SUBMISSIONS SUPPORTIVE OF THE PROPOSAL (Not shown on matrix) NEUTRAL SUBMISSIONS (Not shown on matrix)

ISSUES	SECTION																																F	SU	
Air Quality and Emissions		1 3	4	14 15	27 34	4 35	36 39	40	41	42 44	4 45	46 4	47 48	49 {	50 51	52	53 54	4 55	56	57 5	59	60	61 62	64	65 6	9 70	71	72 7	3 74	75	/6 7	/ 78	79 24	44 TOT	AL
An Quanty and Emissions																																		<u> </u>	\neg
Provide evidence to confirm or refute CSIRO conclusion that "there is indirect chemical evidence that there may be compounds present in the refinery emissions in significant concentrations, that have been either not identified or poorly quantified"	3.1.1)	<								1	
The ERMP should identify the sources of VOCs found at Boundary Road using robust source apportionment methods	3.1.2																								>	(1	
Provide a detailed explanation of how the increased efficiency will be achieved	3.1.3																								>	(1	
The uncertainty analysis included the findings of remodelling NOx using data assimilation which shows under-prediction at receptors 1 to 6 to the south. CSIRO concluded that all generated statistics should be considered to have a factor of 2 uncertainty (+100% to - 50%). This must be carried forward to the HRA.	3.1.4		x									x			x			x		x	(x		x			x			x			9	
Clearly indicate emission rates for each hazard from fugitive, stack and other sources along with indication of degree of certainty in each statistic, and reference for each estimate.	3.1.5																								>	(1	
Data assimilation of TAPM was not undertaken	3.1.6		Х																															1	
The analysis presented in the ERMP, including the HRA is focused on incremental (i.e. refinery only) impacts	3.1.7		x																															1	
Recommend that the odour/VOC relationship developed by Alcoa be independently reviewed	3.1.8		X															_																	
Validity of odour emission estimates	3.1.9	+ $+$	X X		X	_			_	X		X			x		XX	<u>د</u>				+	X X		Χ		\vdash	X	_	\vdash			\vdash	X 12	
Modelled odour impacts not representative of complaints Contribution of the refinery to the ambient environment is said to be small, but this does not take into account short term "events" where the refinery may make a bigger contribution	3.1.10		x																															1	
Provide justification of the estimate of an non-proportional increase in SO2 emissions with production including the reason why the emissions from the liquor burner will not increase with the doubling of throughput	3 1 1 2																								>	(1	
Include an assurance that the sulphur stream is not diverted to sulphur containing organic compounds such as mercaptans and other odorous compounds	3.1.13)	(1	
A number of problems discovered with the reports, which should be revised and tables amended.	3.1.14		X											x									X											3	
Further investigate some technical issues including, TAPM's building wake scheme, further testing of wind field data in fugitive source modelling and sensitivity modelling for fugitive sources	3.1.15		x																															1	
Inadequate meteorological monitoring and maintenance of equipment	3.1.16		х																															1	
Implement the van Emden & Power (AQ Appendix B, section 6) recommendations.	3.1.17																	1)	<									
Cooling tower should be better characterised.	3.1.18		X																	Х	(X											3	_
What will happen to Calciner 5 & 6 low volume vent emissions? Will there be any low volume vents with these calciners?	3.1.19		x																															1	
The use of best practice emission control for all the refinery (not just expansion) has not been identified in the ERMP	3.1.20		x						T																									1	
Is NOx a good tracer for all primary emissions. Not all emission sources emit uniform NOx. and the modelling may not accurately reflect emission dispersion behaviour from other (non NOx) sources	3.1.21		x																															1	
Calciner 3 improvements should be included in the modelled basecase	3.1.22		x																															1	
Why was source emission baseline compared to ambient baseline - is this a valid approach?	3.1.23		x																															1	
Refinery is located in an unsuitable position due to the influence of the escarpment	3.1.24				X	(x							Х																			3	
Emissions should not be averaged as it disguises short term concentrations.	3.1.25													x 2	x				X															3	
Increase in production must lead to an increase of emissions	3.1.26		$\left \right $			_		+			\parallel					+		X	$\left \right $	\square		+			-+			X	X		X	x x	X)	X 8	_
Tall stacks have made emissions worse further from refinery.	3.1.27																		X	X		X	xx					X						6	

The total number of submissions received was 242. The last submission shown on the table is 244 due to submissions being counted twice

SUBMISSIONS SUPPORTIVE OF THE PROPOSAL (Not shown on matrix) NEUTRAL SUBMISSIONS (Not shown on matrix)

