

# **Cliff Head Oil Field Development- 20 km south of Dongara, Shire of Irwin**

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**Roc Oil (WA) Limited**

**Report and recommendations  
of the Environmental Protection Authority**

**Environmental Protection Authority  
Perth, Western Australia  
Bulletin 1150  
October 2004**

### **Environmental Impact Assessment Process Timelines**

<b>Date</b>	<b>Progress stages</b>	<b>Time (weeks)</b>
<b>22/12/03</b>	<b>Level of Assessment set (following any appeals upheld)</b>	<b>0</b>
<b>12/4/04</b>	<b>Proponent Document Released for Public Comment</b>	<b>16</b>
<b>24/5/04</b>	<b>Public Comment Period Closed</b>	<b>6</b>
<b>13/8/04</b>	<b>Final Proponent response to the issues raised</b>	<b>12</b>
<b>25/10/04</b>	<b>EPA report to the Minister for the Environment</b>	<b>10</b>

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## Summary and recommendations

Roc Oil (WA) Limited proposes to develop the Cliff Head Oil Field located approximately 20 kilometres (km) south of Dongara. This report provides the Environmental Protection Authority's (EPA's) advice and recommendations to the Minister for the Environment on the environmental factors relevant to the proposal, which includes the portion of the Cliff Head project located on State Lands and within State Waters.

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.

Section 5 of the report contains information and advice on the matters of oil spill risk and contingency planning and does not form part of the formal component of the EPA's assessment.

### **Relevant environmental factors**

The EPA decided that the following environmental factors relevant to the proposal required detailed evaluation in the report:

- (a) Terrestrial biodiversity (including Beekeepers Nature Reserve); and
- (b) Marine biodiversity (including marine benthic primary producer habitat).

There were a number of other factors which were very relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

### **Conclusion**

The EPA has considered the proposal by Roc Oil to develop the Cliff Head Oil Field as described in Section 2, and has evaluated the potential environmental impacts of the portion of the project located on State Lands and within State Waters.

The EPA has concluded that it is unlikely that the EPA's objectives would be compromised by the assessed proposal, provided there is satisfactory implementation, by the proponent, of the commitments and the recommended conditions set out in Appendix 4, and summarised in Section 4.

The EPA also wishes to draw attention to the advice provided in Section 5 of this report in relation to the required Oil Spill Contingency Plan for the project and has provided a copy of this report to relevant State and Commonwealth agencies.

## **Recommendations**

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for the development and operation of the facilities related to the Cliff Head Oil Field that are located on State Land and within State Waters;
2. That the Minister considers the report on the relevant environmental factors as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised by the implementation of the proposal, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4, and summarised in Section 4, including the proponent's commitments; and
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report.

## **Conditions**

Having considered the proponent's commitments and the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Roc Oil to develop the Cliff Head Oil Field is approved for implementation.

These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:

- (a) that the proponent shall fulfil the commitments in the Consolidated Commitments statement set out as an attachment to the recommended conditions in Appendix 4;
- (b) preparation and implementation of a fire management plan to provide for effective fire management during project construction;
- (c) preparation and implementation of an onshore pipeline rehabilitation plan full rehabilitation of disturbed areas in Beekeepers Nature Reserve;
- (d) lodgment of a rehabilitation performance bond;
- (e) preparation and implementation of a seagrass and seabed stability monitoring and contingency plan to address potential impacts on seagrass; and
- (f) procedures for prevention of introduction and spread of introduced marine pests.

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# 1. Introduction and background

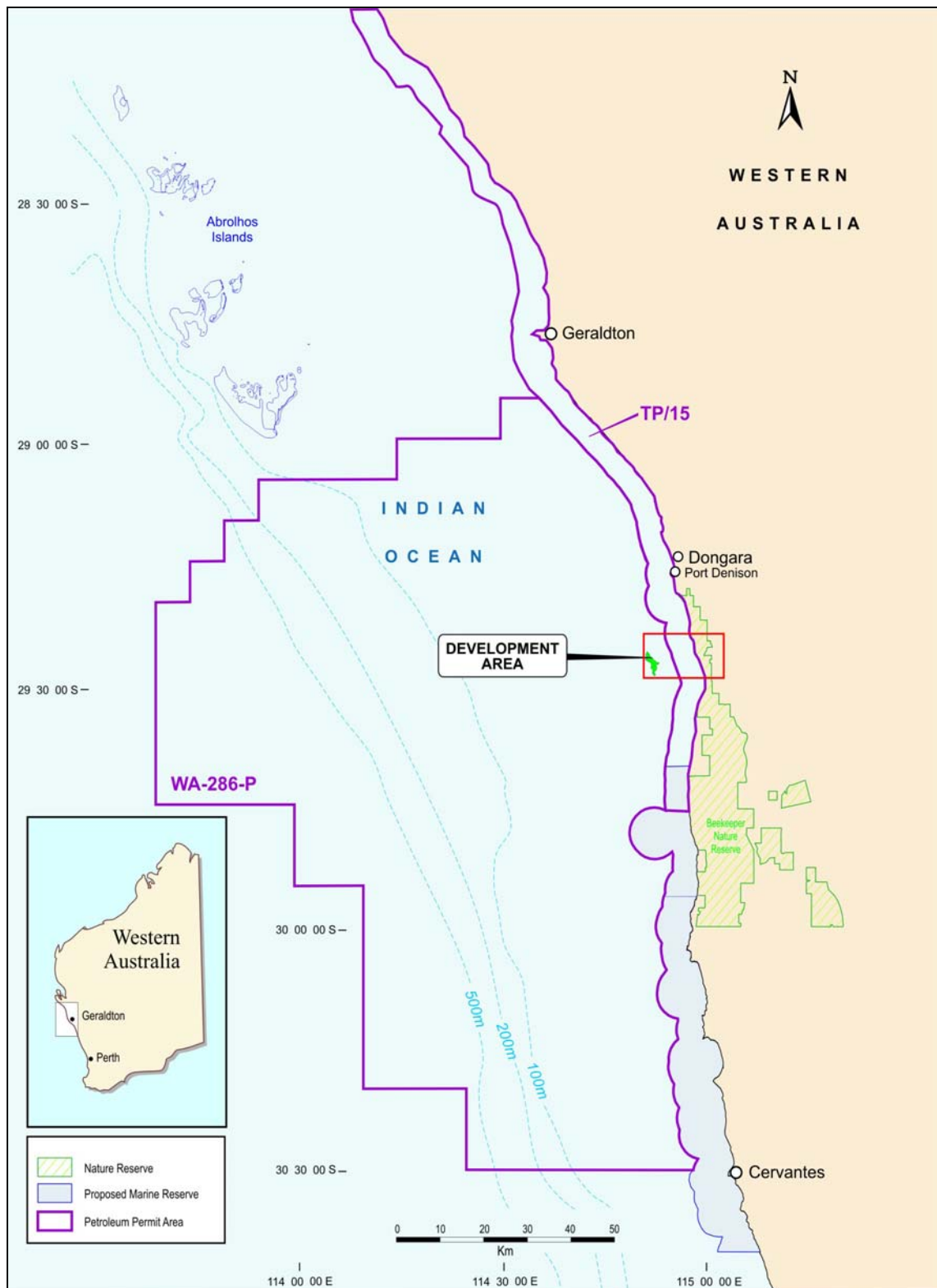
This report provides the advice and recommendations of the Environmental Protection Authority (EPA), to the Minister for the Environment, on the environmental factors relevant to the proposal by Roc Oil (WA) Limited, to develop the Cliff Head Oil Field approximately 20 kilometres (km) south of Dongara (Figure 1). The proposal includes the construction and operation of an unmanned offshore platform, six production and two water injection wells located in Commonwealth Waters, an onshore processing facility, onshore and oil and water pipelines and oil transport to Kwinana and / or Geraldton. The EPA has assessed the environmental impacts of the components of the proposal located within Western Australian Government jurisdiction and the portion of the proposal located in Commonwealth Waters will be separately assessed and reported on by the Commonwealth Department of Environment and Heritage (DEH) in accordance with the procedures for a Public Environmental Report (PER) under the *Environmental Protection and Biodiversity Conservation Act 1999*.

The Cliff Head project was referred to the EPA in December 2003 and the level of assessment for the part of the project subject to Western Australian jurisdiction (the proposal) was set by the EPA at Public Environmental Review (PER) because of the potential to impact on marine benthic habitat and the Beekeepers Nature Reserve.

From the 13th of April to 25 May 2004 the Public Environmental Review (PER) and Draft Public Environmental Report document was subject to public review. Six submissions were received by the EPA during the public review period and copies of these were provided to the DEH.

Further details of the proposal assessed by the EPA are presented in Section 2 of this report. Section 3 discusses the environmental factors relevant to the proposal. The Conditions and Commitments to which the proposal should be subject, if the Minister determines that it may be implemented, are set out in Section 4. Section 5 provides Other Advice by the EPA, Section 6 presents the EPA's conclusions and Section 7, the EPA's Recommendations.

Appendix 5 contains a summary of submissions and the proponent's response to submissions and is included as a matter of information only and does not form part of the EPA's report and recommendations. Issues arising from this process, and which have been taken into account by the EPA, appear in the report itself.



*Figure 1: Location of the Cliff Head proposal*

## 2. The proposal

The main elements of the Cliff Head Oil field development project include:

- a) 6 petroleum production wells, two water injection wells and an unmanned offshore wellhead platform all located in Commonwealth waters;
- b) an onshore treatment (separation) and storage facility located on private land adjacent to Beekeepers Nature Reserve; and
- c) oil and water pipelines connecting onshore and offshore facilities referred to located within Beekeepers Nature Reserve on land and within State and Commonwealth Waters.

