

Report and Advice on Environmental Incident - a partial non conformance with Project Delivery Standard No. 34 in the North of the Bay 3 August 2009

Background

The Environmental Management Plan (EMP) contains 58 Project Delivery Standards (PDS), which are rules about where, when and how the Channel Deepening Project (the Project) must be delivered.

The Office of the Environmental Monitor's (the Office) terms of reference outlines the arrangements to be adopted in the event of an incident. They include:

- In the event of non-conformance with the EMP, the Monitor will seek access to the Port of Melbourne Corporation's (PoMC) remedy plan as soon as practicable;
- The Monitor will scrutinise implementation of PoMC's remedy plan to see that it meets the EMP requirements. When necessary, the Monitor can also provide appropriate advice to the Minister for Environment and Climate Change, or his delegate, for consideration; and
- In the first instance, it will be the Secretary of the Department of Sustainability and Environment who will, if required, provide direction to PoMC to amend the EMP or take action in relation to EMP.

Incident

In the early morning (approximately 2.30 am) of Monday 3 August 2009, the barge *Resolution*, while being manoeuvred by the tug *Edina* to the Port of Melbourne Dredged Material Ground, made an emergency disposal of a load of approximately 400 cubic metres of uncontaminated clay dredged from the Gellibrand Swing Basin. The disposal was required to maintain the safety of crew working on the *Resolution* and *Edina*, which were being severely affected by a sudden and severe change in metocean conditions. The conditions were associated with strong winds, gusting to 56 knots, which swung from the north to the south west.

As a result of the emergency disposal, a non conformance occurred with part of EMP PDS No. 34 that includes rules on where dredged material can be placed. This incident was first identified through routine checking of equipment tracking records and was verified by PoMC on 4 August 2009.

The EMP (Table 6) requires the Office to be notified in the event of such an incident. The Office was notified on Tuesday 4 August 2009.

Sequence of events

- 3 August 2009, incident occurred at approximately 2.30 am
- 4 August 2009, PoMC notified the Office of the incident and on 5 August 2009 released a Media Notification describing the incident.
- 5 August 2009, the Office sought PoMC's remedy plan for the incident.

- 17 August 2009, PoMC provided an incident report, including an assessment of remedy options, and three opportunities for improvement.

Office findings

Managing risk

The Project's environmental risk framework assesses the probability that an event or incident may occur, and if it were to occur, the resulting impact of the incident. The framework considered the risk from planned events, such as the establishment of the extended Port of Melbourne Dredged Material Ground, and unplanned events, such as this incident.

The framework has been used to set the PDSs contained in the EMP to control where, when and how dredged material is to be placed. The EMP sets requirements for routine monitoring and reporting.

Reporting is necessary for the 'plan-do-review' loop that provides for continuous improvement. This loop is an underpinning concept of the international standard AS/NZS14001:2004, on which the EMP is based.

The EMP and PoMC's Environmental Management System of which the EMP forms part, requires the reporting of both planned and unplanned events, such as this incident. This type of incident is commonly called a 'near miss', and has been categorised as such by the PoMC Boskalis Australia Alliance (the Alliance), with respect to the occupational health and safety implications.

Reporting of the near miss

The prompt reporting of near misses is internationally accepted practice. It provides a means for organisations to learn from and thereby help avoid the potential for more serious consequences to life, property and the environment.

The Alliance incident report acknowledges that the internal reporting of this near miss by its subcontractor was inadequate.

The Alliance identified the near miss through its routine review of vessel tracking data on Tuesday 4 August 2009. The Office notes that the timely identification of this near miss confirms action taken by PoMC in conducting routine checking of tracking data, rather than the periodic batch-checking, following the May 2009 partial non conformance in South Channel.

PoMC's incident report identified, 'as an opportunity for improvement', the need to reinforce the importance and requirement for Project incident reporting to all personnel, and has already done so.

Interim response

As an interim measure, PoMC has required the Master of a vessel in charge of non self-propelled barges to, as a minimum, seek advice on wind conditions at the Port of Melbourne Dredged Material Ground and not transit to this area when the maximum wind speeds and maximum wind gusts recorded at Fawkner Beacon reach 35 knots and 50 knots respectively. PoMC has also reinforced that in all circumstances it remains the Master's responsibility to consider safety, and that a judgement may be made for a vessel to not transit in lesser wind conditions.

