PORT KEMBLA COPPER DEMOLITION PROJECT

RESPONSE TO SUBMISSIONS:

STACK DEMOLITION MANAGEMENT PLANS

Prepared by Port Kembla Copper Pty Ltd

For the NSW Department of Planning

13 December 2013

Port Kembla Copper Pty Ltd

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EXECUTIVE SUMMARY

The Port Kembla Copper (PKC) site was approved to be cleared to enable redevelopment as an employment generating precinct by the Minister for Planning on 15 August 2010.

The demolition of the main 200m stack was part of this approval. The technique approved was explosive demolition.

The conditions of consent required the preparation of management plans relating to the stack demolition before the demolition could take place. PKC has been liaising with the community and government agencies since July 2013 in the development of the plans. Drafts were exhibited by the Department of Planning and Infrastructure between 17 and 31 October, and six submissions were received. 94 issues were raised, several overlapping between submissions. This report addresses those issues raised. The submissions were not attributed to any particular group or individual, and so have been nominated as numbers 1 to 6 according to the numbers attributed to them in the version provided to PKC.

CONTENTS

1 RESPONSE TO SUBMISSIONS

1.1 SUBMISSION 1

Item		Response
1	Notice of residents of demolition: resident lost an airfare due to change of date	PKC apologises for the inconvenience caused by the change of date, and will continue to work with the agencies to agree a suitable date for demolition
2	Public meeting: commented that the meeting was a "complete fiasco"	PKC acknowledges that the meeting was interrupted by a disgruntled community member. Personal visits by PKC's General Manager, the Information Centre and other forms are communication will be conducted instead of further public meetings
3	"[PKC] has never been a welcome neighbour in Port Kembla"	Noted
4	The stack: "residents have been grossly misinformed about the structural safety aspects of the stack", allegations that Stack 360 plans have been "thwarted by the actions of others"	PKC has endeavoured to provide all relevant information to residents in relation to demolition of the stack, and will continue to do so. This includes provision of information in multiple languages using different forms of communication, and has and will include information on why and how the stack is being demolished, management measures which will be applied to prevent environmental and health risks, precautions residents may wish to take on the day of demolition, and contact details for further information.
5	The project: community representatives not present at Working Group Meetings	The Working Group is chaired and organized by government agencies, therefore PKC has no particular response on this issue
6	Dilapidation reports: "I was informed by WorkCover that a register would be available at the 'public meeting'", no written assurances of make good, "we don't know who would be responsible for any restoration costs	PKC was not aware the WorkCover had made any assurances on its behalf. All residents in the Exclusion Zone have been offered dilapidation surveys. PKC is an Australian registered company and must, by law, make good any damage it causes
7	Conclusion: "I believe that an appropriate public meeting should be held with all authorities in attendance and in a suitable venue which can accommodate all residents. The very manner in which the entire stack demolition project has been handled leaves a vote of no confidence and it has been left to the residents to be the guiding light of what is really required for such a major project. We assume that once the Shopfront period is over we will be given the required three months notice for the demolition."	It is foreseeable that an additional meeting would again be interrupted. Personal visits by PKC's General Manager, and the Information Centre, effectively replace the need for a further public meeting. PKC will comply with DP&I's requirements regarding timing of resident notification

1.2 SUBMISSION 2

Item		Response
8	"there is no evidence to support that this current demolition by explosion is safe and no assurance can be given that carcinogenic materials will not be dispersed in water and air so the precautionary principal must apply and Ministerial approval not be granted"	Ministerial approval has been granted for demolition of the stack. However, the government agency experts are required to be satisfied that matters relating to potential harm of environment and health are adequately addressed. To do this, PKC and it consultants have carried out a thorough risk assessment to identify potential hazards/risks, have developed management strategies (and contingencies) to address the hazards, and established a monitoring network to demonstrate the effectiveness of the management measures. This process has been carried out in consultation with the relevant government departments, in particular the EPA and NSW Health.
9	(several comments which are non-specific and do not appear to refer directly to PKC, and are therefore unable to be addressed)	
10	"All residents within Port Kembla where it is anticipated the vibrations may reach and impact should be informed as to why these Dilapidation Reports are important and receive copies of these surveys and reports prior to the Final Approval by the Minister or Delegated Officer"	All residents in the Exclusion Zone have been offered dilapidation surveys. The surveys will be made available to those properties if requested. Vibration estimates summarised in the Stack Demolition Management Plan indicate that no damage will occur to any property
11	"I reserve my right to respond further and have my late submission received following the requested documents being made available to me." [Documents requested include Monthly Reports]	Noted

