicted cumulative impacts for annual average PM concentrations. When the two maps are overlayed the PM 10 concentrations disperse further than the PM 2.5. Should finer particles travel a greater distance?
- There is no consideration given to the impact upon vegetation /pastures and thence native animals and landowners stock that ingest these contaminants over a period of time.
- The application is devoid of information pertaining to the economic losses attributed to the impact of copper, magnesium and zinc (in excess of trace levels) on grain production.
- The application is devoid of information pertaining to the impact upon agricultural businesses within the fallout cloud of contaminated dust through contaminated grain deliveries.
- The application is devoid of information pertaining to the potential contamination of rainwater, the main source of drinking water for the area plus contamination to storage dams and natural creek water.

Dust (Volume 1: Section 4,pp106-7: Section 7.4)

- The application is devoid of any impact of the contaminated dust reaching the township of Tumby Bay, Cummins and Pt. Lincoln having regard to the topography (height above sea level of the proposed mine) and the wind direction (and velocity) towards major grain storage facilities of Lower Eye Peninsula.
- The application is devoid of information pertaining to the impact on surface water contained within the Tod River Water Protection Zone (as per the DCTB Development Plan) or the Tod River Wetland of National Significance.

Groundwater (Volume 1: Section 7.4

- We live in the driest State of Australia. Australian Graphite, AGL, state they are in discussions with SA Water to supply "20ML per annum (110KL per day) of potable drinking water from the drinking water system."
- With a stated workforce of 60 in construction and 30 for operation of mine, 60 will use 1.83 KL per day or 1830 litres per day. 30 will use 3.66 KL per day or 3660 litres per day.
- Impossible to want that amount of potable water for amenities! Is this excess amount of potable water to be used for mine operations? We do not have surplus potable water on Eyre Peninsula for mining operations!
- AGL also state they require 400 ML of non-potable water from the Tod Reservoir in the first year of the mines operation and decreasing in subsequent years.
- The Water in the Tod Reservoir is reported to be contaminated and has not been used for public supply for years.
- How can AGL construct a pipeline to supply their mine operations with contaminated water, over agricultural land, or along local government roadsides?
- This contaminated water will be in their holding ponds and used for dust suppression and thereby available to the environment!
- There is no agreement with DCTB or local land owners for the location of this pipeline
- I seem to recall at a public presentation by AGL, Lincoln Minerals, they stated they have spoken to EPNRM and this contaminated water, by then including kerosene and other processing agents, will not harm the environment if it overflows into the adjacent area.
- An AGL/LML rep stated that the flood of 13th June 2014 was a one in one hundred- year event, when questioned where he obtained the data it was stated, "I read it in the paper ". Is this the sort of accurate and reasonable data that AGL/LML rely on? Local records show that this data is wrong.
- The Pillaworta Creek joins the Tod River and flows into the sea, Spencer Gulf, at Poonindie and Port Lincoln Harbour is just around a land point to the south. The Southern Right Whales are known to be in the sea at Port Lincoln and Spencer Gulf each year.
- The sea area in close proximity to the mouth of the Tod River supports abalone nurseries, mussel farms and tuna farms. Port Lincoln is a very important fishing industry to South Australia.
- An analysis of the data provided indicates the existence of a significant number of minerals within the ore body that are potentially harmful to human health and plant health. These include the graphite, but Chromium, Copper, Manganese, Nickel, Rare Earths, Strontium, Thorium and Uranium. These minerals are potential carcinogens and or neurotoxins in humans and growth inhibitors and not needed in our water resources.
- The nature of the hazardous materials emanating from mining operations inclusive of the processing operations is inadequately described in the application.
-

Groundwater (Volume 1: Section 7.4

- The environmental impact associated with contamination of groundwater with the hazardous materials identified is not fully disclosed neither is the long-term health impacts associated with contaminated ground water.
- It is noted that there are *significant limitations with respect to the geotechnical, hydrogeology and hydrology of the site, especially in regard to the design of the TSF facility (Section 4.7.7.4 pp 198)*. It is significant concern that the limitations highlighted by the consultant extends beyond the TSF facility to include the known fact that *no data exists for MC4372*, *nor does the geo-hydrology or hydrology exists beyond the boundaries of MC4373 which may impact upon the Prescribed Wells Area to the South, the source of potable water for the lower Eyre Peninsula*.

