umwelt

Inspired people | Dedicated team
Quality outcomes

Independent Cement

RESPONSE TO SUBMISSIONS FOR CEMENT AND SLAG RECEIVAL AND DISPATCH TERMINAL, MAYFIELD NORTH

April 2013

RESPONSE TO SUBMISSIONS FOR CEMENT AND SLAG RECEIVAL AND DISPATCH TERMINAL, MAYFIELD NORTH

April 2013

Prepared by
Umwelt (Australia) Pty Limited

on behalf of
Independent Cement & Lime Pty Ltd

Project Director:	**Peter Jamieson**
Project Manager:	**Rod Williams**
Report No.	**2520/R09/Final**
Date:	**April 2013**

Newcastle

PO Box 3024
75 York Street
Teralba NSW 2284

Ph. 02 4950 5322

www.umwelt.com.au

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 Introduction

This document has been prepared in response to a request from the Director-General in accordance with section 75H(6) of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) that Independent Cement and Lime Pty Limited (ICL) prepare a response to the issues raised during the public exhibition period of Environmental Assessment (EA) for the Cement and Slag Receival and Dispatch Terminal (the Project). This report has been prepared by Umwelt (Australia) Pty Limited (Umwelt) on behalf of ICL and addresses the issues raised by:

- Roads and Maritime Services (RMS);
- Office of Environment and Heritage (OEH);
- NSW Office of Water (NOW);
- Department of Industry and Investment (Fisheries);
- NSW Health;
- Newcastle Port Corporation (NPC);
- Council;
- Hunter Development Corporation (HDC);
- Corporate (1 submission);
- Community/Interest Groups (1 submission); and
- General Public (2 submissions).

All submissions which raised issues or concerns were comprehensively reviewed and considered. Matters raised by each submission are addressed by category of issue, with additional information and or clarification (if required) provided. For each issue, the theme of the issue raised is noted in bold, followed by a response in normal type. Issues that could not be grouped under an appropriate category were addressed under the 'Other' category.

1.1 Summary of Issues Raised in Submissions

The Department of Planning and Infrastructure (DP&I) advised that a total of 12 submissions were received during the EA exhibition period. This consisted of eight submissions from government agencies (including NPC, and HDC), one submission from industry, two submissions by the general public and one submission by community/interest group. The issues raised within the general public and community/interest group submissions follow a form letter structure and content. The form letter submissions raised issues associated with the economic and social benefits of the Project, the number of ship movements and the adequacy of the assessments associated with such ship movements, clarification of the scope of the project description, cumulative construction and operational impacts, air quality, contamination, truck traffic, and integration with the NPC Concept Plan Approval and Draft Strategic Development Plan.

A summary of the matters raised by the submissions by category is provided in **Table 1**.

1.2 Report Structure

Section 2.0 of this report addresses comments made in submissions by government agencies, community/interest groups, industry and individuals.

A revised Statement of Commitments for the Project, addressing the issues raised in the submissions as discussed in the following sections, is included in **Appendix 1**. The changes made to the Statement of Commitments in response to the submissions received and are highlighted in **Appendix 1** as tracked changes.

EPA's submission also included draft Environment Protection Licence (EPL) conditions. These conditions are included in **Appendix 2** the suggested changes to the draft EPL conditions are highlighted in **Appendix 2** as tracked changes.

NOW's submission also included recommended conditions of approval. The recommended conditions are included in **Appendix 3**, together with ICL's response.

Table 1 - Summary of Issues by Category

	Category of Issue Raised												
Submission Received	**Legislation Considerations (Section 2.1)**	**Clarification of Project Description (Section 2.2)**	**Contamination (Section 2.3)**	**Integration with Other Approvals / Plans (Section 2.4)**	**Air Quality (Section 2.5)**	**Traffic and Transport (Section 2.6)**	**Socio-Economic (Section 2.7)**	**Cumulative Impacts (Section 2.8)**	**Utilities and Services (Section 2.9)**	**Water Resources (Section 2.10)**	**Waste (Section 2.11)**	**Other (Section 2.12)**	**Form Letter**
	Government Agency												
Roads and Maritime Services (RMS)													
Office of Environment and Heritage (OEH)			•		•					•	•	•	
NSW Office of Water (NOW)	•									•			
Department of Industry and Investment (Fisheries)										•			
Newcastle Port Corporation	•	•								•		•	
Newcastle City Council	•		•	•	•			•	•			•	
Hunter Development Corporation			•			•		•				•	
Hunter New England Local Health District					•							•	
	Community/Interest Group												
Correct Planning and Consultation for Mayfield group (CPCFM)		•		•	•	•	•	•				•	•
	Corporate												
OneSteel													
	Individual												
		•		•	•	•	•	•				•	•
		•		•	•	•	•	•				•	•
TOTAL	**3**	**4**	**3**	**4**	**6**	**4**	**3**	**5**	**1**	**4**	**1**	**8**	**3**

2.0 Response to Submissions

2.1 Legislative Considerations

Agency Comments

NSW Office of Water

Water licence requirements under Part 5 of the Water Act 1912.

ICL acknowledges that a water licence under Part 5 of the Water Act 1912 will be required for groundwater interception and management if groundwater is to be intercepted as part of construction activities for the Project. ICL also notes that Section 75V(1) does not apply to water licences issued under Part 5 of the Water Act 1912.

The Project is not expected to have any interaction with the groundwater, with the exception being the foundation piles which will be driven below the groundwater table. No adverse impacts on the groundwater table or groundwater quality as a result of the Project are therefore predicted to occur from the installation of the piles as they will be inert, driven from the surface to the required depth and do not require the extraction of groundwater during their installation.

ICL does not propose to establish any groundwater monitoring bores as part of the Project.

All works in, on or under waterfront land should be conducted in accordance with the NSW Office of Water Guidelines for Controlled Activities.

Agreed. ICL will undertake works in, on or under waterfront land at the site in accordance with the NSW Office of Water Guidelines for Controlled Activities.

Newcastle Port Corporation

The EPL for the cement terminal should be consistent with the Concept plan Approval.

ICL agrees with this statement. Section 3.2.2 of the EA states:

> The EPL for the Project should be consistent with the Mayfield Site Port-Related Activities Concept Plan Approval.

2.2 Clarification of Project Description

Agency Comments

NSW Office of Water

The EA does not provide a quantification of water requirements for the project during construction and operation or how water will be sourced.

The major water usage during construction and operation of the Project is associated with the ablution, amenity facilities and dust suppression. Dust suppression will be undertaken by a contractor. The water requirements for the construction and operation of the Project are therefore minimal. (N.B. This Project involves the storage of cement and ground slag and does not seek approval to operate a concrete batching plant).

NPC is responsible for the provision of permanent services, which includes the provision of potable water to the boundary of the Project. Should a permanent water service not be established prior to the commencement of construction and / or operation of the Project, ICL proposes to draw water from the existing potable water main located adjacent to Mayfield Berth No. 3 and/or Mayfield Berth No 4 (refer to Section 2.4 of the EA).

Newcastle Port Corporation

> **Should the Mayfield Berth No. 3 not be operational when construction of the cement terminal is completed, ships will initially be unloaded at the Mayfield Berth No. 4. If the upgrade of the Mayfield Berth No. 3 is likely to be completed in the near future, the ship unloading facility (i.e. Siwertell unloader) may not be constructed at the Mayfield Berth No. 4 to avoid the need to relocate the ship unloading facilities. If this is the case, ICL will use self-discharging ships until the wharf facilities at Mayfield Berth No. 3 are operational.**

ICL is in agreement with NPC regarding the timing associated with the construction of the ship unloading facility (Siwertell unloader) and the use of self discharging ships pending the availability of Mayfield berth No. 3.

> **Construction of a dedicated emergency truck parking area within the site.**

The Project includes a dedicated emergency truck parking area within the site (refer to **Figure 2.1** of the EA attached).

> **In Figure 2.1 of the EA there is a section of piping that is shown as above the wharf (Mayfield Wharf Silo South-East View). NPC require all links to the boundary of its leased area to be underground (excluding the mobile conveyors/augers).**

Figure 2.2 of the EA (attached) shows both underground and above ground piping options, with the underground option noted as the preferred option.

Community Comments

> **There is no information provided about the tonnages required or the method of transport to be used for the supply of concrete additives to the site.**

The EA does not seek approval to import concrete additives to the site. (N.B. This Project involves the storage of cement and ground slag and does not seek approval to operate a concrete batching plant).

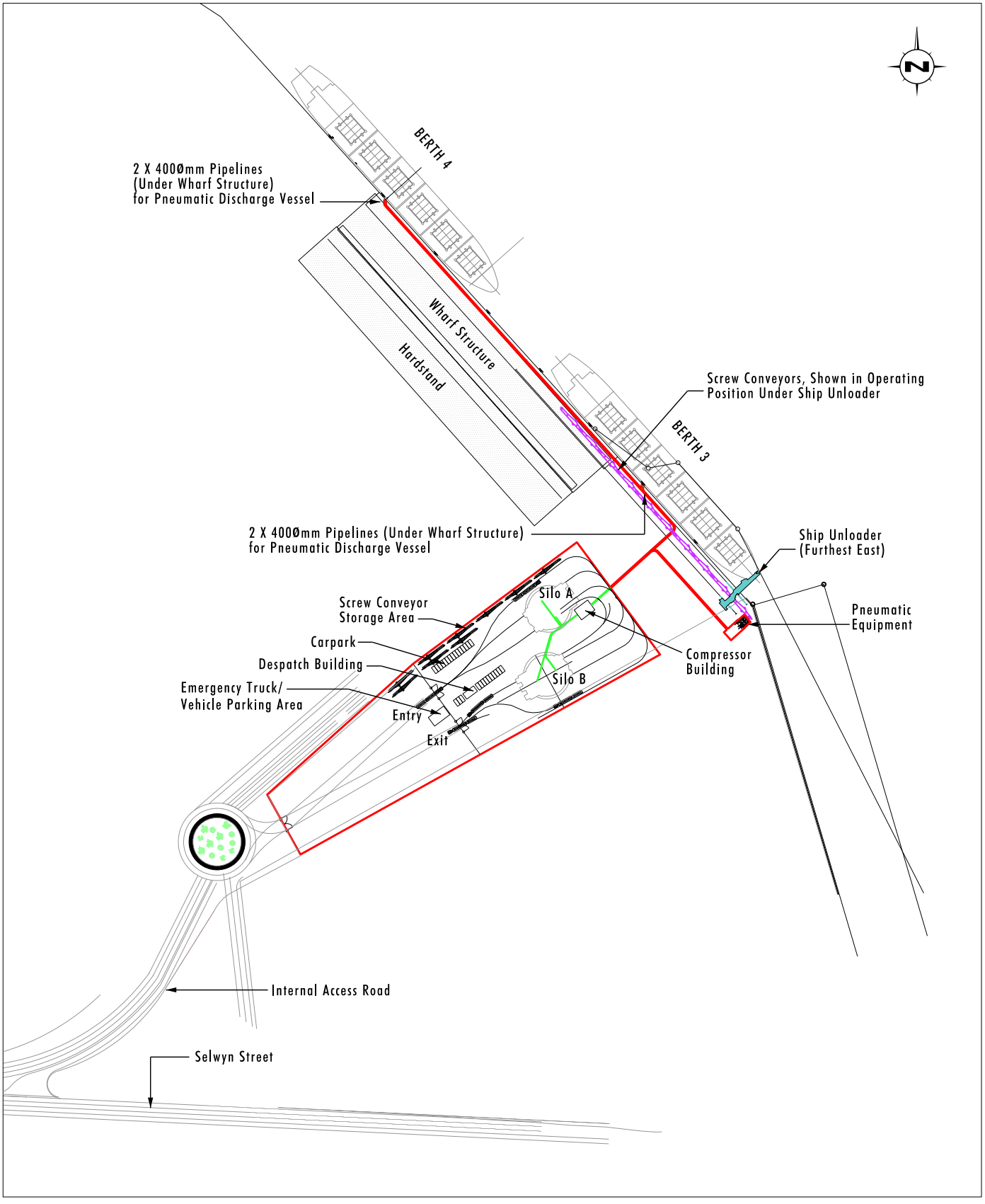
> **The EA seeks approval to undertake port dredging and associated harbour infrastructure, roadways, powerlines and other support infrastructure.**

