

Ref No: 2828-005

3 April 2009

Mr. Lee Webb  
Chief Environment Officer  
Environmental Impact Assessment Unit  
Development Assessment Branch  
Department of Planning & Local Government  
GPO Box 1815  
Adelaide 5001

Dear Mr Webb,

**IWS NORTHERN BALEFILL, DUBLIN – PROPOSED MULTIPLE WASTE TREATMENT FACILITY (MWTF) – RESPONSE TO AGENCY, COUNCIL AND PUBLIC SUBMISSIONS**

Thank you for the opportunity to respond to the various Agency, Council and public submissions received in response to the public consultation phase for the Amendment to the EIS for the proposed Multiple Waste Treatment Facility (MWTF) at the IWS Northern Balefill, Dublin.

We note that the following Agency and public submissions were received in relation to the proposed MWTF:

Agency Submissions:

*(No comment and/or no concerns raised):*

- PIRSA – Agriculture, Food and Wine
- SA Health – Public Health and Clinical Co-ordination Division
- Department for Environment and Heritage

*(Comments and/or issues raised):*

- Office of Major Projects and Infrastructure
- Department for Water, Land and Biodiversity Conservation
- Commissioner of Highways (Manager, Traffic and Access Standards)
- Environment Protection Authority

Council Submission :

- District Council of Mallala

Public Submissions:

- Dublin and District Ratepayers Association
- Confidential Submission (Authors details withheld)
- G. & S. Tauchnitz
- Mr Stephen Jones
- Mrs Francie Brechin

We note that the majority of comments received in relation to the proposal relate to the technical specification and operation of the proposed MWTF with the exception of several public submissions which raised concerns with the historic and ongoing operation and management of the site.

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The attached 'Technical Memorandum' prepared by Golder Associates (ref # 087663311 013 M Final dated 3 April 2009) specifically addresses and responds to the comments received in relation to the public notification of the proposed MWTF application.

**Community Consultation:**

Integrated Waste Services Pty. Ltd. have always sought to inform and consult the local Dublin community of ongoing site operations, process and management including community and stakeholder engagement to provide a high level understanding of site operations and activities. This has in the past included the establishment of a Local Community Consultative Committee which provided a forum for community, Council and IWS dialogue – particularly in relation to evolving site management practices and operations.

Whilst there is no statutory obligation for Integrated Waste Services Pty. Ltd. to coordinate or participate in community consultation in relation to the proposed MWTF application, IWS have agreed to participate in an informal community information session which is to be facilitated by the Mallala Council with representation and input from both the Department of Planning and Local Government (DPLG) and the Environment Protection Authority (EPA). The information session is scheduled to be held at 6.30pm on Monday 6 April 2009 and the purpose of the session is to provide some clarity and information on the nature of the proposed application and to seek to appease any concerns in relation to some of the more technical aspects of the proposal and ongoing site operations.

The information session will be held in good faith, without prejudice and is in no way directly connected to the procedural assessment and or determination of the application by the Governor under Section 48B of the *Development Act, 1993.*

Accordingly, IWS are seeking a prompt and favourable determination of the application irrespective of the outcome or actions arising from (or that could arise in relation to) the pending information session.

**The Demonstrated Need for a MWTF:**

The proposed MWTF represents important infrastructure for South Australia given currently there is no licensed facility to accept, treat or store soils containing listed wastes in the State. Currently soils containing listed wastes are either :

- treated and remediated in-situ often in close proximity to local communities with little opportunity to apply necessary or recognised environmental management and mitigation controls; or
- 'capped' in an untreated state in-situ (often in close proximity to local communities and with the potential for ongoing environmental issues and impacts); or
- transported over large distances, to existing licensed interstate facilities; or
- left untouched on the site which remains un-developed (ie. sites that are considered 'too hard' to remediate are left undeveloped with the potential for ongoing environmental issues and impacts).

The urgency for a waste treatment facility has also recently been compounded by the discovery of extensive contaminated soil at Birkenhead. Currently there is no approved or licensed facility in South Australia to treat this contaminated soil and treatment in-situ would be problematic in the context of the surrounding resident population, and the difficulty of applying suitable mitigation controls to manage potential environmental impact.

Accordingly, the proposed waste treatment facility would provide the necessary infrastructure to treat and remediate the contaminated soil at Birkenhead (as well as other contaminated soil on alternative metropolitan sites) in a remote purpose built licensed and monitored facility, applying 'worlds best practice' techniques and management practices.

There is also a recognised need for a licensed facility to treat listed wastes in South Australia since the South Australian parliament passed the Environment Protection (Site Contamination) Amendment Bill 2007 (assented by the Governor on 1 November 2007). This legislation adds

provisions to the *Environment Protection Act, 1993* in relation to site contamination and assigns responsibility for site contamination, establishes a statutory audit system for South Australia and gives the Environment Protection Authority (EPA) powers to deal with site contamination. The legislative provisions form part of a set of measures to ensure that site contamination is adequately managed in South Australia. The establishment of a facility to receive and treat contaminated soils containing listed wastes in South Australia will be essential to ensure that systems, processes and facilities exist to support this new legislation. In particular, the proposed facility will be required to manage and treat the anticipated increase in contaminated soil identified and registered in association with the new powers of the EPA under this Act to:

- issue assessment and remediation orders (under section 103H and 103);
- require a site owner, occupier, auditor or consultant to notify the EPA in writing of the existence of site contamination that affects or threatens underground water (Section 83A); and
- declare areas where site contamination exists in a wider or numerous areas, or is suspected to exist, as 'Special Management Areas' to allow the EPA to work with relevant stakeholders on forming agreements that will cover the assessment and remediation of any site contamination (Section 103).