Noise: (Volume 1:Section 7.7)

- It is noted that mining operations in the pit will be restricted to daylight hours. However, insufficient data exists in relation to noise generation and dispersion as a consequence of night time operations, which not only generate audible noise but also infrasound.
- An independent report by Resonate Acoustics that assessed noise at the site, and includes the background data collected by Eyre Iron Pty Ltd, is their base line but when the plant is working the noise level rise beyond acceptable level as shown in table 4.26 noise processing plant equipment noise levels.
- The national standard for exposure to noise in the occupational environment is an average daily exposure level of 85 decibels.
  This is consistent with overwhelming scientific evidence which indicates that exposure levels above 85 decibels represent an unacceptable risk to the hearing of those exposed.
  Many other developed countries have introduced legislation based on this standard. For peak noise, the national standard is a peak sound pressure level of 140 decibels.
- Source: National Occupational Health and Safety Commission, National Strategy for the Prevention of Occupational Noise-induced Hearing Loss [NOHSC: 4004(1989)], Australian Government Publishing Service, Canberra, 1989.
- Will this noise travel further than the AGL/LML modelling shows? The winds in the Koppio hills are different than BoM data of Pt. Lincoln and Cummins airports shows.
- The lack of actual site-specific wind dispersion data also implies that the noise dispersion patterns having regard to the wind and to the topography are subject to conjecture.

Construction of the TSF: (Volume 1: Section.....Volume 2: Appendix H)

- Considerable concern is expressed with respect to the limitations of the design of the retaining embankment due to "*insufficient geotechnical, geohydrology and hydrology of the site" as identified by the Consultant*.
- Approval should not be granted until all relevant data is available and the design reflects this.
- The application MUST contain all relevant information so that the public is well informed of the intentions of the Applicant.
- It is our view that the deficiencies of information should be rectified and provided to the public by way of an amendment to the application and be subjected to an appropriate period of public scrutiny. Failure of the applicant to be required to provide this information and to provide approval for the project on the basis of what has been tendered is tantamount to an approval of a faulty design for which legal liability can be established in the future should there be a catastrophic failure of the wall.

The Explosives magazine: (Volume 1: Section 4.5.7)

- It is noted the Applicant is seeking approval to construct and operate an explosives magazine on site.
- It is further noted that up to 60 tonnes of ammonium nitrate and 1 tonne of detonators will be stored in the complex.
- It is also noted there is a significant supply of diesel on-site.
- It is known that the area is subject to significant bushfire impact as experienced during the Wangary fire (2005). The application appears to be devoid of any risk assessment to this facility in the event of a bushfire.
- What is the risk to employee fire fighters or to the CFS as a consequence of a bushfire in the vicinity of the magazine?
- The application is devoid of any assessment of the impact of a catastrophic explosion of the magazine. In such an event, what would be the blast radius?
- The application is devoid of any discussion pertaining to any increase in insurance risk to neighbouring properties as a result of the location of the magazine. Is this potential increase in insurance subject to compensation from the Company?
- An additional unknown is the chemical composition of the detonators. If they contain mercury fulminate, what is the environmental risk of such a large amount of mercury being released during the mining operations (dust and groundwater implications)?
- There are other issues pertaining to the magazine, particularly in relation to the security of the contents, (noting ammonium nitrate is a precursor to many IED's).

Long-term issues:

- It is noted through Company disclosures to the Australian Securities Exchange, that Kookaburra Gully is potentially not a stand-alone development, but a component of the development of the prospect inclusive of Kookaburra Gully extension (for which the Company has received a $3M grant to drill as part of the PACE program) and the original Koppio Graphite Mine area.
- We think that Australian Graphite Ltd, Lincoln Minerals Ltd, should be detailing their entire plans for the area as per their Quarterly Activities Report – June 2013 that is stated to the ASX. This is not just one potential mine although they are only wanting to start with this one.
- Parsons Brinckerhoff, page 6, 1.12 states no component of a larger action?
- We recall the company representative at another public presentation stated that if they had the money then over time they want to mine all the deposits. The area is approx. 8kms in length. The Government PACE, Plan for Accelerating Exploration, program in SA has just granted more money to Lincoln Minerals for further exploration drilling in the area.
- Port Lincoln Times article, 21-4-2015," Lincoln Minerals will receive a share of $2 million worth of state exploration grants to further explore graphite mining potential at Kookaburra Gully near Koppio."