The EA does not seek approval for any dredging works or associated harbour infrastructure.

As noted in Section 2.4 of the EA, NPC is responsible for the provision of permanent services to the boundary of the Project. The EA however seeks approval for ICL to construct all road, power, water etc infrastructure as required within the boundary of the project area.

> **There is no reference to refuelling or servicing of trucks on the site therefore it is assumed that this does not take place.**

Correct. Refuelling or servicing of trucks will not be undertaken at the terminal.

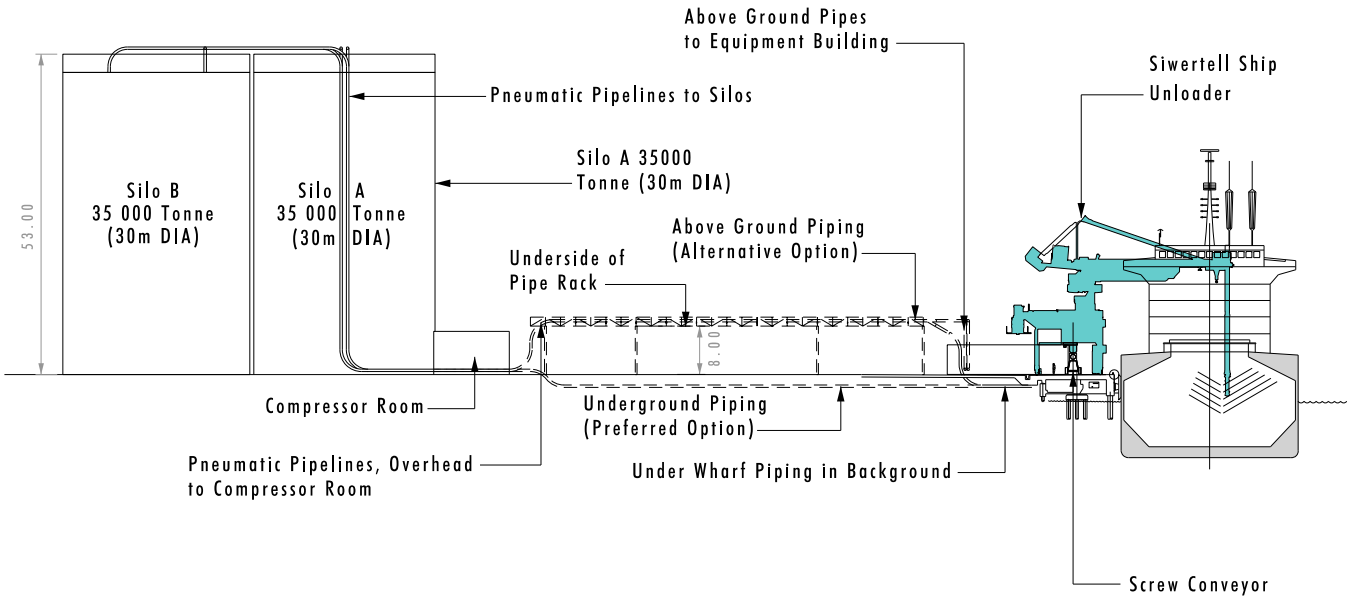


Legend

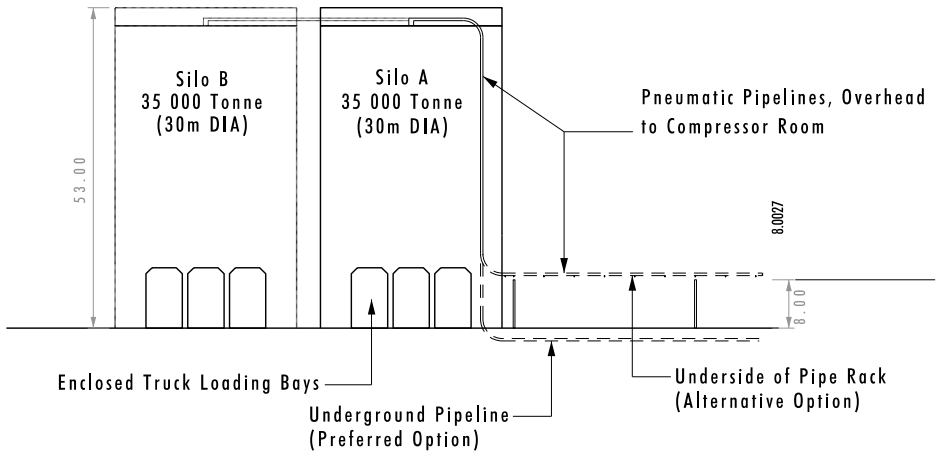
- Project Area
- Pipeline
- Siwertel Ship Unloader
- Screw Conveyors

FIGURE 2.1

Proposed Cement Terminal and Wharf Facility Layout



Mayfield Wharf
Silo South-East View



Mayfield Wharf
Silo East Elevations

0 20 40 60m
1:1250

Legend
Siwerted Ship Unloader

FIGURE 2.2

Cross Sections of Proposed Cement Terminal and Wharf Facility Layout

Source: Prostruc Pty Ltd

File Name (A4): R07_2520_047.dgn
20130222 16.21

The outward movement of product would be by road or rail tanker.

The EA provides no detail of rail movements.

The approval of the project should require the proponent to transport at least 20% of the product by rail from the site from year 5 onwards.

The Project does not seek approval to transport product by rail.

The use of rail to distribute bulk cement is not considered viable at this time. ICL will however continue to review the use of rail for the transport of bulk cement from the site to long haul locations to the north and west and will utilise rail if cement can be rail transported to market destinations in an efficient and feasible manner (refer Section 2.6 of the EA).

2.3 Contamination

Agency Comments

Hunter Development Corporation

ICL are to obtain the site auditor's confirmation that the works comply with the Contaminated Site Management Plan prior to commencing any on site works.

Agreed. Section 5.7.3 of the EA states:

> 'prior to undertaking any works confirmation from the appointed contaminated site auditor that the Project includes suitable remediation and risk management controls and compiles with the requirements of the CSMP will be sought'

No on site works will be undertaken until ICL has received this confirmation.

It is recommended that compliance with the Voluntary Remediation Agreement and the approved Contaminated Site Management Plan be included in the lease agreement and project approval.

Noted.

Newcastle City Council

Construction and operation of the Project is to be undertaken in accordance with the Voluntary Remediation Agreement and approved by the accredited Site Auditor.

Agreed. Section 5.7.3 of the EA states:

> 'prior to undertaking any works confirmation from the appointed contaminated site auditor that the Project includes suitable remediation and risk management controls and compiles with the requirements of the CSMP will be sought'

Environment Protection Authority

> **The Site Auditor should provide a site statement at the completion of the construction phase(s) confirming that the objectives and commitments of the Voluntary Remediation Agreement and the Contaminated Site Management Plan have been satisfied.**

Noted.

> **ICL should prepare a Vapour Risk Assessment report which considers the potential risk associated with the ingress of volatile vapours into buildings and confined spaces. The report should be reviewed by the site auditor.**

The EA notes that ICL will undertake the Project in accordance with the approved Contaminated Site Management Plan (CSMP), which requires an assessment of the risk to human health posed by the potential ingress if volatile vapours into buildings and confined spaces.

It is noted that the contamination investigation undertaken by URS concluded that 'the risk to human health associated with the soil contamination issues identified during the site investigation could be effectively managed by ensuring that excessively high concentrations of contaminants are not present at the surface of the site, in locations where direct contact may take place (URS 2000)' (refer to Section 5.7.1 of the EA).

It is noted that the former BHP site has been subject to extensive contamination investigations and subsequent remediation works. The remediation works has included the emplacement of a low permeability earthen cap on which ICL will construct the concrete hardstand and the various amenity and workshop buildings. Direct contact is therefore not possible at these locations. It is also noted that the silos are elevated above the ground to facilitate the loading of trucks and so direct contact is also not possible. The risk associated with the ingress of volatile vapours into buildings and confined spaces is therefore expected to be minimal.

> **ICL should ensure that the site is capped. The capping material must have a permeability of less than 1 x 10^{-7}.**
>
> **A Cap Integrity Maintenance Plan should be developed.**

ICL will ensure that the long term performance of the earthen cap constructed as part of the remediation of the site will not be compromised as a result of the construction and/or operation of the Project. The permeability of the earthen cap will be as per the approved CSMP.

In addition to the earthen cap, ICL will cover the earthen cap with a concrete hardstand. The concrete hardstand will act as a substantial secondary cap which further limits any potential surface water, groundwater and/or exposure pathways to the underlying potentially contaminated material (refer to 5.7.2 of the EA).

