Member of the Surbana Jurong Group

ATTACHMENT A

SMEC response to EPA WAA 1003592 GSWT S22 Notice to Supply Information

Item	Reference	Page	Request details	SMEC Response	EPA assessment of SMEC response	SMEC Response (13/05/2020)
1	Application	PDF p78	Provide updated Table 5-6 - "Project-Relevant SEPP (Air Quality Management) Design Criteria" that includes the following design criteria, or provide explanation / justification for exclusion of any of the listed parameters: - PM2.5 (24h average) - Hydrogen fluoride (HF) / Fluoride - (7 and 90 day) - Hydrogen chloride (HCl) - Ammonia (NH3) - Dioxins and Furans (DF) (see SEPP(AQM)) - Polycyclic Aromatic Hydrocarbons (PAH) as Benzo(a)Pyrene (B(a)P) - Hexavalent chromium (Cr (VI)) - Cadmium (Cd)	Table 5-6 updated as required. Section 4.1.10 has been updated to detail how dioxins will be managed.	Response complete.	
2	Application	PDF p80	Provide reference facility data summaries in format of "Table 1: Reference Facility Emissions Layout" - (see Attachment B)	Table 5-5 updated as required	Response complete.	
3	Appendix F	PDF p 14	Please provide updated Table 2, 3 and 4 (in Appendix F), formatted as per item 1 in this notice (updated Table 5-6 from APPLICATION)	Appendix F updated as required.	Response incomplete. Table 2 has not been updated. Table 3 has not been updated. Table 5 (was Table 4 in original version) has been partially updated. Provide mass emission rates.	All tables updated with emissions rates in Appendix B of Appendix F (Air Emissions)
4	Appendix F - Air Emissions	-	Update modelling to include time varying background for each scenario and consider emissions impact in addition to existing ambient air quality.	Considering the sensitive nature of this development the more stringent approach of selecting the highest reported 24-hour average value as the background concentration was employed. This conservative approach demonstrates safe exposures. Section 3.3 of Appendix F has been updated to include a justification for excluding background concentrations Section 6.2 of Appendix F has been updated to provide a justification of why cadmium background concentrations are zero. Appendix B of Appendix F has been updated.	Response incomplete. 1. Determine background ambient air quality levels for indicators where there are gaps in data for the locality of the proposal, including PM2.5, PM10, cadmium, NOx, and SOx. 2. Consider emissions impact in addition to existing ambient air quality (once determined)	Appendix F (Air Emissions) updated Section 5.2 of WAA Updated Updated 4.1.5.3

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5	Application / Appendix F - Air Emissions	-	Provide further explanation of the links between emissions, facility processes, and proposed pollution control approaches (technological or operational)	Refer to Section 5.2.8 of the report.	Response complete.	
6	Application - s4.5.5.6 Odour	PDF p 69	A) Provide further information on the expected odour impacts, including odour performance and BATT in reference facilities. B) Provide further supporting information specified in s4.5.5.6 statement: "Based on evidence from similar facilities currently operating overseas, this will eliminate most, if not all, odours."	Section 4.5.5.6 updated to reflect EPA comments	Response incomplete. 1. What is the odour emissions performance of the reference sites that implement the conceptual design approach described in 4.5.5.6? Provide supporting information. 2. Will you only accept waste while the waste receival area is maintained under negative pressure? 3. Will you only accept waste while the fast-acting doors are fully operational? 4. Have you considered secondary odour controls?	1. Updated Section 4.5.5.6 with reference facility odour response 2. Response: Yes 3. Response: Yes 4. Response: Yes
7	Appendix F - Air Emissions	-	For AERMOD outputs: provide modelled 99.9th percentile value for worst-affected sensitive receptor in a table/ tables	Refer to Appendix B of Appendix F	Response complete.	
8	Appendix F - Air Emissions	-	For AERMOD outputs: provide modelled plot with sensitive receptors clearly labelled/numbered	Refer to Figures in Section 6 of Appendix F.	Response complete.	
9	Appendix F - Air Emissions	-	For AERMOD outputs: provide 99.9th percentile for each BoM year.	Reporting statistics based on broader set of climate averages (5 years) was done on the basis that the statistics and conclusions are more representative than individual years. The alternative approach of resolving annual statistics places undue emphasis on particular events, and hence less representative of actual exposures. This is further considered in appendix C and D.	Response complete.	
10	Appendix F - Air Emissions	-	Provide a table with pollutants, and the % of IED limits under BATT emissions controls scenarios and proposed emissions control scenario	Refer to updated Table 7 in Appendix F.	Response complete.	

