Preferred Project Report

Knauf Insulation - Glass Wool Manufacturing Plant
Steel River Estate, Newcastle

Submitted to
Department of Planning
On Behalf of Knauf Insulation

September 2009 ■ 09187

JBA Urban Planning Consultants Pty Ltd ABN 84 060 735 104 ACN 060 735 104 w jbaplanning.com.au
Level 7, 77 Berry Street North Sydney NSW 2060 t 02 9956 6962 ■ 29 Beach Street Wollongong NSW 2500 t 02 4225 7680

Reproduction of this document or any part thereof is not permitted without prior written permission of JBA Urban Planning Consultants Pty Ltd.

JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Stephanie Ballango

4 September 2009

This report has been reviewed by: Gordon Kirkby

4 September 2009

Contents

Tables

Appendices

Contents

1.0 Introduction

1.1 Background

In May 2009, Knauf Insulation (KI) submitted a request to the Minister for Planning that the KI proposal be considered as Part 3A Major Project. The proposal was to develop the site for a glass manufacturing plant comprising:

- site preparation works, including excavation and bulk earthworks;
- construction of approximately 22,000m^2 insulation plant, incorporating:
- an oxy-gas fired furnace;
- high bay low part and low bay plant containing the fiberiser, forming hood, curing oven and cooler systems.
- wash water system;
- four emission stacks;
- binder system;
- a multi pack system (MPS); and
- workshop and ancillary offices.
- construction of associated service buildings, including an oxygen plant, batch house, cullet (recycled broken glass) storage; utility building and gate house;
- civil works, including:
  - internal road network;
  - construction of a 20,000m2 hardstand outdoor (uncovered) storage area to accommodate finished product;
  - 90 staff and 32 visitor at-grade car parking spaces; and
  - 17 at-grade truck parking spaces.
- relocation of a tertiary containment cell currently approved on the site but not yet constructed; and
- landscaping.

The Knauf Insulation Project Application Environmental Assessment Report (EAR) was publicly exhibited for a period of 4 weeks between 17 July 2009 and 17 August 2009. The Department of Planning (DoP) has advised that it has received 15 submissions in response to the public exhibition.

KI and its specialist consultant team have reviewed and considered the submissions. In accordance with clause 75H(6) of the Environmental Planning and Assessment Act 1979, this Preferred Project Report sets out KI's response to the issues raised, provides revised air and noise impact assessments, and provides a revised Statement of Commitments.

1.2 Submissions

The following breakdown of submissions were received from Newcastle City Council, State Government agencies and authorities and the general public in response to the public exhibition of the Project Application and supporting documents:

State authorities and agencies	9 (including 2 DECCW submissions)
Newcastle City Council	1 (in response to DGR consultation only)
Community	5

The State agency submissions required clarification on a number of matters including air and noise impacts, traffic and transport assumptions, construction of the tertiary containment cell, and greenhouse gas emissions.

Newcastle City Council's (NCC) submission focused on issues regarding compliance with the Strategic Impact Assessment Strategy (SIAS) previously approved for the site, contamination, air and noise emissions, and engineering considerations (Traffic, stormwater, subdivision layout).

Public submissions raised similar issues to those identified in agency and NCC submissions, as well as the potential impacts of the project on adjoining residents' health.

Overall the key issues raised in the submissions have been grouped in the following categories:

- Air Quality and Odour;
- Noise Impacts;
- Contaminated Land;
- Traffic and Transport;
- Water Cycle Management;
- Infrastructure and Utilities Servicing; and
- Waste.

KI's response to these key issues is provided at Section 2 of this Report. A detailed summary of issues raised by the community together with KI's response, is at **Appendix B**. The summary table also summarises the points of clarification requested by DoP in its letter dated 20 August 2009.

1.3 Community Consultation

During public exhibition of the EAR, KI and its consultant team facilitated a community consultation meeting (10 August 2009). The meeting was well attended by community, Council and Steel River Estate representatives, most of which indicated general support for the project.

Attendees sought further clarification regarding the plant's operation, particularly in relation to air and noise submissions. KI representatives responded to all queries with reference to the exhibited EAR.

The discussions at the community consultation have not warranted modifications to the plant's design or the preparation of additional specialist documentation.

1.4 KI Preferred Project

1.4.1 Amendment to Scheme

Since lodgement of the EAR for exhibition, KI and its consultant team has continued to refine the plant's proposed design and respond to the site's environmental issues.

That process has resulted in the following design amendments to the plant:

- Removal of fire water tanks;
- Extension of the plant line by 6 metres;
- Creation of a mezzanine storage area in the Low Bay;

- Relocation of the main stack to directly above the Wet EP (equating to approximately 10m);
- Minor arrangements to parking layout;
- Movement of the light vehicle entry north along Pambalong Drive to comply with Newcastle City Council's LEP requirements;
- Increase in the white wool stack by an additional 10m; and
- Increase in the height of the plant's entire slab by 300mm.

The proposed increase in the white wool stack has been recommended by URS to address air emissions (discussed in further detail in **Section 2.1**). DECCW has verbally indicated general support for the increased height. Based on the visual catchment analysis undertaken in the exhibited EAR, there are no visual impacts anticipated as a result of the increased height stack.