2. Project description
2.1 Overview

- Lincoln Minerals Ltd (LML) is proposing the development of the Kookaburra Gully Graphite Mine (Kookaburra Gully). The Project Area is located approximately 35 km north of Port Lincoln on the Eyre Peninsula in South Australia.
- LML has identified three graphite resources in close proximity to each other:
- Kookaburra Gully
- Kookaburra Gully Extended, and
- Koppio.
- LML intends to focus primarily on Kookaburra Gully, with other resources being a secondary consideration. This requires a mineral lease (ML) over the area for the mine and primary infrastructure and will subsequently apply for various Miscellaneous Purposes Licenses (MPL) for associated infrastructure of the ML.
- The question being, is the application an overarching application for the activities not only associated with Kookaburra Gully Mine site but for the holistic view encompassing the original Koppio Mine and Kookaburra Gully extended as inferred by information provided in relation to haul routes and transport requirements in Volume Two?
- There are also local suggestions that this development may also enable some symbiotic arrangement to exist between Australian Graphite Limited and Valance (Uley) Graphite for which there has been no public consultation. Part of the relationship may be the establishment of haul routes between the two prospects. The impacts of such an arrangement are not known, but may be additive to those identified above.

Summary:

In our opinion AGL/LML are speculating without independent documentation to support their mine lease proposal.
AGL refer to this as a small mine but the concerned community are looking at the complete footprint this mine will have on their environment and community health and well-being.
Eighteen hectares is not the footprint of the mine.
We suspect incomplete data in all documentation, one example being the following from Ground Water Modelling:

Reference: 10 Important information about this report.
Kookaburra Gully Groundwater Modelling reference: Page 36.
This hydrogeological investigation report ("the report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Aldam Geoscience. In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

In preparing the report, Aldam Geoscience has relied upon data, surveys, analyses, designs, plans and other information including that provided by the Client and other individuals and organisations, most of which are referred to in the report. Except as otherwise stated in the report, Aldam Geoscience has not verified the accuracy or completeness of those data. To the extent that the statements, opinions, facts, information, outputs, conclusions and/or recommendations in the report are based in whole or part on the data, those outputs and conclusions are contingent upon the accuracy and completeness of the data. Aldam Geoscience will not be liable in relation to incorrect output or conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Aldam Geoscience.

Summary Continued:
This report is also based on subsurface investigations, including drilling and test pumping and it is possible that variations may occur between the test locations. Site investigations identify specific subsurface conditions only at those points drilled, sampled and tested, and the data derived from the site investigation program have been interpolated across the site to form an inferred hydrogeological framework.

Despite investigation, the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies.

Incomplete data appears to be throughout the MLP document.

As a group that is involved with the community SIMGI is raising as many concerns as we can in the short time given to us so that the Department of State Development addresses them.

Stop Invasive Mining Group Inc. members oppose invasive mining on food and fibre producing agricultural land.

Caveat to the use of the material provided:

Yours faithfully,
Bronte Gregurke,
Keith Coventry.

Contact details: Bronte Gregurke or Keith Coventry.

Postal address: PO Box 134 Tumby Bay 5605 South Australia.

Email address: epsimgi@gmail.com

Bronte Gregurke.
Chairperson: Stop Invasive Mining Group Incorporated.

This email is intended for the named recipient only. The information contained in this message may be confidential, or commercially sensitive. If you are not the intended recipient you must not reproduce or distribute any part of the email, disclose its contents to any other party, or take any action in reliance on it. If you have received this email in error, please contact the sender immediately, and please delete this message from your computer.

Kookaburra Gully Graphite Mining Lease Proposal
public comment by Emie Borthwick

I provide this submission to reflect my sincere concern with the Mining Lease proposal.

The following Quotes from the Mining Lease Proposal are a major cause for concern to me:

a. "As discussed with the Eyre Peninsula NRM Board, a catch drain/diversion channel to intercept surface water flows will be sized and constructed around the TSF and treated using water sensitive design techniques within the constructed drain prior to being redirected to the Pillaworta Creek."