The elements of the project are illustrated and described in detail in Section 3 (pages 29-56) of the PER.

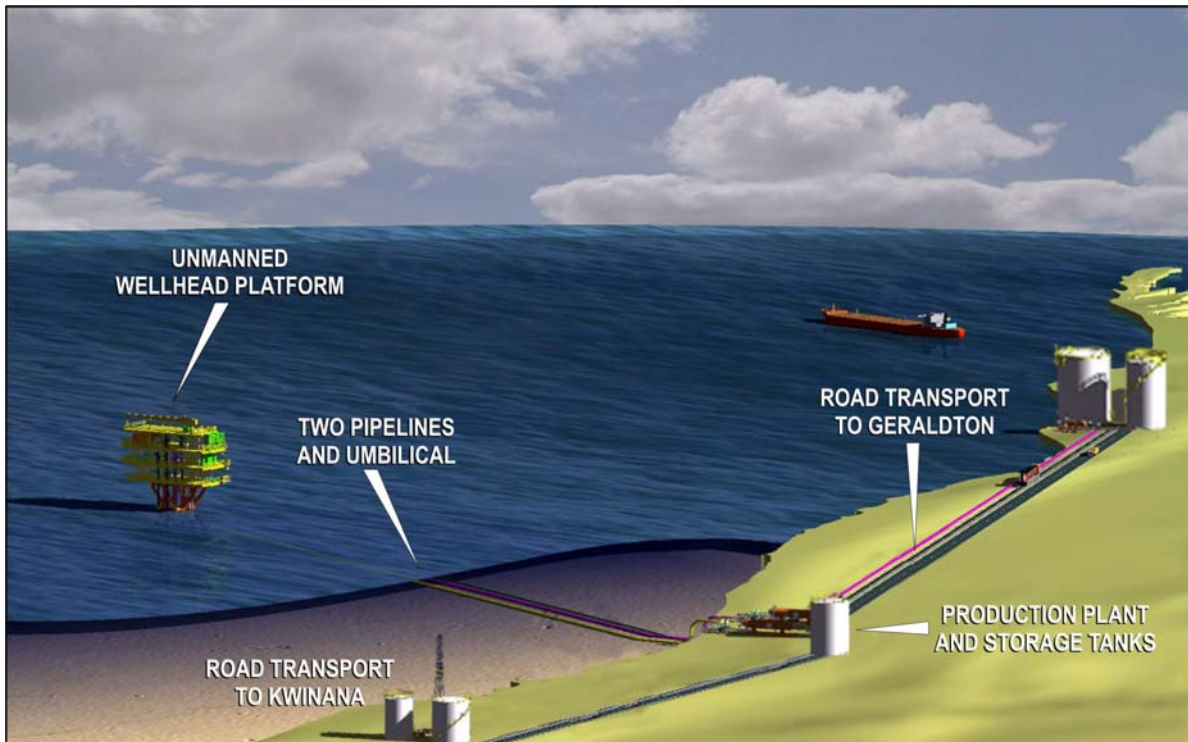
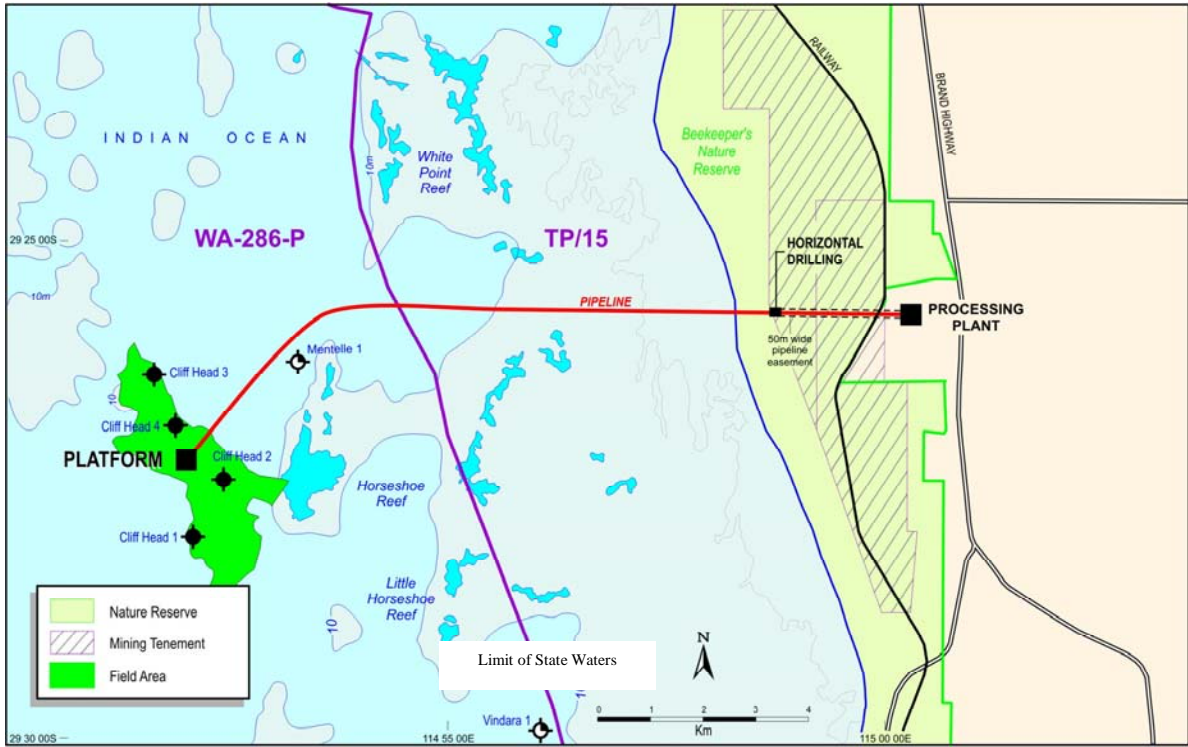
The portion of the overall Cliff Head project that is subject to the requirements of the *Environmental Protection Act 1986* (the EP Act) consists of element b above (onshore treatment plant) and the portions of element c (oil and water pipelines) located on land and within State Waters as shown in Figure 2. This is the proposal assessed by the EPA in this report.

The main characteristics of the proposal are summarised in Table 1

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

Element	Quantities/Description
<p><u>Pipelines</u></p> <p>Diameter</p> <p>Length</p> <p>Description</p> <p>Disturbance footprint</p>	<p>Up to 500 millimetres</p> <ul style="list-style-type: none"> <li>• The offshore sections of the pipelines within State Waters are approximately 4 km long as shown in figure 2</li> <li>• The onshore sections, are approximately 4km long as shown in figure 2</li> </ul> <p>The pipelines will be thermally insulated and the offshore sections will be weight clad and stabilised with rock bolts to the sea floor.</p> <p>Maximum pipeline disturbance corridor width of 50 metres</p> <p>Maximum area of vegetation disturbance for onshore pipelines of 7 hectares</p> <p>Maximum area of seagrass disturbance within State waters of 10.6 hectares</p>
<p><u>Arrowsmith Processing Plant</u></p> <p>Area of vegetation disturbed (excluding pipelines)</p>	<p>To be located on private freehold land within Lot 11 Brand Highway.</p> <p>30 hectares maximum clearing.</p> <p>100 hectares vegetation management area (for reduced fire risk)</p>
Groundwater abstraction	Two onshore wells within Lot 11 to yield a total of up to 6360 M <sup>3</sup> of water per day (2Gl / annum) from the Cattamarra Formation
Maximum pipeline flow rates	8000 M <sup>3</sup> per day (oil production & water injection)
Maximum Processing (Separation) Plant output	3975 M <sup>3</sup> per day
Maximum Storage Capacity	6360 M <sup>3</sup>
Operating Times	The processing facility will operate 24 hours per day, seven days a week for up to 15 years





Note The proposal assessed by the EPA in this report is limited to the components of the project located on State Lands and within State Waters

**Figure 2: Elements of the proposal**

Since release of the PER a number of modifications to the proposal have been made by the proponent. These are discussed in detail in the proponent's summary and response to submissions document (Roc Oil, 2004b) and include the following changes:

- The removal of the option of the trenching method for installation of the oil and water pipelines from east of the primary dune system to some 600 metres west of the shoreline;
- The incorporation of a protocol to manage hull fouling;
- The agreement to monitor the impacts of pipeline on seagrass; and
- The provision of an 'environmental offset' involving a one-off payment of \$25000 to a CALM trust fund to assist with project and reserve management costs.

The potential impacts of the proposal initially predicted by the proponent document and their proposed management are summarised in Table 6.2 of the PER (Roc Oil, 2004a).

### 3. Relevant environmental factors

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 the conditions and procedures, if any, to which the proposal should be subject. In addition, the EPA may make recommendations as it sees fit.

The identification process for the relevant factors selected for detailed evaluation in this report is summarised in Appendix 3. The reader is referred to Appendix 3 for the evaluation of factors not discussed below. A number of these factors, such as groundwater quantity are very relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

It is the EPA's opinion that the following environmental factors relevant to the proposal require detailed evaluation in this report:

- a) Terrestrial biodiversity (including Beekeepers Nature Reserve); and
- b) Marine biodiversity (including marine benthic primary producer habitat).

The relevant factors were identified from the EPA's consideration and review of all environmental factors relevant to the proposal that were generated from the PER document and the submissions received, in conjunction with the proposal characteristics.

Details on the relevant environmental factors and their assessment are contained in Sections 3.1 and 3.2. The description of each factor shows why it is relevant to the proposal and how it will be affected by the proposal. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

### **3.1 Terrestrial Biodiversity**

#### **Description**

The main impact on terrestrial ecosystems from the proposal relates to the disturbance corridor for installation of oil and water pipelines from the shore line near Cliff Head to the onshore processing facility which is to be located within a 50 metre wide easement within Beekeepers Nature Reserve.

