# Wesfarmers LPG proposed upgrade

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## Wesfarmers LPG Pty Ltd

Report and Recommendations
of the Environmental Protection Authority

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# Contents

# 1. Introduction

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors relevant to a proposal by Wesfarmers LPG Pty Ltd (WLPG). The proposal is to upgrade the Liquefied Petroleum Gas (LPG) extraction plant at Kwinana. Environmental assessment of this proposal is being undertaken in accordance with Section 44 (1) of the *Environmental Protection Act 1986*. The proposed upgrade will coincide with a reduction in the concentration of LPG available in natural gas from the North West Shelf and enable the proponent to maintain existing levels of production of LPG.

The proposal was submitted to the Department of Environmental Protection (DEP) (WLPG, Feb 2000) on 10 February 2000, as an application for Works Approval. The proponent subsequently provided additional information on noise (SVT, Feb 2000 and SVT, May 2000) and risk (Stratex, June 2000) impacts for the existing and upgraded plant.

The additional information indicated that the existing plant does not currently comply with the EPA's Guidance Statement No.2 "Off-site Individual Risk from Hazardous Industrial Plant", or the *Environmental Protection (Noise) Regulations 1997*, and thus the DEP considered that the proposal could not be managed through the Works Approval process. Accordingly, the proposal was referred to the EPA for its consideration under Part IV of the *Environmental Protection Act 1986.*

The proponent made a number of commitments on the management of noise, risk and gaseous emissions.

The EPA set the level of assessment at EPA-initiated Environmental Protection Statement (EPS) on 17 August 2000. This level of assessment was decided upon by the EPA following discussions with the proponent and the submission of commitments which the EPA recommends be adopted by the Minister as legally binding environmental conditions.

# 2. The proposal

*Existing Plant*

The LPG plant extracts LPG product (propane and butane) and condensate by-product (primarily pentane and hexane) from natural gas supplied by the Epic Energy gas pipeline from the North West Shelf. The LPG components are separated from the natural gas. The process involves:

- Dehydration (water removal);
- Gas cooling;
- Gas expansion and liquefication of LPG and condensates;
- LPG extraction and fractionation; and
- Re-compression of lean gas (natural gas minus the LPG and condensate).

The lean gas (primarily methane) is recompressed back into the Epic Energy gas pipeline.

The LPG plant is located at Kwinana, adjacent to Mason Rd as shown in Figure 1. The plant was commissioned in 1988 after the proposal was formally assessed at a Public Environmental Review level (EPA, 1986). The plant LPG production was increased by approximately 60% in 1996 through a debottlenecking process that was managed under Part V of the *Environmental Protection Act 1986* through the Works Approval process. The existing extraction plant produces a maximum output of approximately 845 tonnes per day of LPG.

