Proposed Sandy Point Seismic Survey Cape Range National Park Western Australia

Ampol Exploration Limited

Report and Recommendations
of the
Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 383 April 1989

PROPOSED SANDY POINT SEISMIC SURVEY

CAPE RANGE NATIONAL PARK, WESTERN AUSTRALIA

AMPOL EXPLORATION LIMITED

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i. SUMMARY AND RECOMMENDATIONS

Ampol Exploration Limited proposes to conduct a seismic survey which overlaps the south-eastern corner of Cape Range National Park.

The proposal involves 12.9 km of seismic survey in the Park, using the vibroseis technique. This would require some ground disturbance, primarily by walking a bulldozer along the survey lines with its blade raised, in order to press the vegetation down, rather than clearing it. Three 50 m drill holes would also be required but no drilling mud or additives would be used.

The Environmental Protection Authority determined that the proposal required formal assessment under Part IV of the Environmental Protection Act, 1986, because it was proposed in a National Park in a sensitive environment. A Notice of Intent was assessed, and specific advice sought from the National Parks and Nature Conservation Authority, the Department of Conservation and Land Management and other environmental experts and interests. Ampol made modifications to their original proposal as a result of this advice and amended their commitments for this proposal.

The Environmental Protection Authority recognises the importance and sensitivity of Cape Range National park, the presence of poorly known flora and the location of the project in the dissected headwaters of Yardie Creek. The Authority has determined that the environmental impacts of the seismic survey would be small provided that it was undertaken in an environmentally sensitive manner. The proponent has made commitments which will assist to make the project environmentally sensitive.

The Environmental Protection Authority has concluded therefore that the proposed Sandy Point Seismic Survey is environmentally acceptable subject to the proponents original and amended commitments and the following recommendations.

RECOMMENDATION 1

The Environmental Protection Authority concludes that the proposal is environmentally acceptable subject to the operations being carried out in accordance with the commitments in the Notice of Intent (Appendix 1), the amended commitments (Appendix 2), and the Environmental Protection Authority's Recommendations in this Assessment Report.

RECOMMENDATION 2

The Environmental Protection Authority recommends that the bulldozer be walked over the vegetation with the blade up wherever possible and that vegetation be trimmed with minimal disturbance to the topsoil and root stock.

RECOMMENDATION 3

The Environmental Protection Authority recommends that the proponent contract a qualified botanist to locate rare or restricted vegetation and other sensitive areas to be avoided and that the botanist's recommendations be adhered to. All such sensitive locations are to be undershot if seismic data is required. Further, the proponent's representative should contact the Department of Conservation and Land Management's District Manager to arrange

a suitable field inspection at least one week prior to commencing work. Either the botanist or a CALM officer should be present at start up to confirm standards and the seismic crew strictly supervised.

RECOMMENDATION 4

The Environmental Protection Authority recommends that lines intersecting the Sandy Point track be "doglegged" adjacent to the track with no blading of the "dogleg".

RECOMMENDATION 5

The Environmental Protection Authority recommends that the proponent arranges a site inspection with the Department of Conservation and Land Management's District Manager after seismic recording and further recommends that any restoration requirements be agreed at that time and before the seismic crew leaves the area.

RECOMMENDATION 6

The Environmental Protection Authority recommends that, should any restoration work be required, it be completed to a standard and timetable satisfactory to the Department of Conservation and Land Management.

1. INTRODUCTION

Ampol Exploration Limited propose to conduct a seismic survey in the Sandy Point area. Some 12.9 kilometres of the survey extend into the south-eastern corner of Cape Range National Park (Figures 1 and 2). The rest of the survey is on Exmouth Gulf Station to the east and the Commonwealth controlled Location 97 to the south.

Cape Range is a fully gazetted national park vested in the National Parks and Nature Conservation Authority (NPNCA) and managed by the Department of Conservation and Land Management (CALM). The general management objectives for the Park include;

- protection and conservation of native plants and animals and their habitats;
- protection and conservation of physical, cultural and scenic resources; and
- regulation of uses, consistent with the maintenance and protection of natural resource values and the minimisation of conflict between uses.

Specific objectives relevant to this proposal include;

- conservation and protection of groundwater resources;
- control of feral animals and noxious weeds; and
- restoration of natural conditions which have been altered (CALM, 1986).

Because of the important National Park status of the area, the Environmental Protection Authority (EPA) decided that the proposal required formal assessment under Part IV of the Environmental Protection Act, 1986. A Notice of Intent was requested and duly received from Ampol.