1.3 SUBMISSION 3

Item		Response
12	"Since the cancelled demolition date what new testing and modelling has been carried out?"	A thorough assessment of the potential risks and hazards had been carried out by PKC and its consultants prior to the initially scheduled demolition date. This included: - Identification and removal of asbestos, and certification of its removal by an independent industrial hygienist. - Testing the composition of the bricks and residues exposed to emissions for metal concentrations. The more recent testing conducted by Golder Associates, EPA and WorkCover NSW is consistent with (and confirmed) the original testing commissioned by PKC

Item	Response
13 "Where are the EPA and WorkCover asbestos test reports?"	The reports are available on the Department of Planning & Infrastructure's website: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=2702
14 "Can we see the asbestos register?"	The asbestos register referred to is in the Demolition Management Plan 2010 (for the whole site) and does not relate to demolition of the stack
15 "What levels of toxins are considered high? (reference the brick analytical results)"	Potential risks to human health and the environment exist only if the population is exposed to hazardous substances. Asbestos has not been detected in the stack, whilst the metals in the stack: - are associated only with the internal portion of the stack, which is encased by an outer layer of bricks and the concrete weather shield of the stack. - form a very thin veneer or residue which is tightly bound to the internal bricks. - represent a very small proportion of the total mass of the stack (far less than 1%). For these reasons alone, it is considered unlikely that the surrounding population and environment will be exposed to hazardous levels of dust as a consequence of the stack demolition. To further minimise the potential for this to occur, PKC will also be implementing a robust dust mitigation / suppression network consisting of specially designed dust suppression units (Dust Boss DB-60s) along with more conventional high cast sprinklers. The dust suppression network will be fully trialled prior to demolition to demonstrate its effectiveness in wetting down and creating conditions which will mitigate dust from moving off site. EPA, Wollongong City Council, WorkCover NSW, the Department of Health and the Department of Planning and Infrastructure will be invited to attend and provide comments on the trial.
16 "The ClearSafe report identifies Chysotile asbestos as detected. How has this been dealt with?"	PKC and its consultants, along with EPA and WorkCover NSW, have carried out an exhaustive assessment for the presence of asbestos, which exceeds that required by normal environmental and demolition assessments. This has included: - Review, identification and removal of asbestos gaskets by licensed asbestos contractors. - Sampling representative stack bricks and concrete for asbestos (despite there being no documented evidence for these materials to contain asbestos) On the basis of the assessments, asbestos is considered not to be present within the stack.
17 "Has Sydney Water been formally advised? Can we see their written response?"	Sydney Water and PKC have been corresponding regarding the stack demolition. It is PKC's understanding that Sydney Water is satisfied with the arrangements