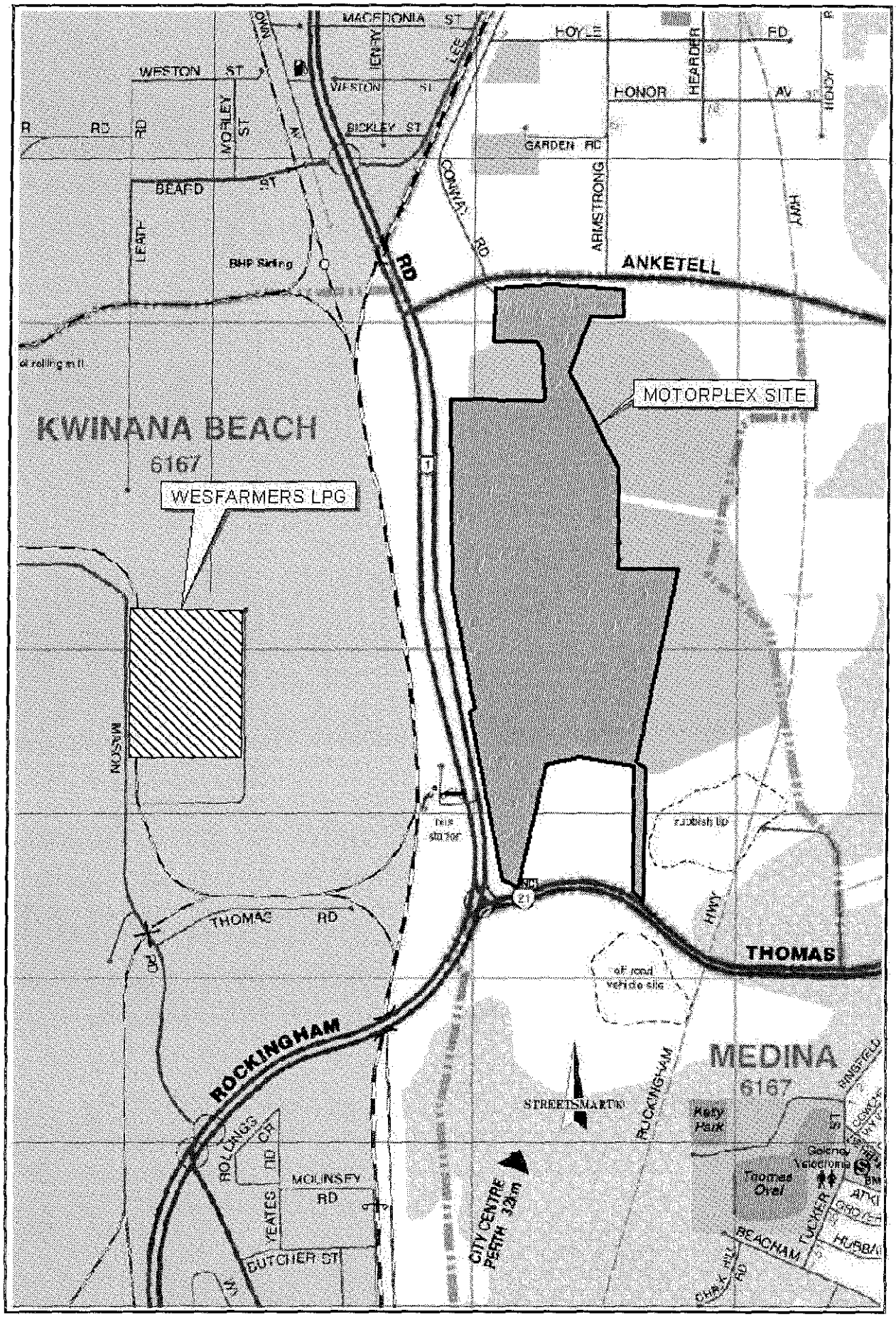


*Figure 1. Location of Wesfarmers LPG Plant.*

*Plant Upgrade Proposal*

WLPG proposes to upgrade the existing plant by installing a parallel LPG extraction section to increase the overall natural gas flow-rate by approximately 25% from 400 terajoules per day to a nominal 500 terajoules per day. The additional natural gas is required by the proponent to maintain current LPG production levels, as in the near future the concentration of LPG in the contracted natural gas supply will decrease.

The extraction process for the proposed upgrade is the same as the existing plant. There is no change to the operating process or technology. The expansion is to be achieved by adding an extraction train to operate in parallel with the existing extraction train. This will require:

- One compressor driven by a gas turbine;
- Two distillation columns;
- Three heat exchangers; and
- Associated pumps and vessels.

The compressor is required to re-compress the lean gas into the main pipeline.

The proposed LPG extraction section has a maximum design flow-rate of 120 terajoules per day. The natural gas flow-rate through the existing extraction section will be reduced to 380 terajoules per day and additional requirements will be processed through the new extraction section. The parallel extraction plant will be located at the north end of the existing plant (near the Air Liquide air separation plant) and occupy an area of 0.12 hectares, equivalent to about 20% of the existing process plant area. There are a number of tie-ins required, including three major process tie-ins to the existing plant piping. As the LPG production will remain essentially the same, there is no need for additional LPG storage or transport. If the LPG content stays high or subsequently returns to previous levels, the plant will not be able to produce more LPG, as overall production is limited by the fractionation section of the existing plant.

