EPA Public Information Session notes

Prepared by Elton Consulting

Independent review into off-site mercury at Orica Botany – Stage One

Date	Venue	Time
12 February 2014	Hillsdale Community Centre 236 Bunnerong Road, Hillsdale	6:30 pm – 9:30 pm

Presenters

- Brian Elton, Managing Director, Elton Consulting (Facilitator)
- Mark Gifford, NSW Environment Protection Authority, Chief Environmental Regulator
- Andrew Kita, CDM Smith

Steering panel members

- Mark Gifford, NSW EPA Chief Environmental Regulator (Steering Panel Chair)
- Professor Mark Ferson, Public Health Unit Director, South Eastern Sydney, Local Health District NSW Health
- Dr Talebul Islam, Coordinator Waste Management, Randwick City Council
- Professor Alison Jones, Dean Graduate School of Medicine, University of Wollongong, Independent Toxicology Expert
- Dr Klaus Koop, Director Environment Protection Science, Office of Environment and Heritage
- Lynda Newnam, community member
- Steven Poulton, Director Assets and Environment Botany Bay Council – not present at the Information Session
- Greg Sheehy, EPA Manager Sydney Industry
- Chantal Snell, community member

1. Welcome

Brian Elton welcomed attendees and outlined the objectives of the meeting.

2. Presentation one – Background to the Orica Mercury Independent Review and the review process

Mark Gifford introduced the study area and provided details of the history of the site at Botany Industrial Park. Mr Gifford explained the EPA's role in regulating and protecting the environment, and then outlined the process of the Mercury Review and some of the key findings from Stage One.

Mr Gifford's presentation can be downloaded from

www.epa.nsw.gov.au/resources/oricabotanycttee/MercuryReviewBackground140212.pdf

3. Questions

The following table includes the questions and responses discussed at the Public Information Session. Questions that could not be answered were taken on notice. Attendees were also invited to contact the EPA with additional questions following the meeting.

Question/comment	Response
3.1 Orica was permitted to dump chemicals through the sewer into the treatment plant at Malabar. How much did they dump in the sewer and was the treatment plant designed to treat such chemicals, like mercury?	From 1958, Orica discharged to the sewer under a licensed agreement with Sydney Water. The waste water treatment plant is designed to treat waste water that contains chemicals, including mercury. (EPA) *Additional information provided after the Public Information Session:* Appendix P, Section 5.2.1 of the CDM Smith report provides information on the mercury waste that was discharged to the sewer. See the CDM Smith report here: http://www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf
3.2 The treatment plant wasn't always there. Where did the mercury go when the plant wasn't there?	Appendix P, Section 5.2.7 of the CDM Smith report details that 'prior to 1958, sludges went into settling/evaporation ponds before potentially being released to Springvale Drain.' (Botany Bay) (EPA) See http://www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf
3.3 There was a lot of mercury coming out of the Orica facility.	*Comment noted.* See the 'Mercury Mass Balance' slide on page 18 of CDM Smith's presentation – visit www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithpresentation140212.pdf.
3.4 Who is paying for this study?	Orica is paying for each stage of the Orica Mercury Independent Review. The EPA engaged the independent consultants, and Orica reimburses the EPA. (EPA)
3.5 It has been reported that no illegal dumping took place offsite,	ICI/Orica legally discharged its effluent to the sewer under a trade waste agreement, i.e. a license with

but what about dumping into sewers that then carry the chemicals offsite?	Sydney Water. The licence contains conditions regarding the quality of waste water allowed to be discharged. (EPA)
3.6 During the closure of the former chlor-alkali facility, there was a considerable amount of dumping. Emptying drums into Botany Bay was common practice and brought ICI into the public eye.	*Comment noted.*
3.7 Most of the testing has been conducted around the site but not in the actual bay.	Tests in the bay were undertaken until 2004 and the results of those tests showed that mercury levels were below the guideline levels. However, because some time has lapsed since then, CDM Smith have recommended further testing of fish will be undertaken. (EPA) *Additional information provided after the Public Information Session:* Appendix K of the CDM Smith report provide further details of the previous testing of fish. (EPA) See http://www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf
4. **Presentation Two Stage One: Data and Information Collection and Review** Andrew Kita gave a detailed explanation of the Mercury Review process, and CDM Smith's findings and recommendations. Download this presentation from www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithpresentation140212.pdf.	
5. **Questions** The following table includes the questions and responses discussed at the Public Information Session. Questions that could not be answered were taken on notice. Attendees were also invited to contact the EPA with additional questions following the meeting.	
Question/comment	**Response**
5.1 Are schools included in the recommended study radius?	Yes, school playgrounds will be included. (EPA)
5.2 You haven't mentioned the release of mercury that occurred about 18 months ago. Orica didn't notify the public about it for 6-9	A risk assessment was carried out on this mercury release and it was peer reviewed. That information is available on the Orica website. (EPA) From a health risk perspective, a short, quick

