



**FINAL  
COMPLIANCE AUDIT REPORT  
ELGAS LTD  
SYDNEY LPG CAVERN  
30 FRIENDSHIP ROAD  
PORT BOTANY NSW 2036**

**FEBRUARY 2012**

This report has been prepared to present the findings of the audit carried out and no responsibility is accepted for its use in any other context, or for any other purpose.

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## EXECUTIVE SUMMARY

An Environment Protection Authority (EPA) Compliance Audit was undertaken at the Elgas Ltd facility located at Port Botany. The site was audited as part of a state-wide program of audits focusing on the management of major environmental risks associated with the activities undertaken at the site. The audit also focussed on emergency management procedures to be used by the licensee in the event of an incident occurring that is or is likely to impact on the environment or on the local community. The main objectives of the audit were to assess compliance with the requirements of Environment Protection Licence 10698 relating to the management of major environmental risks and emergency management planning, and to recommend an action program to be implemented by the licensee to address any non-compliance identified during the audit.

Assessment of compliance was undertaken using information collected during a detailed audit inspection, information supplied by the enterprise, and a review of records and documentation relating to the premises. The procedures and protocols for conducting compliance audits are detailed in the EPA *Compliance Audit Handbook*. The audit inspection was carried out by officers of the EPA on 13 December 2011.

The findings of the audit indicate that the enterprise was not complying with some conditions attached to Environment Protection Licence 10698 issued under the Protection of the Environment Operations Act 1997.

The non-compliances related to:

- The training of staff in managing major environment pollution incidents
- Advertising the telephone complaints line to the public
- Notification of environmental harm

The following issues of concern were identified through further observations:

- Discharge to Soak away

A risk assessment of non-compliances is used to colour code non-compliances according to their environmental significance and an action program has been developed. The action program includes a timeframe for non-compliances to be addressed to ensure the licensee deals with issues raised through the audit process in a timely manner (Table 4.1).

While the risk assessment of non-compliances is used to prioritise actions to be taken, the EPA considers all non-compliances to be important and licensees must ensure that all non-compliances are addressed by the due date specified in the Action Program.

## TABLE OF CONTENTS

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Audit Objective .....	1
1.2 Scope of the Audit.....	1
1.3 Audit criteria, evidence and findings .....	1
1.4 Premises and Process Description.....	2
1.5 Statutory Instruments Issued to the Enterprise.....	2
1.6 Risk Assessment of Non-compliances .....	3
<b>2.0 ASSESSMENT OF COMPLIANCE .....</b>	<b>4</b>
2.1 Compliance with Audit Criteria .....	4
Table 2.1 Assessment of Compliance with Environment Protection Licence No. 10698 .....	5
<b>3.0 FURTHER OBSERVATIONS.....</b>	<b>11</b>
<b>4.0 ACTION PROGRAM.....</b>	<b>12</b>
Table 4.1 Action Program – Environment Protection Licence No. 10698 .....	12

## APPENDICES

Appendix A	Licensee Response to Draft Report
Appendix B	Letter covering licensee’s response to Draft Compliance Audit Report

## 1.0 INTRODUCTION

An Environment Protection Authority (EPA) Compliance Audit has been undertaken at the Elgas Ltd facility at Port Botany. The site was audited as part of a state-wide program of audits focusing on the management of major environmental risks associated with the activities undertaken at the site. The audit also focussed on emergency management procedures employed by licensee in the event of an incident occurring at the site that is or is likely to impact on the environment or on the local community. The audit inspection was undertaken on 13 December 2011.

The procedures and processes for conducting EPA Compliance Audits are detailed in the *Compliance Audit Handbook*, which can be accessed on the EPA website at <http://www.environment.nsw.gov.au/resources/licensing/cahandbook0613.pdf>.

### 1.1 Audit Objective

The objectives of the audit were

- to determine whether the enterprise is complying with environment protection licence requirements in relation to the audit scope and criteria; and
- to outline a time frame for follow-up action to address any non-compliances identified during the audit.