The concrete hardstand provides a physical barrier which protects the integrity of the earthen cap. A controlled works order process will be established as part of the operation of the site to ensure the integrity of the earthen cap is not compromised as a result of future maintenance and operation of the Project.

The need for any containment cell should be assessed based on the volume and chemical characteristics of the excavated material and the design of any cell must be approved by the EPA.

Further assessment is required if the pipelines are to be located below ground (i.e. below the capping material).

ICL expects to receive a site which is suitable for redevelopment (i.e. free of contamination). However, should contaminated material be encountered during construction it will be handled and disposed of in accordance with the approved CSMP for the site, in consultation with the NPC and HDC who have the responsibility of managing the contamination remediation works in accordance with the development approval that was issued for the remediation works. It is noted that the CSMP recognised that the site would be subject to redevelopment and potential disturbance of the earthen cap and so included measures and procedures to address such a scenario.

The installation of pipelines below ground is not expected to encounter any potential contaminated material. All excavated material will be managed in accordance with the approved CSMP for the site. Section 5.7.2 of the EA states:

> Assuming the excavations associated with the installation of services is contained to the top 1 metre from the design surface, the material encountered would be Level 1 and have unrestricted re-use on the site. Level 1 excavated material associated with the installation of services (i.e. within 1.0 metre from the design surface) will be placed back in the excavation following the installation of the services and the low permeability cap reinstated. Excavations which extend beyond the Level 1 cap (i.e. in excess of 1.0 metre from the design surface) may encounter Level 2 soils. All material excavated below the low permeability cap (i.e. Level 1 material) will be reused on site and managed in accordance with the requirements of the MMP.

The disposal of contaminated material off site is not permitted under the development approval associated with the remediation of the site.

Community Comments

EA has not adequately considered the very poor state of the site. Whilst minimal remediation work has been carried out and the site capped I am not convinced that the breaching of the cap will not cause major issues.

The approval should require the appointment of an independent assessor to monitor any disturbance of the cap that would allow the escape or movement of material contained by the cap. Further the assessor be empowered to ensure that remediation work is carried out as required.

The site has been the subject of an extensive remediation program, which has involved re-contouring and capping of the Project area in accordance with the agreed Voluntary Remediation Agreement and the approved CSMP. The CSMP recognised that following the completion of the remediation works further development of the site would be proposed. To account for this the CSMP included a process for the contaminated site auditor to confirm that any proposed works comply and are undertaken in accordance with the approved CSMP (refer to Sections 2.8, 3.3.4 and 5.7 of the EA). ICL will prior to undertaken any on site work confirm that the works comply with the approved CSMP.

2.4 Integration with other NPC Approvals/Plans

Newcastle City Council

> **Further information which clarifies the legal relationship between the Mayfield Concept Plan Approval and the Project is required.**
>
> **Addition information is required which details how the pre- construction commitments contained in the Mayfield Concept Plan Approval will be addressed.**

Section 1.1 of the EA notes that while the Project is located on land associated with the Concept Plan Approval, it will be assessed as a stand-alone project.

The independence of the ICL Project is furthermore supported by the Concept Plan Approval for the Mayfield Site Port-Related Activities which states 'approval to carry out the development the subject of the Concept Plan (other than development for the purpose of the construction and operation of a bulk fuel storage facility or cement terminal that is a transitional Part 3A Project under Schedule 6A of the Act)'.

Community Comments

> **The environment, transport and community consultation obligations contained in the Mayfield Site Port-Related Activities Concept Plan Approval must be established and approved by the Department of Planning and Infrastructure prior to the commencement of the ICL Project.**
>
> **The ICL Project should not be approved until such time as NPC has met its obligation associated with the approval of its Mayfield Concept Plan and ICL has exhibited its transport plan.**

Section 1.1 of the EA notes that while the Project is located on land associated with the Concept Plan Approval, it will be assessed as a stand-alone project.

The ability of NPC to satisfy its concept plan approval obligations is therefore independent to the approval of the ICL Project.

Irrespective of this, ICL has committed to providing management and reporting information to the HDC and NPC to allow each to satisfy their environmental management and reporting obligations, as required and to participate in community consultation and engagement strategies in consultation with NPC (refer to Section 5.7.3 and Section 6.12 of the EA).

ICL has identified its traffic movements, site access/departure arrangements, the end markets and major transport routes to be used and assessed the potential impact, as part of the EA. ICL believes it has therefore already assessed it traffic impacts and exhibited its transport plan.

2.5 Air Quality

Agency Comments

Newcastle City Council

> **The Project should be subject to the same air quality conditions as that detailed in the Mayfield Concept Plan Approval.**

Noted. The dust criteria adopted by ICL in the assessment of the Projects is consistent with the Mayfield Concept Plan Approval.

> **Assessment of the potential air quality impacts should be conducted with reference to the Site Air Quality Model as noted in the Mayfield Concept Plan Approval.**
>
> **The project should be subject to the environmental management system requirements contained in the Mayfield Concept Plan Approval.**

A detailed air quality impact assessment has been undertaken in accordance with the Approved Methods and Guidance for Modelling of Air Pollutants in NSW (DECC 2005) and the Director Generals Requirements for the EA.

Section 1.1 of the EA notes that while the Project is located on land associated with the Concept Plan Approval, it will be assessed as a stand-alone project. Therefore the Project is to be assessed and operates independent of the Mayfield Concept Plan Approval.

To assist NPC with the development of the 'Concept Plan Site Air Quality Model', ICL has provided NPC with the air quality impact assessment and modelling outputs to enable whole of site modelling to be undertaken as required.

NSW Health

> **ICL should monitor the effectiveness of "routine construction management techniques" during the construction phase and adequate response measures need to be implemented to ensure that an exceedance does not occur.**

The following 'routine construction management techniques' as identified in Section 5.3.6 of the EA are applicable to the minimisation of dust emissions during the construction phase of the Project:

> 'maintenance of appropriate dust management controls during the construction phase of the Project including minimisation of disturbed areas, watering of exposed surfaces during construction and the stabilisation of exposed areas post-construction; and
>
> regular dry sweeping of paved areas;'

During the construction of the Project ICL will review the performance of the above measures to ensure dust emissions are minimised where feasible and reasonable.

Environment Protection Authority

> **ICL should implement the air quality management and mitigation measures listed in Section 5.3.6 of the EA.**

Agreed.

Community Comments

> **The EA states that it has not considered the particulate emissions from ship engines and claims they will only represent 1.7% of the harbour traffic. To seek approval on the basis that other harbour users are performing very badly is certainly an unsound basis.**

The EA makes no assumption about the performance of the ships which currently access the harbour, in relation to their engine emissions. It simply notes that the contribution from ICL ships (i.e. 32 vessels per year) is insignificant when compared to the total number of vessels which visited the port during the 2010/11 financial year (i.e. 1860). On this basis particulate emissions from ship engine exhaust were not included in the air quality assessment model.

We maintain that the assessment approach adopted in relation to this matter is justified.

> **The EA has misrepresented the ship numbers as it has only presented the number of ship loads and not ship movements.**

Section 2.6.1 and Table 2.2 of the EA (reproduced below) clearly identifies the number of cement/slag shipments that will be received by the Project.

Table 2.2 – Indicative Shipments per Year

Year	Shipments (per year)
Year 1	7
Year 2	8
Year 3	12
Year 4	14
Year 5	16
Year 10	21
Maximum	32

It is noted that at maximum operations 32 shipments per year will be received by the Project. This equate to 64 ship movements per year. The impact of the maximum number of ship loads and ship movements was considered where relevant in the assessment of impacts.

> **To compare ship unloading times is misleading as a cement ship is typically in port for 60 hours and a coal ship for 28 hours. An unloading cement tanker is also working harder than a loading coal bulker. Clearly the emissions per ship are likely to be much greater.**
>
> **The base data related to ICL shipping requirements be recalculated to ensure accuracy of the data presented.**

The EA makes no such comparison of the duration of time in port between cement and coal ships.

There are two factors associated with the shipping activities which impact on air quality being, engine exhaust emissions and emissions associated with the unloading/transfer of cement and or slag.

The ship engine exhaust emissions were not included in the air quality assessment model as the contribution from ICL ships (i.e. 32 vessels per year) is insignificant when compared to the total number of vessels which visited the port during the 2010/11 financial year (i.e. 1860). ICL's contribution to ship numbers is approximately 1.7 per cent.

The unloading/transfer of cement and or slag from ships is the major factor which impacts air quality. The assessment assumed that the Project would handle 800,000 tonnes per year (i.e. the worst case scenario). The number of ships associated with transporting the 800,000 tonnes per year is not relevant to the assessment of air quality impacts as the emission from ships are considered insignificant.

Section 2.2 of the noise impact assessment (Appendix 7 of the EA) notes that an on board compressor will provide the compressed air necessary to transfer the cement or ground slag to the storage silos for self-discharging ships. While the compressor will contribute to particulate emissions, the contribution is considered to be insignificant in comparison to the overall Project and no further assessment of the impact associated with these emissions has been undertaken.

The Siwertell ship unloader will be electrically powered and thus generate no on site particulate emissions.

The EA suggests that the air will disperse however does not seem to consider that the atmosphere is already heavily laden with industrial and naturally occurring particulates.

The Stockton Air Quality monitor is not referenced however is likely to show about 50 exceedences of the standards in its first year of operation.

Given that the EPA sets the annual standard at 30 for one small precinct to use about 35% of the quota as a "normal" activity would seem unreasonable.

Air quality data from the EPA monitoring stations at Newcastle, Wallsend and Beresfield, and six dust deposition monitoring sites within the Steel River Industrial Estate, Mayfield West, was used to establish the background air quality levels for the Project. The predicted Project related emissions were added to the background air quality levels to provide an indication of the cumulative air quality impacts as a result of the operation of the Project, as shown in Table 5.13 of the EA (reproduced below).

