

6 CONSULTATION AND ISSUES IDENTIFICATION

6.1 Formal Procedures for Consultation

6.1.1 New South Wales Formal Procedures

This EA has been prepared in accordance with Part 3A of the EP&A Act and its Regulation. Part 3A of the EP&A Act ensures that the potential environmental effects of a proposal are properly assessed and considered in the decision making process.

In preparing this EA, the requirements of the Director-General have been addressed as required by Clause 75F of the EP&A Act. Each of the matters raised by the Director-General for consideration in the EA is outlined in **Table 6-1** below, together with the relevant section of the EA which addresses that matter. A copy of the EARs issued by the Director-General is provided in **Appendix B**.

Table 6-1: Director-General's Requirements

Matter	Reference in EA
General Requirements	
The EA must include: • An executive summary; • A description of the proposal, including construction, operation and staging; • An assessment of the environmental impacts of the project, with particular focus on the key assessment requirements specified below; • Justification for undertaking the project with consideration of the benefits and impacts of the proposal; • A draft Statement of Commitments for environmental mitigation, management and monitoring for the project; and • Certification by the author of the Environment Assessment that the information contained in the Assessment is neither false nor misleading.	Executive Summary Section 4 Section 8 Section 11 Section 9 Certificate at front of EA
Remediation Approach, Performance and Justification	
The Environmental Assessment must outline the process followed and considerations applied in selecting the preferred remediation approach and treatment technology. The Environmental Assessment must also demonstrate that the treatment technology is capable of achieving desired remediation and environmental outcomes, including: • Clear details of the layout, design, technology and proposed operation of the DTD Plant, Excavation Pre-treatment Building and Feed Soil Building;	Section 3 Appendix D – RAP
• A detailed description of the stages of the remediation process, including (but not limited to) proposed excavation methods/soil management, and a description of the DTD commissioning program to be applied to the project to verify technology and emission control;	Section 4 Appendix D – RAP

Matter	Reference in EA
• Details of the DTD operation including operating temperatures, residence times for processing materials, production rates, etc; • Detailed information on the Pre-treatment building including the ventilation system, worker and machinery movements, emission control systems and emergency procedures, procedures for the handling, transport, production and storage of materials on site, and for the management of non-treatable wastes; • Details of the quantities and physico-chemical parameters (eg. contaminant concentration, moisture content, particle size, bulk density, etc) of the materials to be remediated, and the qualities of those materials once remediated. The Environmental Assessment shall detail how the technology has been proven as acceptable for processing materials similar to those likely to be located on the site, and/or what measures the Proponent will implement to manage uncertainty where actual or suspected materials on the site have not been the subject of similar and conclusive remediation operations in the past; • Details of the management of any contaminated materials outside of the encapsulation (eg. In the eastern embankment near site boundary and Corish Circle); • Demonstration of how the excavation, handling, pre-treatment and storage of materials and wastes containing scheduled chemical waste, dioxin, PCBs and other principal contaminants of concern is conducted in accordance with best practice measures with consideration to the USEPA <i>Best Practice Management Practices for Soils Treatment Technologies – Suggested Operational Guidelines to Prevent Cross-Media Transfer of Contaminants During Cleanup Activities – EPA530-R-97-007</i> and the DEC's <i>Environmental Guidelines: Assessment, Classification & Management of Liquid and Non-Liquid Wastes</i>.	Section 4 Preliminary details are provided in Appendix D – RAP. Confirmation of these details will be provided following detailed design of the plant and commissioning and proof of performance trials. Section 4 Appendix D – RAP Sections 3, 4 Appendix D – RAP Section 4 Appendix D – RAP Section 4 Appendix D – RAP
Remediation Criteria	
The Environmental Assessment must clearly indicate the proposed remediation criteria to be applied to the site, including details of how these criteria have been derived. The Environmental Assessment must demonstrate how treatment will achieve: • A statistical average dioxin, furan and dioxin-like PCB WHO-TEQ of less than $1\mu\text{gkg}^{-1}$ (1000ppt) determined with a methodology acceptable to the DEC; • An aggregate concentration of scheduled chemical waste constituents of less than 2mgkg^{-1};	Appendix D – RAP Note: The concentrations, nominated in the Director-General's EARs, are more stringent than criteria currently in force in the relevant NSW CCOs. This is because they do not consider practicability

Matter	Reference in EA
- A polychlorinated biphenyl concentration of less than 2mgkg¹; - The relevant requirements of the HCB Waste Management Plan 1996; and - Best practice limits as demonstrated within the technology assessment application to the DEC for other principal contaminants of concern.	(technical and economical) which is considered in the CCOs, and the dioxin criterion is below that in the current dioxin CCO (1986). Section 5 Appendix D – RAP The Technology Assessment application will be prepared following detailed design and will contain the relevant information.
Air Quality Impacts	
The Environmental Assessment must include a comprehensive air quality impact assessment with assessment and modelling of air quality and odour impacts in accordance with the <i>Approved Methods for Modelling and Assessment of Air Pollutants in NSW</i> (EPA, 2005) and having regard to <i>Assessment and Management of Odour from Stationary Sources in NSW</i> (EPA, 2001), <i>Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW</i> (EPA, 2001) and <i>Load Calculation Protocol for use by holders of NSW Environment Protection Licences when calculating Assessable Pollutant Loads</i> (EPA, 1999). The Environmental Assessment must: - Describe baseline conditions at the site and surroundings including existing air quality (using existing information and site ambient monitoring data), meteorology, topography, surrounding landuses and description of surrounding structures that may effect plume dispersion; - Provide details of all air discharge points and characteristics (eg. number and height of stacks, discharge velocities, residence time, etc) and of fugitive emissions; - Include all identified emissions and pollutants of concern, assessed additively with background levels, cumulatively with other potential emission sources at the time of remediation (eg. HCB repacking, GWTP), and considering the effects and significance of estimated pollutant concentrations on the environment, human health, amenity and regional ambient air quality and goals; - Provide details of the proposed air quality and odour control equipment and management for point and fugitive emissions and the proposed monitoring program (ambient and point discharge monitoring); - Include contingency plans for air emission controls in the event of loss of power or other incident or upset that may affect air emissions performance; - Include a detailed dust impact assessment from soil disturbance and other remediation activities, and must consider cumulative dust impacts from other relevant activities in the area;	Section 8.1 Appendix E – Air Quality Assessment Section 8.1.1 Appendix E – Air Quality Assessment Section 8.1 Appendix E – Air Quality Assessment Section 8.1 Appendix E – Air Quality Assessment Section 8.1 Appendix E – Air Quality Assessment Section 8.1 Appendix E – Air Quality Assessment Section 8.1 Appendix E – Air Quality Assessment Section 8.1 Appendix E – Air Quality Assessment