### 1.2 Scope of the Audit

The scope of the audit is limited to the examination of the activities undertaken at Elgas Ltd, in relation to the management of major environmental risks.

The temporal scope adopted for assessment of compliance is:

- The day of the audit inspection for assessing compliance with Operating Conditions, relating to the management of major environmental risks and emergency management planning; and
- 12 months prior to the end of the audit inspection for assessing compliance with any Monitoring, Reporting and Special Conditions and Pollution Studies and Reduction Programs relating to the audit scope.

### 1.3 Audit criteria, evidence and findings

Audit criteria (the requirements against which the auditor compares collected audit evidence) are the Conditions attached to Environment Protection Licence Number 10698 issued under the POEO Act to Elgas Ltd, in relation to the management of major environmental risks.

Audit criteria may include any document referred to by the licence, or relevant to a particular condition of the licence.

Audit evidence was collected during discussions with site personnel, examination of documentation provided by the licensee and/or contained on EPA files, together with observations made during the audit inspection.

Findings of non-compliance with licence conditions are summarised in table 2.1. An Action Program provides a time frame for follow-up action necessary to comply with the licence condition concerned.

#### **1.4 Premises and Process Description**

Elgas Limited operates a LPG storage facility located at Friendship road, Port Botany. The area of the site is approximately 7 hectares and is located within Botany Bay City Council area. The site was commissioned in May 2000. The surrounding land use is heavy industrial with a mix of industries from container terminal, hydrocarbon storage facility and the bulk liquids berth. The site operates 24 hours per day 7 days per week. The nearest water course is Botany bay.

The site imports LPG by ship and transfers LPG via pipeline to the site. LPG is stored cryogenically on the ship at -42°C and then transferred on site. The LPG is heated through a water bath before storing it underground. The LPG is heated to +5 to +7°C to ensure that the underground cavern is maintained and doesn't crack. There is a groundwater curtain around the cavern to ensure that the LPG doesn't escape. The cavern has a capacity to store 65,000 tonnes of LPG. LPG is then transported by road tankers to customers. The only processing of the gas that takes place onsite is undertaken prior to loading into tankers. During this process moisture is taken out of the gas and mercaptan is added as an odourant. The site occasionally fills small ships that have the capacity to transport 2000 tonnes of LPG to customers in Queensland.

Groundwater from the cavern is pumped out to ensure that there is capacity to store gas. The groundwater is treated so that any dissolved volatile organic compounds are removed from the water through a water stripper and is treated for micro-organism control. The water then settles in four water bays before being pumped into the 'soakaway' which is a mound on site before being discharged back into groundwater.

#### **1.5 Statutory Instruments Issued to the Enterprise**

The EPA has issued the following statutory instruments to the enterprise:

Licence number 10698 issued under the Protection of the Environment Operations Act 1997.

The scheduled activity undertaken at the premises is *Chemical Storage* with a fee scale category of *Petroleum products storage – Sydney Basin >100000 kL of active storage capacity, Shipping in bulk* with a fee scale category of *Shipping in bulk >100000-500000 T loaded and unloaded*.

The anniversary date for the licence is 1 June.

A copy of Licence 10698 can be accessed through the EPA online public register at: <http://www.environment.nsw.gov.au/prpoeoapp/searchregister.aspx>

## 1.6 Risk Assessment of Non-compliances

The significance of any non-compliances identified during the audit process are categorised. Following risk assessment of non-compliances, an escalating response relative to the seriousness of the non-compliance is determined to ensure the non-compliance is addressed by the enterprise.

The risk assessment of non-compliances involves assessment of the non-compliance against two criteria; the likelihood of environmental harm occurring and the level of environmental impact as a result of the non-compliance. After these assessments have been made, information is transferred into the risk analysis matrix below.