Table 5.13 – Highest Predicted Ground-level Pollutant Concentrations for PM_{10}, TSP and Depositional Dust

Pollutant and Averaging Time	Assessment Criteria	Existing Levels	Project Contribution	Cumulative Level (Project Contribution + Existing)
Max 24 Hour Average PM10*	**50**	26.7	0.90	27.60
Annual Average PM_{10}	**30**	21.07	0.18	21.25
Annual Average TSP	**90**	52.68	0.24	52.92
Deposited Dust	**4**	1.61	0.14	1.75

As outlined in **Table 5.13**, there are no predicted exceedances of the relevant air quality assessment criteria (i.e. Concept Plan Approval or the EPA's goals). The results of the air quality assessment predict that the emissions from the Project will be negligible and substantially below the relevant air quality goals (i.e. the EPA and Concept Plan Approval air

quality goals). It is also noted that the Project's contribution to particulate emission relative to the EPA's assessment criteria is relatively small (e.g. the Project's contribution of 0.18µg/m^3 to the annual average PM_{10} limit represent 0.60 per cent of the EPA's annual average PM_{10} limit). It is also noted that the EPA nominated air quality goal contours are located within the site boundary and thus no adverse impact on any nearby receptors of the port are expected to occur.

Table 5.2 shows the dust discharge levels at several stages in the process. Given that the product passes through several stages I consider it reasonable that there is a cumulative level for the product by adding the dust from each stage together giving a reading of 80 to 100. This is similar to the 96 for the proposed Sydney terminal. To this has to be added the fugitive emissions and the site construction emissions.

Table 5.2 of the Air Quality Assessment (Appendix 8 of the EA) shows the estimated TSP and PM10 emissions from the dust collectors associated with the Project.

Table 5.2 – Estimated Emissions from Dust Collectors

Dust Collector		Emission Concentration (mg/m^3)		Air Flow (Nm^3/min)	Estimated Emissions (g/s)	
		TSP	PM10		TSP	PM10
S1	Cement Silo [1]	10	10	367	0.0612	0.0612
S2	Slag Silo [1]	10	10	367	0.0612	0.0612
S3	Truck Loading Cement [2]	10	10	25	0.0042	0.0042
S4	Truck Loading Slag [2]	10	10	25	0.0042	0.0042
S5	Transfer Hopper (wharf-side)	10	10	167	0.0278	0.0278
S6	Siwertell [3]	10	10	288	0.0480	0.0480
S7	Hatch Cover [4]	10	10	900	0.1500	0.1500

Note 1: Modelled for continuous operation; actual operational times expected to be approximately 50 hours per ship.

Note 2: Modelled for continuous operation; actual operational times are during truck loading only.

Note 3: Estimates based on the use of the Siwertell unloader for all shipments.

Note 4: Modelled for continuous operation; actual operational times expected to be approximately 2-4 hours per ship.

The calculation of dust emissions is not the addition of the emission concentration for each source. Rather it is the emissions concentration (or the performance measure of the equipment) for a given volume and time period (i.e. (10 mg/m^3 x 367 Nm^3/min) ÷ 60 ÷ 1000 = 0.0612 g/s).

2.6 Traffic and Transport

Agency Comments

Hunter Development Corporation

How will vehicles access the site in the long term.

The establishment of the permanent access points and internal road network within the closure area is the responsibility of NPC. The permanent vehicle access point to the site will be via Selwyn Street. The internal access road arrangement it its connection with Selwyn Street is shown on **Figure 2.1** of the EA (attached).

The design and construction of the internal access roadways forms part of the Mayfield Concept Plan Approval and is therefore outside the scope of the EA.

Environment Protection Authority

> **A Traffic Noise Management Strategy should be developed to ensure that feasible and reasonable noise management strategies are identified and applied.**

The traffic noise impact assessment notes that the Project represents less than 1 per cent of the traffic numbers on Industrial Drive for the years 2013 and 2034. These additional vehicles equate to a 0.1 dB(A) and 1.1 dB(A) increase in road traffic noise at a setback distance of 25 metres from Industrial Drive for the year 2034 during the day time and night time periods respectively, which is considered to be negligible. Similarly the road traffic noise levels at the nearest residential receiver on Selwyn Street for the year 2034 during the day time and night time periods are predicted to be 0.2 dB(A) and 1.3 dB(A) respectively. ICL's contribution to road traffic noise on Industrial Drive and Selwyn Street is less than the maximum increase of 2 dB recommended in the NSW Road Noise Policy (refer to Section 5.2.3 of the EA).

Therefore the EA has clearly demonstrated that the ICL Project's contribution to road traffic noise will comply with the NSW Road Noise Policy.

Community Comments

OneSteel

> **Access to the project must not be through Steelworks Road Mayfield East.**

Section 2.6 of the EA states 'Until NPC establish the permanent access points and internal road network within the closure area, the Project will utilise the existing Selwyn Street entry to access the site.' ICL anticipates that it will continue to access the site via Selwyn Street once the permanent access points are established by NPC.

> **The video uses the cement tanker UBC Canada which has a gross tonnage of 8559. If smaller ships are used then there will be considerably more ships needed to transport the 800,000 tonnes. This could easily double the ship numbers**

The video provides an overview of the operations that would be typical of that undertaken at the proposed Mayfield Project (i.e. the process of ship unloading, silos storage, the loading of trucks and the controls that are implemented) and not demonstrate the size of the ship that would be used.

ICL proposes to utilise ships with a capacity of approximately 25,000 tonnes as detailed in the EA. The Project will be able to receive vessels with a capacity of up to 30,000 tonnes, which theoretically could result in a reduced number of shipments being required.

> **The details of the trucks does not match industry practice or known future trends. Industry uses semi trailers with one pneumatic tank as this matches client needs. Larger trucks are also on the horizon with B triples likely to be in operation in the Newcastle area within ten years. Four tank road trains are in production however I am unaware of any ridged trucks and dog trailers operating a pneumatic bulk tankers.**

The traffic impacts of the Project have been assessed based on a projected breakdown of truck type as identified by ICL. Should the use of larger trucks become more common over time this will reduce the number of trucks movements and therefore the potential traffic impacts associated with the operation of the Terminal.

> **The EA indicates that the truck route will be via Selwyn St until such time the NPC has developed the Mayfield Concept Plan access roadway and from that time the new road will be used. Advice from the NPC is that the new roadway is under construction and should be available for use by the third quarter 2013. The NPC current thoughts on roadway use do not seem to be consistent with the initial roadway proposal for the concept plan.**

The permanent internal access road arrangement and it its connection with Selwyn Street has been provided to ICL by NPC and is shown on Figure 2.1 of the EA (attached). The issue of the internal roadways being inconsistent with the Concept Plan is a matter that NPC needs to consider and address, as it is outside the scope of this Project. The internal road network was approved as part of NP)C's Mayfield Concept Plan Approval and is therefore the subject of a separate approval.

2.7 Socio-Economic justification

Community Comments

> **The project must provide a net benefit over the existing provision and arrangements. That is the new facility must be measured in terms of more jobs, more economic activity and an improved environment for Newcastle.**
>
> **The approval for the project needs to spell out measurable performance indicators.**

Since the closure of the former BHP Newcastle Steelworks in September 1999, the site has been subject of extensive decommissioning and rehabilitation activities to prepare the site for redevelopment as a port related industrial area. In April 2001 Development Consent was granted for the Development of a Multi-Purpose Terminal (DA 293-08-00) within a section of the former BHP Newcastle Steelworks site. The proposed Multi-Purpose Terminal was not developed and the site has essentially remained vacant since the closure of the Newcastle Steelworks in September 1999.

The Project will provide significant economic benefits to the local area and region with a capital investment in the region of approximately $45 M for construction of the plant, and the creation of 15 new full-time jobs when the Project is operational. The Project will also create significant economic flow on effects through business and employee expenditure on goods and services in the local community (refer to Section 7.3 of the EA).

The Project represents an efficient reuse of industrial land (i.e. the redevelopment of part of the former BHP site) and will assist in minimising potential environmental harm associated with the site in its current form (refer to Section 7.3 of the EA).

In addition to the economic and social advantages provided by the site, the Project will have a number of environmental benefits which justify its development.

ICL currently provides approximately 178 truck loads (i.e. 356 truck movements) of cement and/or ground slag per week to the Newcastle area out of its existing Port Kembla facility, with demand for cement and ground slag increasing annually. Similar logistical arrangements are also undertaken from terminals in Sydney and Newcastle on a regular

basis. The development of this facility will satisfy the existing and future needs of the building industry.

The establishment of a terminal at Mayfield is expected to significantly reduce the number of vehicle kilometres travelled by trucks in servicing ICL's existing clients. This has flows on benefits of road safety / accidents, reduced wear and tear on the road pavement and vehicles and reduced resources utilisation (e.g. diesel, road pavement materials etc).

The distribution of cement and/or ground slag to end users within NSW from Mayfield is also expected to result in a net reduction in vehicle kilometres travelled and associated greenhouse gas emissions (refer to **Section 5.9**).

The Project will allow for diversification of import opportunities within Newcastle Harbour, improving the viability of the harbour as a working port while minimising impacts on the local environment.

2.8 Cumulative Impacts

Hunter Development Corporation

> **It is anticipated the cumulative impacts will be managed under the relevant Concept Plan 09_0096 approval requirements pertaining to transport, air quality, noise, stormwater, infrastructure and utility planning, and other relevant requirements**

The Concept Plan Environmental Assessment examined the cumulative impacts associated with the development of the Mayfield site as a whole (i.e. which includes the proposed ICL Project). The EA has considered the cumulative impact of the Project and has clearly identified that the Project is consistent with the criteria contained in the Mayfield Concept Plan Approval and thus the cumulative impact of the Project has been considered.

ICL has committed to providing management and reporting information to the HDC and NPC to allow each to satisfy their environmental management and reporting obligations, as required and to participate in community consultation and engagement strategies in consultation with NPC (refer to Section 5.7.3 and Section 6.12 of the EA).

Community Comments

> **The potential cumulative impacts associated with any overlap between the construction and operational phases has not been considered.**
>
> **The proponent be required to publish the details of the construction activities and in particular the cumulative impact when imposed on the production activities and other port activity in nearby precincts.**

The Concept Plan Environmental Assessment examined the cumulative impacts associated with the development of the Mayfield site as a whole (i.e. which includes the proposed ICL Project). The EA has considered the cumulative impact of the Project and has clearly identified that the Project is consistent with the criteria contained in the Mayfield Concept Plan Approval and thus the cumulative impact of the Project has been considered.

A comprehensive noise impact assessment was completed as part of the EA for the Project. This assessment established the noise goals associated with the construction and operation of the Project in accordance with the EPA's Interim Construction Noise Guideline (DECCW 2009) and the NSW Industrial Noise Policy respectively. As separate noise goals have been

established for the construction and operational phases of the Project, it is not relevant to consider the cumulative impact.

