Submission Cover Sheet

North East Link Project EES IAC

383

Request to be heard?: yes

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Affected property:

Attachment 1: NEL_EES_Submissi

Attachment 2:

Attachment 3:

Comments: Submission is more than 500 words and is therefore uploaded.

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6 June 2019

The Inquiry and Advisory Committee
North East Link Project
Planning Panels Victoria
Department of Environment, Land, Water and Planning

via online submission portal: *Engage Victoria*

Dear Committee

RE: MANAGEMENT OF WASTE ACID SULFATE SOILS

This submission by Nagambie Resources Limited (NRL) is provided to inform the Inquiry and Advisory Committee (IAC) that the Environment Effects Statement for the North East Link Project (the NELP EES) describes the management of waste acid sulfate soils (WASS) in a manner that is highly inconsistent with legislated policies and guidelines. If WASS were to be managed in accordance with the current NELP EES, it would lead to significantly reduced environmental and social outcomes as are currently occurring with the management of the WASS generated from the Metro Tunnel and West Gate Tunnel Projects.

Acid sulfate soil

Acid Sulfate Soil and Rock is geological material containing metal sulphides. Typically, the metal sulfides are iron sulfides in the form of pyrite. Exposure of iron sulfides to oxygen – for example by drainage and excavation of these soils or rock – causes the sulfides to oxidise resulting in the generation of sulfuric acid. This may cause acidification of soils, surface water and groundwater. Acidic leachate can release aluminium, iron and other metals from soil and sediment, and has the potential for significant adverse environmental and human health impacts.

ASS is the generic term used to describe both actual acid sulfate soil and rock (AASS) and potential acid sulfate soil and rock (PASS). AASS is material already generating sulfuric acid as it oxidises. PASS is material that has not oxidised, but if exposed to oxygen would start to produce sulfuric acid. ASS material in Melbourne typically comes in two forms:

- Soil, sediment or unconsolidated material, such as Coode Island Silt (and similar geological material). NRL has termed PASS material of this nature ‘soft PASS’; and
- Consolidated rock mass, such as sandstones and siltstones of the Melbourne Formation. NRL has termed PASS of this nature ‘hard PASS’.

Legal instruments governing the management of ASS

The Industrial Waste Management Policy (Waste Acid Sulfate Soils), 1999 (the WASS Policy) is the policy that governs the management of waste acid sulfate soil in Victoria. IWMPs are statutory instruments and their provisions are legally enforceable and binding on all private individuals and all private and public sector organisations (EPA publication 680, p4).

The Policy, amongst other things:

- States the objective of the Policy, which "is to protect human health and the environment from risks that may be posed by waste acid sulfate soils, by ensuring that they are managed in an environmentally responsible manner" (clause 7);
- Requires ASS to be managed in accordance with best practice or any best practice environment management guidelines approved by the EPA (clause 9);
- Requires that waste acid sulfate soil is disposed or reused only at premises where the occupier is (1) licensed under the Environment Protection Act 1970 to dispose of ASS, or (2) has an environment management plan (EMP) prepared in accordance with the Policy and approved by the EPA (clause 13);

With reference to clause 9 of the Policy, EPA Victoria's current best practice management guideline is EPA (2009) Publication 655.1 *Acid Sulfate Soils*. The Department of Sustainability and Environment's (2010) *Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils* is the other principal document in Victoria in which 'best practice' management of acid sulfate soil is described.

EPA(2009) and DSE(2010) provide for the following hierarchy of management approaches (Publication 655.1, p4):

1	**Avoid disturbance**
2	**Minimise disturbance**
3	**Prevent oxidation**
4	**Treat to reduce or neutralise acidity**
5	**Offsite reuse or disposal**

This hierarchy is based on the Principle of Waste Hierarchy which is one of the Principles of Environmental Protection enacted in law under section 1I of the *Environment Protection Act 1970*.