The pipelines require a 1 metre deep trench and a nominal 10 metre wide zone of clearing (with wider clearing in secondary dune sections). For the majority of the alignment of the pipelines they will be co-located within a single pipeline trench with separate trenches only required at dune crossings and at the location where the pipelines where the pipelines diverge into the entry holes for Horizontal Directional Drilling (HDD) under the primary dunes and beach. The pipelines will be located within a combined disturbance corridor width of up to 50 metres. A staging area of approximate dimensions 50 metres by 50 metres will also be required in a location immediately to the east of the primary dune system for the purposes of deploying equipment for HDD drilling.

A level 1 fauna survey and a level 2 flora and vegetation survey have been undertaken in the pipeline easement corridor. These surveys have not identified any significant flora, vegetation or fauna habitat within the easement.

The proponent has committed to rehabilitating areas disturbed along the pipeline easement and incorporating rehabilitation procedures, timing of operations, completion criteria, and monitoring and management of rehabilitation in its environmental management plan for the project. The proponent also proposes to provide \$25 000 to the Department of Conservation and Land Management (CALM) which will assist in funding CALM's involvement with managing the risk to reserve values along the rehabilitated onshore pipeline easement and reserve management in the area in general.

#### **Public submissions and Government agency advice**

Key issues raised in public submissions on the PER relating to this factor include:

- adequacy of fauna surveys for the pipeline corridor;
- impact of the onshore pipelines on terrestrial fauna;
- rehabilitation of pipeline disturbance corridors; and
- fire management during pipeline construction.

Following the proponent's response to submissions CALM has recommended that the proposal be subject to:

- a) the requirement for a fire management plan to address the risk of, and response to, fire ignition during the construction phase of the project; and
- b) a rehabilitation plan (to CALM requirements) for the onshore pipeline corridor to provide full assurance of a quality rehabilitation outcome.

## **Assessment**

The part of the proposal area to which the EPA's assessment of this relevant factor relates is the onshore pipeline corridor within Beekeepers Nature Reserve.

The EPA's key environmental objective for this proposal is to ensure that the values of Beekeepers Nature Reserve are not significantly compromised.

The EPA agrees with CALM's recommendation in relation to rehabilitation of areas disturbed as a result of the onshore pipelines and considers that the proponent should be required to prepare and implement a comprehensive Onshore Pipeline Rehabilitation Plan to ensure that areas disturbed are returned to a condition similar to the surrounding areas of the Nature Reserve, as specified by defined rehabilitation completion criteria. An environmental condition should also require that the proponent provide a financial assurance (to the value of \$50 000) for the contingent provision of funds to CALM for rehabilitation of the onshore pipeline disturbance corridor in the event that the proponent is unable, for financial or other reasons, to fulfil requirements of the plan or meet the defined criteria. The bond should be linked to achievement of the explicit performance requirements, specified within the Onshore Pipeline Rehabilitation Plan.

Recommended conditions to facilitate these requirements are provided as Conditions 8 and 9 in Appendix 4 of this report.

The EPA also agrees that fire management (avoidance and control of fire ignitions resulting from the proposal) during construction and maintenance of the onshore pipelines and Arrowsmith Processing Plant is of critical importance to protection of the surrounding areas of the Reserve.

A recommended environmental condition designed to address the requirement for a fire management plan is included in Attachment 4 as Condition 10.

## **Summary**

The EPA considers the issue of terrestrial biodiversity conservation (incorporating impacts on Beekeepers Nature Reserve has been adequately addressed and can meet the EPA's objectives for this factor provided that the EPA's recommended conditions relating to a Pipeline Rehabilitation Plan, Rehabilitation Performance Bond and Fire Management Plan are applied to the proposal and implemented.

## **3.2 Marine Biodiversity**

### **Description**

The marine environment of the proposal area supports several marine benthic habitat types:

- Intertidal habitats of sandy beach, limestone platform and exposed beach rock;
- Sandy sea floor with some areas of scattered macroalgae and seagrass;
- Limestone pavement with macroalgae, and sponges and ascidians in elevated areas;

- Patch limestone reef rising 1 to 4 metres above the sea bed with extensive horizontal ledges;
- Emergent limestone reef rising from depth to the surface supporting dense macroalgae and invertebrate cover; and
- Seagrass meadow (located from the 3 metre depth contour to a distance approximately 3 to 4 km west of the shoreline) at varying density dominated by a diverse assemblage of *Amphibolis*, *Thalassodendron* and *Heterozostera* species and with a total of 9 seagrass species present.

Apart from the intertidal (beach) habitat which will largely be avoided by Horizontal Direct Drilling, some seabed disturbance may occur, within each of these habitat types, when the proposed offshore pipelines are installed.

While it will also be possible to avoid significant reef habitat in the location of the proposed offshore oil and water pipelines, a significant portion of the proposed alignment for the pipelines from the shore to the limit of State Waters (approximately 4.3 km) is unavoidably located in areas of seagrass meadow of varying density. Seagrass meadows form important benthic primary producer habitat and are economically important as nursery areas for commercial and recreational fisheries.

The principal impact on seagrass meadow habitat is predicted to occur during the installation of the pipelines (referred to as ‘pipelay’). Two alternative pipelay methods are under consideration by the proponent, which are referred to as ‘barge pipelay’ and ‘bottom-tow’ and are described in Section 5.2.1 of the proponent’s response to submissions document. Loss of seagrass in the most dense seagrass beds near the shoreline will be reduced by the proponent’s commitment to employ Horizontal Directional Drilling (HDD) for installation of the pipelines from east of the beach frontal dune to approximately 600 metres offshore from the beach.

The proponent has provided estimates of the potential extent of impact of the proposal on seagrass habitat using the methodology set out in EPA Guidance Statement No 29. These estimates are shown in Table 1 below and relate to a 45km<sup>2</sup> management area centred on Cliff Head which is 7.5 km long and bounded by the coast and the limit of State Waters as shown in Figure 1 of the proponent’s response to submissions document.

**Table 2: Predicted impacts on seagrass of offshore pipeline installation options**

<b>Pipelay method</b>	<b>Maximum area of ‘high density’ seagrass impacted</b>	<b>% of seagrass habitat within defined management area (45km<sup>2</sup>)</b>	<b>Maximum area of ‘low density’ seagrass impacted</b>	<b>% of seagrass habitat within defined management area (45km<sup>2</sup>)</b>
barge	10.6 hectares	0.4	5.7 hectares	1.0
bottom-tow	1.4 hectares	0.05	0.75 hectares	0.1

## **Public submissions and Government agency advice**

Key issues raised in public submissions on the PER relating to this factor include:

- adequacy of marine surveys for the pipeline corridor;
- significance of the seagrass beds of the Cliff Head area;
- effects of the offshore pipeline installation on seagrass beds; and.
- risks, effects and clean-up of oil spills.

Further information responding to issues raised in submissions was provided in the proponent's response to submissions (Appendix 5) and further advice has also been obtained from key government agencies including CALM and the Department of Fisheries.

### Impacts on marine benthic primary producer habitat (seagrass)

The Department of Fisheries (DoF) has advised that due to the presence of some uncertainty in the proponent's predictions of seagrass loss, and the possibility of potential for seabed destabilisation resulting from seagrass bed damage, there should be a requirement for post impact monitoring of seagrass loss for a few years after pipeline construction with a contingent requirement to stabilise the sea bed if there is evidence of significant seabed instability.

### Introduction and spread of exotic marine organisms

The Department of Fisheries (DoF) has recommended that vessels associated with the proposal that represent a risk of introducing marine pests be required to be inspected at another port, and cleaned as necessary, prior to arrival on site.

The DoF has recommended that a protocol to manage the risk of introductions caused by marine fouling be incorporated in the environmental management plan for the proposal.

## **Assessment**

The area considered for assessment of this factor is the portion of the alignment of the offshore oil and water pipelines located within State Waters.

The EPA's environmental objectives for this factor are:-

- to maintain marine ecological integrity and biodiversity and ensure significant impacts on locally significant marine communities are avoided; and
- to ensure that marine benthic primary producer communities and habitats are protected consistent with the EPA's Guidance Statement 29: *Benthic Primary Producer Habitat Protection for Western Australia's Marine Environment* (EPA, 2004).

### Impacts on marine benthic primary producer habitat (seagrass)

Taking into account the location of the proposal within a 'Category D - non-designated area,' as described in EPA Guidance 29, the predicted area of impact to seagrass meadow from the proposal, as predicted by the proponent and set out in Table 2, is below the 5% maximum cumulative loss thresholds considered acceptable by the EPA.

The footprint-related impacts of the proposal associated with construction and operation are therefore unlikely to compromise the EPA's objectives for the protection of marine biodiversity (incorporating marine benthic habitat) within State waters.

To ensure that the long-term impact of the proposed pipelines on benthic habitat is minimised, the EPA recommends that an environmental condition be applied to the proposal requiring the preparation and implementation of a Seagrass and Seabed Stability Monitoring and Contingency Plan. The preparation of this plan, prior to pipeline installation, would provide for evaluation of impacts on seagrass and bed stability immediately before, after and annually for at least 3 years following construction. In the event of a post-construction reduction in seagrass cover (attributable to the disturbance caused by the proposal) that was significantly greater than the proponents area predictions, the condition would require that the proponent undertake further monitoring and initiate contingency actions to stabilise the seabed and prevent further seagrass loss.

A recommended environmental condition addressing the requirement for a Seagrass and Seabed Stability Monitoring and Contingency plan for the portion of the offshore pipelines within State Waters is included in the recommended environmental conditions in Appendix 4.