The increase in the plant's slab height is in response to further analysis undertaken by the consultant team, which has determined that a better cut and fill balance can be achieved and allows all material can be kept on-site. The increased slab height negates the need to excavate material that would then be required to be disposed of off-site.

The additional design changes are predominantly internalised and do not result in impacts to adjoining residents or Steel River Estate occupants. The relocation of the light vehicle entry is consistent with local planning controls and therefore raises no additional impacts.

The revised plans illustrating the design changes are attached at **Appendix A**.

1.4.2 New and Updated Studies

Since submission of the EAR, the Department of Environment, Climate Change and Water (DECCW) has requested clarification and additional details regarding the proposal's air and noise emissions. In response to this request, the air quality report has been supplemented by an addendum whilst the noise impact assessment prepared by URS has been revised to address key concerns raised by DECCW. Both the air report addendum and revised noise report are summarised in Section 2 and are attached in full at **Appendix C** and **Appendix D** respectively. Similarly, the exhibited Traffic Impact Assessment has also been revised and is discussed in Section 2 and attached at **Appendix E**.

In addition to the new studies, DECCW and DoP requested KI provide details of other KI plants established elsewhere in the world. The permits for Lannemezan (France) and St Helens (United Kingdom) and the United States of America's *Standards of Performance for Glass Wool Manufacturing Plants* (ie: a Federal Protection of the Environment Regulation) have already been provided to DECCW under separate cover and are reproduced at **Appendix F**.

1.4.3 Revised Statement of Commitments

In response to the issues raised in submissions, the exhibited draft Statement of Commitments has been revised to clarify and strengthen future planning and management actions. The revised Statement of Commitments is in Section 3.0 of this report.

2.0 Response to Submissions

This section provides a summary of the key issues raised in the submissions and a general response to those issues. Responses to the issues raised in the submissions are presented in table format in **Appendix B**.

The key issues raised in submissions are as follows:

- Air Quality and Odour;
- Noise Impacts;
- Contaminated Land;
- Traffic and Transport;
- Water Cycle Management;
- Infrastructure and Utilities Servicing;
- Waste; and
- Greenhouse Gas Emissions.

2.1 Air Quality and Odour

2.1.1 Emergency Scenario Emissions

Issue

The exhibited EAR indicated that the concentration of particulate emissions from the Emergency Stack will exceed the regulatory standard specified in Schedule 3 of the *Protection of the Environment Operations (Clean Air) Regulation, 2002* during planned maintenance works. The DoP and DECCW therefore requested the Air Quality Assessment be revised to include:

- Measures to prevent the facility from exceeding the regulatory air emission limits (including PM_{10} and metals);
- Clarification and justification of the assumptions used in the modelling and calculations, and further details of the process justifying these assumptions;
- Confirmation that the EAR includes an assessment of the worst case emissions of Type 1 and Type 2 substances;
- Revisions to the odour assessment to:
  - Reflect the appropriate odour criteria of 2OU;
  - Ensure all odour sources are included in the assessment including stack and fugitive emissions; and
  - Describe any proposed measures required to ensure compliance with this criteria.

Response

URS has prepared a supplementary report (**Appendix C**) to respond to and clarify comments raised by the DoP's independent air quality consultant, PAEHolmes in its review, as well as issues raised by Newcastle City Council (NCC) in its letter to the Department dated 10 July 2009.

Since exhibition, KI has also been in discussions with DECCW regarding PM_{10} emissions, with negotiations focussing on the options available to reduce expected emissions during scheduled maintenance when the emergency stack is in use (identified as 'the Emergency Scenario' in the originally exhibited Air Quality Assessment). Consequently, KI has committed to:

- significantly reducing production during scheduled maintenance, thereby reducing PM_{10} emissions;
- investigating and implementing processes within the first 2 years of operation to further reduce PM_{10} emissions during the Emergency Scenario; and
- in order to achieve odour concentrations within the 2 OU criteria, increasing the height of the Blowing Wool Stack by an additional 10m. It should be noted that the odour as identified in the original air report was during the Emergency Scenario. As KI has made the commitment to significantly reduce production during scheduled maintenance a conservative assumption of 10% odour emissions from the Wet EP stack has been assumed.

In summary, URS' supplementary report which is underpinned by these assumptions:

- clarifies the methodology, justification and assumptions used for the adopted stack calculations;
- confirms both Type 1 and Type 2 metals were modelled for the project;
- provides further comparisons between the emergency stack emissions and the in-stack regulatory guidelines, with specific reference to particulates and metals;
- concludes the revised ground level concentrations of odour off-site are predicted to be less than 2 OU, and that PM_{10} concentrations in ambient air surrounding the plant are unlikely to exceed the $50ug/m^3$ or result in elevated concentrations at sensitive receptors; and
- augments the proposed construction and operational mitigation measures, with specific reference to particulate matter and odour.

KI has revised its Statement of Commitment to incorporate the revised emission concentrations and mitigation measures into the project's design.