The hierarchy suggests that the practices at the top of the hierarchy are 'better' practice than those at the bottom of the hierarchy (e.g. 'Avoid disturbance' is better practice than 'Offsite reuse or disposal'). Given the nature of the NELP, it is unlikely that the first two methods can be used, as there would be limited opportunity to avoid and minimise ASS disturbance. Therefore, the most preferred method is 'Prevent oxidation', which is better practice than 'Treatment to reduce or neutralise acidity' and 'Offsite reuse or disposal.' **The intent of Clause 9 of the Policy is that WASS should be managed using the method, which is highest in the best practice hierarchy, where practicable**. This is '*Prevent oxidation.*'

Prevent oxidation

The *Prevent oxidation* management approach involves placing excavated WASS in an anaerobic environment, such as underwater, where the oxidation of sulphides and thus the

generation of acid, is prevented. **Therefore, when WASS needs to be taken offsite, the most preferred and best practice approach is to transport the WASS to a location where it can be placed underwater**.

Treat to reduce or neutralise acidity

The WASS management method *Treat to reduce or neutralise acidity* involves mixing the WASS with a neutralising agent such as lime. This management method effectively allows the WASS to oxidise and generate acid, which is then reduced or neutralised by the lime. The treated material can then be reused at an appropriately approved facility (as approved under clause 13 of the WASS Policy). Practically, treating WASS with lime is resource intensive and requires the construction of a mixing area (a suitable engineered pad with drainage collection) and the operation of plant and equipment to physically mix the lime and WASS together in the correct quantities. Once mixed, the treated WASS needs to be tested to ensure the resultant pH is achieved. The reasons that treating WASS with lime is less preferred is as follows:

- **It is inherently an unsustainable management approach**, as it requires the consumption of other scarce resources (limestone and energy) to treat the waste . It requires operation of additional plant and heavy equipment to mix the two ingredients together, and it requires follow up and ongoing monitoring;
- **It is an extremely greenhouse gas intensive management method**, as both the production of lime and the treatment of the ASS with lime (termed 'liming') releases significant amounts of greenhouse gases (see discussion of greenhouse gas emissions below).

Offsite reuse or disposal

The least preferred WASS management approach as stated in the WASS Policy is *Offsite reuse or disposal*. This is a somewhat misleading title as the hierarchical management of WASS should include its reuse.

The WASS Policy Impact Assessment (Policy Impact Assessment – Managing Waste Acid Sulfate Soils (EPA 2000) provides clarity to the *Offsite reuse and disposal* approach. It states (p17):

> *EPA aims to work with industry to promote and encourage reuse options rather than disposal of acid sulfate soils to landfill. In particular, EPA will encourage the diversion of this material to unlicensed premises who have an EMP approved under the Policy setting out reuse proposals, in preference to disposal at landfill.*

For this statement, clearly the intent of the WASS Policy is:

- To prevent WASS disposal to landfills;
- Encourage reuse options at approved facilities, with a preference for facilities that use a WASS management approach higher up the hierarchy where practically accessible (see 'Practically accessible' test below).

EPA's Publication 968 Waste Management Policy (Siting, Design and Management of Landfills) 2004 (for simplicity "EPA Landfill Policy") also supports this interpretation of the intent of the WASS Policy. The Foreword and Executive Summary of the EPA Landfill Policy:

- encourage “waste avoidance and recycling rather than filling up our landfills [as] an important way of contributing to a more sustainable Victoria”;
- encourage “use of landfills [as] a last resort”;
- encourage use of “management options higher up the wastes hierarchy. In particular, the policy reinforces that landfills are the least preferred waste management option and therefore their development and use should be kept to a minimum”; and
- finish by saying “the construction of a landfill comes at a cost and decreasing the amount of waste disposed to landfill will conserve valuable landfill space and extend the life of a landfill’s capacity”.

Given EPA’s Landfill Policy, the least preferred WASS management approach (i.e. disposal to landfill) includes consumption of **actual landfill space and potential landfill space** (i.e. space within landfill sites adjacent to developed landfill cells that should be preserved for future developed landfill space).

The WASS Policy Impact Assessment also describes that the WASS Policy has been prepared in a manner that allows flexibility in the choice of WASS management approaches. At the time of its declaration (1999) there was likely limited facilities where WASS could be managed in accordance with the approaches higher up the hierarchy (i.e. prevent oxidation) and landfill disposal was considered an infinite resource. Today however, there are numerous facilities that offer best practice WASS management and therefore the actual intent of the WASS Policy should be upheld.