Any air quality impacts associated with an overlap between the construction and operational phases is expected to be insignificant as the first stage of construction involves covering the site with a concrete hardstand, while the second and third stages of construction involves the installation of the Siwertell ship unloader using pre fabricated components and the construction of the second silo. Neither of these construction activities are likely to generate significant dust emissions, such that the cumulative impact would be greater than that associated with the Project when operating a maximum capacity.

Any traffic impacts are expected to be similar if not less than that associated with the Project operating a maximum capacity. No adverse traffic impacts are therefore anticipated.

2.9 Utilities and Services

Agency Comments

Newcastle City Council

> **The Mayfield Concept Plan Approval requires the preparation of a utilities infrastructure plan. Further information regarding how the Project will integrate within the plan is required, particularly the reticulated sewer system.**

As noted in Section 2.4 of the EA, NPC is responsible for the provision of permanent services to the boundary of the Project. Should permanent services not be established prior to the commencement of construction and / or operation of the Project, ICL proposes to:

- use an on-site pump out system for wastewater;
- use mobile power generators to supply electricity;
- use mobile telecommunications on-site; and
- draw water for construction and commissioning purposes from the Mayfield Berth No. 3 and/or Mayfield Berth No. 4.

Community Comments

OneSteel

> **All power and water must be sourced independently and not using OneSteel or Mayfield Industrial Estate Association (MIEA) services.**

NPC is responsible for the provision of permanent services, which includes water and power to the boundary of the Project. Should permanent services not be established prior to the commencement of construction and/or operation of the Project, ICL proposes to draw water from the existing potable water main located adjacent to Mayfield Berth No. 3 and/or Mayfield Berth No 4, while power will be provided by a mobile generator (refer to Section 2.4 of the EA).

2.10 Water Resources

Agency Comments

Fisheries NSW

Fisheries NSW has a concern with the potential for loss of cement product from the unloading facilities into the adjoining waterway and the incorporation of mitigation control measures in the project approval.

The Project includes a range of management and mitigation measures which will minimise any potential impacts on adjoining waterways, such as:

- The Concept Plan Environmental Assessment examined the cumulative impacts associated with the development of the Mayfield site as a whole (i.e. which includes the proposed ICL Project). The EA has considered the cumulative impact of the Project and has clearly identified that the Project is consistent with the criteria contained in the Mayfield Concept Plan Approval and thus the cumulative impact of the Project has been considered.

- The transfer of cement/slag is undertaken in a negative pressure enclosed system (refer to Section 5.6.2 of the EA).

- Cement and ground slag will be pneumatically conveyed via sealed pipe transfer from the ship to storage silos. The conveying air will be cleaned using fabric filtration pollution control devices to remove any dust prior to being released to the atmosphere (refer to Section 5.3.6 of the EA).

- Preventative maintenance programs to maintain high availability of plant and equipment (refer to Section 5.3.6 of the EA).

- Standard operating procedures for unloading and loading processes (refer to Section 5.3.6 of the EA).

- The Concept Plan Environmental Assessment examined the cumulative impacts associated with the development of the Mayfield site as a whole (i.e. which includes the proposed ICL Project). The EA has considered the cumulative impact of the Project and has clearly identified that the Project is consistent with the criteria contained in the Mayfield Concept Plan Approval and thus the cumulative impact of the Project has been considered.

ICL has committed to the implementation of the above measures will form part of the project approval.

Newcastle Port Corporation

Consideration of rainwater harvesting of roof water for grey water re-use.

Given the small roof area from which rainwater would be collectable, rainwater harvesting is not considered to be viable.

Environment Protection Authority

> **ICL must ensure access to and protection of existing and future groundwater monitoring wells.**

Agreed. ICL is not aware of any monitoring wells within the project area.

> **The EPA notes ICL does not propose to seek a licenced water discharge point.**

ICL will be seeking to licence its water discharge point as part of the EPL application. We note that the draft EPL which accompanied the EPA's submission included a licenced discharge point.

2.11 Waste

Agency Comments

Environment Protection Authority

> **The EPA believes the GBF slag meets the definition of a 'waste' in respect of the *Protection of the Environment Operations Act 1997* and the *Protection of the Environment Operations (Waste) Regulation 2005 and is unable to issue an EPL for the handling of slag until additional information is provide* .**

ICL will be providing additional information to the EPA in relation to the importation and distribution of ground blast furnace slag.

Discussion with the EPA on this matter has confirmed they would licence the importation and distribution of ground blast furnace slag at the Project, subject to the provision and suitability of this information.

ICL will receive, store and distribute ground blast furnace slag in accordance with the requirements of the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Waste) Regulation 2005*.

2.12 Other

Agency Comments

Newcastle Port Corporation

> **Requirements for landscaping, lighting, fencing, signage, car parking, building design and materials and finishes should be determined in consultation with Newcastle Port Corporation.**

ICL agrees to this requirement.

Hunter Development Corporation

> **The use of retention basis should not be excluded as a sediment and erosion control measure during construction.**

Noted.

Section 5.6.3 of the EA notes that a Soil and Water Management Plan will be developed in accordance with the requirements of the 'Managing Urban Stormwater: Soils and Construction (Landcom 2004) and that sedimentation and erosion controls will be implemented throughout the construction phase of the Project in accordance with Managing Urban Stormwater: Soils and Construction (NSW Landcom 2004) (the Blue Book).

The site has been the subject of an extensive remediation program, which has involved re-contouring and capping of the Project area in accordance with the agreed Voluntary Remediation Agreement and the approved CSMP. The CSMP recognised that following the completion of the remediation works further development of the site would be proposed. To account for this the CSMP included a process for the contaminated site auditor to confirm that any proposed works comply with the CSMP, this includes design of sedimentation and erosion controls (refer to Sections 2.8, 3.3.4 and 5.7 of the EA). The erosion and sediment control plan may include retention basin(s), where relevant. However, there use is subject to the contaminated site auditor's approval.

Newcastle City Council

> **How is the Project consistent with the noise goals as detailed in the Mayfield Concept Plan Approval.**

Section 5.2.1 of the EA notes that the Project Specific Noise Levels for the operation of the Project are less than or equal to the project approval night time noise goals contained in the Mayfield Concept Plan approval for the same general locations with the exception of Stockton. The AECOM 2010 EA that accompanied the Concept Plan Approval application did not identify a PSNL for Stockton. The noise goal as shown in the Concept Plan Approval relates to the modelled noise emission at Stockton.

The noise impact assessment for the Project therefore applied the same or more stringent PSNL in the assessment of noise impacts when compared to the Mayfield Concept Plan approval.

> **The development occupies a substantial percentage of the noise envelope and concerns are raised regarding the feasibility of future development associated with the Mayfield Concept Plan approval.**

The predicted noise levels from the Project under worst case meteorological conditions are in excess of 6 dB(A) to 14 dB(A) below noise levels specified for the Concept Plan Approval. Therefore a significant proportion of the noise envelope remains for future developments. Approval of the Project therefore does not jeopardise future development of the site from a noise perspective.

> **The EA does not acknowledge that the Newcastle Section 94A Contributions Plan, 2009 is applicable to the Project.**

ICL will make a Section 94A contribution to NCC in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* and *Environmental Planning and Assessment Regulation 2000*.

NSW Health

> **An environmental management plan should include measures to reduce noise and how noise will be managed should complaints in relation to noise be made during either the terminal construction or operational phases.**

ICL has committed to constructing a modern cement and slag terminal using the best available technology at the time of detailed design. This will result in a state-of-the-art facility which is energy efficient and minimises potential environmental impacts.

Noise emissions from the operation of the Project are not expected to be audible at the surrounding residential areas, given the existing background noise levels are above that generated by the Project.

The construction and operational environmental management plans to be developed will detail the complaints management process.

Noise monitoring should be undertaken to ensure the night time and cumulative impacts do not exceed the requirements.

Section 5.2.5 of the EA detailed the noise management and mitigation measures to be implemented by ICL:

> During the detailed design and procurement process ICL will confirm that the noise emissions from the terminal meet the OEH and Concept Plan Approval goals.
>
> As part of the pre commissioning process of the Project, ICL will undertake a noise review to confirm the performance of individual plant and the overall Project. Tri-annual noise monitoring in line with environmental reporting requirements, will be undertaken when all components of the plant are in operation, with the objective of confirming the acoustic performance of the Project. Further monitoring may be undertaken should any complaints be received by ICL during the life of the operation. Monitoring results and modelling outputs will be provided to NPC to enable whole of site modelling to be undertaken as required.

The above noise monitoring program will demonstrate that the Project complies with its noise emission obligations.

The Emergency Management Plan for the site should incorporate procedures that outline a strategic Early Warning System (EWS) for any incident/emergency emanating from the development that may affect adjoining properties and the local population.

The Emergency Management Plan should take an All Hazards approach and carefully analyse and model the impact of all possible hazards on the site including sabotage and natural disasters. Details of risk reduction, mitigation and management approaches should be defined.

The *Protection of the Environment Legislation Amendment Act 2011* (PELA) requires holders of an Environmental Protection Licence (EPL) to prepare, keep, test and implement a Pollution Incident Response Management Plan (PIRMP). The objective of the PIRMP is to improve the way pollution incidents are reported and managed.

The Project will require ICL to hold and EPL and therefore prepare a PIRMP. The PIRMP will include an early warning system and a hazard assessment.

Water cooling systems and/or warm water systems must meet the *Australian Standard 3666 and the NSW Code of Practice for the Control of Legionnaires Disease 2004, 2nd edition*. Regulated systems must be registered with the Local Council and installed and maintained to prevent the growth of Legionella.

Noted.

Environment Protection Authority

The EPA's preference is that the Noise Model required as a condition of approval of the Mayfield Port Concept Plan be implemented prior to approval of the ICL Project. If this is not possible then consideration should be given to the Noise Model objectives and precinct criteria.

The development of a 'Concept Plan Site Noise Model' is a condition associated with the Mayfield Port-Related Activities Concept Plan (09_0096). The development of this model is the responsibility of Newcastle Ports Corporation (NPC) and therefore outside the scope and/or control of ICL. It is understood that the development of the 'Concept Plan Site Noise Model' is not likely to be completed for at least a number of months and will be undergoing regular revision as new developments are approved and come on line. The ICL Noise Impact Assessment has demonstrated that the Project can be undertaken in accordance with relevant noise planning goals and can be developed to be consistent with noise goals established as part of the Concept Plan Approval.

To assist NPC with the development of the 'Concept Plan Site Noise Model', ICL has provided NPC with the noise impact assessment and has committed to providing the monitoring results and modelling outputs to NPC to enable whole of site modelling to be undertaken as required (refer to Section 5.2.5 of the EA).