Matter	Reference in EA
Include dust management controls with particular attention to the management of contaminated material outside the encapsulation in the eastern embankment and near Corish Circle.	Section 8.1, 9 Appendix E – Air Quality Assessment
Human Health Impacts	
The Environmental Assessment must include an assessment of the human health impacts of the project, undertaken in accordance with the risk assessment approach outlined in <i>Environmental Health Risk Assessment – Guidelines for Assessing Human Health Risk from Environmental Hazards</i>. The Environmental Assessment must include: - Justification for the exclusion/inclusion of specific chemicals, along with toxicological profiles of chemicals; - Exposure parameters/scenarios including the development of a multi-exposure pathway risk assessment model to account for inhalation and ingestion pathways; - Consideration of acute/chronic and carcinogenic impacts of chemical exposures for children and adults including users of Hensley Field and nearby residences; - Consideration of existing background exposure levels of criteria chemicals, and cumulative risks of any known or expected sources of the chemicals of concern during the remediation process that may contribute to acute or lifetime exposure (eg. any emissions from the HCB repacking plant or the GWTP); - Chemicals present at low concentrations but with similar mode of action of other chemicals present at the site must be retained in the risk assessment and a cumulative toxicological effect estimated.	Section 8.9 Appendix H – HHIA Section 8.9 Appendix H - HHIA Section 8.9 Appendix H - HHIA Section 8.9 Appendix H - HHIA Section 8.9 Appendix H – HHIA
Noise and Vibration Impacts	
The Environmental Assessment must include an assessment of the noise impacts of the project in accordance with the <i>NSW Industrial Noise Policy</i> (EPA 2000) and the <i>Environmental Criteria for Road Traffic Noise</i> (EPA 1999). The Assessment shall include consideration of noise impacts resulting from all noise sources associated with the project including (but not necessarily limited to) excavation works, noise emissions from the DTD Plant and pre-treatment building, any activities proposed to be undertaken during evening or night time periods and traffic noise. The Environmental Assessment must include consideration of cumulative noise impacts from other expected contributors to noise during the remediation process (this may include noise from the HCB repackaging proposal or other new activities that are likely to commence in the area during remediation). With respect to potential vibration impacts, the Environmental Assessment must include consideration in accordance with the DEC's <i>Environmental Noise Management – Assessing Vibration: A Technical Guideline</i>.	Section 8.2 Appendix F – Noise Impact Assessment
Water Quality Impacts	
The Environmental Assessment must assess impacts of the project on water quality and the water cycle during each phase of the project, including environmental assessment and management of surface water, stormwater, groundwater and leachate(s). The Environmental Assessment must:	Section 8.6

Matter	Reference in EA
• Provide an accurate representation of the extent of the HCBP “hotspot” in the groundwater adjacent to the CPWE and how this groundwater will be managed/remediated; • Describe how contaminated water held in the hypalon membrane will be managed/remediated; • Details of how nearby production bores will be managed so as not to exacerbate migration of contaminants from the disturbed area; • Provide detail of the proposed monitoring of groundwater and surface water and include effective management strategies to manage the risk of water contamination; • Provide details of sediment and erosion controls.	The proposed remediation project does not involve groundwater remediation. Section 8.6 Appendix D – RAP The proposed remediation project does not involve groundwater remediation. The existing groundwater monitoring program will be maintained for the duration of the works in line with Orica’s EPL. Surface water is addressed in Appendix D – RAP. Section 8.6 Appendix D - RAP
Land Use Safety	
The Environmental Assessment must include a Preliminary Hazard Analysis prepared in accordance with the Department’s Hazardous Industry Planning Advisory Paper No. 6, Guidelines for Hazard Analysis and Multi-Level Risk Assessment. The Preliminary Hazard Analysis must include: • A full description of the treatment process, together with process flow diagrams and other relevant information at various points in the process, such as temperatures, pressures, flow rates and contaminants with their physical state;	Section 8.8 Appendix G – PHA A description of the process is provided in Section 4. Further details such as process flow diagrams, temperatures, pressures, flow rates etc are not currently available but will be provided following detailed design of the plant. See Section 9.
• Full descriptions and operating details of emission control systems such as water treatment, gas scrubbing, gas treatment and monitoring of exhaust to atmosphere;	A description of the process is provided in Section 4. Further details such as process flow diagrams, temperatures, pressures, flow rates etc are not currently available but will be provided following detailed design of the plant. See Section 9.