## 3. Relevant environmental factors

In the EPA's opinion the following are the environmental factors relevant to the proposal:

a) Off-site Individual Risk;

b) Noise; and

c) Gaseous Emissions.

Off-site Individual Risk

ICI conducted a Quantitative Risk Assessment (QRA) for the WLPG plant in 1996 (ICI, Feb 1996), in support of a debottlenecking proposal, which was managed under a Works Approval process. The adjacent land is owned by BHP and is zoned for heavy industry. The relevant EPA off-site risk criteria for fatalities for industrial facilities is set at a maximum of fifty in a million at the site boundary. The QRA showed that the $50x10^{-6}$ contour extends just outside WLPG's eastern fenceline onto the private roadway.

WLPG commissioned Stratex to carry out a QRA in June 2000 (Stratex, June 2000) for the upgraded plant. The report shows that the upgraded plant will marginally push the contour out across the road and into the pipeline easement next to the road. The risk associated with the additional plant if quantified, would be about 2% of the risk level for the existing plant. The ICI and Stratex QRAs did not include the existing loading of LPG road tankers or natural gas pressure relief valves and this may push the contours further east.

The WLPG plant is located in proximity to the Kwinana Motorplex site (Figure 1), and the WLPG upgrade should be planned to avoid any increase in the level of risk at this site. The Department of Minerals and Energy (DME) is of the opinion that although the overall risk from the existing and proposed upgrade is not likely to have a significant additional impact on the Motorplex site, this needs to be confirmed through the revised risk assessment to cover all risk contributors for the upgraded plant. Therefore the EPA considers that prior to commissioning of the upgrade section, it is appropriate for the QRA to be updated to incorporate all aspects of WLPG's operation. This will confirm the location of the $50x10^{-6}$ individual fatality contour and establish a proper basis for the consideration of the additional risk associated with the proposed upgrade. The QRA should also determine the risk reduction measures necessary to off-set any marginal increase in risk from the new section and to demonstrate that off-site risks are reduced to as low as reasonably practicable (ALARP). The EPA considers that a slight extension of WLPG's boundary risk level into a gas pipeline corridor can be managed with concurrence from BHP. BHP is aware of its obligation to inform any future occupiers or owners about the exceedance of the EPA offsite individual risk criteria.

WLPG is a member of Kwinana Industries Mutual Aid (KIMA) and therefore a coordinated emergency response procedure is in place to deal with incidents that have the potential for offsite impacts.

The EPA concludes that its objective for off-site individual risk can be adequately addressed through commitments made by the proponent. These commitments are:

- Provide a QRA for the existing plant and the upgraded section;
- Offset any increase in individual risk levels as a result of the plant upgrade through a real reduction in risk in the existing plant; and
- Implement risk reduction measures to meet ALARP criteria.

These commitments can be managed by the DEP Works Approval/Licensing process and by the DME, under the provision of the *Explosives and Dangerous Goods Act, 1961*. The proponent has submitted a Construction Safety Management Plan to the DME.

Noise

WLPG commissioned SVT Engineering Consultants to develop an environmental noise model of their existing LPG plant to assess the impact of noise emissions at the premise boundary and nearest residences (SVT, Feb 2000). The consultant's report concluded that WLPG's current operations do not comply with the *Environmental Protection (Noise) Regulations 1997*. The assigned noise levels are exceeded by up to 16 dB (A) at sections of the plant eastern boundary and by approximately 5 dB (A) at the nearest residence in Medina under certain weather conditions.

The proponent has applied to the Minister for the Environment for a Regulation 17 exemption to the *Environmental Protection (Noise) Regulations 1997* and has made commitments to reduce current noise levels at the premises through the development and implementation of a DEP approved Noise Reduction Management Plan.