		Likelihood of Environmental Harm Occurring		
		Certain	Likely	Less Likely
Level of Environmental Impact	High	Code Red	Code Red	Code Orange
	Moderate	Code Red	Code Orange	Code Yellow
	Low	Code Orange	Code Yellow	Code Yellow

The assessment of the likelihood of environmental harm occurring and the level of environmental impact allows for the risk assessment of the non-compliance via a colour coding system. A red risk assessment for non-compliance denotes that the non-compliance is of considerable environmental significance and therefore must be dealt with as a matter of priority. An orange risk assessment for non-compliance is still a significant risk of harm to the environment however can be given a lower priority than a red risk assessment. A yellow risk assessment for non-compliance indicates that the non-compliance could receive a lower priority but must be addressed.

There are also a number of licence conditions that do not have a direct environmental significance, but are still important to the integrity of the regulatory system. These conditions relate to administrative, monitoring and reporting requirements. Non-compliance of these conditions is given a blue colour code.

The colour code is used as the basis for deciding on the priority of remedial action required by the licensee and the timeframe within which the non-compliance needs to be addressed. This information is presented in the action program alongside the target/action date for the non-compliance to be addressed.

While the risk assessment of non-compliances is used to prioritise actions to be taken, the EPA considers all non-compliances are important and licensees must ensure that all non-compliances are addressed as soon as possible.

## **2.0 ASSESSMENT OF COMPLIANCE**

### **2.1 Compliance with Audit Criteria**

Compliance was assessed against the licensing requirements of the POEO Act, and the requirements of Environment Protection Licence Number 10698 relating to the audit scope and criteria.

Assessment of compliance was undertaken by a detailed site inspection and review of all records and documentation relating to the audit scope and criteria as required by the licence issued to the licensee.

The findings of the audit indicate that some of the conditions of the environment protection licence, relating to the audit scope were not being complied with.

Details of assessment are presented in Table 2.1.

**Table 2.1 Assessment of Compliance with Environment Protection Licence No. 10698**

<b>Statutory Instrument: Environment Protection Licence No. 10698</b>			
<b>Condition No.</b>	<b>Compliance/ Risk assessment for non-compliance *</b>	<b>Comment</b>	<b>Action required by licensee</b>
<b>O</b>	<b>Operating Conditions</b> <i>The audit assessment is based upon evidence relating to the period limited to on the day of the audit inspection.</i>		
O1.1 Licensed activities must be carried out in a competent manner	Yes	<b>Identification of Major Environmental Risks</b> The licensee has identified major environmental risks associated with the pollution of stormwater at the premises. This includes: <ul style="list-style-type: none"> <li>• Discharge of water into soakaway mound</li> <li>• Chemical storage</li> <li>• Treatment of process wastewater (pumped up from the underground cavern)</li> </ul> The auditors did not identify any other major environmental risks during the site inspection that had not already been identified by the licensee.	
		<b>Use of controls to minimise the Major Environmental Risks Identified</b> The licensee has controls in place to manage the major environmental risks identified such as: <ul style="list-style-type: none"> <li>• chemicals are stored within bunded areas</li> <li>• the main stormwater drains leaving the site have oil/water separators inbuilt into them</li> <li>• Water stripper used to remove volatiles from wastewater pumped up from the underground cavern</li> </ul>	

\* See explanation of risk assessment of non-compliances codes on p3.

