WOODADA GAS PROJECT

REPORT AND RECOMMENDATIONS BY THE ENVIRONMENTAL PROTECTION AUTHORITY

JANUARY 1982

Department of Conservation and Environment
Western Australia

BULLETIN 110

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ENVIRONMENTAL PROTECTION AUTHORITY
BP HOUSE,
1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000
Telephone 322 2477

HON. MINISTER FOR CONSERVATION
AND THE ENVIRONMENT

Your Ref.
Our Ref. 8/81

My Dear Minister

WOODADA GAS PROJECT ERMP

At its last meeting, the EPA discussed the Woodada ERMP in the light of public and Government Department comments.

The EPA found that the project was environmentally acceptable subject to the operators undertaking to modify their management programme according to its recommendations.

Would you please forward to the Hon. Minister for Mines the EPA's report on the ERMP.

Yours sincerely,

A. R. MAIN,
CHAIRMAN

22 JANUARY, 1982.

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1. INTRODUCTION

1.1 The Proposal

A possible commercial petroleum resource has been discovered in the Woodada Structure in an area between Eneabba and Leeman. A "Location" area under the Petroleum Act has been defined over approximately 660 km^2 of this region to allow for studies leading to an application for a production licence (See Figure 1).

More seismic exploration and drilling will be required in this area of heathland and related shrubland to define the extent of the reservoir structures.

Well head processing facilities for formation water and liquid hydrocarbon separation are planned with natural gas being transported from the area via a 12 km buried pipeline to the Dongara to Perth gas pipeline. Condensate will be transported by road tanker. Pipeline construction and termination will be in accord with the SAA Gas Pipeline Code AS 1967-1975. Well drilling and abandonment will adhere to W.A. Mines Department regulations.

The Woodada project is owned jointly by Hughes and Hughes (50%), Strata Oil N.L. (17.5%), Hudbay Oil (Australia) Ltd. (10.00%), Haoma Petroleum Pty. Ltd. (9.45%), Western Continental Corp. Ltd. (5%) and others, mainly individuals (8.05%). The current operator of the project is Hudbay Oil (Australia) Ltd.

1.2 ERMP

Under conditions of the proclamation of Flora and Fauna Reserve 29073 and Flora Reserve 24496 as Crown land for the purposes of the Petroleum Act, 1967 an ERMP was required by the EPA prior to the Operators applying for a production licence.

The ERMP was made available for public review on October 17, 1981 and written comments to the Department of Conservation and Environment were invited by November 27, 1981.

1.3 Adequacy of ERMP

The Authority considers that although the ERMP has the shortcoming that there is not sufficient intergration of the report, it contains sufficient information for the public and other government authorities to make an assessment of the proposal.

Overall the report details the nature of the project and the environment in reasonable detail, taking into account the scale of the project and the perceived impact on the environment.

The Authority believes that the Operators have responded adequately to the public and government submissions.

