AECOM

Medical and Other Waste Thermal Processing

Weston Aluminium Plant Pty Ltd

31-Jul-2017

Response to Submissions Report

SSD 15_7396 Thermal Waste Processing Project

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1.0 Introduction

1.1 Overview of the Project

Weston Aluminium Pty Ltd (WA) owns and operates a waste processing facility between the townships of Weston and Kurri Kurri in the NSW Hunter Valley (the WA site). The existing WA Site primarily remelts aluminium scrap for the production of deoxidant products for the steelmaking sector, and processes aluminium dross and spent pot lining (SPL) that is generated by the aluminium smelting industry as a by-product of the smelting process. WA also currently thermally treats small quantities of illicit drugs and pharmaceuticals.

Having demonstrated the facility's capability to thermally process aluminium smelter wastes and treat drugs and pharmaceutical wastes, WA is seeking to expand its service portfolio to thermally treat a variety of general, hazardous and other types of wastes (such as restricted solid wastes, liquid wastes and special wastes) as defined in the Protection of the Environment Operations Act 1997 (POEO Act). To meet this objective, it is proposed that a dedicated waste thermal treatment plant be constructed at the existing WA Site in Kurri Kurri (i.e. the Project). The Project is a response to the increasing need to dispose of certain waste streams (particularly those resulting from the medical and pharmaceutical industries, and illicit drug wastes seized during law enforcement and quarantine operations). In many instances, thermal processing is considered the best way to remove potential threats that such wastes pose to human and environmental health. The Project would allow WA to increase both the quantities and types of wastes that could be received and treated at the WA Site.

In addition to providing a means for the disposal of various types of general, hazardous and other wastes, the Project would also improve the diversification of economic activities undertaken at the WA Site. Due to volatility in the aluminium smelting industry as evidenced by the recent (2014) closure of the neighbouring Hydro smelter, and contractions within the serviced steelmaking sector (closure of Bluescope Steel's Blast Furnace 6 and the possible closure of the Whyalla Steelworks), WA is looking to maintain its current workforce through diversifying into alternative waste treatment processes.

1.2 Overview of Approval Process and Exhibition

Approval for the Project is being sought as State Significant Development (SSD) under Division 4.1, Part 4 of the EP&A Act. In accordance with section 89F of the EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (the Regulation), the Environmental Impact Statement (EIS) for the Project is required to be placed on exhibition for not less than 30 days. Exhibition of the EIS commenced on 8 September 2016 and was completed on 24 October 2016, during which a number of submissions were received by the NSW Department of Planning and Environment (DP&E), and are discussed herein. Submissions received by DP&E outside this period have also been addressed in this report.

The EIS was made available on the Department of Planning and Environment (DP&E) web site (http://majorprojects.planning.nsw.gov.au/). Copies were also provided to Cessnock City Council, the Nature Conservation Council as well as other key stakeholder agencies.

1.3 Purpose of this Report

The purpose of this Response to Submissions (RTS) Report is to detail and provide responses to issues raised in the submissions received during the EIS exhibition period.

1.4 Changes to the Project as Exhibited

Following the submission and exhibition of EIS submission several amendments have been made to the Project. These are summarised below and discussed in this report where relevant:

- Alteration of minimum finished floor height from 12.5m AHD to 13.0m AHD as part of proposed flood mitigation measures. Reference is made to responses No. 69 – 78 in the RTS and **Appendix H** (Flood Assessment) to the RTS;

- Alternative fuels are no longer considered as a supplementary source of energy for the combustion system. Refer to response No. 20 in the RTS; and
- 'Miscellaneous scheduled wastes' are no longer being proposed as inputs to the process.

To provide further clarification in regards to proposed waste stream I also refer to the response to the EPAs in **Section 3.0** which clarifies those waste types proposed to be processed by the project:

- The project would not accept halogenated organic solvents (G150) waste classification, or any E-waste.

1.5 Structure of this Report

This RTS Report has been set out to address each of the issues raised in the submissions and is structured as follows:

- **Section 1** provides an overview of the Project, the EIS process, the RTS purpose and structure;
- **Section 2** provides a summary of the submissions received;
- **Section 3** provides responses to each of the issues raised in submissions received from State and local Government agencies;
- **Section 4** provides responses to each of the issues raised in submissions received from community stakeholders (individuals and community groups);
- **Section 5** presents a revised set of Project management and mitigation measures that have been reviewed following consideration of the submissions as detailed in this RTS Report; and
- **Appendices** – supporting information as referenced in the RTS.

2.0 Summary of Submissions

2.1 Submissions Process

During the exhibition period, and for a two week period thereafter, submissions in relation to the Project were accepted by DP&E. Submissions were provided to the proponent for response. All submissions were reviewed and issues raised have been addressed in this RTS Report.

2.2 Submissions Received

In total, 37 submissions were received. The submissions are categorised as follow:

2.2.1 Agency Submissions

Seven submissions were from Commonwealth, State and local Government agencies (refer to **Appendix A**) including:

- Cessnock City Council;
- DP&E;
- Department of Primary Industries;
- Environment Protection Authority;
- Office of Environment and Heritage;
- HNE Population Health; and
- Roads and Maritime Services;

2.2.2 Public Submissions Received during the Exhibition Period

26 public submissions were received from the other stakeholders (refer to **Appendix B**) including:

- 22 objections; and
- 4 submissions in support.

2.2.3 Public Submissions Received following the Exhibition Period

Seven submissions (refer to **Appendix B**) were received following the formal exhibition period:

- Five objections; and
- Two supporting submissions.

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3.0 Response to Agency Submissions

This section contains a summary of all submissions received from government agencies, and provides Weston Aluminium's response to each of the submissions. Refer to **Appendix A** for full copies of each submission.

Table 1 Response to Agency Submissions

No.	Issue	Response	Reference
Department of Planning 1.0			
Waste Handling and Storage:			
1.	Provide justification that the proposed storage areas are capable of handling the proposed amount of wastes to be processed. Provide a visual representation of the amount of waste containers/bins which can be stored in the designated locations and an analysis of the sufficiency of the space based on maximum daily refrigeration and a justification as to the adequacy of the refrigerated area to store these wastes.	Reference is made to **Appendix D** which includes storage calculations provided to demonstrate the suitability of the proposed storage areas for the proposed quantities of waste. Additional photographs are also provided in **Appendix C** to further illustrate how the internal storage areas of the facility may appear.	**Appendix D** and **Appendix C.**
2.	Provide details of the bunding to be provided in the storage areas.	The proposed building and the waste processing areas would be equipped with engineered flood-proofing and a drainage system which discharges to the Gross Pollutant Trap (GPT) for collection of any solid matter and subsequent discharge to sewer for any residual liquid effluent. The final specification and design of the drainage, bunding and containment systems would be prepared in the detailed design phase of the project. The design and a design statement confirming the Project meets all relevant Australian Standards and regulations would be provided to DP&E.	NA
3.	The pre-shedding of waste process is unclear. Need to provide specific details of this including how the waste is transferred to the waste shredder, how the shredded waste is transferred to the waste loader and tippler, the design details of the shredder and to detail the human exposure risks of the shredding process and the	A detailed description of how the Project would operate is provided in Section 6.4 of the EIS. The shredder bin would be emptied into the shredder prior to returning to a sealed bin for temporary storage or moved directly to the primary combustion chamber. The shredder would be sealed to	Section 6.4 of the EIS and **Appendix D.**

No.	Issue	Response	Reference
	health and safety measures proposed to protect workers.	prevent human exposure to waste materials. In order to prevent release of airborne material from the shredder it would be a negative pressure environment. Air drawn off the shredder would be ducted to the primary combustion chamber so there are no fugitive emissions or associated health and safety issues. It is noted that the majority of waste inputs would not require shredding. These wastes would be directly charged to the primary chamber via automated tippler. Inlet to the primary chamber is maintained as a negative pressure environment. There is no direct contact between operators and waste materials.	
4.	Provide details of the waste quarantine area.	Quarantine wastes shall be received and stored within a secured (i.e. lockable) store as per the stringent standards required by Biosecurity Australia (formerly the Australian Quarantine Inspection Service). This store would be maintained under video surveillance, and such wastes would be segregated from other waste input storages.	NA
Biosecurity:			
5.	Requests details regarding how biosecurity and quarantine laws will be adhered to during transportation and storage and any requirements under the *Biosecurity Act 2015.*	WA would be required to obtain approvals and licences under this legislation prior to accepting or treating any biosecurity or quarantine wastes. Weston Aluminium is in the process of seeking approval as an approved quarantine facility by Biosecurity Australia (formerly Australian Quarantine Inspection Service (AQIS) under the Biosecurity Act, 2015. Preliminary activities undertaken during 2016 have included registration, staff competency training, facility upgrades (including compliant signage, dedicated waste storage facility development and dedicated bin fabrication), and an inspection and audit by Biosecurity Australia (then AQIS). Works continuing during early 2017, required for full accreditation, include various working area improvements and procedure development.	Section 7.1 of the EIS.

No.	Issue	Response	Reference
		Weston Aluminium anticipates gaining facility accreditation by mid-2017. Facility accreditation would be subject to routine inspection and verification by Biosecurity Australia on an ongoing basis. Details of these licences would be provided to DP&E prior to accepting these types of wastes by the Project. Note: quarantine wastes cannot be received, stored, handled and processed without Biosecurity Australia Approval.	
Wastewater:			
6.	Requests details of any correspondence with Hunter Water regarding Trade Waste. (Will the gross pollutant trap (GTP) proposed be adequate to ensure waste water quality is to a suitable level for discharge to sewer through a Trade Waste agreement?). An alternative wastewater collection and disposal method will be required should a Trade Waste agreement be unattainable.	Weston Aluminium has made an application to Hunter Water for permission to dispose of trade waste. Hunter Water have acknowledged this application and have requested additional information from WA in order to finalise the processing of the application. Additional information is to be submitted to Hunter Water during July 2017. Evidence of Hunter Waters approved trade waste application would be provided to DP&E under separate cover.	Section 15.4.6 of the EIS.
7.	How will the waste collected in the Gross Pollutant Trap (GPT) be further processed?	Waste water would travel through the GPT for subsequent treatment in Hunter Water's waste water treatment system. As material coming into the site for processing is usually bagged within bins, there is not expected to be a large amount of fugitive solids or material that is collected in the GPT. If solid material is collected it would be returned into the waste process stream for disposal. Any residual liquid waste would be disposed of too sewer.	Section 15.4.6 of the EIS.
Contamination:			
8.	A stage 2 investigation is required to determine the extent and type of contamination on site if present. This is to provide the Department with a greater certainty in order to meet its requirements under the *State Environmental Planning Policy 55*	A Stage 2 site investigation is not considered necessary prior to approval of the project. The Phase 1 Environmental Assessment (Phase 1)	EIS Appendix H.

No.	Issue	Response	Reference
	(Remediation of Land).	identified that there would be a low risk of potential contamination within the development footprint: · The site was a greenfield site prior to development of the existing facility in the late 1990's. Refer to Appendix C of the Phase 1, historical aerial photographs; · As detailed in Section 4.8 of the Phase 1, fill materials used onsite are from virgin material won onsite during initial construction as a result of the cut-fill balance. i.e. it is natural fill material and therefore void of anthropomorphic contaminants; · Reference is made to Figure 5 of the Phase 1 report which provides indicative depth to natural material during original site construction; · Since establishment of the existing facilities that fall within the proposed project construction footprint, the majority of this area has been sealed with either asphalt or concrete hardstand, limiting potential for potential contamination ingress; · Given the low potential for contaminates the use of a CEMP to manage contamination potential during construction is considered suitable. A procedure within the CEMP would be put in place to manage potential contamination material if encountered. This would include: - Should any potential anthropomorphic contaminated material (e.g. chitter, slag, building waste (brick or similar) or any odorous materials) the contractor would be required to cease work in the vicinity to the material; - Sampling would take place to identify the content of the material; - Material would be managed pursuant to the results of the sampling analysis with any	

No.	Issue	Response	Reference
		contaminated material handled and managed accordingly; and - Regardless of potential to contain contamination, any excess material generated by construction work that needs to be disposed of offsite would be classified accordingly. Regardless of the above, in order to achieve floor levels to meet flooding requirement's the project would require a net import of fill with excavation likely limited to footings and excess excavated material used to backfill the building footprint. The project would aim for zero waste spoil generation where practical by employment the following methods: · Excavations for the building pad would require the removal of the existing 50mm thick asphalt concrete (AC) surfacing. The pavement substrates under this would be maintained and the AC surface would be crushed and re-used as part of engineering fill; · Any stripped topsoil would also be kept and utilised in other landscaped areas on site; · Any substrate material from excavations would be reused in the engineered fill for the building due to its nature and therefore there would be no off-site disposal of any material; and · Due to the need to fill material where practical any material won on site would be reused where practical.	
Cumulative Impacts:			
9.	Have the modelled scenarios been considered in the proposed expansion of the adjacent battery recycling facility under SSD 7520?	Yes. Modelling undertaken includes a cumulative assessment of the battery recycling facility in relation to air quality, noise and human health. Full details are provided in relevant section of the EIS and supporting studies.	Section 12.0, 14.0 and 17.0 of the EIS

No.	Issue	Response	Reference
Flooding:			
10.	A quantitative assessment of the existing flooding on site alongside an assessment of the potential impacts of the proposal on flood behaviour in the locality.	A Flood Risk Assessment has been prepared which models potential flooding impacts under 1%, 0.5%, 0.05% AEP and PMF events. Flood impacts are considered minor with management measures, including commitments to minimum Project floor heights and flood proofing elements recommended to minimise risks associated with flooding. A Flood Impact Assessment (Royal Haskoning DHV, 2017) has also been prepared which demonstrates that the Project would have a negligible impact on flooding behaviour on adjoining property.	Refer to **Appendix H.** Refer **Appendix I**
11.	The risks associated with the mobilisation of hazardous goods alongside the contamination of waterways in a flood event has not been addressed adequately.	The PHA has been updated to factor in potential flood risks and proposed mitigation strategies. The PHA concluded that with the proposed management strategies in place offsite impacts from the Project as a result of flooding is unlikely.	Refer to **Appendix K.**
12.	DP&E noted that Figure 15-1 on page 108 of the EIS shows the proposed building footprint to be in the wrong location. An updated map indication the correct location with flood hazard references is needed.	Revised flood mapping is included in the Flood Risk Assessment, and therefore Figure 15-1 of the EIS is no longer relevant.	Refer to **Appendix H** for new flood assessment.
Greenhouse Gas			
13.	A greenhouse gas (GHG) assessment is required.	A qualitative greenhouse gas assessment was provided in the Project EIS. Further assessment has been undertaken to quantify the potential GHG emissions in the attached air quality response.	Refer to **Appendix E.**
Bushfire Protection:			
14.	An image indicating the extent of the bushfire hazard reduction area should be provided.	Images of the grassed area at the northern end of the existing facility are contained in Appendix B of the EIS. It should be noted that this is not a mandated hazard reduction zone as required by the RFS but rather an area kept clear of vegetation by WA as part of ongoing site	Appendix B of the EIS.

No.	Issue	Response	Reference
		management practices.	
15.	Will require the clearing of additional vegetation to expand the hazard reduction area?	The Project does not include any habitable dwelling or development for the purposes of Special Fire Protection Purposes therefore the establishment of an asset protection zone for this type of land use does not apply. Whilst the Project does not fit neatly into any Building Code of Australia (BCA) Class of building it may generally be described as a Class 8 – 10 type structure. Section 4.3.6 of *Planning for Bushfire Projection 2006* indicates that there are no specific performance requirements for these class of buildings under *Australian Standard 3959 Construction of Buildings in Bushfire Prone Areas.*	Section 16.0 of the EIS.
Traffic			
16.	An assessment of the parking needs of the existing facility and proposed Project is required referencing RMS guidelines, Council policies and Australian Standards including plans as they have not been provided.	As detailed in the EIS, the site has 38 existing parking to accommodate the staff that would be generated by the Project. Site parking requirements have been reviewed having consideration of the Roads and Maritime *Guide to Traffic Generating Development* as a guideline for calculating the total number of parking spaces that would be required by the entire WA (existing and proposed elements) site. This has also been reviewed having regard to Cessnock Councils Development Control Plan: A comparison of the parking requirements of the RMS Guideline, DCP and the available parking is provided in **Table 1**.	Section 13.4.3 and **Appendix M.**

<table>
<tr><th>No.</th><th>Issue</th><th>Response</th><th>Reference</th></tr>
<tr><td></td><td></td><td>
Table 1 - Parking Requirements
<table>
<tr><th>Land use</th><th>Document</th><th>Parking Requirement</th></tr>
<tr><td rowspan="2">Factory / Industrial Premises</td><td>Cessnock DCP</td><td>1 space per 75m^2 of gross floor area,
OR
1 space per 2 employees, WHICHEVER IS GREATER.</td></tr>
<tr><td>RMS Guideline</td><td>1.3 spaces per 100m^2 gross floor area is recommended.</td></tr>
<tr><td rowspan="2">Warehouse</td><td>Cessnock DCP</td><td>1 space per 300m^2 of gross floor area,
OR
1 space per employee, WHICHEVER IS GREATER.</td></tr>
<tr><td>RMS Guideline</td><td>Provision of one car space per 300m^2 gross floor area is recommended.</td></tr>
</table>

It is considered that a reasonable parking requirement for the WA facility is in between the RMS Guideline requirements for factories and warehouses. WA is therefore proposing a parking ratio requirement of 1 space per 200m^2.

