Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

Under the Minister's delegation of 4 March 2009, I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent and/or minimise adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Sam Haddad
Director-General

Sydney 12th November 2009

SCHEDULE 1

Application No:	06_0197
Proponent:	Orica Australia Pty Ltd
Approval Authority:	Minister for Planning
Land:	Pt Lot 11 DP 1039919 Lot 4 DP 1016112 Pt Lot 9 DP 1016112 Pt Lot 10 DP 1039919 Botany Industrial Park, Banksmeadow
Project:	Remediation of Car Park Waste Encapsulation

TABLE OF CONTENTS

DEFINITIONS

BIP	Botany Industrial Park
CAR	Protection of the Environment Operations (Clean Air Regulation) 2002
COPC	Chemical of potential concern
Construction and site establishment	Construction of buildings, plant and facilities, including excavation and feed soil buildings, water treatment plant, DTD plant, hardstand areas, internal haulage roads, site offices and decontamination units.
Commissioning and Proof of Performance Trials (CPoP)	Initial start-up of plant and trials of remediation technology using clean and contaminated soil to demonstrate the environmental and safety performance of the remediation technology. Carried out in accordance with an approved Commissioning and Proof of Performance Program.
CPRC	Community Participation and Review Committee
CPWE	Car park waste encapsulation
CPWE contents and liner	Refers to material encapsulated within the liner and the liner itself
Council	Botany Bay City Council
Day	The period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays
DECCW	Department of Environment, Climate Change and Water
Decommissioning and site reinstatement	Decommissioning of plant and buildings, decontamination of equipment and reinstatement of site (backfilling excavation).
Department	Department of Planning
Director-General	Director-General of the Department of Planning (or delegate)
DTD Plant	Directly-heated thermal desorption plant
EA	*Environmental Assessment Remediation of Car Park Waste Encapsulation Botany Industrial Park*, prepared by HLA-Envirosciences Pty Ltd dated July 2007
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPA Exemption Order	Order Granting Exemption Under Section 284 of the *Protection of the Environment Operations Act 1997* granted by the EPA on 15 April 2008
EPL	Environment Protection Licence issued under the *Protection of the Environment Operations Act 1997*
ESB	Excavation Soil Building
Evening	The period from 6pm to 10pm
Exemption Application	Submitted to the DECC on 21 December 2007 and comprising: • Focus Environmental Preliminary Mercury Emission Control Report, 11 January 2007; • Focus Environmental Detailed Mercury Emission Control Report, 19 December 2007; and • URS Mercury Health Impact Report for the Remediation of the CPWE, 21 December 2007.
Excavation walls and base	Refers to the limit of the excavation, after excavation of the CPWE contents and liner and soil surrounding the CPWE
FSB	Feed Soil Building
GLC	Ground level concentration
HCB	Hexachlorobenzene
HCBD	Hexachlorobutadiene
HHIA	Human health impact assessment
Minister	Minister for Planning
Night	The period from 10pm – 7am Monday to Saturday and 10pm – 8am Sunday
OCS	Octachlorostyrene
Operation	Includes excavation, handling, treatment and validation of contaminated material
PCB	Polychlorinated biphenyls
PCE	Tetrachloroethene
Project	The remediation of Orica's Car Park Waste Encapsulation (as described in the EA, Submissions Report and RAP)
Proponent	Orica Australia Pty Ltd
RAP	Remedial Action Plan (Final Amended), prepared by AECOM on 7 May 2009
RBC	Risk-based soil concentrations
SCW	Scheduled chemical wastes, as listed in Schedule A of Chemical Control Order, EPA 2004
SIL	Soil investigation level
Site	Land to which application applies (see Schedule 1).

Site Auditor	Independent expert accredited by the DECCW as a Site Auditor under Part 4 of the *Contaminated Land Management Act 1997*
Soil surrounding the CPWE	Refers to soil surrounding the CPWE and liner that must be excavated to reach the CPWE. Includes capping material and landscaping
Statement of Commitments	Prepared by HLA ENSR dated 26 March 2008 and reproduced in Appendix B
Supplementary Proof of Performance Trials (PoP)	Replicate trials of remediation technology carried out while processing contaminated soil, in accordance with defined conditions, designed to establish compliance with soil treatment standards, air emission criteria and other licence conditions.
Submissions Report	*Submissions Report Remediation of Car Park Waste Encapsulation Botany Industrial Park*, prepared by HLA ENSR/AECOM dated December 2007
TCE	Trichloroethene
Technology Assessment	Requirement of the DECCW in accordance with the Stockholm Convention on Persistent Organic Pollutants and the National Strategy for the Management of Scheduled Wastes. The Technology Assessment is required prior to the Commissioning and Proof of Performance Trials and should include detailed design information on the remediation technology and a detailed program for the CPoP trials.
TPH	Total Petroleum Hydrocarbons
WHO TEQ	World Health Organisation Toxic Equivalents, determined by WHO Toxic Equivalency Factor 2005

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the project.

TERMS OF APPROVAL

2. The Proponent shall carry out the project generally in accordance with the:
   a) EA;
   b) site plans (see Appendix A);
   c) Submissions Report;
   d) Remedial Action Plan (RAP);
   e) Statement of Commitments (see Appendix B);
   f) Exemption Application and EPA Exemption Order (see Appendix C);
   g) Technology Assessment; and
   h) conditions of this approval.

3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and
   b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

LIMITS ON APPROVAL

5. This project approval shall lapse five years after the date on which it is granted, unless the works the subject of this approval are physically commenced on or before that time.

6. Once the project has physically commenced, the project shall be undertaken over a maximum period of two years from the date of commencement of the works, unless otherwise agreed with the Director-General. The Proponent shall notify the Director-General in writing upon commencement of construction and site establishment.

7. Nothing in this approval permits the disposal of surplus validated soil from the project outside land owned by Orica described in Schedule 1, or outside land owned by Orica within the Botany Industrial Park, except for disposal at a licensed landfilling facility that can lawfully receive the surplus validated soil.

8. The Proponent shall only process materials from the CPWE site through the treatment plant and shall not receive any contaminated material from off-site for the purposes of treatment.

   Note: treatment of contaminated material from other sites is subject to separate approval.

STAGING OF WORKS

9. The Proponent shall obtain written approval from the Director-General prior to commencing the following stages of work. The Director-General's approval shall only be granted following satisfactory receipt of all documentation required by this approval prior to commencement of each stage.
   a) CPoP trials;
   b) operation;
   c) decommissioning; and

d) site reinstatement.

Note: Where stages occur concurrently, the Proponent may obtain approval for commencement of a number of the above stages of work at any one time.

STATUTORY REQUIREMENTS

10. Prior to the commencement of construction, the Proponent shall complete a Technology Assessment in accordance with the requirements of the *National Protocol Approval / Licensing of Trials of Technologies for the Treatment / Disposal of Schedule X Wastes July 1994* and the *National Protocol Approval / Licensing of Commercial-Scale Facilities for the Treatment / Disposal of Schedule X Wastes July 1994*.

11. The Proponent shall engage an independent site auditor accredited under Part 4 of the *Contaminated Land Management Act 1997* to provide advice throughout the remediation project and on completion of the project.

STRUCTURAL ADEQUACY

12. The Proponent shall ensure that all new buildings and structures on the site are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for any building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

DEVELOPMENT OF LAND

13. The land subject to this approval shall not be developed until the project site has been remediated to the satisfaction of the Director-General, and a Validation Report has been submitted in accordance with condition 55.

BOUNDARY READJUSTMENT

14. The Proponent shall ensure that the adjustment of boundaries within the Botany Industrial Park is carried out in accordance with the figures contained in Appendix D. The boundary adjustment shall be completed witihin one year of completion of remediation of the CPWE, as defined by submission of a Validation Report in accordance with condition 55.

MANAGEMENT PLANS/MONITORING PROGRAMS

15. With the approval of the Director-General, the Proponent may submit any management plan required by this approval on a progressive basis.

16. The Proponent may submit a single management plan or report that satisfies the requirements of both the project approval and the EPL, where reporting requirements are similar.

PROTECTION OF PUBLIC INFRASTRUCTURE

17. Prior to the commencement of construction, the Proponent shall:
    a) prepare a dilapidation report of the public infrastructure in the vicinity of the site (including roads, gutters, footpaths, etc) in consultation with Council; and
    b) submit a copy of this report to the Director-General.

18. The Proponent shall:
    a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
    b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

OPERATION OF PLANT AND EQUIPMENT

19. The Proponent shall ensure that all plant and equipment used on the site is:
    a) maintained in a proper and efficient condition; and
    b) operated in a proper and efficient manner.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

REMEDIATION

Remedial Action Plan (RAP)

20. The Proponent shall ensure that:
    a) the RAP is reviewed and approved by an accredited site auditor prior to the commencement of the CPoP trials; and
    b) the accredited site auditor reviews and approves any revisions to the RAP following the CPoP trials and prior to the commencement of operation.

    A copy of the approvals shall be provided to the DECCW and Director-General prior to the CPoP trials commencing and prior to operation.

Remediation Goals

21. The Proponent shall treat the CPWE contents and liner, and any scheduled wastes, including those generated by the treatment process, until the materials meet the following criteria:
    a) a statistical average dioxin, furan and dioxin-like PCB WHO-TEQ of less than 1µg/kg determined with a methodology acceptable to the DECCW;
    b) an aggregate concentration of scheduled chemical waste constituents of less than 2mg/kg;
    c) a PCB concentration of less than 2mg/kg; and
    d) a HCBD concentration of less than 11mg/kg.