### Introduction of Marine Organisms

While Australian Quarantine Inspection Service (AQIS) regulations address prevention of the introduction of marine organisms into Australian ports, there remains a potential risk associated with transfer of organisms from other ports within Australia and Western Australia.

The Department of Fisheries (DoF) has recommended that vessels associated with the proposal that represent a risk of introducing marine pests be required to be inspected and cleaned as necessary prior to arrival on site and departure to another port. The DoF has recommended that a protocol to manage the risk of introductions caused by marine fouling be incorporated in the environmental management plan for the proposal.

A recommended environmental condition addressing the issue of prevention of introduction and spread of exotic marine species during construction of the portion of the Cliff Head proposal located within State Waters. is included in the recommended conditions set out in Appendix 4.

### Offshore Pipeline decommissioning

The proponent has committed to decommissioning the onshore and offshore pipelines at the end of the project life (with the exception of the portion the pipelines that are installed using direct drilling) according to the regulatory requirements at that time, with the current plan being to internally clean relevant sections of both pipelines and then leave them in-situ.

The EPA considers that the decommissioning plans for the offshore pipelines should include as an option, the full removal of all pipeline infrastructure (other than direct drilled sections) if this is considered appropriate by the Department of Environment and Department of Conservation and Land Management at the time of decommissioning.

A recommended environmental condition designed to address decommissioning (including the option of pipeline removal) is included at Attachment 3.

### Oil spill risk and clean-up

While any oil spill emanating from the offshore component of the project would have potential for impacts on marine biota, the main potential sources of any spill (the offshore oil production wells and platform) are located outside State Waters and are therefore managed under Commonwealth legislation. The EPA has not therefore undertaken a detailed evaluation of the risk and management of oil spills emanating from these facilities as part of this assessment as this is the role of relevant authorities under Commonwealth legislation. However, as any oil spill would likely enter State Waters, the EPA has provided advice on the issue of oil spill risk and clean-up in Section 5 of this report entitled 'Other Advice.'

### **Summary**

The EPA considers the issue of marine biodiversity conservation (incorporating impacts on marine benthic primary producer habitat) has been adequately addressed and can meet the EPA's objectives for this factor provided that the EPA's recommended conditions relating to the Seagrass and Seabed Stability Monitoring and Contingency Plan, prevention of introduction and spread of exotic marine species and pipeline decommissioning are applied to the proposal and implemented.

## **4. Conditions and Commitments**

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.

In developing recommended conditions for each project, the EPA's preferred course of action is to have the proponent provide an array of commitments to ameliorate the impacts of the proposal on the environment. The commitments are considered by the EPA as part of its assessment of the proposal and, following discussion with the proponent, the EPA may seek additional commitments.



The EPA recognises that not all of the commitments as they appeared in the PER are written in a form which makes them readily enforceable, but they do provide a clear statement of the action to be taken as part of the proponent's responsibility for, and commitment to, continuous improvement in environmental performance. The commitments, modified if necessary to ensure enforceability, then form part of the conditions to which the proposal should be subject, if it is to be implemented.

#### **4.1 Proponent's commitments**

The proponent's commitments as set in the PER and subsequently modified, as shown in Appendix 4, should be made enforceable.

#### **4.2 Recommended conditions**

Having considered the proponent's commitments and the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Roc Oil to develop the Cliff Head Oil Field is approved for implementation.

These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:

- a) that the proponent shall fulfil the commitments in the Consolidated Commitments statement set out as an attachment to the recommended conditions in Appendix 4;
- b) preparation and implementation of a fire management plan to provide for effective fire management during project construction;
- c) preparation and implementation of an onshore pipeline rehabilitation plan full rehabilitation of disturbed areas in Beekeepers Nature Reserve;
- d) lodgment of a rehabilitation performance bond;
- e) preparation and implementation of a seagrass and seabed stability monitoring and contingency plan to address potential impacts on seagrass; and
- f) procedures for prevention of introduction and spread of introduced marine pests.

### **5. Other Advice**

#### **5.1 Oil spill risk and contingency planning**

Due to the location of the oil production wells, water injection wells and offshore platform component of the Cliff Head Development within Commonwealth waters, the EPA has not undertaken a detailed evaluation of the risk and management of oil spills emanating from these facilities as part of this assessment. However, as any oil spill would likely enter State Waters the EPA sought information and advice from the Department of Industry and Resources (DoIR) on the potential risk and management of oil spills as a matter of interest.

The level of environmental risk associated with oil spills is generally regarded as being a function of the probability of occurrence of a spill (taking into account project location, design and management considerations) and the potential consequences of the maximum spill size that could occur.

As explained in the PER, the proponent has predicted that the combination of the physical and chemical properties (low toxicity, low dispersability) of the Cliff Head oil, prevailing climatic conditions and the sandy shorelines in the area, are such that there would be:

- a relatively low level of spill risk from the facilities (including pipelines);
- a relatively small volume of oil in a spill if one were to occur;
- a low environmental impact from a spill; and
- the possibility of a relatively complete clean-up in that most of the oil would likely wash up on beaches close to the field.

The proponent's predictions of the level of risk of a significant oil spill resulting from the project have been evaluated by the DoIR. The advice of the DoIR is that the likelihood of a spill is equally low for all offshore drilling operations or production, and in the case of the Cliff Head proposal, any consequences of a spill are (as predicted by the proponent) likely to relate to a reduction of abundance of flora and fauna in the affected area rather than significant changes to biodiversity or ecological setting.

The *Petroleum (Submerged Lands) (Management of Environment) Regulations 1999* administered by the DoIR apply to offshore operations in Commonwealth (and State) waters. Regulation 14(8) states that the operator must provide for an up-to-date Emergency Response Plan (including an Oil Spill Contingency Plan) including detailed response arrangements. Roc Oil is expected to provide an OSCP applicable to State and Commonwealth waters, prior to commencement of construction of the Cliff Head project.

In addition to the requirements of the OSCP, the proponent is also compelled by the *Offshore Schedule 1995* for both State and Commonwealth waters to take “*such action as is necessary to minimise the loss of petroleum and the pollution of the area and to protect persons and property...*” in the event of an oil spill (escape) emanating from the project.

The EPA accepts that the OSCP required by the approval under Petroleum legislation and other provisions of relevant State and Commonwealth legislation should be able to prevent and manage environmental impacts of any oil spill (however unlikely). The EPA recommends however, that the required OSCP for the Cliff Head Development contain explicit biophysical criteria for the standard of oil clean-up required as an aid to effective and timely response to any incidents that occur. The criteria could include a specification for the degree to which oil contaminated material such as seagrass wrack deposited on beaches, should be removed as an alternative to prolonged beach closure. The Oil Spill Contingency Plan should also specify locations for interim and longer-term storage of contaminated material from clean-up operations.

The EPA recognises that the Department of Environment has expertise in the provision of advice on oil spill clean up and should be consulted in determining clean-up criteria and the locations for interim and /or longer term storage of contaminated material.

## 6. Conclusions

The EPA has considered the proposal by Roc Oil to develop the Cliff Head Oil Field as described in Section 2, and has evaluated the potential environmental impacts of the portion of the project located on State Lands and within State Waters.

The EPA has concluded that it is unlikely that the EPA's objectives would be compromised by the assessed proposal, provided there is satisfactory implementation, by the proponent, of the commitments and the recommended conditions set out in Appendix 4, and summarised in Section 4.

The EPA also wishes to draw attention to the advice provided in Section 5 of this report in relation to the required Oil Spill Contingency Plan for the project and has provided a copy of this report to relevant State and Commonwealth agencies.

## 7. Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for the development and operation of the facilities related to the Cliff Head Oil Field that are located on State Land and within State Waters;
2. That the Minister considers the report on the relevant environmental factors as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised by the implementation of the proposal, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4, and summarised in Section 4, including the proponent's commitments; and
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report.

# **Appendix 1**

## **References**

## References

Roc Oil (WA) Limited (Roc) (2004a). *Cliff Head Development: Public Environmental Review*. April 2004.

Roc Oil (WA) Limited (Roc) (2004b). *Cliff Head Development: Public Environmental Review and Draft Public Environmental Report – Supplementary Information following Public Review* received August 2004

Environmental Protection Authority (EPA) (2004) *EPA Guidance Statement 29: Benthic Primary Producer Habitat Protection for Western Australia's Marine Environment*. June 2004

## **Appendix 2**

### **List of submitters**

**Organisations:**

Department of Conservation & Land Management

Department of Fisheries

Main Roads Western Australia

Shire of Irwin

**Individuals:**

Dr Graham Edgar

Dr Graham Thompson

## **Appendix 3**

**Summary of identification of relevant environmental factors**



### Summary of identification of relevant environmental factors

Preliminary issues/ Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
<b>BIOPHYSICAL</b>			
Terrestrial flora and vegetation	The proposal involves disturbance to up to approximately 7 hectares of good quality native vegetation within Beekeepers Nature Reserve and 20 hectares of previously disturbed native vegetation on private land at the processing plant site.	<u>CALM</u>  The Department recommends that fire management and rehabilitation plans be required for the portion of this project impacting on Beekeepers Nature Reserve.	<b>Considered to be a relevant environmental factor</b>  <b>This factor is discussed in the EPA’s report as part of the factor entitled ‘terrestrial biodiversity conservation.’</b>
Terrestrial fauna	The proposal may impact on fauna individuals as a result of clearing and disturbance of vegetation for construction of the onshore pipeline and Arrowsmith Treatment Plant.	<u>Public</u>  The EPA should not approve of this development until a field survey is undertaken of the terrestrial vertebrate fauna in the area that adequately reports on the potential impacts that the proposal is likely to have on this biota.  The proponent should determine the scale of impact relative to the habitat scale of affected faunal species and should commit to rehabilitating affected areas to a standard that ensures that the area is returned to a near natural and self sustaining ecosystem.	<b>Considered to be a relevant environmental factor</b>  <b>This factor is discussed in the EPA’s report as part of the factor entitled ‘terrestrial biodiversity conservation.’</b>
Land form and soil stability	The proposal involves disturbance of vegetation in an area of high vulnerability for soil erosion.	<u>CALM</u>  The Department recommends that fire management and pipeline rehabilitation plans be required for the portion of this project impacting on Beekeepers Nature Reserve.	<b>Considered to be a relevant environmental factor</b>  <b>This factor is discussed in the EPA’s report as part of the factor entitled ‘terrestrial biodiversity conservation.’</b>
Conservation areas	The survey area affects a portion of Beekeepers Nature Reserve.	<u>CALM</u>  The Department recommends that fire management and rehabilitation plans be required for the portion of this project impacting on Beekeepers Nature Reserve.	<b>Considered to be a relevant environmental factor</b>  <b>This factor is discussed in the EPA’s report as part of the factor entitled ‘terrestrial biodiversity conservation.’</b>