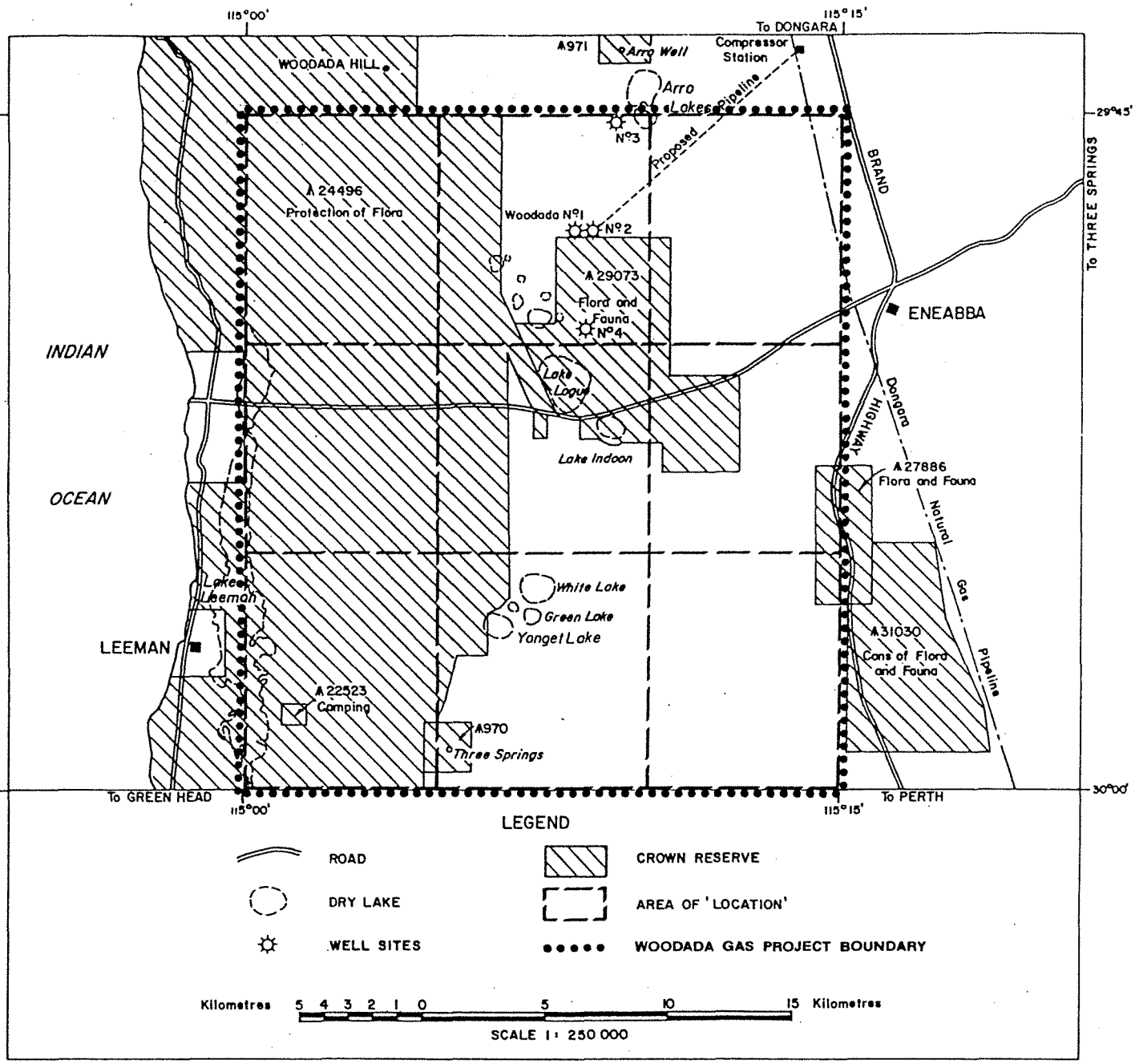

Figure 1. Woodada Gas Project Area

2. ENVIRONMENTAL ASSESSMENT

In assessing the environmental impact of the Woodada Gas Project the Authority took into consideration public and Government department submissions. The Department of Conservation and Environment held discussions with appropriate representatives of the project operators and the results of these discussions have been taken into account by the Authority.

2.1 Native Vegetation

The area contains an extremely high diversity of plant species per unit area. The species richness of the heathland and related shrubland flora is equalled by only one other area in Western Australia, namely the Stirling Range-Fitzgerald River region. Approximately a third of the project area has been cleared for agriculture.

Exploration work represents the major impact on the uncleared environment in terms of land disturbance. To February 1981 the total amount of land cleared for seismic tracks, access roads and exploratory drill sites was about 1·23 km^2. This is small compared with the remaining area of undisturbed ecosystem in the project area which covers approximately 475 km^2. With the further seismic and drilling work anticipated the total amount of land cleared will be less than 1% of the remaining undisturbed ecosystem. Guidelines for exploration on reserves in the area are included in Government Gazette proclamations of August 3, 1979 and January 23, 1981. These include minimising vegetation and wetland disturbances on survey lines, restrictions of vehicle movements, Phytophthora cinnamomi hygiene, pollution and fire control and rehabilitation. To avoid unnecessary vegetation disturbance the following are recommended.

Recommendation 1:

> Keep clearing of drill sites to the smallest practical size taking into account fire-break requirements.

Recommendation 2 :

> Construct access roads to drill sites so as not to unnecessarily damage wetland areas either directly or through impeding over-land water flow.

The only significant clearing operation remaining to bring the gas field to production is the construction of a gas pipeline. Clearing of vegetation along the 12 km main pipeline easement will directly affect four vegetation units, none of which are exclusive or unique to the study area. In the report, clearing of a 20 m wide easement was discussed. In practice the operating company has stated that it is likely that a 15 m swath will be sufficient, thus reducing the impact on surrounding vegetation. Further, no track will be required for four wheel drive vehicle access along the pipeline. As a result topsoil and vegetation removed to allow pipe laying will be replaced immediately over the easement area. Also topsoil will only be disturbed along the pipeline trench line.