Other possible future amendments to the *Development Act, 1993* are also envisaged that could potentially increase the contaminated soil identified and registered in the State including a requirement that planning authorities must require the submission of a site contamination audit for sites where a sensitive land use is proposed and a prescribed potentially contaminated activity has occurred (or known contamination is recorded).

The proposed facility will therefore directly support the EPA in fulfilling the legislative provisions of this new legislation by providing a fully licensed, purpose built facility to appropriately manage and treat the growing volume of identified and registered contaminated soil in the State.

Another advantage associated with the development of a facility to treat soils containing listed wastes in South Australia is the ability for the plant and associated laboratory and facilities to be commissioned for potential alternative or unforeseen circumstances and / or emergencies at the discretion and/or direction of Government.

In the same way a brewery is recognised as important infrastructure that can be commissioned by Government in the public interest for emergency purposes (ie a laboratory for the mass production of medicines as may be required in the event of a National pandemic etc) the waste treatment facility could be commissioned for currently unforeseen emergency purposes (ie. utilised for the treatment and safe disposal of carcasses of diseased animals in the event of the breakout of contagious diseases (ie hendra virus, foot and mouth, bird flue etc). Whilst these alternative uses are not envisaged nor proposed in association with this application, there are strong benefits in the construction of a facility that could be used to provide important infrastructure and facilities that could be adapted, commissioned and used for alternative 'emergency' purposes in the interest of the State.

Clearly there is an identified need in South Australia for a purpose built waste treatment facility to treat soils containing listed wastes. The proposed waste treatment facility will :

- reduce the potential impacts on communities and the environment compared with treatment of contaminated soils in-situ within populated urban areas and/or contaminated soils remaining 'capped' or untreated in existing urban environments (with inherent risk of migration of pollution and ground water contamination);
- offer a facility in South Australia to manage and treat the expected increase in contaminated soil identified and registered in association with the new powers of the EPA under the Environment Protection (Site Contamination) Amendment Bill, 2007; and
- provide important infrastructure and facilities that could be adapted, commissioned and used for alternative 'emergency' purposes in the interest of the State (at the absolute discretion and direction of Government).

### Site Suitability:

There are clear benefits and advantages derived from the siting of the facility within the existing IWS Northern Balefill site as follows:

- the facility is located on the periphery of *Greater Adelaide*, approximately 30 kilometres from the current Urban Growth Boundary, in an area unlikely to be required for urban purposes and based on current population growth and projections for *Greater Adelaide* - is unlikely to be subject to encroaching urban development for the anticipated life of the facility as a waste disposal depot over the next 100 years;
- siting of the facility to the north of Adelaide reduces the risks associated with transport of listed wastes through metropolitan Adelaide (ie. the site is closer to the origin of the majority of contaminated land, waste generators and developing industrial and commercial land);
- existing safe roads of adequate capacity to allow the safe transport of soils containing listed waste for treatment;
- no loss of valuable rural land currently utilised for primary production, recreation or water and nature conservation (given the existing poor and degraded condition of the land which is generally clear of native vegetation and with highly saline groundwater with no beneficial uses);
- the area is sparsely populated and appropriate buffers and separation distances to adjacent residential properties and sensitive receptors already exist;
- the site can be developed in a manner which will not result in any unreasonable visual intrusion on adjoining properties or the public realm;
- existing site infrastructure and services can be utilised, thereby reducing the environmental effects as compared to a new standalone facility;
- opportunity to leverage off the extensive environmental controls, systems and monitoring already in place at the site;
- the existing extensive knowledge of the site and area gained through the exhaustive EIS process and ongoing monitoring of the existing facility;
- the existing use of the site including the existing operation of a Low Level Contaminated Waste (LLCW) cell which already safely receives low level contaminated soil (allowing future contaminated soil treated in association with the proposed MWTF to be stored on site in accordance with the existing approved Landfill Environmental Management Plan (LEMP));
- the EPA approved LEMP for the IWS Northern Balefill site can be readily modified to incorporate considerations of the proposed infrastructure and associated processes;
- the suitable site geology with favourable natural clays (which act as an aquitard and provide a natural impervious barrier providing protection to ground water); and
- the suitable site climate with high levels of evaporation (exceeding precipitation) reducing the generation of leachate from disposed wastes (post treatment) and assisting in storm water management on site.

As demonstrated above, with the adoption of appropriate operational and environmental site management practices, the existing IWS Northern Balefill site is well positioned to accommodate the proposed new waste treatment facility given the suitable location and natural attributes of the site and given the strong synergies and ability to leverage from the existing use of the site as a waste disposal depot that already receives low level contaminated soil and other wastes.

We thank you in anticipation of your favourable consideration of the application as an amendment to an existing approval for a declared major development (the IWS Northern Balefill) under Section 48B of the *Development Act*, 1993.

Please do not hesitate to contact the undersigned on (08) 8232 9088 should you have any questions or queries in relation to any matter raised above or should your wish to discuss the proposed application for the waste treatment facility at the IWS Northern Balefill.