Infrastructure that supports the WASS Policy

There are a number of approved facilities in Victoria that can manage WASS. These facilities are either landfills licenced to accept WASS or the facility has an environment management plan for the acceptance of WASS approved by the EPA (as per clause 13 of the WASS Policy).

For unknown reasons, these facilities are not made publicly known by the EPA. However, searches of EPA’s database of approved licences reveals that there are six or seven licenced landfills that are approved to dump WASS in their facility. From information obtained through the *Freedom of Information Act 1982*, there are also numerous facilities in Victoria that have an approved environment management plan to manage WASS. As of November 2018, there are approximately seven facilities with an approved EMP, two or three of which use *Prevent oxidation* (underwater placement) as the management approach. These facilities are located in Maddingly (located approximately 60km from Melbourne), Nagambie (located approximately 130km from Melbourne) and possibly Langwarrin (located approximately 50 km from Melbourne).

‘Practicably accessible’ test

The Environment Protection (Industrial Waste Resource) Regulations 2009 requires waste producers to use the "*practicably accessible*" test to determine whether there is an opportunity for avoidance, reuse or treatment respectively. It is used by the EPA to determine which management approach the waste producer is to use.

Practicably accessible is defined (Reg 5) as follows:

Practicably accessible means that having regard to the location of the premises and the scale of the business conducted by the prescribed industrial waste producer and the financial viability of that business, the technology and facilities are reasonably available and reasonably affordable.'

If the practicably accessible test is applied to *Prevent oxidation* (as per the table below), it is evident that ***Prevent oxidation*** **is reasonably available and reasonable affordable in the context of the North East Link Project**, and therefore should be used ahead of the other WASS management approaches.

Test element	**Element outcome**
Location of 'Prevent oxidation' premises	50 km to 130 km from Melbourne
Scale of the business conducted	$15 billion project
Financial viability of the business (Victorian Government)	Effectively unlimited
Facility technology	Simple – involves placing WASS underwater in water-filled pits
Affordability - direct costs	Lower than *Treat to reduce or neutralise acidity* as there is no need to purchase and mix with lime.
Affordability - externalities	Lower than *Treat to reduce or neutralise acidity* as it avoids the necessary production of lime and its associated greenhouse gas emissions.

North East Link Authority Policies

The North East Link Authority (NELA) has committed to operate in accordance with an Environmental Policy and a Sustainability Policy when delivering the Project. Key statements of the policies are provided below:

NELA Environmental Policy

'Our Vision is to lead by example through setting, maintaining and delivering high standards of environmental performance and management across all phases of delivery of the North East Link Project demonstrating our commitment to continuous improvement.'

'The North East Link Project will work with our project partners to:

- *Adopt leading practices in environmental management…'*
- *…..strive to exceed our environmental compliance requirements, including all applicable environmental legislation, regulations, objectives and targets';*
- *Continually seek opportunities to reduce our environmental footprint, improve environmental outcomes and create lasting benefits.'*

'To give effect to this Policy, our people will:

- *'Take responsibility for reducing and managing our environmental impacts and risks'*

NELA Sustainability Policy

'Our Vision is to achieve excellent environmental, social and economic outcomes across all phases of the North East Link project in order to leave enduring positive benefits for communities and contribute to the future liveability of Melbourne.'

'To achieve this Vision, the North East Link Project will work with our partners to:

- *Use resources efficiently by embedding …… waste reduction initiatives into the design, construction and operation of the Project;*
- *Play a part in Victoria achieving its emission reduction targets while preparing for the challenges presented by climate change.'*

'To give effect to this Policy, our people will:

- *Be leaders in sustainability and integrate sustainability principles into planning, design, procurement and project decision making'*

If the above key statements of the Environmental and Sustainability Policies were to be applied to the management of WASS from the Project, it is evident that the North East Link Authority should ensure that the highest WASS management approach on the hierarchy is implemented, particularly when it is reasonably available and reasonably affordable.

WASS and the North East Link Project

Estimated quantities of ASS from the Project

Table 23-4 of the NELP EES states that the estimated volume of acid sulfate soil and rock that would be generated by the Project is 2,630,000 metres cubed (m^3). Applying average densities of 2.65 t/m^3 for acid sulfate rock (sandstone and siltstone) and 2.00 t/m^3 for acid sulfate soil (derived from http://www.edumine.com/xtoolkit/tables/sgtables.htm), the quantity of WASS that would be generated by the Project is approximately **6.6 million tonnes** (Mt). It is noted that the Technical Report R – Greenhouse Gas report assumes a spoil density of 1.5 t/m^3 (Appendix D - Tunnel calculations – Spoil transportation, page number not provided). This density is considered highly conservative and likely to be incorrect.