2.2 Noise Impacts

2.2.1 Project Specific Noise Levels

Issue

DECCW questioned the Project Specific Noise Levels (PSNL) for receivers at Locations A and D, and raised concern that the KI project will use all of the available noise capacity for industrial development within the Steel River Estate. DECCW requested KI review its PSNLs to provide capacity for additional noise producing industrial development within the Estate.

Response

KI representatives met with the DECCW and DoP officers on 26 August 2009 to discuss the PSNL. Following that meeting, KI agreed to review the exhibited Noise Impact Assessment and subsequently confirmed that the PSNLs should be adjusted as shown in Table 1 below, which comply with the Industrial Noise Policy (INP) Limits (Table 2) :

Table 1 – Predicted Operation Noise Levels

Receptor Location	Intrusiveness Criterion LAeq, 15min dB(A)			Modified Amenity Criterion LAeq, period dB(A)		
	Day	Evening	Night	Day	Evening	Night
A	56	51	46	60	50	**42**
B	56	51	46	60	50	**41**
C	48	48	43	55	37	**35**
D	45	43	40	55	45	**36**
E	56	51	46	60	47	**42**
F	n/a	n/a	n/a	65	65	**65**
G	n/a	n/a	n/a	70	70	**70**
H	n/a	n/a	n/a	55	55	**55**

Table 2 – Predicted Operational Noise Levels – INP Noise Limits, dB(A)

Receptor	Predicted Noise Levels (LAeq)					Criterion (LAeq)	Exceedance (dB)	
	Neutral Met Conditions		Adverse Met Conditions					
Period	D	E & N	D	D	E & N	E & N	All	
Wind Direction	No Wind	No Wind	NW Wind	Easterly Wind[1]	NW Wind	Easterly Wind		
A (R)	41.5	41.4	41.3	42.3	41.5	42.1	42	**No (~0.3)**
B (R)	31.9	32.0	32.1	32.9	32.8	33.2	41	**No**
C (R)	27.3	27.4	29.5	28.2	30.0	29.7	35	**No**
D (R)	33.6	33.6	33.4	34.2	33.9	34.3	36	**No**
E (R)	36.6	36.7	35.1	37.8	36.3	38.4	42	**No**
F (C)	51.4	51.4	51.1	52.4	51.5	52.2	65	**No**
G (I)	45.4	45.5	45.9	46.3	46.6	46.7	70	**No**
H (P)	30.7	30.8	33.1	30.9	33.6	33.0	55	**No**

Notes:

- 1 = During summer
- D = Day, E = Evening, N = Night
- R = Residential, C = Commercial, I = Industrial, P = Park

The exhibited Noise Impact Assessment has therefore been revised as a result of the adjusted PSNLs, with URS concluding that the plant can comply with the INP (refer **Appendix D**). The minor exceedance of 0.3dB at Receptor A during the day, evening and night scenario with easterly winds is considered a negligible exceedance and therefore can be supported. The Statements of Commitment have been revised to reflect the findings of the revised Noise Impact Assessment.

2.2.2 Meteorological Assumptions

Issue

DECCW's assessment of the potential noise enhancing meteorological conditions has determined that the results presented in the Noise Impact Assessment are inconsistent with other recent assessments in the area, and accordingly certain scenarios have not been considered in the modelling.

DECCW also advised that it does not concur with the assessment of potential noise enhancing meteorological conditions presented in the Noise Impact Assessment, due to the prognostic model used by URS.

Response

The revised Noise Impact Assessment at **Appendix D** has been amended to address DECCW's comments (refer to Section 5.3.3 of Appendix L) and to clarify the meteorological assumptions adopted for the assessment. These include modelling noise sources at identified heights, provision of acoustic insulation/cladding, and no noise attenuation through the roof ventilators and wall ventilations.

The findings of the exhibited Noise Impact Assessment remain unchanged as a result

2.2.3 Predicted Noise Levels and Impacts

Issue

Based on the PSNLs and meteorological assumptions, DECCW has recommended KI:

- in preparing the Construction Noise & Vibration Management Plan committed to in the Statements of Commitment, reference the Assessing Vibration: a Technical Guideline (prepared by DECCW and dated 2006) and Interim Construction Noise Guideline (prepared by DECCW and dated 2009);and
- undertake additional analysis during operation of the meteorological conditions, additional noise modelling, and assessment of predicted noise levels with all mitigation measures to confirm the PSNLs.

Response

The Statements of Commitment have been revised to incorporate DECCW's recommendations.

2.2.4 Noise Emissions – General Clarifications

Issue

The Department has requested:

- confirmation that the noise assessment has considered noise emissions from piling and rock breakers;
- further details of the reasonable and feasible options available to minimise the noise emission of the project.

Response

The exhibited URS' Noise Assessment does consider noise emissions from construction machinery and activities, such as piling and rock breakers (refer Section 5.4 of the revised Noise Assessment). The initial finding that a marginal (albeit insignificant) exceedance is expected at the nearest commercial premises during construction remains unchanged.

The revised Noise Assessment now includes an additional noise assessment by EMA Consulting Engineers (Appendix A of **Appendix D**). The additional assessment confirms that the overall calculated noise emissions are not expected to exceed the Steel River SIAS Environmental Envelope's day, evening or night noise allocations for the site. Notably, noise emissions will not exceed adopted limits at any of the residential receivers.