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11	Appendix F - Air Emissions	-	Provide AERMOD summary tables for: - Criteria pollutants - 99.9th percentile one-hour averages: for CO, NO2, and SO2, including hourly time varying background data where available. - PM2.5, including hourly-varying background data where available and 99.9th percentile one-hour average for comparisons with SEPP(AQM) design criterion. - Maximum 24-h average and annual average for comparisons with SEPP(AAQ) objectives. - HF, for comparisons with design criteria: with 24-h average, 7-day average and 90-day average (all maxima). - 99.9th percentile 3-minute averages for other pollutants of varying toxicity: with HCl, NH3, Dioxins and Furans (DF), PAHs as B(a)P, Cr(VI) and Cd.	Refer to the Appendices of Appendix F. James Brett discussed with EPA the need to undertake 7 day average and 90 day average comparisons due to 24 hour average being the most conservative which EPA confirmed was agreeable.	Response complete.	
12	Appendix F - Air Emissions	-	Explain how accidental or emergency emission releases have been considered in accordance with EPA (2013b), Recommended separation distances for Industrial Residual Air Emissions.	Section 5.2.8, 4.5.5.4, 4.5.5.5, 4.1.5.4 and Table 4-1 updated	Response incomplete. 1. Why four-hour continuance of breach? What triggers for immediate shutdown? 2. Explain why the proposed separation distances to sensitive receptors are sufficient.	1. Updated Section 4.1.10 'ESD Environmental Management' Reference to four-hour continuance of breach removed as not relevant to proposed facility. 2. Updated Section 4.1.10 'ESD Environmental Management'
13	Appendix F - Air Emissions	-	Provide further information considering non-steady-state emissions in relation to steady-state emissions and design criteria and emissions limits, in tabulated form.	Refer to Table 5-11 of the WA document	Response incomplete. Include emissions criteria and the start up conditions maximums as a % of the emissions criteria.	Air emissions report (Tables 6 to 11 of Appendix F) updated to include design criteria (emissions limits) and % of the emissions criteria for each of the three scenarios. Section 5.2 of WAA
14	Appendix O - HRA	-	Provide updated HHRA that takes into account: a) the updated Appendix F; b) gives consideration to all parameters in IED and item 1 of this attachment; and c) gives consideration to exposure consisting of combined background and modelled emissions.	The updated HHRA has incorporated the updated air modelling provided, which includes the additional emissions characterised (PAHs and Cr VI for the reference plant scenario). The assessment has been updated to be model clear about the assessment of impacts form the facility and where background exposures are also addressed.	Response incomplete. Dependency on background ambient air quality in Appendix F (including Item 4 of this notice) What provision for changes in standards has been made in the risk assessment approach?	HHRA (Appendix O) updated to include background concentrations, as per revised Air Emissions Assessment (Synergetics). Section 4.6 of Appendix O (HHRA) updated to discuss potential impacts associated with changes to guidelines and standards.
15	Appendix O - HRA	-	Identify any recreational uses of Dandenong Creek and consider in HHRA	Additional information has been included in Section 3.2 in relation to recreational uses	Response complete.	
16	Appendix O - HRA	-	Update Table 3: Substances and routes of exposure to include all relevant emissions listed in Appendix F.	Table 3 has included the addition of PAHs and Chromium VI – which is then also addressed throughout the updated report	Response complete.	
17	Appendix O - HRA	-	Clarify if the HRA evaluated combined impacts of emissions from the proposed	The report has been revised to include assessment of the	Response complete.	