   What are the water sensitive design and treatment techniques?

b. "The EPNRM Board expressed a desire that water flows to Pillaworta Creek and water dependent ecosystems (WDEs) were maintained, and acknowledged that, given the open pit is positioned through the existing creek line, this could only be achieved through the implementation of a catch drain or diversion channel."

   A complex understanding of the hydrogeology of the immediate area is unknown and concern is raised into this determination. What technical/raw data did the company provide to the Board and what science, experience and qualification does the board have to determine if their 'desire' is of benefit to the environment?

   ALL materials associated with the mining proposal for which the Company is reliant upon should be contained within the Lease.

c. "A surface water drainage system will be established around the stockpiles and WRSFs to manage the collected water so that mining operations are maintained, and impacts to the environment are minimised (Figure 4.4 to Figure 4.6). Collected water will be directed initially to water detention ponds for silt detention, removal and monitoring then allowed to discharge to the environment."

The salinity of the raw water that will be used extensively for dust suppression will accumulate over time within the mineral lease, discharge into the environment will be determined by the ability to meet the regulatory requirements.

d. "The Barngarla people advised that reinstatement of the ephemeral creek was the preferred outcome."

   Contact and information from the Barngarla women renders this statement false.

I find the following issues evidence of the Mining Lease proposal falling behind a minimum standard of acceptability:

1. The limited economic gain being identified fails to recognize Environmental Diversity and Resilience, which remain in the interest of our generation and future generations.

2. The proposed mining operation is located in the Tod River Wetland System which is recognized and included in the directory of Important Wetlands in Australia. My concern is in relation to the unknown hydrogeological interactions within the 400km^2 area that is the Tod River Catchment and Wetland System.

3. The ecological and hydrological functioning of the Tod River Estuary, the only surface water system with a permanent connection between the mouth and the ocean on the Lower Eyre Peninsula, is not identified in the Mining Lease proposal.

4. The Pillaworta Creek Catchment is a major component of the environmental water for the known system, and not as 'the supply' to the Tod Reservoir. Therefore baseline data must be

determined for both upstream and downstream of the proposed project so that management criteria can be determined for the known impacts and potential risks of the project before mining begins.

5. Even though the Mining Lease proposal suggests that dewatering effects will impact on the Pillaworta creek system, and diversion channels have been developed in consultation with the EPNRM.

   Based on the lack of scientific information available dewatering effects on the local valley tracts, ephemeral springs and the complex fractured rock aquifers are assumed to be minimal. Eyre Iron identified significant water sources from previous drilling within close proximity to the Kookaburra Gully site that has been ignored by the company stating that large volumes of water encountered must be an error. The data provided by Eyre Iron has been used by the company with significant detail removed, or the data provided was limited, either way it should be the proponents responsibility to invest the time and money to determine baseline data that can support a mining lease proposal.

6. “Resupply the creek using pit-water if necessary, ensuring it meets water quality criteria.”

   For the technical reasons discussed below and the hydrological assumptions based on a limitation one drill hole made by AGL (in the middle of the graphite resource which is by virtue of that strata part- isolated from the surrounding hydrogeology) this statement holds limited credibility and should be withdrawn from the proposal if not able to be supported by significant additional information that is site-specific.

7. “Rehabilitation strategies have been articulated and AGL will work with the EPNRM Board in rehabilitation methods.”

   What technical and engineering experience does the EPMRN Board have to be referenced in this way?

   The Mining Lease proposal that has been submitted to the Department for State Development for assessment is deficient in that it is not adequately relative to the specific site therefore the activities, impacts, mitigation and relationship to the regional setting is unknown and unqualified.

   Comments, management plans, mitigation strategies are well below a standard I have come to expect from a department that promotes world’s best practice. One of many examples within the Mining lease proposal is the Tailings Storage facility -

   - “seepage is predicted to be very low through the tailings dam due to low permeability”
   - “A low permeability tailings mass that will restrict movement of water.”
   - “The use of a low permeability liner on the upstream side of the TSF will form a barrier to water movement through the dam.”
   - “The supernatant pond will be kept isolated from the embankment to minimize the development of seepage forces.”
   - “Seepage collection system within the TSF embankment. SCP system downstream of the TSF embankment.”
   - “Ground and surface water monitoring location downstream.”
   - “The TSF is categorized as a low hazard for uncontrolled water release. The reason for this that the open-pit is the immediate structure downstream of the TSF so any potentially uncontrolled water releases are minimal as the water would flow into the open-pit. However, the TSF is rated as a high hazard for embankment failure as such a failure could potentially cause excessive economic loss to LML.”

