

## Introduction:

This report is issued in accordance with the requirements of the South Australian, Pipeline Regulations 2000, regulation 33 and concerns the regulated activities conducted under Petroleum Production Licence 21 (PPL21) at the 'Caroline 1' Well. The report covers the period of 1 January 2009 to 31 Dec 2009.

## Reg 33 (2) a - Summary of Regulated Activities:

Activities conducted under the licence within the report period included;

- Processing and distribution of Carbon Dioxide, approx. 9896t
- Routine maintenance and minor plant improvements. The minor improvements included modifications to moisture removal processes (improved efficiency), improved water treatment (improved corrosion control and cost reduction) and safety related items. In particular the works this year included improved ammonia leak detection, refrigeration equipment upgrade and under insulation inspection and repairs as needed.

## Reg 33 (2) b - Compliance with the Petroleum Act and Regulations 2000, the licence and statement of environmental objectives;

Operations at the Caroline 1 Well and associated processing plant have been conducted in accordance with the requirements of the Petroleum Act & Regulations 2000.

After consultation with PIRSA, Air Liquide recognises that the Statement of Environmental Objectives as below will require revision prior to the production licence PPL21 being relinquished or transferred to a third party. Refer also to comments under 'Development Activites'.

With regard to the environmental objectives the following table details progress towards those objectives and their assessment criteria. Refer also to the current Air Liquide, Statement of Environmental Objectives.

Environmental Objective	Comments
<b>Avoid groundwater and soil contamination - General</b>	
Chemicals, fuels and oils stored in a contained area on a flat, impermeable surface.	All items stored correctly
Sulphuric acid stored in a contained area.	Portable bund in-situ.
Spill response station maintained.	In compliance.

Environmental Objective	Comments
<p>Environmental incident reporting integrated into existing incident reporting systems.</p> <p>Appropriate training in spill response and reporting for employees and contractors undertaken.</p>	<p>No incidents reported.</p> <p>Site personnel are trained in spill containment.</p>
<p>Material Safety Data Sheets and spill response procedures posted in appropriate work areas.</p> <p>In the event of a spill, appropriate spill response procedures to be followed and the incident reported to the Plant Manager (as per Safety Training Manual).</p> <p>Waste volumes recorded and continually reviewed to ensure that waste generation (as a percentage of CO<sub>2</sub> production) is not increasing.</p>	<p>All MSDS' are current and are updated routinely as required.</p> <p>No spills to report.</p> <p>Losses are recorded daily. A loss reduction program is ongoing:</p> <p>2009 actions to reduce losses included;</p> <p>Dryer regeneration system process improvements, (piping and timing)</p> <p>Planned 2010 actions include;</p> <p>Automation of water separation from raw CO<sub>2</sub></p> <p>Replacement of the no 2 cooling tower - will save water and save chemicals for water treatment.</p>
<p>Waste generation reviewed and opportunities for reduction identified and documented (by March 2001).</p>	<p>Completed</p>
<p>Use of silica gel phased out and waste generation below 800 kg/year for moisture removal stage of CO<sub>2</sub> purification (by March 2001). New product, KC Trockenperlen, has double life of old silica gel.</p>	<p>Objective completed and now KC Trockenperlen has been replaced with activated alumina.</p> <p>Activated alumina has been</p>

Environmental Objective	Comments
<p>Strategy developed for continued waste reduction</p>	<p>performing well, no need to replace for several years.</p> <p>Refer above 'Waste volumes ...' which provides details of loss reduction strategy. In addition reduced plant throughput has reduced solid waste production proportionally.</p>
<p>Contracts with licensed waste disposal contractors maintained (i.e. activated alumina, activated carbon, Puraspec, sewage, hydrocarbon, and general rubbish).</p>	<p>Contract in place with Cleanaway.</p>
<p>Monitor wellhead pressure and diesel system. Assess casing integrity every two years.</p>	<p>Daily monitoring of pressure in outer casing confirms the integrity of the casing.</p>
<p>Conduct soil analysis in the vicinity of the disused waste pits by March 2001.</p>	<p>Samples and analysis were performed in March 2001 and the results indicated no contamination.</p>
<p>Minimise air emissions</p>	<p>Maintenance program has been implemented and records are kept.</p>
<p>Reduce CO2 losses by 5% from December 2001</p>	<p>Average losses for 2009 were 18.9%.</p> <p>Previous annual averages were:</p> <p>2008-19.0%,  2007 – 19.6%,  2006 – 20.1%,  2005 – 16.8%,  2004 - 16.5%,  2003 -26.5%,  2002 - 21.6%,  2001 - 27.6%</p>