Yours sincerely

**CONNOR HOLMES PTY LTD**



**RICHARD DWYER**  
Principal

**Table 1: EIS Amendment Comments and Responses: Planning**

EIS Comment	Response
Patrick Nganga, Senior Adviser Waste Management, EPA	
<ul style="list-style-type: none"> <li>■ EPA does not support a two-staged development of the facility, however will consider 2 staged development conditional to Stage 2 being completed within 12 months of Stage 1 commencing construction. If not, operations of the facility should be suspended</li> </ul>	<ul style="list-style-type: none"> <li>■ The proponent will prepare a works outline and schedule outlining the activities and staged requirements for Stage 1 and Stage 2. This will be submitted to the EPA for approval. These may form of any future EPA Licence 11275 changes.</li> <li>■ Stage 2 of the proposed development will be constructed within 12 months of Stage 1 commencing. An indicative schedule for progression of the facility is provided as introduction:               <ul style="list-style-type: none"> <li>■ construct bunded and concrete pad: 1 - 2 months:</li> <li>■ detailed design and procurement phase (concurrent with bunded and concrete pad): 3 – 6 months:</li> <li>■ commence staged construction of facility: 4 months:</li> <li>■ commissioning: 9 - 12 months</li> </ul> </li> <li>■ The MWTF will be completed prior to any treatment of received material.</li> <li>■ Mixing or treatment of material will only be undertaken once the MWTF facility is completed.</li> </ul>
<ul style="list-style-type: none"> <li>■ Approved LEMP is inadequate. EMP specifically tailored to the remediation technologies to be used in the proposed MWTF required. EMP should include               <ul style="list-style-type: none"> <li>■ Types and quantities of wastes expected</li> <li>■ Where each of the different treatments activities is to take place</li> <li>■ Whether treatments will be undertaken undercover or in the open</li> <li>■ What pollutants or hazards are expected to be generated and how they will be managed</li> <li>■ How stockpiles will be contained and maintained</li> <li>■ How waste liquids will be colleted and dealt with</li> <li>■ How polluted stormwater will be contained, collected and disposed of</li> <li>■ How clean stormwater will be kept separate from polluted stormwater</li> <li>■ How clean stormwater will be dealt with</li> <li>■ How groundwater will be protected.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ A facility specific Environmental Management Plan will be prepared and submitted to the EPA for approval as part of the site EPA Licence 11275 requirements.</li> <li>■ The proponent will prepare and submit to the EPA for approval a Stage 1 interim Environmental Management Plan relating to storage of received waste until Stage 2 is completed, the facility operational and a final EMP completed with EPA approval.</li> <li>■ Mixing or treatment of material will only complete once the shed style facility is completed.</li> </ul>

EIS Comment	Response
<ul style="list-style-type: none"> <li>■ In the event of MWTF approval, conditions of licence will be developed specific to the MWTF.</li> <li>■ Table 7 should be revised and incorporated in to EMP               <ul style="list-style-type: none"> <li>■ Undercover operation of MWTF only relates to stage 2 (No.2)</li> <li>■ Storage of waste to be in roofed facility or outside of MWTF requires clarification (No. 5 and 6)</li> </ul> </li> </ul>	
<ul style="list-style-type: none"> <li>■ EPA Licence 11275 does not permit the reuse of any material above waste fill criteria.</li> </ul>	<ul style="list-style-type: none"> <li>■ The development does not propose to reuse material above SA EPA waste fill criteria.</li> <li>■ Waste treated to low level contaminated waste (LLCW) criteria can be disposed of onsite, as part of existing LLCW disposal operations.</li> <li>■ The EIS Amendment proposes that material treated to LLCW leachability criteria can be disposed of to the approved LLCW cells, irrespective of primary concentrations of contaminants (eg, that have been chemically fixed to the soil matrix), pending EPA approval. This is current practise for contaminated waste treatment and disposal.</li> <li>■ All treated material will be tested prior to disposal or reuse by a suitably qualified environmental consultant to review the suitability of disposal/reuse options.</li> </ul>
<ul style="list-style-type: none"> <li>■ Future options can't be approved until pre-trials have been undertaken.</li> <li>■ Occurrence of Bioremediation is ambiguous</li> </ul>	<ul style="list-style-type: none"> <li>■ Future options would not be undertaken until necessary changes to the license had been made, with supporting process specific EMPs and trials.</li> <li>■ The use of bioremediation as the treatment method will be matched to those contaminants that can be treated using bioremediation.</li> <li>■ All received material will be tested prior to receipt to the MWTF and the results reviewed by a suitably qualified environmental consultant to review treatment options and any need for pre-treatment trials.</li> <li>■ Pre-remediation trials will be conducted prior to receipt of material onsite for materials assessed to be difficult to remediate.</li> </ul>
<p>Brendon Schulz, Team Leader, Development Assessment, DC of Mallala</p>	

EIS Comment	Response
<ul style="list-style-type: none"> <li>■ On-site storage of contaminated materials before the treatment facility is established in Stage 2. Council would prefer the development to be undertaken in one stage so that contaminated materials are able to be processed upon delivery.</li> <li>■ Proposed structures will require a building rules assessment, and any amenities will require a waste control system approved by Council.</li> </ul>	<ul style="list-style-type: none"> <li>■ The proponent will prepare a works outline and schedule outlining the activities and staged requirements for Stage 1 and Stage 2. This will be submitted to the EPA for approval. These may form of any future EPA Licence 11275 changes.</li> <li>■ The proponent will prepare and submit to the EPA for approval a Stage 1 interim Environmental Management Plan relating to storage of received waste until Stage 2 is completed, the facility operational and a final EMP completed.</li> <li>■ Stage 2 of the proposed development will be constructed within 12 months of Stage 1 commencing. An indicative schedule for progression of the facility is provided as introduction: <ul style="list-style-type: none"> <li>■ construct bunded and concrete pad: 1 - 2 months:</li> <li>■ detailed design and procurement phase (concurrent with bunded and concrete pad): 3 – 6 months:</li> <li>■ commence staged construction of facility: 4 months:</li> <li>■ commissioning: 9 - 12 months</li> </ul> </li> <li>■ The MWTF will be completed prior to any treatment of received material.</li> <li>■ The detailed design phase of the development will include application for other required regulatory and local government approvals including building regulations etc.</li> </ul>
Chris Lawrence, Dublin & District Ratepayers Association, Public	
<ul style="list-style-type: none"> <li>■ New Post Closure must be addressed.</li> </ul>	<ul style="list-style-type: none"> <li>■ Any material received and treated onsite will not be stockpiled at closure, but disposed of in accordance with regulatory requirements and EPA approval during facility operation.</li> </ul>
<ul style="list-style-type: none"> <li>■ The proposal should not be considered an amendment to the original EIS.</li> <li>■ Rezone the site as “special use” with a much extended buffer required.</li> </ul>	<ul style="list-style-type: none"> <li>■ The proposed activity is consistent with current land use as a mixed waste management site.</li> <li>■ Rezoning is not proposed as part of this assessment</li> <li>■ The proposed facility is located within the current site. There are two residences within 520m of the eastern property boundary. These residences are located</li> </ul>