- “No particle size distribution (PSD) of the tails is currently available. None was assumed.”
- “No specific gravity (SG) for the tails is currently available.”
- “No drained or undrained settled density data is currently available.”
- “No permeability data is currently available.”
- “No specific geotechnical data is currently available for the tailings.”

Examples of a few of the recommendations provided by a consultant

- “Once these studies are complete the design can be redone based on the findings of these studies.”
- “additional site investigations be conducted to help quantify the geotechnical, hydrogeological, and hydrological properties of the TSF and WRSF areas.”
- “a laboratory testing program aimed at determining the material properties and geotechnical characteristics of the project.”
- “As the encapsulation of the PAF waste is an important component of the TSF operating philosophy the determination of the actual PAF production schedule is required.”
- “A laboratory testing program would also be required to determine the physical characteristics of the PAF waste material.”
- “site wide water balance be completed”
- detailed mine design, mine schedule, and reserve estimate are done during the feasibility study, which will allow the amount of different materials generated through the LOM and the economic return of the project to be quantified.”

The concerns of the consultants report, summaries and conclusions, I agree with, there is no scientific evidence and baseline data that supports the concepts and plans the company has submitted in the Mining lease proposal.

A South Australian company has discovered recently that despite detailed technical information and engineering plans, clay based compaction liners can leak and seep into the environment.

AGL proposes this technique, with minimal use of HDPE liners, “low permeability clay within the TSF basin that will form a barrier to water movement”
This should never been relied upon, especially in light of the enormous lack of data that this company has to support this kind of statement. Lessons learnt must not be repeated in such a sensitive ecological environment such as the Tod River Catchment.

The Mining Lease Proposal does not contain the empirical data to determine:

i. The existing Environments
ii. Potential impacts
iii. Mitigation measures
iv. Baselines
v. Ability to determine measurement criteria

Mining activities involving excavation, pulverization, dust generation, or use of water, often result in aeration and oxidation of mineralised zones. Within mineral zones, any iron oxides that may be present as fine grained haematite, or magnetite, in contact with water can be oxidised to iron oxides, liberating the sulphide to react with oxygenated water or water, thereby producing sulphuric acid (the ‘acid sulphate’ phenomenon).

Sulphuric acid is a well known chemical reagent that can interact with and dissolve minerals and other compounds. It is used in wet chemistry procedures/analyses (often in combination with other acids) to help dissolve soils and other compounds. In an artificially-produced acidic environment, such as in a mining operation, the sulphides and oxides of other metals such as Chromium, Arsenic, Copper, Lead, Manganese, Cobalt, Nickel, and Zinc (if present) can react with the sulphuric acid, mobilising the metals from their parent minerals by - these metals (now in solution) can find their way into the groundwater or surface water to become problematic heavy metal contaminants.

Acid Sulphate Soil (ASS) in inland aquatic ecosystems were recognised as an important issue only relatively recently. Therefore, there has been little government response in the form of legislation, policy and scientific, technical, and management guidance on assessing and managing them in inland aquatic ecosystems.

It should be noted, the term ‘acid sulphate soil’ generally includes both actual and potential acid sulphate soils. Actual and ‘potential acid sulphate soils’ are often found in the same soil profile, with ‘actual acid sulphate soils’ generally overlying potential acid sulphate soil horizons. The Mining Lease proposal is blatantly deficient of credible contingency plans in case of complications.

I find that in the above context, the cost saving options identified in the proposal by the company unacceptable. The TSF and WRSF proposals have not identified the potential impacts to the environment, from a surface catchment perspective or the complex nature of the groundwater systems.

8. “Baseline dust data were collected by Eyre Iron Pty Ltd for the Fusion project over a period of one year on Pillaworta Road adjacent to the proposed mine site, although continuous meteorological, particulate matter and suspended particle data were collected approximately 6 km away.”