Preliminary issues/ Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
Marine biodiversity and productivity	<p>The proposed offshore pipelines will result in disturbance to seagrass habitat and is located in an important Rock Lobster fishing ground.</p> <p>Use of vessels from areas outside the region has the potential to lead to translocation of non indigenous marine organisms including marine pests.</p>	<p><u>Department of Fisheries</u> The proponent should monitor impacts on seagrass and seabed stability following pipeline construction and take steps to stabilise the seabed if this is shown to be necessary.</p> <p>The Proponent should ensure that there is a protocol in place to prevent the introduction and spread of marine pests organisms including those associated with vessel hull fouling.</p>	<p><b>Considered to be a relevant environmental factor</b></p> <p><b>This factor is discussed in the EPA's report as part of the factor entitled 'marine biodiversity conservation (incorporating marine benthic communities).'</b></p>
Marine benthic habitat	<p>The installation of facilities such as the offshore pipelines has the potential to impact on the stability of the seabed which in turn may affect benthic primary producer habitat.</p> <p>The ability of seagrass beds to regenerate following severe disturbance is variable and re-establishment technologies for some seagrass species are not fully developed.</p>	<p><u>Department of Fisheries</u> The proponent should monitor impacts on seagrass and seabed stability following pipeline construction and take steps to stabilise the seabed if this is shown to be necessary.</p>	<p><b>Considered to be a relevant environmental factor</b></p> <p><b>This factor is discussed in the EPA's report as part of the factor entitled 'marine biodiversity conservation (incorporating marine benthic communities).'</b></p>
Groundwater quantity and quality	The proposed water bores for water abstraction will access the saline Catamarra formation and will require a groundwater abstraction licence from the DoE under the Rights in Water and Irrigation Act.	No comments	<b>Factor does not require further evaluation</b>

Preliminary issues/ Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
<b>POLLUTION</b>			
Noise	<p>The proposal is not expected to be a significant generator of noise emissions following construction.</p> <p>Noise emissions are required to comply with the Environmental Protection (Noise) Regulations 1997 in that for 'out of hours' construction work the proponent will be required to submit a noise management plan or meet the assigned levels for the area as determined by the Chief Executive Officer of the Department of Environment.</p>	No comments	<b>Factor does not require further evaluation</b>
Air emissions (Oxides of nitrogen and sulphur and Volatile Organic Compounds (VOC's))	<p>The burning of natural gas for power production may lead to some emissions of nitrogen and sulphur oxides and volatile organic compounds (VOC's).</p> <p>The project is expected to lead to the emission of a total of 0.5kg of methane and 3kg of non-methane VOCs per day for the life of the project.</p> <p>The Arrowsmith Separation Plan will require a works approval and licence from the Department of Environment.</p>	No comments	<b>Factor does not require further evaluation</b>
Greenhouse emissions	Over the estimated 15 year life span of the project is estimated that the proposed development will result in the emission of approximately 532000 tonnes of CO <sub>2</sub> equivalents.	No comments	<b>Factor does not require further evaluation</b>

Preliminary issues/ Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
Other emissions	<p>Emissions such as large oil spills could affect fauna such as seabirds and other marine biota.</p> <p>The proponent has predicted a low risk of significant impacts from any spill based on the amount of oil that could be released in a spill, the physical and chemical properties of the oil, prevailing climatic conditions and characteristics of the local environment.</p>	<p><u>Public</u> Spilt oil could form a mousse and mix with accumulated seagrass making it difficult to effectively clean up. The proponent should provide further information on this issue.</p> <p><u>Department of Fisheries</u> The proponent's prediction of a low risk of a large or highly toxic spill or one that impacts on highly sensitive marine systems such as the Abrolhos Islands is noted.</p> <p><u>Main Roads WA</u> More information should be provided on clean up of oil spills along roads, particularly under high temperature summer conditions.</p>	<p><b>Due to the location of the oil production wells, water injection wells and offshore platform component of the Cliff Head Development within Commonwealth waters, the EPA has not undertaken a detailed evaluation of the risk and management of oil spills emanating from these facilities as part of this assessment.</b></p> <p><b>Within the context of the State Environmental assessment process the proponent has responded adequately to these issues in the PER and response to submissions. Therefore this factor does not require further evaluation.</b></p> <p><b>However the EPA has provided advice on the subject of oil spills in Section 5 of this report entitled 'other advice'.</b></p>
<b>SOCIAL SURROUNDINGS</b>			
Indigenous culture and heritage	<p>The proposal affects an area of relatively low previous European disturbance near the coast and there is the possibility of the proposal impacting on previously undisturbed sites of Aboriginal heritage significance.</p> <p>A field survey of the onshore pipeline route and plant site did not identify any sites of Aboriginal heritage significance.</p>	No comments	<p><b>Factor does not require further evaluation</b></p> <p><b>However the proponent is required to comply with the provisions of the Aboriginal Heritage Act (1972).</b></p>
European heritage	The proposal area occurs in a region where a number of significant shipwreck occur however there are no known significant shipwrecks nearby.	No comments	<b>Factor does not require further evaluation</b>
Effect on local industry	The proposal area is located within an important Rock Lobster Fishing Ground. The proponent has consulted extensively with fishing industry representatives.	<p><u>Department of Fisheries</u> It is recommended that Roc consult further with the fishing industry in relation to the movement of project related vessels during construction and safety issues related to the completed offshore platform. The proposed Memorandum of Understanding with the Industry in relation to fishing access is to be encouraged.</p>	<b>Factor does not require further evaluation</b>

# **Appendix 4**

## **Recommended Environmental Conditions and Proponent's Consolidated Commitments**

## RECOMMENDED CONDITIONS AND PROCEDURES

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

#### CLIFF HEAD OIL FIELD DEVELOPMENT SHIRE OF IRWIN

**Proposal:** The construction and operation of offshore and onshore oil and water pipelines and an onshore oil separation plant and the transport of oil to Geraldton and / or Kwinana by road or rail, as documented in schedule 1 of this statement.

**Proponent:** Roc Oil (WA) Pty Limited

**Proponent Address:** Level 14, 1 Market Place SYDNEY NSW 2000

**Assessment Number:** 1506

**Report of the Environmental Protection Authority:** Bulletin 1150

The proposal referred to above may be implemented by the proponent subject to the following conditions and procedures:

#### **1 Implementation**

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement, to the requirements of the Minister for the Environment on the advice of the Environmental Protection Authority.

#### **2 Proponent Commitments**

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

#### **3 Proponent Nomination and Contact Details**

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 as the proponent for the proposal.

- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

#### **4 Commencement and Time Limit of Approval**

- 4-1 The proponent shall substantially commence the proposal within five years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

- 4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- 1.the environmental factors of the proposal have not changed significantly;
- 2.new, significant, environmental issues have not arisen; and
- 3.all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

#### **5 Compliance Audit and Performance Review**

- 5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

- 1.the status of implementation of the proposal as defined in schedule 1 of this statement;
- 2.evidence of compliance with the conditions and commitments; and
- 3.the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to monitor the compliance of the proponent with the statement and should directly receive the

compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

5-2 The proponent shall submit a performance review report every five years after the start of operations, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, which addresses:

1. the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;
2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;
3. significant improvements gained in environmental management, including the use of external peer reviews;
4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
5. the proposed environmental targets over the next five years, including improvements in technology and management processes.

5-3 The proponent may submit a report prepared by an auditor approved by the Department of Environment under the “Compliance Auditor Accreditation Scheme” to the Chief Executive Office of the Department of Environment on each condition/commitment of this statement which requires the preparation of a management plan, programme, strategy or system, stating whether or not the requirements of each condition/commitment have been fulfilled within the timeframe stated within each condition/commitment.

## **6 Seagrass and Seabed Monitoring and Contingency Plan**

6-1 The proponent shall not take any action that would directly result in the significant damage or destruction of more than 11 hectares of seagrass within State Waters during the construction, installation or use of the offshore oil and water pipelines.

6-2 Prior to commencement of construction of the portion of the offshore oil and water pipelines within State Waters, the proponent shall prepare a Seagrass and Seabed Monitoring and Contingency Plan to the requirements of the Minister of the Environment on the advice of the Environmental Protection Authority.

The objectives of this Plan are:

- a) to undertake regular monitoring of seagrass meadows and the seabed for seagrass loss or damage following installation of the offshore pipelines; and
- b) to ensure that the installation of the pipelines does not lead (either directly or indirectly) to a long term decline in the area of seagrass in the vicinity of the pipelines.