ICL has undertaken to during the life of the Project provide NPC with all results of noise monitoring and modelling so that this information can be incorporated into the noise model required by the Concept Plan Approval.

The proposed ICL Project is a standalone project, as acknowledged in the Mayfield Concept Plan Approval, while the DGRs require the Project to be consistent with the Concept Plan Approval. The noise impacts associated with the ICL Project have therefore been assessed as a standalone project in accordance with the EPA Industrial Noise Policy guidelines and compared to the Concept Plan noise goal.

The noise assessment for the Project predicts that the night time noise emissions from the Project under worst case meteorological conditions are in excess of 6 dB(A) to 14 dB(A) below noise levels specified for the Concept Plan Approval (refer to Section 5.2.3 of the EA).

The EA clearly demonstrates that the Project complies with relevant noise criteria in its own right as a standalone approval and from a cumulative perspective is consistent with the noise limits contained within the Mayfield Port-Related Activities Concept Plan (09_0096).

It is also noted that the Mayfield Port-Related Activities Concept Plan Approval (09_0096) does not contain noise criteria for individual precincts but for the development as a whole.

Community Comments

The project approval must not only regulate the onsite activity but also the offsite impact levels. This included the inward and outward movement of product by road, rail and ship.

The onsite and offsite impacts of the Project were considered as part of the EA. Where the offsite activities are not regulated by a separate approval (e.g. the movement of ships into and out of the harbour), ICL expects that thresholds will be included in the project approval, where relevant (e.g. air quality, noise, etc).

The impacts on the community must be acceptable to the community.

Noted.

ICL needs to clarify who is responsible for managing emissions from ship such as dust, fumes, black soot and alike.

The approval for the terminal requires ICL to be fully responsible for the emissions of all shipping importing or exporting all products under ICL control from the time the ship enters the port until the time the ship leaves the port.

ICL is responsible for the managing the performance of all its contractors while they are under the control of an ICL representative or on the ICL site. ICL has advised that it can enforce rectification of environmental issues through the use of appropriate conditions in its cartage contracts and has indicated that is willing to do this as required.

The cement dust and slag terminal should be required to operate at zero emissions.

It is not reasonable, feasible or possible for the Project to operate with zero emissions. The EA has however identified that the impacts of the Project are significantly less than the limits contained in the Mayfield Concept Plan Approval and/or guideline documentation.

The noise, light and vibration impacts seem inadequate and do not seem to reflect current data.

The noise and vibration impacts of the Project are detailed in Sections 5.2 of the EA, while Section 5.5 of the EA details the visual impacts of the Project.

The comments provided have not resulted in a change to the project description and/or the assumptions used to assess the Projects noise, light and vibration impacts. The noise, light and vibration impacts associated with the Project are therefore as presented in the EA and are reflective of the Project's predicted impacts.

The EA provides no indication that trucks could be loaded directly from ships by ship side wharf movement.

ICL does not seek approval for the loading of trucks directly from ships.

It is noted that this is a 24 hour operation with 7 day operation.

Given that many clients do not function 24/7 it is clear that weekday day operation will be far greater than nights or weekend.

ICL proposes to provide cement from the Mayfield terminal to markets in Newcastle, Sydney, North Central NSW and Northern NSW (refer to Section 2.6.2 of the EA). Given the significant transport distance and / or commute times associated with such markets, 24 hours 7 days a week operations are required.

The NPC has also advised that they have not yet produced the Transport Master Plan or their Community Consultation Master Plan.

The lack of these plans and the lack of detail about the ICL vehicle movements on to Industrial drive and beyond make it impossible to assess the impact of ICL traffic and operations.

The issue of the Transport Master Plan and the Community Consultation Master Plan is a matter that NPC needs to consider and address, as it is outside the scope of this Project.

Table 2.3 of the EA (reproduced below) clearly articulates the number of truck movements per day over the life of the Project.

Table 2.3 – Indicative Truck Deliveries per Day

Year	Total Trucks (per day)	
	Laden Trucks	Truck Movements
Year 1	12	24
Year 2	14	28
Year 3	22	44
Year 4	25	50
Year 5	29	58
Year 10	38	76
Maximum	58	116

Section 2.6 of the EA identifies the Project will utilise the existing Selwyn Street driveway to gain access to and from the site. Selwyn Street intersects with Industrial Drive, which is a signalised intersection. Industrial Drive is a four to six lane arterial road, is a designated heavy vehicle route and provides linkages north, south and west via the Pacific Highway, New England Highway and F3 Freeway. The above road network will be utilised to transport cement and slag to end users in Newcastle, Sydney, North Central NSW and Northern NSW.

Table 2.4 of the EA (reproduced below) showed an indicative breakdown, as a percentage of total tonnage by year, for the distribution of cement and ground slag to end users from the Mayfield cement terminal. The distribution of cement to such locations would utilise Selwyn Street, Industrial Drive, the Pacific Highway, New England Highway and F3 Freeway to end users in Newcastle, Sydney, North Central NSW and Northern NSW.

Table 2.4 – Indicative Breakdown of Distribution Locations

	Distribution Location			
Year	Northern NSW	Central Coast	Sydney North	Newcastle Area
1	25%	9%	24%	24%
2	25%	9%	29%	37%
3	25%	9%	38%	28%
4	25%	9%	38%	28%
5	25%	9%	38%	28%
10	25%	9%	38%	28%
Maximum	25%	9%	38%	28%

A detailed road traffic assessment was undertaken within the Mayfield Site Port-Related Activities Concept Plan. The Projects maximum average daily traffic numbers are less than the 161 trucks trips per day (i.e. 322 truck movements) allowed for as part of the Bulk and General Precinct, the 112 truck trips per day (i.e. 224 truck movements) from the General Purpose Precinct and the 1268 truck trips per day (i.e. 2536 truck movements) allowed for in total under the Concept Plan Project Approval. No addition traffic impacts are predicted to occur from that identified by the Concept Plan Project Approval.

The Department of Planning and Infrastructure should also consider a submission made on the Draft Strategic Development Plan for Newcastle Port. The main issues raised in the submission are as follows:

- **the promotion of coal and associated development within the port;**
- **the plan lack an assessment of the economic, social and environmental impacts associated with the future development of the port;**
- **the inadequacy of land based transport modes to accommodate the future expansion of port based development; and**
- **the need to improve public access to the harbour and reduce exclusions zones.**

The issues raised in the submission relating to the Draft Strategic Development Plan for Newcastle Port are outside the scope of the ICL Project. It is noted however that:

- the ICL development would increase the diversity of activities undertaken within the port, and
- the ICL EA detailed the economic, social and environmental impacts of the Project. This included an assessment of the road network to be used to distribute material to the wider region.

Access of the public to the harbour foreshore and exclusions zones is outside the control of ICL.

Noise, Light and Visual Impacts are not representative of the Project

Sections 5.2 and 5.5 of the EA present the noise and visual impacts of the Project.

The lighting impacts of the Project are expected to be minimal given the distances associated with nearest residential areas (i.e. Mayfield approximately 1.4 kilometres, Tighes Hill, approximately 1.5 kilometres; Carrington, approximately 1.5 kilometres and Stockton approximately 1.7 kilometres (refer to Section 1.3.1 of the EA).

ICL will position lighting so that glare or excessive light spillage will not occur onto neighbouring land. External lights shall comply with Australian Standard *4282:1997 - Control of the Obtrusive Effects of Outdoor Lighting*.

Appendix 1 - Revised Statement of Commitments

The Statement of Commitments included in the EA has been revised to consider the issued raised in the response to submissions. The revised Statement of Commitments details the measures proposed by ICL for environmental mitigation, management and monitoring of the Project.

If approval is granted under Part 3A of the EP&A Act Project, ICL will commit to the following controls.

6.1 Operational Controls

6.1.2 To carry out the development of the Project generally in accordance with the Project Application and this EA report.

6.1.3 The Project will operate up to 24 hour per day 7 days per week.

6.1.4 The Project will handle up to 800,000 tonnes per annum in total of cement and/or slag.

6.1.5 ICL will receive, store and distribute ground blast furnace slag in accordance with the requirements of the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Waste) Regulation 2005*.

6.2 Noise

6.2.1 Construction activities which are audible at any residential or other sensitive receiver will be limited to between 7.00 am and 6.00 pm Monday to Friday and 8.00 am and 1.00 pm Saturdays, with the exception being the construction of the silos and pile caps which will occur 24 hours per day for approximately four weeks and one week respectively as the concrete is poured.

Works proposed to be undertaken outside of these hours includes:

- any works that do not cause construction noise emissions to be audible at any nearby sensitive noise receiver;
- the delivery of materials as requested by the Police or other authorities for safety reasons;
- emergency work to avoid the loss of life, property and/or prevent environmental harm; and
- any other work as agreed through negotiation between ICL and potentially affected noise receivers or as otherwise agreed by the DP&I.

Noise Mitigation Measures

6.2.2 During the detailed design, procurement and commissioning processes ICL will confirm that the noise emissions from cement and slag terminal operations do not exceed the noise limits as shown in **Table 6.1**.

