

**8 July 2004****BUTADIENE STORAGE FACILITY AT COODE ISLAND AND ASSOCIATED ISSUES****Division** Assets & Services**Presenter** Haig Poulson, Acting Group Manager Engineering Services**Purpose**

1. To provide further detail on the possible bulk storage of the chemical butadiene at Coode Island.

**Time Frame**

2. An announcement on Dow/BASF's preferred tenderer is expected within the next three weeks.

**Finance**

3. No financial implications for the City of Melbourne at this juncture.

**Legal**

4. Assuming the proposal to establish the Butadiene Storage Facility at Coode Island proceeds, then Marstel Terminals Pty Ltd ("Marstel") will require a number of approvals. Council has not been provided with details of the Butadiene Storage Facility at Coode Island. Until those details are provided, it is not certain what approvals are required, and whether the proposal will be advertised, and third parties given the right to object and appeal to VCAT. It is likely that Marstel would require a Works Approval under the Environment Protection Act 1970 and a planning permit issued by the Minister for Planning as the Responsible Authority under the Port of Melbourne Planning Scheme.

**Sustainability****Connected and Accessible City**

5. There is a potentially significant sustainability impact.

**Inclusive and Engaging City**

6. There is significant sustainability impact.

**Innovative and Vital Business City**

7. Although there are no direct impacts relating to this strategic direction, the carpet industry is dependent upon accessible storage of butadiene for use in latex carpet backing.

## Environmentally Responsible City

8. The major environmental impacts relate to the possible increase in risk of having butadiene stored at Coode Island with its related health and safety concerns.

## Background

9. The tender to store butadiene has arisen because Qenos has stated it will cease production of the chemical at its Altona works in 2005. At the moment, Dow/BASF receives butadiene by pipeline directly from the neighbouring Qenos plant.
10. Dow/BASF Chemicals has invited tender submissions for the storage of butadiene from Marstel Pty Ltd and Terminals Pty Ltd, (“Terminals”). Marstel has lodged a tender to store butadiene at a storage facility on Coode Island whilst Terminals is tendering to store the material at its Corio facility.
11. Council, at its meeting of 24 June 2004, considered a report titled “*Butadiene Storage Facility at Coode Island and a Proposal for the Transit of Gas Storage Ships along the Yarra River*”. The resolution from the meeting is as follows:

*“That Council:*

- *note the information in this report and resolve to advise the Environment Protection Authority that it wishes to be advised and consulted regarding any applications to store butadiene at Coode Island;*
  - *request that a full report be prepared on all aspects of this issue, including environmental and safety aspects for a special Council meeting to be held in approximately 14 days time and the representation made by the Footscray SES at the Special Finance, Corporate Services and Governance Committee meeting;*
  - *has serious concerns and is opposed to the escalation of quantities of hazardous chemicals stored on Coode Island;*
  - *has serious concerns and is opposed to any increase to the transportation of hazardous chemicals through our City;*
  - *will vigorously campaign for the best possible outcomes in all aspects of environment protection and safety;*
  - *write to Dow and BASF expressing its concern and informing them of our position in regard to an escalation of highly toxic chemicals stored on Coode Island and transported through our community; and*
  - *be updated about the tender awarding decision once made, and consider further strategies to deal with any escalation of the storage and transportation of hazardous chemicals.”*
12. Council has sent letters to Dow/BASF and the Environment Protection Authority Victoria (EPA) outlining its concerns.
  13. The responsibility for emergency management in the event of a hazardous spill lies with the Metropolitan Fire Brigade supported by other emergency services such as the State Emergency Service (SES). Discussions have been held with the Municipal Emergency Resource Officers (MERO) at the City of Maribymong and VicUrban. A meeting will be held at the SES

headquarters to review the long term strategic approach for dealing with emergencies in VicUrban and Melbourne. VicUrban is reviewing their funding arrangements with SES Footscray in conjunction with Melbourne and this will also be addressed at the SES headquarters meeting.

### **Butadiene**

14. Butadiene is a form of liquefied petroleum gas. Dow/ BASF Chemicals use it as a component in the production of latex used as backing for carpet. Butadiene ranks 36th in the top 50 most produced chemicals in the United States. Three billion pounds per year are produced in the United States and 12 billion globally (source: US Department of Labour).
15. Butadiene is a Class 3 hazardous material, according to the Environmental Protection Authority Victoria (EPA) nomenclature, with Class 1 being least hazardous, and Class 3 most hazardous. A Class 3 material is defined as “*a waste which is extremely hazardous substance that may threaten the beneficial uses of the environment*” (ie life, health and well being of people). Other Class 3 chemicals stored at Coode are benzene, propylene oxide, acrylonitrile and toluene diisocyanate (TDI) which are mostly stored in larger quantities at Coode Island. Butadiene would be limited to a single tank.
16. Under the Dangerous Goods (Storage and Handling) Regulations 2000, (“the Dangerous Goods Regulations”) Butadiene is classified as Class 2.1 because it is a flammable gas (ie unlike the EPA environmental classifications, the Dangerous Goods Regulations are not hierarchical). Butadiene would be the first product with a 2.1 classification to be stored at Coode Island.
17. In high concentrations, the gas can act as an irritant, producing a cough, and a narcotic producing fatigue, drowsiness, headache, vertigo, loss of consciousness, respiratory paralysis, and death. Chronic exposure may result in central nervous system disorders, diseases of the liver, tendencies toward hypertension and decreased haemoglobin content in the blood (source: US Agency for Toxic Substances & Disease Registry). The International Agency for Research on Cancer rank butadiene as a ‘probable human carcinogen’. This is based upon experiments involving animal exposure to the product. Reports suggest that epidemiological studies conducted on the exposure of humans to butadiene and a link with cancer mortality are inconclusive (source: Baffling Butadiene: Environmental Health Perspectives, V. 102, March 1994).
18. Butadiene refining centres are located in North America, China, North Africa and the Middle East. Council’s research has not found any examples of a butadiene leak leading to casualties or loss of property. Records of fires breaking out at chemical facilities have made no reference to butadiene being the point of ignition.