A number of industries in the Kwinana Industrial Area that were constructed prior to the implementation of the *Environmental Protection (Noise) Regulations 1997* are currently non-compliant with the regulations and an industry wide approach is being taken by government and industry to address the issue.

WLPG also requested SVT Engineering Consultants to assess the environmental noise impact of the proposed upgraded plant (SVT, May 2000). The addition of the new parallel extraction section of plant was predicted to marginally increase the overall noise emissions by 0.1 to 0.3 dB(A) at the nearest residence in Medina. Additional information subsequently provided by

SVT indicates that noise levels at Hope Valley Township will also increase by up to 0.3 dB(A). Such levels of increase are not detectable by the human ear.

Noise emissions at certain positions along the plant boundary display tonal characteristics and there was concern that the noise levels at the nearest residences may need to be adjusted for tonality. However, the proponent provided additional information confirming that the noise emitted from the premise was not tonal when measured at a point several hundred metres to the east of the plant boundary, due to masking of the plant noise by noise emissions from other sources. The noise received at the nearest residence from the existing and upgraded plant is also expected to be free of tonality. Based on the information provided, the noise contribution from the new section of plant is predicted to be more than 5 dB (A) below the assigned noise level at the nearest residence.

The EPA therefore considers noise emissions from the proposed parallel extraction section to be an insignificant contributor to the overall noise levels at the nearest residence in Medina or Hope Valley Township.

The EPA concludes that the proposed expansion is an insignificant contribution to noise levels and thus is acceptable.

The initial marginal increase in noise from the premises will not be discernible at the nearest residence and the proponent has committed to reducing the overall noise emissions through the Regulation 17 process.

Gaseous Emissions

The proposed upgrade will result in an increase in gaseous emissions of carbon dioxide, carbon monoxide and oxides of nitrogen, due to the installation of a Centaur 40 gas turbine to drive the new re-compressor. Atmospheric emissions are predicted to increase as follows:

| Gaseous Emission | Existing Plant | Upgraded Plant | Increase |
|---|---|---|---|
| Carbon dioxide ($CO_2$) | 65,200 tpa* | 77,600 tpa | 19% |
| Carbon monoxide (CO) | 22 tpa | 23 tpa | 4% |
| Oxides of nitrogen ($NO_x$) | 410 tpa | 435 tpa | 6% |

*tonnes per annum

The EPA considers the increase in carbon dioxide emissions from the upgrade not to be a significant contribution to Greenhouse Gas emissions. However, the proponent has advised that the parent company, Wesfarmers Ltd, is currently determining its company wide strategy in relation to Greenhouse Gas emissions and reduction measures. Wesfarmers Ltd will direct WLPG on the implementation of the parent company strategy when determined. In the interim, WLPG have identified some reduction strategies and will commence an assessment program in the near future.

The proponent has made a commitment to install a water injection system on the gas turbine to lower peak combustion temperatures and reduce the formation of oxides of nitrogen, so as to comply with the EPA's Guidance Statement No.15 for Emissions of Oxides of Nitrogen from Gas Turbines.

The emissions of carbon monoxide comply with the Australian Environmental Council/National Health and Medical Research Council (AEC/NHMRC) (1985) National Guidelines for the Control of Emissions of Air Pollutants from New Stationary Sources.

Contributions of carbon monoxide and oxides of nitrogen emissions are not likely to cause any exceedance of the National Environmental Protection Measure (NEPM) air quality standards cumulatively.

The EPA concludes that the factor of gaseous emissions can be managed to meet the EPA's objective of compliance with acceptable air quality standards and EPA guidelines.

## 4. Conclusions

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

The EPA concludes that a slight extension of the risk level into a gas pipeline corridor can be managed with concurrence of the land owner. The proponent has committed to reducing risk levels for the existing plant to effectively offset any marginal increase in risk from the proposed new plant. The EPA also concludes that noise can be managed under Regulation 17 of the *Environmental Protection (Noise) Regulations 1997* and gaseous emissions can be managed to meet acceptable standards and EPA Guidelines.