Item		Response
18	"Has the Port Corporation been formally advised? MM? Vesuvius? South Coast Engineering? The Mission to Seamen?"	PKC has worked with MM because they are inside the Exclusion Zone and therefore affected by the demolition. The other organizations have not, because there is no foreseen impact on them
19	"Has Wollongong City Council made arrangements to institute ground surveys and/or measurements…?"	PKC is not aware of such plans and suggests the respondent seeks advice from Council
20	"Has the state government done the same for the court house?"	PKC is not aware of such plans and suggests the respondent seeks advice from the Department of Planning & Infrastructure
21	"Has the Office of Environment and Heritage been involved in the process?"	Yes – the Office has been involved in all stages of the demolition project and continues to be actively involved via the EPA
22	"What is the penalty for damaging the heritage items?"	PKC is not aware of any applicable penalty
23	"Is there any pre-tensioned concrete in the chimney? Is there any declaration that states either way?"	The stack drawing and direct observation are of a steel reinforced structure. The demolition design has taken this into account. There are no drawings nor any observation made, of any of the equipment associated with pre-tensioned concrete such as cables or anchor points
24	"Where is the community consultation, detailed letters to the broader community, media statements"	Refer to Response 4
25	"Do you have plans to inform the community of your actions to date, the results of reports and testing, forward plans etc?"	Refer to Response 4
26	"Do you plan to give the community 2 months notice?"	The community has been advised of plans to demolish the stack since 2008 and PKC will continue to make special arrangements with those people affected
27	"If it is not right now who can the minister get to oversee the project and get it right?"	The current team is suitably qualified and experienced to carry out the project, and the appointment of consultants have been approved by the NSW Government agencies where appropriate
28	"Prior to commencement PKC informed the community that there was a $168m fund for remediation works if the business folded. How much of this is remaining?"	PKC confirms that there has never been such a fund
29	"Can we see the make good Clause and the insurance document indicating that all properties (not only those in the exclusion zone will be repaired as well as identifying the perpetual insurance of unforeseen damage to people and property."	All relevant insurances are in place, and proof have been provided to the relevant government agencies
30	"The maps used in Appendix G Traffic Management Information are incorrect and missing access roads used"	The maps in the final Evacuation Management Plan will be corrected
31	"Will there by security in Wentworth Lane …"	Security contractors have been engaged to secure the entire Exclusion Zone. Police will also patrol the area

Item		Response
32	"The infostack website states that all agencies would be at the 'shopfront' but that information does not appear on the timetable"	PKC has requested the attendance of all agencies listed. It is up to the agencies to attend when they are available, and PKC will advise the community of those times
33	"How and when will PKC contact the owners of property in the Exclusion Zone to advise them about Dilapidation Reports"	Property holders have been notified of dilapidation surveys during personal surveys with PKC representatives, and by letter
34	"I think that the Clearsafe reports (appendices 1,2 & 3 in the Golder Plan) show that the Chrysotile asbestos has been removed in the gaskets"	Refer to Response 16
35	"The problem could still exist with asbestos in the 'Flintkope surfacing'"	PKC understands that Flintkote was a bitumen-based waterproofing paint, and is not to be confused with the American Flintkote Company
36	"We do not know the health effects [of Acalor 23A and Acalor 7C] when smashed"	The substances Acalor 23A and Acalor 7C are trade names for polymers or plastics that are used as protective coatings similar to paints. They were understood to have been used 50 years ago to protect the inside lining of the stack. These polymers are called polyepoxides and polyamines and their toxicity has been reviewed by regulatory agencies. When new, animal studies have shown they have moderate toxicity after short-term and long-term intake (e.g. by ingestion), are not capable of causing mutations in cells (considered a feature of a cancer-causing agent) and do not produce allergic reactions. They have not been evaluated for carcinogenicity but there is no evidence they accumulate in biological tissues. Over time, the temperatures in the stack would have resulted in degradation and loss of volatile and other components through oxidation. Any residual coating within the stack lining would represent a very small percentage of the materials from the demolition. During the demolition process this aged and brittle coating will fracture and may produce dusts. This dust, and other dusts generated during demolition will be management through the documented dust control measures before, during and after the demolition event.