ISSUES	SECTION	1	3	4	14	15	27	34	35	36 3	9 4	404	1	42	44	45	46	47	48	49	50	51 (52	53	54	55	56	57	58	59	60	61	62	64	65 (69
Monitoring should be independently conducted and audited	3.1.28																																Х			
Slurry tanks should be monitored and licenced.	3.1.29																																Х			
Cooling towers are the source of Legionaries disease outbreak on	3.1.30																																Х			
several occasions	5.1.50																																^			
Emission control measures on Building 50 and Calciner 3 have not been effective	3.1.31																										X						х			
Residue samples are washed prior to analysis to remove leachable	3.1.32																																			
compounds. This may affect fluoride results.																																				
Some emission estimates differ to NPI data	3.1.33			Χ																																
The original CSIRO study proposal should be implemented.	3.1.34																												Χ						Х	
There should be continuous ambient air monitoring at a number of	3.1.35																																x			
locations		_										_																							\rightarrow	
Comparison of ambient air with rural, not rural environment with industry.	3.1.36																																Х			
Some calciners and liquor burner were off during ambient		_										_	_											_	_											
sampling.	3.1.37																																			
Emissions from tall stacks is claimed to be only steam	3.1.38																																-		-	_
It should have been possible for Environ to directly or indirectly use				~																													-		-	_
the peak to mean ratios from TAPM output	3.1.39			х																																
Emissions from the refinery have an adverse impact on organic and	3.1.40							х																							х					
traditional farms	3.1.40							^																							^					
Air Quality - Residue Drying Area	•			1	1		1																													
A robust monitoring program must be instigated along with																		Γ	Γ		I						Ī			Ţ		l T				Ī
continuous particulate monitoring and collection of meteorological																																				~
data in accordance with recognised standard methods in an attempt	3.2.1																																			X
to verify modelled fugitive particulate emission, especially in regard to gustiness of wind.	1																																			
Assessment of dust is based solely on dust monitoring during the										_															_								\rightarrow		—	
winter months, with no summer data	3.2.2																																			
			1																												v	~	\rightarrow		~	
RDA dust emissions have a significant impact on neighbours.	3.2.3													Х																	Х	Х			Х	
The review period for the RDA by the LTRMS and RPLG should	3.2.4																	х															x			
be reduced from 5 to 3 yrs	5.2.4																	^															^			
Odour modelling from the cooling pond should be considered	3.2.5			х																													x	x		
exploratory.																																				
Air quality - Bunbury Port	1	<u> </u>		1		1		<u> </u>	-				-	<u> </u>	<u> </u>			<u> </u>				<u> </u>	-									<u>г т</u>	<u> </u>		<u> </u>	
Dust and noise will increase from Bunbury Port loading bays	3.3.1																																			
through the expansion Health Risk Assessment/Issues				I																																
Health Risk Assessment/Issues			1		1	1													1														<u> </u>		<u> </u>	<u> </u>
ERMP to include a summary table in the main document that gives, for each receptor and each chemical compound the GLC, human	3.4.1																																			Х
guideline value, toxicological endpoint, averaging time, HQ and																																				
bounds of uncertainty, i.e. an error estimate.																																				
Demonstrate why the principal metal components of the feed-stock																																				
are not a health risk to susceptible individuals, including vanadium,	3.4.2																																			x
zirconium, thorium, rubidium, niobium and strontium, irrespective	5.4.2																																			^
of their radionuclide status		_																																		
Demonstrate PM2.5 is not a health risk with this project	3.4.3																												Χ						X	Х
Table 1.0, AQ Appendix F should be expanded to include all			1																																	
chemicals detected or are reasonably certain to be present in	3.4.4																																			х
Wagerup refinery emissions and indicate reasons for inclusion or rejection of each substance in the HRA.																																				
The actual values used in each HI calculation needs to be shown in			<u> </u>					\vdash	+	-		+	+					—	-+	_	_		-+		-+	-+						├ -	\rightarrow		+	\neg
the ERMP and appendices. NEPM values which are presented and			1			1																														
not used in the HRA need to be clearly identified to prevent	3.4.5		1			1																														Х
confusion.																																				
Justification for the expected size fraction of TSP and expected	3.4.6		[T				T										T													х
compositions of those fractions	5.4.0		 																														\square		'	^
Clarify total mercury emissions under the current and proposed	3.4.7		1																										х							x
scenarios, its sources and control measures			<u> </u>					\vdash				-	-+													-+							\rightarrow		<u> </u>	-
	2.4.0		1			1																														~
Give assurance that the growth of the RDA will not increase the	3.4.8		1																																-	Х
risk to human health given the dynamic nature of the RDA			┨			<u> </u>		\vdash		+	-	+	-+													-+						┝─┤	\rightarrow	_	\rightarrow	_
	3.4.9		1	х		1																														
Compare substances modelled with those in the Worsley ERMP		_							+		-		+	-+		$ \rightarrow $			\rightarrow				+	-+	-+	-+							\rightarrow	\rightarrow	-+	
The existing refinery emissions has adverse health impacts and is	3.4.10	Х	1		х			X)	x)	x >	(X		Х	Х	x	Х		Х	X	X	Х			Х	Х	Х	Х	Х	х	х	Х	x	
making people sick.	L		I			I																														

