2004 EIP ACHIEVEMENTS REPORT

During 2004 – 2007 the refinery made great progress on its 2004 Environment Improvement Plan (EIP). This report provides an outline of the key achievements and environmental improvements made against the 155 items included in the plan.

We are now building on these achievements with our new EIP 2007-2009 and have identified ways the refinery can further improve on environmental performance. As we do this, we look forward to working with our stakeholders, listening to community concerns, sharing our progress and, together, building a better future. To read the EIP 2007-2009 please visit the refinery's website www.shell.com.au/geelong.

OUTLINE OF KEY 2004 EIP ACHIEVEMENTS

AIR

Monitoring of emissions by both Shell and the EPA shows that local industrial emissions have minimal impact on the air quality surrounding the Geelong refinery. In the past three years projects undertaken by the refinery have resulted in significant air quality improvements:

- Benzene Reduction Facility (Bensat) commissioned
  A significant new unit, the Bensat Plant, was built to meet the requirements of Federal Government Clean Fuels Legislation to reduce the level of benzene in the fuel to less than 1%. This has resulted in a step change reduction in the benzene concentration in the air near busy roads in our cities. It has had a similar positive impact on emissions from the refinery.

- Ambient air monitoring programs established
  Ambient monitoring has been conducted for many years and has been augmented significantly since 2004. The program covers Volatile Organic Compounds or VOCs (petrol vapours including benzene), Fluoride, Particulates and Sulphur Dioxide or SO_2. This monitoring has included analysis and specific source identification programs. The refinery's ambient air monitoring program in 2006 involved an investment of $1.1 million. The results, which are NATA (*National Association of Testing Authorities*) accredited, showed local industrial emissions had minimal impact on the air quality surrounding the Geelong refinery. This is consistent with the EPA's own monitoring that shows air quality in the Corio area is generally good and consistently meeting State and National air quality objectives.

- Odour Detection and Management
  In upgrading its processes for detecting and managing odours, the refinery has built up its team of "Calibrated Noses" (people whose noses have been tested for sensitivity). Employees are available around the clock to detect and trace odour sources and participate in twice-daily patrols. In addition, a panel has been established to involve our neighbours in quarterly odour audits at the refinery. Like our employees, our community volunteers are calibrated so that they are also able to give us a community perspective and help us in our efforts to further reduce odours.

- Sulphur Recovery Improvements
  The second of our Sulphur Recovery Units was recommissioned and has significantly increased our capacity to remove sulphur from the process. Sulphur, in its various forms, is an odour source and one of our licenced emissions (SO_2), therefore removal of more sulphur translates to reduced sulphur compounds in our environment.

- Flare Gas Compressors recommissioned
  In normal operation there are small losses of gas to flare that are difficult to avoid. Early in 2005, flare gas compressors were recommissioned to capture these gasses and return them to our fuel gas system for use in our furnaces. The recommissioning of the compressors, along with other initiatives, helped us lower our greenhouse gas emissions by around 30,000 tonnes in 2006.

WATER

Good water management is essential to refinery operations and projects undertaken through the EIP and other refinery initiatives have resulted in water savings, better management of water effluent streams and improved reliability in water pipelines:

- Water Master Plan
  During 2003/04, an extensive study of the refinery's water systems was undertaken. This study led to the preparation of a significant project called 'The Water Master Plan' (WMP). From 2004 to 2007 the refinery implemented the WMP, which consisted of more than 40 sub-projects and was completed mid 2007 at a cost of about $55 million. The WMP improved the way the refinery manages its water resources and among other benefits, has saved about 300,000 litres a day of fresh water and improved treatment of water leaving the refinery. In the course of a year under the EPA licence the refinery tests the four outfalls for 2364 parameters. In 2006 the refinery achieved 99.97% compliance with EPA discharge limits in 2006 and a 64% reduction in the discharge of dissolved hydrocarbon (TOC) from 2005 to 2006. These improvements were recorded before the completion of the WMP in mid 2007 and the final works provide for further improvements to discharge water quality

- Replace Cooling Water Mains
  New cooling water main supply pipelines have been in place since April '05 and their performance from both reliability and flow perspectives has improved cooling reliability across the refinery and helped environmental performance.

SOIL AND GROUNDWATER

Shell has conducted extensive investigations that have provided an improved understanding of the extent and nature of soil and groundwater impact at the site. The studies show that while hydrocarbon impact exists across large areas of the site it is being suitably contained. Off-site impact is very limited in extent and historical in nature. Observed impact is being managed and monitored while a long-term clean-up strategy is being developed. The first stage of a groundwater remediation system has been designed, installed and commissioned. Impacted groundwater is recovered from the foreshore area and from the existing interception trench systems and pumped to a purpose-built plant located within the refinery for treatment and recycling. Spills awareness training was also undertaken for staff and contractors.

JETTY

The jetty EIP category was created in the 2004 EIP to take up the recommendations of a jetty environmental audit conducted in 2004. Most items sought to review a number of the operational aspects of the jetty to reduce the risk of loss in an area of the refinery's operations on Corio Bay. The items were completed successfully.