The findings are however contingent upon the acoustic design of the building. Specific wall and roof acoustic ratings have been incorporated into the revised Noise Assessment, which have also been adopted by the revised Statement of Commitments.

2.2.5 Off Site Transport Noise

Issue

DECCW considers the traffic noise inadequate on the following grounds:

- Existing traffic noise levels have not been determined at residential receivers along Maitland Road/Industrial Drive;
- Changes in traffic noise levels (LAeq, 15hr, dB(A) and LAeq, 9hr, dB(A)) as a consequence of the plant's construction and operational traffic will be outlined in the Construction Management Plan and Noise and Vibration Management Plans committed to in the revised Statements of Commitment;
- The assessment has not adopted DECCW's Environmental Criteria for Road Traffic Noise (ECRTN).

Response

Section 4.4 of the exhibited Noise Impact Assessment presented a qualitative assessment of the off-site traffic noise. In response to the three issues raised by DECCW:

- The Assessment did not include residential receivers along Maitland Road/Industrial Drive due to the lack of any residential dwellings directly fronting those roads. Receptors A and B considered noise levels south of Industrial Drive;
- Changes to the traffic noise levels pre- and post-construction are negligible, having been predicted to be less than 0.22dB above the existing noise levels at the worst affected residential dwellings, and accordingly satisfy the off-site traffic noise criteria of 2dB;
- The Assessment did adopt the ECRTN and identified criteria of 60dB(A) for the day scenario and 55dB(A) for the night scenario.

2.3 Site Contamination

2.3.1 Existing Site Contamination

Issue

DECCW has confirmed that neither the site nor the project encroach or impact upon the declared 20m wide buffer zone located on the southern bank of the

Hunter River. DECCW has also confirmed that it is satisfied with the project's approach to contamination within the site. DECCW also noted that the Environmental Management Plan Stage 9 and 10 Steel River Site (prepared by RCA and dated July 2008) and the Operational and Long Term Environmental Management Plan Proposed Tertiary Containment Cell Steel River Site (also prepared by RCA and dated July 2008) adequately address the existing contamination issues on the site and recommended that DoP impose conditions of approval on the project requiring compliance with those documents.

Response

As outlined in Sections 7.5 and 8 of the exhibited EAR, KI is committed to complying with both the Environmental Management Plan Stage 9 and 10 Steel River Site and Operational and Long Term Environmental Management Plan Proposed Tertiary Containment Cell Steel River Site, in so far as the primary containment cell is affected by the project. However, the proposed construction of the tertiary containment cell requires several amendments to be made to the documents to ensure the proposed mitigation measures are specific to the tertiary cell's design and location.

RCA has prepared a revised Operational and Long Term Environmental Management Plan which generally adopts the requirements of the *Environmental Management Plan Stage 9 and 10 Steel River Site* although with some amendments to respond specifically to the KI site.

The Statement of Commitments commits KI to amending the documents.

2.3.2 Integrity of Primary Containment Cell

Issue

DECCW has noted the project does not strictly comply with the Environmental Management Plan Stage 9 and 10 Steel River Site in relation to loading and piling through the primary containment cell. DECCW has recommended a site auditor, accredited under the Contaminated Land Management Act, 1997 review the proposal.

Response

A revised Operational Long Term Environmental Management Plan is attached at **Appendix G** addressing the full range of matters identified by the Department.

The Statement of Commitments have been revised to reinforce KI's commitment to compliance with the revised Operational Long Term Environmental Management Plan. The Statement of Commitments also commit KI to obtaining the relevant Site Auditor Statements.

2.3.3 Tertiary Containment Cell

Issue

DoP has requested KI confirm and/or clarify:

- the location of contaminated material which is proposed to be contained within the Tertiary Containment Cell;
- the progress of the remediation across the Steel River Estate; and
- the proposed remediation and ownership/management regime proposed on the KI site.

The Department has also requested Site Auditor endorsement of the proposed location of the Tertiary Containment Cell and the Tertiary Containment Cell's

compliance with the Operational and Long Term Environmental Management Plan during the design and construction process.

Response

We can confirm that arisings excavated during development of other lots and construction of roads within the Steel River Estate, are currently stockpiled on the KI site. KI proposes to place the stockpiled materials along with materials arising from the plant construction into the Tertiary Containment Cell.

The proposed chronology of events can be summarised as:

- Relocation of the existing stockpiled arisings within the site to suitable locations away from the proposed plant location;
- Stockpiling of new arisings resulting from excavation with the existing stockpiles;
- Bunding and treatment of new stockpiles in accordance with the Steel River Construction Guidelines;
- Construction of the Tertiary Containment Cell;
- Placement of arisings into the Tertiary Containment Cell, which will be sized to a volume capable of holding all arisings on the KI site;
- Capping and covering of the Tertiary Containment Cell with hardstand or other approved materials, thereby requiring future arisings from elsewhere in the Estate to be relocated off site entirely.

The site including the Primary and Tertiary Containment Cells will be owned by KI. BHPB as the original polluter will continue to be responsible for the ongoing ground water monitoring in accordance with the voluntary remediation agreement with DECC.