Environmental Objective	Comments
<p>Freon gas (R12) phased out by June 2002.</p>	<p>Complete.</p>
<p>Provide a safe working environment for employees, contractors and third parties.</p>	<p>Based on the results of;</p> <p>monitoring of well head by expert consultant,</p> <p>monitoring of wellhead pressure,</p> <p>monitoring of diesel system,</p> <p>safe operation has been achieved. Air Liquide is committed to a zero accidents policy.</p> <p>Improvement initiatives for 2010 include;</p> <p>Man down system, and emergency response</p>
<p><b>Avoid groundwater and soil contamination - Hydrocarbon Waste</b></p>	
<p>Hydrocarbon waste is stored in banded tank. Sludge removed annually.</p>	<p>Volume of sludge has decreased significantly in the last 1-2 years and now removal is done when level in sludge tank is approx 25%.</p>
<p>Hydrocarbon tank and banded area inspected for spills and leaks</p>	<p>Daily checks have been conducted.</p>
<p>Procedure for hydrocarbon tank and bund maintenance and inspection to be documented.</p>	<p>Confirmed and recorded in daily logs</p>
<p>Hydrocarbon storage tanks and bund to be maintained in a structurally sound condition.</p>	<p>Based on inspections and maintenance conducted the integrity of the storage tanks and bunds is</p>

Environmental Objective	Comments
	confirmed. Some reinforcing works were conducted this year.
<b>Avoid groundwater and soil contamination - Produced Formation Water</b>	
Sprinkler system is relocated periodically to avoid creation of soakages and areas of die-off.	Daily checks.
A checklist for inspection of grassed areas, "effluent" tanks, hydrocarbon storage tank and bunds developed and implemented.	Daily check.  Formation water is now being diluted with bore water to reduce salinity levels.
Liquid waste sampled and analysed for hydrocarbon content, salinity and pH levels every six months.	Tests have been conducted to schedule and all results are within ANZECC guidelines.
Water quality monitoring data (hydrocarbon content, salinity and pH) and inspections of discharge (irrigation) water (i.e. signs of "die-off" or surface hydrocarbons on grassed areas) recorded.	Continuous, no indications of die-off or surface hydrocarbons.
Water quality data to be assessed as per ANZECC guidelines for agriculture.	Routine testing system in place.

**Reg 33 (2) c – Actions to rectify non-compliance with the Act**

Air Liquide are continuing to monitor formation water disposal to ensure there is no contamination of ground water outside accepted limits.

Based on available water salinity data, history of water disposal practices and site observations Air Liquide believes that operations are in accordance with requirements of the Petroleum Act and Environment Protection Act. However to enable the planning of decommissioning works and to identify the extent of any site remediation works Air Liquide are to implement a monitoring program using a environmental consultant expert in water contamination.

## Reg 33 (2) d – Summary of management system audits

The following management system audits were conducted:

- Internal Audit, Thermo relief valves audit for preventing the risk of piping failure on the pressure build up vaporiser of a cryogenic vessel - conducted March 09,
- External Audit, SAI Global surveillance audit – conducted Nov 09,
- Internal Audit, EIS (element important for safety) audit for Mt Gambier CO2 Plant – conducted Oct 09.

## Reg 33 (2) e – List of Reports and Data generated

The following table identifies the reports and data relevant to the Petroleum Act 2000 generated during the reporting period;

Report	Status
Production Reports (reg 45 (1)).	Submitted with Royalty return, monthly.
Royalty returns.	Submitted each month.

## Reg 33 (2) f – Incidents reported to the Minister

There have been no incidents reported to the minister during the reporting period.

## Reg 33 (2) g – Foreseeable Threats

There are no reasonably foreseeable threats to the facilities that require reporting.

## Reg 33 (2) h – Operations planned for next year

The proposed operations for the year 1 January 2010 to 31 December 2010 involve continued safe and efficient production of carbon dioxide. It is expected that production volumes will be lower than the previous year by approximately 7%. The estimated production 2010 is 9,200t. The reduction is due to depletion of the resource. No down-hole works are planned.

**Reg 33 (2) i – Estimated production volume**

The estimated production volume for the period 1 Jan to 31 Dec 2010 is 9,200t.

**Reg 33 (2) j – Development Activities**

No development activities initiated by Air Liquide are planned for the period 1 January 2010 to 31 December 2010.

Air Liquide have had preliminary discussions with a third party regarding the transfer of the production licence for further petroleum exploration works.

**Reg 33 (3) – Statement of Expenditure**

A statement of expenditure on regulated activities conducted under the licence for the reporting period is attached to this report.

Mark Bennett, Air Liquide Australia Limited