   I have consideration that the company has been working on this Mining Lease proposal for a few years. So why did the company not produce any data to support that investment of time which can credibly be concluded as knowledge relevant to this Mining Lease proposal?

   If this proposal was developed appropriately, to express the knowledge of the company for the project and gain the trust of the community, then this type of cost-saving redacted information contained within the Mining lease proposal is inappropriate.

   I fail to see that minimum standards have been met. Reputable mining companies in the State, have expressed concern at the lack of regulatory requirements being addressed and the acceptance of this type of minimal quality application and undefined resource.

9. “Because the haul road to WRSF South will cross an actively eroding small ephemeral creek, the crossing will be constructed as a Grade Control Structure (GCS) (Figure 4.70). This GCS will be constructed so as to facilitate storm surge water flows and halt any further upstream migration of the eroding creek bed. A Water Affecting Activity permit application will be prepared and submitted to the EPNRMB for the construction of the GCS.”

   As a local resident daily driving along Pillaworta Road for the past 20 years, I have deep concerns at the lack of understanding and knowledge assumed by the Company. Ephemeral creeks cross the Pillaworta Road in many locations, some have simple structures to mitigate flows others have none. After heavy rainfall events this road can become impassable to any traffic apart from a 4wd, for a day and/or weeks at a time.

   I have repeatedly sought to engage in the community consultation referred to by the company and in my opinion this has been inadequate and lacked relevant detail. Suggesting the company either does not know what it is proposing to do (making it up as they go along) or seeks to deny and limit relevant information of concern to the community.

   One conversation with the company’s representatives on the traffic predicted for Pillaworta Road detailed only 2 to 4 semi-trailer movements per day. After reading the Mining Lease proposal this statement was both inaccurate and misleading.

   School bus timetables have been mentioned throughout the document, my confusion is how can the company plan for and mitigate something that has never been discussed with the affected community members?

Of major concern is the predicted impacts being downgraded to minor by basing the recalculation upon assumptions and no knowledge of credible management. The dangers of the intersection of Pillaworta Road and the Tod Hwy have not been identified and the communities response to this is “someone will be killed at that intersection.”

How can a loss of life be mitigated?
Local knowledge and concern has again being ignored, downgraded and mitigated!

The already concerning and potentially ‘dangerous when wet’ conditions of this road have not been addressed and/or acknowledged.
How often and what Pillaworta Road is used for has been ignored by the Company and therefore will not be included in the management plans that are yet to be established.

The examples include:

i. The demographics of the road users.
ii. Predicted experience and ability to safely share the road with in excess of 150,000 traffic movements per year.
iii. Day to day agricultural needs and uses of the road
iv. Impacts to the tourists that frequently drive through this area.
v. Noise levels of braking and accelerating through steep inclines and declines.
vi. Frequency and numbers of kangaroos that share the road, especially certain times of the year.
vii. Fallen trees across fences and the road, frequently during certain times of the year, with dry windy conditions.
viii. Detailed impact study of the EP Blue Gum Communities along the roadside.

The Mining Lease proposal clearly reflects that my personal knowledge, and that of many other landowners, relevant to the specifics of the site has not been obtained and/or considered.

The company has failed to engage the local community so as to ensure that as affected landowners we will either not be impacted or the predictable impact/s are being recognised and thereupon considered in the management capability of the company for the mining proposal.

Trucks entering the Pillaworta Road from Bratten Hwy can be heard from our residence 3kms away, this aspect has not been considered, neither has the topography of the road, a steep decline is located near my driveway, acceleration and braking increasing the impacts of noise disturbance.

Confusion in the representation in the Mining lease proposal for the times of day/night that heavy traffic is to operate is not identified. The inconsistency of information upon which I can comment in relation to the company’s proposal of daylight hours contradicts the restrictions identified by the consultants.

References are made throughout the Mining Lease proposal as to the minimal upgrades needed for Pillaworta Road, in light of the lack of understanding the limitations and complex nature of the environment.

Where is the baseline data, which council and EPNRM does not have, that relevantly supports the unrealistic assumptions, future safety, environmental impacts, EPBC listed species and communities, mitigation outcomes, suitability and predicted ongoing costs of Pillaworta Road being the most suitable road for the proposal.