22. The Proponent shall treat and validate the soil surrounding the CPWE (i.e. capping material and landscaped areas) in accordance with the indoor reuse criteria listed in Table 14 of the RAP.

    Note: Where the risk based concentration in Table 14 has been set equal to 'Csat', the risk based concentration for surface soils must be applied.

23. The Proponent shall treat and validate the excavation walls and base in accordance with the indoor reuse criteria listed in Table 16 of the RAP, up to a maximum soil volume of 9,000m^3 (not including the contents of the CPWE).

    Note: 1. Where the risk based concentration in Table 16 has been set equal to 'Csat', the risk based concentration for surface soils must be applied.
    2. The maximum soil volume of 9,000m^3 represents a 20% contingency, additional to the contents of the CPWE (estimated at 45,000m^3), that may require treatment.

24. If after treatment of a maximum soil volume of 9,000m^3, the excavation walls and base can not be validated against the indoor reuse criteria listed in Table 16 of the RAP, the Proponent may validate the excavation walls and base using the outdoor reuse criteria provided in Table 17 of the RAP. If the outdoor criteria are applied, the Proponent will cap the remediated area (where residual contaminant concentrations exceed the indoor reuse criteria) with a low-permeability barrier to prevent water infiltration to the subsurface. The Proponent shall also prepare and implement a long-term environmental management plan for the site that:
    a) is prepared by an appropriately qualified expert;
    b) is prepared to the satisfaction of the Director-General and the DECCW;
    c) details the residual contaminated area based on the results of the validation works;
    d) includes inspection, monitoring and maintenance procedures to ensure the integrity of the low-permeability barrier is not compromised;
    e) includes a groundwater monitoring program that will be implemented to identify any statistically significant increases in chlorinated hydrocarbon contaminant concentrations;
    f) details the contingency measures that will be implemented should an increase in groundwater contaminant concentrations be identified;
    g) details the statistical approach to evaluate an appropriate time to discontinue groundwater monitoring;
    h) identifies the parties responsible for carrying out the requirements of the plan; and
    i) be enforced by way of a public positive covenant under the *Conveyancing Act 1919*.

Soil Excavation, Handling and Disposal

25. Stockpiles of validated material shall be covered or managed to ensure dust generation and soil runoff are minimised.

COMMISSIONING AND PROOF OF PERFORMANCE (CPOP) TRIALS

CPoP Trial Plan

26. At least one month prior to the commencement of the CPoP trials, the Proponent shall:
    a) submit a detailed plan or plans for the CPoP trials, to the satisfaction of the Director-General;
    b) consult with the DECCW during preparation of the plan or plans;
    c) detail procedures for testing the performance of all major process components of the remediation equipment, including the ESB, FSB and DTD emission control systems; and
    d) address all relevant requirements of the EPL for the project.

Conduct of Trials

27. The Proponent shall carry out CPoP trials prior to commencement of operation. The CPoP trials shall:
    a) be carried out in accordance with a detailed CPoP plan approved by the Director-General;
    b) be undertaken by a suitability qualified and experienced person(s);
    c) demonstrate compliance with the relevant requirements of the EPL, project approval and relevant environmental and safety criteria;
    d) test performance of all major process components including emission control systems using no soils, clean soils and contaminated soils representative of the maximum level of contamination proposed to be treated during each stage of the operation;
    e) identify changes to the DTD emission control system that may be necessary to achieve compliance with the EPL, including supplementary CPoP trial(s) of mercury control technologies.

Supplementary Proof of Performance (PoP) Trials during Operation

28. The Proponent shall carry out supplementary PoP trials if material to be treated during commercial operations contains levels of contaminants that exceed the criteria established in the original CPoP, and/or contaminants not tested in the original CPoP. Supplementary PoP trials shall:
    a) consist of a minimum of two full runs;
    b) be carried out consistent with the original CPoP trials; and
    c) test the effectiveness of emission controls on the ESB, FSB and DTD for dealing with the contaminant concentrations that exceed the levels trialled in the original CPoP or were not tested in the original CPoP.

    In addition to these requirements, any supplementary PoP trials for material containing total petroleum hydrocarbons (TPH) must demonstrate that high concentrations of petroleum hydrocarbons would not affect the ability of the DTD plant to meet agreed stack emission and soil treatment criteria.

AIR QUALITY

Limits

29. The Proponent shall ensure the emissions from the project do not exceed the emissions limits in Table 1, unless otherwise specified in the EPL.

Table 1: Air Emission Limits

Emission Point	Pollutant	Unit of measure	100 percentile concentration limit	Reference conditions
DTD Plant exhaust stack	Cadmium	mg/m^3	0.02	dry, 273k, 101.3 kPa
	Carbon monoxide	mg/m^3	125	dry, 273k, 101.3 kPa
	Chlorine	mg/m^3	200	dry, 273k, 101.3 kPa
	Dioxins & Furans[1]	ng/m^3	0.1	I-TEQ, dry, 273 K, 101.3 kPa
	Hydrogen chloride	mg/m^3	100	dry, 273k, 101.3 kPa
	Hydrogen fluoride	mg/m^3	35	dry, 273k, 101.3 kPa
	Mercury	mg/m^3	TBD[1]	dry, 273k, 101.3 kPa
	Nitrogen oxides	mg/m^3	350	dry, 273k, 101.3 kPa
	Solid particles	mg/m^3	25	dry, 273k, 101.3 kPa
	Sulphuric acid mist and sulphur trioxide (as SO_3)	mg/m^3	75	dry, 273k, 101.3 kPa
	Type 1 and Type 2 substances (in aggregate)	mg/m^3	TBD[1]	dry, 273k, 101.3 kPa
	Volatile organic compounds, as n-propane equivalent	mg/m^3	20	dry, 273k, 101.3 kPa
ESB and FSB emission control system stacks	Cadmium	mg/m^3	0.1	dry, 273k, 101.3 kPa, 11% O_2
	Mercury	mg/m^3	0.1	dry, 273k, 101.3 kPa, 11% O_2
	Solid particles	mg/m^3	10	dry, 273k, 101.3 kPa, 11% O_2
	Type 1 and Type 2 substances (in aggregate)	mg/m^3	0.5	dry, 273k, 101.3 kPa, 11% O_2
	Volatile organic compounds, as n-propoane equivalent	mg/m^3	TBD[3]	dry, 273k, 101.3 kPa, 11% O_2

Notes:

- *[1] To be determined following Commissioning and Proof of Performance Trials. On 11 March 2008, the EPA Board approved the granting of an exemption for the in-stack Regulation limit for mercury. The exemption permits a discharge limit of up to 1.0mg/m³ for mercury and a 1.8mg/m³ (in aggregate) for Type 1 and Type 2 substances. The exemption operates from 1 January 2009 to 31 December 2010.*
- *[2] The oxygen correction for Point 1 will be determined following Commissioning and Proof of Performance Trials. The licensee must determine an oxygen correction factor, to be approved by DECCW, which reflects the operation of the equipment.*
- *[3] To be determined following Commissioning and Proof of Performance Trials.*

30. If any amendments are required to the limits following the CPoP or supplementary PoP trials, the Proponent must apply to DECCW to vary the air emission limits specified in the EPL and notify the Director-General prior to the commencement of operation.

31. Prior to commencement of operation, the Proponent shall provide to the Director-General a copy of any notice varying the air emission concentration EPL limits for mercury (Hg) and Type 1 and Type 2 substances in aggregate during operation of the facility.

32. The Proponent shall implement all reasonable and feasible measures to minimise dust generated by the project, including minimising emissions from:
    a) the transport of material from the ESB to the FSB;
    b) stockpiles of validated material; and
    c) the reinstatement works.

33. The Proponent shall not cause or permit the emission of offensive odours from the site, as defined under Section 129 of the *Protection of the Environment Operations Act 1997*.

Design and Operating Parameters

34. The Proponent shall design the project to allow completion of the mercury control trials that are required by the EPA Exemption Order.

Air Quality Management Plan

35. The Proponent shall prepare and implement an air quality management plan to ensure compliance with the conditions of this approval and the EPL for the project. The plan shall:
    a) be approved by the DECCW and Director-General prior to commencement of CPoP trials;
    b) be undertaken by a suitably qualified and experienced person(s);
    c) assess whether the project is complying with the air quality criteria specified in this approval and the EPL, and identify the additional measures to be implemented to ensure compliance should any non-compliance be detected;
    d) validate that the performance of the project reflects the assumptions and conclusions made in the EA, Submissions Report, Human Health Impact Assessment, Mercury Health Impact Report, Exemption Application and Technology Assessment;
    e) provide details of any complaints received relating to air quality generated by the project, and action taken to respond to those complaints;
    f) include ambient monitoring of emissions from the project, including PM_{10} and NO_2 at the Hensley Athletics field;
    g) include stack emissions monitoring from the DTD plant, DTD thermal oxidiser, ESB and FSB emission control systems.

    Any proposed changes to the management plan following the CPoP trials must be approved by the DECCW and the Director-General prior to commencement of operation.

36. The Proponent shall provide results of monitoring in accordance with the reporting requirements in condition 52. Results of the assessment conducted in accordance with conditions 35d) shall also be provided to NSW Health.

HUMAN HEALTH

37. The Proponent shall ensure that all works are carried out in accordance with NSW Occupational Health and Safety Regulations and the requirements of WorkCover NSW.