hours. What impact did this have on people?	release of mercury is not worrying. Toxicology studies examine continuous exposure to mercury over a long period of time. (Independent Toxicology Expert) *Additional information provided after the Public Information Session:* For more information, visit www.oricabotanytransformation.com/index.asp?page=133 The EPA is currently prosecuting Orica in the Land and Environment Court of NSW for breach of a condition of its environment protection licence under the Protection of the Environment Operations Act. Orica has pleaded guilty and the judgement has been reserved.(EPA)
5.3 Some of the paperwork intended for distribution to letterboxes was not delivered – some was found on the street.	*Comment noted.*
5.4 While diving at Malabar, it was clear that Malabar Waste Water Treatment Plant was not able to process sewage, so I am concerned it was also not able to process chemicals. What about all the elemental mercury going through Springvale that might be sitting in Botany Bay?	There are studies that examine mercury levels at Malabar and they are no higher than the levels recorded elsewhere, such as at Manly. (EPA, CDM) *Additional information provided after the Public Information Session:* Information regarding sediment and biota in Springvale Drain and Penrhyn Estuary can be found in Section 6.3.3 of the CDM Smith.. (EPA) See www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf
5.5 Were those studies conducted on the fish or the water itself?	*Question taken on notice.* *Additional information provided after the Public Information Session:* Studies were undertaken on biota (finfish & shellfish) and sediments. (EPA) Information regarding sediment and biota in Springvale Drain and Penrhyn Estuary can be found in Section 6.3.3 and in Appendix K of the CDM Smith report. See www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf (EPA)

5.6 Orica or ICI brings up emotions for a lot of local residents from the 1960s to the 1980s. I believe Orica would want to initiate a study of the Orica site with the hope of finding only a small amount of mercury so they can develop or sell the land. Would Orica fund a report on the practices on the site during operation and the impacts on the workers? Most of the former workers are now deceased so they would be difficult to find.	*Comment noted. Question to be referred to Orica for response.* Some former workers were quite specific in blaming Orica for health problems. Some also entered into confidentiality agreements with Orica regarding workers compensation and were not willing to break these agreements. (Community Member)
5.7 Orica said they did not keep records that were older than seven years. How were 12,000 pages of documents examined during this review process? I am also concerned that these documents are not in the public domain.	Many financial records older than seven years were not available, but the technical and scientific records still exist and these were made available. (CDM) There was no record of importation of mercury before the 1970s or 1980s. While we don't know if mercury was imported before this time, this would not influence the mass balance much. (CDM)
5.8 When the findings in the independent review were presented to the EPA, did they review them or ask for anything in them to be changed?	The findings and an entire copy of CDM Smith's draft report were presented to the steering panel. Requests for clarifications or comments on the draft report were all noted in a transparent and open fashion. Comments from members of the steering panel and CDM Smith's responses were made available to all members. (CDM) *Additional information provided after the Public Information Session:* The EPA has gained permission from the steering panel to release their comments. If you want to receive a copy of the comments, email info.botany@epa.nsw.gov.au. (EPA)
5.9 When you say you found no evidence of illegal dumping, what definition are you applying?	*Additional information provided after the Public Information Session:* One of the issues that CDM Smith was requested to address during Stage One was whether there was any evidence that illegal dumping of mercury containing wastes had been undertaken by Orica during the operation of the former chlor-alkali plant (FCAP). The term 'illegal dumping' was already being used by some concerned community