Matter	Reference in EA
• Details of the ventilation system proposed for the excavation and pre-treatment building. If the building is not intended to be maintained at negative pressure, the systems proposed to control fugitive emissions to the atmosphere must be outlined; • Quantitative evaluation of the irritation and injury risks at surrounding residential areas and assessment of these risks against the criteria set out in the Department's <i>Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning</i>. Failure modes of both detection and safe shutdown systems must be taken into consideration when evaluating risks; • Details of safe shutdown systems in the event of process malfunction including estimates of (quality and quantity) off-spec emissions prior to reaching a safe/stable condition; and • The impacts on any food related industries in the area.	A description of the process is provided in Section 4 and in more detail in Appendix G – PHA. Further details such as process flow diagrams, temperatures, pressures, flow rates etc are not currently available but will be provided following detailed design of the plant. See Section 9. Dispersion modelling shows that injury and irritation threshold values are not exceeded in surrounding areas therefore HIPAP 4 criteria are satisfied. Section 8.8 Appendix G - PHA Section 8.8 Appendix G - PHA Section 8.8 Appendix G – PHA Appendix H - HHIA
General Environmental Risk	
Notwithstanding the above key assessment requirements, the Environmental Assessment must include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of these additional key environmental impacts must be included in the Environmental Assessment.	Section 10

Matter	Reference in EA
Consultation Requirements	
You must undertake an appropriate and justified level of consultation with the following parties during the preparation of the Environmental Assessment: • NSW Department of Environment and Conservation • NSW Department of Health • Botany Bay City Council • Randwick City Council • Department of Natural Resources • The Community Participation and Review Committee; and • The local community and relevant community groups. The EA must clearly indicate issues raised by stakeholders during consultation, and how those matters have been addressed in the EA.	Section 6

In addition to the above, the EA must include the general requirements for projects under Part 3A of the EP&A Act, as outlined in **Table 6-2** below.

Table 6-2: Statutory Requirements for EA (Including EP&A Regulation Clause 51 Matters)

Requirement	Reference in EA
Executive Summary	Executive Summary
Description of the proposal, including construction, operation and staging	Section 4
Details of the location of the project and environmental planning provisions applicable to the site and the project	Sections 2 & 5
Consideration of Alternatives	Section 3
An assessment of the environmental impacts of the project, with particular focus on the key assessment requirements specified below	Section 8
Proposed mitigation/ management measures of residual environmental impacts	Section 8
Justification for undertaking the project with consideration of the benefits/ impacts of the proposal, and proposed management/ mitigation	Section 11
A draft Statement of Commitments for environmental mitigation, management and monitoring for the project	Section 9
Certification by the author of the Environmental Assessment that the information contained in the Assessment is neither false nor misleading	Certificate at front of EA

6.2 Consultation with Stakeholders and Other Relevant Authorities

6.2.1 Statutory and other relevant authorities

The proposed project is classed as a 'Major Project' as discussed in **Section 1.4**. As such, written comments from relevant statutory agencies were requested by DoP. In addition, HLA, on behalf of Orica, consulted the Department of Natural Resources (DNR), the Department of Health, CoBB Council and Randwick City Council (RCC) by letter dated 29 August 2006, requesting any specific requirements for the EA or comments on the proposal. **Table 6-3** below summarises the responses with the full responses provided as **Appendix I** to this EA.

Table 6-3: Government Agency Requirements and EA Reference

Requirement	EA Reference/Comment
Department of Environment and Conservation	
The DEC provided detailed comments in respect of the project with regards to: • Air • Noise and Vibration • Water • Waste and Chemicals • Threatened Species and Aboriginal Cultural Heritage	Sections 8.1, 8.2, 8.6, 8.8 and 8.9
Air	
• The EA prepared in respect of the project should: - Identify all sources of air emissions from the development - Provide details of the project that are essential for predicting and assessing air impacts including: (i) the quantities and physio-chemical parameters (eg concentration, moisture content, bulk density, particle sizes etc) of materials to be used, transported, produced or stored; (ii) an outline of procedures for handling, transport, production and storage; and (iii) the management of solid, liquid and gaseous waste streams with potential for significant air impacts. - Include clear diagrams illustrating (i) The physical layout of the plant and pollution control equipment; and (ii) the material and air flows through the plant and any pollution control equipment, including structures or enclosures for controlling air and odour emissions.	Section 8.1, Appendix E – Air Quality Assessment

Requirement	EA Reference/Comment
- Establish existing background levels of the key air pollutants in the ambient air at potentially affected sensitive receptor locations; - Detail how background levels and emissions from other potential sources of the key air pollutants have been cumulatively assessed at sensitive receptors locations; - Detail how fugitive emissions of potentially contaminated material will, essentially, be eliminated; - Provide details of an appropriate odour impact assessment and detail how potentially offensive odour will be eliminated at any sensitive receptor location; and - Provide details of trials to verify (before treating and disturbing contaminated materials) that the process will not create fugitive emissions and that point emissions will meet predicted levels. • The EA must provide a description of existing air quality and meteorology, using existing information and site representative ambient monitoring data. This description must include the following: - A description of the typography and surrounding land uses; - Details of the exact locations of dwellings, schools and hospitals; - A perspective view of the study area such as the terrain file used in dispersion. • The EA needs to include site representative data on the following meteorological parameters: - temperature and humidity; - rainfall, evaporation and cloud cover; - wind speed and direction; - atmospheric stability class; - mixing height (the height that emissions will be ultimately missed in the atmosphere); - katabatic air drainage; and - air re-circulation. • With respect to the assessment of air quality impacts, the EA should include: - An air quality and odour impact assessment in accordance with the requirements of the Approved Methods for Modelling and Assessment of Air Pollutants in NSW August 2005 and with regard to Assessment and Management of Odour from Stationary Sources in NSW (EPA 2001) and Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW (EPA 2001). - A health risk assessment acceptable to the NSW Department of Health.	Section 8.1, Appendix E – Air Quality Assessment Section 8.1, Appendix E – Air Quality Assessment Section 8.1, Appendix E – Air Quality Assessment, Appendix H - HHIA