WATER

Discharges

38. The Proponent shall not cause or permit any waters to be polluted, as defined under Section 120 of the *Protection of the Environment Operations Act 1997*.

39. Prior to the construction of any utility works, the Proponent shall obtain relevant approvals from service providers, including Sydney Water.

40. The Proponent shall obtain a Section 73 Compliance Certificate from Sydney Water under the *Sydney Water Act 1994* and shall supply all information necessary for Sydney Water to assess the impacts of wastewater discharges to sewer. The Proponent shall fund any adjustments needed to Sydney Water infrastructure as a result of the project.

Stormwater

41. Prior to commencement of construction, the Proponent shall prepare and implement a Stormwater Management Plan for the site to the satisfaction of the Director-General. The Plan shall be prepared in accordance with *Managing Urban Stormwater: Soils and Construction,* (Department of Housing).

Bunding

42. All chemicals, fuels and oils shall be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. The bund(s) shall be designed and installed in accordance with:
    a) the requirements of all relevant Australian Standards; and
    b) the DECCW's *Environmental Protection Manual Technical Bulletin Bunding and Spill Management*.

HAZARDS

Pre-Construction Hazards Studies

43. Prior to the commencement of construction and site establishment, the Proponent shall submit for the approval of the Director-General, the following studies:
    a) a **Fire Safety Study** covering all aspects detailed in the Department's publication *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Guidelines* and the New South Wales Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall include a strict maintenance schedule for essential services and other safety measures. The Study shall be submitted for the approval of the Commissioner of the NSW Fire Brigades prior to submission to the Director-General;
    b) a **Hazard and Operability Study** (HAZOP) chaired by an independent, qualified person or team. The independent person or team shall be approved by the Director-General. The Study shall be carried out in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 8 - HAZOP Guidelines* and shall include consideration of measures to prevent any accidental spills of liquids and/ or liquid wastes on all relevant tanks and equipment used for the storage and handling of liquids or liquid wastes, including associated pipes and hoses; and
    c) a **Construction Safety Study** prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines*.

Pre-Commissioning Hazards Studies

44. Prior to the commencement of commissioning, in accordance with an approved Commissioning and Proof of Performance Trials, the Proponent shall submit for the approval of the Director-General the following studies:
    a) an **Emergency Plan**. The Plan shall be prepared in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines*. The Plan shall be developed in consultation with relevant emergency services, and incorporated within the Emergency Plan for the Orica site; and
    b) a **Safety Management System**, covering all operations at the development and any associated transport activities involving hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be developed in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 9 - Safety Management*.

Pipelines

45. The Proponent shall ensure that the integrity of existing pipelines surrounding the CPWE is not compromised by the project for the duration of construction, commissioning, remediation and reinstatement works.

NOISE

Noise Limits

46. The Proponent shall ensure that noise from Orica's operations on the Botany Industrial Park, including the project does not exceed the noise limits presented in Table 2.

Table 2: Project Noise Limits $L_{Aeq\ 15\ min}$ dB(A)

Location	Day	Evening	Night
Nearest residence on Denison Street	65	55	50

Note - Noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy:

Hours of Work

47. Unless otherwise agreed with the Director-General, the Proponent shall comply with the construction and operation hours in Table 3.

Table 3: Construction and Operation Hours for the Project

Activity	Day	Time
Construction	Monday – Friday	7am to 6pm
	Saturday	8am to 1pm
	Sunday and Public Holidays	Nil
Operation of ESB and transportation	Monday – Friday	7am to 7pm
	Saturday	7am to 7pm
	Sunday and Public Holidays	Nil
Operation of FSB and DTD	Monday – Friday	24 hours per day
	Saturday	24 hours per day
	Sunday and Public Holidays	24 hours per day

Notes:
- *Construction activities may be conducted outside the hours in Table 1 provided that the activities are not audible at any residence beyond the boundary of the site.*
- *Operation includes plant and equipment, including a front end loader handling treated material outside the DTD compound and inside the ESB and FSB.*

Noise Management Plan

48. The Proponent shall prepare and implement a Noise Management Plan for the project, to the satisfaction of the Director-General. This plan must:
    a) be prepared by a suitably qualified and experienced expert;
    b) be submitted to the Director-General for approval prior to commencement of the CPoP trials;
    c) detail implementation of the noise mitigation measures outlined in the EA;
    d) detail monitoring to ensure compliance with the EPL and project approval;
    e) detail procedures for implementing additional reasonable and feasible noise mitigation measures in response to exceedance of limits and/or noise complaints;
    f) describe the scheduling of works to minimise noise impacts on residents and during major sporting events at the Hensley athletics field; and
    g) include procedures for notifying residents prior to undertaking activities likely to generate excessive noise, such as sheet piling works.

SCHEDULE 4
ENVIRONMENTAL MANAGEMENT, REVIEW AND REPORTING

ENVIRONMENTAL MANAGEMENT

Operation Environmental Management Plan

49. Prior to the commencement of operation, the Proponent shall prepare and implement an Operation Environmental Management Plan, to the satisfaction of the Director-General. The plan shall:
    a) detail how the project will comply with the requirements of the EPL and project approval throughout operation;
    b) describe the procedures that would be implemented to keep the local community informed and receive, handle and respond to complaints.

    Following completion of the CPoP trials, the Proponent shall amend the Operation Environmental Management Plan, to the satisfaction of the Director-General, to describe any proposed changes to limits contained in the EPL and project approval including detailed justification for the changes and relevant results of the CPoP trials.

INDEPENDENT REVIEW

Independent Expert(s) (IE)

50. Prior to the commencement of commissioning of the ESB, FSB and DTD, the Proponent shall, in consultation with the CPRC and other interested stakeholders, develop a scope of work for an IE(s) and engage the services of an IE(s) for the duration of works including CPoP trials, operation and decommissioning. The IE(s) shall:
    a) be suitably qualified and experienced; and
    b) provide independent technical advice relating to the project to the CPRC and other interested stakeholders as required throughout the duration of works, to the satisfaction of the Director-General.

    The Proponent shall notify the Director-General, the DECCW and the CPRC of the name(s) and contact details of the IE(s) upon appointment and prior to commencement of construction and site establishment works.

    The Proponent shall bear the cost of the IE(s) and make resources available to enable the IE(s) to respond to reasonable information requests from the CPRC and interested stakeholders for the duration of the works.

Independent Environmental Audit

51. The Proponent shall undertake an Independent Environmental Audit of the project at any time, as directed by the Director-General. The Proponent shall appoint an independent environmental auditor approved by the Director-General and commission and pay the full cost of the independent environmental audit.

REPORTING

Monthly Reporting

52. The Proponent shall provide to the Director-General and the DECCW, a Monthly Report, throughout all stages of the project including construction and site establishment, CPoP trials, operation and decommissioning. The Report shall review the performance of the project against the requirements of this approval and the EPL, and shall include:
    a) all monitoring data collected for the project during the month;
    b) results of all PoP trials in the Monthly Report following each trial or trials;
    c) a copy of the complaints register for the month and details of how these complaints were addressed and resolved;

d) identification of any non-compliance with the conditions of this approval and the EPL; and
e) details of additional measures to be implemented to address any non-compliance.

The first report shall be submitted within one month of the commencement of construction and site establishment works, and every month thereafter, or as otherwise agreed by the Director-General. The Proponent shall make available copies of Monthly Reports to the CPRC, and to the public on request.

Incident Reporting

53. Within 24 hours of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment, an Incident Report shall be supplied to the Director-General outlining the basic facts. A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventive measures. That report must be submitted to the Director General no later than 14 days after the incident or potential incident.

54. The Proponent shall maintain a register of accidents, incidents and potential incidents. The register shall be made available for inspection at any time by the Director General.

Validation Report

55. The Proponent shall provide a Validation Report to the Director-General and the DECCW following decommissioning and reinstatement works. The Validation Report shall be prepared in accordance with the RAP. The Validation Report shall be reviewed and approved by the accredited site auditor.

56. The Proponent shall provide Site Audit Statement(s) and Site Audit Report(s) prepared by the accredited site auditor to the Director-General and the DECCW upon completion of remediation.

SCHEDULE 5
COMMUNITY CONSULTATION

Access to Information

57. Subject to confidentiality, the Proponent shall make all documents required under this approval available for public inspection on request.

Community Consultation

58. The Proponent shall continue to implement its community consultation process throughout the duration of the project, which includes consultation with the Community Participation and Review Committee (CPRC) and other interested stakeholders.