Attention is also drawn to DECCW's submission which notes that DECCW is aware that a site auditor has already reviewed the tertiary cell design and proposed groundwater monitoring and provided comments on its adequacy. Notwithstanding this, the revised Statement of Commitments reinforce KI's commitment to obtaining the relevant Site Auditor Statement(s) for all works related to the primary and tertiary containment cells.

2.4 Traffic and Transport

2.4.1 Pacific Highway Intersection

Issue

The RTA is of the view that the project does not comply with the Land and Environment Court 2007 judgement which required a left-in access from the Pacific Highway into the Steel River Industrial Estate (Judgement No. 11298).

Response

The Land and Environment Court Judgement relates to a separate DA for the development of the Steel River Estate, which originally envisaged the KI site being subdivided into 32 individual allotments and up to 690 traffic movements per hour(refer Section 7.11.1 of the exhibited EAR). As demonstrated in Section 7.11.1 and Appendix N of the exhibited EAR, the KI plant is likely to only generate 68 light and 14 heavy vehicle trip movements per hour, and accordingly will generate significantly less vehicle trips per hour. The second access from the Pacific Highway is therefore not considered necessary.

KI representatives met with the RTA, NCC and DoP officers on 2 September 2009 to discuss the proposed intersection. At that meeting, it was agreed that KI would strengthen the exhibited traffic impact assessment to:

- demonstrate the left -in turn is not required from the Pacific Highway, having regard to existing traffic movements and the plant's proposed operational traffic movements;
- clarify the PM peaks expected for the plant;
- incorporate 10 year traffic growth projections; and
- incorporate the results of additional manual traffic counts that have been undertaken since public exhibition of the EAR.

The revised Traffic Impact Assessment at **Appendix E** has incorporated the above requirements.

2.4.2 Traffic Impact Assessment

Issue

The RTA and the Hunter Regional Development Committee (HRDC) have requested a new traffic impact assessment with additional traffic counts and modelling to assess the impacts of the project.

Response

The meeting of 2 September 2009 between KI, RTA and DoP representatives addressed the RTA's and HRDC's submissions as outlined above, and a revised Traffic Impact Assessment has been prepared to respond to the key issues raised in those submissions (**Appendix E**).

2.4.3 Emergency Access

Issue

The RTA and NCC requested a publicly accessible emergency access be constructed from the north western edge of the site to the Pacific Highway.

Response

Unfortunately, publicly available emergency access is not feasible through the KI site for safety and security reasons. Due to plant operations, KI will fence the entire site and the access driveway at the Pacific Highway will be locked and gated.

During an emergency and in the event the main Steel River Estate access at Steel River Boulevard is blocked, KI will permit emergency vehicles and KI staff to access and exit the site from the access driveway on the KI site. In exceptional circumstances, KI will also allow Steel River occupants to exit the Estate via the same emergency access driveway. The Statements of Commitment reflect this proposed arrangement.

2.4.4 Public Transport and Non-Car Usage

Issue

DoP and NCC have requested KI amend its traffic assessment to include details of:

- the proposed pedestrian/cycle access;
- provision for public transport/alternative transport modes; and
- a sustainable travel plan that could be implemented.

NSW Transport and Infrastructure (formerly Ministry of Transport and herein referred to as NSWTI) has raised similar concerns and specifically requested the preparation of a Workplace Travel Plan to encourage a greater shift to public transport and non-car transport modes amongst staff and visitors to the site. NSWTI has also criticised the EAR for not considering the extension of the rail siding/link into the site and potential use of the rail line for the transport of goods and raw materials.

Response

The pedestrian / cycle access for the site is to be via the existing footpaths and cycle ways provided within the public road reserves both within the Steel River Estate and beyond. The exhibited EAR identified that the cycle way could be extended to the River foreshore (refer Figure 25 of the exhibited EAR). The KI plant will include bicycle racks, showers and change rooms for staff who chose to walk, run or cycle to work. The Statement of Commitments have been revised to reinforce KI's commitment to providing these facilities.

We note that there are no current bus routes within the Steel River Estate. KI would encourage the use of public transport to work in the event that a bus provider introduced a route within the Steel River Estate.

KI is interested in extending the rail siding into the site for delivery of raw materials and transport of product, subject to a feasibility (approvals, logistics, cost, etc) analysis following establishment on the site. KI has accordingly revised its Statement of Commitments committing KI to use best endeavours to investigate future opportunities to extend the rail siding into the KI site.

2.5 Water Cycle Management

2.5.1 Stormwater Events

Issue

DECCW has sought clarification as to whether the stormwater concept design can accommodate the 1 in 20 and 1 in 100 ARI storm events.

Response

As outlined in Section 7.8.1 of the exhibited EAR, the stormwater system has been designed with a capacity to accommodate the design flow for a 1:20 year ARI storm event with exceedance directed via overland flow to the designated water quality control ponds.

The hydrological assessment predicts that the total discharge post construction for a 1 in 100 year ARI storm event would exceed the maximum capacity of the two water quality control ponds. However, these ponds are sized and intended to act as water quality ponds rather than detention basins in any such an event will overflow to the River.