Requirement	EA Reference/Comment
- The EA should also: - Identify all pollutants of concern and estimate emissions by quantity (and size for particles), source and discharge point; - Describe the effects and significance of pollutant concentration on the environment, human health, amenity and regional ambient air quality standards or goals; - Described the contribution that the development will make to regional and global pollution, particularly in sensitive locations; and - For potentially odorous emissions provide the emission rates in terms of odour units (determined by techniques compatible with EPA/DEC procedures). - The EA must outline specifications of pollution control equipment (including manufacturer's performance guarantees where available) and management protocols for both point and fugitive emissions. Where possible, this should include cleaner production processes.	Sections 8.1 & 8.8, Appendix E – Air Quality Assessment, Appendix H - HHIA Section 8.1, Appendix E – Air Quality Assessment
Noise	
- The EA must: - identify all noise sources from the remediation project (including both construction and operation phases). Detail all potentially noisy activities including ancillary activities including transport; and - Specify the times of operation for all phases of the project and for all noise producing activities. - The EA must: - identify any noise sensitive locations likely to be affected by activities at the project site, such as residential properties, schools, churches, and hospitals; and - Identify the land use zoning of the site and the immediate vicinity and the potentially affected areas. - The EA must demonstrate how the proponent will: - Determine the existing background (LA90) and ambient industrial (LAeq) noise levels in accordance with the NSW Industrial Noise Policy, inclusive of industrial noise from BIP; and - Determine the existing road traffic noise levels in accordance with the NSW Environmental Criteria for Road Traffic Noise, where road traffic noise impacts may occur.	Section 8.2, Section 9, Appendix F – Noise Impact Assessment Section 8.2, Appendix E – Noise Impact Assessment Section 8.2, Appendix F – Noise Impact Assessment

Requirement	EA Reference/Comment
- The noise impact assessment report should provide details of all monitoring of existing ambient noise levels including: - Details of equipment used for the measurements; - A brief description of where the equipment was positioned; - A statement justifying the choice of monitoring site, including the procedure used to choose the site, having regards to the definition of 'noise sensitive location(s)' and 'most affected location(s)' described in Section 3.1.2 of the NSW Industrial Noise Policy; - Details of the exact location of the monitoring site and a description of land uses in the surrounding areas; - A description of the dominant and background noise sources at the site; - Day, evening and night assessment background levels for each day of the monitoring period; - The final RBL value; - Graphs of the measured noise levels for each day should be provided; - A record of periods of affected data (due to adverse weather and extraneous noise), methods used to exclude invalid data and a statement indicating the need for any re-monitoring under Step 1 in Section 81.3 of the NSW Industrial Noise Policy; and - Determination of LAeq noise levels from existing industry.	Section 8.2, Appendix F – Noise Impact Assessment
- The EA must demonstrate how the Proponent will: - Determine the INP project specific noise levels for the site. For each identified potentially affected receiver, this should include: - Determine the intrusive criterion for each identified potentially affected receiver; selection and justification of the appropriate amenity category for each identified potentially affected receiver; - Determine the amenity criterion for each receiver; and determination of the appropriate sleep disturbance limit. - Determine expected noise level and noise character (eg: tonality, impulsiveness, vibration, etc) likely to be generated from noise sources during (i) site establishment; (ii) construction; (iii) operational phases; (iv) transport including traffic noise generated by the proposal; and (v) other services.	Section 8.2, Appendix F – Noise Impact Assessment
The EA must demonstrate how the Proponent will determine the noise & vibration levels likely to be received at the most sensitive locations (these may vary for different activities at each phase of the development).	Section 8.2, Appendix F – Noise Impact Assessment

Requirement	EA Reference/Comment
- Potential vibration impacts should be assessed using the DEC guideline titled: <i>"Environmental Noise Management - Assessing Vibration: a technical guideline"</i> - The noise impact assessment report should include: - A plan showing the assumed location of each noise source for each prediction scenario; - A list of the number and type of noise sources used in each prediction scenario to simulate all potential significant operating conditions on the site; - Any assumptions made in the predictions in terms of source heights, directivity effects, shielding from topography, buildings or barriers, etc; - Methods used to predict noise impacts including identification of any noise models used. Where modelling approaches other than the use of the ENM or Soundplan computer models are adopted, the approach should be appropriately justified and validated; - An assessment of appropriate weather conditions for the noise predictions including references to any weather data used to justify the assumed conditions; - The predicted noise impacts from each noise source as well as the combined noise level for each prediction scenario under any identified significant adverse weather conditions as well as calm conditions where appropriate; - For developments where a significant level of noise impact is likely to occur, noise contours for the key prediction scenarios should be derived; and - An assessment of the need to include modification factors as detailed in Section 4 of the NSW Industrial Noise Policy. - The noise impact assessment report should discuss the findings from the predictive modelling and, where relevant noise criteria have not been met, recommend additional mitigation measures; and should include details of any mitigation proposed including the attenuation that will be achieved and the revised noise impact predictions following mitigation. - Where relevant noise/vibration criteria cannot be met after application of all feasible and reasonable mitigation measures the residual level of noise impact needs to be quantified by identifying: - locations where the noise level exceeds the criteria and extent of exceedance; - numbers of people (or areas) affected; - times when criteria will be exceeded; - likely impact on activities (speech, sleep, relaxation, listening, etc); - change on ambient conditions; and - the result of any community consultation or negotiated agreement.	Section 8.2, Appendix F – Noise Impact Assessment Section 8.2, Appendix F – Noise Impact Assessment Section 8.2, Appendix F – Noise Impact Assessment Section 8.2, Appendix F – Noise Impact Assessment