### **Marstel’s Tender – Coode Island Storage**

19. Marstel’s tender includes projections for the on-site handling of 6000 tons of butadiene a year, which equates to approximately 7 to 8 truck movements per week from their Coode Island facility, to DOW/BASF at Altona, 5 days a week.
20. Marstel has informally stated that the handling and storage of butadiene can be managed at Coode Island without an escalation in the risk profile of the site.

### **Terminal’s Tender – Corio Storage**

21. Terminals is proposing to store butadiene at a bulk liquid facility in Corio. The Corio development already stores four gases (currently in liquid form). The storage and transportation details are the same as listed in the Marstel tender information.

22. According to Terminals, the refinery berth at its Corio Plant where ships enter is remote from other berths and population centres. Ships carrying liquefied gas already travel up to the refinery which is on the edge of the Port of Geelong.

### **Risk Profile at Coode Island**

23. The Victorian Government commissioned a Risk Assessment for Coode Island for WorkSafe in 1997. The most current risk profile for Coode Island was conducted in 2001 by Marstel Terminals related to the development of its terminal. These documents provide a benchmark for the future assessment of risk. Any potential storage of butadiene would be subject to a new Risk Assessment as part of the permit process.
24. Although butadiene is a gas, it would be transported and stored under low pressure in a refrigerated tank that will keep it in a liquid phase. The possible problem with storage of a gas as a liquid is that if containment is lost, it will return to its original gaseous state and may form a vapour cloud. This could also have safety ramifications for storage on vessels making their way to Coode Island.
25. The storage risk of butadiene is increased because it has both a 'near field effect' (ie a spill may burn in a localised area) and a 'far field effect' (ie a spill may also drift to other geographical areas). A 'far field effect' would only take place if significant quantities were spilt. Butadiene if stored at Coode Island would be the only chemical to have this dual effect.
26. Terminals recently announced that it will cease to store and handle acrylonitrile at its Coode Island facility within the next month. Acrylonitrile is one of the most hazardous chemicals stored on Coode Island, and also the principal product that burnt during the 1991 Coode Island fire. The EPA has advised the removal of this product will greatly reduce the risk profile for the Coode Island facility.
27. A decision about whether the tender will be awarded to Marstel (ie. to take butadiene to Coode) or Terminals (ie to take butadiene to Corio Bay) is expected to be made by mid August 2004. A successful tenderer should require a Works Approval from the EPA. Approval would also need to be sought from WorkSafe Victoria and the Metropolitan Fire Brigade. Any proposal to store butadiene at Coode Island would therefore undergo rigorous analysis. Council should be able to make submissions during the process.

### **Issues**

28. If the tender was awarded to Marstel (ie for Coode Island storage of butadiene), the main issue is concern is that another Class 3 product would be stored at Coode Island at a time when, (especially with the impending withdrawal of acrylonitrile), the number of hazardous products stored at Coode is being reduced. The proposal would also involve the increased transport risks both as a result of trucks carrying butadiene to Altona and of ships carrying butadiene to Coode Island along the Yarra. Butadiene would be carried in the hold of a ship as a chilled liquid.

### **Consultation**

29. Consultation has been undertaken with the EPA, Marstel, the City of Maribyrnong, Terminals, WorkSafe Victoria and Dow/BASF Chemicals.
30. The installation should require a works approval under the *Environment Protection Act 1970*. Applications for works approvals are generally subject to appeal to the Victorian Civil & Administrative Tribunal. Council will be consulted as part of any works approval process and should also have a right of appeal to VCAT should a works approval be granted without Council's support or without appropriate conditions.

## **Government Relations**

31. Coode Island is located within the City of Melbourne but is within the area covered by the Port of Melbourne Planning Scheme. The Minister for Planning is the responsible authority for all planning applications under this Scheme.

## **Recommendation**

32. That Council note the information on the storage of butadiene at Coode Island and associated issues as contained in this report.
33. That Council note that progress reports will be provided as the situation regarding tender requirements becomes more clearly defined.