Between original notification of the project and submission of the NOI Ampol carried out further field scouting. Following this scouting, line A89-16 was moved east to avoid a steep sided creek and sand dunes to the west. A list of commitments was submitted with the NOI (Appendix 1).

Comment on the Notice of Intent (NOI), was sought from the NPNCA, CALM, the Australian Conservation Foundation and the Conservation Council of Western Australia.

These comments were taken into account during the Environmental Protection Authority's assessment of the proposal. As a consequence of these comments Ampol deviated line A89-29 and made further commitments (Appendix 2).

2. PROJECT DESCRIPTION

The proposal follows up seismic work carried out by Ampol in the area in 1988. The current proposal includes 12.9 km of seismic line within the Park.

The vibroseis technique would be used to acquire the seismic data. Three specialised trucks with very wide, low ground pressure tyres move along in sequence and lower a metal pad onto the ground through which the seismic

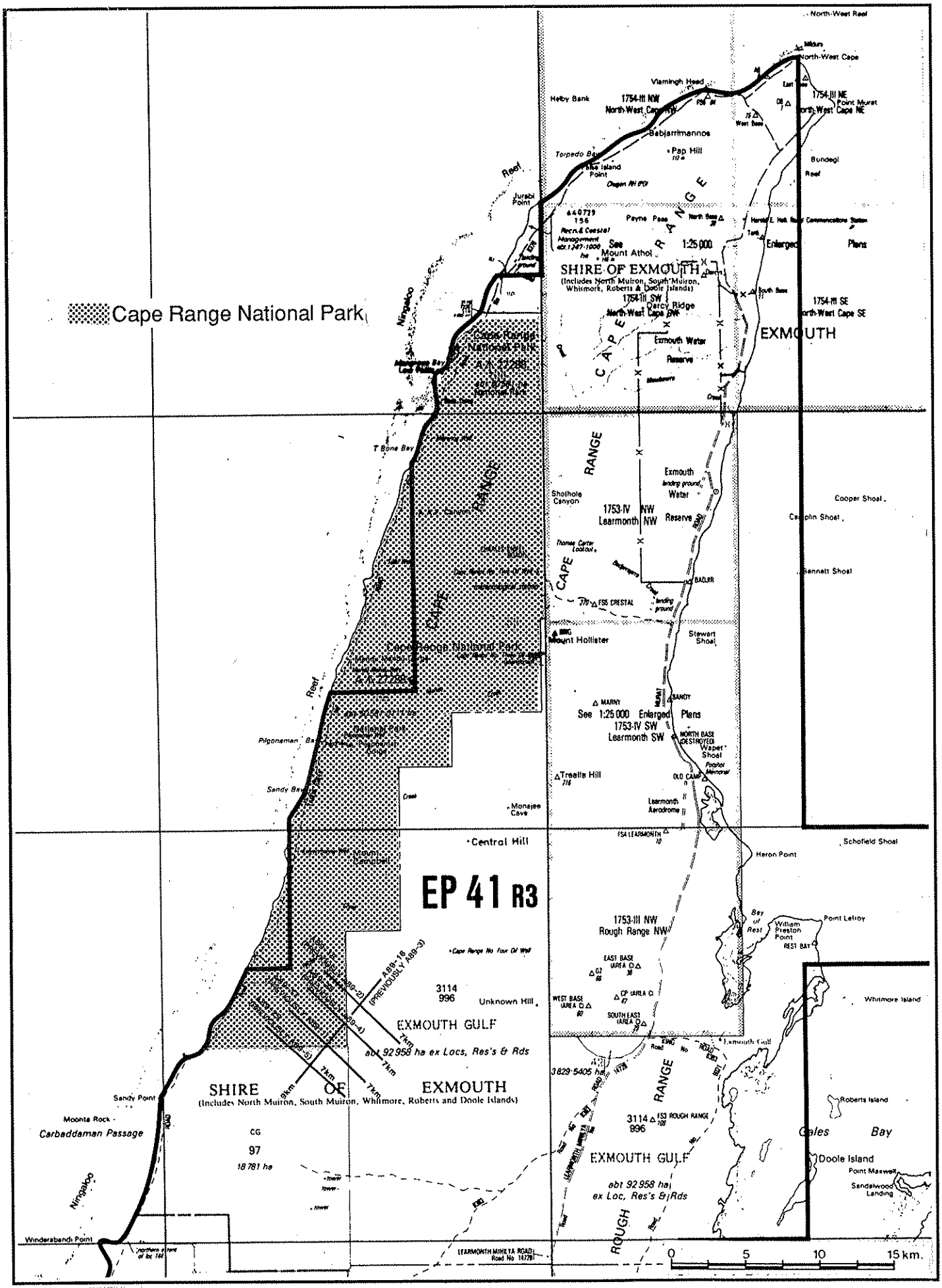

Figure 1. Locality Map.

