



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

**TITANIUM DIOXIDE PIGMENT PLANT, INCREASE IN PRODUCTION CAPACITY
TO 80,000 TPA, KWINANA (882)**

TIWEST JOINT VENTURE

This proposal may be implemented subject to the following conditions which replace all previous conditions set under Part IV of the Environmental Protection Act for this project (See note 1):

1 Proponent Commitments

The proponent has made a number of environmental management commitments in order to protect the environment.

- 1-1 In implementing the proposal, the proponent shall fulfil the commitments made in the Consultative Environmental Review, in response to issues raised following public submissions, and in correspondence of 2 March 1995; provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.

A schedule of environmental management commitments (April 1995) which will be audited by the Department of Environmental Protection was included in Environmental Protection Authority Bulletin 778, and a copy is attached.

2 Implementation

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 2-1 Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal.
- 2-2 Where, in the course of the detailed implementation referred to in condition 2-1, the proponent seeks to change the designs, specifications, plans or other technical material submitted to the Environmental Protection Authority in any way that the Minister for the Environment determines, on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3 Environmental Management Programme

A practical operational plan is needed to implement good environmental management.

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3-1 Within three months of the formal authority issued to the decision-making authorities under Section 45(7) of the Environmental Protection Act 1986, the proponent shall revise the Environmental Management Programme required by the Ministerial Statement of 26 April 1989 for the pigment plant. This programme shall include the requirement for submission of brief annual and comprehensive triennial reports to the Department of Environmental Protection, and shall address, but not be limited to:

- 1 air quality monitoring and quality control procedures;
- 2 effluent pond management;
- 3 noise level measurement, frequency and control;
- 4 detection and management of leaks; and
- 5 radiation monitoring and management (see condition 7).

3-2 The proponent shall implement the Environmental Management Programme required by condition 3-1.

4 Atmospheric Emissions

4-1 From operation to decommissioning, the proponent shall maintain the process equipment, instrumentation and alarm systems consistent with the safety and reliability assessment of the plant; to the requirements of the Department of Environmental Protection on advice of the Chief Inspector, Explosives and Dangerous Goods Division of the Department of Minerals and Energy.

4-2 From operation to decommissioning, the proponent shall maintain very high integrity instrumentation for the control of the plant and for the detection of and response to any unplanned releases, to the requirements of the Department of Environmental Protection on advice of the Chief Inspector, Explosives and Dangerous Goods Division of the Department of Minerals and Energy.

4-3 The proponent shall design and operate the plant in a manner which ensures that there is no odour of reduced sulphur compounds from the plant detectable in the nearest residential areas.

5 Wastewater Discharges

5-1 The proponent shall only discharge wastewaters into Cockburn Sound which permit the maintenance of the beneficial uses of the receiving waters, outside the defined mixing zones.

5-2 The proponent shall refer any proposal for wastewater discharge through the Cape Peron Ocean outfall to the Environmental Protection Authority and the Water Authority of Western Australia.

6 Water Reduction, Re-use and Recycling

6-1 Within six months of the formal authority issued to decision making-authorities under Section 45(7) of the Environmental Protection Act, the proponent shall report on methods of reducing water consumption, including wastewater re-use and recycling, and on-site wastewater treatment and re-use, at the Pigment Plant.

6-2 The proponent shall implement appropriate methods of water reduction, re-use and recycling arising from condition 6-1, to the requirements of the Department of Environmental Protection on advice of the Water Authority of Western Australia.

6-3 In the event of a major water recycling project commencing in the Kwinana area, the proponent shall utilise the recycled water produced, provided that such water is suitable for production with minimum cost-effective processing by the proponent, and can be

supplied at a commercially viable cost. In this regard, the proponent shall confer with the Minister for the Environment, the Minister for Water Resources and the Minister administering the Mineral Sands (Cooljarloo) Mining and Processing Act 1988.

7 Radiation Management

- 7-1 The proponent shall safely manage radiation within the plant site and its environs.
- 7-2 Within six months of the formal authority issued to decision-making authorities under Section 45(7) of the Environmental Protection Act, and to achieve the objectives of condition 7-1, the proponent shall prepare a revised radiation management programme for the pigment plant and for the disposal of liquid and solid wastes, to the requirements of the Department of Environmental Protection on advice of the Radiological Council of WA and the Department of Minerals and Energy.
- 7-3 The proponent shall implement the radiation management programme required by condition 7-2.