<b>Statutory Instrument: Environment Protection Licence No. 10698</b>			
<b>Condition No.</b>	<b>Compliance/ Risk assessment for non-compliance *</b>	<b>Comment</b>	<b>Action required by licensee</b>
		<p><b>Monitoring the effectiveness of the controls used by the licensee to manage the Major Environmental Risks</b></p> <p>The licensee monitors the effectiveness of the controls used to manage the major environmental risks identified at the site. Monitoring undertaken by the licensee includes the use of:</p> <ul style="list-style-type: none"> <li>• Adhoc visual inspections of stormwater oil/water separator drains</li> <li>• The licensee samples the treated wastewater prior to discharge into the mound as required by their Environment Protection Licence</li> <li>• Weekly check of equipment associated with the water stripper</li> </ul>	
		<b>Managing major environmental risks associated with air pollution</b>	
	Yes	<p><b>Identification of Major Environmental Risks</b></p> <p>The licensee has identified the major environmental risks associated with the pollution of air at the premises. This includes:</p> <ul style="list-style-type: none"> <li>• Propane emission during unloading and transfer</li> <li>• Leak of ethyl mercaptans</li> </ul> <p>The auditors did not identify any other major environmental risks during the site inspection that had not already been identified by the licensee.</p>	
		<p><b>Use of controls to minimise the Major Environmental Risks Identified</b></p> <p>The licensee uses controls to manage the major environmental risks such as</p> <ul style="list-style-type: none"> <li>• Gas detection system with point and beam detectors</li> <li>• If gas detection system is activated part of the plant shuts down automatically and the fire pumps turn on to start the deluge system</li> </ul>	

\* See explanation of risk assessment of non-compliances codes on p3.

<b>Statutory Instrument: Environment Protection Licence No. 10698</b>			
<b>Condition No.</b>	<b>Compliance/ Risk assessment for non-compliance *</b>	<b>Comment</b>	<b>Action required by licensee</b>
		<ul style="list-style-type: none"> <li>Ethyl Mercaptans is stored within a closed building under negative pressure with air being filtered through activated carbon canisters</li> </ul>	
		<p><b>Monitoring the effectiveness of the controls used by the licensee to manage the Major Environmental Risks</b></p> <p>The licensee monitors the effectiveness of the controls used to manage the major environmental risks at the site. Monitoring undertaken by the licensee includes the use of:</p> <ul style="list-style-type: none"> <li>Monthly testing of deluge system</li> <li>The gas detection system is checked every 3 months and are activated using known concentrations of gases</li> </ul>	
	<b>Managing Major Environmental Pollution Incidents</b>		
	<p>No</p> <p><b>Code Yellow</b></p>	<p><b>Processes for managing major environmental pollution incidents</b></p> <p>The licensee has not held current emergency response training for staff on site. The licensee stopped conducting desktop scenario emergency training in 2008. It is noted that the licensee has since been trying to organise a live exercise with Sydney Ports however it was postponed and is to be conducted in the first quarter of 2012. It is also noted that there was an incident involving a gas release in September 2011 where the licensee had to initiate the emergency management plan. The licensee advised that the response to the incident went according to the emergency management plan. The EPA is concerned that the licensee has not undertaken regular emergency training of staff since 2008 and that staff are not prepared to respond to an incident in the event of an emergency. There is an increased likelihood that response to incidents may not go as planned due to the lack of training provided to staff.</p>	<p>The licensee must ensure that all staff has up to date training on how to respond in an emergency situation.</p>

\* See explanation of risk assessment of non-compliances codes on p3.

<b>Statutory Instrument: Environment Protection Licence No. 10698</b>			
<b>Condition No.</b>	<b>Compliance/ Risk assessment for non-compliance *</b>	<b>Comment</b>	<b>Action required by licensee</b>
	Yes	<p><b>Procedures and equipment for managing major environmental pollution incidents</b></p> <p>The licensee has procedures, processes and equipment in place to manage major environmental incidents. The procedures include:</p> <ul style="list-style-type: none"> <li>• Emergency response procedures for major risks identified that include automatic plant shutdown and evacuation</li> <li>• Notification to relevant agencies such as Workcover NSW, EPA, Sydney Water and Local Council</li> <li>• Notification to the impacted neighbours</li> <li>• Assigning roles and responsibilities to key personnel</li> <li>• Availability of emergency response equipment</li> </ul>	
O3.1	Yes	<p><b>Emergency Response Plan</b></p> <p>The licensee maintained an emergency response plan that documents the procedures for the management of all types of incidents that may occur at the premises that are like to cause harm to the environment.</p>	
<b>M</b>	<b>MONITORING CONDITIONS</b>		
	<i>The audit assessment is based upon evidence relating to the period limited to 12 months prior to the end of the audit inspection.</i>		
M4.1	Yes	<p><b>Recording of pollution complaints</b></p> <p>The licensee does keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which the licence applied.</p>	
M4.2	Yes	The licensee has recorded all the details of the complaint as required.	
M4.3	<p>It is beyond the scope of the audit to determine whether the licensee retains the records for at least 4 years.</p> <p>The licensee has records of complaints made in the past and the EPA has no reason to believe that those records would not be kept for the</p>		