											SUB
70	71	72	73	74	75	76	77	78	79	244	TOTAL
											1
											1
											1
		v									2
		Х									1
		Х									1
											3
		X									2
											1
		х									
										Х	1 1
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		X									4
Х											1
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		Х									4
											1
											1
											1
											2
											1
											1
	х	х	x	х		x	x	х	Х	v	1
	^	^	^	^		^	^	^	^	X	33

SUBMISSIONS SUPPORTIVE OF THE PROPOSAL (Not shown on matrix) NEUTRAL SUBMISSIONS (Not shown on matrix)

ISSUES	SECTION		_																						_				_		_	\square	SUB
		1			15 2	27 34	35	36 39	40	41	42 44	45 46	47 48	3 49 5	50 51	52 53	54	55 56	6 57 5	8 59	60 61			5 69	70 7	71 72	73	74 75	5 76	77 78	3 79	244	TOTAL
The ERMP does not address current health and amenity impacts	3.4.11		X																				x								_		2
The ERMP has not identified a causative agent for complaints	3.4.12		X				_										+			_						_			_	\vdash	—	'	1
The HRA is based on a dose-response relationship and is not predictive or correlate to illness	3.4.13					X	X				X				X			X				X											6
An increase in refinery production will result in increased health						-				-																				\vdash	+	+'	0
impacts (short-term emissions)	3.4.14																		X			X											2
	2 4 15							1																									
A full health impact assessment for residue dust and radiation.	3.4.15)	`													1
Only 27 compounds have been included in the HRA	3.4.16																	X				X											2
Mine workers should not have been included in the health survey	3.4.17																		X														
(Healthwise).	3.4.17																		^												\perp	'	1
	2 4 10																					v											
Alcoa does not recognise the correlation between refinery pollution	3.4.18																					X											
and complaints as found in AWN/CSIRO study 2003 The refinery poses a radiation risk and the increased rates of thyroid			-			_				_										_			_			_				\vdash	+	'	1
cancer in Healthwise study (2004) is not unexpected	3.4.19																					X											1
EPA to be provided a full copy of the Community Health Nurse																						~									+	+	
report 2002/03	3.4.20																					Х											1
The health survey results should be available for inclusion in ERMP	3.4.21																					x	x	,									
or prior to the expansion	3.4.21																					^	^	`									2
Ensure mechanism is in place for adequate follow-up surveys of	3.4.22										x																						
participants and any trends acted upon			_								~									_			_	_		_			_	\vdash	—	'	1
An independent body should undertake the health survey	3.4.23		_			_												X		_		_	X			_				\vdash	—	'	2
The health survey should include people who lived in area and have	3.4.24																						X	(4
now moved The health survey should not include people from outside the local										_										_						_				\vdash	+	'	1
area as this will influence the results.	3.4.25																		X														1
																															+	+	
Chemical illness in workers or community members adjacent to	3.4.26					X									x					ĸ		X											
Wagerup refinery since 1996 is not addressed in the ERMP.																																	4
Alcoa Medical Services is unresponsive in meeting the health needs						v																v											
of employees and others affected by chemical illness	3.4.27					X																X											2
Wagerup Land Management																																	
An adequate buffer zone should be established around the refinery	3.5.1		X								X		X		X							X		X				X	K .				7
Social and economic impact of the Land Management strategy is	3.5.2										x											x											
not adequately addressed in the ERMP.	5.5.2		_								~						+			_		~				_				\square	—	'	2
The town sites close to Wagerup refinery will be relocated 20 kilometres to the west	3.5.3			X																													
The throughput limit should be decreased if complaints from a										_										_						_				\vdash	+	'	1
wider area are received	3.5.4				X																												1
Alcoa prevents its tenants from complaining about refinery										v					v									,							+	+	<u> </u>
emissions and operations	3.5.5									х					X								X										3
Alcoa will not purchase properties outside the buffer area, even	3.5.6				,	x		x x					X	,		x x	x	x	x	x	x		X	,		x		x					
thought those residents suffer the same impacts.	5.5.0		_			^		^ ^					^	`		^ ^	^	^		^	^		^	`		^		^			\perp	'	14
The ERMP and Alcoa has not addressed the issue of community	3.5.7					x	X			x		x			X							X	x x	C I	X	x							
dislocation. The refinery and expansion make it difficult to sell property in the																														\vdash	—	'	10
area	3.5.8																					X	x										2
Property purchasers new to the area are not aware of the existing	2.5.0																v						~								+	+	
problems	3.5.9																X						x										2
Community Consultation Process																																	
Alcoa does not have community support for the expansion and	3.6.1																									x							
therefore should not proceed	5.0.1																									^						'	1
	3.6.2																	x	x	ĸ		X	x	C I									
The working group process was not independent, open or fair.			_							_										_						_			_	\vdash	—	'	5
The selection of the working group members was not fair or representative of the community.	3.6.3														X	X						X	X	(4
representative of the community.										-																					+	+	- 4
Why was the ECU study cut short and no final report or outcomes	3.6.4																						X			X							2
Concern over the Alcoa compliant system and fear of intimidation.	3.6.5						1		1 1								\uparrow					X				X	1 1		1		\top	X	3
Limited time for consultation on the expansion	3.6.6										X				İ			X	X			X	X	(1	\uparrow	5
Selection of expert reviews was not fair	3.6.7						1		1 1								\uparrow					X	X				1 1		1		\top	1	2
Open Forum issues not published	3.6.8																				1 1	X									\top	+	1
A full social impact assessment should be undertaken	3.6.9																			ĸ						X					\top	+	2
	1	4 <u> </u>		· · · · ·				· · · ·			I		· · ·										1	I	I	Ē	<u> </u>	I		<u> </u>			
Noise Emissions																																	
	2.7.1		v																													<u> </u>	
Noise Emissions	3.7.1		x																												\Box		1