8 Emergency Response and Risks and Hazards

- 8-1 The proponent shall maintain and revise the plant emergency plan to take into account all relevant emergency events, including "plant upset" conditions, to the requirements of the Department of Environmental Protection on advice of the Chief Inspector, Explosives and Dangerous Goods Division of the Department of Minerals and Energy.
- 8-2 Within six months of the formal authority issued to decision making-authorities under Section 45(7) of the Environmental Protection Act, the proponent shall prepare a coordinated emergency response plan to be implemented with the proponent of the adjacent chlor-alkali plant, to the requirements of the Department of Environmental Protection on advice of the Chief Inspector, Explosives and Dangerous Goods Division of the Department of Minerals and Energy.

Note 1: The plant emergency plan referred to in condition 8-1 should be fully integrated with the requirements of other neighbouring Kwinana industries.

Note 2: Prior to expansion of production beyond 80,000 tonnes per annum, and to meet the risk criteria published in "Criteria for the assessment of risk from industry - expanded discussion", Environmental Protection Authority Bulletin 627 (May 1992), the proponent will be required to implement and audit the implementation of recommendations 1.3.1 to 1.3.3 contained in the VRJ Risk Engineers Pty Ltd hazard and risk assessment (1994) (A copy of these recommendations is attached).

9 Decommissioning

- 9-1 The proponent shall achieve the satisfactory decommissioning and rehabilitation of the site and its environs.
- 9-2 At least six months prior to decommissioning, the proponent shall prepare a decommissioning and rehabilitation plan to achieve the objectives of condition 9-1.
- 9-3 The proponent shall implement the plan required by condition 9-2.

10 Proponent

These conditions legally apply to the nominated proponent.

- 10-1 No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination

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

11 Time Limit on Approval

The environmental approval for the proposal is limited.

- 11-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced.

Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period to the Minister for the Environment.

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

12 Compliance Auditing

To help determine environmental performance, periodic reports on progress in implementation of the proposal are required.

- 12-1 The proponent shall submit periodic Progress and Compliance Reports, in accordance with an audit programme prepared by the Department of Environmental Protection in consultation with the proponent.

Procedure

- 1 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.
- 2 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.

Note

- 1 The original conditions for this project were issued on 26 April 1989 (Assessment No. 175A) and subsequently amended on 19 August 1994 (Assessment No. 867). The conditions in this statement replace those conditions which are no longer applicable for this project.
- 2 The proponent is required to hold a licence under the provisions of Part V of the Environmental Protection Act.

Hon. Peter Foss, MLC
MINISTER FOR THE ENVIRONMENT

28 SEP 1995

Schedule of Environmental Management Commitments which
will be audited by the
Department of Environmental Protection
(April 1995)

**TITANIUM DIOXIDE PIGMENT PLANT,
INCREASE IN PRODUCTION CAPACITY
TO 80,000 TPA, KWINANA (882)**

TIWEST JOINT VENTURE

Environmental audit

1. The proponent commits to an environmental audit of its Pigment Plant at the proposed 80,000 tpa production rate by an external auditor who is acceptable to the Proponent and the Department of Environmental Protection. The audit scope will be set in consultation and agreement with both parties and include such issues as compliance with environmental licence, ministerial conditions and Proponent's commitments, risk assessment, environmental operating procedures, continuous improvement and comparison with industry best practice. The Proponent commits to implementation of audit action items agreed by the DEP prior to commissioning of the 80,000 tonne per annum project.

Environmental Management Programme

2. Within three months of approval of the 80,000 tpa debottlenecking project, the proponent will submit a revised Environmental Management Plan (EMP) for the Pigment Plant to the Minister for the Environment.
3. The proponent will implement the EMP for the Pigment Plant site. The EMP will be reviewed and updated as necessary in consultation with the Department of Environmental Protection (DEP).

Emergency Response Procedures

4. The proponent will continually review and modify as necessary its plant emergency procedures plan. The proponent will maintain a strong and active association with the Kwinana Industries Mutual Aid group.