With a floor space of 6,560m^2 and there currently being 40 formal spaces available this equates to approx. 1 space per 164m^2. This is approximately half way between the
</td><td></td></tr>
</table>

No.	Issue	Response	Reference
		factory and warehouse requirements as per both the RMS Guideline and the DCP, with the DCP having a slightly higher requirement (notwithstanding the fact that as per clause 11 of *State Environmental Planning Policy (state and Regional Development) 2011* DCPs do not apply to State Significant Development). Due to the nature of the operation not fitting neatly into either category, the available parking is considered representative of the need generated by the site and the project. Given existing staffing numbers and those proposed by the project it is considered that adequate parking is available for the project.	
Community Consultation			
17.	Section 9.3 of the EIS states that community and stakeholder engagement was limited to a single community consultation session which occurred in August of this year. As several public submissions have been received, the DP&E suggests that further community consultation sessions be held during the preparation of the RTS.	Noted. WA propose to undertake further community consultation following the assessment of the Project and would provide DP&E with full details of proposed dates and the outcomes of the consultation undertaken.	NA
Hazards and Risks			
18.	Ensure that key hazards are identified and that proposed safeguards are adequate. This is to demonstrate that the process will not impose a level of risk that will impact people and the environment.	Key hazards and related management measures are identified in the Preliminary Hazard Analysis included with the Project EIS. This, along with the other assessments, including the Air Quality Impact Assessment and Human Health Risk Assessment, concluded that the Project would not impose a significant risk to the community or environment.	Appendix E, J and K of the EIS, and **Appendix J** and **Appendix K** of this report.
19.	DP&E emphasise the importance of the care and precautions needed to handle cytotoxic material and ask how WA will address these risks at all stages.	WA acknowledge the importance of correctly handling such materials. WA would develop detailed management and handling procedures for future review and approval by DP&E prior to accepting these materials to site or the operation of the Project.	NA

No.	Issue	Response	Reference
20.	DP&E request that the hazards and risks associated with the design, operation and control of the secondary combustion chamber dual burner system efficiency is to be addressed.	WA no longer proposed to operate a dual fuel burner therefore no further consideration of that system is considered necessary. Should alternative fuel use be considered in the future, regulatory approval would be sought in the usual manner.	NA
21.	The design, equipment type and combustion conditions need to be addressed in relation to flue gas.	Reference is made to **Appendix D** which provides further details justifying the proposed primary combustion chamber type based on the necessary combustion conditions required to process the proposed wastes and therefore the appropriateness of the design.	Refer to **Appendix D**
22.	The PHA does not address the integration of the two separate waste processing gas streams and the potential hazards and risks associated with the cross contamination and exceeding design utilisation rates, in the event that both streams operate concurrently. DP&E also require more information and details regarding emissions from Class 6.1 and Class 6.2. Additional information, including preventative measures should be provided to demonstrate that potential risks and hazards from unprocessed cytotoxic waste released to atmosphere will not significantly impact surrounding land users, in the event that the bypass stack is activated in an emergency. In an emergency situation there is the potential for the direct release of cytotoxic waste prior to its complete combustion in the secondary combustion chamber. WA has not addressed this issue, what preventative controls will be in place to mitigate the risk of cytotoxic waste release direct to atmosphere. Cytotoxic waste should not come into contact with normal living cells, particularly to surrounding land users including both residential and sensitive receptors such as the Kurri Kurri High School, 860 meters away.	The proposed primary combustion chamber and existing reverbratory furnace, both of which are connected to baghouse No. 5, would never be operated simultaneously, therefore cross contamination and associated risks would not occur. Isolation dampers would be provided to control the source of emissions to the air pollution control plant. Restrictions would be in place restricting the inflow of gases to a single source. The PHA has been updated to include a hazard assessment of potential cross contamination of waste materials which concludes risk as manageable with appropriate safeguards recommended .and cross contamination unlikely. The emergency bypass stack is located after the thermal treatment plant's secondary combustion chamber and before the exhaust gas dry scrubber. Therefore even in the event of a bypass is not possible for poorly or incompletely combusted cytotoxic wastes to be discharged to atmosphere. The proposed thermal treatment plant secondary combustion chamber has been designed to achieve a true retention time of 2.0 seconds at a temperature of 1100^{o}C. As advised by project engineer Advanced Combustion Engineering Pty Ltd (ACE) this is well in excess of 1.0	Refer to **Appendix K.**

No.	Issue	Response	Reference
		second which was deemed to be necessary for the effective control of cytotoxic wastes as determined by Paul Clarey in his 1989 research document "The Management of cytotoxic medical waste" and subsequently the typical Australian requirement for many years. In fact it is only in recent years that the remaining Australian thermal treatment plant's with 1.0 second retention time secondary combustion chambers are being required to upgrade to achieve a 2.0 second retention time.	
23.	The risks of fire and explosion from hot exhaust gases coming into contact with the activated carbon stream in Baghouse 5 has not been identified as a hazard. DP&E also request further safeguards to prevent gas and carbon based explosions.	The use of activated carbon for the control of combustion based air emissions is a well proven technology which has been utilised throughout Australia and numerous other countries for many years. The function of the activated carbon is to reduce both dioxin and heavy metal pollutants which are adsorbed onto the activated carbon which is then collected and removed from the process gas by means of the fabric filter. The use of the fabric filter necessitates that the exhaust gases be cooled significantly and depending on the filter media used the exhaust gas temperature at the point of activated carbon injection is typically in the order of 150 to 250ºC. The existing WA fabric filter be operated at approximately 160ºC and controls would be provided to bypass the exhaust from the fabric filter in case of emergency if the process temperatures were to exceed 230ºC. At this low temperature combined with the use of high quality, high ignition temperature activated carbon, specifically designed for combustion flue gas applications would appropriately manage risk of fire or explosion within the	Section 6.4 of the EIS and **Appendix K**.

No.	Issue	Response	Reference
		fabric filter. The proposed equipment designer has previously provided systems for both the Suez Perth facility and the Ace Waste Melbourne facility. These facilities both utilise activated carbon injection, and have operated for 20 and 7 years respectively without incident. The hazard assessment undertaken in the PHA concluded that risk of fire or explosion due to hot exhaust gases coming in contract with activated carbon are minor and appropriate safeguards are in place.	
24.	Requests further detail for the proposed process of injecting activated carbon into existing scrubber, assessing hazards and safeguards. What controls will be in place to ensure gas temperatures entering Baghouse 5 will be sufficiently reduced after the hot exhaust gases exit the secondary combustion chamber at 1100 C, pass through the cooler to the point where the activated carbon injection occurs? Efficiency and selection of coolers and controls around reducing temperatures is required. The Department is not questioning the use of activated carbon for air emission control, it is more concerned that a fire and explosion situation does not arise due to inadequate cooling of the hot gases prior to contact with activated carbon injection.	The activated carbon injection system consists of a bulk bag discharge frame, variable speed volumetric feeder and pneumatic conveying system which injects the activated carbon to the fabric filter inlet duct. The proposed system is similar to the existing WA hydrated lime conveying system. Subject to final design, the carbon bulk bag discharge frame and volumetric feeder may be incorporated into the existing pneumatic conveying system. The use of activated carbon for the control of combustion based air emissions is a well proven technology which has been utilised throughout Australia and numerous other countries for many years. The function of the activated carbon is to reduce both dioxin and heavy metal pollutants which are adsorbed onto the activated carbon which is then collected and removed from the process gas by means of the fabric filter. The use of the fabric filter necessitates that the exhaust gases be cooled significantly and depending on the filter media used the exhaust gas temperature at the point of activated carbon injection is typically in the order of 150 to 250ºC.	Section 6.4 of the EIS and **Appendix K**

No.	Issue	Response	Reference
		The proposed WA thermal treatment plant would be equipped with a preliminary heat exchanger to cool the hot combustion gases from 1100 ºC to approximately 900ºC. At this point the exhaust gases enter the forced air cooler where ambient air is introduced to affectively cool the hot gases to an acceptable fabric filter inlet temperature. As an additional safeguard the exhaust gas cooling plant is also equipped with a water spray system which would automatic operate if the fabric filter inlet temperature were to exceed the deemed maximum operational temperature. At the proposed process operating temperature combined with the use of a high quality, high ignition temperature activated carbon specifically designed for combustion flue gas applications the risk of fire or explosion within the fabric filter would be negligible. If the exhaust gas process temperatures were to exceed 230ºC for any reason then the flow of activated carbon would automatically cease and the exhaust gases would bypass the fabric filter eliminating any risk of fire or explosion. This process would be PLC controlled in real-time. The proposed equipment is similar that that utilised by both the Suez Perth facility and the Ace Waste Melbourne facility, and numerous other overseas facilities, which utilise activated carbon injection and have operated for many years respectively incident.	
25.	Have potential impacts of the development on the nearest residential receptor been considered in the Air Quality Assessment or the HHRA?	Yes, the assessment considers potential impacts at the nearest residential receiver in regards to potential impacts, notable air quality and human health. Full details are provided in those specialist reports.	Appendix E and I of the EIS and **Appendix J.**
26.	DP&E requests further information on the interface of the customised liquid injection system and identify risks and hazards	WA no longer proposed to utilise liquids fuels as part of the Project. Should alternative fuel use be considered in	Refer to **Appendix K.**

No.	Issue	Response	Reference
	with its use and systems.	the future, regulatory approval would be sought in the usual manner. In regards to paint and solvent The liquid waste injection system will consist of a supply tank with supply pump, reticulation piping with inline filtering and a liquid injection nozzle. Liquid waste types would be injected into the primary combustion chamber by an air atomized nozzle which uses compressed air to finely atomise the liquid wastes producing an extremely small liquid droplet size. This allows for rapid combustion when injected into the incinerator. Specific equipment sizing and type is subject to detailed design.	
27.	Flooding events have not been addressed in the PHA and no consideration provided in both the EIS and PHA to mitigate risk to the community during flooding event.	A quantitative Flood Risk Assessment (FRS) (Refer **Appendix H**) has been prepared to assess the potential hazards associated with flooding. The Project PHA has also been updated based on the outcomes of the FRA and concludes that with the proposed flooding safeguards in place offsite impacts as a result of flooding are unlikely. Reference is made to the updated PHA at **Appendix K.**	Refer to **Appendix H** and **Appendix K.**
28.	DP&E requested that more detail is required on how events which cause onsite impact can be eliminated from future analysis. Table A1, Appendix J EIS also needs to be reviewed.	See response to Issues No. 27.	NA
29.	Correct errors in PHA by checking Section 5.1.2 pg. 21 first paragraph and requests that all codes and standards referenced on the PHA are correct and change *'Australian Standard 3813-2009 Industrial and Gas Fired Appliances'* to: *Australian Standard 3814-2009 Industrial and Commercial Gas Fired Appliances.*	All relevant Australian Standards applicable to the Project would be applied to the design and operation of the facility. A design statement or similar would be prepared by the Project designer to confirm this following detailed design.	NA

No.	Issue	Response	Reference
NSW Environmental Protection Authority (EPA) 1.1			
Air Quality			
*Note: Summary responses are provided below with detailed responses to the EPAs comment provided in **Appendix E.** Appendix E also contains correspondence from EPA confirming that all air quality issues have been generally addressed and that the EPA intends to provide recommended conditions of approval once the RTS is received.*			
30.	EPA required that the emissions based on the maximum potential process rate of the proposed thermal waste treatment plant are assessed. This is due to possible underestimations with the emission rates which can lead to an under prediction of potential impacts.	The design rate of the Thermal Waste Processing equipment has been clarified with the manufacturer and has been confirmed as 800kg/hr. Emissions have been calculated based on this maximum throughput.	Refer to **Appendix E**
31.	EPA recommends that the AQIA needs to be revised to provide robust justification of estimated emissions. Reference should be made to manufacturers' performance guarantees and reference plant stack test data and reports.	The AQIA was prepared utilising US EPA AP42 emissions factors which are derived based on data gathered from a variety of facilities, and considered worst-case with respect to potential emissions associated with processing the full profile of waste inputs. The Project engineer has confirmed the emissions estimates are consistent with existing operating facilities across Australia, and for the nature of the proposed operation.	Refer to **Appendix E**
32.	EPA requires an analysis of the composition of the expected feedstock, and emissions adjusted accordingly. Emissions from expected fuels types need to be incorporated into the analysis. The EPA discovered that the AQIA does not discuss toxic equivalent calculations. The Approved Methods Modelling requires that dioxin and furan model results be expressed as toxic equivalent. As the AQIA doesn't discuss toxic equivalent calculations it is assumed that results have not been expressed in this manner.	Following a review of potential dioxin emissions it should be noted that assessed emissions are 1000 times lower than reported. In regards to level of toxicity these levels are significantly lower than the Toxic Equivalence Factor provided in the Protection of the Environment Operations (Clean Air) Regulations. It should also be noted that the USE EPS AP 42 emissions factors, as used in this assessment is based on a variable medical waste feedstock composition as proposed by the project. The assessment it therefore considered representative of the project, which as detailed above was modelled as being well below the toxicity criteria for the modelled pollutants.	Refer to **Appendix E**
33.	EPA discovered that Aluminium, Barium and polycyclic aromatic hydrocarbon emissions were not assessed and need to be	Utilising the assessment for the existing metals and reviewing the criteria for Aluminium and Barium any	Refer to **Appendix E**

No.	Issue	Response	Reference
	revised.	emission of these metals is considered to be well below their criteria.	
34.	EPA discovered that emissions of VOC were not noted in scenarios 1, 3 and 4. The AQIA should assess VOCs from all scenarios and reference the correct limit in the POEO (Clean Air) Regulation.	VOCs were assessed utilising benzene as an indicator due to its lower criteria compared to other VOCs. Full assessment of VOCs was not considered necessary as they are not a pollutant of concern and would generally be removed if present through complete combustion in the secondary chamber.	Refer to **Appendix E**
35.	EPA discovered that the 10minute average SO_2 was not modelled. The AQIA needs to include this.	The 10 min SO_2 average was calculated and demonstrated compliance with the criteria.	Refer to **Appendix E**
36.	EPA discovered that the ratios between PM_{10} and $PM_{2.5}$ emissions are not consistent with Table 2.3-15 of USEOA AP42. EPA notes that is may not be realistic for emissions from a baghouse. Recommends that the proponent should ensure the particle size distribution used in the AQIA is representative of emissions from a baghouse system.	The predicted levels of particulates from the process were very low and any likely variations to the distribution would have an insignificant effect on the results and have no impact on the conclusion that compliance is achieved.	Refer to **Appendix E**
37.	EPA discovered that the use of emission data is not consistent with the EPA's Approved Methods Modelling requirements to model maximum emissions. Average emissions may also lead to an underestimation of impacts from the premises. Need to consider maximum emissions, consistent with a worst case scenario for all emission sources at the premises.	The existing facility was assessed as operating with all stacks emitting pollutants at an average rate concurrently operating 24 hours per day, 365 days per year. This is considered to be highly conservative. The use of maximum emissions over this period is not physically possible. The use of the average emissions is considered a realistic factor considering the nature of the operations over the year.	Refer to **Appendix E**
38.	EPA recommends that the AQIA should be revised using more realistic partitioning of Type 1 and Type 2 emissions as the previous partitioning was considered too simplistic.	As per the response to Issue No. 33 the method is not considered simplistic and emissions are assessed to be well below criteria.	Refer to **Appendix E**
39.	The EPA discovered that the AQIA adopted not site specific input data including emission factors. Further, site specific meteorological observations do not appear to have been used. The EPA recommends that AQIA should be revised to consider 100^{th} percentile model results for toxic air pollutants.	The assessment is considered appropriate as it used the following data site specific data: · The emissions data for all stacks with the exception of the medical waste processing (which is not yet	Refer to **Appendix E**