2.5.2 Stormwater Drainage and Diversion

Issue

DECCW has also sought further clarification on the water quality control ponds and specifically who will be responsible for the proposed monitoring and cleaning of the water quality control ponds the project relies on.

Response

There are currently two water quality control ponds relevant to the KI plant (WQ1 & WQ2). WQ1 is within the KI site, whilst WQ2 is to the north of the KI proposed land. Discharge from the site to each of the ponds is an approximate 50:50 split.

WQP1 has been constructed as a sediment pond and is proposed to be constructed generally in accordance with the attached Patterson Britton design which was prepared for Domaine Steel River in the preparation of the original subdivision (refer **Appendix H**). The design of the WQP1 will however need to be finalised to correspond to the KI plant and proposed site usage. The design will be finalised prior to Construction Certificate (refer to revised Statement of Commitments).

WQP2, which is located outside the KI site, has already been constructed and is in operation for other lots on the Steel River Estate.

Notably, the Hunter-Central Rivers Catchment Management Authority (CMA) has confirmed that the project does not raise any issues of direct relevance to the CMA.

KI will own and monitor WQP1, whilst WQP2 will continue to be owned and managed by the Steel River Community.

2.5.3 Stormwater Harvesting

Issue

DoP and Hunter Water Corporation (HWC) have suggested KI investigate stormwater harvesting and reuse beyond the proposed 220 kL of rainwater harvesting.

Response

KI has explored stormwater harvesting and reuse as suggested by the Department, however preliminary findings have concluded the rainwater system will provide an unviable 2 -3 days worth of water based on the proposed storage and rainwater contribution. KI's rational for forming this view is set out below.

The median annual rainfall is 1063.5 mm with an average of 8 rain days per month of rainfall greater than 1mm and 2 to 3 days of rainfall greater than 10mm. Monthly median rainfall ranges from a low of 57.4 mm (September) to a high of 102.2 mm (May). Assuming the above conditions, the plant roof's 22,500m2 area could capture between 1,294 -2,300 kL of rainwater per month (equating to 15,528-27,600kL per annum).

The plant requires approximately 480kL of process water per day to operate the cooling tower and undertake the wash water process (equating to 14,637 kL per month). The water quality targets and requirements for the cooling tower and wash water processes are extremely high and accordingly roof water must be subjected to a stringent treatment process prior to use. The net harvest following first flush and treatment water rejection is in the order of 28% which results in an additional harvest of only 644-931 kL per month. The initiative is therefore economically and environmentally unfeasible.

It should be noted that up to 220 kilolitres of rainwater is proposed to be sourced annually from four rainwater tanks appropriately located around the proposed buildings. These rainwater tanks have been strategically located to allow the use of rainwater for toilet flushing. This will include toilets in the Office / Workshop area, the Gate-house, within the High Bay section of the plant and the Batch-house. As with all rainfall dependent systems, a top up arrangement will be put in

place to ensure viable levels of supply, with potable water supplementing rainwater when required.

2.5.4 Water Supply and Servicing

Issue

HWC has advised that:

- the project can be serviced from the existing 250mm water mains in either Channel Road or Riverside Drive;
- sufficient capacity exists in HWC's water main system to meet minimum pressure requirements;
- KI will however need to construct a 250mm water main for security of supply linking the existing water main at the site to the existing 250mm water main in the Pacific Highway;
- Easements currently exist in favour of HWC within the site that will need to be adjusted and abandoned at the property boundary;
- A HWC chlorinator is situated adjacent to the western boundary of the site, which is accessed via an easement within the proposed KI site. No building should be located within the easement.

HWC has also advised that the project triggers a Section 50 Notice of Requirements application, and recommended DoP impose appropriate conditions to remind KI of its statutory obligations under the *Hunter Water Act, 1991*.

Response

KI notes that there is currently adequate capacity within the water supply infrastructure to service the project. KI does not believe that an upgrade of the water mains network from the Pacific Highway is warranted given HWC has already confirmed available water supply from Channel Road.

The existing easements will be reconciled as part of the land transfer between the current vendor and KI. KI will continue to liaise with HWC in this regard to ensure all necessary easements are retained.

The Statements of Commitment have been revised to reinforce KI's commitment to working with HWC to obtain the required Section 50 Compliance Certificate.

2.6 Waste

2.6.1 Waste Avoidance and Resource Recovery

Issue

DECCW has recommended DoP consider imposing conditions of approval on the Project Application which encourage maximisation of recycling, and specifically cullet. DECCW has also suggested KI should prepare a "raw materials report" to determine use and mix of recycled glass and process capability.

Response

KI is committed to operating an environmentally sustainable plant and in doing so utilising the most efficient and economical methods to produce their end product. Cullet quantities are highly dependant upon the furnace type (ie: small furnaces can rely on up to 80% of the raw materials comprising recycled glass). The KI furnace is limited to a maximum 60% of raw materials comprising recycled glass, which comprises approximately 50% bottle glass and 50% plate glass. It should

be noted however that the cullet industry in Australia is very competitive, and demand is much higher than supply. KI is in negotiations with a number of cullet suppliers for the proposed plant, however preliminary discussions suggest that suppliers are currently unable to provide the volumes and quality of cullet that will be required by KI.