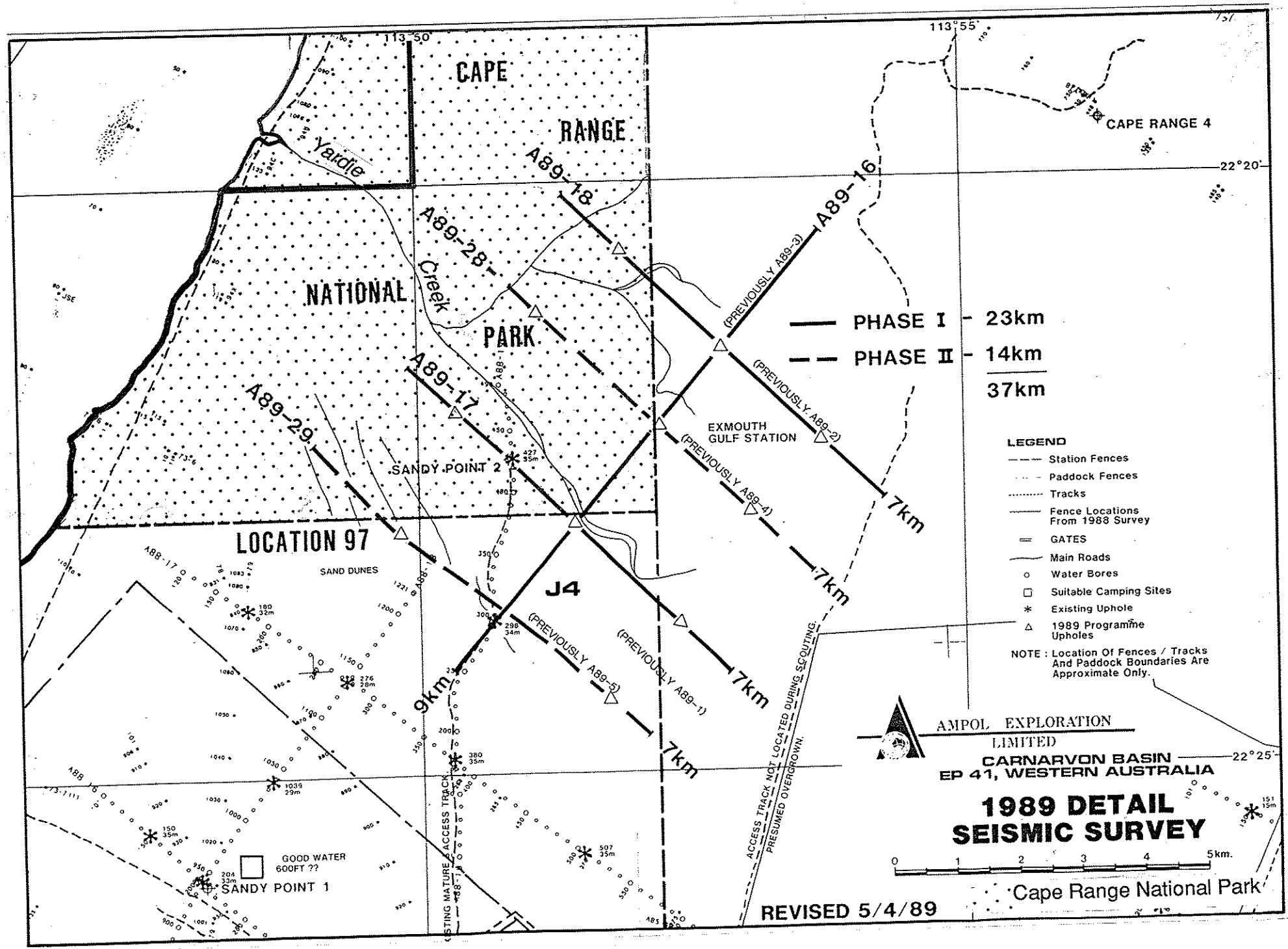

Figure 2. Seismic Lines.

sweep, or vibration, is transmitted into the ground. Reflections from subsurface rock boundaries are detected by geophones placed on the ground and recorded on magnetic tape.