Atmospheric Emissions

5. Atmospheric emissions will be maintained to levels and standards agreed with the EPA and the DEP.
6. The approved system of primary waste gas incinerators and associated scrubbing equipment and back up combustion chamber will be operated and maintained to reduce emissions of contaminants from the main and by-pass stacks.
7. The existing Standby Thermal oxidiser (STO) is designed to accommodate a plant production rate of 80,000 tonnes per annum. In the event that both Waste Gas Incinerators (WGI) fail, the Proponent commits to scaling back plant production, as necessary, to ensure that all process waste gases pass through the STO, without load sharing to the Emergency Stack.
8. The proponent commits to implementing an agreed quarterly reporting procedure with the Department of Environmental Protection that will provide comprehensive detail of Emergency Stack usage including time of occurrence, frequency, duration, reason for use and estimated composition of emitted gases.
9. Fugitive emissions of Titanium Tetrachloride will be collected by a vacuum pick up system connected to a scrubber system.

Water Usage

10. Where possible, the proponent will minimise water usage within the plant areas where water usage can be reduced or recycled, and have a potential to impact on the environment, will be discussed with the DEP prior to implementation.

Plant Spillages

11. Water circulation systems will, generally, be located over concrete pads or hardstand with collection areas and sumps. Spills will be collected and routed to a neutralisation system to join the plant effluent stream.

Stormwater

12. Contaminated stormwater collected in hardstand areas with collection areas and sumps will be routed through the waste water treatment plant. Uncontaminated stormwater will be directed to stormwater sumps at the site.

Effluent Storage Ponds

13. The settling ponds will be lined to prevent leaching of liquids into the groundwater. The proponent will monitor a set of ground water bores adjacent to the ponds to ensure that the integrity of the liners is maintained.

Details of pond designs, and mitigation procedures in the event of pond leakage will be included in the EMP.

Ground Water

14. The proponent will conduct an on-going ground water monitoring and reporting programme.

Liquid Effluent

15. The proponent will dispose of liquid effluents by either discharge into Cock burn Sound or into the Western Australian Water Authority's Cape Peron sewerage disposal system, or an alternative system approved by the EPA.

Radiation & Solid Waste

16. Within three months of approval of the 80,000 tpa project, the proponent will review the existing Radiation Management Plan (RMP) to the requirements of the Radiological Council of WA, Department of Minerals and Energy and the DEP.
17. The proponent will implement the RMP for the Pigment Plant site. The RMP will be reviewed and updated as necessary in consultation with the Radiological Council of WA, Department of Minerals and Energy and the DEP.
18. The proponent will develop transport and disposal methods for the plant solid wastes for the approval of the authorities and will detail the methods to be used in the EMP.

Noise

19. The proponent is committed to remaining within the EPA guidelines for noise emissions and undertaking an on-going noise monitoring programme.

Risk

20. The proponent commits to achieving all appropriate risk criteria for the Pigment Plant as defined in EPA Bulletin 627 through implementation of risk mitigation measures where appropriate.
21. The capacity of the SNAKE system scrubbers will be sufficient to deal with all possible releases directed to the SNAKE system.

Decommissioning

22. When operations cease and no further use for the site facilities can be identified, buildings and equipment will be dismantled, sold or disposed of. The general plant area will then be cleaned up to a tidy condition.

Equipment used in the titanium dioxide plant will be checked for radioactivity, and where necessary, decontaminated prior to sale or disposal.

Proposals for clean up procedures will be submitted to the EPA for approval prior to decommissioning.

The appropriate recommendations from the VRJ (1994) report are:

- "1.3.1 A testing program for all critical trip systems should be introduced to the plant. The introduction of this system would lead to a further reduction in risk levels for the plant.
- 1.3.2 In addition to recommendation 1.3.1, a hazard and demand frequency (trip testing) review should be undertaken. This, together with the results of this hazard and risk analysis, will assist in determining a priority procedure for critical trips throughout the plant.
- 1.3.3 The six LPG vessels are considered to be a high risk area. Their alignment is towards the plant which is considered to be an unacceptable exposure. VRJ believe that these vessels should be replaced with a storage configuration utilising larger vessels. Any alteration should first be evaluated within the context of this hazard and risk analysis study before proceeding".