EIS Comment	Response
	<p>greater than 500m from the proposed development area. Based on the site specific odour modelling and the closed nature of proposed facilities there are no negative impacts expected to residences related to facility operations.</p>
<ul style="list-style-type: none"> <li>■ Properties within the extended buffer zones should be offered market value compensation.</li> </ul>	<ul style="list-style-type: none"> <li>■ The proposed activity is consistent with current land use as a mixed waste management site.</li> <li>■ No negative impacts expected to residences related to facility operations.</li> </ul>
Confidential, Public	
<ul style="list-style-type: none"> <li>■ Risk assessment to include social risks and broadened scope</li> <li>■ More detail on storage and treatment of contaminated waste</li> <li>■ Risk assessment being overly optimistic</li> </ul>	<ul style="list-style-type: none"> <li>■ Health, odour and amenity impacts are addressed as part of the application. Based on this the risk assessment is considered adequate for the purposes of this application.</li> <li>■ An EPA licence will be required for operation of the facility and be regulated by the EPA.</li> </ul>
G. & S. Tauchnitz, Public	
<ul style="list-style-type: none"> <li>■ Concern that the proprietors will 'do the right thing'</li> </ul>	<ul style="list-style-type: none"> <li>■ The proprietors will be required to act in accordance with relevant conditions of approval and the EPA approved Environmental Management Plan as part of a revised site licence.</li> <li>■ Ongoing operation of the site will be regulated by the EPA.</li> </ul>
<ul style="list-style-type: none"> <li>■ Toxic wastes have the potential to permeate water tables either by building design flaws, incorrect disposal, human error or incompetence</li> </ul>	<ul style="list-style-type: none"> <li>■ All contaminated material received by the facility will be stored or treated on concrete sealed surfaces and covered.</li> <li>■ Possible liquid or stormwater run-off from any contaminated received material will be contained in sealed sumps for treatment and disposal as contaminated material.</li> <li>■ There is no direct contact with soil, ground or surface water proposed as part of facility design or operations.</li> <li>■ A facility specific Environmental Management Plan will be prepared and submitted</li> </ul>

EIS Comment	Response
	to the EPA for approval as part of the site EPA Licence 11275 requirements.
<ul style="list-style-type: none"><li>■ Unsuitable location surrounded by residential homes and livestock etc</li></ul>	<ul style="list-style-type: none"><li>■ The proposed facility is located within the current IWS Northern Balefill site. There are two adjoining residences within 520 metres of the eastern property boundary. These residences are located greater than 500m from the proposed development area. Based on the site specific odour modeling and the closed nature of proposed facilities, there are no negative impacts expected to residences related to facility operations.</li></ul>

**Table 2: EIS Amendment Comments and Responses: Technical**

EIS Comment	Response
Patrick Nganga, Senior Adviser Waste Management	
<ul style="list-style-type: none"> <li>■ PCB must be disposed of in accordance with the PCB management plan.</li> </ul>	<ul style="list-style-type: none"> <li>■ Bioremediation and stabilisation are the two treatment options proposed at this time for use at the facility. Future options will require pre-trial assessments and EPA approval prior to use.</li> <li>■ The treatment of PCBs is only a “possible future option”, and approval for this type of treatment is not being sought as part of this EIS amendment.</li> <li>■ PCBs would be treated in accordance with the <i>ANZECC PCB Management Plan</i></li> </ul>
<ul style="list-style-type: none"> <li>■ Disposal of material being dictated by leachate concentrations is unacceptable to the EPA since LLCW/LTPR disposal criteria have been developed based on dry weight chemical concentrations and leachate concentrations (Note 5).</li> <li>■ Table 1           <ul style="list-style-type: none"> <li>■ Maximum Leachability Values are an order of magnitude above those for the SA EPA and US EPA. Justification for the values has not been provided. Treated wastes must be disposed of as per the current leachability criteria.</li> <li>■ Trials need to be conducted on proposed waste streams to determine pre-treatment leachability values. TCLP/MEP must be done before and post-remediation based, for example, on the following concerns:               <ul style="list-style-type: none"> <li>– Some fixation techniques are affected by interfering ions and can affect immobilisation and alter leachability, for example, the sulphide treatment of Hg is pH dependent.</li> <li>– Bioremediation treatment of long hydrocarbons unlikely to significantly degrade.</li> </ul> </li> <li>■ Comments for SVOCs state that treatment could be a range of options depending on composition. It then refers to more sophisticated treatments and trials. Treatment and trials must be subject to EPA approval to ensure compliance with the <i>Environment Protection Act 1993</i> and associated Regulations and policies.</li> <li>■ SVOCs also have leachability values to be provided.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ The EIS Amendment proposes that the material treated to LLCW leachability criteria can be disposed of to the approved LLCW cells, irrespective of primary dry weight chemical concentrations of contaminants (eg, that have been chemically fixed to the soil matrix), pending EPA approval. This is current practise for contaminated waste treatment and disposal.</li> <li>■ Pre-remediation trials would be conducted for contaminants that are above the criteria listed in Table 1 of the EIS Amendment (Trigger Concentrations)</li> <li>■ Post-remediation testing would always be required in order to assess its suitability to be disposed of or reused, depending upon the method and desired outcome. This is standard current practise for any remediation process. All treated material will be tested prior to disposal from the MWTF by a suitably qualified environmental consultant to review the suitability of disposal options.</li> <li>■ The proponent recognises bioremediation treatment of long chain hydrocarbons can be difficult, hence the comment in Table 1 that this “<i>would likely require either a mixture of bioremediation and stabilisation, or a more sophisticated treatment</i>”</li> <li>■ Pre-remediation trials would be conducted for any technology that is not Contaminant Stabilisation (using chemicals such as cement, lime, MnO and fertilisers) and would include a process-specific EMP in addition to the EMP for the MWTF.</li> <li>■ Leachability values that are available for SVOCs will be added. The proponent will liaise with the EPA to ensure the proponent has included the ones the EPA are</li> </ul>