No.	Issue	Response	Reference
		operational) were sourced from site stack emissions testing data; · Regional specific meteorological data was used for the assessment; and · Regional specific background data was used to generate the regional background data, to which the stack contribution from the existing Weston facility was added to derive a background concentration. Given the level of site specific data, it is considered a reasonable approach to adopt a level 2 assessment and hence the 99.9th percentile.	
40.	The EPA discovered that potential emissions from the 'burnout hearth' were not assessed and it is recommended that it should be, alongside any other additional emission sources not currently assessed.	The Burnout Hearth is not open to the environment when there are any combustion activities occurring. All combustion gases would be ventilated and treated through the emission control system.	Refer to **Appendix E**
41.	The dual fuel combustion operation was not assessed and the EPA recommends that the AQIA should be revised to assess all fuel types proposed.	WA have since confirmed that a dual fuel system would no longer form part of the Project, therefore no further consideration of this systems is required.	Refer to **Appendix E**
42.	EPA believes that emission concentrations have not been demonstrated as complying with the regulation prior to dilution. Page 30 of the EIS advises that "*Air leaving the heat exchanger is reduced in temperature by several hundred degrees and is then injected with ambient air until it reached temperature of approximately 160 C"* Based on the above, emission concentrating would be diluted by a potentially significant margin prior to discharge at the stack. The POEO (Clean Air) Regulation requires that emission concentrations apply at the point prior to air being added to the air impurities. It is recommended that the AQIA be revised to demonstrate that all emission concentrations will comply with regulatory requirements prior to dilution with excess air.	No dilution is included in the Project. Air is added post combustion for regulating temperature prior to further emissions control is applied. Temperature reduction is required as the air temperature would be too high to enter the baghouse or have activated carbon controls applied. Equipment would be installed to allow temperature and oxygen levels to be monitored in real-time to enable process management control and for safety the safe operation of emissions control systems. The use of process air monitoring data would allow stack emissions data to be corrected for the equivalent (precooling air) conditions to be established and reviewed accordingly. As demonstrated in the AQIA all emissions as considered to comply with the POEO (Clean Air) Regulation.	Refer to **Appendix E**

No.	Issue	Response	Reference
43.	The EPA believes that the meteorology and background air quality data is not adequately evaluated and justified as representative. The AQIA provides no analysis and discussion which shows that 2014 is a representative year for meteorology and dispersion. Adopted background air quality data was sourced from the Office of Environment and Heritage (OEH) for the year 2015 however this data was not justified. EPA recommends that AQIA is to be revised to justify 2014 as a representative year for modelling. EPA also requires that the adopted background air quality data is justified and to quantitatively evaluate meteorological model performance, including a statistical evaluation. There is also some missing wind data, data showed 8735 hours of data when there are 8760 hours in a standard year.	Additional justification for the use of the meteorology data input in the model is provided in Section 1.14 of **Appendix E.**	Refer to **Appendix E**
44.	The EPA discovered that the control technology has not been benchmarked against best practice process design and emission control. EPA required that the AQIA be revised to provide a thorough and rigorous benchmarking of the proposal with best practice process design and emission control. Also should include a comparison with applicable best practice reference facilities. Project needs to be modified to adopt additional emission control.	A benchmarking review of the available and proposed emissions control technologies is provided in Section 1.15 of **Appendix E.** This review concludes that based on the characteristics of the Project, the proposed emissions control technologies represents a good mix of emissions solution which are proven and suitable for managing emissions from a plant such as that proposed.	Refer to **Appendix E**
45.	The EPA discovered that the proposed bypass stack emissions do not comply with regulation limits and assessment criteria are predicted to be exceeded. The EPA recommends that the AQIA be revised and the proposal redesigned to ensure compliance with POEO (Clean Air) Regulation limits and Approved Methods impact assessment criteria for all pollutants at all times.	The bypass stack would not operate as part of regular operations. It would only be used in emergency shutdown / upset conditions. It therefore falls outside the compliance limits of the POEO (Clean Air) Regulation.	Refer to **Appendix E**
Noise			
46.	In an addition submission received from the EPA requested: · Clarification in regards to the sleep disturbance criteria being prosed for project compliance purposes; and · Confirmation of two potential corrections required in Tables 8	An updated Noise Impact Assessment has been prepared which provides clarity in regards to the proposed sleep disturbance criteria. Section 5.6 of the updated report provides further discussion to confirm the project would	Refer to **Appendix L.**

No.	Issue	Response	Reference
	and 16 of the Noise assessment	meet sleep disturbance criteria. Clarification to Tables 8 and 16 has been made in the updated report as per EPAs comment. These clarifications do not impact on the outcomes or findings of the report.	
Proposed Waste Streams			
47.	The EPA does not support the project processing organic halogenated solvent wastes (G150 classified wastes).	In relation to the organic halogenated solvent wastes, WA confirms that it is not seeking approval for the receipt or processing of any wastes classified as G150 wastes.	Management measure added to **Section 5.0.**
48.	The EPA considers that E-waste would have relatively high quantities of plastics and therefore related pollutant emissions from the processing of these plastics may be high. EPA therefore recommended E-wastes art processed by the project	WA confirms that the project is no longer seeking permission for the receipt, storage or processing of any e-wastes as part of the Project.	Management measure added to **Section 5.0.**
Cessnock City Council 1.2			
Air Quality:			
49.	Monitoring should be imposed to ensure that the pollutant discharge concentrations are below the allowable limits having regards to air dispersion modelling in the Air Quality Impact Assessment, the maximum allowable concentrations set out in the Protection of the Environment (Clean Air) Regulation 2010 and the Weston Aluminium Environment Protection Licence. The waste that will be processed at the facility is unknown and may vary between waste types.	Noted. WA propose to undertake monitoring of stack emissions as would be required by the EPA. Full details of monitoring requirements would be detailed by the EPA in the site's Environmental Protection Licence (EPL 6423). Monitoring data would continue to be reported in accordance with existing protocols and regulatory requirements.	Section 12.5 of the EIS.
50.	Cessnock City Council requires that a pollution incident management and response plan to be developed to deal with the potential issue when pollution discharge levels may exceed the allowable concentrations.	Noted. WA have a mature Pollution and Incident Response Management Plan for its existing operations, and would develop and implement a similarly appropriate pollution and incident management and response plan for the Project. This would be incorporated into the site's overall Environmental Management System.	Section 12.5 of the EIS.
Human Health:			
51.	Cessnock City Council recommends that a Human Health Risk Assessment Validation Report should be carried out within 12	WA agrees to undertake a Human Health Risk Validation Assessment within 12 months of commencing operations.	Section 17.5 of the EIS.

No.	Issue	Response	Reference
	months of commencing operation. This report is to contain air quality and noise monitoring and include data on any water and soil sampling carried out during the first year of operation.		
52.	Every 2 years an assessment is to be carried out to ensure that the assumptions that have been made in the report titled Human Health Risk Assessment prepared by AECOM Australia Pty Ltd (Job No.: 60486360 Date: 26 August 2016), are still valid. Updates to the Human Health Risk Assessment should also be provided to the NSW DP&E and Cessnock City Council.	WA agrees that periodic assessment should be undertaken. It is considered however that the frequency of assessment should be flexible to allow assessment to be undertaken based on environmental performance and not mandated to every 2 years.	NA
Contamination			
53.	A stage 2 site investigation to determine the type and extent of contamination present on the site due to the uncertainty with regards to fill materials, elevated metal levels and potential for the migration of contaminants from neighbouring sites.	A Stage 2 site investigation is not considered necessary. The Stage 1 assessment discussed the need for sampling and classification of excavated material should it require offsite disposal. The recommended approach as detailed in Section 6.0 of the Stage 1 assessment is to include measures in the CEMP to appropriately manage such fill if generated during construction works.	EIS Appendix H
54.	Within 6 months of commencing operation of the facility, an acoustic validation report be prepared and submitted to the NSW EPA and Cessnock City Council. This report is to determine if the operation of the facility complies with the project specific noise criteria set out in the submitted Noise Impact Assessment.	WA commit to undertaking noise validation monitoring following the commencement of operations. It is considered appropriate to require this within the first 12 months of operations to align to other monitoring requirements.	NA
Community Engagement			
55.	The development of a Communication and Engagement plan to address stakeholder concerns is recommended.	Noted. WA would prepare an engagement plan which would provide details as to how WA propose to operate the facility and provide key information to the local community.	NA
Flooding			
56.	Cessnock City Council requires that material storage/processing activities be restricted to areas of the site beyond the Probable Maximum Flood event on the site.	A quantitative Flood Risk Assessment has been prepared which has recommended waste storage be a minimum floor level of 13m AHD for waste storage and processing areas to mitigate potential flooding risks. Dry flood-proofing elements are also defined for the Project	Refer to **Appendix H.**

No.	Issue	Response	Reference
		structures. WA have committed to this minimum flood level and flood-proofing elements.	
Trade Waste			
57.	Trade waste agreement is required to discharge to sewer.	Noted. WA would continue to consult with Hunter Water regarding trade waste licencing requirements. Amendment to the site's existing Trade Waste Agreement is currently underway.	NA
Car Parking			
58.	Chapter C1 Parking and Access of the Cessnock Development Control Plan 2010 (DCP) requires parking to be 1 space per 75^2 of gross floor area, or 1 space per 2 employees (whichever is greater). Construction of 10 car parking spaces is also needed.	The provisions of the DCP not apply to a development this nature and regardless do not apply to an SSD Project. Despite the proposed floor space of the facility, it is primarily for the storage of bins, therefore the correlation between floor space and parking demand is negligible. The EIS demonstrates that the existing parking levels are more than adequate for the number of staff required by the Project.	Refer to Section 13.0 of the EIS and the response to comment No. 16 in this report.
Vehicular Access			
59.	Cessnock City Council recommends that access to the site should be via a swept path analysis. Plans also need to be prepared that demonstrate that the internal access within the site is adequate to cater for the design 8.8m service vehicle.	There are no changes to the already approved and operating site access proposed as part of the Project. Regardless a swept path analysis has been undertaken to demonstrate that the design vehicle can access the site.	Refer to **Appendix M**
Stormwater			
60.	Stormwater disposal should be to a legal discharge point and that existing stormwater systems have adequate capacity to cater for the additional stormwater discharge.	The Project would only create a relatively small increase in impervious surface area, it proposes to utilise the site's existing stormwater discharge system. This includes all site discharges going through the existing licenced discharge point (Point No. 12) as detailed on the existing site's EPL 6423. No waste runoff, leachate or similar would be drained to this system. Any runoff from bunded areas would be directed to sewer under a trade waste agreement with Hunter Water. No emissions to water are proposed that would trigger the need for an additional discharge point. Monitoring of the existing discharge point	Section 6.4.10 of the EIS.

No.	Issue	Response	Reference
		would be undertaken against the established discharge criteria. Implementation of WA's existing water monitoring program would continue on an ongoing basis.	
Crime Prevention			
61.	The existing mesh wire fencing can be easily breached. Upgrading the site fencing to a type that provides greater security is to be considered.	WA would review its existing site fencing to ensure that is in a full functional operation. A chainwire mesh with three-strand barbed wire topped fence would be maintained around the facility for the duration of its operation. Beyond perimeter fencing, WA has mature site security systems in place, including back-to-base security monitoring, independent attended patrol monitoring, and a recorded surveillance camera network.	Section 6.4.12 of the EIS.
Office of Environment and Heritage (OEH) 1.3			
Threatened Biodiversity			
62.	OEH requires that the biodiversity/threatened species aspects of this project are to be assessed under the NSW Biodiversity Offsets Policy for Major Projects.	A Biodiversity Assessment Report has been prepared for the Project. A copy is attached at **Appendix F**. The BAR was prepared in accordance with NSW Biodiversity Offsets Policy for Major Projects and the Framework for Biodiversity Assessment (FBA). One plant community type was identified the project area, occupying an area of 0.01 ha; Parramatta Red Gum - Narrow- leaved Apple - Prickly-leaved Paperbark shrubby woodland in the Cessnock-Kurri Kurri area, derived grassland (PCT 1633). This community occurs as derived and highly modified grassland. The high levels of disturbance have resulted in a species composition which no longer reflects the original community and inhibits the potential for future regeneration. This vegetation community does not correspond to any EEC due to the lack of regeneration potential. The grassland within the project area provides very	Refer to **Appendix F.**
63.	OEH requires the EIA to include a Biodiversity Assessment Report (BAR) which must assess the impacts on threatened biodiversity.		-
64.	OEH concurs with the EIS that the disturbed site would provide limited habitat for threatened species however the EIS needs to comply with the specific process under the Framework for Biodiversity Assessment (FBA). OEH requires the EIS to prove that due process has been followed and evidence of an appropriate assessment has been undertaken following the FBA.		-
65.	OEH requires appropriate assessments in accordance with the FBA to try and locate threatened species such as the Green and Golden Bell Frog and/or transient bird species with have been recorded nearby. OEH acknowledges that the disturbed site would provide minimal habitat to these threatened species however appropriate assessments should be implemented.		-
66.	The OEH requires an accredited person under section 142B(1)(c)		-

No.	Issue	Response	Reference
	of the *Threatened Species Conservation Act 1995* to conduct an assessment in accordance with the FBA and specifically provide a Biodiversity Assessment Report (BAR). No exemption is provided for the removal of a BAR where projects deem to have no values due to current disturbance.	negligible fauna habitat value and any vertebrate fauna utilising the project area are only likely to do so on an intermittent basis. Calculations generated by the BioBanking calculator in accordance with the FBA methodology, has resulted in no ecosystem or species credits being generated. Accordingly, offsets are not required for the project and no offset strategy is necessary.	
Aboriginal Cultural Heritage			
67.	Section 19 of the EIS contains a significant discrepancy on the site's assessed potential to contain potential archaeological deposits (PAD). EIS notes the requirement for earthworks and states that the Weston Aluminium site is heavily disturbed or modified. However the EIS also states that earthworks are proposed.	A review of the potential aboriginal heritage due diligence assessment was undertaken for the Project by Myall Coast Archaeological. With the additional advice provided to OEH for review, OEH subsequently confirmed that the requirements for aboriginal heritage assessment have been met for the Project. **Appendix G** also contains correspondence from OEH confirming they are satisfied with the assessment and would be advising DP&E that there are no further concerns regarding aboriginal cultural heritage for the Project.	Refer to **Appendix G.**
68.	OEH requires an assessment of the area of potential archaeological deposits be undertaken for the Project and requests that the already provided due diligence assessment be built up into an Aboriginal Cultural Heritage Assessment (ACHA). This will identify the nature and extent of the identified area of PAD and needs to include a determination on the significance of any object contained within it.		-
69.	OEH recommends following their *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW,* if there is uncertainty whether an activity could harm any Aboriginal objects or places. It should also be consulted if the proponent is required to undertake a cultural heritage assessment.		-
70.	OEH requires that the processes set out in the document: *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* must be, followed and documented in the EIS.		-
71.	The processes followed in the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010). Are to be followed and documented		-

No.	Issue	Response	Reference
	whenever an archaeological investigation is to be undertaken on a cultural heritage site.		
Flooding and Floodplain Management			
72.	OEH requires the EIS to consider the impact on the facility and the environment for floods in excess of the 1% AEP flood.	Since the preparation of the EIS, WA has engaged Advisian Worley Parsons Group to prepare a Flood Risk Assessment (FRA) for the Project. The FRA assessed potential impacts of 0.05%, 0.5%, 1% and PMF flood events on the proposed Project. The FRA concluded that while the site may be subject to flooding, impacts would generally be minor. The FRA recommended that in order to appropriately manage the potential risk of flooding to site infrastructure, appropriate structural engineering would be designed into the Project to manage the potential impacts (inundation depth and velocity) of a 0.05% AEP flood level and velocity. The FRA also concludes that due to the minimal nature of flooding impacts on the site, it is considered that the potential for offsite flooding impacts to occur as a result of the Project are minimal. Utilising the FRA, the Project Preliminary Hazard Analysis was revised to incorporate consideration of the potential hazard and risk impacts of flooding on both the Project and offsite areas. The PHA concluded that with the flooding risk management measures recommended by the FRA in place, the Project would not represent a significant hazard or risk including on downstream or offsite receives as a result of mobilisation of wastes in flood waters. Key flood risk management features include storage of all waste materials in sealed contains in sealed storages areas at a minimum flood level of 13m AHD. The waste storage	Refer to Flood Risk Assessment in **Appendix H,** Flood Impact Assessment in **Appendix I** and Hazard Assessment in **Appendix J.**
73.	Flood waters will enter the proposed storage and processing facility in flood events between 0.5% and 0.2% event, which gives a 25% chance that over the service life of 50 years the facility will experience floods at floor level or deeper. These risks are considered too high and have not been considered in the preliminary hazard assessment.		
74.	The proposed fill to be placed in the floodplain has the potential to increase flood levels in the development area. EIS needs to make an assessment of the impact of this fill.		
75.	The prime access routes to the site (Mitchell Avenue and Government Road) are closed by flood events that exceed the 5% AEP flood. Alternative routes need to be considered during flood events.		
76.	OEH requires the EIS to consider and mitigate the risk to the community and environment posed by mobilisation of stored dangerous goods during a flood event in excess of the 1% AEP event.		
77.	Quantitative assessment of existing flooding on site is needed alongside the potential impacts to and as a result of the development and proposed mitigation measures.		
78.	OEH requires the EIS to demonstrate how the risk of mobilisation of stored dangerous/hazardous goods will be managed in a flood event, including the PMF event.		
79.	OEH requires the EIS to demonstrate how the risk of contamination of waterways will be managed in the event of inundation of the site during flood events. Assessment needs to		