Item		Response
37	"Apparently the EPA lab report done in Perth WA found Mullite in Level 4 and 2. "	Mullite is a mineral comprised of aluminium and silica commonly used in making fireproof (ceramic) bricks. This mineral can produce airborne fibres. Animal toxicity studies have not shown it to be an irritant to the skin or be a skin sensitiser. It has not been evaluated for carcinogenicity. Studies of workers have reported respirable fibres within ceramic fibre factories as a source of fibres that when inhaled are capable of reaching deep into the lung. These studies then suggest that such exposures may be hazardous. One medical case report evaluating mullite factory workers suggests a lung condition may result from mullite fibre inhalation following long-term inhalation. On the basis of a short-term demolition operation long-term exposure is not feasible and fibre distribution will be readily managed through dust suppression and control measures and removal of wastes
38	"PKC (Golder) say that asbestos emissions are "unlikely". This suggests that there is a possibility of asbestos remaining in the structure and therefore the structure should be assumed to contain asbestos and dismantled in an approved (asbestos handling) method"	Refer to Response 16
39	"What shockwave modeling has been done? What geology reports have been done? What underground studies have been done?"	The studies and modeling are summarized in the SDMP. Geology reports are not considered necessary due to the small mass of the stack in comparison with the surrounding geology
40	"Can we see that calculations?"	A summary of the calculations are provided in Appendix I
41	Re stakeholder consultation: "Landholders and the community. How? When?"	Refer to Response 4
42	"The process and timing for notification of the community for demolition of the stack will be determined by consultation with the CLG. It will occur at least two months prior to demolition ...." Will this be done?	The CLG has continued to be updated about stack demolition plans since approved in 2010
43	"Calculations of the ground vibration from the stack .... 4.5 mm/sec at 200 metres." This contradicts SDMP 4.2.2 page 24 which says 3.7 mm/sec. which is correct?	The vibration calculations below indicate vibration of 4.27 mm/s at 200m. The SDMP has been updated for consistency
44	"Will drains be blanked off"	The sewerage and water supply pipes have already been blanked off. The surface drains empty into the water treatment plant
45	Re location of residual asbestos: "Has this been done? Can we see the report?"	This comment appears to be relation to the broader Demolition Management Plan (Appendix A to the Stack Demolition Management Plan). All asbestos within the stack and other site structures has and will be identified, removed and disposed off site by experienced and licensed contractors

Item	Response
46 "The stack height gives it the potential to fall anywhere in a circle of 410 m diameter with further potential fly material in an arc either side of and beyond the intended drop zone" Do PKC recognize this as a potential hazard? How is it being 'addressed?	This comment was written prior to detailed engineering of the stack demolition, and is not correct

1.4 SUBMISSION 4

Item	Response
47 "Exactly what control measures will PKC be putting in place to ensure that grated surface drains are kept clear during demolition?"	Internal drainage on the PKC site has and will continue to be maintained to keep the site free of standing water. Water and dust on the site is conveyed the site wastewater treatment plant for treatment prior to discharge under the site Environmental Protection Licence No. 1753. The stack demolition is unlikely to have any effect on drainage external to the site. However, as required by the Project Approval, PKC will make good any damage which the stack demolition causes to public infrastructure, including stormwater drains
48 "As water will be the main source to reduce dust emissions, what control measures will be in place post demolition to clear soil that might be contaminated from the chimney structure?"	Soil will not come into contact with the stack because the site is completely sealed. All fine and coarse rubble generated during the breaking up of the stack will be analysed and disposed of according to the Waste Classification Guidelines. Any sediment entrained in site surface water will be treated at the wastewater treatment plant
49 "How do PKC plan to sweep/collect and contain/dispose of fine and course debris generated from during the demolition? Who will be monitoring this and ensuring that additional silica dust and other toxic elements will not continue to be exposed into the environment and become air borne?"	Dust and debris generated during stack demolition will be managed in accordance with the Demolition Management Plan (Appendix A to the Stack Demolition Management Plan). These measures have been applied since demolition of the site commenced in 2010. A comprehensive monitoring program for dust has also been conducted since demolition began at the site, which has demonstrated the effectiveness of the applied measures. The results of the monitoring are provided to EPA, Wollongong City Council and the Department of Planning and Infrastructure on a monthly basis
50 "Page 31 indicates that as a contingency plan, if upgrades need to be made to the storm water management infrastructure, that these will be implemented as soon as possible to mitigate possible future/uncontrolled releases. Who has inspected storm water infrastructure and where can the results of this inspection be found?"	Site stormwater drains to the site wastewater treatment plan for treatment prior to discharge from the site. Some changes to the stormwater management system have been made to following demolition activities in parts of the site. However, stormwater continues to be transferred to and treated at the wastewater treatment plant