EIS Comment	Response
<ul style="list-style-type: none"><li>■ “TBA” – Acceptance, treatment and disposal criteria will need to be developed in consultation with the EPA for chemicals not listed in the LLCW/LTPR facility schedule. The proponent needs to be aware that the existing LLCW/LTPR schedules are disposal criteria and can only therefore be used for that purpose. The fate of treated waste that is still above LLCW/LTPR criteria has not been addressed in the proposal. Trials need to be conducted on proposed waste streams to determine pre-treatment leachability values.</li><li>■ Remove PCBs from SVOCs table.</li><li>■ Table 1 headings need to be edited to read appropriately i.e., Total dry weight chemical concentrations (mg/kg) and Maximum leachate concentrations (mg/L)</li><li>■ Note 7 can only make sense only if and after the trigger values proposed in Table 1 have been justified.</li><li>■ Section 2.1 refers to PCB treatment in future technologies. PCBs have also been included in SVOCs. This is ambiguous and in any event incorrect as PCBs cannot be heat treated (if remediating in bio-piles which will be the main methodology for volatiles/SV) as stable. This needs to be deleted from this section.</li><li>■ “Appropriate level” in Section 2.1 needs to be qualified.</li><li>■ The second paragraph in section 2.2 refers to leachability criteria. The proponent is presupposing that the proposed leachability values are acceptable to the EPA and this is not the case.</li><li>■ The proponent has defined their own criteria for trigger concentration. The proponent must either:<ul style="list-style-type: none"><li>■ Undertake remediation trials, or</li><li>■ Provide examples where the treatment of proposed waste streams have been treated with the proposed methods to produce treated wastes to levels that will be acceptable for reuse or disposal as LLCW. The expected contaminant concentration levels in the treated wastes have not been provided in the</li></ul></li></ul>	<p>aware of.</p> <ul style="list-style-type: none"><li>■ It is common current practise to accept primary dry weight concentrations of contaminants above the LLCW criteria provided that the chemicals are not above the LLCW leachability criteria. It is the leachability that drives the risk, both from a health perspective (ie, how available is the contaminant?) and from a disposal perspective (ie, is the receiving facility designed to contain this material so that the surrounding environment is protected?). There are no facilities in South Australia that accept concentrations of contaminants in soils and sludges that are above the LLCW criteria. Therefore, there is an ongoing need for the EPA to accept materials into LLCW facilities based on their leachability alone for chemicals that cannot be practicably removed or destroy. (Note: using technology that removes contaminants actually produces a concentrate that can lead to an even more complicated waste management requirement).</li><li>■ PCBs will be removed from the SVOCs table and listed under “Other”.</li><li>■ The treatments listed in Table 2 (Section 2 of the EIS Amendment) under “Future Options” are future options that would require prior EPA approval, and are not part of the treatment options that will initially be used at the facility.</li><li>■ “appropriate level” refers to the target remediation criteria. This could be Waste Fill criteria for possible reuse Intermediate Landfill Cover for disposal as daily cover in the balefill cells at the site, Low Level Contaminated Waste for disposal at the LLCW cells at the site, or LLCW (leachability only) for disposal at the LLCW cells at the site with EPA approval,</li><li>■ No soil will be accepted at the site without classification testing by a recognised environmental consultant, which will need to include primary and leachability concentrations for the range of contaminants listed in the LLCW license, and based on site history information (as per the NEPM). The trigger concentrations are provided as these levels of contaminants are readily remediated based on industry experience.</li><li>■ Based on industry experience, trigger concentrations were adopted to reflect the ability to treat such materials successfully using either stabilisation and/or</li></ul>