No.	Issue	Response	Reference
	include dangerous goods and the waste ash product.	building would have engineered flood protection to a height of 14m AHD and be constructed to endure flood depth and velocities associated with a 0.05% AEP flood event. Site management, safety and emergency plans would also include specific measures to manage flood risk as part of ongoing operations. The Flood Impact Assessment (Royal Haskoning DHV, 2017) concluded that the project is not likely to result in any increase in peak flood risk on adjoining properties.	
80.	SEPP 33 requires hazard assessments. Hazard assessments need to be undertaken in accordance with the Hazardous Industry Planning Advisory Paper guidelines provided by the NSW Department of Planning for Multi-Level Risk Assessment.		
81.	EIS needs to outline the risks to human health, the environment and the downstream waterway.		
Human Health Risk Assessment			
82.	The HRRA does not clearly consider and assess all potential Project health risks.	AECOM has reviewed all potential human health risks associated with the Project, including those associated with air quality and odour, noise, soil and groundwater contamination and construction and operational hazards as documented in: · Noise Impact Assessment, Weston Aluminium Thermal Waste Processing Project. AECOM Australia Pty Ltd. 11 April 2017; · Air Quality Impact Assessment, Weston Aluminium Thermal Waste Processing Project. AECOM Australia Pty Ltd. 30 June 2017; and · Preliminary Hazard Analysis (PHA), Weston Aluminium Thermal Waste Processing Project. AECOM Australia Pty Ltd. 30 June 2017. A summary of AECOM (2017) and a qualitative assessment of human health risk have been included as Section 3.5 of the revised HRRA.	Refer to Section 3.5 of the revised HHRA in **Appendix J.**
83.	It is unclear if the HHRA is based on the most up to date technical reports.	The data used in the HHRA is current and based on the most up to date technical reports. References to those reports have been updated in Section 1.1, Section 3.1 and Section 11 in the revised HHRA.	Refer to Section 1.1, Section 3.1 and Section 11 of the HHRA in

No.	Issue	Response	Reference
			Appendix J.
84.	Critical parameters and assumptions regarding the facility and its operations are not adequately considered.	A discussion on the proposed operation of the Project relevant to potential emissions and impacts has been included as Section 2.6 of the revised HHRA. Additionally, the limitations associated with the unavailability of emission data has been discussed as a data gap analysis in Section 3.6 of the revised HHRA. A review of emission data from comparable facilities in Australia (including ACE Waste in QLD and Sterihealth in NSW) was undertaken as part of the development of the AQ emissions inventory. Although there were emissions data available for the Sterihealth facility, the context of the data was not available (i.e. full stack testing report was not available including throughput at the time of testing, waste type being processed during testing etc) and as such the data was considered unsuitable for use in the AQIA. In addition only a limited list of pollutants (10 stack testing pollutants) were tested for Sterihealth which is much more limited than the expected list of Chemicals of Potential Concern (CoPC) modelled in the HHRA. It should be noted that any data from such reference facilities would also be very specific to the type of material processed and the process specifications, air pollution control technology applied and its operating efficiency. It is considered unlikely that such robust information would be available in a testing report so that adjustment could be made to the emission rates for application for the Project. Accordingly, emission factors provided by AP42 for thermal treatment operations were adopted for the modelling assessment. The AP42 emission factors are by their nature considered to be conservative (due to the assumptions made when developing the emission factors)	Refer to Section 2.6 and Section 3.6 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		and considered to be a robust estimation of the expected operational emissions from the facility. The emission rates provided in AP42 are referenced to two varying types of thermal treatment plants, scaled to throughput and also to the pollution control methods to be applied, making them more relatable to the operational specifications at the WA facility. The AP42 factors are also a compilation of various facilities operating with different mitigation specifications in order to capture the spectrum of emissions. The Project design engineer reviewed the specifications of Baghouse 5 and designed the proposed emissions controls in order to allow WA to achieve compliance. Based on experience designing similar facilities throughout Australia, the Project design engineer considers the proposed emissions assumptions appropriate for a facility of this type and scale. WA has historically demonstrated strong emissions control performance and adherence to regulatory compliance requirements, and commits to meeting the emission rates stated in the AQIA. The dispersion modelling considered the potential for uncertainties, through the modelling of different scenarios which considered the expected “normal” operational emissions and the “maximum allowable” emissions based on the expected EPL limits. This allows the analysis of a range of potential operational scenarios and compliance situations. Overall, the emission factors used in the AQIA and assumptions regarding the dispersion modelling are considered to be robust with respect to the assessment of risk to human health.	

No.	Issue	Response	Reference
85.	It is unclear if all relevant and significant data gaps in the HHRA have been identified and appropriately evaluated.	AECOM notes that all likely plant operations have been considered in the HHRA (refer to the operating scenarios listed in Section 4.1). It is noted that emission data for all CoPC was not available under each scenario and this was identified as a data gap in Table 5 (Section 3.6). Additional data gaps have been included in Table 4 of the revised HHRA. The data gaps relate to: · Inherent uncertainty of air dispersion modelling; · It is not known when the site would be operation or non-operational; · Longer term averaging periods have not been included in the upset operating conditions assessment; · All CoPC not assessed for each future operating condition scenario; · Potential future changes of land use surrounding the Site to more sensitive land uses; · Emission data not available for a chemical that may be present within the processed waste or that may be generated and emitted during the incineration process; · Emission data not available to assess odour or fugitive emissions; · No transfer factor from chicken to eggs available for vanadium; · No assessment of consumption of chickens; · No plant uptake factors available for lead; and · No assessment of air-to-leaf transfer of chemicals to edible plants or dust deposition onto plants. Given the low expected emissions of VOC's from the facility, and that VOC are the most common cause of odour concerns, odour were not expected to be a cause	Refer to Section 3.6 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		for concern. However, to ensure the consideration of VOC's was included in the assessment, they were modelled at the CAR limit for VOC which showed compliance with the ambient limits for VOC, which by inference addresses the concerns relating to odours. Fugitive emissions from the WA facility are expected to be minimal. All major sources or emissions are covered with extraction systems which are vented through emission control devices, and this is true of the proposed medical waste facility which has a dual emission control system incorporated into its operation i.e. carbon and lime injection, and fabric filter collection for pollutant adsorption and capture.	
86.	It is unclear if the operating scenarios considered are appropriate	The purpose of the modelling of the existing sources is to ensure the existing facility operating under typical operating conditions is considered as part of the background pollutant concentrations. Using an average emission rate is considered more appropriate than using a maximum emission rate from each source as it does not represent the facility operating at normal operating conditions, which varies in terms of throughput, material composition and process schedules. It is not considered plausible for the plant to operate at its maximum rate for 365 days per year, 24 hours per day due to the cyclical nature of the process (unloading and loading etc.), neither is it considered plausible to operate for an entire year due to plant shutdowns, maintenance etc. To confirm whether this assertion could be considered as an overestimation even at its average emission rates, the potential for the existing stacks to operate concurrently was sought from WA. The current facility operations operate as follows:	Refer to Section 4.1.3 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		· Stack 1 OR Stack 5 - Depending upon whether Rotary Furnaces are operating (Stack 1) or Reverb Furnace (Stack 5), but WA does not currently have the workload demand (or staff) to operate all furnaces simultaneously; Note: for the proposed 'Medical & Other Waste Processing' plant, both Stacks 1 and 5 may ultimately be operated concurrently for part of the month: · Stack 2 - only operational for short periods, typically when dross/SPL deliveries occur to Front Bays within the Main Plant Building; · Stack 3 OR Stack 4 - depending on which MRM-Cooler is operational. Not operated simultaneously; · Stack 6 - only actively servicing 'Holding Side' of the Reverb Furnace when remelt and casting occurs (and when a heel may be held); and · Stack 7 - typically operated for 1 or 2 x 8 hr shifts per day on a shift rotation (day, afternoon and night intervals) depending upon Crushing Plant and Briquetting Plant demand. Based on this description, it is clear that the facility operating with all stacks emitting pollutants concurrently is an overestimate and the assumption that the facility operates 24 hours per day, 365 days per year is also considered to be highly conservative. However, as the plant could physically operate (regardless of lack of feed, maintenance downtime etc.), it has been modelled as such to allow the emissions to be included as background. The use of the average emissions is considered a realistic factor considering the nature of the operations over the year. A summary of the above discussion has been included in	

No.	Issue	Response	Reference
		Section 4.1.3 of the revised HHRA.	
87.	It is unclear if all significant potential emission sources have been considered in the assessment	A data gap with regard to odour and fugitive emissions has been added to Table 4, Section 3.6 of the revised HHRA. Refer to response to Item 82. Emissions from the WA facility are controlled through control of emission air flows and the treatment of those air flows. All major sources or emissions are covered with extraction systems which are vented through emission control devices, and this is true of the proposed medical waste facility which has dual emission control system incorporated into its operation i.e. carbon injection and fabric filter collection for pollutant adsorption and capture.	Refer to Section 3.6 of the HHRA in **Appendix J.**
88.	It is unclear if the emissions considered in the assessment are appropriate	1) For Scenario 2, the AQIA has been conservatively prepared assuming the emission concentrations occur at the maximum allowable concentration as per the proposed limits for the facility EPL. It is acknowledged that it would be ideal to know the pollutant emission concentrations for each of the proposed waste types i.e. medical waste (which is reasonably well understood), quarantine waste and "other" waste. As detailed in the Project EIS (Section 6.4.1) Project waste volumes (as a percentage) could be: · Medical Wastes = 75% · Quarantine Wastes = 15% · Other = 10% The 'other waste' would potentially comprise of a mixture of the following: · Pitch sludge's = 4%; · Solvents & paints = 2%; · Oily rags = 2%; and · Documents= 2%.	Refer to **Appendix E** and Section 4.4 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		Despite these percentages for quantities of quarantine and other wastes these are potential maximum amounts. It is anticipated that a higher percentage of medical waste would be processed through the facility due to anticipated waste availability and service demand. It is therefore considered that the dispersion model, having been based on medical waste processing results from US EPA AP42 for Scenario 1 is considered representative for the Project. Despite there being a lack of available representative data for the quarantine and "other" waste streams the following should be considered: 1. Due to the nature of their constituent inputs, it is not expected that other waste streams (e.g. quarantine wastes) would result in emissions above those generated from medical waste processing operations; 2. The dispersion modelling that was undertaken in the AQIA is considered conservative in that: a. Scenario 1 was based on US EPA AP42 emissions factors derived from actual emissions data extracted from the medical waste disposal industry; and b. Scenario 2 was modelled with emissions at 100% of the proposed emissions limits for 100% of the time. This scenario is considered extremely unlikely to occur in reality and as such the results from the scenario are considered very conservative. 3. Both Scenario1 and Scenario 2 demonstrated compliance with all relevant ground-level air quality concentration criteria in the AQIA. Regardless of the final ratio of proposed wastes, WA would be required to operate in accordance with its	

No.	Issue	Response	Reference
		emissions limits as would be enforced through its EPL. This would be verified through the regular independent NATA-accredited stack emission testing WA already undertakes to demonstrate EPL compliance. Reference should be made to a letter from ACE (provided by AECOM in response to the comments on the AQIA) which provides additional discussion on the different type of waste streams, and how in ACE's experience, the different types of waste are unlikely to have a significant impact on the emissions from the Project beyond those modelled in the medical waste scenarios. A summary of the above discussion has been included in Section 4.4 of the revised HHRA. 2) The design rate of the Thermal Waste Processing equipment has been clarified with the manufacturer and has been confirmed as 800 kg/hr. The air assessment emission calculations were prepared on the basis of 800 kg/hr, which is expected to represent the maximum design and operating capacity of the facility. It is acknowledged that the EIS had a figure of 8000t/year quoted as a general throughput rate. This was a rounded-up figure which would not reflect actual throughput of the facility. WA commits to meeting the emission concentration limits and rates outlined in the AQIA. Further, WA commits to undertake post commissioning validation stack testing of the thermal treatment process to demonstrate and confirm compliance with the regulatory emission requirements.	
89.	The Project HHRA relies on information and data in other EIS documents being accurate	AECOM notes that all relevant amendments made to the AQIA have been incorporated in the HHRA.	Refer to HHRA in **Appendix J.**

No.	Issue	Response	Reference
90.	It is unclear what modelling was undertaken for the considered operating scenarios	AECOM has removed the reference to 'three modelled' in Section 4.1.1 of the revised HHRA as all four scenarios were modelled for use in the HHRA.	Refer to Section 4.1.1 of the HHRA in **Appendix J.**
91.	It is unclear what ground level concentrations were used to assess chronic and acute impacts	Definitions of 1-hour and 24-hour maximum annual average ground level concentrations have been added to Section 4.3 of the revised HHRA. The '1-hour maximum annual average concentration' is the maximum value (concentration) of the 1-hour averages that were predicted over an entire year. The '24-hour maximum annual average concentration' is the maximum value (concentration) of the 24-hour averages that were predicted over an entire year. Additionally, the 'grid maximum' is the highest concentration reported from all arbitrary gridded receptors. AECOM has added subheadings within Section 4.3 of the revised HHRA to clearly distinguish the data used in the chronic and acute HHRA. Additionally Table 7 in Section 4.3.4 of the revised HHRA has been prepared to summarise the data used in each operational scenario modelled.	Refer to Section 4.3 of the HHRA in **Appendix J.**
92.	Dust deposition details are not provided	Deposition rates for all CoPC have been estimated using the CALPUFF dispersion model. The CALPUFF model (version 7.2.1) calculates dry deposition rates based on pollutant characteristics such as the geometric mass mean diameter and geometric standard deviation. CALPUFF is a well-known, approved and trusted dispersion model used widely throughout Australia and the world for the prediction of pollution dispersion and deposition levels. The dispersion and deposition algorithms have been verified extensively and can be found online as part of the CALPUFF modelling system. Documentation accompanying CALPUFF describes the	Refer to Section 4.3 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		deposition function as follows "*A full resistance model is provided in CALPUFF for the computation of dry deposition rates of gases and particulate matter as a function of geophysical parameters, meteorological conditions, and pollutants species. Options are provided to allow user specified diurnally varying deposition velocities to be used for one of more pollutants instead of the resistance model (e.g. for sensitivity testing or to bypass the dry deposition model completely.*" All CoPC modelled used default parameters included in the CALPUFF species library to define the deposition parameters used in the assessment. Wet deposition has historically focused on two pollutant types (Particulates and SO_2). CALPUFF only considers wet deposition for particulates (TSP, PM_{10} and $PM_{2.5}$ and SO_2). As both of the contributions of particulate and SO_2 deposition from the WA facility were very low, for both dry deposition and gaseous concentrations, the expected contribution of wet deposition to the overall deposition was also expected to be low and not significant to the overall findings of the HHRA. A footnote regarding how the dust deposition rates were estimated has been added to Section 4.3 stating the following: "*Given that particulate matter less than 2.5 micrometres are not readily affected by gravitational settling, to generate a non-zero outcome, deposition modelling was completed based on an assumption that all particulate matter is released within the 10 micrometre (PM10) size fraction. This is considered conservative for deposition purposes, and in reality the particulate is anticipated to lie within the PM2.5 size fraction. Deposition estimates were derived through conventional atmospheric dispersion*	

No.	Issue	Response	Reference
		modelling, using the assumption of particulate in the 10 micrometres in aerodynamic diameter". Reference to contaminant concentration and dust deposition data has been amended to be Appendix B.	
93.	The selection and characterisation of CoPC is not adequately justified *Recommendation: The HHRA be revised to:* *1) clarify the potential chemicals and hazardous substances associated with the proposed wastes and those that may be emitted from processing these wastes;* *2) provide details and further justification how the COPC were identified and selected;* *3) justify why COPC were excluded from further consideration or assessment;* *4) include discussion on the implications of uncertainties in COPC and COPC emission concentrations; and* 5) *demonstrate the HHRA has been conducted conservatively with respect to the COPC and emission concentrations used.*	1) Refer to response to Item 85. 2) Refer to response to Item 85. Additionally, ammonia was not considered to be a CoPC as no selective non-catalytic reduction (SNCR) is proposed for the facility. 3) A number of potential chemicals (e.g. barium, silver, zinc, molybdenum, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), hexachlorobenzene, individual volatile organic compounds, or other hydrocarbons or chlorinated compounds) that may be present within the processed waste or that may be generated and emitted during the thermal treatment process were not assessed as part of the AQIA and therefore the HHRA. This was primarily due to the absence of emission data for each of the chemicals. However, a qualitative assessment of PAHs has been undertaken as part of the responses to the EPA comments on the AQIA (see below). *The Polycyclic aromatic hydrocarbons (PAH) emission concentrations associated with the proposed medical and other waste processing facility can be scaled based on the concentrations modelled for the dioxins/furans. Dioxin/Furan emissions data from the Project air quality impact assessment are as follows:* · *Dioxin/Furan Emission Rate = $2.1x10^{-10}$ g/s;* · *Maximum GLC = $1.6x10^{-9}$ µg/m^3; and* · *Scaled Emission Concentration (Emission Rate / GLC) – 1 g/s of Dioxin/Furan = Max GLC of*	Refer to **Appendix J.**

No.	Issue	Response	Reference
		7.62 µg/m^3. *Based on the emission factors extracted from literature, PAH emissions have been measured at an emission rate of 8.05 mg/ton of waste combusted. This emission factor is based on the combustion of Solid Waste with the use of Carbon Injection plus Bag Filter similar to the equipment to be used for the Project.* *Based on the proposed waste throughputs for the Project, the following PAH emissions rate has been calculated:* · *PAH Emission Factor = 8.05 mg/t;* · *Combustion throughput = 0.8 t/hour;* · *PAH Generation rate = 6.44 mg/hour = 1.79x10^{-6} g/s;* · *Scaled Emission Concentration (1.79x10^{-6} g/s x 7.62 µg/m^3) = 0.0000136 µg/m^3; and* · *PAH Assessment Criteria (PAH as benzo(a)pyrene) = 0.4 µg/m^3.* *On the basis of the information provided above, the ground level pollutant concentration from emission of PAH would be expected to be approximately 30,000 times lower than the assessment criteria.* 4) Refer to response to Item 82. 5) This assessment is considered conservative for the following reasons: 1. Facility is assumed to be operating 365 days per year, 24 hours a day. This is very unlikely due to mechanical constraints i.e. maintenance requirements, plant shut downs, feed interruptions and limitations and practical manning levels. 2. Modelled emission rates have been assumed to be at their maximum levels for all hours modelled (refer Scenario 2), which is a significant overestimate as the actual emissions are expected to be orders of magnitude lower than these levels for many of the pollutants.	