This plan shall include:

1. procedures for obtaining and providing to the Department of Environment, no later than 6 months following the completion of pipeline installation, an accurate total area and geographically referenced location map of seagrass lost or damaged during pipeline construction;
  2. details of the methodology of a programme of at least 3 years of annual monitoring of seagrass health and mortality in, and adjacent to, areas of seagrass damaged during pipeline installation, which is to be used as the basis for annually updating the areas and mapped locations referred to in item 1 above;
  3. provision for a 'further monitoring' trigger level of 0.4 hectares of annual post-construction seagrass loss or damage, attributable to the effects of pipeline installation, above which the proponent is required to continue annual seagrass monitoring, subject to item 6 below, beyond the three year period referred to in item 2 above;
  4. provision for a 'contingency action' trigger level of 11 hectares of cumulative seagrass loss or 1 hectare of annual post-construction seagrass loss or damage, attributable to the effects of pipeline installation, above which the proponent is required to:
    - a) continue annual seagrass monitoring; and
    - b) within 6 months, commence contingency actions which ensure that the rate of post-construction seagrass loss or damage in and adjacent to the areas of seagrass lost or damaged by the pipeline/s, is reduced to less than 1 hectare per annum;
  5. procedures for annual reporting on the monitoring programme referred to in item 2 above and the success of actions undertaken in response to exceedance of the trigger level referred to in item 3 above; and
  6. provision for the reduction in frequency or cessation of monitoring after 3 years following construction, or, in the event of the trigger level referred to in item 3 above being exceeded, after the proponent has demonstrated the success of contingency actions in reducing the rate of annual seagrass loss or damage to less than the 'further monitoring' trigger level referred to in item 3 above, for 3 successive years.
- 6.3 The proponent shall ensure that the contingency actions referred to in Condition 6-2 are successful in confining the cumulative total area of seagrass loss resulting from the proposal to less than 16 hectares.

## **7 Introduced Marine Pests**

- 7-1 Prior to the arrival of any vessels and equipment which are to be used for the proposal in the portion of the development area located within State Waters, the proponent shall cause inspections to be carried out by an appropriately qualified marine scientist to ensure that any sediment or fouling organisms on or within the vessels and equipment associated with the proposal do not present a risk to the marine ecosystem integrity of

the development area, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7-2 Prior to the commencement of pipeline construction and installation, the proponent shall report to the Department of Environmental Protection on the results of the inspection referred to in condition 7-1, for vessels and equipment to be used for construction and installation, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7-3 The proponent shall manage any sediment or fouling organisms found as a consequence of inspections required by condition 7-1, to the timing and other requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: In the preparation of the report required by condition 7-2, and in the development of any actions required by condition 7-3, the Environmental Protection Authority expects that advice of the following agencies will be obtained:

- Department of Fisheries; and
- Australian Quarantine Inspection Service.

## **8 Onshore Pipeline Rehabilitation Plan**

8-1 Prior to ground-disturbing activities, the proponent shall develop an Onshore Pipeline Rehabilitation Plan, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Conservation and Land Management.

The long term objective of this plan is to ensure that disturbed areas of vegetation do not become permanent areas for vehicle access, and that vegetation disturbed during pipeline installation, operation and decommissioning is returned to a condition similar to adjacent areas undisturbed by the proposal.

This plan shall relate to all areas of native vegetation disturbed during pipeline construction and operation such as pipeline easements, staging areas, turning areas and encampments and shall incorporate.

(1) an Access Control Plan which includes:

- methods of controlling or closing access to pipeline easements during project operation;
- performance criteria (including completion criteria) for the effectiveness of access control / closure; and
- contingency actions to be carried out in the event that the defined performance criteria are not being met.

(2) a Vegetation Management Plan which includes:

- delineation of areas of vegetation proposed to be disturbed;
- a baseline vegetation study identifying the appropriate techniques for regeneration or revegetation of the vegetation types affected by the survey;
- development of specific rehabilitation performance criteria, including completion criteria for the restoration of affected areas to a condition equivalent

to or better than the condition of adjacent areas of vegetation undisturbed by the proposal;

- proposed methods for rehabilitation of disturbed areas;
- details of weed management to be undertaken as part of rehabilitation ;
- a monitoring program to determine rehabilitation success; and
- contingency actions to be carried out in the event that the defined performance criteria are not being met.

(3) a Soil Conservation Management Plan which includes:

- delineation of areas disturbed with steep slopes and/or erosive soils;
- operational methods of minimisation and remediation of soil erosion in the identified disturbed areas during and following pipeline installation;
- performance criteria (including completion criteria) for the effectiveness of the proposed methods of minimisation and remediation; and
- contingency actions to be carried out in the event that the defined performance criteria are not being met.

8-2 The proponent shall implement the Onshore Pipeline Rehabilitation Plan required by condition 8-1 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's rehabilitation responsibilities have been fulfilled.

8-3 The proponent shall make the Onshore Pipeline Rehabilitation Plan required by condition 8-1 publicly available, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: In the preparation of advice to the Minister on the implementation of conditions 8-1 and 8-2, the Environmental Protection Authority expects that advice of the following agencies will be obtained:

- Department of Conservation and Land Management.

## **9 Rehabilitation Performance Bond**

9-1 As security for the due and punctual observance and performance by the proponent of the requirements of condition 8-2 to be observed, conformed and complied with, the proponent shall lodge with the Chief Executive Officer of the Department of Environment on demand prior to ground-disturbing activity, an irrevocable Performance Bond as nominated and approved by the Chief Executive Officer in his sole unfettered discretion to a cash value and in a form acceptable to the Chief Executive Officer ("the Security") which Security at the date hereof being \$50 000.

9-2 The Chief Executive Officer may review the Security required by condition 9-1 at any time or times and if, on such review, the Chief Executive Officer considers that a security has ceased to be acceptable to the Chief Executive Officer, then the Chief Executive Officer may, with the approval of the Minister for the Environment, require the proponent to furnish replacement or additional security for performance by the proponent of its obligations under condition 7-2.

- 9-3 The proponent shall within 14 days after written request by the Chief Executive Officer furnish replacement or additional security in such sum as the Chief Executive Officer shall nominate, in a form and upon terms and conditions approved by the Chief Executive Officer, which approval shall not be unreasonably withheld. On receipt of approved replacement security the Chief Executive Officer shall release and discharge the original security.

Note: In the preparation of advice to the Chief Executive Officer in relation to conditions 9-1, 9-2 and 9-3, the Environmental Protection Authority expects that the advice of the following agencies will be obtained:

- Department of Conservation and Land Management;
- Department of Industry and Resources; and
- Department of Environment.

## **10. Fire Management Plan**

- 10-1 Prior to the commencement of ground-disturbing activity, the proponent shall prepare a Fire Management Plan for the onshore component of the proposal to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This Plan shall include:

- 1 bush fire prevention, detection and reporting measures and procedures during the construction of the onshore processing plant and oil and water pipelines;
- 2 fire brigade and the proponent's fires suppression equipment and preparedness measures; and
- 3 training of appropriate personnel for suppressing bush fires originating from construction of the project.

- 10-2 The proponent shall implement the Fire Management Plan, required by condition 10-1, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

- 10-3 The proponent shall make the Fire Management Plan, required by condition 10-1 publicly available to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: In the preparation of advice to the Minister, the Environmental Protection Authority expects that the advice of the following agencies will be obtained:

- Department of Conservation and Land Management; and
- Fire and Emergency Services Authority.

## **11 Decommissioning Plans**

- 11-1 Prior to the commencement of construction, the proponent shall prepare a Preliminary Decommissioning Plan, which provides the framework to ensure that the sites of the onshore processing plant and onshore and offshore oil and water pipelines are left in an

environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Preliminary Decommissioning Plan shall address:

- 1 the rationale for the siting and design of the plant and infrastructure as relevant to environmental protection, and conceptual plans for the removal or, if appropriate, retention of plant and infrastructure (including, where practicable, onshore and offshore pipelines) according to the requirements of the Department of Conservation and Land Management and the Department of Environment.
  - 3 a conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with relevant decision-makers;
  - 4 a conceptual plan for a care and maintenance phase; and
  - 5 management of noxious materials to avoid the creation of contaminated areas.
- 11-2 Within 12 months following any four-year period of non-use of the processing plant or pipelines, or at such time agreed by prior arrangement with the Environmental Protection Authority, the proponent shall prepare a Final Decommissioning Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Final Decommissioning Plan shall address:

- 1 removal or, if appropriate, retention of plant and infrastructure (including where practicable, onshore and offshore pipelines) as considered appropriate according to the requirements of the Department of Conservation and Land Management and the Department of Environment.
  - 2 long-term management of ground-water systems affected by the processing plant and related groundwater abstraction;
  - 4 in relation to facilities within Beekeepers Nature Reserve, rehabilitation of all disturbed areas to a standard acceptable to the Department of Conservation and Land Management;
  - 5 in relation to facilities located on freehold private land, rehabilitation of all disturbed areas to a standard suitable for the prevailing land use zoning at that time, or for an alternative land use agreed with the Shire of Irwin; and
  - 4 identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.
- 11-3 The proponent shall implement the Final Decommissioning Plan required by condition 11-2 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's decommissioning responsibilities have been fulfilled.

11-4 The proponent shall make the Final Decommissioning Plan required by condition 11-2 publicly available, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

### **Procedures**

- 1 Where a condition states “to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority”, the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.
- 2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.
- 3 Where a condition lists advisory bodies, it is expected that the proponent will obtain the advice of those listed as part of its compliance reporting to the Department of Environment.

### **Notes**

- 1 The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.
- 2 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 1986*.
- 3 Within this statement, to “have in place” means to “prepare, implement and maintain for the duration of the proposal”.
- 4 Compliance and performance reporting will endeavour to be in accord with the timing requirements of reporting under the *Petroleum Act 1967* and the *Petroleum (Submerged Lands) Act 1995*.