The total number of submissions received was 242. The last submission shown on the table is 244 due to submissions being counted twice

SUBMISSIONS SUPPORTIVE OF THE PROPOSAL (Not shown on matrix) NEUTRAL SUBMISSIONS (Not shown on matrix)

ISSUES	SECTION																																				<u> </u>	SUB
It is unclear if the Alcoa-owned residences which they permit to be		1			15	27 3	54 35	36	39 40	41	42	44	45 46	47	48	49 5	υ 51	52	53	54 5	5 5	57	58	59	60 6 ⁻	1 62	64	65 6	9 70	71	72	/3 74	75	76 7	7 78	79	244	TOTAL
occupied are included in the discussion.	3.7.2)	('	1
Like to see a study along the entire length of old and new sections of the conveyor and various transfer stations	3.7.3)	(1
There should be a sign-off process for the detailed construction noise management plans for the various construction phases	3.7.4		>	¢																																		1
The use of best practice noise control for all the refinery (not just the expansion) has not been identified in the ERMP	3.7.5)	C																																		1
Existing noise levels are in excess of the prescribed levels and this matter still yet to be resolved	3.7.7										x								x				x			x					x							5
Noise levels will increase through the expansion	3.7.8												XX	(X								Х			Χ	Х										6
Conveyor affected residences currently still regularly record levels in excess of 40dB.	3.7.9																														X							1
Water Supply																																						ľ
The refinery expansion will result in a deterioration of water quality in Yarloop.	3.8.1					x	x							x					X							x		x										6
The expansion will result in an over commitment of scarce water resources in the region, reducing water levels and quantity available	3.8.2						x			x	x	x							x		×	x			×	x		x										10
Groundwater Quality		11				11_		11																			1 1				11				I			
Lack of groundwater (site) investigation in the vicinity of the proposal area	3.9.1)	(1
Is acid sulphate soils an issue for the proposal	3.9.2)	(1
Have not demonstrated the reasoning of utilising surface water	2.0.2																																					ľ
verses the use of groundwater from the Harvey River Main Drain and how this would be managed	3.9.3)																																			1
There will be further contamination of groundwater from the RDAs and refinery	3.9.4						x					X											X			X	X				X							6
Alcoa has had a significant number of spills indicating poor environmental management	3.9.5											X	X										X		X	K	X					xx						7
Surface Water Quality		1 1								-							-						-								<u> </u>		_			-		
The Wagerup stormwater containment system is badly damaged and is causing contamination	3.10.1																									X					X							2
Transport		<u> </u>		- <u>r</u>	<u> </u>			<u>г</u>						-			_	<u> </u>				<u> </u>								<u> </u>	<u> </u>		_			-		<mark>را</mark>
Increased impacts (noise, vibration dust, traffic delays) in towns from increased road and rail traffic	3.11.1										x																				X							2
Increased heavy rail traffic will result in greater noise levels having further negative impacts on residents.	3.11.2					X													X	X			X				X										!	5
A study of all sectors of track between Pinjarra and the Port and include cumulative noise impacts from all three upgrade proposals	3.11.3		>	C																																		