APPENDIX A
SITE PLANS

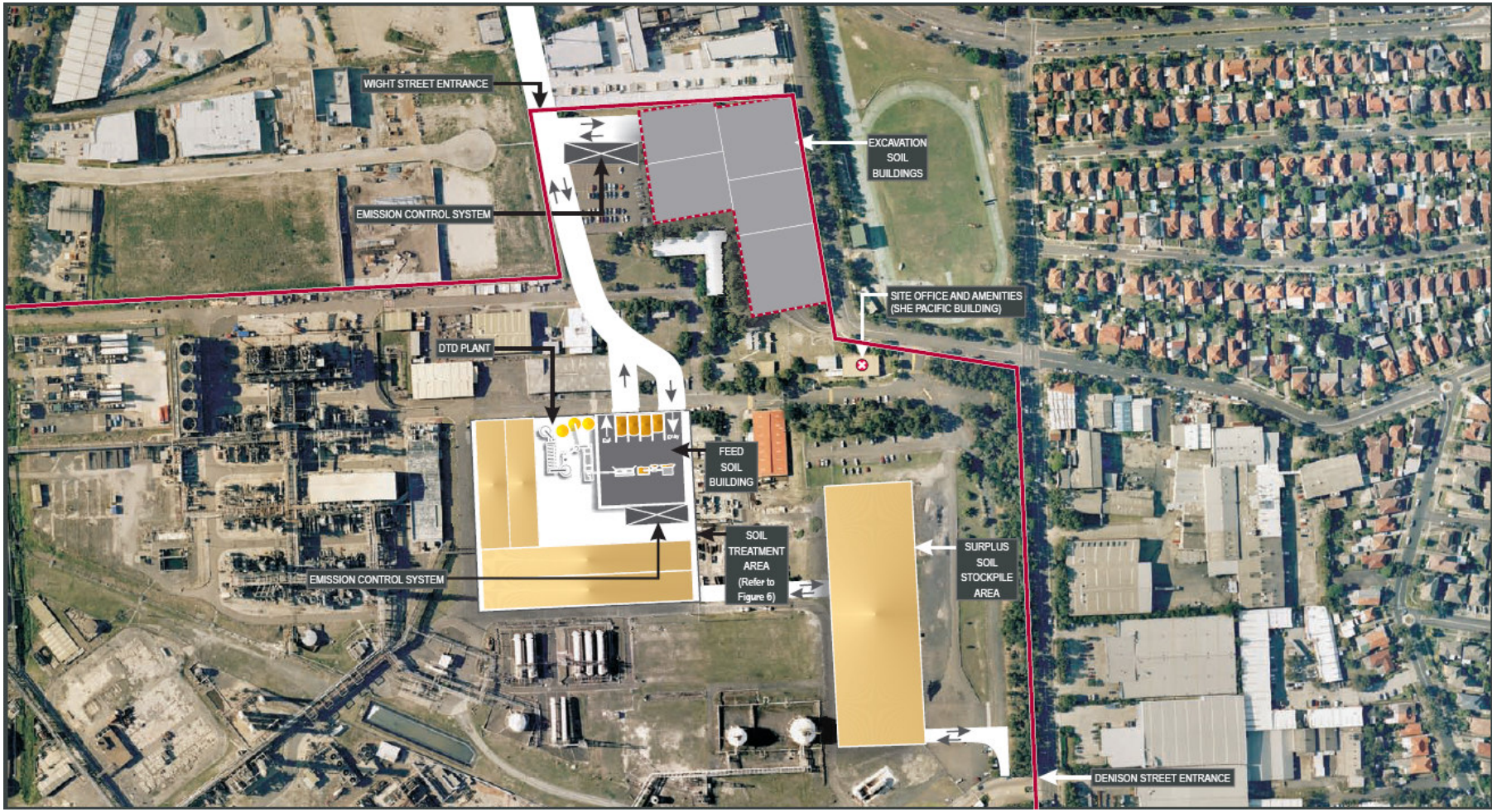


Figure 1: CPWE site and land to be used for remediation activities

Figure 2: Excavation Staging

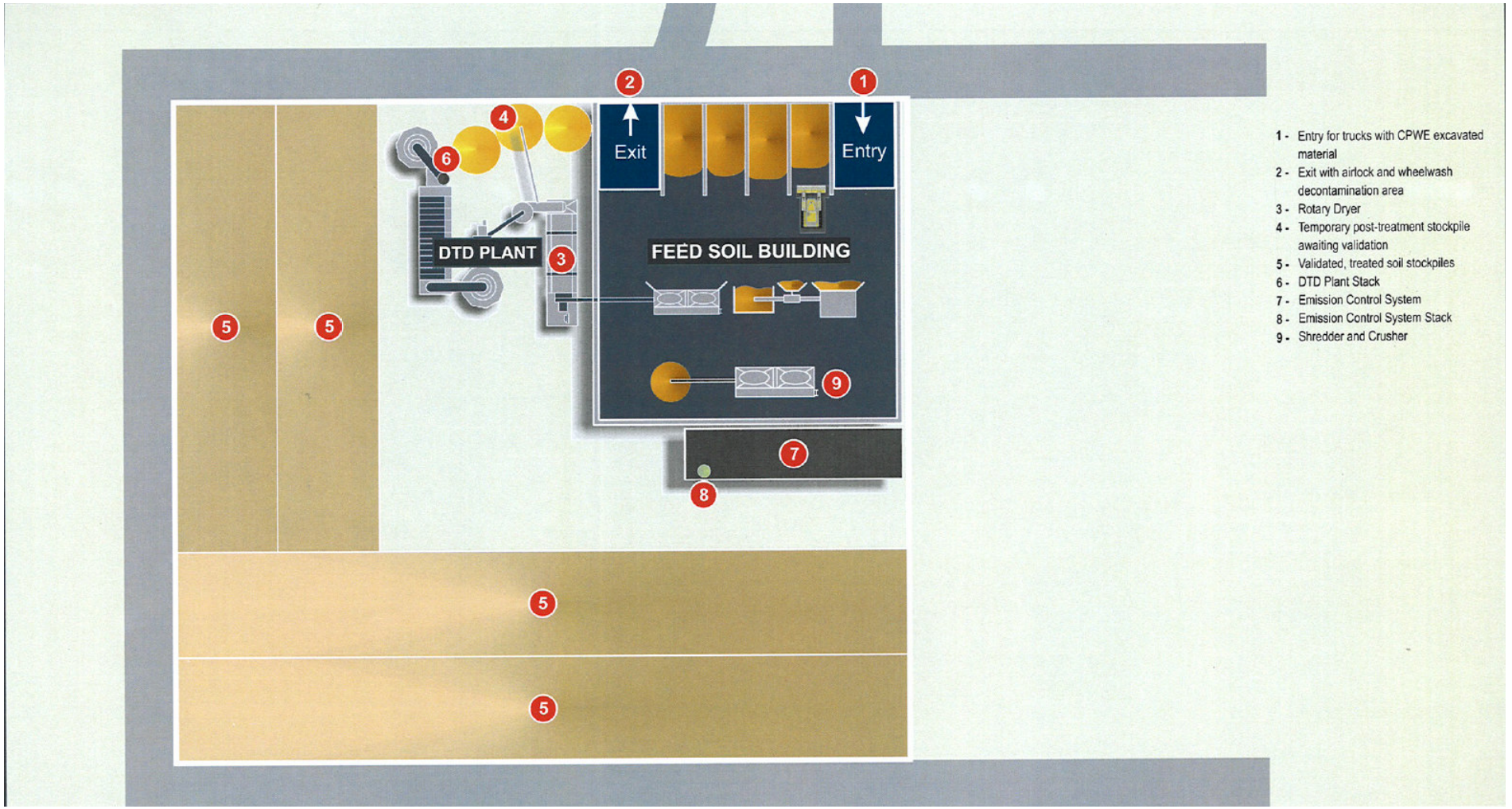


Figure 3: Soil Treatment Area Layout

APPENDIX B
STATEMENT OF COMMITMENTS

Environmental Issue	Commitment
Statutory Requirements	1 Prior to the issue of an Environment Protection Licence (EPL) for the project, the Department of Environment and Climate Change (DECC) shall be provided with sufficient and appropriate documentation for a Technology Assessment to be undertaken by the DECC in accordance with the *National Protocol Approval/Licensing of Technologies for the Treatment/Disposal of Schedule X Wastes* and the *National Protocol Approval/Licensing of Commercial-Scale Facilities for the Treatment/Disposal of Schedule X Wastes.* Orica shall construct and operate the development generally in accordance with the specification outlined in the Technology Assessment document provided to the DECC, unless otherwise agreed by the DECC.
Soil Remediation Requirements	2 Materials shall only be processed through the Directly-heated Thermal Desorption (DTD) Plant where those materials have matrices, contaminant constituents and contaminant concentrations which have been proven as acceptable for processing during Commissioning Proof of Performance (CPoP) trials. 3 Orica shall manage all materials and wastes containing Scheduled Chemical Waste (SCW) and polychlorinated biphenyls (PCBs) in accordance with the applicable Chemical Control Order (CCO), or in accordance with a licence under the *Environmentally Hazardous Chemicals Act 1985*. 4 Orica shall process the contents of the CPWE and other excavated materials intended to be retained on the CPWE site that are scheduled wastes or do not meet the Remediation Goals detailed in the Remedial Action Plan (RAP), and any scheduled wastes generated by the treatment process until the materials / wastes meet: • A statistical average dioxin, furan and dioxin-like PCB WHO-TWQ of less than 1 µg/kg determined with a methodology acceptable to the DECC; and • An aggregate concentration of SCW constituents of less than 2 mg/kg; and • A PCB concentration of less than 2 mg/kg; and • The Remediation Goals specified in the RAP. Note: If the treatment criteria in the Director-General's EARs cannot be practically achieved (technical and economical), an alternative best practice standard would be proposed to DECC for their approval.
Air Quality	5 Plant associated with the remediation works shall be selected and operated so that stack emissions are below the maximum allowable emission concentrations discussed in Section 8.1 of the Environmental Assessment (EA), or if that is not possible to an agreed best practice standard. 6 Contaminated material excavation and handling activities shall be completely enclosed within the Excavation Soil Building (ESB) and Feed Soil Building (FSB). 7 Orica shall design, construct, operate and maintain a ventilation system(s) for the ESB and FSB so that air flow is drawn into the buildings and discharged via the emission control systems. 8 Orica shall implement appropriate practicable measures to eliminate or