## 5. Recommendations

The EPA considers that the proponent has demonstrated, by its commitments, that the proposal can be managed in an environmentally acceptable manner and provides the following recommendations to the Minister for the Environment:

3. That the Minister notes that this report follows a decision by the EPA to set a level of assessment as EPA-initiated Environmental Protection Statement because:

    - The proposal by Wesfarmers LPG Pty Ltd, was for an upgrade of an existing plant, which had previously been assessed by the EPA; and

    - The commitments in relation to the environmental factors identified needed to be made legally binding through the environmental conditions set in accordance with Part IV of the *Environmental Protection Act 1986.*

4. That the Minister considers the report on the relevant environmental factors as set out in Section 3.

5. That the Minister notes that the EPA has concluded that the proposal makes an insignificant contribution to noise and risk levels and that the proposal is acceptable, provided there is satisfactory implementation by the proponent of the recommended conditions and proponent commitments as set out in Appendix 2.

6. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

# Appendix 1

## References

AEC/NHMRC, 1985. *National Guidelines for the Control of Emissions of Air Pollutants from New Stationary Sources.*

Environmental Protection Authority WA, 2000. *Final Guidance No. 2, 'Guidance for Risk Assessment and Management: Off-site individual risk from Hazardous Industrial Plant'.*

EPA (1986) *Proposed Liquefied Petroleum Gas (LPG) Extraction Plant.* Environmental Protection Authority Bulletin 257, April 1986.

ICI Australia, February 1996. *Updated Risk Assessment for the Wesfarmers LPG Plant Kwinana (Uprate to 380TJ/day)*

National Occupational Health and Safety Commission, 1996. *'Control of Major Hazard Facilities'.*

SVT Engineering Consultants, February 2000. *Environmental Noise Modelling of the Wesfarmers LPG Plant at Kwinana.*

SVT Engineering Consultants, May 2000. *Environmental Noise Modelling of the Proposed Upgraded Wesfarmers LPG Plant at Kwinana.*

Stratex Pty Ltd, June 2000. *Updated Risk Assessment for the WLPG Extraction Plant Kwinana.*

WLPG Pty Ltd, February 2000. *Wesfarmers LPG Proposed Expansion – Application for Works Approval.*

# Appendix 2

## Recommended Environmental Conditions and

## Proponent's Consolidated Commitments

Statement No.

# Recommended Environmental Conditions

## STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

UPGRADING OF WESFARMERS LIQUEFIED PETROLEUM GAS PLANT
MASON ROAD, KWINANA

**Proposal:** The upgrading of Wesfarmers liquefied petroleum gas plant at Mason Road, Kwinana, consisting of the construction of a parallel extraction plant that is capable of processing 120 terajoules per day of natural gas. The upgrade coincides with a decrease in the concentration of liquefied petroleum gas in the natural gas feed stock. Liquefied petroleum gas production will remain at the current maximum production rate of approximately 845 tonnes per day, as documented in Schedule 1 of this Statement.

**Proponent:** Wesfarmers LPG Pty Ltd

**Proponent Address:** Mason Road, KWINANA WA 6167

**Assessment Number:** 1354

**Report of the Environmental Protection Authority:** Bulletin 993

The proposal to which the above report of the Environmental Protection Authority relates may be implemented subject to the following conditions and procedures:

## 1 Implementation

1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

## 2 Proponent Commitments

2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

## 3 Proponent

3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person in respect of the proposal.

3-2 Any request for the exercise of that power of the Minister referred to in condition 3-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.

3-3 The proponent shall notify the Department of Environmental Protection of any change of proponent contact name and address within 30 days of such change.

## 4 Commencement

4-1 The proponent shall provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced.

4-2 Where the proposal has not been substantially commenced within five years of the date of this statement, the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.

4-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement at least six months prior to the expiration of the five year period referred to in conditions 4-1 and 4-2.

4-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years for the substantial commencement of the proposal.