In this context, KI has assumed it will be able to obtain 15% of the raw materials for the plant from the Australian cullet market. KI is however a proactive organisation and recognises that using recycled glass is not only more energy efficient, but also reduces the amount of waste in communities. The Statement of Commitments have therefore been revised, to commit KI to investigating opportunities to uptake greater proportions of cullet from the market if demand can be met.

3.0 Statement of Commitments

In accordance with Part 3A of the Environmental Planning and Assessment Act 1979, the following commitments are made by KI to manage and minimise potential impacts arising from the plant. These commitments replace the draft commitments included with the EAR.

3.1 Construction Management

KI will undertake construction in accordance with the Construction Management Plan attached at **Appendix I** of this report. Noise, traffic, dust and erosion, and waste arising from construction will be managed in accordance with the Plan.

3.2 Air Quality

- KI will prepare a Construction Environmental Management Plan (CEMP) prior to commencement of works which will incorporate the following environmental safeguards into the during the construction processes to address air monitoring and management:
  - use of water sprays during dry, windy conditions, to dampen soils prior to excavation and handling;
  - spraying, watering and covering of stockpiles as relevant;
  - loading of construction vehicles up to (not over) the side and tailboards. All loads will be covered, and the undercarriages and wheels of all trucks will be removed prior to exiting the site;
  - stabilisation of long-term stockpiles using fast-seeding grass or synthetic cover spray;
  - sealing of major access roads into the site, or alternatively controlled speeds on unsealed roads to minimise dust; and
  - standard dust control mitigation measures ordinarily carried out during construction works.
- During scheduled maintenance, KI will significantly reduce production to ensure reduced PM_{10} emissions.
- Within the first 2 years of operation, KI will investigate and implement alternative processes and technologies to further reduce PM_{10} emissions during Emergency Scenarios.
- KI will comply with the 2 OU criteria.

3.3 Contamination

- To ensure that the redevelopment of the site is managed in a way to prevent any contamination in the future, KI will prepare a construction management plan that requires construction activities to be undertaken in accordance with the Managing Stormwater Volume 1 Soils and Construction (Landcom, 2004).
- KI will obtain the required Site Auditor Statements for all proposed contamination works.

3.4 Primary Containment Area

- Development will be generally in accordance with the Steel River Construction Guidelines and Operational and Long Term Environmental Management Plan Proposed Tertiary Containment Cell Steel River Site.

- KI will prepare a site specific Operational and Long Term Environmental Management Plan for the Proposed Tertiary Containment Cell Steel River Site, which will adopt amongst other things, the alternative control measures recommended by RCA Australia at Section 2.3 of its report (Appendix I of the exhibited EAR);
  - all relevant site construction management guidelines will be followed to ensure the protection of both site workers and the integrity of the remediation strategy for the site;
  - the pile system will be designed to ensure infiltration of surface waters into the primary containment area does not occur;
  - contingencies will be made for pile protection or corrosion loss given the ground may be chemically aggressive to buried structures.

3.5 Tertiary Containment Cell

Following approval of the tertiary containment cell KI will incorporate the recommended alternative control measures to suit the specific site constraints of the new location, namely:

- construction of a diversion drain around the foot of the residual clay embankment to divert any surface water that infiltrates the soil profile;
- provision of an additional layer of coarse drainage gravel overlain by 'bidim' (a geotextile) to allow dissipation and lateral groundwater discharge to the surrounding strata rather than into the lower levels of the containment cell;
- fill and residual clay should be situated beneath the proposed tertiary containment cell base to avoid localised groundwater flow;
- incorporation of the alternative control measures outlined in Section 2.3 of RCA Australia's report (Appendix I);
- verification of the soil profiles, groundwater levels and the likely extent of contaminated material at the new location during the construction works.

3.6 Soils

KI will prepare an Acid Sulphate Soils Management Plan in accordance with the NSW Government's Acid Sulphate Soil Manual which will include:

- A description of mitigation strategies for the treatment of soil, including the application of lime to disturbed soils.
- A monitoring program – outlining the parameters to be monitored, the number of locations, monitoring frequency, and analyses to be conducted.
- Contingency procedures for remedial and restoration action in the case of unexpected events or the failure of management procedures.

3.7 Traffic Management

KI will develop the following plans:

- A detailed Transport Plan (including obtaining approvals) for the transportation of facility components and equipment.
- A Traffic Management Plan for the operational phase, detailing traffic management measures for:
  - safety for all modes of transport;
  - potential hazards;
  - maintenance of road network; and

- cumulative impacts of traffic movements.

KI will also:

- Construct internal roads in accordance with Australian Standards.
- Provide alternative emergency vehicle access from the Pacific Highway to the western boundary of the site via a gravel driveway for the use of emergency vehicles and KI staff. KI will permit emergency vehicles and KI staff to access and exit the site from the access driveway on the KI site. In exception circumstances, KI will also allow Steel River occupants to exit the Estate via the same emergency access driveway.
- Investigate future opportunities to extend the rail siding into the KI site.
- KI will provide bicycle facilities, showers and bike lockers on site to encourage staff to use non-car based modes of transport to and from work.