Environmental Issue	Commitment
	reduce, as far as practicable, fugitive emissions from the transport of material from the ESB to the FSB. 9 The thermal oxidiser (being the major piece of emission control equipment) shall be designed to meet the requirements of best practice in terms of destruction efficiency and stack emissions. 10 Air monitoring/air discharge points for monitoring will be as described below: • DTD Plant exhaust stack; • ESB emission control system stack; and • FSB emission control system stack. 11 The Proponent shall prepare and submit a CPoP Plan to DECC for approval prior to commencing commissioning and operations on the Site. The CPoP Plan shall provide a program to quantitatively confirm that that facility will meet the environmental performance described in the Environmental Assessment (EA). The Proponent shall then undertake CPoP trials in accordance with the approved CPoP Plan. Any proposed variation to the CPOP Plan shall also be submitted to the DECC for approval. 12 During CPoP trials, the Proponent shall undertake monitoring of each pollutant listed below in SOC16**.** Within 28 days of completion of the commissioning trials, or as otherwise agreed, the Proponent shall submit a report to the DECC, including an analysis of the results of the monitoring during the commissioning trials and providing justification for the maximum concentration limits and reference conditions that will apply to the operation of the project. 13 A monitoring program shall be designed for each of the ESB, FSB and DTD emission control systems and stacks. The monitoring programs shall include: • Monitoring of ESB, FSB and DTD Plant and emission control system components for specified flows, pressures and temperatures; • Continuous monitoring of the ESB and FSB emission control system for parameters such as relative humidity, pressure, temperature and volatile organic compounds (VOCs); • Continuous monitoring of the DTD Plant stack for flow rate, temperature, oxygen, oxides of nitrogen (NOx) and carbon monoxide (CO) concentrations (CO provides feedback on the efficiency of combustion in the thermal oxidiser); and • Periodic discrete sampling of the ESB, FSB and DTD stacks for a range of combustion pollutants and/or contaminants (as detailed in SOC16). 14 The treatment plant stacks shall be fitted with sampling port(s) in accordance with the relevant Australian Standard and safe access provided for stack sampling. 15 An ambient monitoring program shall be conducted to monitor fugitive emissions from the treatment plant to ensure that all site emissions limits are complied with. 16 Orica shall design, construct, commission, operate and maintain the development to ensure that at each discharge point identified in SOC10,

Environmental Issue	Commitment
	the concentration of each pollutant listed does not exceed the maximum allowable discharge concentration limit specified for that pollutant in the table below: **Discharge Point 1 - DTD Exhaust** **Pollutant concentration limit (1)** — **Units of measure** — **100 percentile** Cadmium — mg/m^3 — 0.02 Carbon monoxide(3) — mg/m^3 — 125 Chlorine(3) — mg/m^3 — 200 Dioxins & Furans(4) (WHO-TEQ) — ng/m^3 — 0.1 Hydrogen chloride(3) — mg/m^3 — 100 Hydrogen fluoride — mg/m^3 — 35 Nitrogen Oxides — mg/m^3 — 350 Solid Particles — mg/m^3 — 25 Sulphuric acid mist and sulphur trioxide (as SO_3) — mg/m^3 — 75 Type 1 and Type 2 substances in Aggregate (2) — mg/m^3 — 1.0 (1) At standard reference conditions, i.e. Dry, 273 K, 101.3 kPa, 10% O_2. (2) "Type 1 and Type 2 substances in aggregate" means the sum of the concentrations of Antimony, Arsenic, Cadmium, Lead, Mercury, Beryllium, Chromium, Cobalt, Manganese, Nickel, Selenium, Tin and Vanadium. (3) These concentration limits would be reviewed following commissioning and proof of performance testing and lower limits proposed based on the test results. (4) At 11% O_2.
	Discharge Point 2 - ESB emission control system stack **Pollutant concentration limit (1)** — **Units of measure** — **100 percentile** Cadmium — mg/m^3 — 0.1 Mercury — mg/m^3 — 0.1 Solid Particles — mg/m^3 — 10 Type 1 and Type 2 substances in Aggregate (2) — mg/m^3 — 0.5 (1) At standard reference conditions, i.e. Dry, 273 K, 101.3 kPa. (2) "Type 1 and Type 2 substances in aggregate" means the sum of the concentrations of Antimony, Arsenic, Cadmium, Lead, Mercury, Beryllium, Chromium, Cobalt, Manganese, Nickel, Selenium, Tin and Vanadium. **Discharge Point 3 - FSB emission control system stack** **Pollutant concentration limit (1)** — **Units of measure** — **100 percentile** Cadmium — mg/m^3 — 0.1 Mercury — mg/m^3 — 0.1 Solid Particles — mg/m^3 — 10 Type 1 and Type 2 substances in Aggregate (2) — mg/m^3 — 0.5 (1) At standard reference conditions, i.e. Dry, 273 K, 101.3 kPa. (2) "Type 1 and Type 2 substances in aggregate" means the sum of the concentrations of Antimony, Arsenic, Cadmium, Lead, Mercury, Beryllium, Chromium, Cobalt, Manganese, Nickel, Selenium, Tin and Vanadium. 17 Orica shall design, construct, operate and maintain all stacks associated

Environmental Issue	Commitment
	with the project in accordance with detail provided in this EA as well as good engineering practice in order to minimise the effects of stack tip downwash and building wake effects on ground-level air pollutant concentrations. 18 Orica shall not permit any offensive odour to be emitted from the remediation works beyond the boundary of the BIP, as defined under section 129 of the *Protection of the Environment Operations Act 1997.* 19 Orica shall design, construct, commission, operate, maintain and decommission the project in a manner that minimises or prevents dust emissions from the Site. Orica shall seek to ensure that the system is designed such that there are no visible dust emissions from the Site.
Noise	20 The DTD Plant and associated plant shall be sourced / designed with the objective of achieving the noise goals set out in Orica's EPL. The following general mitigation measures shall be considered in the detailed design of the plant in order to achieve the required noise reductions. • Plant layout and orientation shall be designed to minimise noise impacts. • ECS and DTD Plant fans to incorporate silencers and enclosures to achieve appropriate noise reductions. • Solid barriers shall be incorporated, wherever reasonably practicable at noise sources at a height. • Plant items shall be located at lower heights where reasonably practicable such that noise shielding from the FSB is maximised. • A flexible connection may be used between the fan and ductwork in the DTD Plant stack. The connection may be encased to control break out noise. • Ductwork, including the stacks shall be acoustically lagged if required. This shall be confirmed with measurement once operational and lagging retrofitted if needed. Details of the above measures and noise reductions achieved shall be provided to the Department of Planning (DoP) during the detailed design stage of the project. 21 Orica shall prepare a Noise and Vibration Management Plan (NVMP) in respect of the project addressing the following: • Appropriate noise monitoring program for the project including details of periodic noise and vibration testing to be undertaken during activities deemed likely to generate high noise and vibration levels; • Management of vibration during any use of piling rig and roller; • Scheduling of works/respite periods from activities likely to generate high levels of noise during major sporting events at Hensley Athletics Field; • Notification to all those impacted by works likely to cause excessive vibration and noise i.e. if sheet piling is required; and • Provision of a 24 hour community hotline to allow the local community to register complaints regarding noise at the Site. 22 Orica shall ensure that works on the Site are carried out in accordance with the following: • All CPWE excavation operations shall be undertaken within the enclosed ESB in between the hours of 7.00am and 7.00pm from Monday to Saturday; All operations undertaken within the enclosed FSB (screening, crushing,

Environmental Issue	Commitment
	blending of stockpiled materials and feeding material to the DTD Plant) and the operation of the DTD Plant, the ESB emission control system and the FSB emission control system may be undertaken 24 hours per day, seven days per week; • All other works including stockpile management, maintenance of drainage and environmental control measures, and the maintenance of haul roads will be undertaken between the hours of 7.00am and 7.00pm from Monday to Saturday; • All equipment and plant used on-site will be maintained in good order in accordance with manufacturers recommendations; and • All construction vehicles will enter and exit the Site in accordance with the Site entry controls specified in the EA and RAP prepared for the project.
Social	23 An ongoing consultation program will be undertaken with the local community for the duration of the project. A Community Liaison Plan will be prepared for the project including the following key components; • A database shall be prepared identifying all key stakeholders in the proposed remediation works. Over the course of the project, the database shall be updated regularly and will be used to document communications with key stakeholders and interested parties. • Appropriate communications tools will be used to distribute information to identified stakeholders prior to establishment of works at the CPWE. The tools shall contain information relating to the proposed CPWE remediation works, a project program showing the anticipated duration of works, opportunities for key stakeholder participation and contact details for more information. • Regular meetings, focusing solely on the remediation of the CPWE, will be held to disseminate information on the progress of the works including information on incidents, issues and operational conditions, and be attended by technical specialists, where necessary, to address any specific concerns or issues that may arise. These meetings will be open for anyone to attend. • The CPRC will continue to be a key stakeholder during the project and project information will be provided and discussed with the Committee. • Newsletters shall be prepared and distributed to key stakeholders to communicate project information. The newsletters shall provide an avenue for communicating specific information on the progress of the remediation works where appropriate. Feedback on the information shall be collected via the consultation methods described above. • A dedicated 24-hour 1800 telephone number/service shall be established to answer queries on the project and to receive comments and shall be available throughout the duration of the project. • A notice board shall be posted at the main site entrance containing information about the project and contact details. • Information about the project shall be posted on the web. The website shall be advertised to key stakeholders and regularly updated.
Traffic	24 A Traffic Management Plan (TMP) shall be prepared for the project prior to site establishment and construction. The TMP shall incorporate existing Botany Industrial Park (BIP) traffic management procedures and include: • Designated site access via Gate 3 on Denison Street for all