With other WASS generating major infrastructure projects being constructed concurrently with the NELP, it is likely that approximately 1.0 to 1.2 Mt of WASS will be generated per year over at least the next seven years and potentially the next 15 or more years. To put this into perspective, Melbourne disposes approximately 4.2 Mt of waste to landfill per year (in 2016-17, Sustainability Victoria).

WASS management as stated in the NELP EES

Chapter 23 of the NELP EES provides an assessment of the contamination impacts (including from WASS) associated with the construction and operation of NELP and is based on the impact assessment presented in Technical Report O – Contamination and soil.

Chapter 23 states that WASS will be managed in accordance with an Acid Sulfate Soil Management Plan that would be prepared as part of an overarching Spoil Management Plan (SMP). The Plan '*could include but would not be limited to*' (p23-14 and 15):

- *Development of appropriate stockpile areas including lining, covering and runoff collection to prevent release of acid to the environment;*
- *Addition of neutralising compounds to prevent acid formation;*
- *Preventing oxidation through scheduling practices; that is, ensuring that acid sulfate materials are transported to licensed receiving facilities and not left in stockpiles onsite.*

WASS management is also addressed as an Environmental Performance Requirement. These EPRs are provided in Chapter 27 of the EES. EPR CL2 is as follows (Table 27-4, p27-32)

> *Minimise impacts from disturbance of acid sulfate soil*
>
> *The SMP referenced in EPR CL1 must include requirements and methods to minimise impacts from disturbance of acid sulfate soil, including but not limited to:*
>
> - *Characterising acid sulfate soil and rock prior to excavation*
> - *Developing appropriate stockpile areas including lining, covering and runoff collection to prevent release of acid to the environment*
> - *Identifying suitable sites for re-use management or disposal of acid sulfate soil and rock*
> - *Preventing oxidation that could lead to acid formation if possible through cover and/or scheduling practices, i.e. ensuring acid sulfate soil and rock is not left in stockpiles for any length of time and/or addition of neutralising compounds.*
>
> *Requirements and methods must be in accordance with the Industrial Waste Management Policy (Waste Acid Sulfate Soils), EPA Victoria Publication 655.1 Acid Sulfate Soil and Rock, and the Department of Sustainability and Environment's Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil.*

From the information provided in the NELP EES, it is evident that:

- there is not a full understanding of the intent of the WASS Policy, or
- the intent is being ignored or deliberately interpreted in a way that facilitates the adoption of approaches at the lower levels of the WASS hierarchy. The stated method of preventing oxidation through scheduling practices or covering the WASS is incorrect and misleading. Scheduling practices do not prevent oxidation of the metal sulphides in ASS. Preventing oxidation can only be achieved by placing the excavated WASS in an anaerobic environment;
- the stated WASS management approach is in contradiction to the intent of the WASS Policy, the WASS Policy Impact Statement, EPA's Landfill Policy, best practice, and the commitments of NELA's Environmental and Sustainability Policies.

ASS Management and greenhouse gas emissions

Carbon emissions from the management of WASS from the NELP

Greenhouse gas emissions from the NELP are assessed in Chapter 26 of the NELP EES. Chapter 26 is based on the information contained in Technical Report R – Greenhouse gas.

In regard to the management of WASS, it appears that Technical Report R failed to consider the emissions associated with the production of lime needed to treat the generated WASS. If the intended WASS management method is *Treat to neutralise acidity*, then the emissions associated with this approach need to be included as a Scope 3 emission due to their materiality (as shown below). The EES for the Metro Tunnel Project (called the Melbourne Metro Rail Project or MMRP) also failed to consider this significant emission source.

Greenhouse gas emissions from ASS management approaches

Using the data provided in Technical Report R – Greenhouse gas, the following is a comparison of the carbon emissions that would be emitted under the following ASS management scenarios:

1. *Treat to neutralise acidity*, at a facility 35 km from the construction site; and
2. *Prevention of oxidation* at the Nagambie facility located 130 km from the construction site.