Requirement	EA Reference/Comment
- For the assessment of existing and future traffic noise, details of data for the road should be included such as assumed traffic volume; percentage heavy vehicles by time of day; and details of the calculation process. These details should be consistent with any traffic study carried out in the EA. Alternatively, measured noise levels can be used provided the traffic volume during the period of measurement is demonstrated to be typical of normal volumes etc. - The EA must demonstrate how the Proponent will determine the most appropriate noise mitigation measures and expected noise reduction including noise controls and management of impacts for both construction and operational noise. This will include selecting quiet equipment and construction methods, noise barriers or acoustic screens, location of stockpiles, temporary offices, compounds and vehicle routes, scheduling of activities, etc. - For traffic noise impacts, provide a description of the ameliorative measures considered (if required), reasons for inclusion or exclusion, and procedures for calculation of noise levels including ameliorative measures. Also include, where necessary, a discussion of any potential problems associated with the proposed ameliorative measures, such as overshadowing effects from barriers.	Section 8.2, Appendix F – Noise Impact Assessment Section 8.2, Appendix F – Noise Impact Assessment Section 8.2, Appendix F – Noise Impact Assessment
Water	
- The DEC is concerned about groundwater contamination which may arise once the encapsulation is disturbed. The EA needs to address: - An accurate representation on the extent of the HCB "hot spot" in the groundwater adjacent to and underneath the CPWE; - How contaminated water currently held in the hypalon membrane will be removed prior to disturbance and its subsequent management thereafter; - How groundwater in the surrounding area will be monitored and how nearby production bores will be managed so as not to exacerbate migration of contaminants from the disturbed area; - Details of any contaminated soil management arrangements; and - Details of the installation, operation and maintenance of the sediment and erosion controls associated with the construction works.	Section 8.6, Appendix D – RAP Note: The proposed remediation project does not involve remediation of groundwater.
Waste and Chemicals	
The EA must demonstrate how the Proponent will manage all materials and wastes containing scheduled chemical waste, dioxin and/or polychlorinated biphenyls (PCBs) in accordance with the applicable Chemical Control Order. National Management Plan or in accordance with a licence under the Environmentally Hazardous Chemicals Act 1985.	Section 4, Appendix D – RAP

Requirement	EA Reference/Comment
- Prior to the issue of any variation of the existing Environmental Protection Licence and Environmentally Hazardous Chemicals Act Licence to permit the proposed works, the proponent must provide the EPA with sufficient and appropriate documentation for a technology assessment to be undertaken by the EPA, in accordance with the following: 'National Protocol – Approval/Licensing of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes -July 1994'; and 'National Protocol for Approval/Licensing of Commercial Scale Facilities for the Treatment/Disposal of Schedule X Wastes -July 1994'.	Section 9
Within the technology assessment application, the applicant must develop a Commissioning and Proof of Performance Program (CPoP) to demonstrate the technology's capability to meet best practice emission and treatment levels. The CPoP must include the proposed staging of treatment consistent with the requirements of the 'National Protocols'. Consideration should also be given to the Basel General technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants (POPs) and Stockholm BAT BEP guidance.	Section 9
- The EA must demonstrate how the Proponent will: - Process all Scheduled Chemical Waste, dioxin waste and/or Polychlorinated Biphenyls Waste (PCBs), and any wastes generated by the treatment process until the materials wastes meet: - a statistical average dioxin, furan and dioxin like PCB WHO-TEQ of less than 1 ug/kg (1 000 ppt) determined with a methodology acceptable to the EPA; - an aggregate concentration of scheduled chemical waste constituents of less than 2mg/kg; - a polychlorinated biphenyl concentration of less than 2mg/kg; - the requirements that apply in accordance with the Hexachlorobenzene Waste Management 1996; and - best practice limits as demonstrated within the Commissioning and Proof of Performance Program for other principal contaminants of concern.	Section 4, Appendix D – RAP

Requirement	EA Reference/Comment
- The EA must demonstrate that excavation, handling, pre-treatment, storage and other activities involving materials and wastes containing scheduled chemical waste, dioxin, polychlorinated biphenyls (PCBs) and other principal contaminants of concern will be conducted in accordance with best practice measures to minimise loss to the environment, exposure to humans and maximise destruction through the proposed treatment plant. The applicant should present within the Environment Assessment how this will be achieved and in addition to the NSW statutory requirements should consider the USEPA Best Management Practices (BMPs) for Soils Treatment Technologies - Suggested Operational Guidelines to Prevent Cross-Media Transfer of Contaminants During Cleanup Activities - EPA530-R-97-007. The DEC can provide the proponent with all the application forms, protocols and guidelines covered in relation to the EHC Act and technology assessment. - The EA needs to include risk assessment details covering exposure by inhalation and ingestion of contaminated soil if there is to be any loss of dust from the site during the rehabilitation process. However, the risk assessment should focus on inhalation of possibly higher air concentrations than those existing at present, because of opening the encapsulation.	Section 4, Appendix D – RAP Section 8.8, Appendix H – HHIA, Appendix G - PHA
Impact on Threatened Species and their habitat	
The DEC acknowledges that the site is highly disturbed and therefore the presence of threatened species is unlikely. Nonetheless, the EA should, if applicable, include a brief field survey of the site. If any TS are identified then likely impacts on threatened species and their habitat need to be assessed, evaluated and reported on. The EA must describe the actions that will be taken to avoid or mitigate impacts or compensate for unavoidable impacts of the project on threatened species and their habitat. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.	Section 8.9