3.8 Noise and Vibration

3.8.1 Construction Noise and Vibration

KI will prepare a Construction Noise and Vibration Management Plan in accordance with the (former) DECC Environmental Management – Noise Assessing Vibration: A Technical Guideline (2006), and Interim Construction Noise Guideline (prepared by DECCW and dated 2009.

3.8.2 Operational Noise

- KI will apply the following acoustic treatments to the plant:
  - 0.48mm thick Colorbond steel cladding wall to the external walls of the MPS, Low Bay, Wash Water, White Wool, Utility and oxygen plant;
  - Colorbond steel cladding external walls in the High Bay with acoustic insulation to achieve a minimum STC rating of 30;
  - 0.48mm thick Colorbond steel sheeting to the roof of the plant over the MPS, Low Bay, Wash Water, Utility and oxygen plant;
  - Colorbond steel cladding of the roof above the White Wool and High Bay with acoustic insulation to achieve a minimum STC rating of 30; and
  - Noise attenuation of roof ventilations to an STC rating of 7.
- KI will comply with the Predicted Operation Noise Levels identified in Table 5-4 of the Revised Noise Assessment attached at **Appendix D** of this PPR.

3.9 Landscaping

All landscaping works will be provided in accordance with the SIAS Landscape Development guidelines.

3.10 Water Cycle Management

KI commits to implement the following measures to manage any impacts associated with the water cycle on site:

3.10.1 Operational

- Water quality devices will be incorporated into the drainage system once the development becomes operational.
- Where practical rainwater harvesting will be used for use in toilets.
- Spill control measures will be adopted around all potential spill sites including specific sump and clean out measures.

3.10.2 Construction

- A Construction Environmental Management Plan will be prepared to ensure all construction works are undertaken in a manner to minimise the potential for soil erosion and sedimentation. As a minimum, the measures outlined in the Managing Urban Stormwater – Vol 1 Soils and Construction should be implemented.
- Construction will be planned to minimise the time that disturbed land is exposed and appropriate erosion prevention and sedimentation devices will be installed and maintained where areas are disturbed.
- Construction of Water Quality Pond 1 in the northern corner of the site will be undertaken generally in accordance with the conceptual plans prepared by Patterson Britton (Figures 1-4 of **Appendix H** of this PPR), and will be subject to detailed design by an appropriately qualified engineer.
- Sediment basins will not be used as their construction may expose the underlying material to additional infiltration of water, possibly mobilising the contaminated material capped on the site.
- Construction will be undertaken in accordance with the conceptual erosion and sedimentation plan (see Drawing number H59657 of Appendix B of the exhibited EAR).
- Staff facilities will be installed and maintained so that pollutants, including wash water, are not conveyed from the Site in stormwater. All wastewater during the construction period will be disposed of either via a connection to the existing Hunter Water sewerage system and / or offsite to a licensed facility.
- Spills will be minimised through the application of protocols for the handling of hazardous materials. If any spill occurs, it is likely to be of a small volume and contaminate only a small area. All possible pollutant materials will be stored clear of site boundaries and stormwater drainage lines and in a designated covered area. Containment bunds will be constructed with provision for collection of any spilt material.

3.11 Visual Impact

KI commits to mitigate any potential lighting impacts by complying with Control of Obtrusive Effects of Outdoor Lighting (Standards Australia, AS 4282.

3.12 Waste Management

- KI will implement and monitor procedures and practices to manage solid and liquid waste from operations.
- Within 2 years of operations commencing, KI will investigate opportunities to uptake greater proportions of cullet from the market.

3.13 Hazards

KI commits to undertaking the following mitigation measures to manage potential hazards on site:

- Storage and unloading areas will be designed in accordance with AS3780 for corrosive substances (incl. bunding).
- Hot work permit system will be established for all hot work such as welding, grinding etc.
- HAZOP or other structured hazard identification technique will be used to determine adequacy of process controls, trips and alarms.

- Location of natural gas isolation valve will be determined to allow for rapid isolation from a safe location in case of an incident.
- Hazardous Area Classification (zoning) required in accordance with Australian Standards. Electrical equipment will be determined in accordance with Hazardous Zones.
- The burner controls will adhere to international codes and standards.
- Spill kits will be available on the site for incidental spillage or leakage from the domestic fuel storage and handling.
- AS1940 Storage and Handling of Flammable and Combustible Liquids and AS 1596 The storage and handling of LP Gas to be referred to in the design of LPG and fuel storages.
- KI will prepare a Fire Risk Management Plan or other fire risk study for a detailed determination of required fire systems.
- Ensure hydrants and hoses comply with standards and code requirements.
- Location of fire hose reels to be determined in accordance with the requirements in AS1940, AS2419.1 and Building Code of Australia. Hose reel needs to be compliant with AS1221 and AS2441.
- At least two emergency access points for the fire brigade are required to access the site.
- All fire protection equipment will be maintained to AS1851.
- The site fire protection drawings will be prepared to show the exact location of all forms of fire protection once the detail design has finished.