Another example of the inaccurate assumptions based on limited/non-existent data that cannot identify or support any prediction for the impacts. Therefore having no relevant mitigation capacity identified in the Mining Lease proposal its lack of credibility by virtue of specific engineering data and an environmental understanding.

Proposals for ‘quarry’s’ have been more detailed! although this project has been referred to by the Company, to the community, as nothing more than a ‘small quarry’. There are many

differences and this type of inaccurate misleading information should render the consultation process a failure.

10. “An SEB contribution in accordance with legislative requirements will be made to the Native Vegetation Fund or equivalent approved fund (e.g. Nature Foundation of SA). This will enable funds to be provided for activities leading to an overall ecological benefit.”

and

“Discussions with the EPNRMB have highlighted that numerous local programs could benefit from any fund contributions made to offset the local vegetation losses associated with the Kookaburra Gully Graphite project. AGL is excited to be able to contribute to local programs to ensure the viability of these projects but this is subject to Government priorities and approvals.”

In relation to Significant Environmental Benefits, the payment option, has been chosen by the company. This does not automatically mean that funds will be returned to the direct area affected. The Company is making a false statement in promoting this to be achievable by the company. There is a process that must be accountable and transparent.

The company will have conditions and requirements based on the application and approval process, underpinned by the Mining Regulations 2011 and the Mining Act 1971 and therefore any local projects must be over and above the determined requirements of the company. I have significant concern as to the Company’s claims for the use of offsets, EPNRM Boards understanding of the process (as there have been significant changes to policy in the past year) and ability to not create a conflict of interest, DSD delegated authority’s and the lack of transparency and accountability.

11. “AGL will be responsible for environmental management (including weed and pest management) in the ML area. The program may have an effect on the wider area. LML and AGL have already compiled considerable new information on the flora, fauna, groundwater, soils and air quality in the local area and broader Koppio region as part of the baseline data collection for this proposal. Ongoing monitoring of flora, fauna, groundwater, soils and air quality in the ML and adjacent areas will add significant research information regarding the environment character of the region.”

This statement confirms that there is little known data and understanding of the existing local and regional environment. The little information that is located on government databases is unknown to the community, as the internal consultation process is behind closed doors for the government department’s relevant comments. How do we know that the company is following recommendations specified from the departments if their comments are undisclosed.

12. “The key stakeholder is DEWNR in terms of potential impacts on fauna. No concerns have been raised by DEWNR. The EPNRM Board and Biodiversity Officer at the DCTB highlighted that possums are found in the region. Community members also raised concerns about possums in the locality interacting with the project.”

What are the concerns raised by DEWNR in relation to other aspects of the project?

The summaries and conclusions paint a very different picture to that of the company, this must be addressed, in the exploration phase as the place and time to gather the data that is needed to prove the cost v’s economic gain for the project is quantified.

BEFORE the process is fast tracked to a mining phase of shareholder’s pockets to support the dream of unlocking huge potential that cost more than can be made, from a small insignificant uneconomic deposit.

Despite new technologies and developments in high grade graphite potential, is the grade high enough for a premium price? Once the proposal is refined and quantified is the deposit

economically viable? Considering the potential conditions of the Mining Lease and ongoing rehabilitation and monitoring?

The recent downgrading of operations at the only other graphite mine in South Australia, that recently only reopened, is of significant concern

It is my opinion that this Mining Lease Proposal has created more questions and concerns than answers. A few exploration holes, borrowed data from another company, no long term commitment from the company to begin site specific scientific baseline data, future exploration for the “real” mining potential that is estimated at 4.5kms long (kookaburra Gully extended), and a very limited financial capacity to complete rehabilitation requirements for past exploration at the Barns Deposit (which should have been completed), raises concern’s, on the company’s ability to successfully move from an exploration to a mining company.

Again where are the formal comments from the government departments as inclusions in the Mining Lease proposal so as to identify to me and the community the concerns we have repeatedly expressed to the Company have been identified and responded to competently?

If a mining PEPR is based on the information contained in the Mining Lease Application, I have concern’s for the completeness of that future document also.

I, and my community, am left without confidence in transparency and compliance being achieved for the Mining Lease proposal process having been overseen efficiently by the government. A benefit to the State at this point is clearly questionable.

Emie Borthwick