Environmental Issue	Commitment
	construction and operational traffic; • The use of existing workforce car parking and heavy vehicle unloading areas within the BIP; • Designated haulage routes within the BIP for heavy vehicle movements; • Designated haulage routes within the Randwick Local Government Area (LGA); and • Compliance with designated speed limits and load limits specified for heavy vehicle routes.
Water and Soils	25 Orica shall apply practicable measures to reduce the quantity of dirty water, and the concentration of contaminants contained in dirty water, produced as a result of site establishment, construction, operation and decommissioning works for the project. 26 Orica shall take all practicable measures to: • Minimise soil erosion and the discharge of sediments and pollutants from the Site; and • Reduce both the concentration of contaminants contained in dirty water and the total quantity of dirty water produced as a result of site establishment, construction, operation and decommissioning works for the project. 27 In relation to the management of the water cycle on the Site, Orica shall implement measures designed to ensure that: • Stormwater from contaminated areas within the Site is transferred to the on-site water treatment plant associated with the project and is not permitted to contaminate clean areas of the Site; • All contaminated water within the Site is collected and treated in an on-site water treatment plant, or disposed of off-site to a wastewater treatment facility lawfully permitted to accept such waste; • Only uncontaminated rainwater would be permitted to flow to stormwater drains; and • Water to be reused on the Site meets the criteria specified in the Environmental Management Plan (EMP) developed in accordance with SOC42. 28 Orica shall ensure that material that is to be stockpiled on site is stabilised to prevent contamination, erosion or dispersal of the material. 29 With respect to the reuse of wastewater Orica shall ensure that: • Wastewater/effluent is applied to the Site strictly in accordance with an approved EMP as described in SOC 42 with respect to water volumes, quantities and application areas; • Reuse of contaminated water/effluent on site meets the requirements of NSW Health and WorkCover NSW as relevant; and • Contaminated water/effluent to be reused on site is tested and verified as safe for site workers and local residents, and will not contaminate clean areas and will not contaminate clean areas. 30 In the event that wastewater from the Site is to be discharged to sewer, Orica shall establish a (or modify an existing) Trade Waste Agreement with Sydney Water Corporation and comply with the conditions of the Agreement at all times.
Hazard and Risk	31 Prior to the commencement of commissioning of the treatment plant

Environmental Issue	Commitment
	(DTD Plant) as part of the Technology Assessment, Orica shall submit to the Director-General 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. 32 Prior to the commencement of commissioning of the development, in accordance with an approved CPoP Program, the following documents will be prepared: • an Emergency Plan for the development. The Plan shall be prepared in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 1 – Industry Emergency Planning Guidelines.* The Plan shall be developed in consultation with relevant emergency services, the CPRC and broader community and the DECC; • a Safety Management System, covering all parts of the project and any associated transport activities involving hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be developed in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 9 – Safety Management.* 33 Orica shall successfully rehearse the Emergency Plan referred to under SOC32 of this Statement of Commitments on at least one occasion during the commissioning of the treatment plant or proof of performance trials. The rehearsal shall include a simulated response to a full-scale emergency at the development and shall involve relevant key stakeholders, including but not necessarily limited to relevant emergency services and adjacent landowners. 34 Prior to site establishment, appropriate Occupational Health and Safety (OH&S) and planning activities will be completed, documented and approved, where necessary. These activities include: • Verifying the OH&S training of all employees and subcontractors scheduled to work at the Site; • Medical examinations for all employees and subcontractors who are to work at the Site and are exposed to contamination; • Documented attendance at an on-site safety induction briefing for all employees and subcontractors scheduled to work at the Site; • Appointment of a Site Safety Officer (SSO); • Provision of first aid and medical facilities and supplies at the Site; • The procurement, provision and training in the use of personal protective equipment (PPE) detailed in the OH&S Plan (OHSP) and works procedures; • Completion of all quality assurance (QA) and maintenance checks on all electrical equipment, plant and tools to be used at the Site at the commencement of works. Scheduled on-going checks will be performed on all plant and equipment brought on-site; • Installation of decontamination units at the specified areas on the Site, as detailed in the OH&S Plan and the design drawings; and • All activities required to provide a safe and healthy work environment for all personnel who work or visit the Site. 35 Prior to site establishment, WorkCover NSW shall be notified of the proposed commencement date for site works. WorkCover NSW will be

Environmental Issue	Commitment
	provided a copy of the OH&S Plan. 36 Prior to the commencement of construction on the Site, the following studies shall be prepared: • a Fire Safety Study for the project, covering all aspects detailed in the Department's publication Hazardous Industry Planning Advisory Paper No. 2 – Fire Safety Guidelines and the NSW Government's Best Practice Guidelines for Contaminated Water Retention and Treatment Systems. The Study shall include a strict maintenance schedule for essential services and other safety measures. The Study shall be submitted for the approval of the Commissioner of the NSW Fire Brigades prior to submission to the Director-General; • a Hazard and Operability Study (HAZOP) and Control Hazard and Operability Study (CHAZOP) of the project chaired by an independent, qualified person or team. The independent person or team shall be approved by the Director-General. The Study shall be carried out in accordance with the Department's publication Hazardous Industry Planning Advisory Paper No 8 – HAZOP Guidelines; • a Construction Safety Study for the project, prepared in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 7 – Construction Safety Standards. 37 The construction and operation of the proposed project shall be undertaken using an appropriate OH&SP for construction workers on the Site as well as long-term employees at the facility. The plan shall include the preparation of safe work method statements to address specific activities as outlined within the Preliminary Hazard Analysis (PHA) prepared for the proposal.
Completion of Works	38 Orica shall engage an independent site auditor accredited under the *Contaminated Land Management Act 1997* to endorse the RAP and for the duration of the remediation of the CPWE site, ultimately providing 'sign-off' for the site audit statement.
Environmental Management	39 Standard operating procedures (SOPs) shall be developed for all plant items relating to the development, including but not limited to procedures for the handling of contaminated soils, operation of major process units and operation of pollution control equipment. The SOPs shall identify critical operating parameters for each item of plant, identifying appropriate operating levels for each parameter and indicating how these parameters will be monitored. Subject to confidentiality, copies of the Procedures shall be made available for inspection by the Director-General, the DECC and the community on request. 40 Operation of the development shall be conducted strictly in accordance with the SOPs referred to in SOC39 at all times. SOPs shall be updated to reflect significant changes to operations that may occur from time to time. Orica shall periodically notify the Director-General and the DECC of any update of the SOPs, indicating the scope and nature of the update.
Environmental Management Plans	41 A Construction Environmental Management Plan (CEMP) shall be prepared in respect of the proposed remediation works detailing mitigation measures to be implemented during the construction period including: • Access to the CPWE to be via existing sealed roadways only;

Environmental Issue	Commitment
	• Water (or other appropriate control measure) shall be used to suppress particles potentially generated during the erection of boundary fences, barriers and screens; • Land clearing activities shall be controlled using water suppression where necessary; • Areas of disturbed soil shall be minimised during the construction period; • Water (or other appropriate control measure) shall be used to suppress dust emissions during dry windy periods (as required); • The height from which dust generating material is dropped shall be minimised; • Loaded trucks carrying contaminated materials shall be covered at all times; • The cutting/grinding of materials on site shall be kept to a minimum. Where cutting or grinding is necessary equipment and techniques to minimise dust will be used; • Soil mounds shall be treated with surface binding agents or sealed by seeding or surfacing with vegetation or covered with secured tarpaulins or other suitable material; • Heavily used areas shall be paved; • Paved areas shall be swept when necessary using a vacuum sweeper; • Wheels of site plant and vehicles shall be cleaned to minimise the spread of mud onto surrounding roads; • Exhaust emissions from mobile plant shall not discharge straight at the ground; • Construction plant and vehicles will be well maintained and regularly serviced. Visible smoke from plant should be avoided. Defective plant will not be used; • Engines shall be switched off when vehicles are not in use and refuelling areas will be away from areas of public access; • Loading and unloading shall take place within the Site; and • Waste removed from site will be assessed, classified and managed (where necessary) in accordance with *Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes (DEC, 2004)*. All waste will be disposed to an appropriately licensed waste facility 42 Prior to the commencement of site preparation or construction works on the Site, an EMP shall be prepared to identify key issues and to provide a management strategy to effectively manage the environment for the duration of the project and the remediation activities considered to potentially have an adverse impact on the environment. The EMP will address the following key issues: • Surface water management; • Management of water in excavations; • Air quality management including dust, gaseous emissions and odours; • Noise management; • Vibration; • Waste management; • Equipment operation; and • Traffic control.