\* See explanation of risk assessment of non-compliances codes on p3.

<b>Statutory Instrument: Environment Protection Licence No. 10698</b>			
<b>Condition No.</b>	<b>Compliance/ Risk assessment for non-compliance *</b>	<b>Comment</b>	<b>Action required by licensee</b>
	required 4 years.		
M4.4	Yes	The licensee is required to produce a record of complaints to any authorised officer of the EPA who asks to see them. The licensee did produce records of complaints made within the 12 month scope of this audit.	
M5.1	Yes	<b>Operating a telephone line for receiving complaints</b> The licensee operates, during its operating hours a telephone line for the purpose of receiving any complaints from members of the public.	
M5.2	No <b>Code Blue</b>	<b>Advertising the telephone complaints line number to the public</b> The licensee has not notified the public of the fact that the contact number is a complaints line or can be used to make a complaint. The licensee does advertise a contact number that the public can call however the licensee has not notified the public of the fact that the contact number is a complaints line that can be used to make a complaint. The licensee has a sign on the front gate with a telephone number that is advertised as a pollution hotline. The EPA is concerned that the telephone line is not advertised as a complaints line for the purpose of receiving any complaints from members of the public.	The licensee must inform members of the community that the advertised telephone line is a complaints line that can be used by members of the for the purpose of making complaints.
M5.3	This is a deeming clause that determines the applicability of Conditions M5.1-M5.2 and no assessment of compliance is required. It is noted that M5.1 and M5.2 do apply as the licence was been issued for more than 3 months.		
<b>R</b>	<b>REPORTING CONDITIONS</b> <i>The audit assessment is based upon evidence relating to the period limited to 12 months prior to the end of the audit inspection.</i>		
R2.1	Yes	<b>Notification of environmental harm</b> The licensee does make notification of incidents causing or threatening material harm to the environment to Environment Line.	

\* See explanation of risk assessment of non-compliances codes on p3.

<b>Statutory Instrument: Environment Protection Licence No. 10698</b>			
<b>Condition No.</b>	<b>Compliance/ Risk assessment for non-compliance *</b>	<b>Comment</b>	<b>Action required by licensee</b>
R2.2	No <b>Code Blue</b>	<p>The licensee has not provided written details of notifications to the EPA within 7 days of the date on which the incident occurred.</p> <p>There was only one incident that occurred within the scope of the audit. The incident occurred on the 14 September at 10pm. A written report was requested by the region and was sent in via email to the regional operations officer on the 22 September 2011 at 4.39pm.</p> <p>The licensee was required to submit a written report by COB on the 21 September which is 7 days from the date of the incident.</p>	The licensee must submit written report providing details of notifications within 7 days of the date on which the incident occurred.

\* See explanation of risk assessment of non-compliances codes on p3.

### **3.0 FURTHER OBSERVATIONS**

Further observations are recorded where the audit identified issues of environmental concern which do not strictly relate to the scope of the audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliances or areas where environmental performance may be improved.

#### **Further Observation No.1 – Discharging to Soakaway**

During the audit inspection, an earthen mound was observed onsite. The licensee explained that it was used to discharge treated wastewater back into groundwater. The treated wastewater is discharge onto the mound consisting of soil and infiltrates through the soil into groundwater.