## 5 Decommissioning Plan

5-1 Prior to commissioning of the upgraded plant, the proponent shall prepare a Preliminary Decommissioning Plan that provides the framework to ensure that the site is left in a suitable condition, with no liability to the State, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

The Preliminary Decommissioning Plan shall address:

1 rationale for the siting and design of the upgraded section of plant and infrastructure and conceptual plans for its removal or, if appropriate, retention;

2 conceptual rehabilitation plans for all disturbed areas and a process to agree on the end land use(s); and

3 management of noxious materials to avoid the creation of contaminated areas.

5-2 At least six months prior to the anticipated date of decommissioning, or at a time agreed with the Department of Environmental Protection, the proponent shall prepare a Final Decommissioning Plan designed to ensure that the site is left in a suitable condition, with no liability to the State, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

The Final Decommissioning Plan shall address:

1 removal or, if appropriate, retention of plant and infrastructure;

2 rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and

3 identification of contaminated areas, including provision of evidence of notification to relevant statutory authorities.

5-3 The proponent shall implement the Final Decommissioning Plan required by condition 5-2 until such time as the Minister for the Environment determines that decommissioning is complete.

5-4 The proponent shall make the Final Decommissioning Plan required by condition 5-2 publicly available, to the requirements of the Environmental Protection Authority.

## 6 Compliance Auditing

6-1 The proponent shall submit periodic Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

6-2 Unless otherwise specified, the Chief Executive Officer of the Department of Environmental Protection is responsible for assessing compliance with the conditions, procedures and commitments contained in this statement and for issuing formal, written advice that the requirements have been met.

6-3 Where compliance with any condition, procedure or commitment is in dispute, the matter will be determined by the Minister for the Environment.

## Note

1 The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the Environmental Protection Act.

# Schedule 1

## The Proposal

The proposal is to upgrade the existing Wesfarmers liquefied petroleum gas (LPG) plant at Mason Road, Kwinana by the addition of a parallel LPG extraction section. The additional section is to be constructed at the north end of the existing process plant as shown in Figure 1.

The extraction process for the upgraded plant is the same as that used in the existing plant. The LPG extraction section has a maximum design flow of 120 terajoules per day.

The plant upgrade will allow the natural gas flow-rate to the LPG plant to be increased by approximately 25%. The additional natural gas is required by the proponent to maintain current LPG production levels, since in the near future the concentration of LPG in the contracted natural gas supply will decrease. As the LPG production will remain essentially the same, there is no need for additional LPG storage or transport.

The main characteristics of the table are summarised in Table 1.

**Table 1: Summary of key proposal characteristics**

| Element | Description |
|---|---|
| Project purpose | To upgrade the existing LPG plant by the addition of a parallel extraction plant. The plant upgrade will allow a nominal increase of 25% inlet feed gas flow and enable the proponent to maintain existing production rates of LPG, after the concentration of LPG in natural gas is reduced. |
| Plant Location | Mason Road, Kwinana. The plant upgrade is directly adjacent to the north end of existing process plant. |
| Plant site area | The site area is approximately 1200 square metres which is 20% of the total process area. |
| New plant equipment | 1. Turbo expander / compressor.<br>2. Aluminium plate fin heat exchangers (2 units).<br>3. Gas turbine driven gas centrifugal re-compressor.<br>4. Absorber distillation column.<br>5. De-ethaniser distillation column.<br>6. Cold separator vessel.<br>7. Re-compressor scrubber vessel.<br>8. De-ethaniser feed centrifugal pumps (2 units).<br>9. De-ethaniser kettle type reboiler.<br>10. Residue gas air cooler. |
| Plant operation | Continuous – 24 hours per day, 365 days per year. |
| Plant storage capacities:<br><br>Propane<br><br>Butane<br><br>Condensate<br>Ethyl Mercaptan | <br><br>No change. (48,000 kilolitres refrigerated storage, 625 kilolitres pressure storage.)<br>No change. (24,000 kilolitres refrigerated storage, 625 kilolitres pressure storage.)<br>No change. (136 kilolitres pressure storage.)<br>No change. (3.6 kilolitres pressure storage.) |
| Plant inputs:<br><br>Natural gas feed stock<br>Natural gas consumption<br><br>Electricity consumption | <br><br>Increased by 25% to approximately 500 terajoules per day.<br>Increased by 19% to approximately 30,200 tonnes per annum.<br>Increased by 8% to approximately 4.3 MW. |
| Production capacity:<br><br>LPG<br>Condensate | <br><br>No increase. (Nominal 845 tonnes per day.)<br>No increase. (Nominal 30,000 tonnes per annum.) |
| Plant Emissions:<br><br>Carbon monoxide<br>Carbon dioxide<br><br>Oxides of nitrogen<br>Liquid waste<br>Solid waste | <br><br>Increased by 4% to approximately 23 tonnes per annum.<br>Increased by 19% to approximately 77,600 tonnes per annum.<br>Increased by 6% to approximately 435 tonnes per annum.<br>No increase.<br>No increase. |
| Noise emissions | No significant increase. |
| Risk | No net increase in site risk as a result of the upgrade. |