Requirement	EA Reference/Comment
Impacts on Aboriginal cultural heritage values	
- The DEC acknowledges that the site is highly disturbed and therefore the presence of Aboriginal cultural heritage artefacts is unlikely. Nonetheless, the EA should if applicable: - Address and document the information requirements set out in the draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation involving surveys and consultation with the Aboriginal community; - Identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area; - Describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented; and - Demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts, developing options and making final recommendations.	Section 8.9
City of Botany Bay Council	
<i>Air Emission Controls and Monitoring</i> - Council is particularly concerned with dioxin emissions and air quality impacts to users of Hensley Athletic Field. - Council proposes that an air quality communications strategy be developed to report monitoring of emissions to stakeholders. This would include standard procedures and timeframes for reporting any non-compliance issues to the HCB Community Participation and Review Committee. - Council suggests fortnightly dioxin emission testing at a minimum during the commissioning and initial processing of the plant's operation. <i>Energy Requirements & Contingency plan for loss of power</i> - Council suggests that a contingency plan be developed to address energy requirements of the DTD Plant, particularly during summer months where peak demand for energy will occur and the cumulative energy demands of the DTD Plant and the existing GTP. <i>Management of eastern embankment of the car park site</i> - Management of contaminated material outside of the encapsulation located in the eastern embankment of the site must be addressed due to close proximity of area to site boundary and Corish Circle and potential dust and emissions in this area. <i>Remediation/Management of contaminated groundwater</i> - The EA should address how contaminated groundwater (identified in URS Groundwater monitoring report 29 May 2006) will be remediated or managed in the long term.	Section 8.1, Appendix E – Air Quality Assessment Section 8.3, Section Section 8.1, Section 9 Section 4, Section 8.8, Appendix G - PHA Section 4, Appendix D – RAP The proposed remediation of the CPWE does not involve the treatment of groundwater.

Requirement	EA Reference/Comment
Disposal of non treatable waste within the encapsulation - The EA should address the capability of the DTD pant to process and dispose of foreign objects and other non-organic contaminants within the soil that may not be destroyed by the proposed treatment process. Such material would require appropriate disposal in accordance with DEC guidelines. Other Issues - Council suggests that the following matters be dealt with in the EA: - Details of the validation and certification by an EPA accredited site auditor of the land suitability of the site following remediation. Future development of the site should be assessed under Part 5 rather than Part 3A. - Cost of the project must be addressed and will be important in determining S94 contributions which may be due as a result of the construction and operational jobs created by the project. - Traffic impacts of project particularly for Hensley Athletic Field users.	Section 4, Appendix D – RAP Section 4, Section 9 Detailed on Majors Projects Application form Section 8.5
Randwick City Council	
Air Quality - EA should address contaminated dust and potential emissions being generated as a result of the soil disturbance and thermal oxidiser and organic vapours from bioremediation. Human Health - Identification and risk assessment of the potential impacts on the surrounding community and those using the adjacent athletic field. Water contamination - Potential impact/ further contamination of stormwater and groundwater systems. Visual Impact - Size and appearance of the structures associated with the remediation Noise, odour and light pollution - Potential impact of noise, odour and light pollution on nearby residences. Time line - Preference for a full remediation rather than extended remediation to reduce associated environmental and social risks.	Section 8.1, Appendix E – Air Quality Assessment Section 8.8, Appendix H – HHIA, Appendix G - PHA Section 8.6 Section 8.9 Section 8.1 and 8.2 Section 4

Requirement	EA Reference/Comment
NSW Department of Health	
General • Pre-treatment building - is it airtight? If so, how will worker and machinery movements be undertaken? - If not, how will gaseous contaminant be controlled once the car park capsule is cracked? - What emission control systems will be placed on the shed? - What will be the emergency procedures for the shed should a build up of gaseous contaminant become excessive and what will be the impacts of these actions? • DTD and bioremediation process details are required, • Contaminated material should be fully characterised, including presence and concentrations of heavy metals. • Soil remediation goals and proposed validation criteria should also be described. Air • Potential health risks should be undertaken using the approach specified in the Environmental Health Risk Assessment Guidelines for assessing human health risks from environmental hazards. • Agreement from NSW Health should be obtained regarding the following: - Contaminants of concern - Justification for exclusion/ inclusion of specific chemicals in the risk assessment. NSW Health considers that where chemicals may be present in low concentrations but have a similar mode of action to other chemicals present at the site should be retained in the risk assessment and a cumulative toxicological effect estimated. - Chemical parameters used in the risk assessment - Exposure parameters/scenarios – a multi-exposure pathway risk assessment model should be employed to account for inhalational and injection (via dust deposition and homegrown vegetable) pathways. Acute impacts of chemical exposures should be considered for both children and adults. The contribution of chemical exposures during the remediation to lifetime exposure for chemicals with chronic carcinogenic effects should also be considered.	Section 4, Section 8.8, Appendix D – RAP, Appendix G – PHA Note: Information regarding the bioremediation project is provided in Section 3. This is not the technology selected to remediate the CPWE. Section 8.9, Appendix H – HHIA

Requirement	EA Reference/Comment
- Receptors considered should include acute impacts on users of Hensley Athletic Field, in addition to acute and chronic impacts on people in nearby residences. - Assessment modelling – Air modelling should be undertaken in accordance with DEC Approved Methods for Modelling and Assessment of Air pollutants in NSW. This should include impacts from the DTD plant or bioremediation emissions and associated equipment as well as impacts from the car park excavation. Concentrations of gas and dust emissions at identified receptors should be presented separately and additively with background levels. - Background exposure of the community should be assessed by representative monitoring of current concentrations of criteria pollutants and chemicals of concern in the air, in addition to incorporating any known or expected sources of the chemicals of concern during the remediation process that may contribute to acute or lifetime exposure, or in the future that may contribute to lifetime exposure. This would include expected contributions to local air pollution associated with proposals such as HCB repackaging or the GWTP. - The potential for odour impacts at Hensley Field and residential locations should also be assessed.	Section 8.1, Appendix E – Air Quality Assessment Section 8.9, Appendix H – HHIA Section 8.1, Appendix E – Air Quality Assessment
Noise - Noise modelling should be undertaken in accordance with the NSW DEC Industrial Noise Policy and compared to the Industrial Noise Criteria. Background noise at the Hensley Field and the most impacted residential locations should be assessed by monitoring during a number of representative periods (weekday, weekends, evening and nighttime for residential). - Expected contributors to noise during the remediation process should also be identified and included in the modelling of noise impacts, this may include noise from the HCB repackaging proposal and other new activities that are likely to commence in the area during the remediation. - Modelling should include: - Operational noise - Construction noise - Traffic noise	Section 8.2, Appendix F – Noise Impact Assessment
Traffic Safety A traffic plan should be included in the EA that addresses safety concerns for children entering and exiting Hensley Field. Justification for the need to route heavy vehicles onto Cornish Circuit and alternative routes for these heavy vehicles should be presented.	Section 8.5