No.	Issue	Response	Reference
94.	Transport pathways excluded from the assessment are not adequately justified	The following text has been added to Section 4.5 of the revised HHRA. *"The contaminant mass that may leach from soil is likely to be minimal given the nature of the contaminants. The organic contaminants (i.e. dioxins/furans) have high soil organic carbon-water partitioning coefficients (Koc) (i.e. 249000 L/kg), indicating they are less mobile and likely to bind to the soil. The inorganic contaminants (i.e. metals) have elevated distribution coefficients (kd), ranging from 2.1 L/kg to 1000 L/kg, indicating they are unlikely to partition to water.* *As a result of the above, subsurface media is unlikely to be impacted by the operations at the WA facility via leaching from soil. Additionally, the CoPC that may deposit on the soil are not considered to be volatile based on Schedule B2 ASC NEPM (2013) where a CoPC is considered to be sufficiently volatile if its Henry's law constant is greater than 1 x 10^5 atm m^3/mol and the vapour pressure is greater than 1 mm Hg at room temperature".*	Refer to Section 4.5 of the HHRA in **Appendix J.**
95.	Unclear if future receptors have been appropriately considered	To address any sensitive land use changes in the future, the HHRA has been revised to also include an assessment using the grid maximum ground level concentration i.e. the highest 24-hour annual average and 1-hour maximum ground level concentrations reported from the dispersion modelling. Adopting grid maximum concentrations ensures that the most sensitive receptor is being assessed with a 'worst-case' exposure point concentration. It should be noted that the grid area covers future residential, recreational and commercial/industrial receptors that may be located adjacent to or surrounding the Site.	Refer to Section 3.6 and Section 4.6 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		A discussion on potential future changes of land use surrounding the Site to more sensitive uses and how it has been addressed in the HHRA is included in Section 3.6 (Table 4) of the revised HHRA. Additionally, commentary regarding the grid maximum assessment has been added to Section 4.6 of the revised HHRA. The grid maximum GLC were added to Table 16 (EPC used in the HHRA) of the revised HHRA.	
96.	Assumptions used to evaluate and quantify exposure should be clearly presented and robustly justified	Given the regional nature of the assessment area, the HHRA conservatively assumed that residents consume 100% of their fruit and vegetable intake from home-grown produce. Additionally, it was conservatively assumed that residents consume 100% of their egg intake from home-grown chicken. Section 4.6 of the revised HHRA has been amended to clarify the intake percentages modelled in Appendix F and Appendix I. Additionally, a data gap regarding the consumption of chicken has been added to Section 3.6 of the revised HHRA (refer to Note 4).	Refer to Section 3.6 and Section 4.6 of the HHRA in **Appendix J.**
97.	All CoPC that are persistent and/or bioaccumulative should be considered in the multiple pathway assessment	Reference to 'persistent' chemicals has been removed from the revised HHRA. Refer to response to Item 90 with regard to consideration of other semi- or low-volatile organic compounds. As nickel and vanadium have the potential to bioaccumulate in some plants, AECOM has assessed them via the multiple pathways assessment in the revised HHRA. Table 10 and Table 13 of the revised HHRA has been updated to identify nickel and vanadium as	Refer to HHRA in **Appendix J.**

No.	Issue	Response	Reference
		potentially bioaccumulative metals and therefore assessed via the multiple pathway assessment. The appropriate models presented in Appendix F and Appendix I have also been updated.	
98.	It is unclear if all relevant exposure pathways were considered and assessed	The following text has been added to the data gaps discussed in Section 3.6 of the revised HHRA: "*Root uptake was considered in the HHRA as this was considered to be the most significant transport pathways given the nature of the contaminants. Air-to-leaf transfer was not considered to be a significant accumulation pathway as bioaccumulative CoPC considered in the multiple pathway assessment are typically not volatile (based on the Henry's law constant and vapour pressure) and therefore unlikely to be present in 'air'. Additionally, dust deposition onto plants was considered to be negligible and residents are likely to wash any dust of fruit/vegetables prior to consumption."*	Refer to Section 3.6 of the HHRA in **Appendix J.**
99.	Clarification and justification of site conceptual site model (CSM) is required	The CSM in Section 4.10 of the revised HHRA has been updated to include all potentially complete and incomplete exposure pathways Additionally, AECOM has added footnotes to Table 11 of the revised HHRA to provide justification for why a specific pathway was considered 'incomplete', including those relevant to farming (i.e. ingestion of home-grown beef, lamb and milk) and ingestion of drinking water.	Refer to Section 4.10 of the HHRA in **Appendix J.**
100.	The screening criteria used to assess chronic exposure are not adequately justified	The screening approach adopted in the HHRA is consistent with the hierarchical approach recommended by *Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards* (enHealth, 2012). However, AECOM has amended the criteria for CO, SO_2 and NO_2 to be specific to the averaging period being assessed i.e. 24 hours or 1 day. The modelled	Refer to Section 4.11 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		concentrations of these CoPC continue to remain significantly below the adopted criteria. The Tier 1 screening assessment approach has been updated in Section 4.11 of the revised HHRA for clarity.	
101.	Justification for the use of the selected screening criteria for lead is required	In the first instance, AECOM has adopted the published Australian guideline value of 0.5 µg/m^3. This guideline value was retained as an impact assessment criterion in the recent revision of the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (NSW EPA, 2017) so it is therefore considered to be appropriate for use in the HHRA. AECOM notes that adopting the US EPA (2016) guideline value of 0.15 µg/m^3 would not significantly affect the outcomes of the HHRA as lead concentrations were modelled to be below this guideline value. Additionally, lead has been carried through to a Tier 2 assessment based on its bioaccumulation potential in the environment.	Refer to **Appendix J.**
102.	Clarification is required regarding several specific air toxics	The Tier 1 screening approach for the chronic assessment has been updated in Section 4.11 of the revised HHRA for clarity.	Refer to Section 4.11 of the HHRA in **Appendix J.**
103.	Acute screening does not include consideration of appropriate criteria	The Tier 1 screening approach for the acute assessment has been updated in Section 4.12.1 of the revised HHRA. Table T3 and Table T3 in Appendix C have been amended accordingly.	Refer to Section 4.12.1 of the HHRA in **Appendix J.**
104.	Stack concentrations used for emergency bypass operation modelling require justification	The Bypass stack serves as an outlet for the Medical Waste Treatment process only in the event of an emergency shutdown. The Bypass stack would only vent emissions from the batch that is being processed i.e. no new batches can be processed until the main pollution	Refer to **Appendix J.**

No.	Issue	Response	Reference
		control equipment is brought back on line. Emissions from the Bypass stack have been modelled based on the design limits specified by the equipment and process design engineer, taking into consideration variations in feed stock. It should be noted that equipment design limits are based on the maximum expected pollutant concentrations for a process and emissions and are not expected to reach these levels regularly, if at all. On this basis the modelling undertaken is conservative. As the pollution control equipment would reduce pollution levels from the design limits to levels at or below the regulated operating limits set by the EPA, the facility is expected to be able to comply with the operating limits regardless of the waste mix.	
105.	The HHRA should include assessment of emissions at in-stack concentrations	The EPL scenario (i.e. assessment at in-stack concentration limits) is an unrealistic scenario to consider from a health perspective. The likelihood of the facility operating at its maximum limits 24 hours a day 7 days a week is essentially zero. The purpose for undertaking the modelling is to test the emissions under different expected meteorology and its effect rather than the potential for exceedance in reality.	Refer to **Appendix J.**
106.	It is unclear if the exposure point concentrations used reflect worst case current and future receptor locations	To address any sensitive land use changes in the future, the HHRA has been revised to also include an assessment using the grid maximum ground level concentration i.e. the highest 24-hour annual average and 1-hour maximum ground level concentrations reported from the dispersion modelling. Adopting grid maximum concentrations ensures that the most sensitive receptor is being assessed with a 'worst-case' exposure point concentration. A discussion on potential future changes of land use	Refer to Section 3.6 and Section 4.6 of the HHRA in **Appendix J.**

No.	Issue	Response	Reference
		surrounding the Site to more sensitive uses and how it has been addressed in the HHRA is included in Section 3.6 (Table 4) of the revised HHRA. Additionally, commentary regarding the grid maximum assessment has been added to Section 4.6 of the revised HHRA. The grid maximum GLC were added to Table 16 (EPC used in the HHRA) of the revised HHRA.	
107.	Representative exposure point concentrations appear to be based on Scenario 1 emissions estimates (normal operating conditions) rather than Scenario 2 (operating continuously at stack emission limits)	Scenario 2 (Stack Emission Limits) assumes that the proposed thermal processing plant is operating at the maximum allowable limits (i.e. EPLs) continuously for 365 days per year and 24 hours per day. AECOM notes that it is not plausible for the plant to operate exactly at its EPL limits due to the cyclical nature of the process (unloading and loading, temperature ramp up and down etc.), nor is it plausible to operate for an entire year due to plant shutdowns, maintenance, reverb furnace operating campaign requirements etc. In the AQIA, the Scenario 2 is considered to be a theoretical maximum prediction only and is not relevant to compliance. As noted in Table 5 of the revised HHRA, '*Scenario 2 is representative of theoretical worst-case impacts using the proposed emission limits and is unlikely to ever occur, and if so unlikely to be for long periods of time'*. Accordingly, it would not be appropriate or representative to assess chronic health risks under these operating conditions. Therefore, AECOM assessed health risks for Scenario 2 based on a short-term (acute) exposure in Section 4.12 of the revised HHRA.	Refer to Section 4.12 of the HHRA in **Appendix J.**
108.	Chemical intakes for offsite residents use incorrect values for soil ingestion	The daily soil ingestion rate for a resident has been amended in Table 17 and Table 23 of the revised HHRA to be 50 mg/day for an adult and 100 mg/day for a child. The daily soil ingestion rates have also been updated in the models presented in Appendix F and Appendix I.	Refer to the HHRA in **Appendix J.**
109.	Some toxicological profiles require amendment	The toxicological profile for dioxins and furans (as PCDDs	Refer to the

No.	Issue	Response	Reference
		and PCDFs), nickel and vanadium have been added to Appendix E of the HHRA.	HHRA in **Appendix J.**
110.	It is unclear how exposure point concentrations for chromium(VI) were estimated	In the HHRA, the ground level concentration of total chromium was conservatively assumed to be 100% hexavalent chromium i.e. the most toxic form of chromium. The toxicity values adopted for Cr(VI) are presented in Table 14 of the revised HHRA.	Refer to the HHRA in **Appendix J.**
111.	It is unclear if the Project applies best available techniques and best environmental practices	BAT analysis was undertaken as part of the response to NSW EPA, refer to Attachment 1 and Attachment 2 of **Appendix J**.	Refer to Response Letter in **Appendix J.**
112.	Lack of information presented to demonstrate the Project uses demonstrated technology	This query has been addressed as part of the response to NSW EPA, refer to Attachment 1 and Attachment 2 of **Appendix J**.	Refer to Response Letter in **Appendix J.**
Hunter New England Population Health NSW (HNEPH) 1.4			
113.	HNEPH requires clarification as to whether operation of the Thermal Waste Processing Plant will occur at separate times to the processing of Aluminium Dross and Spent Pot Lining; or, if planned for simultaneous operation, whether cumulative emissions are accounted for in the EIS.	Operation of the Project and the existing processes of the WA facility, with the exception of the reverbratory furnace, may occur concurrently. Potential for cumulative impacts to occur have been assessed in the Air Quality Impact Assessment and Human Health Risk Assessment. No significant impacts have been identified as a result of this modelling.	Appendices E and K of the EIS. Also refer to **Appendix E** and **Appendix J.**
114.	HNEPH requires information on the period of time the bypass stack may need to operate and therefore the quantity of emissions.	The bypass stack would only be in operation during an emergency shutdown event. In such an event, the plant would be placed in showdown mode if an issue was identified. Such an event would place the whole system in shutdown and therefore the bypass stack would not be used for prolonged operation.	Section 6.4.6 of the EIS.
115.	HNEPH requires a sensitivity analysis of best case and worse case waste stream scenarios to assist with the understanding of the potential health impacts.	Whilst the exact waste streams (relative) proportions that may be processed by the Project cannot be fully quantified at the outset, it is noted that a sensitivity analysis was provided in Section 8.6 of the Human Health Risk Assessment to account for variability in waste streams.	Appendix K of the EIS. Also refer to **Appendix E** and **Appendix J.**

No.	Issue	Response	Reference
116.	Assumes that EPA license will set upper bounds for the frequency and quantity of selected waste streams.	WA expects that the EPA would place all necessary measures on the facility as would be outlined in the site EPL should the Project be approved. In regards to air quality monitoring criteria modelling has accounted for waste variability and performance of treatment system regardless of input waste mix and the project was shown to meet the relevant EPA criteria.	NA
117.	HNEPH requires that worst case scenarios including quantity and frequency for Dioxins and VOCs are to be explored in the EIS.	Worst case processing scenarios for the Project are assessed in both the Air Quality Impact Assessment and Human Health Risk Assessment. These reports concluded that all relevant criteria would be met even under conservative worst case scenarios.	Appendices E and K of the EIS. Also refer to **Appendix E.**
118.	Understands that thermal disposal trials of illicit drugs and pharmaceutical wastes have occurred at Weston Aluminium over the past year. The results of these trials are to be included in the submission to assist with the assessment.	These trials have occurred in the existing WA facility and would not be representative of the Project. Full details of these trials have been provided to the EPA (and are published on WA's website) in accordance with licencing requirements. No further consideration of these results is considered necessary as part of this Project.	NA
119.	Notes that Table 2, page 5 (Air Quality and Odour Assessment) is incorrect. The NEPM Ambient Air Standard for annual average PM2.5 is 8µg/m^3. Important for the annual PM2.5 to be modelled carefully and correctly.	PM2.5 modelling has been addressed in the response to the EPAs comments on the Air Quality Impact Assessment at **Appendix E**. PM2.5 emissions are still predicted to remain below the criteria.	Refer to **Appendix E.**
120.	HNEPH require the project ozone impacts to be addressed.	Potential ozone impacts have been addressed in **Appendix E**. The Project would not be a significant producer of ozone or ozone precursor gases, therefore potential impact from ozone are considered negligible.	Refer to **Appendix E.**
121.	HNEPH requires that the all of these recommendations to the development are to be considered within a community driven approach.	Noted. Requirements would be included in the EPL and consent requiring the public reporting of the Project environmental performance. WA also commits to ongoing consultation to keep the public and agencies informed.	NA

No.	Issue	Response	Reference
Department of Primary Industries 1.5			
Groundwater			
122.	If any groundwater is intercepted any time during works, DPI Water are to be contacted immediately.	Noted. Details for management of any groundwater encountered during construction would be detailed in the CEMP.	NA
Transport Roads & Maritime Services (RMS) 1.6			
123.	RMS suggests that the appropriate traffic measures are in place during the construction phase in order to minimise impacts.	Noted. Construction traffic measures would be included in the CEMP. Operational measures would be included in the site's Environmental Management System.	NA
124.	RMS suggests that appropriate sight line distances are available at the exit/entry points of the site in accordance with Australian standards.	The relevant document for determining sight line distance is the AustRoads Guide to Road Design. Table 3.2 in Part 4A – Section 3 of the Guide indicated that for an intersection on a 60km/hr road a sightline distance of 114m is required assuming a 1.5 second response time. As Mitchell Avenue is relatively flat and without significant curvature this response time is considered appropriate. A review of the current road arrangements indicates that the 114m sight line can be easily met. Regardless it should be noted that the project does not propose to establish a new site access or alter the existing site access which has been operating without incident for many years.	NA
125.	Consideration is needed to provide an intersection upgrade treatment consistent with the warrants in section 4.8 of *Austroads Guide to Road Design – Part 4A Unsignalised and Signalised Intersections.*	No change to the site entrance is proposed so no intersection works are proposed as part of the Project. No further consideration of intersection design is considered necessary. Turing path analysis has been undertaken as attached to this RTS which demonstrates the existing site access is capable of accommodating the design vehicle.	Refer to **Appendix M.**

4.0 Response to Other Stakeholder Submissions

This section contains a summary of all submissions received from other stakeholder and Weston Aluminium's response to each of the submissions. Refer to **Appendix B** for full submission issue details. Where submissions contained similar issues, these have been collated and a single response has been provided (e.g., resident's submissions).

