

27 September 2004

Mr Tony Robinson
Manager - South West
Environment Protection Authority
Cnr Little Malop and Fenwick Streets
Geelong Vic 3220

**GEELONG SITE ANNUAL REPORTING -
ENVIRONMENT IMPROVEMENT PLAN for 2003-2004**

Dear Tony,

Please find enclosed:

- the annual reporting of summary results of the monitoring programs conducted under our EPA licence (EW214) condition 3.2 for the financial year 2003-2004;
- any changes proposed to the Environment Improvement Plan; and
- EPA reportable incidents.

I trust this is sufficient for your needs. Please do not hesitate to contact me on 0414 604481 or Gary O'Sullivan, Operations Manager Geelong on 03 5274 6602 regarding any further queries.

Yours faithfully

Geoff Millard
National Safety and Environment Manager

Distribution

Original: Tony Robinson - EPA Geelong
Copy 2: Gary O'Sullivan - TPL Geelong
Copy 3: David Kenwood - Toll Holdings
Copy 4: Carlo Fasolino - TPL Melbourne (without Attachments)
Copy 5: Peter Able - Shell (without ERM report)
Copy 6: File copy



terminals pty. ltd.

GEELONG

ENVIRONMENT IMPROVEMENT PLAN

2003 - 2004

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- A. Emission Table
- B. Stormwater Graphs
- C. Shell Report
- D. ERM Report on Groundwater Monitoring

**ENVIRONMENT IMPROVEMENT PLAN
2003 - 2004**

1. AIR MONITORING

Terminals meets our EPA Waste Discharge Licence No. EW 214 conditions 1.1, 1.2 and 1.3.

1.1 Air Emissions

Hydrocarbon emissions (other than vinyl chloride) to air were estimated at less than 5 kg/day/tank; using the US Tanks4.0 or AP42 tank emission computer calculation program. There were no vinyl chloride emissions to air except for an incident involving a small leak (7 kg) during planned maintenance activity. The incident is reported in section 4. Results shown in Attachment A.

1.2 Leak Detection Program

Terminals has a comprehensive leak detection program for Vinyl Chloride Monomer; as previously detailed in our EIP. In addition, material (Gas Condensate hydrocarbons in Tank 2.10) as a volatile chemical undergoes leak detection monitoring. Mono Iso Propyl Amine (MIPA) was not stored on site during the current year. The results are consistent with last year's results and show no trends or individual levels of concern.

The summary details are tabulated below.

**Summary Table of Leak Detection Results
for Geelong 2003 to 2004**

	VCM	Gas Condensate Hydrocarbons
No. of Results	4020	680
No of Results above 0ppm	3	0
No of results above criteria level	4	0
Summary details of results above criteria including follow up action	Found minor leaks at valve stems and swagelock connection. All leaks were rectified.	

Reviewed by: Gary O'Sullivan/Geoff Millard

Date: 10/9/04

1.3 On Site Air Monitoring

Ambient air monitoring for VCM showed no emissions of concern.

Many of the results were below the level of detection; that ranged between 0.4 and 0.01ppm. There were no cases above the criteria, ie based on Worksafe exposure standard for eight hours and NOHSC recommended STEL (Short Term Exposure Limit over 30 minutes).

The results are summarised below.

Average	ALL RESULTS (ppm)
Average	0.9
Standard Deviation	2.7
Number of Samples	78
Worksafe Exposure Standard	5 ppm (8 hours)
NOHSC recommended STEL	15 ppm (30 minutes)

This covered 78 sampling periods ranging from fixed point monitoring at worse case locations (eg. ship hose disconnection over short term) to personal monitoring including ship unloading, road tanker loading and general duties over eight hour and short term sampling. Passive badge monitors were used.

1.4 Boundary Air Monitoring

There were thirteen sets of boundary monitoring results for VCM during the year. Each set covered the four plant boundaries with passive badge monitors, except one set had only 2 results due to instrument difficulties. The duration of monitoring was between 2 and 19 days. Sensitivity of analysis was 0.001ppm to be consistent with the new SEPP(Air) value of 0.017 ppm for VCM ground level concentration.

During routine monitoring, the results are favourable with no exceedances above the new SEPP(A) guideline of 0.017 ppm; in fact generally results were an order of magnitude below this guideline. One monitoring set did exceed the SEPP(A) guidelines. This occurred during a small VCM leak (7kg) while using the Gas Recovery System for sphere decommissioning. However later investigation showed some of these results may have been misleadingly high due to possible contamination from VCM calibration gas. The incident is reported in section 4. The coverage time increased to 26% from last year's 20% coverage.

The results are summarised below.

	All results	Routine Monitoring
Average	0.0116	0.0028
Standard Deviation	0.030	0.0029
Number of Samples	46	42
Total Coverage Duration	26%	25%

2. STORMWATER MONITORING PROGRAM

Stormwater discharged from the premises to Corio Bay was sampled every quarter and analysed for TOC, Suspended Solids, Oil and Grease, pH and Acute Toxicity. All results met the stormwater criteria.