Table 6.1 – Project Noise Limits (dB(A))

Location	Day	Evening	Night
	PSNL	**PSNL**	**PSNL**
N1 – 54 Arthur Street, Mayfield	57 $L_{Aeq\ (15\ minute)}$ 2	54 $L_{Aeq\ (15\ minute)}$ 2	45 $L_{Aeq\ (15\ minute)}$ 2
	52 $L_{Aeq\ (day)}$ 1	49 $L_{Aeq\ (evening)}$ 1	41 $L_{Aeq\ (night)}$ 1
N2 – 67 Forfar Street, Stockton	42 $L_{Aeq\ (15\ minute)}$ 2	42 $L_{Aeq\ (15\ minute)}$ 2	38 $L_{Aeq\ (15\ minute)}$ 2
		38 $L_{Aeq\ (evening)}$ 1	34 $L_{Aeq\ (night)}$ 1
N3 – 25 Kitchener Parade, Mayfield East	48 $L_{Aeq\ (15\ minute)}$ 2	46 $L_{Aeq\ (15\ minute)}$ 2	44 $L_{Aeq\ (15\ minute)}$ 2
			39 $L_{Aeq\ (night)}$ 1
N4 – 2 Crebert Street, Mayfield [1]	54 $L_{Aeq\ (15\ minute)}$ 2	47 $L_{Aeq\ (15\ minute)}$ 2	45 $L_{Aeq\ (15\ minute)}$ 2
			43 $L_{Aeq\ (night)}$ 1
N5 – 32 Elizabeth Street, Carrington [1]	49 $L_{Aeq\ (15\ minute)}$ 2	48 $L_{Aeq\ (15\ minute)}$ 2	44 $L_{Aeq\ (15\ minute)}$ 2
N6 – 186 Fullerton Street, Stockton	50 $L_{Aeq\ (15\ minute)}$ 2	50 $L_{Aeq\ (15\ minute)}$ 2	50 $L_{Aeq\ (15\ minute)}$ 2
	49 $L_{Aeq\ (day)}$ 1	47 $L_{Aeq\ (evening)}$ 1	45 $L_{Aeq\ (night)}$ 1

Note 1: Amenity Criteria

Note 2: Intrusiveness Criteria

6.2.3 ICL shall prepare and implement a Noise Management Plan for the Project to the satisfaction of the Director-General. This plan will:

- be prepared in consultation with EPA and NPC, and submitted to the Director-General for approval within 6 months of the date of this consent;
- describe the measures and procedures that will be implemented to minimise noise emissions from the Project (including those associated with piling activities);
- include a noise monitoring program to confirm compliance or otherwise with the noise emissions from the terminal do not exceed the noise limits as shown in **Table 6.1**; and
- include a procedure for managing any potential noise exceedance(s).

6.2.4 ICL will seek to comply with the modelled operational noise emissions but will ensure noise emissions from the operation of the Project are less than the Project Specific Noise Limits.

6.2.5 Noise emissions from ICL's operations will be consistent with the noise goals as specified in Table 4 of the Concept Plan Approval (09- 0096).

6.3 Air Quality

Air Quality Management and Mitigation

ICL has committed to the following air quality management and mitigation measures for the Project:

Construction

6.3.1 Maintenance of appropriate dust management controls during the construction phase of the Project including minimisation of disturbed areas, watering of exposed surfaces during construction and the stabilisation of exposed areas post-construction.

Operation

6.3.2 Minimising any visible dust emission generated from the handling, transfer, storage and transport of cement and ground slag.

6.3.3 ICL shall prepare and implement an Air Quality Management Plan for the Project to the satisfaction of the Director-General. This plan will:

- be prepared in consultation with EPA, Council and NPC, and submitted to the Director-General for approval within 6 months of the date of this consent;
- describe all reasonable and feasible measures and procedures that will be implemented to minimise dust emissions from the handling, transfer, storage and transport of cement and ground slag; and
- describe the measures that will be implemented should dust emission generated from the handling, transfer, storage and transport of cement and ground slag be observed.

6.3.4 Dust emissions from ICL's operations will be consistent with the air quality criteria as specified in Table 11-6 within the Mayfield Site Port Related Activities Concept Plan EA (AECOM 2010).

6.4 Road and Sea Traffic

Construction

6.4.1 ICL will utilise the existing Selwyn Street access point for equipment and materials transport and vehicle access.

Operational Road Traffic Control

Operational traffic management measures to be implemented include:

6.4.2 NPC will provide sealed access to the boundary of the proposed Cement terminal prior to the plant being commissioned.

6.4.3 A minimum of 15 parking spaces will be provided on-site.

6.4.4 The design of the access driveway, and internal access roads, will conform to Australian Standard AS 2890.2:2002 – Off Street Commercial Vehicle Facilities.

6.4.5 Provision of appropriate access driveways and circulation roadways, as well as loading areas, which will ensure that all manoeuvring occurs on site.

6.4.6 The Project at full throughput capacity will not generate more than 58 laden trucks per day (calculated using an annual rolling average).

Operational Sea Traffic Control

6.4.7 ICL will liaise with NPC to ensure the efficient and coordinated passage of its ships to and from the port.

6.4.8 The Project at full throughput capacity will receive up to a total of 32 shipments of cement and/or slag per year (calculated using an annual rolling average).

6.5 Visual

6.5.1 ICL will prepare a Lighting and Material Finishes Management Plan for the terminal in consultation with NPC. A copy of the Plan will be provided to DP&I and NPC prior to the commencement of construction.

6.5.2 ICL will position lighting so that glare or excessive light spillage will not occur onto neighbouring land. External lights shall comply with Australian Standard *4282:1997 - Control of the Obtrusive Effects of Outdoor Lighting*.

6.6 Soil and Water

Construction

6.6.1 A Soil and Water Management Plan will be developed in accordance with the requirements of the 'Managing Urban Stormwater: Soils and Construction (Landcom 2004).

6.6.2 Sedimentation and erosion controls will be implemented throughout the construction phase of the Project in accordance with Managing Urban Stormwater: Soils and Construction (NSW Landcom 2004) (the Blue Book).

Operation

6.6.3 Runoff harvested from 'clean areas' of the site will be used on site, where possible. Excess water will be discharged directly to the existing trunk drainage network.

6.6.4 Runoff from 'dirty areas' will pass through a first flush system prior to being discharged to the existing trunk drainage network.

6.7 Contamination

6.7.1 Prior to undertaking any works confirmation from the appointed contaminated site auditor that the Project includes suitable remediation and risk management controls and compiles with the requirements of the CSMP, will be sought.

6.7.2 Any potential acid sulphate soils excavated from the site will be managed and treated in accordance with the measures detailed in Section 5.7.3 of the EA.

6.8 Hazard and Risk

6.8.1 The Project will not store quantities of Dangerous Goods which exceed the relevant thresholds.

6.9 Greenhouse Gas

ICL will prepare an annual Greenhouse Gas and Energy report that will be submitted to DP&I and EPA. The report will include the following:

a) Monitoring and reporting energy efficiency indicators such as energy consumed per tonne dispatched.

b) Assessment and implementation of energy and greenhouse management initiatives during the design and operation of the Project.

c) Review of developments in alternative technology.

d) Consideration of biodiesel compatibility in future procurement decisions.

6.10 Waste

6.10.1 The management of waste materials generated by the construction and operation of the Project will be managed through the design; procurement of construction materials and purchasing; identification and segregation of reusable and recyclable materials; processing materials for recycling; and considering environmental impacts for waste removal processes.

6.11 Environmental Management, Monitoring, Auditing and Reporting

Environment Management System

6.11.1 ICL will develop and implement an Environment Management System to outline the environmental management practices to be implemented during the construction and operation of the Project.

Environmental Protection Licence

6.11.2 ICL will obtain an Environmental Protection Licence for the Project prior to commencement of operations at the site.

Independent Environmental Audit

6.11.3 Three years after the commencement of the Project, and every four years thereafter, ICL will commission and pay the full cost of an Independent Environmental Audit of the Project.

Incident Reporting

6.11.4 As soon as practicable following the detection of an exceedance of the limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, the Proponent shall notify the exceedance/incident to the appropriate regulatory authority. The notification may include the following information:

- describe the date, time, and nature of the exceedance/incident;
- identify the cause (or likely cause) of the exceedance/incident;
- describe what action has been taken to date; and
- describe the proposed measures to address the exceedance/incident.

6.12 Community Engagement

Ongoing Community Consultation

6.12.1 ICL will continue to consult with the community and other relevant stakeholders following lodgement of the EA with the DP&I, as required.

Community Enquiry Phone Number

6.12.2 Prior to the commencement of construction ICL will implement, publicise and list with a telephone company a contact phone number to enable the general public to reach a person who can arrange appropriate response action to the enquiry.

6.12.3 ICL will maintain a register to record details of all enquiries received and actions undertaken in response.

6.12.4 ICL will supply the DP&I with a copy of the enquiries register on an annual basis.

Participation in wider industry consultation processes

6.12.5 In consultation with NPC, ICL will as required participate in community consultation and engagement strategies.

Appendix 2 - Draft EPL Conditions

The draft Environment Protection Licence (EPL) conditions which were included in the DECCW's submission. ICL's comments are on an exception basis, with the relevant condition reproduced in full and ICL's comments and suggested amendments as tracked changes noted below each condition.

Issue

A1.3 The applicant must not process more than 600,000 tonnes of cement per year.

Response

The ICL EA seeks approval for a maximum through put of up to 800,000 tonnes per year. Subject to market demand this could consist of entirely of cement.

Suggested amendments to condition L1.3.

A1.3 The applicant must not process more than ~~600,000~~ 800,000 tonnes of cement and/or ground blast furnace slag combined per year.

Issue

A1.4 The applicant must not receive, store, process or discharge ground blast furnace slag at the premises.

Response

The ICL has provided additional information to the EPA in relation to the importation and distribution of ground blast furnace slag. Subsequent discussion with the EPA has confirmed they will licence the importation and distribution of ground blast furnace slag at the terminal.

Suggested amendments to condition L1.4.

A1.4 ~~The applicant must not receive, store, process or discharge ground blast furnace slag at the premises.~~ ICL will receive, store and distribute ground blast furnace slag in accordance with the requirements of the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Waste) Regulation 2005*.

Issue

L5.1 Noise operated at the premises must not exceed the noise limits in the table below. The locations referred to in the table below are indicated by Table 4.1 Project Specific Monitoring Locations for Operational Noise Impact Assessment in the 'Environmental Assessment – Noise Impact Assessment for Cement and Slag Receival and Dispatch terminal Mayfield North' prepared by Umwelt (Australia) Pty Limited February 2013.

Noise Limits

Locality	Location	Noise Limits dB(A)			
		Day LAeq, 15minute	**Evening LAeq, 15minute**	**Night LAeq, 15minute**	**Night LA1, 1minute**
N1	54 Arthur Street, Mayfield[1]	35	35	35	45
N2	67 Forfar Street, Stockton	35	35	35	45
N3	25 Kitchener Parade, Mayfield East	36	36	35	45
N4	2 Crebert Street, Mayfield	36	36	35	45
N5	32 Elizabeth Street, Carrington	35	35	35	45
N6	186 Fullerton Street, Stockton	35	35	35	45

Response

ICL note that the EPA has suggested a criteria of 35 $L_{Aeq(15\ minute)}$ db(A) during the day, evening and night time periods, for the noise monitoring locations where the predicted noise levels, as per Table 5.8 of the EA (reproduced below) is less than 35 $L_{Aeq(15\ minute)}$ (i.e. N1, N2, N5 and N6). Where the predicted noise levels, as per Table 5.8 of the EA are greater than 35 $L_{Aeq(15\ minute)}$ (i.e. N3 and N4), the EPA has suggest the predicted maximum $L_{Aeq(15\ minute)}$ noise level for the day and evening time periods but not the night period where the EPA has suggest a adopted criteria of 35 $L_{Aeq(15\ minute)}$ db(A). As the model indicates that the Project can not comply with the criteria suggested by the EPA and seeks to have the criteria for the night time period be increased from 35 to 36 dB(A).