## **Schedule 1**

### **The Proposal (Assessment No. 1506)**

The proposal is the portion of the Cliff Head Oil Field Development (as described in the Public Environmental Review document of April 2004) located on State Lands and within State Waters, as shown in Figure 1.

The main activities to be conducted include construction and operation of:

- The Arrowsmith onshore oil processing (separation) plant and associated road and rail transport of oil product from the plant to Geraldton and/or Kwinana;
- the onshore oil and water pipelines from the low tide level of the Indian Ocean to the Arrowsmith Processing Plant;
- the portion of the offshore oil and water pipelines between the limit of State Waters and the low tide level of the Indian Ocean.

The key characteristics of the proposal are listed in Table 1.

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

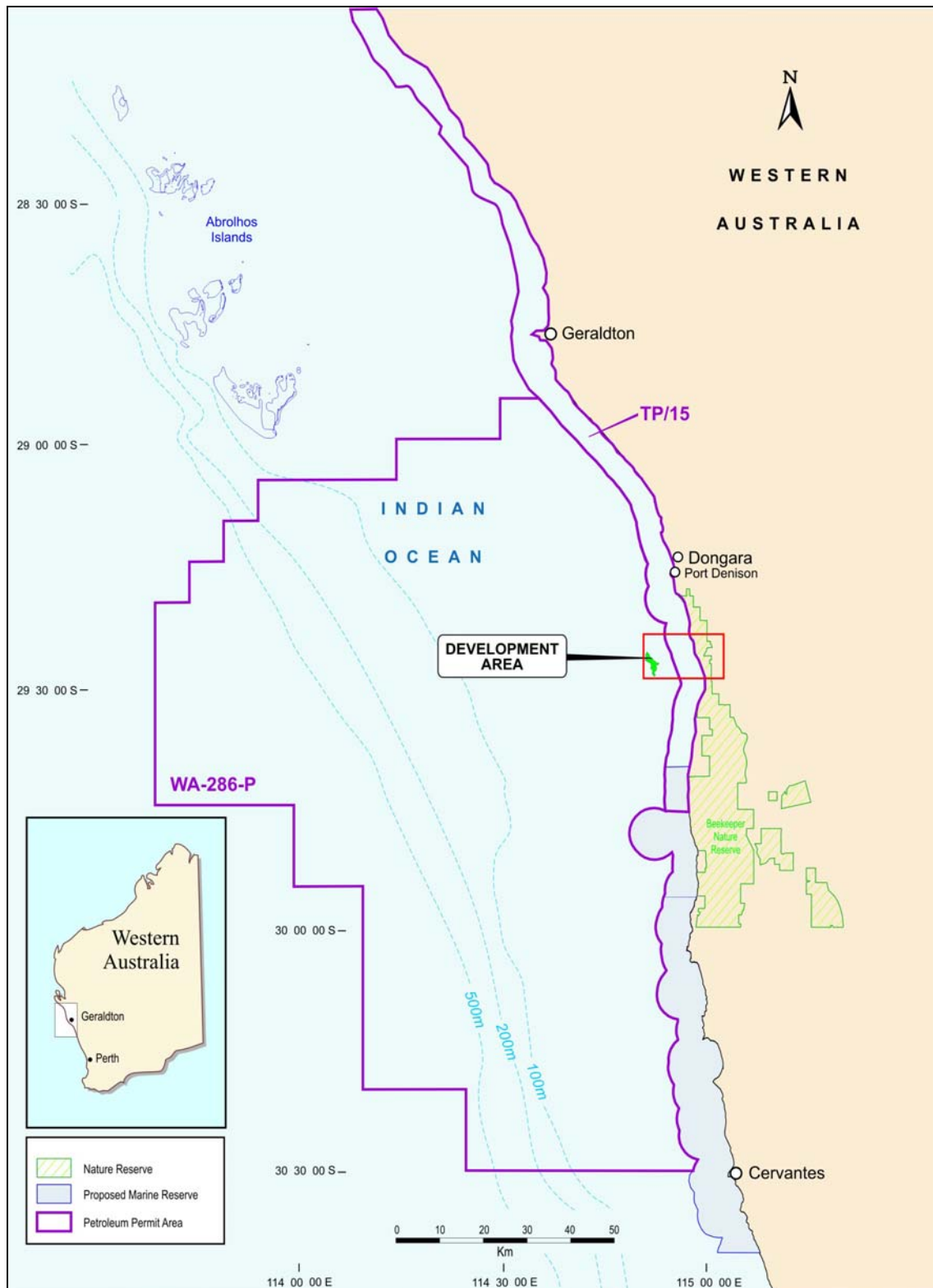
Element	Quantities/Description
<p><u>Oil and Water Pipelines</u></p> <p>Diameter</p> <p>Length</p> <p>Description</p> <p>Disturbance footprint</p>	<p>Up to 500 millimetres</p> <ul style="list-style-type: none"> <li>• The offshore sections of the pipelines within State Waters are approximately 4 kilometres long as shown in figure 2</li> <li>• The onshore sections, are approximately 4kilometres long as shown in figure 2</li> </ul> <p>The pipelines will be thermally insulated and the offshore sections will be weight clad and stabilised with rock bolts to the sea floor.</p> <p>Maximum pipeline disturbance corridor width of 50 metres</p> <p>Maximum area of vegetation disturbance for onshore pipelines of 7 hectares</p> <p>Maximum area of seagrass disturbance within State waters of 10.6 hectares</p>
<p><u>Arrowsmith Processing Plant</u></p> <p>Area of vegetation disturbed (excluding pipelines)</p>	<p>Plant to be located on private freehold land within Lot 11 Brand Highway as shown in figure 2.</p> <p>30 hectares maximum clearing for plant .</p> <p>100 hectares vegetation management area (for reduced fire risk)</p>
<p>Groundwater abstraction</p>	<p>Two onshore wells within Lot 11 to yield a total of up to approximately 6500 M<sup>3</sup> of water per day (2Gigalitres per annum) from the Cattamarra Formation</p>
<p>Maximum pipeline flow rates</p>	<p>8000 cubic metres per day (oil production &amp; water injection) approximately</p>
<p>Maximum Processing (Separation) Plant output</p>	<p>4000 cubic metres per day approximately</p>
<p>Maximum Storage Capacity</p>	<p>6360 cubic metres approximately</p>
<p>Operating Times</p>	<p>The processing facility will operate 24 hours per day, seven days a week for up to 15 years</p>

**Figures (attached)**

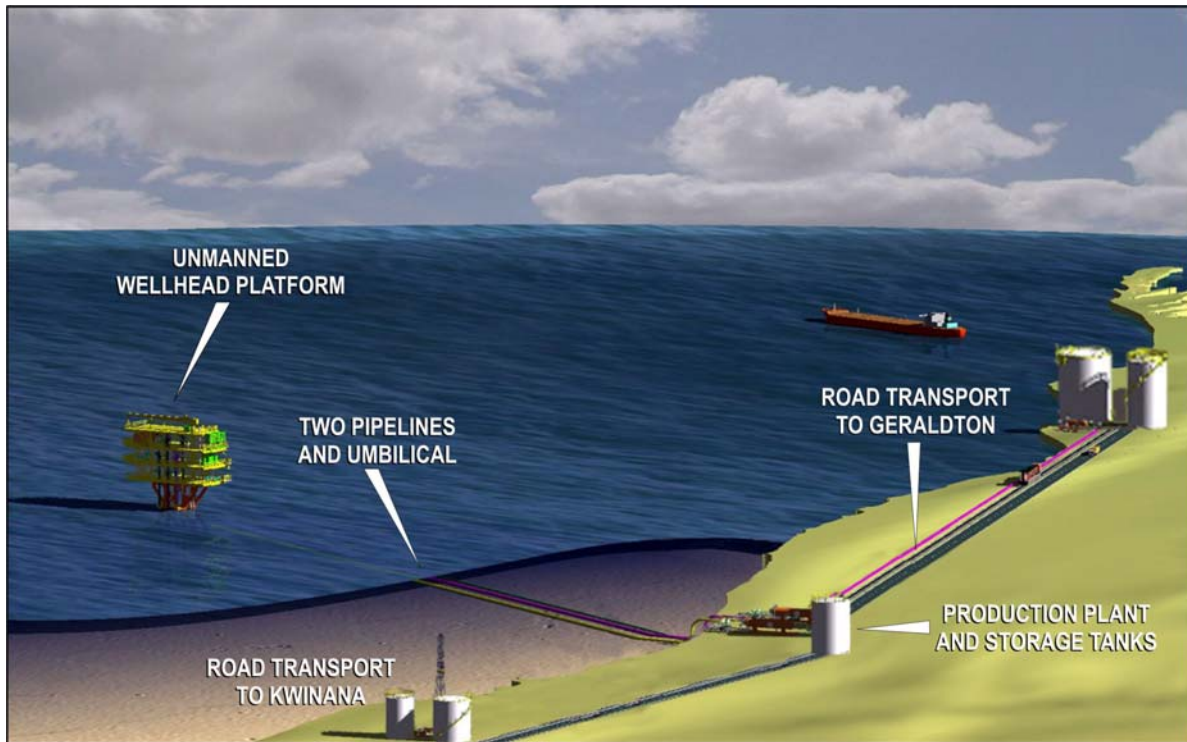
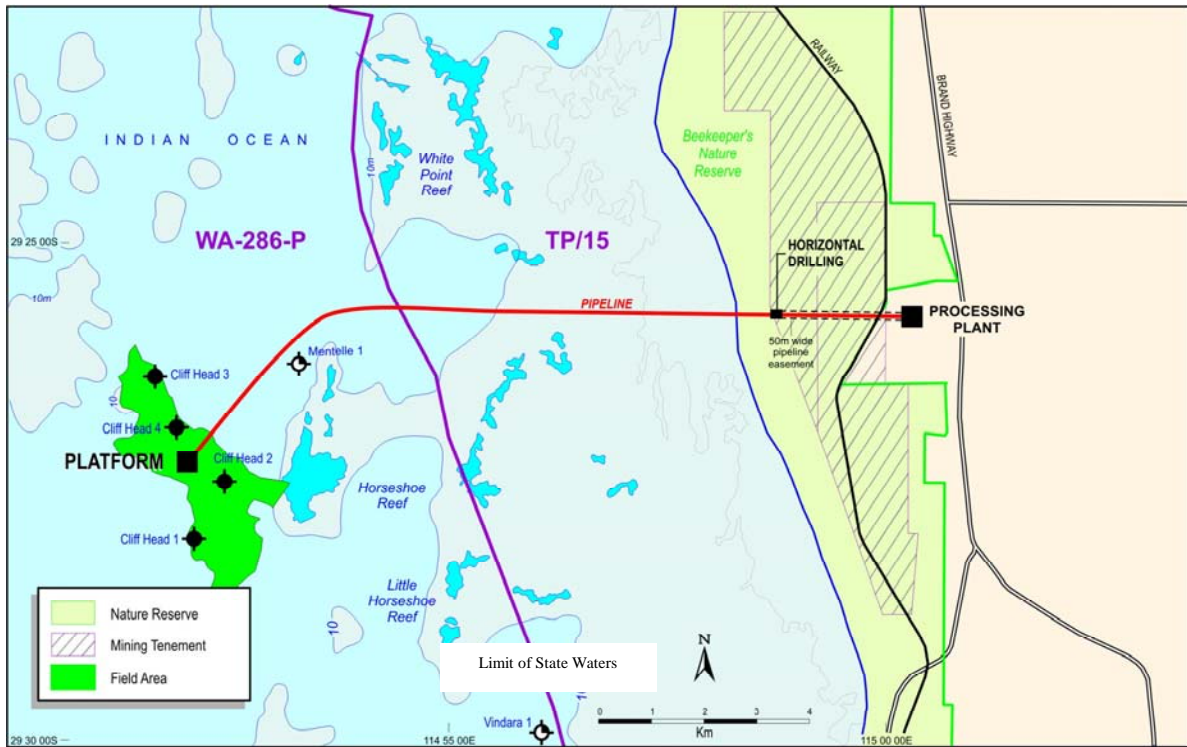
Figure 1 – Proposal location