A spur pipeline joining Woodada No. 1 to the main line at Woodada No. 2 will be installed in a similar fashion to the main line. The operators of the project now do not intend to construct a spur pipeline from Woodada No. 3. As a result disturbance of a wetland area which was of concern will not occur.

To allow for natural regeneration of vegetation on seismic lines the ERMP discusses the need to discourage entry to the tracks. To attain this the following is recommended.

Recommendation 3 :

> Accessible sections of disused tracks should be broken up sufficiently to prevent easy access to four wheel drive vehicles.

The ERMP discusses rehabilitation approaches after site abandonment. It is likely that some areas such as drill sites will be abandoned progressively through the life of the project. Following removal of surface installation and plugging of wells, rehabilitation of disturbed areas is planned utilising recontouring and brush matting.

Recommendation 4 :

> Rehabilitation of disused drill sites, access roads and borrow pits should be carried out progressively through the life of the project, using current Fisheries and Wildlife Department experience. The approaches to rehabilitation and results should be documented.

Although plant pathogen introduction is addressed in exploration guidelines for the area this has not been addressed in the ERMP. Alien plant introductions were also not discussed.

Recommendation 5 :

> Earthmoving equipment and vehicles travelling from Phytophthora cinnamomi infected areas should be cleaned according to Forest Department requirements before entering off road sections of the project area.

Recommendation 6 :

> Weeds in fire-break areas should be killed using a non residual chemical weedicide. Declared plants under the Agriculture and Related Resources Protection Act 1976 should be controlled according to Agricultural Protection Board requirements.

2.2 Fauna

Two submissions commented on the paucity of detailed faunal information from the project area. However there are no known habitats of rare animal species directly affected by the project. Also much of the disturbance to animals has occurred with the exploration programme. It is expected that any exodus of fauna from the immediate

vicinity of the operation will be temporary due to population pressures in adjacent habitats and progressive rehabilitation of disturbed areas providing reestablished habitats.

2.3 Access

The ERMP discusses the benefits of using some drill site access roads and seismic tracks for fire control, recreation and land management. However it does not discuss the means of deciding on which tracks to retain and which to close.

Recommendation 7 :

> The operators should consult with the relevant land managers and fire control authorities on which tracks should be retained.

2.4 Formation Water Disposal

On-site processing facilities at each producing well site will separate formation water via an automatic oil/water separating system. The water will contain dissolved salts, particulates and some oil.

The ERMP describes a water disposal system including an evaporation pond and water disposal shaft. As a result of concerns expressed about floating oil being injected into the shallow aquifer, the system has been redesigned. Water disposal into the shaft is now to be via a submerged off-take to avoid entraining floating oil. In the event of an oil build up in the pond, it will be drawn off and transferred to a condensate tank.

The potentially toxic nature of liquids in the ponds may lead to the deaths of bees from adjacent apiary sites.

Recommendation 8 :

> The Operators, in conjunction with the Forests Department and Department of Agriculture should determine the risks of the formation water disposal sites to bees and advise affected beekeepers of proper precautions.

2.5 Fire

During both construction and operation of the Woodada Gas Project bush fires, a normal aspect of the ecosystem of the area, are going to be of considerable concern to the operators and land managers. The ERMP adequately addresses the bush fire risk, detailing relevant work-force education and fire action plans.

2.6 Archaeology

A public submission recommended that an archaeological survey be carried out on the project area. It is realised that most disruption has already occurred during exploration and further disturbance will be relatively small. However the W.A. Museum, Aboriginal Sites Department, believe it is desirable that archaeological work be

carried out before previously undisturbed areas are disturbed so that sites can be avoided if necessary. Land adjacent to wetland areas is more likely to contain archaeological material.

The operators commissioned an archaeological survey of the pipeline route and no aboriginal sites of any kind were found. Further studies will be undertaken in areas to be disturbed during ongoing exploration.

3. CONCLUSIONS

The Authority believes that the Woodada ERMP is acceptable as a document for public review. The report detail s the nature of the project and the environment in reasonable detail and recognises the important environmental issues. Recommendations have been made concerning some aspects of the management programme which overall is regarded favourably.