Table 5.8 – Predicted Noise Impact - Siwertell Unloading Ship, dB(A)

Receiver ID	Night-time PSNL	Predicted Operational Noise Levels				
		Met Scenario 1 3 m/s SE wind	**Met Scenario 2** 3 m/s NW wind	**Met Scenario 3** Inversion Conditions	**Met Scenario 4** 3 m/s NE wind	**Met Scenario** Neutral Conditions
N1*	41	31	14	29	30	19
N2	34	18	32	30	23	25
N3	39	33	23	34	36	30
N4*	43	< 35	25	34	36	30
N5*	44	21	34	34	34	26
N6*	45	18	33	31	20	24

* Concept Plan Approval Noise Locations

Suggested amendments to condition L5.1.

L5.1 Noise operated at the premises must not exceed the noise limits in the table below. The locations referred to in the table below are indicated by Table 4.1 Project Specific Monitoring Locations for Operational Noise Impact Assessment in the 'Environmental Assessment – Noise Impact Assessment for Cement and Slag Receival and Dispatch terminal Mayfield North' prepared by Umwelt (Australia) Pty Limited February 2013.

Noise Limits

Locality	Location	Noise Limits dB(A)			
		Day LAeq, 15minute	Evening LAeq, 15minute	Night LAeq, 15minute	Night LA1, 1minute
N1	54 Arthur Street, Mayfield[1]	35	35	35	45
N2	67 Forfar Street, Stockton	35	35	35	45
N3	25 Kitchener Parade, Mayfield East	36	36	~~35~~36	45
N4	2 Crebert Street, Mayfield	36	36	~~35~~36	45
N5	32 Elizabeth Street, Carrington	35	35	35	45
N6	186 Fullerton Street, Stockton	35	35	35	45

Issue

O3.3 Should visible dust emissions occur at any time, the applicant must identify and implement all practicable dust mitigation measures, including cessation of relevant activities, as appropriate, such that emissions of visible dust cease.

Response

Dust emissions from the operation of the Project are inevitable and may potentially be visible (i.e. it is not possible for the Project to operate with zero dust emissions and cease operations if dust emissions are visible). The observation of dust emissions does not however indicate a system failure or that the operations are not being undertaken within the approval and/or licence requirements. The primary measure for the protection of air quality is the minimisation of dust emissions which are likely to result in a measureable and material impact on air quality (e.g. continuous dust the emissions which are in excess of the performance of the air filter system).

Suggested amendments to condition O3.3.

O3.3 Should ~~visible~~ fugitive dust emissions from the terminal be observed for a period of 10 minutes or more ~~occur at any time,~~ the applicant must identify and implement all practicable dust mitigation measures. Should a failure of the bag house system used to remove dust from air emissions be detected, all relevant activities will cease until the issue is rectified. ~~dust control, including cessation of relevant activities, as appropriate, such that emissions of visible dust cease.~~

Issue

M2.2 Air Monitoring Requirements

Point 2, 3, 4, 5, 6, 7, 8

Pollutant	Unites of Measure	Frequency	Sampling Method
Solid particles	mg/m^3	Post commissioning and then six monthly	TM-15

Response

ICL proposes to utilise bag house filter technology to remove dust prior to the air being released to the atmosphere. This technology is widely used and is highly effective in the removal of dust from air emissions. Typical reverse pulse fabric filters have particulate collection efficiencies of 99.9 per cent. Given the simple design, the system either works or it does not.

ICL considers that the implementation of a system which detects the failure of the filter bag (e.g. opacity metre, which measures the concentration of dust in air emissions) combined with visual observation from the emission point (i.e. is excessive dust visible) is likely to be more effective at minimising the air quality impact of the Project rather than a system of monitoring the concentration of dust in air emissions which would only simply confirm effective operation of the system.

The implementation of a system which detects the failure of the filter bag (i.e. source control practices) also assists in the identification of who may be the responsible party in the event of a dust complaint and/or an exceedence, as well as the implementation of rectification measures.

Suggested amendments to condition M2.2.

~~**Point 2, 3, 4, 5, 6, 7, 8**~~

~~Pollutant~~	~~Unites of Measure~~	~~Frequency~~	~~Sampling Method~~
~~Solid particles~~	~~mg/m^3~~	~~Post commissioning and then six monthly~~	~~TM-15~~

A bag break detection system will be included in the design to monitor to performance of the bag house filter for EPA identified Points 2, 3, 4, 5, 6, 7 and 8.

Issue

M5.1 To determine compliance with Condition 5.1 attended noise monitoring must be undertaken in accordance with Conditions L5.6 and L5.7 and:

a) at each one of the locations listed in Condition L5.1;

b) occur annually during the applicants reporting period as defined by an Environment Protection Licence;

c) occur during each, day, evening and night as defined in the NSW Industrial Noise Policy for a minimum of:

- **1.5 hours during the day;**
- **30 minutes during the evening;**
- **1 hour during the night; and**

d) occur for three consecutive days.

Response

It is noted that noise modelling of the Project identified that the construction and operation of the Project will comply with the OEH and Concept Plan Approval noise goals at all locations during the day, evening and night time periods (refer to Section 5.2.5 of the EA).

Furthermore ICL committed to:

- confirming that the noise emissions from the terminal meet the OEH and Concept Plan Approval goals during the detailed design and procurement process;
- undertaking pre commissioning noise testing to confirm the performance of individual plant and the overall Project; and
- undertaking tri-annual noise monitoring of the performance of the operations (refer to Section 5.2.5 of the EA).

This program would be able to clearly demonstrate the Projects compliance with the PSNL.

As the existing noise levels at the proposed monitoring locations are already above the noise emissions associated with the Project the monitoring program suggested by the EPA would not confirm the noise performance of the Project prior to its operation and/or compliance with the PSNL (i.e. noise emissions from the Project are not likely to be audible at the monitoring locations due to the existing background noise environment). The implementation of the EPA suggested program is extremely costly, not able to provide informative data that is not known at the present point in time and not typically associated with a fixed plant operation.

The monitoring program as proposed by ICL is designed to address any potential noise issue prior to the commencement of the operations through the detailed design (contract specifications) and pre commissioning phases of the project. Ongoing noise compliance would be confirmed via tri annual monitoring which would target the major noise sources on site and compare the measured noise levels with that collected during the pre commissioning phase and the noise levels used in the noise impact assessment model.

Should the EPA maintain this position, ICL will seek to:

- minimise the duration of monitoring at each location, such that the duration of monitoring is representative of typical operations;
- establish reference points for each major noise source; and
- cease all further noise monitoring requirements should compliance be demonstrated. (N.B. Further monitoring may be undertaken should any complaints be received by ICL during the life of the operation).

Suggested amendments to condition M5.1.

M5.1 To determine compliance with Condition 5.1 attended noise monitoring must be undertaken in accordance with Conditions L5.6 and L5.7 and:

a) at each one of the locations listed in Condition L5.1;

b) occur <u>following the commencement of operations; and</u> ~~annually during the applicants reporting period as defined by an Environment Protection Licence~~

c) occur during each, day, evening and night as defined in the NSW Industrial Noise Policy <u>such that the noise levels recorded are typical of that at the receiver when the terminal is operating.</u> ~~for a minimum of:~~
   - ~~1.5 hours during the day;~~
   - ~~30 minutes during the evening, and~~
   - ~~1 hour during the night,~~

d) ~~occur for three consecutive days.~~

Appendix 3 - Draft NOW Recommended Conditions of Approval

The Proponent shall prepare and implement a Water Management Plan for the project. This Plan must be developed in consultation with the Office of Water and include:

- **details of water requirements, water use and water management on site;**
- **details of water licence requirements;**
- **a Surface Water Management Plan; and**
- **Groundwater Management Plan.**

Overall NOW's recommended conditions of approval are particularly onerous given the nature of the development and the potential construction and operational impacts on the surface and groundwater resources.

The water requirements for the construction and operation of the Project are minimal as the major water usage is associated with the ablution and amenity facilities.

The Surface Water Management Plan must include:

- **surface water impact assessment criteria, including trigger levels for investigating any potentially adverse surface water impacts;**
- **a program to monitor surface water flows and quality; and**
- **a protocol for the investigation and mitigation of identified exceedences of the surface water impact assessment criteria.**

As part of the construction phase of the Terminal the entire site will be capped with a concrete hardstand. Runoff from the concrete hardstand will be conveyed to and treated in a first flush system before being discharged offsite. Therefore, there would be little to no potential for erosion, sedimentation or water quality impacts to occur during operation. Therefore the potential surface water impacts of the Project are essentially limited to the construction phase. ICL will prepare and implement a Surface Water Management Plan only during the construction of the Project.

The Groundwater Management Plan must include:

- **baseline data on groundwater levels and quality;**
- **groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts;**
- **a program to monitor groundwater levels and quality beneath the site; and**
- **a protocol for the investigation and mitigation of identified exceedences of the groundwater impact assessment criteria.**

Since the closure of the former BHP Newcastle Steelworks in September 1999, the site has been subject of extensive decommissioning and rehabilitation activities, to prepare the site for redevelopment as a port related industrial area. This has included recontouring, installation of site drainage infrastructure, installation of a subterranean barrier wall to control groundwater movement within a portion of the closure area and capping the site with a low permeability material. These works limit infiltration and therefore any potential groundwater interaction or recharge.

Excavations associated with footings and the installation of services will penetrate the low permeability capping material but will not extend below the groundwater table. The excavations will provide a potential pathway for surface water to enter the groundwater system. This could alter existing surface water and groundwater conditions. This will be minimised by implementing up slope diversions to convey runoff around the excavation site. These control measures minimise the potential for any groundwater. The construction of the Project will include capping of the site with a concrete hardstand. This will provide an additional mitigation measure which further minimises infiltration and potential mobilisation of contaminants during the operation of the Project.

The risk of the construction or operational activities adversely impacting the groundwater is considered to be low and therefore the need to prepare and implement such rigorous surface water and groundwater management plans is not proposed.

Newcastle

PO Box 3024
75 York Street
Teralba NSW 2284

Ph. 02 4950 5322

www.umwelt.com.au