EIS Comment	Response
<p>proposal.</p> <ul style="list-style-type: none"> <li>■ Section 1.2 refers to 'by-products of remediation'. This depends on what is being treated and how. In order to justify the assertions in section 1.2, the proponent must either; <ul style="list-style-type: none"> <li>■ Undertake remediation trials, or</li> <li>■ Provide examples where the treatment of proposed waste streams have been treated with the proposed methods to produce treated wastes to levels that will be acceptable for reuse or disposal as low level contaminated waste (LLCW).</li> </ul> </li> <li>■ The expected contaminant concentration levels in the treated wastes have not been provided in the proposal.</li> </ul>	<p>bioremediation techniques.</p> <ul style="list-style-type: none"> <li>■ IWS will seek advice from suitably qualified environmental consultants to assess the need for pre-treatment trials of received material prior to receiving any material.</li> </ul>
Confidential Public	
<ul style="list-style-type: none"> <li>■ Stage 1 is a rather simplistic soil treatment, not considered to be technology, nor best practice. It doesn't rank well for a broad range of contaminants in the USEPA treatment Technologies Screening Matrix.</li> </ul>	<ul style="list-style-type: none"> <li>■ Soil treatment suitability will be assessed per material load and actual chemical composition. The methods proposed are well understood and commonly used methods. The ability to undertake these methods in a controlled environment (as proposed at the MWTF) is what makes it best practise.</li> <li>■ Stage 1 proposed only receipt and temporary storage of material while detailed design and stage 2 construction activities are undertaken. Management of the material to control dust, odours and leachate will be carefully managed under a material specific EMP, and will be better than most "on-site" methods currently employed at sites surrounded by residential areas</li> </ul>
<ul style="list-style-type: none"> <li>■ The bioremediation methodology proposed includes screening and mechanical mixing of the soil, without capture and treatment of organic compounds volatilised during these processes.</li> </ul>	<ul style="list-style-type: none"> <li>■ Soil treatment suitability will be assessed per material load and actual chemical composition.</li> <li>■ The mixing and screening will occur within the shed. Any volatilisation will be captured by facility bio-filters. This is an improvement on current practise in other waste management facilities, which is typically conducted in open air.</li> </ul>
<ul style="list-style-type: none"> <li>■ Proposed treatment of acid sulphate soil by chemical stabilisation may not be in</li> </ul>	<ul style="list-style-type: none"> <li>■ This facility will comply with SA regulations for acid sulphate soil and will not create</li> </ul>

EIS Comment	Response
<p>accordance with best practice for these materials. This includes the accepted hierarchy for acid sulphate soil management (refer QASSIT, Vic EPA and others) which encourages on avoidance and on-site management methods. The ready availability of a treatment facility may discourage appropriate and better-practice onsite avoidance and management techniques for these materials being adopted by waste producers.</p> <ul style="list-style-type: none"> <li>■ Chemical stabilisation of acid sulphate soil, depending upon the fixative used, may not prevent acidification and associated environmental impacts. Once acidification processes in acid sulphate materials have commenced, for example via disturbance, dewatering and aeration via mixing, it is almost impossible to stop the process continuing, as once initiated under aerobic conditions, the acidification processes can still continue.</li> </ul>	<p>any acid sulphate soil through its construction</p> <ul style="list-style-type: none"> <li>■ If the facility is ever used for ASS treatment (not likely as on-site treatment is the preferred option, but not always possible), then it will be done in accordance with SA EPA requirements (SA EPA Guidelines, EPA638/07, "Site Contamination – Acid Sulfate Soil Materials" November 2007) Chemical stabilisation would not be used. The addition of lime would be used so that any acid generation was buffered by the presence of lime.</li> </ul>
<ul style="list-style-type: none"> <li>■ Inadequate level of detail on proposed methodologies and management of soil swapping facility and quality of swapped-out soils.</li> </ul>	<ul style="list-style-type: none"> <li>■ Soil quality testing will be undertaken to ensure compliance with SA EPA standards for material exported from the site and to the satisfaction of the owners of receiving site. This would be undertaken by suitably qualified personnel and NATA accredited laboratories, in accordance with the <i>National Environment Protection (Assessment of Site Contamination) Measure, 1999</i>. and relevant SA EPA guidelines.</li> <li>■ Detailed management procedures will be prepared subsequent to detailed design.</li> <li>■ The facility will be managed in accordance with future EPA Licence requirements.</li> </ul>
<ul style="list-style-type: none"> <li>■ Inadequate level of detail on soil quality testing and QA/QC regimes as part of the facility operations.</li> </ul>	<ul style="list-style-type: none"> <li>■ Soil quality testing will be undertaken to ensure compliance with SA EPA license for material disposed at the site. This would be undertaken by suitably qualified personnel and NATA accredited laboratories, in accordance with the <i>National Environment Protection (Assessment of Site Contamination) Measure, 1999</i> and relevant SA EPA guidelines, and include industry standard QA/QC procedures and testing.</li> <li>■ Detailed management procedures will be prepared subsequent to detailed design.</li> <li>■ The facility will be managed in accordance with future EPA Licence and regulatory</li> </ul>

EIS Comment	Response
	requirements.
Francie Brechin, Public	
Concerned about toxins leaching	<ul style="list-style-type: none"><li>■ All contaminated material received by the facility will be stored or treated on concrete sealed surfaces and covered.</li><li>■ Possible liquid or stormwater runoff from any contaminated received material will be contained in sealed sumps for treatment and disposal as contaminated material.</li><li>■ There is no direct contact with soil, ground or surface water proposed as part of facility design or operations.</li></ul>