Results are detailed on the graphs in Attachment B.

3. LAND AND SUBSURFACE GROUNDWATER MONITORING

Terminals Pty Ltd and Shell Refining (Aust.) Pty Ltd have been working jointly to implement the Management Plan for identified hydrocarbon impact at the Terminals' site on Wharf Road, North Shore (refer letter dated 26 August 1998). This section is to provide an annual update (as per letters dated 9/4/99 and 12/5/2000 and EIPs in 2001, 2002 and 2003) regarding the status of the Terminals' Site Impact Management Plan as well as meet the E.I.P. monitoring condition (3.2) of our new EPA licence, dated 19 October 2000.

The following is a summary of the progress over the last 12 months plus actions for the next twelve months similar to the previous Site Impact Management Plan.

PSH Recovery

Monitoring wells B2, MW6 and MW7 were regularly gauged for PSH and regularly underwent vacuum extraction. There were 20 vacuum extraction events during the annual period.

Overall, apparent thickness of phase separated hydrocarbons (PSH) shows a stable and/or possible reducing situation. During the dry periods, lower groundwater levels have generally shown increased PSH levels, as expected.

Details of results are attached (as Attachment C) in Shell's letter dated 17th September 2004. Apparent PSH thickness and groundwater depth levels are graphed from March 1999 to July 2004 to show trends over time and with groundwater levels.

Annual Groundwater Monitoring Program

Monitoring and sampling groundwater for TPH and BTEX in monitoring wells hydraulically down gradient (B6, B7, MW1, MW8b, MW9a and MW11) of the Terminals' site occurred in June 2004. In addition, all monitoring wells were gauged for PSH.

Results of the hydraulically down gradient wells showed all analytes were below the ANZECC (1992) Guidelines for Protection of Aquatic Ecosystems - Marine Water. Low levels of TPH, predominantly in the C₁₀ to C₂₈ fraction were found. These levels were consistent with previous year's results.

Two monitoring wells (B1 and MW9) last year could not be sampled and were replaced by new wells, labelled B1a and MW9a.

Monitoring well, B8 had been destroyed during the year but was not replaced as not considered down gradient of any storage nor handling areas.

Results are detailed in the attached report by ERM Australia Pty Ltd (as Attachment D).

Proposed Action Plan for July 2004 to June 2005

- ▶ Continue gauging and vacuum extraction at B2, MW6 and MW7 on a monthly basis, until an alternative PSH recovery solution is developed.
- ▶ Report DTW data corrected for APT density to improve data review process: :
- ▶ Include those monitoring wells on the Terminals' site in the Shell Groundwater monitoring program (currently twice yearly);
- ▶ Install additional data points (monitoring wells) on-site and/or around Terminals' site as appropriate;
- ▶ Undertake aquifer testing and/or pilot trials as appropriate;
- ▶ Develop remedial action plan and complete action items as required under the terms and conditions of Section 62A Clean UP Notice, yet to be issued to Shell Geelong as a final document.
- ▶ Continue annual independent analysing of key hydraulically down gradient wells (as above) for BTEX and TPH in June each year. The aim is to sample at a consistent seasonal time and to provide current data. In addition, continue to gauge all monitoring wells on site to check for PSH as part of the annual monitoring.

4. INCIDENT REPORTING TO EPA

There was one EPA reportable incident. In March 2004, a Gas Recovery Unit (GRS) was being used to decontaminate sphere 2300 in preparation of the sphere's statutory internal inspection. On 16th March at 5.35pm, a small VCM vapour leak was observed from the lagging around the separator tank within minutes of when VCM was introduced to the GRS unit. The GRS feed was immediately isolated and the system cleared of VCM. An estimated 5-8 litres of liquid VCM was released onto a concrete sealed area over a 5-10 minute period and vaporised rapidly.

The cause of the leak was a 2mm diameter pin hole at the bottom of the VCM condensate vessel. The equipment was decontaminated and taken off site for repairs/replacement as required and a comprehensive engineering investigation was conducted. The sphere turnaround and GRS operation was rescheduled for August 2004. For further details of the incident refer to Terminals' letter to EPA, dated 25/3/04.

5. PROPOSED CHANGES TO E.I.P.

5.1 VCM Boundary Monitoring

Terminals has improved the site boundary monitoring program for VCM. This has involved scheduling monthly boundary monitoring covering all four directions over approximately one week period to provide 26% coverage this year and better than last year's 20% coverage. This appears to be the optimum set up as longer duration sampling periods suffer interference by other background volatile hydrocarbons at these very very low levels of detection. This was the reason for not being able to use one set of boundary monitoring results during this year.

To increase the coverage duration the sampling frequency would have to be increased. There appears no cost justification to increase the sampling frequency as the existing routine results are substantially below the criteria and around 25% coverage provides representative data.

Terminals aims to maintain this sampling schedule and analysing sensitivity of 0.001ppm for future years.