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			works and background concentrations, or solely emissions from the proposed works.	project and the project plus background, where relevant to the assessment. Section 4.4.2 includes some additional text discussion on the project plus background exposures to PM2.5. Section 4.4.3: - the acute assessment makes it clear that this relates to impacts form the project only. Some additional test is also included in relation to the NEPM pollutants. - the chronic assessment includes consideration of the project plus background intakes in the calculations where relevant as detailed in the report (in this section). Note there is some text discussion on the NEPM pollutants on Page 22. Section 4.5 includes consideration of the project plus background intakes as detailed in the report and also presented in all the calculations in Appendix D		
18	Appendix F - Air Emissions	-	Provide detail on proposed continuous and periodic monitoring of air emissions.	Section 4.5.5.4 updated to reflect EPA requirements	Response complete.	
19	Appendix Q - Fuel Specification	-	Provide information explaining how fuel specification compliance will be monitored and managed	Sections 4.1.10, 6.3.3 and 4.2 updated to reflect EPA requirements	Response complete.	
20	Appendix Q - Fuel Specification Application	s6.3.3.3 PDF p 109	A) Provide explanation and supporting information for s6.3.3.3 claim "Significant feedstock variation is not considered likely due to the pre-sorted nature of municipal, commercial and industrial waste accepted at the facility", given s4.2.1.3 states "Waste composition data is impacted by seasonal changes and as such further testing should be conducted to confirm the above findings". B) Provide a plan for further testing/monitoring of feedstock to determine properties and the seasonal variation of these.	Sections 4.1.10, 6.3.3 and 4.2 updated to reflect EPA requirements	Response complete.	

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21	Application	PDF p45 / p104	The application lists unacceptable waste types and s4.1.10 gives an overview of quality control for feedstock.s5.7.4.2 gives an overview of rejected wastes management. A) Provide further detail of the "routine audit process" in s4.1.10. Include plan details of analytes and frequency of analysis for "processing and analysis in accordance with a statistically representative methodology" (at a laboratory). B) Provide procedure or plan for how these waste types will not be mixed in with fuel, and how contamination will be detected and managed.	Sections 4.1.10, 6.3.3 and 4.2 updated to reflect EPA requirements	Response complete.	
22	Appendix F - Air Emissions Application s4.1.10.1	Application PDF p44	Provide updated Air Emissions assessment and modelling to determine what will end up on bottom ash and fly ash to support resource efficiency claim (Application s4.1.10.1 / s4.1.8)	Section 4.1.10 updated to reflect EPA requirements	Response complete.	
23	Application	PDF p74	A) Please elaborate on the statement quoted below. Please include further consideration to adjustment of this variation of waste composition and its impact on the design of the process, over the life of the proposed facility. "It should also be noted that some of the parameters used in the assessment would change over the life of the proposed facility, including: • waste composition – various factors will influence the composition of waste coming into the proposed facility, which would affect the calorific value of the waste, influencing both biogenic and non-biogenic fractions" B) Provide explanation and supporting information for achieving net calorific value fuel specification through addition of C&I to MSW, given the statement quoted below. "Net calorific value (NCV) for the MSW is 7.2 MJ/kg; less than specification limit. However, NCV will be adjusted / increased by combining with C&I (Approximately 15-20 per cent) and would also increase through the implementation of FOGO separation"	Section 4.2.4.1 and 5.1.3.2 updated to reflect EPA requirements	A) This part response complete. B) Response incomplete. Explain determination of assumptions for C&I, such as NCV and assumption of 66% biomass, in both WAA and Appendix M. Provide supporting information. WAA 4.2.1.1. states that initially the facility would only accept weekly household waste (MSW). For what period is this proposed? What is the calculated R value for this phase? With consideration to the waste audit findings regarding the less than fuel specification calorific value (approx. 10% under-spec – see WAA Table 4-10 and section 4.2.4.1), how could this proposed period of MSW-only operation impact on the efficient operation of the facility, the emissions produced and the performance of the pollution control technologies proposed?	B) The assumptions presented in the WAA and Appendix M regarding C&I waste characteristics were developed, noting the following: - C&I waste data to the level of detail required is not publicly available - A member of the GSWT team has conducted a confidential audit of C&I waste. Supporting information cannot be provided due to the nature of the contract. - The Audit methodology was determined to be statistically valid to inform waste characterisation for a proposed 160,000 tonnes per annum RDF facility. More than 400 tonnes of C&I waste were assessed from 28 full front lift and 10 rear lift loads. MRF rejects were also assessed. - Based on experience from the project team, C&I waste will have a higher CV than MSW and contain lower food content - The ratio of MSW to C&I (approximately 80%/20%) is consistent with reference facilities. - It is recognised that further characterisation of waste (including C&I) is required prior to commencement of construction, to confirm the waste feedstock will comply with the fuel specification. GSWT intend to undertake further waste characterisation, as detailed in the WAA (Section 4.1.10 and 5.7.2.2). Updated Section 4.2.1.1. The facility will accept MSW and C&I from commencement of operations (not solely MSW)