WASTE

Close co-operation with recycling contractors and employees is helping the refinery to become a zero landfill operator. We have achieved a number of successes in this area, including being certified as a Waste Wise Company through Sustainability Victoria. Waste reduction in this section refers to solid wastes produced and handled during refinery operations. Energy use and product waste are addressed under the air section as greenhouse gas or vapour loses.

- Waste Reduction Action Plan
  In February 2007 the refinery was certified as a Waste Wise company through Sustainability Victoria after submission and commitment to the refinery's Waste Reduction Action Plan (WRAP). The WRAP was developed after a detailed review and assessment of the refinery's waste streams and consideration of options for avoidance, reduction, re-use and recycling. The WRAP outlines the refinery's priority actions to further reduce waste. Recycling has improved steadily across waste streams with the traditional metals and paper products leading the way

- Recycling of Tank Sludge
  The refinery has expanded use of the Geotube® de-watering technology, which uses large geotextile fabric containers to hold the refinery's sludge. The geotextile fabric allows water to be dispelled through the porous fabric while retaining and drying the solids within the fabric container. The dried sludge can then be bio-remediated and recycled as a compost product available for use on-site to advance our tree-planting program. The technology has halved the amount of waste that is removed and disposed of from site to landfill. In future it is envisaged that almost all of the dried sludge will be taken to the refinery's composting site, Schoe Park, for bio-remediation.

COMMUNITY RELATIONS

The refinery's engagement with our neighbours has been enhanced through a range of activities that included development of a website, making it clear to the community how they can get information and regular publication of a newsletter that is letterboxed to more than 14,500 neighbouring homes and businesses.

In 2004 the refinery undertook a communication campaign to explain our alarm system and tell the community how to find out more information when an alarm is heard. At the same time, the refinery published an explanation of the alarms in our newsletter and on a fridge magnet. More than 14,500 copies of these fridge magnets were distributed to homes, businesses and community centres in the local area. A 1800 (free) number is available for community members who may be concerned about operational activities, and the large signs around the refinery's boundary publicise this number, as does the newsletter.

In addition, through research and deeper and broader engagement with our neighbours, we have a better understanding of them and in turn this has helped us to align our social investments to more closely meet the needs of Corio and Norlane.

EMERGENCY RESPONSE

The refinery has a comprehensive emergency response program and plans are tested and updated to ensure readiness in the eventuality of an oil spill to the bay. In addition, the refinery has installed rapid deployment booms at the jetty. In the event of a spill the booms can be deployed very quickly to limit any spill spread.

MANAGEMENT SYSTEMS

The Management Systems section of the 2004 EIP addressed the capture, development, reporting and dissemination of environmental standards and processes. In all cases this involved adjustments or formalisation of existing processes to facilitate tracking and improvement over time.

- ISO14001:2004 accreditation
  Accreditation of the updated version of ISO14001 international standard for environmental management systems was achieved in 2006. The system was initially certified to ISO 14001 in 2000. Re-certification for another three years was achieved in 2007.

TRANSITION TO A NEW EIP

In July 2006, Shell, the Community Advisory Panel (CAP) and EPA Victoria (EPA) began reviewing the progress of the 2004 EIP and worked through priorities and aspirations for future environmental improvement at the refinery. This process was supported by the services of an independent auditor who was engaged to review and verify the completion of the

previous EIP items. The completion of a significant proportion of the EIP items, coupled with the refinery's journey of continuous improvement, led to work on a new EIP.

In August 2007 the refinery invited the public, including a wide range of community members, interested stakeholders and employees, to provide feedback on the draft of the EIP 2007-2009.

The new EIP incorporates three large environment improvement programs that were either in progress at the time of transition to the new EIP or will take a number of years to complete:

- Particulate Emission Reduction Project;
- Working with Barwon Water on it's proposed Northern Water Plant;
- VOC emission reduction project; and,
- Groundwater Project.

Environment improvement items in progress from the 2004 EIP, in addition to those listed above, have been carried forward to EIP 2007-2009.

Verification Process

The refinery engaged the services of an independent auditor who reviewed and verified the completion of 2004 EIP items at appropriate intervals. This process was also guided by the CAP, which has a formal role in monitoring the progress of the EIP. The Independent Auditor is a person outside of the EIP process who is qualified to conduct a systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which the targets and objectives of the EIP have been fulfilled.

2004 EIP Summary

The 2004 EIP included a total of 155 items. Of these 155 items:

- 113 have been completed, and verified as complete;
- 21 items have been transitioned to EIP 2007-2009 as they were in progress and further environmental improvement outcomes are to be gained;
- Seven Items have been completed but are not able to be fully verified since undertaking the community consultation phase for the draft 2007-2009 EIP. These items have been listed in the EIP 2007-2009 Appendix for further review in 2008; and,
- 14 items were withdrawn from the 2004 EIP in the period 2004 to 2006.

Please refer to the Appendix of this report which includes details of the status of each of item from the 2004 EIP, complete with comments from the independent auditor and progress comments where relevant.

APPENDIX

- TABLE 1: Completed and Verified 2004 EIP Items
- TABLE 2: Map of 2004 EIP Items carried into EIP 2007-2009
- TABLE 3: Items from the 2004 EIP that have been completed and not able to be fully verified
- TABLE 4: Items withdrawn from 2004 EIP

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