	members, and this issue was frequently raised at community meetings and during discussions with concerned residents. We agree though that 'illegal dumping' does not cover all potential scenarios where waste could have been disposed of, and in view of this CDM Smith spent considerable time trying to identify all potential waste disposal routes during operation of the FCAP. As a result, we identified what appeared to be possible on-site disposal ponds in historical aerial photographs during the time period before a sewer connection existed. (CDM)
5.10 How long does the mercury sit there for?	Remediation was completed in the Springvale Drain. The estuary contains mercury from the 1970s, which is now expected to be buried under layers of sediment. (CDM)
5.11 How confident are you that you've had access to all of the relevant information during the review process?	We were satisfied with the level of cooperation from Orica. We talked to all relevant finance people at Orica who assisted with the process and didn't request to review any of the notes we were making. We have not identified anything mentioning a report that we were unable to access. We don't believe anything is missing that would dramatically alter the findings. However, it is difficult to know what we haven't seen if we haven't seen it. (CDM) Regarding the illegal dumping issue, we have asked for people with any information to come forward anonymously, but no-one has come to us so far. (CDM)
5.12 Page 262 of the report (see the CDM Smith report www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf) says you only received part of the Davies Report.	A full copy of the Davies report was provided to CDM Smith. (EPA)
5.13 Has any testing been recommended for former fishing areas in Botany Bay? How do I know fish eaten from there years ago wasn't contaminated?	Sampling was undertaken in the estuary and concentrations did not exceed mercury guideline levels. *Additional information provided after the Public Information Session:* Information regarding sediment and biota in Springvale Drain, Penrhyn Estuary and Botany Bay can be found in Section 6.3.3 and Appendix K of the

	CDM Smith report. See www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf (EPA).
5.14 Residents want to find out about all pollution present in the bay, particularly as fishing was banned for some reason.	*Comment noted.* *Additional information provided after the Public Information Session:* Information regarding sediment and biota in Springvale Drain and Penrhyn Estuary can be found in Section 6.3.3 and Appendix K of the CDM Smith report. See www.epa.nsw.gov.au/resources/oricabotanycttee/CDMSmithreportstage1.pdf (EPA) Further information on fishing bans in Botany Bay can be found at www.dpi.nsw.gov.au/fisheries/info/closures/rec-sw-loc/central-coast-index/botany-bay-and-georges-river
5.15 I am concerned about the (Hensley) athletics field that children play on, located alongside the plant.	We have not found any evidence of materials being taken offsite and disposed of at these locations. However, this area is recommended for further testing. (CDM)
5.16 When the (Hensley) field was being developed, a lot of soil was taken from that site and dumped elsewhere. The media reported that there were many issues with this soil.	*Question taken on notice.* The EPA is seeking further information from Botany Bay Council on the soil sampling results taken at the time the soil was removed from the site.
5.17 Was that testing undertaken by Orica itself?	*Question taken on notice.* As above
5.18 Is there mercury at Southlands? There is an approved development application for this land. An application for something like a petrol station wouldn't be approved without a big clean-up.	We did review the mercury levels at Southlands and there is widespread low-level mercury. The source of this is not clear. (CDM) In terms of future development, the appropriate development process will be followed. There are legislative mechanisms under the planning and contaminated lands legislation to prevent sensitive uses being carried out on contaminated land. (EPA)
6. **Presentation three: Next steps – Stage Two and onwards** Mark Gifford provided details about Stage Two of the Orica Mercury Independent Review	

process and noted that the dates of the next stages may change.

Download this presentation from www.epa.nsw.gov.au/resources/oricabotanycttee/MercuryReviewNextSteps140212.pdf.

7. Questions

The following table includes the questions and responses discussed at the Public Information Session. Questions that could not be answered were taken on notice. Attendees were also invited to contact the EPA with additional questions following the meeting.

Question/comment	Response
7.1 You mention testing of flora and fauna – are you considering human testing for concentrations of mercury?	This will depend on the results of Stage Two as it is unethical to undertake human testing unless environmental sampling indicates there is a need to do so. (Independent Expert) Furthermore, the risks from mercury exposure are greater for the younger members of the community and it would be unethical to prematurely conduct tests on children. This position could change with new data but is not justified given the data gathered so far. (Independent Toxicology Expert)
7.2 Would you test for all kinds of mercury?	This depends on the range of mercury; for example, a mix of organic and inorganic. (CDM)
7.3 I'm concerned there are no hair testing facilities in Australia.	This resource would be made available if it was needed. (Independent Toxicology Expert) Hair testing is not necessarily effective in determining the impacts of mercury – it can show patterns of exposure, but not levels of exposure. (Independent Toxicology Expert)
7.4 Can you explain what will happen with air modelling in Stage Two?	The EPA has accepted the recommendations from Stage One, including those that relate to air modelling. These will be further considered as part of Stage Two (EPA)
7.5 Is there a set height that the air should be tested at for mercury? How do you test the air?	Generally, air testing needs to be undertaken at a height where vapour is likely to be inhaled – around one to two metres high. (EPA) Because the health risk assessment focuses mainly on younger members of the community, air testing will be taken at lower heights. We will test the amount of mercury in the air breathed in by humans.