Item		Response
51	"Where are the applications to WorkCover NSW for details about the removal and handling of hazardous wastes?"	Only licensed and experienced contractors have been engaged to handle and remove hazardous waste from site. All waste removed from site has been classified in accordance with EPA requirements
52	"Where is the asbestos register and supplementary assessment?"	Please see Response 14
53	"Is there a demolition work site permit?"	All relevant permits have been obtained for the demolition on PKC's site
54	"Where is there evidence of and copies of "toolbox meetings" held by the demolition contractor and PKC where waste management will figure on the agenda??"	Prior to disposal, spoil material has and will continue to be tested and disposed of (by licensed contractors) according to EPA requirements
55	"How long will PKC be storing general waste and in particular potentially contaminated materials on site? And whilst contaminated materials are kept on site it should be made mandatory, not preferable, that it be stored undercover."	If the waste requires special disposal, it will be stored undercover until able to be safely disposed off-site

1.5 SUBMISSION 5

Item		Response
56	"Has it been established whether pre or post-tensioned concrete has been used in the construction of the stack? What affect will there be on the directional control of the felling of the stack?"	Refer to Response 39
57	"There still could be asbestos in the stack structure."	Refer to Response 38
58	"In one test, sub-dominant levels of Mullite were reported"	Refer to Response 37
59	"The levels of arsenic, cadmium, chromium, copper, iron, lead, nickel, selenium and zinc as reported in the exposed bricks report seem to be unacceptably high. How can we be sure that these toxic heavy metals do not disperse into a cloud to envelope the community?"	Refer to Responses 8 and 12.
60	"The Tileman & Co plan in the book shows that Acalor 23A is used as a paint inside the shell and Acalor 7C is used in mortar in the bracket at RI720'6"."	Refer to Response 36
61	"How can it be considered to continue with the proposed method of demolition?"	PKC is confident that the proposed demolition method is the only safe way to prepare the site for future use. The approach to demolition has been developed in consultation with EPA, the Department of Health, WorkCover NSW, Wollongong City Council and the Department of Planning and Infrastructure

Item		Response
62	"There is a possibility of asbestos remaining in the structure and therefore the structure should be assumed to contain asbestos and dismantled in an approved asbestos handling way."	Refer to Response 38
63	(Comments about dissatisfaction with consultation)	Refer to Response 4
64	"The Community Information Session on 15th August was poorly planned and badly run:"	Refer to Response 2
65	"PKC will not call a public meeting and have all the agencies present to answer questions."	Refer to Response 7
66	"The shop front has not been adequately advertised or staffed in accordance with what would work."	Refer to Response 32 PKC provided as much notice as was possible whilst complying with the processes set out by government agencies
67	"PKC has not delivered all the public letters it has claimed to deliver to selected groups."	PKC has diligently and professionally approached letter delivery and will continue to do so. The approach to consultation has been outlined in the Evacuation Management Plan
68	"Landlords of rented properties may not receive the letters intended for the property owners."	The notification of EZ occupants is to enable them to make arrangements for the evacuation. Landlords have separately been notified regarding dilapidation surveys
69	(Comments regarding brochure "PKC Stack Demolition: Plan Ahead")	Noted
70	Road closures: issues with accuracy, legibility, consultation	Refer to Response 30
71	Make Good Clause: proof of PKC culpability, underground infrastructure	Refer to Response 6
72	Heritage: Comments regarding the heritage listed structures	Information regarding protection of heritage structures has been provided in the *Heritage Management Plan* and *Demolition Heritage Management Plan*

1.6 SUBMISSION 6

Item		Response
73	"Shopfront": issue with limited notification	Refer to Response 66
74	"Shopfront": availability of agencies	Refer to Response 66
75	Infostack website [sic]: availability of agencies	Refer to Response 66
76	Promises made by Minister Hazzard	The comment is not addressed to PKC
Evacuation Management Plan		
77	Currency of dates	The Plan has been refreshed accordingly
78	Notifications excludes Illawarra Seniors College	That premises will not be affected on the day