Environmental Issue	Commitment
Environmental Reporting	43 Orica shall notify the DECC and the Director-General of any environmental incident occurring during the project with actual or potential significant off-site impacts on people or the biophysical environment as soon as practicable after becoming aware of the incident. Orica shall provide full written details of the incident to the DECC and the Director-General within seven days of the date on which the incident occurred. Orica shall make a copy of the report available for public inspection on request. 44 If Orica identifies, through monitoring or otherwise, an exceedance of environmental or safety limits specified in this SOC or the EPL for the Site, Orica will take all necessary steps to cease and prevent the recurrence of the exceedance (subject to safe shutdown procedures). Unless the exceedance can be rectified within a reasonable period of time, Orica shall notify the Director-General and the DECC of the cause of the required shutdown and identify additional measures to be applied to address the cause of the exceedance and identify additional measures to be applied to address the cause. 45 Orica shall, throughout the life of the project, prepare and submit to the Director-General and the DECC, a Monthly Performance Report. The Report shall review the performance of the development against the relevant requirements set out in this SOC and the EPL and shall include: • All monitoring data collected for the development during the month; • A copy of the complaints register for the month and how these complaints were addressed and resolved; • Identification of any non-compliance with the conditions of approval or the EPL; and • Details of additional measures to be implemented to address any non-compliance with the conditions of approval or the EPL. 46 Six months after the commencement of operation of the project, and then annually on the anniversary of the commencement of operation, Orica shall commission an independent, qualified person or team to undertake an Environmental Audit of the project. An Environmental Audit Report shall be submitted to the Director-General within one month of the completion of the Audit. The Audit shall: • Be carried out in accordance with ISO 19011:2002 – Guidelines for Quality and/or Environmental Management Systems Auditing; • Be carried out in accordance with the requirements of the approval issued in respect of the project, and other licences and approvals that apply to the project; • Assess the environmental performance of the project against the predictions made and conclusions drawn in the EA; and • Review the effectiveness of the environmental management of the project, including any environmental impact mitigation works. • The Environmental Audit Report shall be made available for public inspection on request.

APPENDIX C
EPA EXEMPTION ORDER

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

Order Granting Exemption Under Section 284

Preamble

This Order grants an exemption to an in-stack regulatory air emission limit for mercury to facilitate a project by Orica to permanently clean up a contamination legacy at its premises at Matraville, Sydney, adjacent to Botany Bay.

The contamination is referred to as the Carpark Waste and comprises medium-level chlorinated hydrocarbon contamination encapsulated within a synthetic liner.

Remediation of the Carpark Waste will deliver lasting community and environmental benefits by destroying the contaminated material using a technology – direct thermal desorption – that has been successfully applied worldwide to the remediation of chlorinated hydrocarbons. Remediation is a priority as the synthetic encapsulation liner is deteriorating and contaminants are migrating to the surrounding soil.

The soil at the Carpark Waste site has a high concentration of mercury relative to other sites that have been remediated using this technology. As a result, in-stack mercury emissions from Orica's proposed direct thermal desorption plant might not comply with the technology-based regulatory limit, notwithstanding the application of best practice emission controls.

Comprehensive studies have demonstrated that in-stack mercury emissions from the direct thermal desorption plant at the upper level allowed for in this exemption present a negligible health risk and will readily achieve the applicable environmental goals for mercury.

Stringent conditions attached to the exemption require the application of best-practice mercury emission controls throughout the remediation project while enabling Orica to clean up the chlorinated hydrocarbons in the Carpark Waste.

Background

I. Orica Australia Pty Ltd is proposing to construct and operate a direct thermal desorption plant to remediate contaminated soil at its premises at Matraville. The direct thermal desorption plant includes a main gas stack.

II. Emissions to atmosphere from the main gas stack must comply with the limits prescribed in the *Protection of the Environment Operations (Clean Air) Regulation 2002* ("the Regulation").

III. The Regulation prescribes an emission limit for mercury of 0.2 milligrams per cubic metre and for Type 1 and Type 2 substances (in aggregate) of 1.0 milligram per cubic metre. Mercury is a Type 1 substance.

IV. Orica submitted a letter to the Environment Protection Authority (EPA) on 21 December 2007 seeking an exemption from Regulation limits for mercury and Type 1 and Type 2 substances on the basis that emissions from the main gas stack plant might not comply, notwithstanding the application of best practice emission controls.

V. The exemption sought is for emissions from the main gas stack of up to 1.0 milligram per cubic metre for mercury and 1.8 milligrams per cubic metre for Type 1 and Type 2 substances.

VI. The exemption request was supported by a comprehensive assessment of the health and environmental impacts of the exemption and of best-practice mercury controls for direct thermal desorption plants.

VII. This assessment demonstrated that exemption will result in mercury concentrations in the receiving environment that are below the applicable health based impact assessment criteria and will have negligible human health risk.

VIII. NSW Health and other independent advice indicates that the health impacts of an exemption will be negligible. Independent advice also confirms that Orica is adopting a best-practice approach to mercury emissions control.

IX. Sections 284(1) and (2)(b) of the *Protection of the Environment Operations Act 1997* ("the Act") provide that the EPA may exempt a person or class of persons from any specified provision of the Act or the regulations under the Act in circumstances where:

(i) the EPA is satisfied that it is not practicable to comply with the relevant provision or provisions, by implementing operational changes to plant or practices, and

(ii) the EPA is satisfied that non-compliance with the provision or provisions will not have any significant adverse effect on public health, property or the environment, and

(iii) the Board of the EPA approves the granting of the exemption.

X. The EPA concluded from its review of all relevant information that:

(i) the technology-based emission limit prescribed by the Regulation may not be achievable because the soil at this site has a high concentration

of mercury relative to other sites worldwide that have been remediated using direct thermal desorption technology;

(ii) no mercury technologies have been identified that will conclusively enable Orica to achieve compliance with the in-stack emission limits prescribed for mercury and Type 1 and Type 2 substances (in aggregate);

(iii) in-stack mercury emissions of 1.0 milligram per cubic metre for mercury and 1.8 milligram per cubic metre for Type 1 and Type 2 substances (in aggregate) will result in environmental impacts that are within the applicable environmental criteria and will have negligible human health risk;

(iv) the exemption will not have any significant adverse effect on public health, property or the environment; and

(v) it is appropriate for the direct thermal desorption plant to commence commissioning with interim in-stack emissions limits for the main gas stack of 1.0 milligram per cubic metre for mercury and 1.8 milligrams per cubic metre for Type 1 and Type 2 substances (in aggregate) to enable available mercury control technologies to be assessed, with final limits to be established through the commissioning process.

XI. On 11 March 2008, the Board of the EPA approved the granting of the exemption, subject to the conditions outlined in the Exemption Order.

Order

By this order, the Environment Protection Authority (EPA), with the approval of the Board of the EPA, grants to Orica Australia Pty Ltd (ACN 004 117 828) ("Orica") an exemption from s 128 of the *Protection of the Environment Operations Act 1997* ("the Act") in relation to:

(a) the emission of mercury individually; or

(b) the emission of Type 1 substances and Type 2 substances (in aggregate) where mercury forms part of the aggregate of those substances,

from the main gas stack of the thermal desorption plant located on Lot 4 in DP 1016112 ("the main gas stack").

The exemption operates from 1 January 2009 to 31 December 2010 (inclusive).

The EPA is satisfied that:

(a) it is not practicable for Orica to implement operational changes to its plant or practices to comply with s 128 of the Act in relation to:

(i) the emission of mercury individually, or

(ii) the emission of Type 1 substances and Type 2 substances (in aggregate) where mercury forms part of the aggregate of those substances,

from the main gas stack because extensive reviews of international best practice have not identified any mercury technologies that will conclusively enable Orica to achieve compliance with the emission limits prescribed for these substances.

(b) non-compliance with s 128 of the Act will not have any significant impact on public health, property or the environment because rigorous assessments have demonstrated that there are no significant adverse effects on public health, property or the environment if mercury emissions from the main gas stack are at 1.0 milligram per cubic metre.

The exemption is granted under s 284 of the Act subject to the following conditions:

1. The emission of mercury individually must not exceed 1.0 milligram per cubic metre.

2. The emission of Type 1 substances and Type 2 substances (in aggregate), where mercury forms part of the aggregate of those substances, must not exceed 1.8 milligrams per cubic metre.

3. This exemption only applies to emissions from the main gas stack arising from the treatment of:

(a) soil that has been removed from the synthetic liner on Lot 11 in DP 1039919, referred to as the "Carpark Waste"; or

(b) soil that has been removed from the immediate vicinity of the Carpark Waste that requires treatment for the remediation project as specified in the Remedial Action Plan prepared for the project as required by

the *Contaminated Land Management Act 1997* or as otherwise required by a condition of licence or approval applicable to the project.

4. Orica must submit a Best Practice Mercury Control Report ("the Report") to the EPA.

5. Orica must provide the Report to the EPA at the same time that it submits its Technology Application to the EPA in accordance with Condition 13.2.2 of its Licence (Number 26) under the *Environmentally Hazardous Chemicals Act 1985*.

6. The Report must:

   (a) include a review of developments in mercury control technology since 21 December 2007 that might be relevant to the thermal desorption plant.

   (b) include a detailed specification of trials of mercury control technologies ("mercury control trials") to be undertaken during commissioning of the thermal desorption plant to reduce mercury emissions to the maximum extent practically achievable.

7. The mercury control trials must be structured with the objective of identifying:

   (a) the mercury control technologies that can be used to achieve compliance with the Regulation emission limits for mercury individually and Type 1 and Type 2 substances (in aggregate); or

   (b) if this compliance is not achievable, the mercury control technologies that can be employed to give a best-practice result for the reduction of mercury emissions from the main gas stack.

8. The mercury control trials must include trials of the following technologies:

   (a) low pH scrubbing; and

   (b) the injection of powdered activated carbon (both with and without special sorbents); and

   (c) the injection of powdered activated carbon in combination with low pH scrubbing; and

   (d) the injection of powdered activated carbon in combination with oxidative scrubbing; and

   (e) any relevant additional mercury control technologies identified in the review required by Condition 6(a);

   except if the review required by Condition 6(a) compellingly demonstrates that a technology as listed in (a) to (d) above will not be reasonable and effective for the control or reduction of mercury emissions from the main gas stack and the EPA has given written approval to Orica that the particular technology can be excluded from the mercury control trials.