The emissions sources from managing the WASS at these facilities are:

	Emissions from transport		Emissions from Liming		Emissions from the production of lime
Treat to neutralise acidity	✓	+	✓	+	✓
Prevent oxidation	✓	+	None	+	None

Emissions associated with transport of WASS

Using information from Technical Report R – Greenhouse gas, the emissions associated with transporting the WASS to the various facilities are compared in the Table below.

	Treat to neutralise acidity facility (35 km one way)	*Prevent oxidation* (Nagambie facility, 130 km one way)	
Total acid sulfate soil	594,000	594,000	m^3
Total acid sulfate rock	2,036,000	2,036,000	m^3
Total WASS (2.65 t/m^3 for acid sulfate rock (sandstone and siltstone) and 2.00 t/m^3 for acid sulfate soil)	6.6	6.6	Mt
Total no. of trucks (25t per truck)	264,000	264,000	truckloads
Total kms for disposal of ASS	9,240,000	34,320,000	km
Total ASS transport diesel (0.00056 kL/km)	5,174	19,219	kL
Diesel fuel – energy content factor – Scope 1 (38.6 GJ/kL)	199,732	741,861	GJ
Scope 1 – CO2 (69.9 kg CO2-e /GJ)	13,961,256	51,856,092	kg CO2-e

Scope 1 – CH4 (0.1 kg CO2-e /GJ)	19,973	74,186	kg CO2-e
Scope 1 – N2O (0.5 kg CO2-e /GJ)	99,866	370,931	kg CO2-e
Scope 3 - (3.6 kg CO2-e /GJ)	719,035	2,670,700	kg CO2-e
Total transport emissions (one way)	14.8	55	kt CO2-e
TOTAL transport emissions (return)	29.6	110	kt CO2-e

Emissions associated with liming of ASS

Table 8-1 of Technical Report R states the emissions from liming the ASS is 59 kt CO2-e.

Emissions from the production of lime

Appendix D of Technical Report R states the liming rate is 186 kg lime per metre cubed of WASS. Therefore (0.186 x 2,630,000) 489,180 tonnes of lime is required for liming.

Using the publicly available greenhouse gas protocol sector specific tools calculator for lime production - Approach 1 (available online [https://ghgprotocol.org/calculation-tools], accessed 29 May 2019) the emissions of CO2-eq from the production of 489,180 tonnes of lime (using the most conservative default settings in the calculator) would be 362 kt.

If the emissions from the production of lime were added to the total estimated construction emissions, it would represent an approximate 18% increase to that reported in Technical Report R, Table 8-1. This is a material increase.

Total comparable emissions

The estimated carbon emissions from the transport and treatment of ASS/ASR with lime at a facility on the outskirts of Melbourne compared with emissions from transport of the ASS/ASR to Nagambie are as follows:

ASS management approach	Emissions from transport (kt CO2-e)	+	Liming (kt CO2-e)	+	Production of lime (kt CO2-e)	=	Total emissions (kt CO2-e)
Treat to neutralise acidity (outskirts of Melbourne)	29.6	+	59	+	362		450
Prevent oxidation (Nagambie)	110	+	0	+	0		110

The above estimates of emissions for the *Treat to neutralise acidity facility*, do not include the emissions from plant and equipment needed to mix the lime (which was included in the MMRP EES) , nor the emissions associated with transporting nearly 500,000 tonnes of lime to the Treat to neutralise acidity facility (which wasn't included in the MMRP EES).

The above estimates show the carbon emissions associated with taking the ASS/ASR to a facility on the outskirts of Melbourne (35 km one way), where liming is required would be more than four (4) times the carbon emissions associated with disposing of the ASS/ASR at the Nagambie Mine (130 km one way) where the *prevent oxidation* approach is used (placing the WASS underwater).

This analysis supports the WASS management hierarchy which indicates the *prevent oxidation* approach is a more preferred and environmentally responsible approach than the *treat to neutralise acidity* approach. By selecting *treat to neutralise acidity* over *prevent oxidation,* significantly greater greenhouse emissions will occur, as are occurring already with the Metro Tunnel Project.