Item		Response
79	Care for pets	Shelter will be available for pets supervised by their owners on the day of demolition, as outlined in the Evacuation Management Plan
80	Public meeting	Refer to Responses 2 and 7
Demolition notification		
81	"Will future letters that will be required to be delivered actually be sent out?"	Refer to Responses 24 and 67
82	"How is PKC going to contact the property owners with this important information [re dilapidation surveys]?"	Refer to Response 33
Security of properties and incorrect maps		
83	Security – "What method of protection will PKC use stop looter such as happened recently in the Bush Fire Zones?"	Refer to Response 31
84	"Will these maps be corrected and information used be reviewed?"	Refer to Response 30
Appendix A		
85	"A. How can this happen when 2 months notice of road closures etc are part of the Consent?"	Refer to Response 7
86	"B. This website was unable to be view by many people who tried to do so"	PKC is using best endeavours to manage the website appropriately
87	"C. Please advise of the demolition companies other "15 such stack demolitions""	The government agencies are satisfied with the skills and experience of the demolition contractor, and have approved his appointment
88	"D. This stack is … and that doesn't sound much like a "tree" to me"	The macro physical properties of the stack are very similar to a tree (tall, slender structure)
89	"E. PKCs top priority so far hasn't indicated their priority to be safety"	PKC takes safety very seriously and has an exemplary record on the site
90	"F. Not all access roads are shown on their maps"	Refer to Response 30
91	"G. This is surely a joke answer "	PKC is addressing impacts of the demolition very seriously
92	"H. 11,000 tonnes of concrete and brick stack hitting the ground will surely also make a sound"	Yes, and for a very short duration, for one time only
93	"I. The Exclusion Zone spoken of is now 300m"	Noted
94	"J. How and when will these bus timetables and diversion routes be published and distributed for the public and school children who use them"	As soon as a date is confirmed and arrangements have been made with the bus operators

APPENDIX 1: VIBRATION CALCULATIONS

TAIT CONDON PTY LTD								
ACN 067 884 119		57 Middleton Rd. Dee Why NSW 2099						
ABN 50 067 884 119		Ph-02 9972 1207 Fax-02 9972 1227						
CALCULATION OF PEAK PARTICLE VELOCITY (GROUND VIBRATION) DUE TO								
SHOCK FROM FALLING MASS								
Ref: Explosives Engineering Handbook								
PROJECT	**PRECISION DEMOLITIONS - PKC STACK**							
DATE	3/09/2013							
M = mass of structure =	tonnes	6850						
H = height of structure =	m	198						
g =	m/s/s	9.81						
Energy of Impact = E =	M x	H x	g =	**13305303**	**KJ**			
				13305.30	**MJ**			
Peak Particle velocity (root mean square) = V								
At a distance d =	m from point of impact			**400**	**300**	**200**	**100**	**50**
for k =	a constant for coupling ranging from 1 to 0			1	1	1	1	1
	depending on local plastic yield of soil							
	1 produces a maximum estimate of V							
E =	13305303	KJ						
n =	-0.5	= empirical constant						
then								
V =	[d/sqrt(kE)]^n							
where kE =				13305303	13305303	13305303	13305303	13305303
sqrt(kE) =				3647.64	3647.64	3647.64	3647.64	3647.64
d/sqrt(kE) =				0.11	0.08	0.05	0.03	0.01
Peak Particle velocity (root mean square) = V			**mm/s**	**3.02**	**3.49**	**4.27**	**6.04**	**8.54**
Note AS 2187								
Recommended Peak Particle Velocity								
Historical buildings, monuments, special buildings					V <	2 mm/s		
Houses, low residential, & commercial other than below					V <	10 mm/s		
Commercial & Industrial Reinforced concrete or steel frame buildings					V <	25 mm/s		
NOTE THIS OVER ESTIMATE AS FALL ZONE IS MULTI LEVEL & IMPACT IS NOT CONCURRENT								