9. The detailed specification of the mercury control trials required by condition 6(b) must include, but is not limited to:

   (a) the number of trials to be conducted on each mercury control technology (or combination of technologies) to ensure that repeatable results are obtained; and

   (b) the full methodology to be used for each trial, including the duration, operational parameters, monitoring frequencies and test methods; and

   (c) the criteria to be applied in assessing the success or otherwise of each trial and for moving on to the next trial, as appropriate; and

   (d) the principles to be used for determining that mercury emissions have been reduced to the maximum extent achievable through the application of best practice.

10. Once Orica has submitted the Report, the EPA may approve the carrying out of the mercury control trials as detailed in the Report or subject to any conditions imposed by the EPA. Orica shall not carry out the mercury control trials without this approval from the EPA. This condition does not exempt Orica from obtaining any other necessary approvals or licences for the carrying out of the mercury control trials.

11. Orica must make the results of any mercury control trials that are undertaken by it, or at its request, available in writing to the EPA as soon as practicable after the completion of each trial.

12. Notwithstanding Conditions 1 and 2, on completion of the mercury control trials, Orica must comply with any emission limits determined and imposed by the EPA for:

   (a) the emission of mercury individually, or

   (b) the emission of Type 1 substances and Type 2 substances (in aggregate) where mercury forms part of the aggregate of those substances,

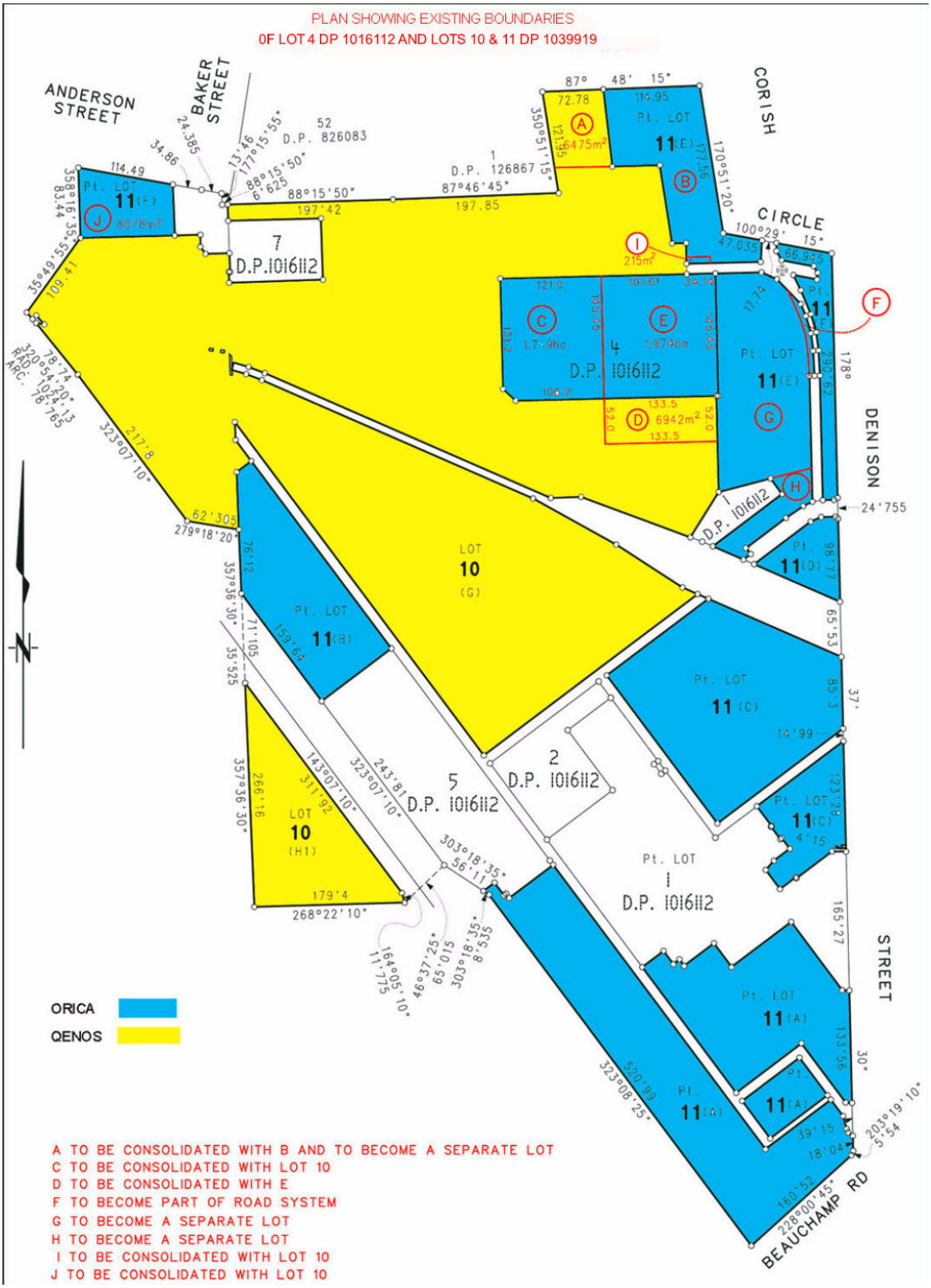
   from the main gas stack.

Dated: 15/4/08

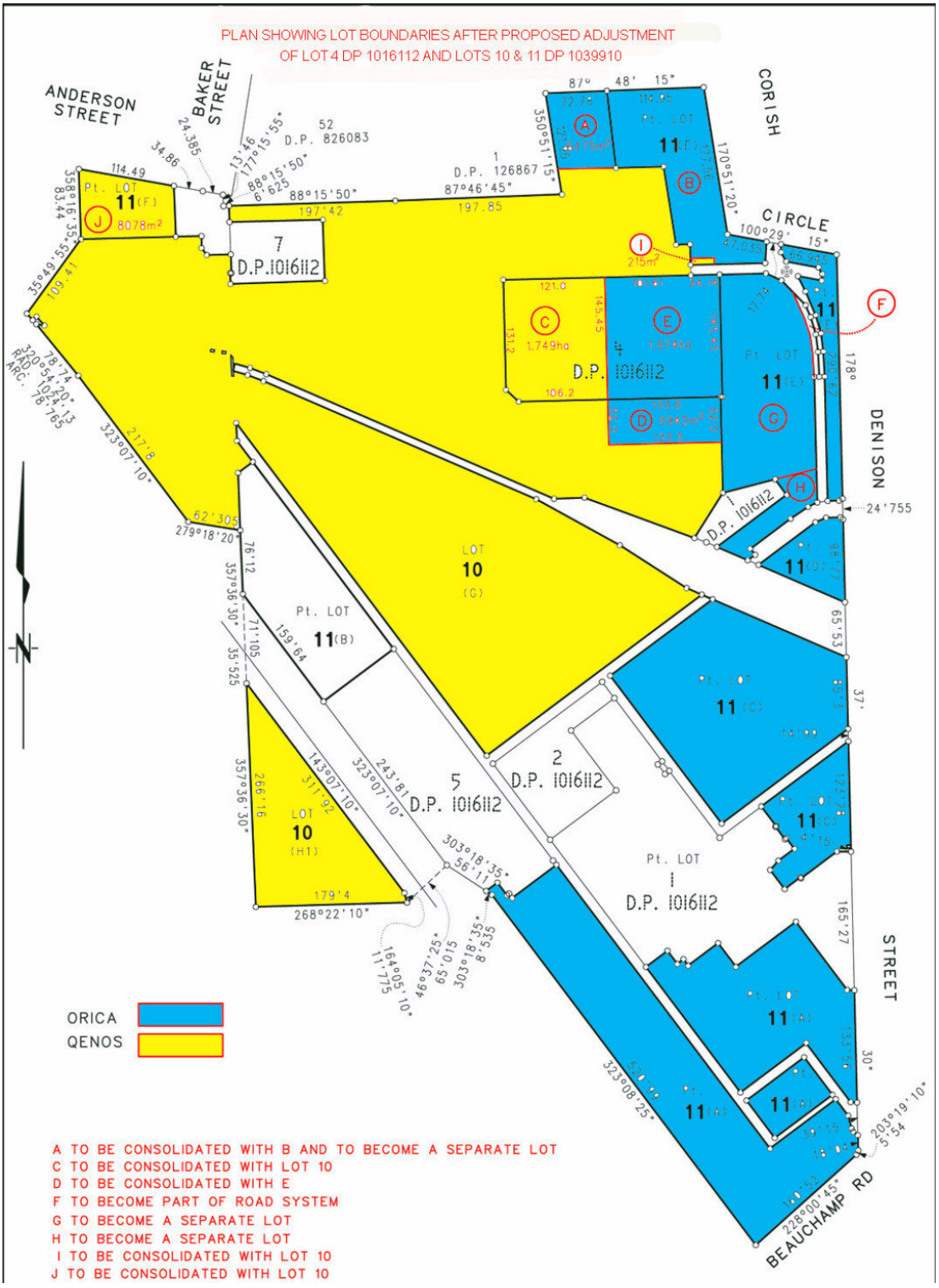
Lisa Corbyn

LISA CORBYN
Director General
Environment Protection Authority
15/4/08

APPENDIX D
BOUNDARY READJUSTMENT



Existing Lot Boundaries



Proposed Lot Boundaries