Table 2 Response to Other Stakeholder Submissions

No.	Issue	Response	Reference
Daniels Health Pty Ltd 2.1			
126.	Questions the comment that "NSW urgently needs treatment capacity to process these waste locally". Claims that the majority of these wastes including Quarantine waste can be treated by means other than combustion such as by autoclave and fumigation which is already servicing NSW in various locations across the state.	WA has undertaken market analysis that indicates there is demand for the Project regardless of other facilities that might also process similar wastes. Such information is commercially sensitive and therefore not included in the EIS.	NA
127.	Questions the need for the project as there are other facilities in NSW that still have spare capacity and still operate to combust medical wastes and that pharmaceutical waste is in decline, further reducing the need for the project.	As above, WA's analysis indicated that there is demand for the Project and quantities of these wastes are often transported interstate for required processing.	NA
128.	The EIS hasn't identified any waste that its proposed equipment will be able to successfully treat.	The proposed technology has a proven track record of suitably treating waste at similar facilities across Australia based on WA's Project Engineer having been involved with other projects with demonstrated success.	NA
Waste Storage			
129.	The proposed waste and washed bin storage areas are inadequate. The stated maximum quantities of stored wastes provided in Table 2 "Materials at the Project" in Appendix J Preliminary Hazard Analysis are incompatible with the stated annual waste throughput volumes and the maintenance needs of the project	As detailed in **Appendix D,** the proposed waste storage areas are considered adequate for the storage of the proposed waste quantities.	**Appendix D**
Waste Water Treatment			
130.	Proposed bin washing (Gross Pollutant Trap) and sediment trap are inadequate.	The proposed GPT would be specifically designed for the Project to meet the requirements of the site.	Section 15.4 of the EIS.

No.	Issue	Response	Reference
131.	The large quantity of detergents used to wash the bins alongside other wastes that can be received such as oils, solvents and quarantine wastes would further pollute trade waste water.	WA continues to consult with Hunter Water regarding trade waste disposal requirements, including the quality and quantities of water that can be disposed of to sewer and any necessary pre-treatment. Full details of the trade waste agreement would be provided to DP&E prior to operation.	Section 15.4 of the EIS.
Pre-shredding Waste			
132.	Concerned about the release of fine powders in the proximity of the project as this can cause fires. Concerned that shredding creates aerosols and can cause health risks.	The waste shredder would be fully sealed to prevent the release of dust or similar. Negative pressure would draw any air into the combustion system and all exhaust air would go through the proposed emissions treatment system via the primary combustion chamber. Combustion gases would exit the plant through the site's existing baghouse. WA would monitor and operate the Project according to EPA requirements to ensure there is no risk to human health.	Refer to **Appendix D.**
Specialised Waste Treatment Services 2.2			
133.	Specialised Waste Treatment Services argue that their autoclave facility at Kooragang Island, which operates at less than half its design capacity, has been ignored by the proponent in providing a reason for another facility.	The Project is proposing an alternate facility that provides a waste processing service beyond what an autoclave can provide. The autoclave is therefore not considered a comparable alternative to the Project.	NA
Waste:			
134.	Where the quarantine waste will come from?	Quarantine waste may be sourced from international airports, ports or other facilities that handle imported goods that are identified as quarantine risks e.g. mail centres.	NA
135.	Raises the point that quarantine waste must be treated locally and at the closest possible treatment facility.	Quarantine goods should be processed at appropriately approved and managed facilities regardless of their source of origin. Transport of quarantine waste would be via approved and licenced contractors to minimise any transport related risks.	NA
136.	Needs an indication whether all clinical wastes will be	All wastes proposed to be processed through the Project	NA

No.	Issue	Response	Reference
	combusted or just the majority proportion.	would be combusted.	
Public Health and Safety:			
137.	Concerned of the risk of fire when shredding untreated wastes including pharmaceuticals.	The PHA assessed potential for fire risk which demonstrated that all risks would be suitably low and appropriately managed. There would be no ignition sources in the shredder and it would be fully sealed. Firefighting systems would be installed should any fires occur.	Appendix J of the EIS.
138.	Suggests that the proponent has not taken the risks that pre-shredding and shredding have on human health. The facility needs to operate at a negative pressure with a proper air extraction system with HEPA filtration.	Risks associated with shredding have been appropriately assessed. Material, including gas would be sealed in the shredder and moved through the thermal treatment plant (primary and secondary chambers) and treated when the combustion chambers are in operation. If shredding is required at other times air from the shredder would be directed through a HEPA filter. Gases would then be treated through the proposed emissions control systems prior to release through the baghouse.	Appendix J of the EIS and **Appendix D.**
Singleton Shire Health Environment Group (SSHEG) 2.3			
139.	Wants to see the facility moved to Tomago.	There is no reason the Project should be moved to Tomago. The EIS and specialist studies have demonstrated that the Project can be undertaken at the site (existing Industrial zone) with no significant increase in risk to the community or environment. An alternative site would also see the benefits of the Projects co-location at the WA facility lost.	Section 5.0 of the EIS.
Public Health			
140.	The facility's emissions will add further toxicity onto ambient particulates by their surface 'Adsorption' which will impact local resident's health and safety.	A detailed Human Health Risk Assessment was undertaken that demonstrated the Project would not have a significant impact on public health.	Appendix K of the EIS. Also refer to **Appendix I.**
141.	The World Health Organisation is calling for air and noise pollution reduction and is asking how the facility will meet that	The Project includes measures to minimise and manage air and noise emissions that may result from construction	Section 25.0 of the EIS.

No.	Issue	Response	Reference
	call?	or operational activities. It has been demonstrated that any such emissions would be below the relevant NSW Government criteria.	
142.	Questions how averaging distorts and disguises the Human Exposure, where Air Drifting patterns and calm conditions increase Air Toxicity not considered in current Modelling evaluations'.	The detailed Human Health Risk Assessment utilises a range of NSW Health and guidelines to develop the methodology and undertake the assessment. This assessment includes consideration of both chronic and acute exposure which account for a variety of scenarios including averages and peak load or worst case exposure. The results are therefore not distorted. The assessment concluded that there would not be a significant risk to human health.	Appendix K of the EIS. Also refer to **Appendix J.**
143.	Questions why there if there is any indication that NSW Health have scrutinised this Facility as being suitable.	NSW Health have reviewed the Project and provided submissions which are addressed in **Section 3.0**. As evidenced NSW Health have reviewed the material and do not question the viability of the Project.	**Section 3.0**
144.	Questions why there is no greater amount of scrutiny towards the toxic plumes and ash that will be emitted.	No toxic plumes of ash would be created. Emissions have been demonstrated to all be within the EPA's criteria.	Appendix E of the EIS.
145.	Warns about the major fire risks that can be associated with pollution leakages in the stack pollution control filters.	The facility would incorporate fire and safety systems to prevent, detect and manage fire risk. WA has a demonstrated track record in the operation of high performing pollution control systems. Monitoring equipment would be installed to ensure control systems are properly operating allowing the plant to be shutdown should problems with environmental controls be detected.	Appendix E and J of the EIS.
146.	A health survey should be undertaken to establish the demographic disease levels of local residents who live close to the facility. States that the demographics should include Pre – Post Natal, children under 18 and elderly over 65. Asthmatics, COPD, Diabetics and those in Poverty need to be surveyed.	WA should not be required to undertake a health survey of the community. WA prepared a detailed Human Health Risk Assessment which formed Appendix K to the Project EIS. This report concluded the any health risks associated with the Project are low and acceptable.	Appendix K of the EIS. Also refer to **Appendix J.**
147.	Requires that the 'Other Wastes' outlined in the EIS needs to be explained in a specific list and monitored by video surveillance 24 hours a day and audited by authorities quarterly.	Those wastes detailed in Section 6.4.1 of the EIS are proposed to be processed by the Project. Monitoring of different waste streams would be required in accordance	Appendix E of the EIS.

No.	Issue	Response	Reference
		with the relevant licences and approvals.	
Public Submission 3.1			
148.	*Air Quality: Comments on the AQ assessment:* No mention of the possible change with the possible likely future update of NEPM and EPA guidelines. Also noticed that no local monitoring is in place for the site to confirm compliance with air quality standards or existing levels or to aid in accurate inputs into model.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.** The Project has been assessed in accordance with the most recent guidelines. The air modelling uses site specific data obtained from the existing monitoring program to add accuracy to the modelling.	Appendix E of the EIS. Also refer to **Appendix E.**
149.	*Noise:* Assessment included 1 night of attended noise monitoring which is inadequate as weather conditions play a significant role in noise emissions. Conduct more night monitoring of current site, (focus on La max and La1 levels to refine predictions). Sleep has been disturbed by reversing beepers, (unsure if the site is the source). Broadband reversing alarms should be imposed as it should be imposed in a condition of consent.	A comprehensives noise assessment was prepared for the Project in accordance with the requirements of the Interim Construction Noise Guidelines and the Industrial Noise Policy. Background monitoring was timed to prevent external interference sources (weather) impacting results. The noise assessment concluded that the Project would not result in significant noise impacts at any sensitive receiver. The assessment also reviewed potential impacts as a result of sleep disturbance which indicated the project could operate below the relevant sleep disturbance criteria.	Appendix G of the EIS.
150.	*Traffic:* No traffic surveys were carried out, so impacts and volumes are not known. Other proposals such as the Kurri Hydro development were not assessed. The Frame Drive bridge upgrade was also not assessed which has the potential to send the majority of traffic coming from Cessnock to Newcastle through the many intersections (Sawyers Gully Road, Hart Road etc.), as the main route of traffic to and from the site. Would like to see a contribution to the upgrade to the Gingers	As detailed in the traffic assessment, surveys are not deemed necessary due to the relatively low volume of the traffic generated by the Project and historically low background traffic level on Mitchell Avenue. This provides adequate capacity to absorb Project generated traffic. The Project does not propose to use Frame Drive, therefore no assessment of this road is warranted. The Project would use the arterial road network and therefore no further assessment of local roads is necessary. Reference is made to the submission by Cessnock	Appendix F of the EIS.

No.	Issue	Response	Reference
	Lane, Sawyers Gully Road, Hart Road and Government Road intersection to the satisfaction of Cessnock City Council.	Council and the RMS confirming the Project would have minimal impact on the road network as a result of project generated traffic.	
Public Submission 3.2			
151.	*Traffic* Roads in Kurri Kurri are in poor condition and safeguards will be needed to ensure that any waste that is transported will not cause any contamination issues.	See response to issue No. 132 All transport would be undertaken by licenced contractors.	Appendix F of the EIS.
152.	*Noise*: A dross plant and concrete recycling plant which is already in the area causes noise therefore the project will be unacceptable as it will only increase the noise levels.	Refer to response to issue No. 138 and No.146	Appendix G of the EIS.
153.	*Air quality:* Home is located in an East North East wind direction and is approximately 800yards away from the site. Due to this more odours will be brought across from the site. Suggests that the site should be further away from the nearby residential areas.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0**.	Appendix E of the EIS. Also refer to **Appendix E.**
Public Submission 3.3			
154.	*Public Health and Safety:* The site will be too close to houses and the general public and will be dangerous to the children and elderly. The site should be built away from these areas.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS. Also refer to **Appendix J.**
155.	*Air quality:* Concerns that the project will add on to the dust that is already emitted from the crushing plant located nearby.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0**.	Appendix E of the EIS. Also refer to **Appendix E.**
Public Submission 3.4			
156.	*Odours*: Have experienced an increase in bad odours and haze in recent times and often at night.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0**.	Appendix E of the EIS. Also refer to **Appendix E.**
157.	*Public Health and Safety:*	A detailed assessment of potential public health and	Appendix K of

No.	Issue	Response	Reference
	The site location is too close to residential areas and schools.	safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	the EIS. Also refer to **Appendix J.**
Public Submission 3.5			
158.	*Public Health and Safety:* Concerns that the project is too close to the surrounding residents.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS. Also refer to **Appendix J.**
159.	*Air Quality:* Concerned that the new site will contaminate the air.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	Refer **Section 3.0.**
Public Submission 3.6			
160.	*Air Quality:* Concerned that the prevailing winds will carry any odours the site might produce towards the developing residential areas nearby.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	Refer **Section 3.0.**
Public Submission 3.7			
161.	*Public Health and Safety:* Is not convinced that there is guarantee towards community safety. The prevailing winds will carry odours which will impact the health of the community.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS. Also refer to **Appendix I.**
Public Submission 3.8			
162.	*Public Health and Safety:* Concerned that the project will impact the health of the nearby residents and emissions the project could potentially generate.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS. Also refer to **Appendix J.**
Public Submission 3.9:			
163.	*Public Health and Safety/Air Quality:* Concerned about what happens to the ash that is left over after the combustion processes. Will the ash be contaminated and will still hold the disease and viruses and that it will need to be contained correctly otherwise it will contaminate the air,	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.** The purpose of the combustion process is to destroy	Refer to **Section 3.0.**

No.	Issue	Response	Reference
	threatening the health of the town's residents. Also outlines that the burning of the medical waste will still pollute and contaminate the air with viruses.	infectious substances and thus prevent it entering the environment.	
164.	*Traffic;* Transport routes need to be planned to minimise exposure to the waste and to be more considerate of the residents who use the road every day. Roads are in poor condition and full of pot-holes which add to the noise in the area. The use of Mitchell Avenue for the facility and trucks will add to the traffic and noise on the road, while worsening its condition.	See response to issue No. 132 The transport routes chosen for transporting if waste have been designed to minimise trucks on local roads and therefore any resulting impact on local residents. The state of local roads is not a function of the Project. As an economic activity in the Cessnock LGA, the Project would generate rates to assist in improving roads.	Appendix F of the EIS.
Public Submission 3.10			
165.	*Odours:* Home is constantly subject to foul smells from the recently closed smelter and sure that the project will cause the same problem towards the local environment and surrounding residents.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
166.	*Noise:* Concerned that the project will cause constant noise as previous developments in the past have done before.	Refer to response to issue No. 138 and No.146	Appendix G of the EIS.
Public Submission 3.11			
167.	*Public Health and Safety:* Stated in the submission that the nearest house is 600metres away when it is actually 160metres away. The amount of waste and fumes already being released in the area has been linked to cancer cases. The project will add more fumes to the air, causing more health problems.	It is understood that this submission refers to a house located at 8 Railway Parade. The submission indicates that this house is approximately 160m away from the project. A review of offset distances indicates that this property is in fact: · Approximately 300m from the Weston Aluminium site entrance; and · Approximately 600m from the proposed new building. It is noted that this residence is located within the IN2 Light Industrial Zone. References to residents 600m away	Refer to **Appendix J Appendix K** and **Appendix L.**

No.	Issue	Response	Reference
		were made in relate to the dwellings within residential zoning. A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project. Other modelling in regards to noise and air quality als confirmed that the project could operate with the relevant criteria.	
168.	*Air Quality/Waste* The project will pollute the air as a result of the releasing of toxic fumes.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.** As detailed in both the Air Quality and Human Health Assessments, the Project is not expected to result in the emissions of toxic levels of fumes.	**Section 3.0**
Public Submission 3.12			
169.	Submission supports the Project.	Support noted.	NA
Public Submission 3.13			
170.	*Public Health and Safety:* From a public health perspectives there would be better locations for the project to be implemented on. Submission also states/acknowledges that there are alternative potential sites that could be considered.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS.
171.	*Waste:* The proposed waste and washed bin storages are inadequate. The proposed method of treating water from bin washing and the washing down of bunded areas are also inadequate.	Refer to response to issue No. 7.	NA
Public Submission 3.14			
172.	*Public Health and Safety:* A project such as that proposed should not be located near the surrounding residents.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS. Also refer to **Appendix I.**