It is noted that there are monitoring conditions on the Environment Protection Licence for the license to monitor the quality of the treated wastewater prior to discharge into the mound and subsequently into the groundwater.

The EPA is concerned that the quality of the water being discharged into the mound may not be of the same quality as the existing groundwater. The licensee should be aware that if the discharge of treated wastewater has a negative impact on the quality of groundwater it could be considered a breach of s120 of the Protection of the Environment Operations Act 1997 for pollution of waters.

The licensee should ensure that any treated wastewater is not causing pollution of groundwater.

#### 4.0 ACTION PROGRAM

The following action program must be undertaken in relation to Elgas Ltd.

**Table 4.1 Action Program – Environment Protection Licence No. 10698**

Condition No.	Action Details	Non-Compliance Code (where applicable)	Target/Action Date
O1.1	<p><b>Managing Major Environmental Pollution Incidents - Processes for managing major environmental pollution incidents</b></p> <p>The licensee must ensure that all staff has up to date training on how to respond in an emergency situation.</p>	<b>Code Yellow</b>	1 June 2012
M5.2	<p><b>Advertising the telephone complaints line number to the public</b></p> <p>The licensee must inform members of the community that the advertised telephone line is a complaints line that can be used by members of the for the purpose of making complaints.</p>	<b>Code Blue</b>	31 March 2012
R2.2	<p><b>Notification of environmental harm</b></p> <p>The licensee must submit written report providing details of notifications within 7 days of the date on which the incident occurred.</p>	<b>Code Blue</b>	Within 7 days of an incident occurring

EPA considers that the licensee should take the necessary actions to ensure that environmental performance is improved in relation to any matters identified as a Further Observation in Section 3.0 of this Report.



**APPENDIX A**

**LICENSEES RESPONSE TO DRAFT REPORT**

## West Raelene

---

**From:** Aldo Costabile [aldo.costabile@elgas.com.au]  
**Sent:** Wednesday, 15 February 2012 9:15 AM  
**To:** West Raelene  
**Cc:** Clark Stuart  
**Subject:** Compliance Audit Report

Raelene

Hi. We acknowledge receipt of the EPA's Draft Compliance Audit Report following the EPA visit conducted on 13th December 2011. As mentioned in our telephone discussion, we are satisfied with the report.

Because I'm not certain of your email address, could you please confirm receipt of this email.

Thanks and regards

Aldo

**APPENDIX B**

**LETTER COVERING LICENSEES RESPONSE TO DRAFT COMPLIANCE AUDIT  
REPORT**



ENVIRONMENT PROTECTION AUTHORITY

Your reference:  
Our reference: FIL11/9033  
Contact: Raelene West (02) 9995 6426

Mr Aldo Costabile  
Cavern Terminal Manager  
Elgas Limited  
PO Box 108  
MATRIVILLE NSW 2036

Dear Mr Costabile

**Re: Final Compliance Audit Report – High Risk Facilities Audit  
Elgas Limited (Licence Number 10698)**

The Environment Protection Authority (EPA) is pleased to present you with a copy of the Final Compliance Audit Report for the Elgas Limited premises located at Port Botany. The compliance audit was undertaken as part of the EPA's program of compliance audits across the state, focussing on industries that pose a high risk of environmental harm.

The EPA understands from the comments provided in your email dated 15 February 2012 that you concur with the findings of the audit. A copy of the email has also been attached as an Appendix to the final report together with a copy of this letter. A copy of this report will be available in the EPA Library for public review.

I would like to take this opportunity to thank you and your staff for the co-operation during the audit. If you require further information or clarification on any matters regarding this audit, please do not hesitate to contact Stuart Clark on 02 9995 6835.

Yours sincerely



21/2/2012

**CHRISTOPHER KELLY**  
A/Manager Compliance and Assurance Section  
Environment Protection Authority

Enclosure: Final Audit Report 'Elgas Limited'

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