(Pinjarra, Wagerup and Worsley).																																					<u> </u>	1
Greenhouse gas emissions																																					T	
The refinery expansion will increase greenhouse gas emissions.	3.12.1									X		Х										X			×	X		X										6
Waste Management					-	гт	- T			-	т г				<u>г</u> г		-							<u> </u>	- T				1	-	гг			<u> </u>			т—	ا ا
An alternative method of disposal needs to be found for oxalate other than restarting the oxalate kiln.	3.13.1				Х																																	1
Visual Amenity		1 1				1 1		1l			1 1		<u> </u>	- 1	1		- 1	_ 1 1	L	I					1		L	1			1	1	1 1	1 1	- 1	1	<u> </u>	<u> </u>
Further planting on the northern end of Somers Rd is require to screen the RDAs	3.14.1															x																						1
Increased visual amenity impacts of the RDA.	3.14.2				1	$\uparrow \uparrow$					1 1			X	1 1					\uparrow		1		Х						1	$\uparrow \uparrow$							2
Increased visual amenity impact's from a second tall stack.	3.14.3											_†												Х												İ		1
Sustainability																											L											
Danahmank afforts to find alternative disease have the	3.15.1															x									X	x 🛛												
Benchmark efforts to find alternative disposal options for residue. Long term use of RDA's is not sustainable	3.15.2	$\left \right $		+	+	+		+			+	-+	-+	x	+			+	\rightarrow	+	+	+	x	\vdash			$\left - \right $			+	+		+	\vdash	-		<u>+</u> '	2
Increased production rate is not sustainable	3.15.3	$\left \right $	x	+	X	+					+	-+		^	+			+	\rightarrow	-+	+		X			_					+						+'	2
Expansion is not in the best long term interests of the South West and WA long term economic and social benefits	3.15.4		~	+				[]		x		\uparrow							\uparrow		\top		~						+	1				x 2	x x	x	\square	5
Alcoa does not comply with its own sustainability principles	3.15.5				+	+					+		-+		+					+		+	+		×				X		+						+'	2
Waste of natural gas resources and restricts long term energy options in WA	3.15.6			+	1			[]		x		\uparrow							\uparrow		\top					-	x									\top	\square	2
Alcoa to prepare closure and rehabilitation plans	3.15.7		x	+		+				+	+	-+			+					-+	+	X	+			X					\vdash						+-'	2
Use existing aluminium stocks through improved reuse and						\uparrow				x	\dagger				$\uparrow \uparrow$					+											$\uparrow \uparrow$						\square	<u> </u>
recycling	3.15.8									^																												1

SUBMISSIONS SUPPORTIVE OF THE PROPOSAL (Not shown on matrix) NEUTRAL SUBMISSIONS (Not shown on matrix)

ISSUES	SECTION	1	3	4 14	¥ 15	27	34	35 3	36 3	9 40	41	42 44	45	46	47	48 4	49 (50 51	52	53	54 5	5 56	57	58	59 6	0 6	1 62	64	65	69	70 7	1 72	73	74	75	76	77 7	78 79	244	SUB TOTAL
The refinery should adopt newer green technology	3.15.9							Х																																1
Biodiversity																																								
Mining or its impacts are not included in the ERMP. Mining and expansion will have negative impacts on jarrah forest. ERMP should include mining.	3.16.1									x					x									x		>	(x			x	x	x							8
Require that some formal assessment of the increased mining activity (including transportation issues) is undertaken.	3.16.1											x																												1
		1	2	32 2	3	4	8	5	1 2	3	8	11 5	4	4	7	2	5	4 8	2	8	4 7	6	11	17	5 5	5 1	0 40	12	21	17	4 2	2 24	3	4	1	4	3	3 3	5	342