Management of ASS from the Metro Tunnel Project

To appreciate why the NELP EES needs to reflect the actual intent of the WASS management hierarchy, one needs only look at how WASS from the Metro Tunnel Project is being managed.

WASS management as stated in the MMRP EES

Chapter 20 of the Melbourne MMRP EES states that Acid Sulfate Soil would be managed as follows:

> *Acid sulfate impacts would be managed in accordance with EPA guidelines and the Industrial Waste Management Policy (Waste Acid Sulfate Soils). This would include implementing an environmental management plan that includes:*
>
> - *Identification of the location and extent of any acid sulfate soil and rock (primarily Fresh Melbourne Formation rock and Coode Island Silt) within the project boundary*
> - *Assessment of the potential environmental risks of disturbance*
> - *Identification of suitable sites for the re-use or disposal of any acid sulfate material.*
>
> *Prevention of acid generation is the preferred management option. However, a number of off-site waste management options are available for treating acid sulfate material extracted during tunnelling activities, where prevention is not possible. These options include:*
>
> - *Treating spoil with limestone;*
> - *Inhibiting oxidation of pyrite in spoil by underwater disposal or by encapsulation within a water saturated engineered cover;*
> - *Preventing leaching of pyritic spoil by encapsulation within a long-term containment system designed to limit infiltration.*

The Environmental Performance Requirement C2 (Minister for Planning's assessment, Dec 2016) applicable to ASS management states:

> *Prior to the commencement of construction of the project, and in consultation with the EPA, prepare and implement an Acid Sulphate Soil and Rock (ASS/ASR) Management Sub-Plan prior to construction of the Project as a sub-plan of an overarching SMP in accordance with the Industrial Waste Management Policy (Waste Acid Sulphate Soils) 1999, EPA Publication 655.1 Acid Sulphate Soil and Rock and relevant (EPA) regulations, standards and best practice guidance and in consultation with the EPA. This sub-plan must include the general requirements of the SMP and also:*
>
> - *Identify locations and extent of any potential ASS/ASR ;*
> - *Characterise ASS/ASR spoil prior to excavation;*
> - *Identify and implement measures to prevent oxidation of ASS/ASR wherever possible;*

- *Identify suitable sites for re-use, management or disposal of any ASS/ASR.*

The statement in Chapter 20 of the MMRP EES clearly provides for the waste generator to adopt which ever WASS management approach it prefers (which is always the cheapest). EPR C2 is similar, although its stated intent is that WASS management adopt the *prevent oxidation* approach.

Actual management of ASS from the Metro Tunnel Project

Information obtained under Freedom of Information legislation reveals that WASS from the Metro Tunnel Project is being managed as follows:

- Transported to a landfill facility where it is being treated with lime and disposed of in areas adjacent to the landfill cells (i.e. potential future landfill space); and
- Transported to landfill where it is being dumped directly into landfill cells without treatment. At this facility the EPA amended the landfill licence in 2018 to allow the facility to accept ASS.

Therefore, to date, the actual management of ASS from the Metro Tunnel Project is being undertaken in a manner contrary to the intent of the WASS Policy, EPA's best practice guidelines and EPR C2.

This is a result of all of the following:

- As stated above the WASS Policy was prepared at a time when there was limited or no facilities where the *Prevent oxidation* approach was possible. Therefore, the WASS Policy was prepared to give flexibility to the waste producers to choose which approach to use. Even though there are now new WASS facilities where prevent oxidation is achieved which are 'practicably accessible', the Metro Tunnel construction contractors use this flexibility to adopt the cheapest approach and gain financially at the expense of the State and the environment;
- The approach 'prevent oxidation' can be interpreted as being:
    - Avoiding excavation or disturbance of ASS. As such, it can be easily dismissed as an approach that is not possible on projects such as the NELP;
    - Burying WASS in a landfill (i.e. the WASS is covered by other materials and is therefore in an anaerobic environment;
    - Placing WASS under water.

  This ambiguity allows the waste producer to select a WASS management approach that is the least costly to themselves.

- The EPA has acted as an enabler of the least preferred approach to WASS management (landfill disposal) for The Metro Tunnel's WASS, by making an 'EPA initiated licence amendment' so that Melbourne's largest landfill can accept WASS; directing the landfill operator to dispose of WASS directly into landfill;
- Rail Projects Victoria has accepted this approach as they are only concerned that the approach is allowable under the WASS Policy. Again, this highlights the misinterpretation of the WASS Policy intent.