**Schedule 2**

# Proponent's Consolidated Environmental Management Commitments

5 September 2000

## WESFARMERS LPG PLANT, EXPANSION KWINANA (993)

WESFARMERS LPG PTY LTD

**Schedule 2**

**Proponent's Consolidated Commitments**

| No | Topic | Action | Objective | Timing | Advice |
|---|---|---|---|---|---|
| 1 | Risk | Provide a QRA to the satisfaction of the DEP and DME for the existing plant and the expansion. | To demonstrate that the EPA's Guidance Statement No.2, Off-site Individual Risk from Hazardous Plants will be met. Any net increase above current off-site individual risk levels as a result of the plant upgrade will be off-set through a real reduction in risk in the existing plant. | Prior to commissioning the new LPG extraction section. | DEP/DME |
| 2 | Risk | Implement the risk reduction measures identified in the risk assessment to achieve no net increase in risk and meet the "As Low As Reasonably Practical" (ALARP) principle. | To reduce off-site individual risk. | Within a time frame approved by the DEP/DME. | DEP/DME |
| 3 | Risk | Consult with BHP on the results of the QRA, including provision of a summary of results of the QRA. | To ensure that BHP and any future occupiers of BHP land is aware of the exceedance. | Prior to commissioning the new LPG extraction section. | |
| 4 | Noise | Develop a Noise Reduction Management Plan for the gas extraction plant. The plan will be a comprehensive action plan that specifies the noise reduction measures. | To determine a strategy to reduce noise emissions from major noise sources in the plant to the DEP's satisfaction. | Plan completed by 31 December 2000. | DEP Part V |
| 5 | Noise | Implement the Noise Reduction Management Plan. | To achieve compliance with the Environmental Protection (Noise) Regulations 1997 or to reduce noise emissions to as low as reasonably practicable. | As agreed with the DEP. | DEP Part V |
| 6 | Gas Emissions | Install NOx reduction equipment on the gas turbine for the new parallel extraction section and operate the gas turbine such that it meets the AEC/NHMRC (1985) National Guidelines for the Control of Emissions of Air Pollutants from New Stationary Sources. | To reduce emissions of NOx to atmosphere. | Within a time frame approved by the DEP. | DEP Part V |

| | | | | | |
|---|---|---|---|---|---|
| 7 | Gas Emissions | Minimise discharges from the accidental release of hydrocarbons and PSV emissions, including flaring. | To achieve "best practice" for the whole plant. | Within a time frame approved by DEP. | DEP/DME |

AEC/NHMRC = Australian Environmental Council/National Health and Medical Research Council.
EPA = Environmental Protection Authority.
DEP = Department of Environmental Protection.
DME = Department of Minerals and Energy.
LPG = Liquefied Petroleum Gas.
NOx = Oxides of nitrogen.
PSV = Pressure safety valve.
QRA = Quantitative Risk Assessment.