	(Independent Toxicology Expert)
7.6 How high off the ground was Orica's testing?	That testing was undertaken for a different purpose. The air was tested at the appropriate height for the workers at the site (approximately 1.8 metres). (EPA) *Additional information provided after the Public Information Session:* The ambient mercury monitors at Orica were required under the environment protection licence for a very specific purpose and are an important component of the remediation of the site of the former chlor-alkali plant. (EPA)
7.7 Is there likely to be much difference between the mercury levels in the air one metre high compared with two metres high?	We need to ensure we do not exclude children in our testing, but there is unlikely to be a big difference. (Independent Toxicology Expert) The current level of mercury in the air is practically zero. We would be testing for mercury potentially coming up out of the soil. (NSW Health) *Additional information provided after the Public Information Session:* Specialist advice obtained by the EPA has indicated that the height of Orica's ambient air monitoring point for this particular monitoring program does not make a significant difference to the results recorded. (EPA)
7.8 Does temperature affect the measurements? Would there likely be more mercury in the air on a 40-degree day than a 22-degree day? If the sampling is taken during winter, will there be a lower level of mercury?	Yes, temperature can affect the levels and so does humidity and wind. On hotter days, on average, there is more mercury in the air. (CDM) This will be carefully considered by the environmental consultants. We will work out the seasonal balance to account for the warmer months, and if necessary, undertake more testing. (Independent Toxicology Expert)
7.9 What is the role of the Public Health representative on the steering panel and has that representative attended every panel meeting?	The role of the representative is to provide health-related input into the discussions. As director of the local health unit, I have operational responsibility for health matters in South Eastern Sydney. My expertise is about trying to understand and interpret risks to public health and communicate them. I have not attended every meeting. (NSW Health)
7.10 I have seen a toddler crawling	Health risk assessments have been carried out.

on the front lawn of a property near the site. The toddler is clearly at risk if gaseous mercury is coming from the ground on warm days. If the EPA standard is 1.8 micrograms per cubic metre at ground level, maybe there should be better regulation.	Even the smallest child who was on a property near the site all the time would not be at risk. (Independent Toxicology Expert)
7.11 There is a cancer register in this area – has it shown any increase in cancer compared with other areas of Sydney in relation to mercury?	Mercury does not cause cancer and, regardless, there has been no clustering of cancers in the area. We have also enquired about the reasons for hospitalisation and the only mercury-related admission was one case due to self-administration. (NSW Health)
7.12 Given that mercury is not being added to the soil, is it likely to still be there as elemental mercury or would it have evaporated a long time ago? What about 1ppm ? What about 5ppm?	There will be an assessment done on the soil in the study zone. There is unlikely to be mercury after 50 or 60 years. (CDM) No Unlikely
7.13 How often does the steering panel meet and why don't all members attend every meeting?	The steering panel meets regularly, but only when there is something to discuss. On average it has met every four to six weeks. It is challenging for every single member to attend every meeting, but this is usually the case. As a group, it was decided that the panel wouldn't meet if the two community representatives and the Independent Toxicology Expert were unavailable, so sometimes the meeting is rescheduled. (EPA)
7.14 Do the panel members receive payment?	The steering panel members are entitled to be remunerated under the Premier's guidelines for sitting fees for panels and committees. No members have claimed fees for sitting on the panel. (EPA)
7.15 I am concerned about local children's ability to learn because of mercury exposure.	There is no simple way of collecting this type of data from the community. This is why we are undertaking this process. (NSW Health)
7.16 I am 70 years old and have been exposed to a lot of mercury over the years, even as a child, and I am all right.	*Comment noted.*

7.17 What is the purpose of the photography this evening?	The photographs are for the EPA's own records. If anyone objects to their image being used, please notify the EPA. (EPA)
7.18 What other chemicals are stockpiled on the Botany Industrial Park site?	Hexachlorobenzene (HCB) waste is also stored on the site and is subject to strict conditions. The storage facilities are inspected regularly by the EPA. If we require information on any other substances we will obtain it (EPA) *Additional information provided after the Public Information Session:* The NSW WorkCover requirements for major hazardous facilities require details of some chemicals to be reported to Workcover.
7.19 Has there ever been Agent Orange on the site?	*Question taken on notice.* *Additional information provided after the Public Information Session:* Orica has advised that Agent Orange was not produced at the Matraville site (EPA)
8. **Thank you and close** Brian Elton thanked attendees and presenters for their time and advised that the presentations and meeting notes would be available on the EPA website within one to two weeks.	