No.	Issue	Response	Reference
173.	*Air Quality:* Will add to the air pollution that already occurs as a result of wood fired heating.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
Public Submission 3.15			
174.	*Air Quality:* North West winds will carry pollution and odours to the surrounding living environment.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
175.	*Traffic and Public Health and Safety:* The increase in traffic would impact on personal health and comfort. The maximum quantities of stored wastes provided in Table 2 of the Preliminary Hazard Analysis are incompatible with the stated annual waste throughout volumes and the maintenance needs of the project.	See response to issue No. 132. A detailed calculation of the required waste storage is provided in **Appendix D** demonstrating that the proposed waste storage areas are adequate.	Appendix F of the EIS and **Appendix D.**
Public Submission 3.16			
176.	*Public Health and Safety:* Public will be exposed to unexpected health and mental ramifications as a result of the project being close to the town and burning 24hours a day. The project will also jeopardise the development of the town and overall area preventing it from being part of the sophisticated Hunter Valley Wine Region.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project. The thermal treatment plant would not jeopardise the development of the township. The Project would assist in maintaining the WA facility as an ongoing viable employer, supporting the local economy and growth of the town. The Project would be situated in an established industrial area away from tourist areas.	Appendix K of the EIS. Also refer to **Appendix K.**
Public Submission 3.17			
177.	*Air Quality:* Will pollute the air, affecting its quality.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
178.	*Public Health and Safety:* Concerned that the development will harm public health, and	A detailed assessment of potential public health and safety impact of the Project was provided in the Human	Appendix K of the EIS. Also

No.	Issue	Response	Reference
	that the development should be considered to be sited in a different location away from Kurri Kurri.	Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	refer to **Appendix K.**
179.	*Waste:* The maximum quantities of stored wastes provided in Table 2 in Appendix J Preliminary Hazard Analysis are incompatible with the stated annual waste throughput volumes and the maintenance needs of the project. The proposed waste and washed bin storage areas are inadequate.	Further detail regarding the suitability of the proposed waste storage areas is provided in **Appendix D.** This confirms that the proposed waste storage is not incompatible with the potential throughput of the thermal treatment plant.	**Appendix D**
Public Submission 3.18			
180.	Objects to the waste plant. No specific issues raised.	Noted.	NA
Public Submission 3.19			
181.	Due to potential health hazards this project should be located in the proposed area.	This matter has been addressed by the Human Health Risk Assessment, Air Quality Impact Assessment and response to the OEH submission detailed in **Section 3.0.**	Refer to **Section 3.0** and **Appendix E** and **Appendix J**
Public Submission 3.20			
182.	Submission supports the Project.	Support noted.	NA.
Public Submission 3.21			
183.	Supports the idea of more industry and jobs for Kurri Kurri, but also agrees with the main three arguments Daniels Waste Services mentions in their submission/letter.	Reference is made to response to issues 93 – 99. All issues raised by the Daniels Waste submission have been suitably addressed.	NA
Public Submission 3.22			
184.	*Air quality:* Already poor air quality in the area and the project will only add to it.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
185.	*Public Health and Safety:* Also concerned that the development is too close to the surrounding residential areas. Would like to see the development relocated to another site.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS. Also refer to **Appendix K.**

No.	Issue	Response	Reference
Public Submission 3.23			
186.	*Air Quality:* Concerned that the emission will cause some residents to have trouble breathing.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
Public Submission 3.24			
187.	*Public Health and Safety:* Is worried that the project will cause medical problems towards the surrounding residents especially children. Medical waste has the potential to cause medical problems. Is especially concerned about Cytotoxic waste as this is deadly to humans.	A detailed assessment of potential public health and safety impact of the Project was provided in the Human Health Risk Assessment. This concluded there would be no significant public health risk as a result of the Project.	Appendix K of the EIS. Also refer to **Appendix K.**
Public Submission 3.25			
188.	*Air Quality:* Due to the other surrounding developments, so much dust is emitted in the area already and is breathed in by the residents. With the cement crushing plant and recycle plant already nearby, the addition of the project is not welcomed.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
Public Submission 3.26			
189.	*Air Quality:* The air quality is already considered to be poor due to the previous coal mines which surrounded the area and an aluminium smelter which also caused some problems in the past. In addition to this, the Dross Plant emitted more pollution therefore the project is not welcomed.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.**	**Section 3.0**
Public Submission 3.27			
190.	Indicates the town rejected the Aluminium Plant being built in Kurri Kurri and rejected the Dross Plant which proceeded anyway. The company is commercially focussed and the town is concerned about the safety of the residents and families who live nearby.	WA has demonstrated a high standard of environmental management during its operation through compliance with stringent licencing requirements put in place by the EPA.	NA

No.	Issue	Response	Reference
Public Submission 3.28			
191.	Fumes have the potential to impact the health of local residents as well as cause odours. Property will be devalued due to additional trucks moving past houses.	This matter has been addressed by the Air Quality Impact Assessment and response to the EPA submission detailed in **Section 3.0.** There is no evidence that property values would be impacted by the Project. Project generated traffic would be low and not traverse residential areas therefore traffic would have a negligible impact on property values.	**Section 3.0**

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5.0 Management Measures

The Project EIS included a summary of the management measures that will be incorporated into the construction and operation of the Project. Following the receipt and consideration of submissions these management measures were reviewed. The final summary of Project management measures is provided in **Table 3.**

Table 3 Summary of Management Measures

Ref#	Management and Mitigation Measures	Timing
Waste Management		
1.	Throughout the construction and operation of the Project, WA will implement the waste hierarchy principals outlined in the WARR Strategy.	Construction
2.	Ash materials resulting from the thermal treatment process will be disposed of at an offsite landfill licensed to receive such wastes as per the POEO Act.	Operation
3.	WA will not accept wastes for onsite processing which are not defined in the Development Consent or encompassed in the updated EPL 6423.	Operation
4.	WA will ensure that wastes received onsite have been properly classified by the providers of those wastes, and will fulfil its waste tracking requirements as set out in the Protection of the Environment Operations (Waste) Regulation 2014.	Operation
5.	A screening process will be implemented for all waste arriving at the site. No waste will be allowed to be deposited at the site until approval has been provided by the WA operator. A formal screening and approval procedure will be included in the Project Operational Management Plan regarding the screening process. This process will mimic established and mature dross/SPL/scrap inspection and accept/reject procedures.	Operation
6.	WA will ensure that it and any of its transport contractors comply with the Dangerous Goods (Road and Rail) Transport Act 2008, Dangerous Goods (Road and Rail Transport) Regulation 2014, and ADG Code when arranging for the transport of any materials covered by the ADG Code.	Operation
7.	In accordance with EPA requirements, WA will retain any waste sampling and classification results that it obtains for the required interval of time (currently for a minimum 7-years).	Operation
8.	Waste water will be disposed of to the waste water network in accordance with the Trade Waste Agreement with Hunter Water.	Operation
9.	The Project will not receive, store or process any organic solvents (G150) wastes or E-waste.	Operation
Air Quality and Odour		
10.	Existing safeguards to manage air quality impacts, including the existing fabric filter and lime injection system, which will service both the proposed Project and the existing reverb furnace process emissions.	Operation
11.	Additionally, the Project will include real time monitoring and activated carbon injection. The Project will be equipped with an extractive emission monitoring system comprised of oxygen, carbon monoxide and carbon dioxide analysers.	Operation

Ref#	Management and Mitigation Measures	Timing
12.	Analysers will be used for monitoring combustion efficiency calculations, process control and alarm generation.	Operation
13.	Exhaust gases from the secondary chamber, once cooled, will receive an injection of both activated carbon and lime into the fabric filter exhaust inlet duct. Here, exhaust gases will undergo filtration with activated carbon and lime for particulate, acid gas, heavy metals and dioxin control within the plant's existing fabric filter. Treated exhaust gases will then be discharged to the atmosphere from the existing stack.	Operation
14.	The facility will include an emergency bypass stack in which hot combustion gases may be vented directly to the atmosphere during emergency situations or power failure. The proposed bypass stack will be equipped with a fail-safe pneumatically assisted and counterweighted insulated stack cap.	Operation
15.	All air quality monitoring, management and pollution control systems will be operated to maintain emissions below proposed emissions limit for Stack 5 and existing emissions limits for all other stacks.	Operation
Traffic and Transport		
16.	A Construction Traffic Management Plan will be prepared and implemented prior to the construction phase of the Project as part of the CEMP. This will include the guidelines, general requirements and principles of traffic management to be implemented during the construction phase to minimise the potential for traffic impacts on Mitchell Avenue. Specifically, no construction traffic will be allowed to park or idle on the surrounding road network.	Construction
17.	The WA Site's existing Operational Environmental Management Plan will be updated to incorporate consideration of the Project's operational traffic requirements. Measures that will be implemented to manage operational traffic include: · An induction process for drivers; · Time of day travel restrictions in accordance with the Development Consent and EPL; · The requirement to follow approved operational access and egress routes from the Hunter Expressway; and · The identification of area for light vehicle overflow parking within the boundaries of the WA site.	Operation
Noise and Vibration		
18.	Construction Hours – Works will be limited to standard construction hours where possible.	Construction
19.	Standard Mitigation Measures: All construction activities associated with the development of the Project will be subject to the standard noise and vibration mitigation measures described below: · The contractor will, where reasonable and feasible, apply best practice noise mitigation measures including: - Maximising the offset distance between noisy plant items and nearby noise sensitive receivers; - Avoiding incidents of noisy plants working simultaneously close together and adjacent to sensitive receivers, where practicable; - Orientating where possible, equipment with directional noise emissions away from sensitive receivers; - Locating noisy plant away from potentially noise affected neighbours or behind barriers, such as sheds or walls; - Loading and unloading out away from sensitive receivers, where practicable; - Carrying out maintenance work on construction plants with the potential to generate noise impacts away from noise sensitive receivers and confined to standard daytime construction hours, where possible;	Construction

Ref#	Management and Mitigation Measures	Timing
	- Relocating any vibration generating plant and equipment away from noise and vibration sensitive receivers in order to minimise any potential vibration impacts; - Turning off plant that is not being used; - Ensuring plant is regularly maintained, and repairing or replacing equipment that becomes noisy; and - Arranging the construction work site to minimise the use of movement alarms on vehicles and mobile plant.	
20.	Local Road Traffic – Heavy Vehicles Noise Mitigation: · The following mitigation measures are proposed in order to minimise the impact from heavy vehicles on local roads: - All trucks will be fitted with mufflers and any other noise control equipment in good working order; - As far as practical and safety consideration, truck drivers will avoid: § Heavy acceleration and braking; § Compression braking; § Reversing as far as practicable; § High speeds; § Pick-ups and deliveries outside standard construction hours; § Idling outside noise sensitive receivers; and § Truck routes to and from the construction work site will be via arterial routes. · Reversing Alarms: - The potential noise impact associated with reversing alarms will be managed and minimised via a combination of proactive driver/operator training and operational procedures. The following mitigation strategies will be undertaken, taking into account that SafeWork NSW Work Health and Safety requirements will need to be satisfied with respect to safety surrounding construction vehicles; - The primary means for minimising reversing alarm noise will be through a dedicated effort on the part of all construction equipment drivers to minimise, wherever feasible, the amount of reversing of their vehicles; - Wherever feasible, turning circles will be created at the end points of vehicle work legs, which will allow trucks to turn and avoid the need for reversing; and - Emphasis will be placed during driver training and site induction sessions on the potential adverse impact of reversing alarms and the need to minimise their use.	Construction and Operation
21.	The existing site Operational Environmental Management Plan will be in force to manage operational noise.	Operation
Soil and Water		
22.	Where excess spoil is excavated at the Project Area (not foreseen), it will be subject to sampling and classification according to the Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014a) prior to being transported offsite to an authorised receiver.	Construction
23.	Erosion and sediment control practices will be incorporated into the CEMP for the Project, in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) to prevent construction site runoff entering the WA Site stormwater	Construction

Ref#	Management and Mitigation Measures	Timing
	system, or the nearby Swamp Creek.	
24.	To minimise the potential for contamination to occur during construction works the following measures will be employed during construction works: · Excavated spoil will be stored so as to prevent its uncontrolled release; and · Construction works and laydown areas will be confined to hardstand areas where reasonable and practicable to do so.	Construction
25.	Groundwater interception will be avoided where possible.	Construction
26.	Spill kits will be available at the construction site.	Construction and Operation
27.	All liquids will be stored in appropriately bunded areas in accordance with Safety Data Sheet and manufacture requirements.	Construction and Operation
28.	Refuelling activities will be undertaken in existing dedicated refuelling bunds.	Construction and Operation
29.	The existing OEMP prepared for the Facility provides a framework to effectively manage the potential pollution of soils and water during the operation of the Project. The OEMP will be updated where relevant to incorporate the Project in consultation with DP&E. The site Surface Water Management Plan will also be updated to incorporate the relevant compliance requirements of the Project.	Operation
30.	During operations WA will continue to comply with any water quality management measures set out in EPL 6423. This may include stormwater monitoring (such as that currently undertaken at the WA Site), as well as the appropriate storage, enclosing, bunding and covering of SPL material and pharmaceutical wastes.	Operation
31.	WA will continue to liaise with Hunter Water to ensure the operational phase of the Project is included in a Trade Waste Agreement with Hunter Water.	Operation
32.	The CEMP will include of procedure for the management of contamination or potential contamination during site work, including the following measures as a minimum: · Should any potential anthropomorphic contaminated material (e.g. chitter, slag, building waste (brick or similar) or any odorous materials) the contractor will be required to cease work in the vicinity to the material; · Sampling will take place to identify the content of the material; · Material will be managed pursuant to the results of the sampling analysis with any contaminated material handled and managed accordingly; and · Regardless of potential to contain contamination, any excess material generated by construction work that needs to be disposed of offsite will be classified accordingly.	Construction
Hazards		
33.	The following practices currently employed at the WA Site will continue during the operation of the Project: · Baghouse No. 5 will be fitted with a real-time, continuous particulate monitoring system;	Operation

Ref#	Management and Mitigation Measures	Timing
	· All baghouses will be fitted with high differential pressure detection to activate bag switch-over and clogged bag cleaning processes; · The existing site EMS will be updated to incorporate the management requirements of the Project; and · Dangerous Goods will be transported to and from site in accordance with the ADG Code, the Dangerous Goods (Road and Rail Transport) Act 2008 and the Dangerous Goods (Road and Rail Transport) Regulation 2014. A number of further safety studies will be required to be conducted in accordance with: · The hazard-related conditions of consent provided by DP&E; · The Work Health and Safety Act 2011, associated regulations (including the Work Health and Safety Regulation 2011), and codes of practise; and · The Protection of the Environment Operations Act 1997 and associated regulations.	
34.	The following measures will be implemented to control, minimise and manage risks during all phases of the Project: · In detailed design, locate product storage areas at separation distances with specific reference to the applicable Australian Standards; · Conduct a Fire Safety Study for the Project to determine appropriate fixed and portable fire protection systems for the Project Area; · A Final Hazard Analysis will be prepared prior to construction; · Develop a Traffic Risk Assessment and a detailed Route Selection study for the dangerous goods transport activities particularly for the transport of dangerous goods to the Project Area; · Carry out safety in Design Reviews in accordance with Work Health and Safety Regulation 2011 and Code of Practice – Safe Design of Structures (Safe Work Australia, July 2012); and · The flood protection measures identified in the Preliminary Hazard Analysis (AECOM, 2017) including minimum floor levels, flood proofing of buildings and infrastructure and the implementation of operational, emergency and safety plans with respect to flooding will be implemented for the Project.	Construction and Operation
35.	The following measures will be implemented to control, minimise and manage risks: · Update the Safety Management System Manual, November 2015 to include the operations and materials associated with the Project prior to the commencement of operation in accordance with the requirements of the Work Health and Safety Regulation 2011; · Update the Emergency Response Plan (Weston Aluminium Pty Ltd, November 2015) to include specific responses to the hazard scenarios identified in this PHA and any other safety studies conducted for this Project; · Develop and implement an appropriate Safety Management Plan. This should include access by workers to a risk register for all construction activities; · Ensure a permit to work system is implemented, in particular where workers may be exposed to high risk activities; · Undertake audits on construction activities, and address and communicate any findings to the relevant workers; · Ensure the workers have appropriate training and the necessary competencies; and	Construction and operations.