Conclusion

The NELP EES describes how WASS generated from the project (6.6 million tonnes) is to be managed. The described approach is based on a misinterpretation (at best) of the intent of the applicable policy. In Victoria, there are now several facilities that can accept WASS and manage it in a manner that is the highest on the WASS management hierarchy (for ASS that needs to be removed offsite – i.e. placement underwater). The management of WASS from the Metro Tunnel Project shows that the construction contractors are using the flexibility of the policies and guidelines as a way to manage WASS at the cheapest direct cost but at the expense of the State. This is being enabled by government regulators.

Recommendations to the Committee

The following recommendations are made to the IAC:

1. The NELP ESS includes an in-depth description of the intent of the WASS Policy. The NELP EES should then include WASS management approaches that are consistent with the intent of the WASS Policy and an explanation of how the approaches are consistent. This should include identification and description of actual 'on the ground' management approaches on the WASS management hierarchy;
2. 'Scheduling practices' and covering WASS should not be considered a *prevent oxidation* approaches;
3. The EES's description of WASS management, and the associated EPR, need to be consistent with the following:
    a. The intent of the WASS Policy and EPA's Best Practice guideline (i.e. that WASS be managed in accordance with the WASS management hierarchy whenever practicably accessible);
    b. The WASS Policy Impact Assessment, that states:
    EPA aims to work with industry to promote and encourage reuse options rather than disposal of acid sulfate soils to landfill. In particular, EPA will encourage the diversion of this material to unlicensed premises who have an EMP approved under the Policy setting out reuse proposals, in preference to disposal at landfill.
    c. EPA's landfill policy (Publication 968) which:
        i. encourages "waste avoidance and recycling rather than filling up our landfills [as] an important way of contributing to a more sustainable Victoria";
        ii. encourage "use of landfills [as] a last resort";
        iii. encourage use of "management options higher up the wastes hierarchy. In particular, the policy reinforces that landfills are the least preferred waste management option and therefore their development and use should be kept to a minimum";
    d. The concept of 'Practicably Accessible' (i.e. where a WASS management approach higher up the hierarchy is reasonably accessible and reasonable affordable, it must be used ahead of other approaches lower on the hierarchy);
    e. NELA's Environment and Sustainability Policy commitments.

4. The cumulative impact of managing up to 6.6 million tonnes of WASS at Melbourne's landfills should be assessed in the NELP EES. Consideration should be given to landfill scheduling as provided in the latest Statewide Waste and Resource Recovery Infrastructure Plan (SWRRIP). The assessment should also include an analysis as to how much the cost of landfilling municipal wastes will increase as WASS consumes scheduled landfill space (which is not planned for in the SWRRIP) and how much additional costs Local Governments and Victoria's rate payers will have to pay as these consequential additional landfill costs are passed onto the consumer. The consequential additional landfilling costs should be compared with the savings the construction contractor will realise by managing WASS using the least preferred approach;
5. The NELP EES needs to consider the impact on local residents located close to the landfill that received the EPA initiated landfill licence amendment in 2018, to allow it to accept WASS. As this amendment was made in contradiction to the clause 20C(2) of the *Environment Protection Act 2017*, and without consultation, this assessment should consider the 'worst case' scenario of transporting 6.6 million tonnes of WASS (294,000 truck trips) to and from this landfill. Obtaining the views of the relevant Councils and residents who live in the vicinity of this landfill should be mandatory;
6. IAC should ensure the greenhouse gas assessment includes the greenhouse gas emissions associated with the production of lime needed to treat WASS. This should be compared to the greenhouse gas emissions produced using WASS management approaches higher up the WASS hierarchy. The greenhouse gas assessment should then justify the chosen WASS management approach in terms of its greenhouse gas intensity and the applicable legislation. The densities for WASS should also be reviewed.

Should you wish to discuss any of the above further, please contact me on 0481 462 642. I would be happy to present this information in person to the Committee.

Yours faithfully

CEO

Nagambie Resources Limited

Declaration:

Nagambie Resources Limited operates Victoria's largest *prevent oxidation* WASS management facility. This facility is one of several that operates in Victoria.