**Table 3: EIS Amendment Comments and Responses: Stormwater**

EIS Comment	Response
Deanne Popow, Planning Officer, Department of Water, Land and Biodiversity Conservation	
Would like the opportunity to comment on LEMP	<ul style="list-style-type: none"><li>■ The LEMP is an EPA regulated site management document which forms part of the EPA Licence 11275 for the site.</li><li>■ Activities at the proposed facility will be operated under a revised EPA site Licence 11275.</li></ul>
Peter Newland, Manager, Water and Catchments, EPA	
<ul style="list-style-type: none"><li>■ EMP specific to MWTF be submitted as proponent failed to provide sufficient information.</li><li>■ EMP to provide clearer indication of the pollutants and hazards that are likely to be produced and undertake a detailed risk assessment of them that indicates the level of risk and how it will be managed. Risk assessment requires greater level of detail.</li></ul>	<ul style="list-style-type: none"><li>■ A facility specific Environmental Management Plan will be prepared and submitted to the EPA for approval as part of the site EPA Licence 11275 requirements, including consideration of risk within the plan.</li></ul>



**Table 4: EIS Amendment Comments and Responses: Air Quality**

EIS Comment	Response
Brendon Schulz, Team Leader, Development Assessment, DC of Mallala	
<ul style="list-style-type: none"> <li>■ Council has concern over the potential for wind blown material to impact on rural activities and residents of the locality. Although contaminated material is proposed to be covered, the delivery and movement of material by machine may have adverse impacts.</li> </ul>	<ul style="list-style-type: none"> <li>■ The risk of wind blown material impacting upon rural activities and residents of the locality is low.</li> <li>■ Contaminated material will be transported in covered trucks.</li> <li>■ Once Stage 2 is completed trucks would unload inside the shed with the doors closed. Mixing and screening would also take place in the shed with doors closed. Any storage of untreated the material in the undercover area would be covered with geomembrane or similar. Within the shed there will be no opportunity for dust to escape and odours will be collected and treated by the biofilter.</li> <li>■ For Stage 1, unloading would be done onto the bunded concrete area under a water spay to minimise dust, and then the material would be covered with a geomembrane or similar, and managed under a specific Stage 1 interim EMP to the satisfaction of the EPA.</li> </ul>
<ul style="list-style-type: none"> <li>■ Chris Lawrence, Dublin &amp; District Ratepayers Association,</li> <li>■ Stephen Jones, Public</li> <li>■ Francie Brechin, Public</li> </ul>	
<ul style="list-style-type: none"> <li>■ Concern in treatment of dangerous material in an open area where high winds are the norm.</li> </ul>	<ul style="list-style-type: none"> <li>■ Refer previous action</li> </ul>
Chris Harris, Principal Adviser Air Quality , EPA	
<ul style="list-style-type: none"> <li>■ No indication of which options would be used or their efficacy in odour removal</li> </ul>	<ul style="list-style-type: none"> <li>■ A biofilter is proposed for odour control with an assumed odour removal efficiency of 85%</li> </ul>
<ul style="list-style-type: none"> <li>■ Odour modelling was provided for emissions from the receival storage building only. No modelling was provided for any activities undertaken outside of the building.</li> </ul>	<ul style="list-style-type: none"> <li>■ There are understood to be no odour sources located outside the building;</li> </ul>

EIS Comment	Response
<ul style="list-style-type: none"> <li>■ The odour emission rates used were from data from Victorian gas works remediation site. The reports state that this would be considered worst case for this proposal.</li> </ul>	<ul style="list-style-type: none"> <li>■ This is correct – the removal of soil from ex-gas works sites has often been associated with odour complaint and is considered the worst case.</li> </ul>
<ul style="list-style-type: none"> <li>■ The modelling assumes that the treatment area would be kept under negative pressure</li> </ul>	<ul style="list-style-type: none"> <li>■ The biofilter design has not been finalized however, based on the current assumptions of flow rate passing through the bed it is highly unlikely that it will be sufficient to maintain a negative pressure within the building. Consequently the modelling conservatively assumed that the ventilation extraction system installed to serve the biofilter will only capture 50% of the emissions, with the remaining fugitive emissions discharging from the building.</li> </ul>
<ul style="list-style-type: none"> <li>■ No indication of the potential odour rates for the various materials that are to be stored or treated. There may be a potential odour impact as there is no indication of what odours will be emitted from the open storage of contaminated soils in stage 1.</li> </ul>	<ul style="list-style-type: none"> <li>■ As noted above the worst case was assumed. There is little data available for odour rates of emission from different types of contaminated soils. The other potential source of odour that has not been assessed is any manure that may be used as part of the composting process.</li> <li>■ Contaminated soils are not proposed to be stored in the open, but under cover.</li> </ul>
<ul style="list-style-type: none"> <li>■ The proposed EIS amendment indicates they may treat persistent monocyclic aromatic hydrocarbons, organic pollutants, PCBs and PAHs. There is no modelling of the potential ground level concentrations of the emissions.</li> </ul>	<ul style="list-style-type: none"> <li>■ The proposed EIS amendment indicates they may treat persistent monocyclic aromatic hydrocarbons, organic pollutants, PCBs and PAHs. There is no modelling of the potential ground level concentrations of the emissions:               <ul style="list-style-type: none"> <li>■ PCBs contaminated soils are understood not to be proposed for treatment. Modelling can be conducted for the remaining contaminants, however it is difficult to estimate emissions from the soil surface. It is possible to provide emission flux data for a range of VOCs, based on previous experience with composting gas works soil, together with ambient air quality data upwind and downwind of a remediation site. The flux data could be used to estimate VOC emissions if actual likely soil surface areas can be determined and subsequently modelled.</li> </ul> </li> </ul>

**Table 5: EIS Amendment Comments and Responses: Revegetation**

EIS Comment	Response
<p>Deanne Popow, Planning Officer</p> <p>Section 1.1 highlights that 'revegetated perimeter buffer zones &amp; retention of existing revegetation where possible' to be incorporated as one of the key features of the MWTF. It is suggested this statement reads:</p> <p><i>Revegetated perimeter buffer zones using locally indigenous species &amp; retention of existing revegetation where possible'</i></p> <p>And is incorporated as one of the key features of the MWTF.</p>	<ul style="list-style-type: none"> <li>■ noted</li> </ul>