Ref#	Management and Mitigation Measures	Timing
	· Implement actions/risk reduction strategies as identified through Safety in Design reviews.	
36.	During operations, the following measures will be implemented: · Update the site Safety Management Plan. This should include access by workers to a risk register for all operational activities; · Update the site Emergency Response Plan to ensure a co-ordinated response to the hazard scenarios identified in this assessment; · Update the site Operational Environmental Management Plan; · Undertake audits on operational activities, and address and communicate any findings to the relevant workers; · Ensure workers have appropriate training and necessary competencies; · Implement appropriate maintenance programs to minimise potential for equipment failures; · Notify SafeWork NSW of any WHS Regulation Schedule 15 chemicals that are likely to exceed 10 percent of the threshold quantity; · Prepare/update any placards, manifests and emergency plans as required for chemicals exceeding the WHS Regulation Schedule 11 placard or manifest quantities; and · Update the onsite dangerous goods register and Safety Data Sheet register, as well as provide updated dangerous goods notifications to SafeWork NSW as required.	Operation
37.	The following safeguards will be implemented to limit the consequences and likelihood of a fire occurring at the Project Area's dangerous goods store: · The Project Area will be continuously staffed with appropriate security fencing and/or other systems to resist malicious attack; · The proposed warehouse building will incorporate an electrical system designed to meet relevant explosion protection standards; · No equipment will operate in dangerous goods warehouses areas that might generate friction or other sources of heat contributing to the risk of ignition; · A strict smoking ban will continue to be enforced on the WA Site; · Process areas will contain properly maintained equipment (such as forklifts) suitable for the relevant hazardous area classification; · All incompatible dangerous goods classes will be completely segregated with appropriate fire separation distances created and maintained (including use of fire walls etc. where necessary) according to AS 1940:2004 – The Storage and Handling of Flammable and Combustible Liquids; · All spills will be quickly and completely cleaned up; · No dangerous goods will be accepted at the Project Area unless they are packaging complying with the ADG Code and the requirements of the WHS Regulation, with steel drums preferred where possible to limit potential for damage and leakage;	Operation

Ref#	Management and Mitigation Measures	Timing
	· Adequate sprinkler or foam systems will be installed if the Fire Safety Study indicates these are required; · Fully bunded dangerous goods warehouse sections will be maintained so as to limit the spread of fire and prevent the discharge of contaminated fire-water in the event of such an incident; and · Training will be provided for staff in correct equipment operation, accident prevention and emergency response (including firefighting).	
38.	The following additional safeguards will be implemented to limit the consequences and likelihood of a toxic release from class 6.1 dangerous goods: · Equipment (such as forklifts) will be properly maintained to minimise the risk of damage to packaging; and · No transfer operations of class 6.1 materials destined for thermal processing will occur outside the thermal waste processing plant.	Operation
39.	To control, minimise and manage risks during the post-closure phase of the Project, the following measures will be implemented: · Develop a decommissioning plan. This should include a project risk register that is available to all workers, including any risk items added during the construction and operations phases; and · Keep records of all workplace health and safety information relating to the Project post closure phase; · The storage and handling of dangerous goods during the Project will be undertaken in accordance with the relevant Australian Standard for each class of dangerous goods, including those outlined below: - AS/NZS 3816:1998, Management of clinical and related wastes relating to the management of class 6.1 pharmaceutical substances; - HB 202-2000, A management system for clinical and related wastes – Guide to the application of AS/NZS 3816-1998, Management of clinical and related wastes; - AS 1940:2004 – The Storage and Handling of Flammable and Combustible Liquids relating to the management of paints, solvents, pharmaceutical and quarantine wastes classified as class 3 substances; - AS 3780:2008 – The storage and handling of corrosive substances - management of class 8 pharmaceutical and quarantine wastes classified as corrosive substances; - AS/NZS 4452:1997, The storage and handling of toxic substances - management of class 6.1 pharmaceutical substances; - AS/NZS 4681:2000 – The storage and handling of Class 9 miscellaneous dangerous goods relating to class 9 pharmaceutical wastes; and AS/NZS 3833:2007 – The Storage and Handling of Mixed Classes of Goods, in Packages and Intermediate Bulk Containers considered for the management of areas where various classes of goods are stored, such as waste preparation areas.	Post-Operation
40.	· The Shredder would be operated in a negative pressure environment. Following the addition of waste material to the shredder, the shredder hood would be closed effectively sealing the shredder and preventing the escape of any material during the shredding process. A bin is placed under the shredder to capture shredded material following its processing.	Operational

Ref#	Management and Mitigation Measures	Timing
	The shredder is designed such that the shredder bin fits tightly under the shredder to prevent material escape. · During the operation of the shredder, air is drawn from the shredder in order to maintain a negative pressure environment. This air is directed to either: - The primary combustion chamber for thermal treatment if the combustion chamber is in operation; or - Passed through a High Efficiency Particulate Air (HEPA) filter before release to ensure any airborne material is captured.	
41.	The following would be implemented to prevent cross contamination of waste streams: · Wastes associated with the project to be transported, stored and processed separately to SPL and dross material; · Separate processing facilities would be used to treat each waste stream. No dross or SPL material would be treated by the project and no medical waste would be treated in the existing facility; and · Storage and handling procedures unique to each waste type (including procedures currently in place at WA) would be implemented across the site to prevent loss of containment.	Operational
42.	To prevent fire or explosion resulting from excessively hot exhaust gas coming into contact with activated carbon the following would be implemented: · Preliminary heat exchanger to remove excess heat from exhaust gas following release from secondary combustion chamber; · Forced air cooler to inject ambient air to further reduce temperature of exhaust gas following the heat exchanger; · Water spray system would automatically operate if the fabric filter inlet temperature were to exceed the deemed maximum operate; · If the exhaust gas process temperatures were to exceed 230ºC at the baghouse for any reason then the flow of activated carbon would automatically cease and the exhaust gases would bypass the fabric filter eliminating any risk of fire or explosion; · Programmable Logic Controller (PLC) would be utilised to monitor the operation of the plant in real-time allowing systems responses (shutdowns) to be implemented immediately in the event of 'upset' conditions; and · The system would utilise high quality, high ignition temperature activated carbon specifically designed for combustion flue gas applications.	Operational
Human Health		
43.	All air pollution management, monitoring and pollution prevention systems will be operated to maintain the proposed emissions limits from Stack 5.	Operational
Biodiversity		
44.	Limit the construction disturbance footprint area of the Project as far as possible through the use of flagging, to restrict plant and machinery movements.	Construction
45.	Minimise soil transportation within, or out of the Project footprint to reduce the potential for weed spread.	Construction

Ref#	Management and Mitigation Measures	Timing
46.	Stockpile or store construction materials within the existing hardstand areas of the WA Site.	Construction
47.	Apply appropriate erosion and sedimentation controls around the Project Area during construction to prevent impacts to downstream riparian habitats.	Construction
48.	A clearing procedure will be prepared which details the methods to be implemented during clearing. This should include suitable protocols in case of any fauna found during clearance works. Such as procedure to contact suitable fauna handlers/ecologists to rescue, relocate or euthanize any fauna.	Construction
Heritage		
49.	Aboriginal Cultural Heritage: · Although no archaeological heritage items have previously been identified within the Project disturbance area or immediate surrounds, should an artefact or item of Aboriginal cultural heritage be discovered during construction works, the following standard procedure should be adopted: - Cease all works immediately in the area to prevent any further impacts to the site; - Notify the OEH; - Engage a suitably qualified archaeologist and Registered Aboriginal Parties (RAP) to determine the nature, extent and significance of the site and provide appropriate management advice. Management action(s) will vary according to the type of evidence identified, its significance (both scientific and cultural) and the nature of potential impacts; - Prepare and submit an AHIMS site card for the site; and - In the event that potential human skeletal remains are identified within the Project area at any point during the life of the Project, all work in the vicinity of the remains should cease immediately and OEH should be notified for further instruction.	Construction
50.	Non-Aboriginal Heritage: · Should any items of potential cultural heritage significance be uncovered during earthworks, the immediate area of the potential find will be isolated and the heritage officer at Cessnock City Council contacted for advice.	Construction
Visual Amenity		
51.	The waste processing building will be clad in green Colorbond and the use of reflective materials will be avoided where possible.	Design / Construction
52.	Exterior lighting will be designed and constructed in accordance with *Australian Standard 4282 – Control of Obtrusive Effects and Outdoor Lighting*.	Design / Construction
Consultation		
53.	A Stakeholder Consultation Plan will be prepared to detail how the community and key stakeholders will be consulted during the construction and operation of the Project.	Construction and Operation.

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6.0 Conclusion

This Response to Submissions report has addressed those matters raised in the submissions received from agencies and the community. WA requests that the assessment of the remaining issues is undertaken to allow the Project to proceed through to determination.

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Appendix A

Agency Submissions

Appendix A Agency Submissions

Appendix B

Community Submissions

Appendix B Community Submissions

Appendix C

Additional Indicative Site Images

Appendix C Additional Indicative Site Images

Indicative Waste Storage Area Photos


11.02.2004

Appendix D

Waste Storage Area & Thermal Treatment Plant Details

Appendix D Waste Storage Area & Thermal Treatment Plant Details

Waste Storage Size

The waste storage area detailed in **Table 4** has been provided by Advanced Combustion Technologies Pty Ltd who are the Project design engineers.

Table 4 Waste Storage Size Calculation

Element	Dimension	Unit	Amount
Operational Details			
Combustion Rate	-	Kg / hr	800
Plant availability	-		90%
Quantity of Waste to be shredded and held in cold storage	-		80%
Total quantity of waste to be shredded	-	Kg / hr	576
Density of shredded waste following compaction	-	Kg / m^3	250
Volume of Refrigerated Storage required			
Typical maximum storage period required	-	Days	8
Total waste volume required	-	m^3	442
Proposed Waste Transfer / Storage Container Dimensions			
Internal dimensions	Length	m	1.2
	Width	m	1
	Height	m	1
	Volume	m^3	1.2
External Dimensions	Length	m	1.2
	Width	m	1
	Height	m	1.15
Number of Storage Containers Required			
Number of containers stacked in height	-	Number	4
Minimum floor area required	-	m^2	111
Proposed floor area	-	m^2	120

Design Type, Combustion Conditions and Flue Gas Details

Source: Advanced Combustion Technologies Pty Ltd

Thermal processing involves the combustion of the waste materials at high temperatures to produce a biologically inert ash, carbon dioxide, water and trace levels of pollutants. Whilst the pathogens in pathological and other wastes are readily destroyed at relatively low temperatures, the incomplete products of combustion formed in the combustion chambers must be treated at high temperatures. Thus thermal waste processing plants typically consist of a primary combustion chamber and secondary combustion chamber which may also be referred to as an afterburner.

The proposed rotary kiln primary chamber is an ashing co-current design and shall be equipped with a final ash burnout zone. The waste materials are loaded into the kiln where initial combustion takes place. The ashes once discharged from the rotary kiln are maintained on a stationary burnout hearth for a period of up to eight hours to ensure virtually complete burnout of all carbonaceous matter. The burnout hearth is equipped with an ash pusher which gradually pushes the waste ashes across the hearth into the ash pit.

The chemical composition of the waste materials may affect pollutant emissions. Wastes containing metals or plastics are of particular concern. Metals which vaporise at the primary combustion chamber temperature may become metal oxides with particle sizes less than 1 micron. Halogenated plastics, such as polyvinyl chloride, would form acid gases such as hydrogen chloride. The presence of chlorinated wastes could also contribute to the formation of chlorinated organic compounds such as dioxins and furans under poor operating conditions.

The following properties of wastes all affect the operation of the facility:

- Calorific Value;
- Moisture Content;
- Glass Content; and
- Plastic and PVC Content.

Calorific Value

A facility of this nature is predominantly sized on the heat release or calorific value of the wastes to be thermally disposed. An facility designed and sized to burn low calorific wastes can often be significantly smaller than a unit sized to burn the same quantity of high calorific wastes.

Moisture Content

The moisture content of the wastes affects the overall sizing of combustion equipment and the layout and the design of the primary chamber. High moisture wastes usually necessitate that a drying zone be equipped to eh plant prior to the combustion zone.

Glass Content

The glass content of wastes is important as it can affect the reliability of combustion equipment. Most types of glass would deform at approximately 600^0C and would liquefy at 800-1000^0C.

Plastic and PVC and Rubber Content

The plastic and rubber content of the waste significantly affects the calorific value and subsequently the combustion capacity. When burning wastes of a higher plastic and/or rubber content than originally designed, the throughput must be reduced to ensure that the overall heat release from the wastes is consistent with the original design.

Poly Vinyl Chloride results in the formation of hydrogen chloride acid gas and rubber results in the formation of sulphur dioxide, sulphur trioxide and subsequently sulphuric acid gas and both are critical in terms of determining the need for an acid gas scrubbing plant, the design of the scrubbing plant and the neutralisation chemical demand of such a plant.

Flue Gas Contaminants

The types and concentrations of contaminants in the flue gases generated from such a facility depend on combustion chamber design, the waste being burned and combustion conditions. Full details of the potential flue gas contaminants of concern are detailed in the Project Air Quality Impact Assessment (AECOM, 2016).

Particulate matter consists primarily of entrained non-combustible matter in the flue gas, as well as the products of incomplete combustion that exist in solid or aerosol form. The quantity of particulates discharged from the combustion chamber is dependent on the ash content of the waste, the gas velocities through the chamber and the type of ash agitation used.

Acid gases are the flue gas constituents which, when combined with water or water vapour, form acids including nitric acid, sulphuric acid, hydrogen chloride and hydrogen fluoride. The quantities of acid gases discharged from the process are dependent on the type of waste burnt. Any sulphur in the waste or the auxiliary fuel would oxidise to produce SO_2 and slight quantities of SO_3. More significantly, any chlorine present would react with hydrogen or water to form hydrochloric acid (HCl).

Metallic compounds, are present in the flue gas primarily as oxides and chloride salts. Most of the metallic compounds are in the vapour phase within the combustion system, since these compounds boil or sublime at temperatures around 1,000°C. The metallic compounds tend to condense as the flue gas is cooled and become absorbed onto fine particulate matter (generally sub-micron in size, i.e. 0.2-0.7 micron). It is possible that a portion of the more volatile metals such as mercury and lead may remain in the vapour phase, depending upon temperature conditions, even at 50 C.

Products of incomplete combustion include carbon monoxide and trace organics including polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzo furans (PCDFs). PIC's are generally not dependent on the pollution control equipment but on the design and operation of the secondary combustion chamber. Provided time, temperature and turbulence are maintained, proper combustion is assured.

Groups of organic compounds that are of interest because of their health effects are PCDD's and PCDF's. A mechanism for the production of these compounds is the catalytic reaction of chlorine and organic compounds on the surface of ash in the temperature range of 450-200 degrees Celsius. By ensuring virtually complete combustion of wastes and providing a rapid transition of temperature throughout this range the discharge of these pollutants can be minimised to negligible levels. However to achieve a specified dioxin emission rate of 0.1 ng Nm^3, significant additional controls are required.

Potential for Waste Release during Transfer

Waste to Shredder Transfer

As detailed in the EIS, waste material would be received at the facility in a range of potential bin sizes. Following receipt at the facility these bins would either be placed in storage (potentially cold storage depending on the waste type/content and anticipated duration of storage) or the bins would be prepared for immediate processing. When ready for processing, bins are moved to a bin tippler – a device that lifts and inverts the bin, depositing the waste contents directly into the shredder hopper. The shredder hopper would incorporate a metal shield around the top within which the tipping of waste would be undertaken. This metal shield would be designed to contain all waste and prevent splashes or release of any material. A cage would also be placed around the tippler to isolate it from human interaction when operational for safety purposes. Accordingly, the waste transfer operation is a guarded and automated operation, which is isolated from personnel.

It should be noted that waste being processed is usually within plastic bags or containers at source e.g. hospitals, prior to being put into the bins in which it is delivered to site. Weston Aluminium's logistic protocols and contractual arrangements would ensure that there would be no loose material in bins, which would otherwise have the potential to be spilt or re-released during processing.

The Shredder would be operated in a negative pressure environment. Following the addition of waste material to the shredder, the shredder hood would be closed effectively sealing the shredder and preventing the escape of any material during the shredding process. A bin is placed under the

shredder to capture shredded material following its processing. The shredder is designed such that the shredder bin fits tightly under the shredder to prevent material escape.

During the operation of the shredder, air is drawn from the shredder in order to maintain a negative pressure environment. This air is directed to either:

- The primary combustion chamber for thermal treatment if the combustion chamber is in operation; or
- Passed through a High Efficiency Particulate Air (HEPA) filter before release to ensure any airborne material is captured.

This will allow the shredding process to be operated independently of the combustion chamber whilst ensuring an adequate level of emission control is in place.

Shredded Waste to Storage Transfer

Shredding of waste materials would generally be undertaken as soon as practical prior to being thermally processed. As detailed above, shredded waste would be deposited from the shredder directly into a bin located underneath the shredder. If shredded waste requires temporary storage prior to being thermally treated it would be placed in cold storage in this bin which would be sealed with a lid.

Personal Protective Equipment (PPE) Requirements

Due to the mode of operation and the proposed safety measures in place no specialist Personal Protective Equipment (PPE) is required. Standard PPE would however be required as is already the case with the remainder of the WA site.

Appendix E

Air Quality Response to EPA Comments

Appendix E Air Quality Response to EPA Comments

Appendix F

Biodiversity Assessment

Appendix F Biodiversity Assessment

Appendix G

Aboriginal Heritage

Appendix G Aboriginal Heritage

Appendix H

Flood Risk Assessment

Appendix H Flood Risk Assessment

Appendix I

Flood Impact Assessment

Appendix I Flood Impact Assessment

Appendix J

Human Health Assessment

Appendix J Human Health Assessment

Appendix K

Hazard Assessment

Appendix K Hazard Assessment

Appendix L

Noise Impact Assessment

Appendix L Noise Impact Assessment

Appendix M

Entrance Turning Path

Appendix M Entrance Turning Path