Requirement	EA Reference/Comment
Water The EA should provide detail of the proposed monitoring of groundwater and surface water impacts, and include effective management strategies to minimise and further water contamination.	Section 8.6
Environmental Management Plan The EA should include details of an environmental management plan that includes a monitoring proposal for air and noise emissions.	Section 9

6.2.2 Community Consultation

Overview

Since its inception in 1997, the Community Participation Review Committee (CPRC) has been provided with information on investigations for remediating the CPWE. Since late 2004, the group has been engaged in discussions regarding a number of thermal options as well as research on the possibility of using bioremediation to remediate the soil. From this time until the most recent workshop in August 2006, the various options were explored with the CPRC and one by one Orica narrowed the shortlist to the two options of DTD and bioremediation (see **Section 3** of this EA for details on the options considered).

In August 2006 at the CPRC meeting and the community workshop, Orica informed the community that as the bioremediation trials had not proved conclusive, it had identified DTD as the preferred option. The company also committed to continuing its research on bioremediation in the event that it could be used for remediating other areas of the BIP in future.

Orica interfaces with a number of stakeholder groups through its communication with the CPRC. It also endeavours to reach the local, regional and wider community with advertised information sessions about its projects, through the CPRC newsletters, letters to the community, fact sheets, newspaper columns, a website and door knocking campaigns. These activities achieve a wider awareness and understanding of Orica's projects and the issues associated with them. The wider community includes people from local and regional residences and businesses (including BIP), non-English speaking background community members, MPs, councillors and council officers, major green groups and local community environmental or interest groups.

This section of the EA summarises Orica's interaction with community stakeholders, including its industrial neighbours, the CPRC and the wider community, during the identification of a remediation option for the CPWE. While there were a number of topics covered in the different forums, the most frequently raised issues, as would be expected, were those surrounding human health, in particular, stack emissions, dust and odour. Further details on the consultation undertaken is provided in **Appendix J**.

Investigation of Options with the CPRC/Community

For over two years, Orica has been discussing the options for remediating the CPWE, including discussion of the draft EA, with the community, including workshops, largely represented by the CPRC.

Table 6-4 provides a summary of issues raised and discussed by Orica and the CPRC during the course of a series of community workshops.

Table 6-4: Summary of Community Workshops and Issues Raised

Workshop/Meeting	Date	Overview	Key issues raised
CPRC Meeting	9/11/04	Update on ongoing management of the CPWE	Discussion on air emission testing
CPRC Meeting	8/2/05	Update on ongoing management of the CPWE	Discussion on: - air emissions data - possibility of contamination of groundwater from HCBd
CPRC Extraordinary Meeting	14/4/05	Presentation of: - Human Health Risk Assessment (HHRA) for CPWE - Feasibility Study based on Technology Review of treatment options for the soil	Support for Orica to further view three thermal options as well as continue work on bioremediation project
CPRC Meeting	10/5/05	- Presentation and more detailed discussion on CPWE bioremediation and fall-back thermal options - Update on ongoing management of CPWE, particularly short-term remediation works.	- Environmental controls during the work - Type of monitoring during project - Anticipated timing of bioremediation
CPRC Meeting	9/8/05	- Continued presentations on thermal technologies - Update on CPWE bioremediation research - Discussion on community consultation approach for CPWE remediation - Update on ongoing management of the CPWE	General discussion on information presented
Community Workshop 1	11/10/05	- Background on Orica's progress towards seeking options for the long term remediation of the CPWE. - Summary of community consultation to date and steps for the future. - Presentation of information on three technical options, being ITD; DTD; and ISTD.	- Human health issues - Air/emissions - Risks and hazards e.g. further contamination of groundwater, unplanned maintenance. - Approvals process. - Residue management. - Bioremediation.
CPRC Meeting	8/11/05	- Update on ongoing management of CPWE - Update on CPWE bioremediation research - Report on community consultation	- Discussion on bioremediation trials - Discussion on workshop 1

Workshop/Meeting	Date	Overview	Key issues raised
Community Workshop 2	22/11/05	Outline of concerns raised related to ISTD – general consensus that this technology would not be further pursued due to the risk of adverse impact upon groundwater and the lack of experience with the application of this process on similar projects. - Presentations by the DoP, the DEC, EBCRC, Thiess Services and GHD Pty Ltd on the following topics: - Bioremediation – update on status; - A revision of thermal options; and • Hazards and risk of thermal options.	• Bioremediation process, impacts and trial. • Condition of liner. • Dust suppression. • Residues from thermal processes. • Hazards and risk. • Project timeframe. • Approvals process.
Community Workshop 3/CPRC Meeting	7/02/06	Outline process of community consultation to date. Update on bioremediation field trial. Final results not available until mid 2006. Outline of other remediation technologies – ITD, DTD and ISTD. Presentation of preferred thermal technology – DTD. Overview of timing considerations. Discussion on a stockpile of low level HCB impacted waste on Pacific National land situated adjacent to the BIP. DEC sought community feedback on the option of treating the stockpile using the CPWE DTD technology should it proceed.	CPRC members expressed their strong disapproval for off-site waste to be treated at the BIP. Other issues as identified in Workshops 1 and 2.
CPRC Meeting	9/5/06	Announcement of Orica's selection of DTD as the preferred "fall-back" option Update on CPWE bioremediation research	Emissions control system during bioremediation research
Community Briefing Session	17/6/06	General update on the CPWE project provided as part of Botany Transformation Project	General discussion
Community Workshop	27/6/06	Update on CPWE bioremediation research Update on the EA - the draft Environmental Assessment Scoping Report (EASR)	Prioritisation of issues to be addressed in EA
CPRC Meeting	8/8/06	Update on CPWE bioremediation research Announcement by Orica that it would now need to focus on DTD as remediation solution	EA content and timeframe