**Table 6: EIS Amendment Comments and Responses: Groundwater**

EIS Comment	Response
<ul style="list-style-type: none"> <li>■ Chris Lawrence, Dublin &amp; District Ratepayers Association</li> <li>■ Confidential, Public</li> <li>■ Stephen Jones, Public</li> </ul>	
<ul style="list-style-type: none"> <li>■ Local knowledge regarding GW reinforces the fact of abundant GW reserves as progress north on the site creating a greater potential for contamination</li> <li>■ The proposal does not specify how the quality of the land &amp; groundwater environment surrounding the facility will be assured. This is particularly concerning in relation to the proposed use of unknown solvents/fixatives etc.</li> </ul>	<ul style="list-style-type: none"> <li>■ On site groundwater monitoring undertaken as part of overall site management.</li> <li>■ Reiterate sealed storage facility design and stormwater controls</li> </ul>

**Table 7: EIS Amendment Comments and Responses: Climate Change**

EIS Comment	Response
<ul style="list-style-type: none"><li>■ Chris Lawrence, Dublin &amp; District Ratepayers Association</li><li>■ Stephen Jones, Public</li><li>■ Francie Brechin, Public</li></ul>	
<ul style="list-style-type: none"><li>■ Concerns with rising sea level interfering with groundwater/stormwater issues.</li></ul>	<ul style="list-style-type: none"><li>■ The facility will be built at about 11 m AHD. Groundwater is expected to be at approximately 6 m AHD (i.e., 4 -5 m below ground surface level). Therefore, there will not be any interaction between the facility and groundwater during construction or during operation (which will be fully contained for any liquids inside the building).</li><li>■ The latest predictions by CSIRO are that sea level rises due to climate change are expected to be somewhere between 0.3m and 0.9m by 2100. Even if the upper prediction level (0.9m) occurred and groundwater rose by the same amount, this would not impact upon the facility or present any risk to groundwater from the facility.</li><li>■ Stormwater will not come in contact with waste materials and therefore will not be impacted.</li></ul>

**Table 8: EIS Amendment Comments and Responses: Traffic**

EIS Comment	Response
<p>F Hurley(?), Manager, Traffic and Access Standards for Commissioner of Highways, DTEI</p> <p>The traffic information submitted within the EIS documentation is considered insufficient to enable a proper assessment to be undertaken. Accordingly EDTEI request that a Traffic Impact Study be undertaken that includes;</p> <ul style="list-style-type: none"> <li>■ An assessment of vehicle types intended to use the site, and details of any Restricted Access Vehicles that are intended to access the site.</li> <li>■ Assessment of the implications for the adjacent road network</li> <li>■ Potential solutions for traffic management to ensure that road safety at this location are not jeopardised by the increased traffic movement associated with this proposal.</li> <li>■ Any proposed changes to the existing roadway configuration to cater for the increase in traffic.</li> </ul>	<ul style="list-style-type: none"> <li>■ The proposed facility is not expected to cause significant impacts to road traffic volume or safety, therefore additional survey is not proposed.</li> <li>■ On average, the proposed facility is expected to receive approximately 15,000 tonnes to 30,000 tonnes per annum. This is based on the use of B-double or semi-trailer tipper vehicles for the transport of soil, with a capacity of approximately 15 tonne per vehicle average. This equates to around 20 - 40 vehicles per week or 3-6 per day entering the facility. This further equates to approximately 6-12 two-way vehicle movements per day.</li> <li>■ The traffic movements reported in the <i>Mallala Solid Waste Landfill Environmental Impact Statement</i> (February 1996) were 7,300 two-way movements per year along Port Wakefield Road. Therefore, the additional vehicle movements expected as a result of the proposed facility form less than 0.1 % of those reported in the EIS and can be described as negligible.</li> <li>■ There is expected to be some additional vehicle movements if the removal of suitably treated soil off-site becomes viable, however, standard industry practice is to backload vehicles that have delivered contaminated soil.</li> </ul>

**Table 9: EIS Amendment Comments and Responses: Community Consultation**

EIS Comment	Response
DC of Mallala	
<ul style="list-style-type: none"> <li>■ Council request to be kept informed in relation to this proposal, in particular in relation to how the identified issues have been addressed. There may also be merit in the EPA conducting a 'Community Forum' in Dublin whereby experts from both Government &amp; Industry are able to explain the full proposal and ongoing operating procedure including all measures undertaken to minimize any risk.</li> </ul>	<ul style="list-style-type: none"> <li>■ A community consultation information session will be undertaken on 6 April 2009 by IWS with attendees from the EPA and Local Council. This session will present EPA assessment processes and procedures as well as provide a project presentation and Q&amp;A forum</li> </ul>
<ul style="list-style-type: none"> <li>■ Council has no objection to this submission being made available for public inspection.</li> </ul>	<ul style="list-style-type: none"> <li>■ No comment</li> </ul>
Stephen Jones, Public	
<ul style="list-style-type: none"> <li>■ public consultation must take place to enable all residents to be better informed.</li> </ul>	<ul style="list-style-type: none"> <li>■ A community consultation information session will be undertaken on 6 April 2009 by IWS with attendees from the EPA and Local Council. This session will present EPA assessment processes and procedures as well as provide a project presentation and Q&amp;A forum.</li> <li>■ The EIS Amendment was available for public comment as part of compliance with SA development requirements.</li> </ul>