The Authority believes that the Woodada Gas Project is environmentally acceptable subject to the Operators undertaking to modify their management programme according to its recommendations.

4. SUMMARY OF RECOMMENDATIONS

1. Keep clearing of drill sites to the smallest practical size taking into account fire break requirements.

2. Construct access roads to drill sites so as not to unnecessarily damage wetland areas either directly or through impeding overland water flow.

3. Accessible sections of disused tracks should be broken up sufficiently to prevent easy access to four wheel drive vehicles.

4. Rehabilitation of disused drill sites, access roads and borrow pits should be carried out progressively through the life of the project, using current Fisheries and Wildlife Department experience. The approaches to rehabilitation and results should be documented.

5. Earthmoving equipment and vehicles travelling from Phytophthora cinnamomi infected areas should be cleaned according to Forest Department requirements before entering off road sections of the project area.

6. Weeds in fire break areas should be killed using a non residual chemical weedicide. Declared plants under the Agriculture and Related Resources Protection Act 1976 should be controlled according to Agricultural Protection Board requirements.

7. The Operators should consult with relevant land managers and fire control authorities on which tracks should be retained.

8. The Operators, in conjunction with the Forests Department and Department of Agriculture should determine the risks of the formation water disposal sites to bees and advise affected beekeepers of proper precautions.

APPENDIX I

PUBLIC SUBMISSIONS SUMMARY

1. INTRODUCTION

The Department of Conservation and Environment received two public submissions on the project. Neither opposed the project as such.

2. SUMMARY OF MAIN POINTS

2.1 Primary Industry Association Western Australia (Inc.), 239-247 Adelaide Terrace, Perth, 6000.

The Association supported the project provided the Company maintained its management programmes for flora protection and fire prevention and control.

2.2 R.H. Pearce, 21 Davies Crescent, Kalamunda, 6076.

It was recommended that thought should be given to an archaeological survey of the project area.

APPENDIX II

A SUMMARY OF STATE GOVERNMENT DEPARTMENTAL SUBMISSIONS

1. DEPARTMENT OF AGRICULTURE

A detailed submission was made that summarised input from various branches.

1.1 Vegetation

The vegetation study was carried out at a time when many of the plants would not have been in flower. It is desirable that further plant collections be undertaken. The report provides no indication of the number of sites sampled.

It was not apparent from the report whether the exploration companies concerned were provided with guidelines to minimise environmental damage.

1.2 Land Use

To maintain nectar flow for honey production it is important that all sites or tracks requiring specialised rehabilitation programmes be replanted with nectar species native to the area.

1.3 Seismic Tracks

To discourage entry to seismic tracks there is a need to break up the visible and or compacted sections of track to encourage rapid vegetation. Simply blocking off of tracks could be unsuccessful.

1.4 Formation Water Disposal

Beekeepers with apiary sites close to formation water disposal ponds should be advised in conjunction with the Forests Department on the approach to avoid deaths of bees due to toxicity of the liquid.

1.5 Improvement of Access

There is a need to confer with land management and fire control authorities on which tracks are to be retained.

1.6 Site Rehabilitation

During all phases of the operation it would be highly desirable to exclude the entry of all plant pathogens or alien plants either by design or accident.

1.7 Rehabilitation Committee

It was recommended that a Rehabilitation Co-ordinating Committee should be set up to ensure that the environmental requirements and conditions are implemented and monitored.

2. FISHERIES AND WILDLIFE

The following forms part of a detailed submission on the project.

2.1 Information on the fauna of the location derived from actual field work should be provided, with statements on impact.

2.2 Provide details of vegetation impact, especially the number and location of wells to be drilled in the nature reserve.

2.3 A description of field rehabilitation trials suitable for statistical analysis.

2.4 A stronger commitment to rehabilitation.

2.5 A commitment to Phytophthora hygiene on all off road and earth moving vehicles.

3. LANDS AND SURVEYS

The project was found to be satisfactory to the Department and the Bush Fires Board.

4. NATIONAL PARKS AUTHORITY

The material generated by the study has provided useful information for the Authority.

5. PUBLIC WORKS DEPARTMENT

Care will need to be taken to ensure that useful ground water aquifers are not damaged by the formation water disposal system.

6. W.A. MUSEUM

The section on fauna lacks clear explanations of the field work programme and is based on inadequate data and therefore is unacceptable as a basis for proposing a management programme for fauna.