The interim measure is to remain in place until a risk review is completed and its findings implemented, as outlined below.

Learnings

This near miss has highlighted the implications of atypical metocean conditions in the bay for non self-propelled barges. In this instance, the loaded barge was subject to conditions that arose from

changing wave direction and increased height driven by a wind change, associated with strong winds.

PoMC's incident report acknowledges the learnings available from this near miss. It intends to undertake a risk-review assessment to identify opportunities to improve the assessment by vessel Masters of bay metocean conditions and the manoeuvrability of non self-propelled barges. The review is scheduled for September 2009.

The first step of the Project risk standard, AS/NZS 4360, is to establish the context. The Office notes that the context for this risk review is non-self propelled barges. This means that options to manage risk are limited to controls over the use of the barges (e.g. use of their maximum load capacity) and the timing of barge movements. While these controls should provide sufficient flexibility, should this context not be sufficient to provide the certainty required, the risk assessment context should be broadened to include the implications of choosing different barge types. This broader context is consistent with the Project's approach of designing-out risk through the choice of equipment and then determining how and when (i.e. timing) that equipment be used.

PoMC has advised that knowledge of the weather conditions affecting the Bay and how these conditions may affect barge stability will be incorporated in the risk-review.

The overarching Project environmental risk register should then be amended as required to address the finding of this risk assessment. This is required to allow the learnings to be incorporated into the Project and to also ensure that the register remains current for this Project.

This near miss has also highlighted the benefit of developing measures to deal with such emergencies. Agreed arrangements already exist for events, such as oil spills and the introduction of marine pests.

Consideration of such measures sensibly follows the risk-review, so that all reasonable action has occurred to minimise the chance of such near misses in the future.

Impact of the incident

The impact was caused when approximately 400 cubic metres of uncontaminated clay was released through the barge's bottom opening doors and settled on the seabed. It occurred in the north of Port Phillip Bay, two kilometres north west of the Port of Melbourne Dredged Material Ground.

The impact was highly localised, primarily affecting an area of the Bay seafloor covering 55 metres by 15 metres. The impact area was subject to a site assessment by PoMC on 10 August 2009 and expert advice on that assessment. As the impact was limited, and the options to either remove the clay or treat the site with sand cover would only further disturb the site by further changing the sites physical habitat, PoMC concluded that further intervention would only increase impacts rather than remediate them.

The Office is satisfied that further intervention at the impact site is not warranted.

The Office is also satisfied that no consequences have arisen from the incident in relation to features specifically protected under the *Fisheries Act 1996*, *Flora and Fauna Guarantee Act 1988*, *Heritage Act 1995*, *Wildlife Act 1975* or the *Environment Protection and Biodiversity Conservation Act 1999*.

Reporting

The non conformance was reported to regulators and the Office on 4 August 2009. Notwithstanding the comments made above regarding the internal reporting of this near miss, the Office is satisfied that, with respect to the EMP requirements, PoMC reported the incident as required, including the provision of an incident report.

Opportunities for improvement

A foundation of the EMP, and PoMC's implementation of it as part of its Environmental Management System, is the concept of continuous improvement.

PoMC has identified three actions: reinforcing the requirements and importance of reporting near misses to its contractors, identifying opportunities to reduce the risk of similar events, and establishing contingency arrangements. It has already implemented the first action and established interim arrangements until the risk review can be completed and its findings implemented.

Finding

When implementing the opportunities it has identified, it is recommended that PoMC address the following:

- Should the risk review of the use of non self-propelled barges not provide the certainty required, the review context should be broadened to consider other equipment options;
- The results of the risk review be formally incorporated in the Project risk register, and the register updated as required; and
- Contingency arrangements be considered following the risk-review.

Conclusion

The Office is satisfied that the environmental impacts of the non conformance were inconsequential.

The Office considers that the PoMC implementation of the three opportunities for improvement identified and adoption of the above findings will support the continued level of environmental performance expected of the Project.