

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

Publication of Exemption Granted under Section 284

The following exemption is published by the Environment Protection Authority (EPA) in accordance with section 284 of the Protection of the Environment Operations Act 1997. Section 284 of the Act provides that the EPA may exempt a person or class of persons from a specified provision of the Act or Regulations under the Act. The Board of the EPA approves the making of the exemption.

Dated: 15/4/08



LISA CORBYN
Director General
Environment Protection Authority

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
Director General
Environment Protection Authority
15/4/08