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24	Application	A) PDF p99 B) PDF p56	A) Provide explanation and supporting data for determining the following claims in s5.7.1: "It is expected that bottom ash will likely be categorised as 'non-prescribed industrial waste', while fly ash will likely be categorised as either 'Category B PIW' or 'Category C PIW', with the potential for some of the heavy metal species to exceed thresholds for Category A." B) Provide further information regarding the following statement from s5.7.2.2, including explanation for not testing for leachability and further characterisation, given claimed likely classification of industrial waste for bottom ash. Give consideration to variation between Victorian and European waste fuel properties. "Analysis of the Forus bottom ash sample (ALS, 2019) indicates the material would be classified as 'industrial waste', pending leachability analysis and further characterisation in accordance Industrial Waste Resources Guidelines. It is anticipated that further investigations into classification of the bottom ash will be ongoing"	Sections 5.7.1 and 5.7.2.2 updated to reflect EPA requirements. Please note in response to Part B - the analysis results are indicative only with further testing to be undertaken at a later stage, as per approval. SMEC notes there will be variation in bottom ash based on waste feedstock variation between Europe and Victoria. However, the composition of bottom ash composition will be determined based on Vic waste, following further characterisation. Further characterisation would include leachability analysis.	A) Complete response. B) Complete response.	
25	Application	-	The Non-Prescribed Industrial Waste and Industrial waste terms have been used in the WA application for bottom ash. Please clarify the differences between descriptions used of Non-Prescribed Industrial Waste and Industrial waste.	These terms are interchangeable. Please note we have removed the words 'Non-Prescribed' to avoid confusion.	Complete response.	
26	Application	-	It is reported in the international literature that bottom ash generated through MSW EtW facility may also contain levels of dioxins. In consideration of this, provide further information to clearly address the management options for disposal of bottom ash, with consideration to the management and treatment of hazardous boiler ash + APC residues before any disposal to landfill.	Section 5.7.2.2 updated to reflect EPA requirements.	Complete response.	
27	Application	PDF p19	Provide further information on waste disposal from the facility – how will waste generated at the facility be handled, monitored and stored before it is sent for reuse or disposal in accordance with EPA requirements?	Section 5.7.4.1 updated to reflect EPA requirements	Complete response.	
28	Submissions	-	Provide a response to the Public Submissions (2 PDF files) published to Engage.Vic WA webpage (see Supporting Documents section).		Complete response previously received.	