In uncleared areas, an access route is established so that the geophones and cables can be laid on the ground and to allow the vibrator trucks and support vehicles to move through the area.

In sensitive locations it is possible to "undershoot" the seismic sweep. This is done with the buggies off to one side of the sensitive location, to avoid traversing these sites.

The terrain in the majority of the project area is described as undulating rock covered by fairly dense vegetation.

It is proposed to establish the access route by walking a bulldozer, with its blade raised wherever possible, over the vegetation. This is designed to flatten the vegetation with minimal disturbance of the topsoil and root stock. Small dry creeks would be crossed by detouring to points without steep edges, so that no bulldozer blade work would be required.

Three drill holes to approximately 50 metres depth are proposed within the Park. These holes are used to lower geophones into the ground so that seismic measurements, necessary for correct processing of the vibroseis data, can be obtained. The holes would be drilled using air and fresh water only. No drilling muds or additives would be used, thereby protecting any groundwaters.

3. EXISTING ENVIRONMENT

The Cape Range National Park has been established to protect and conserve native plants and animals and their habitats as well as physical, cultural and scenic resources.

The proposed project area is largely limestone country with shallow soils dissected by usually dry gullies forming the headwaters of Yardie Creek. Access is poor and the area is likely to receive very few visitors. There are some sand dunes in the extreme south-west. According to Beard (1975) the vegetation is largely open spinifex, with Acacia shrubs occurring rarely. Previous reports (M. Trudgeon, unpublished) indicate that the area is of considerable biological importance, representing the overlap between the South-west and Eremaean botanical provinces. The undulating limestone country is the most significant area, representing an outlier of the south-west vegetation which may not be well represented elsewhere in the Park. A number of significant or poorly known plant species are likely to exist in the area (CALM, unpublished).

The proponent's report no known Aboriginal sites of significance.

4. ENVIRONMENTAL IMPACTS AND MANAGEMENT

Following field inspections after Ampol's 1988 operations CALM staff noted that:

. walking the bulldozer only (no blade work) on limestone/caprock resulted in minimal disturbance. Vegetation recovery should be quite acceptable over time;

- dunes crossed at their lowest point, without dozing, resulted in significant reductions in visual impact and potential erosion; and

- dunes, subject to seismic work in 1963, revegetated adequately if crossed at right angles.

The methods proposed by Ampol Exploration Limited for this project (Appendix 1) would generally be expected to limit the ground disturbance and landscape disruption to acceptably low levels which should recover satisfactorily.

The use of the line clearance bulldozer will require particular care with adequate supervision being of the utmost importance.

RECOMMENDATION 2

The Environmental Protection Authority recommends that the bulldozer be walked over the vegetation with the blade up wherever possible and that vegetation be trimmed with minimal disturbance to the topsoil and root stock.

Creek crossings and significant landscape elements (such as breakaways or cliffs) are also important. The proponent has undertaken to detour at creek crossings, to avoid steep creek banks requiring blade work, and to detour around trees and significant landscape elements.

Suitable control of the operations can be achieved by adequate consultation and supervision. The proponent has undertaken to contract a consultant botanist to locate and mark rare and restricted vegetation, which will be avoided, and to engage a consultant to liaise with land management authorities and supervise the environmental performance of the field crew.

RECOMMENDATION 3

The Environmental Protection Authority recommends that the proponent contract a qualified botanist to locate rare or restricted vegetation and other sensitive areas to be avoided and that the botanist's recommendations be adhered to. All such sensitive locations are to be undershot if seismic data is required. Further, the proponent's representative should contact the Department of Conservation and Land Management's District Manager to arrange a suitable field inspection at least one week prior to commencing work. Either the botanist or a CALM officer should be present at start up to confirm standards and the seismic crew strictly supervised.

The proponent's undertakings should result in minimal disturbance. The commitments not to cross sand dunes or use drilling fluids other than air or fresh water are noted. It is also important to discourage future park uses from turning the seismic lines into permanent access tracks.

RECOMMENDATION 4

The Environmental Protection Authority recommends that lines intersecting the Sandy Point track be "doglegged" adjacent to the track with no blading of the "dogleg".