Workshop/Meeting	Date	Overview	Key issues raised
Community Workshop	19 and 22/8/06	Update on CPWE bioremediation research and Orica's focus on DTD as the remediation solution for the CPWE Presentation on EA investigations to date	Health and safety risks Operating risks Remediation action planning Emissions management monitoring
CPRC Meeting	14/11/06	Update on CPWE EA timetable Update on CPWE treatability trials	Project timetable
Community/CPRC Question and Answer Workshop on Draft EA	05/12/06	Feedback on Draft EA Update on Draft EA	Issues included, but not limited to: neighbouring sensitive land uses; worker safety/health; traffic; operational issues; auditing; approvals; condition of CPWE liner; complaints recording; community consultation; operational hours, etc.

With specific regard to the proposed remediation project as described in **Section 4** of this EA, the community raised the following issues.

Table 6-5: Summary of Key Issues Raised - Community Consultation

Issue	Reference in EA
• Health risks of project	Section 8.9, Appendix H - HHIA
• Safety of workers	Section 8.8, Appendix D – RAP, Appendix G – PHA
• Odour	Section 8.1, Appendix E – Air Quality Assessment
• Noise and vibration	Section 8.2, Appendix F – Noise Assessment
• Visual impacts	Section 8.3
• Risk of spread of contamination or contamination of groundwater during project	Section 8.6 and 8.7, Appendix D - RAP
• Impact of emissions from project	Section 8.1, Appendix E – Air Quality Assessment
• Dust impacts	Section 8.1, Appendix E – Air Quality Assessment
• Residues/wastes produced from DTD process?	Section 4, Appendix D - RAP
• Proven track record of DTD technology for treatment of HCBd?	Section 3

Issue	Reference in EA
Risk of operating DTD in close proximity to residential areas and other sensitive land uses (e.g. food manufacturing)	Section 8.9, Appendix H - HHIA
Risks during operation of DTD plant	Section 8.8 and 8.9, Appendix G – PHA, Appendix H – HHIA
Back up electrical supply for plant	Section 4, Section 8.8
Presence of/impacts on groundwater	Section 8.6, Appendix D - RAP
Management of groundwater	Section 8.6, Appendix D - RAP
Timing of project	Section 4
Planning process for project	Section 1, Section 5
Future use of site	Section 1, Section 5
DEC input to process	Section 6
Operating hours	Section 4
No. of trucks and management of traffic	Section 4, Section 8.5
Utilities/resources required for project	Section 4
Environmental monitoring	Section 8, Section 9
Auditing of the project	Section 4, Section 9
Feed material	Section 4, Appendix D - RAP
Community consultation process	Section 6, Section 9, Appendix D - RAP
Treatment of other wastes in CPWE (i.e. oversized material)	Section 4, Appendix D - RAP

It should be noted that in addition to community members, the DoP and the DEC have also been involved in CPRC meetings from the inception of the Committee in 1997. Issues raised by them have been included in the table above as part of the CPRC discussion. In addition to these CPRC meetings, there has been direct contact with both Departments as required for compliance purposes. This contact has largely been through correspondence and is outlined below.

Department of Planning

The main submission to DoP to date is the Environmental Assessment Scoping Report (EASR), dated 20 July 2006, which was submitted to the DoP with the Preliminary Project Application. This EASR formed the basis of the Director-General's EARs detailed in **Section 6.1.1** above.

Department of Environment and Conservation

Orica's interaction with the DEC has been through the framework of its EPL No. 2148, which governs all the Orica operations at its Botany site. This licence has been reviewed and modified over many years to reflect the requirements of DEC for the CPWE for both ongoing monitoring as well as short and long-term investigations for remediation. There have been routine reports, initially on a six-week basis, to keep DEC informed of progress. Since agreement of the preferred remediation option reports are required every six months until the soil has been remediated. The timeframe for the remediation is set out in condition E3.1 of the EPL, as discussed in **Section 1.4** of this EA.

Local Government

The CoBB Council participates on the CPRC and Councillor Bellieli from RCC receives all documentation relating to CPRC meetings. Both councils have attended the CPWE workshops held over the past year. Therefore, the issues raised in the community section above reflect those raised by both local government organisations during the process to date.

Facilitated by the CoBB Council, information is also distributed to the Hensley Athletics Field Users Taskforce (HAFUT) and direct communication has been made with the Eastern Suburbs Soccer Football Association which uses the ground for its competition.

Discussion with Industrial Neighbours

As with local and state government bodies, a number of industrial neighbours either participate in CPRC meetings or have attended the CPWE workshops, such as Kellogg's, Solvay Interlox Pty Ltd and Pacific National Pty Ltd. Accordingly, issues raised by industrial neighbours are also covered in **Table 6.5**. Orica representatives have also engaged in door knocking campaigns and correspondence in the commercial complex adjacent to the car park to provide information and answers about the short-term remediation works as well as the longer-term concept for remediating the CPWE. Information exchange and visits have also taken place with nearby food manufacturing businesses.

In addition, there have been several meetings with industrial neighbours on BIP, such as Qenos, Huntsman, ABB and SGS Australia Pty Ltd to review the proposal and in particular the suggested access route from the encapsulation to the treatment plant through Qenos land. These discussions have covered the impact on their operations and mitigating measures for the duration of the project, focusing on:

- new supply of services including natural gas and electricity;
- stockpiling of the treated soil;
- employee car parking access during the project;
- noise and vibration management;
- emissions control to avoid human exposure;
- reinstatement of the car park on completion of the project; and
- continued communication between these businesses and Orica.

Participants have reflected a willingness to cooperate with Orica's project requirements.

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