Figure 2 – Proposal elements





**Figure 1: Location of the Cliff Head proposal**



*Note The proposal covered by this statement is limited to the components of the Cliff Head project located on State Lands and within State Waters*

**Figure 2: Elements of the proposal**

**Proponent's Environmental Management Commitments**

October 2004

**Cliff Head Oil Field Development**

(Assessment No. 1506)

**Roc Oil (WA) Pty Ltd**

## Proponent's Environmental Management Commitments – 13 October 2004

### CLIFF HEAD OIL FIELD DEVELOPMENT (Assessment No. 1506)

**Note:** The term "commitment" as used in this schedule includes the entire row of the table and its six separate parts as follows:

- a commitment number;
- a commitment topic;
- the objective of the commitment;
- the 'action' to be undertaken by the proponent;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment.

No	Topic	Objectives	Action	Timing	Advice
1.	Environmental management Plans (Preparation)	Ensure appropriate procedures are in place to manage environmental issues effectively and maintain continuous improvement in environmental performance	Prepare environmental management plans for the construction and operation phases of the proposal.	Prior to commencement of construction	DoIR, CALM, Dept of Fisheries, Irwin Shire, Dongara Professional Fishermen's Association.
2	Environmental management Plans (Implementation)		Implement the approved EMPs	During construction and operation	DoE, DoIR, CALM, Dept of Fisheries, Irwin Shire
3.	Contractor management	Ensure contractors are experienced in environmental management and suitable for the work	Ensure that all primary contractors undergo an operational audit or audit review which includes examination of environmental management procedures.	Prior to appointment of contractors.	

No	Topic	Objectives	Action	Timing	Advice
4	Personnel training and coordination	Ensure personnel are familiar with the environmental systems and issues	Ensure that all personnel going to site undergo an environmental induction.	At all times.	
5	Marine flora and fauna.	Manage impact to marine habitat and marine flora and fauna	Consult with CALM and the Department of Fisheries during the final alignment of the offshore pipelines to assist in selecting the pipeline route that minimises disturbance to sensitive marine habitats.	Prior to commencement of offshore pipeline construction	CALM, Dept of Fisheries
6	Marine flora and fauna.	Manage impact to marine flora and fauna .	Ensure that the Horizontal Directional Drilling (HDD) exit point extends the maximum possible distance (and at least 500 metres) from the shoreline in order to minimise impacts on sea grass in waters shallower than 6 metres.	During detailed planning of HDD installation.	CALM, Dept of Fisheries.
7	Marine flora and fauna	Manage impact to sensitive marine habitats.	Incorporate a protocol to minimise damage by anchors during pipeline installation within the construction EMP.	Prior to commencement of offshore construction.	DoIR, AMSA, Dept of Fisheries, CALM.
9	Accidental discharges	Ensure appropriate spill response procedures are in place	Prepare an Oil Spill Contingency Plan (OSCP) for the offshore component of the project within State waters	Prior to commencement of offshore construction.	DoIR, AMSA, DEH, Dept of Fisheries, CALM.
10	Accidental discharges	Ensure appropriate spill response procedures are in place.	Ensure that plans for oil spill response arrangements covering onshore facilities and road transport operations are maintained for the duration of operations.	Prior to commissioning.	DoIR, AMSA, Dept of Fisheries, Main Roads WA.

No	Topic	Objectives	Action	Timing	Advice
11	Landform	Maintain integrity of frontal dune and beach system by ensuring no impact to dune of beach from Horizontal Directional Drilling (HDD) installation of pipelines.	Use Horizontal directional drilling (HDD) to install the pipelines under the frontal dune and beach.	During construction of the onshore and offshore pipelines .	CALM, DoIR.
12	Rehabilitation of onshore pipeline disturbance corridor		<p>Incorporate within the EMP/s for the proposal, objectives and procedures for the rehabilitation of disturbance in the pipeline easement corridor across Beekeepers Reserve including those to be employed for the operations of :</p> <ul style="list-style-type: none"> <li>• vegetation clearing,</li> <li>• soil handling, and backfilling</li> <li>• agronomic practices, surface stabilising procedures</li> <li>• replanting and genotype management</li> <li>• weed control</li> <li>• rehabilitation procedures</li> </ul> <p>Ensure that the EMP/s specify the timing of planned works, rehabilitation completion criteria, monitoring and managing of rehabilitation and the communication of the plan.</p>	During the construction and operation phases of the proposal	CALM
13	Public access	Prevent the pipeline easement becoming a public access across Beekeepers Reserve.	Ensure that any tracks or vehicle paths remaining along the easement following pipeline easement rehabilitation are effectively closed or left in a condition acceptable to CALM.	Following construction and during rehabilitation.	CALM

No	Topic	Objectives	Action	Timing	Advice
14	Protection of fauna	Minimise impacts to fauna resulting from 'captures' in open pipeline trenches and vehicle collisions with fauna.	<ol style="list-style-type: none"> <li>1. Employ a qualified person to monitor pipeline trenches for entrapped fauna at least twice daily during construction</li> <li>2. Include fauna awareness training in induction procedures for personnel (see commitments 5 &amp; 7)</li> </ol>	During onshore construction.	CALM
15	Weeds and pathogens	Prevent introduction and spread of weeds and pathogens in Beekeepers Reserve	Incorporate a weed and pathogen hygiene plan in the construction phase EMP	Prior to commencement of onshore construction	DoE, CALM.
16	Environmental Offset	Provide an environmental offset for the residual impacts of the pipeline easement through Beekeepers Nature Reserve	Deposit \$25 000 into a trust account specified by CALM	Prior to commencement of onshore construction	CALM
17	Air quality	Reduce greenhouse gas emissions and minimise production of incomplete combustion products.	Regularly maintain transport vehicles and power generation equipment to ensure they run efficiently.	At all times.	.

No	Topic	Objectives	Action	Timing	Advice
18	Transport	Minimise potential for transport accidents and oil spillages.	<p>Put in place internal and / or contractual procedures to minimise the potential for transport accidents and oil spillages.</p> <ul style="list-style-type: none"> <li>• Truck access to Brand Highway at Arrowsmith to meet Guideline standards.</li> <li>• Trucks to be marked with the appropriate hazard coding.</li> <li>• Operational procedures to incorporate prevention of oil spills and response to possible spills from trucking operations.</li> </ul>	At all times.	DoE, Main Roads WA, Shire of Irwin and other relevant Shires.
19.	Socio-economic	Minimise impact to lobster fishing industry	Design the offshore pipelines and offshore platform so as to allow for lobster fishing activities to take place unaffected throughout the area traversed by the pipelines and to permit fishing up to the platform except when construction or maintenance operations are active.	During final design.	Dept of Fisheries, Dongara Professional Fishermen's Association
20	Socio-economic	Minimise impact on rock lobster industry.	Establish an agreement with the Dongara professional Fishermen's Association allowing fishing up to the platform and over the pipelines except during periods of specific maintenance.	Prior to commissioning.	Dongara Professional Fishermen's Association, Western Rock Lobster Council. Dept of Fisheries.  DoIR



# **Appendix 5**

## **Proponent's Response to Submissions (see attached compact disk)**

Paper copies of the response to submissions document are available from the EPA Service Unit on request.