The proponent has also undertaken to carry out required restoration.

RECOMMENDATION 5

The Environmental Protection Authority recommends that the proponent arranges a site inspection with the Department of Conservation and Land Management's District Manager after seismic recording and further recommends that any restoration requirements be agreed at that time and before the seismic crew leaves the area.

If restoration is required it will be important to complete the work to a suitable standard prior to significant following rains.

RECOMMENDATION 6

The Environmental Protection Authority recommends that, should any restoration work be required, it be completed to a standard and timetable satisfactory to the Department of Conservation and Land Management.

The proponent has made further commitments to undertake actions for weed and feral animal control and to minimise erosion and scenic disruption (Appendices 1 and 2).

Together with the commitments mentioned previously and the Recommendations above, this project should be controlled sufficiently to be consistent with the objectives of CALM's Management Plan for the area.

5. CONCLUSIONS

The Environmental Protection Authority has assessed the proposed Sandy Point Seismic Survey. The Authority notes the importance and sensitivity of Cape Range National Park, the presence of poorly known flora and the location of the project in the dissected headwaters of Yardie Creek.

The Authority concludes that a seismic survey could be undertaken in an environmentally sensitive manner and that the environmental impacts from the survey are acceptable.

RECOMMENDATION 1

The Environmental Protection Authority concludes that the proposal is environmentally acceptable subject to the operations being carried out in accordance with the commitments in the Notice of Intent (Appendix 1), the amended commitments (Appendix 2), and the Environmental Protection Authority's Recommendations in this Assessment Report.

6. REFERENCES

Beard, J S (1975). Vegetation Survey of Western Australia. Pilbara 1:1000000 Vegetation Series. Explanatory Notes to Sheet 5. UWA Press, Crawley.

Department of Conservation and Land Management, (1986). Cape Range National Park. Draft Management Plan. CALM, Como.

LIST OF ENVIRONMENTAL COMMITMENTS BY THE PROPONENT IN THE NOTICE OF INTENT

1. All vehicles will be washed prior to first entering the area to help avoid the introduction of foreign seeds, insects and soil borne disease.

2. The seismic crew and sub-contractors will be issued with government and industry guidelines related to correct environmental practices.

3. The line clearance bulldozer will be walked along the line in the subject area with the blade up except where vegetation would impede vehicle access. In areas of vegetation the blade will be used to trim vegetation but leaving the topsoil and root stock as undisturbed as possible.

4. The blade width will be maintained at a width of 4.5 metres (15 feet) and no top soil windrows will be produced. Turning circles will be avoided and vehicular traffic will be kept to a minimum.

5. Detours around trees and significant landscape elements will be made.

6. Where the seismic lines cross minor creek beds, short detours will be found to enable vehicle access without any bulldozer work to the creek banks.

7. A consultant botanist will be contracted to walk proposed seismic lines in order to locate and clearly mark areas of rare and restricted vegetation which will be avoided in subsequent line clearance.

8. A consultant will be contracted to liaise with land management authorities. His responsibilities will include supervision of the field crew to ensure they adhere to the requirements for minimising the environmental impact of the seismic recording. He will also be responsible for supervising any required restoration work.

9. If any significant damage to the three sand dunes traversed by seismic line A89-29 occurs, a restoration process will be implemented whereby original land surface contours will be restored as near as is practical and dune faces will be "brush matted".

10. There are no known aboriginal "Sites of Significance" near the programmed lines. The seismic crew and sub-contractors will be issued with the WA Museums "Notes on the Recognition of Aboriginal Sites" with instructions to comply with the documents recommendations/instructions.

11. Any refuse will be removed from the seismic lines and also transported from the crew camp to an appropriate disposal site outside the National Park and Commonwealth Lands.

12. No drilling mud with additives will be used during drilling of the three required upholes within the National Park. Only air and fresh water will be used to facilitate drilling.

13. No firearms or domestic pets will be taken into the National Park or Location 97. No cooking or camp fires will be allowed within the National Park or Location 97.

14. Access to and from, and the movement of vehicles within the National Park will be restricted to existing tracks and the seismic lines.

15. Cut vegetation will be re-distributed along cleared lines in the National Park as required to provide more seed stock for natural revegetation.

16. Ampol Exploration Limited will undertake to carry out a visual inspection of the seismic lines in the National Park and Location 97, approximately one year after the survey. A report including photographs of the lines will be submitted to the designated authority for review.

17. Ampol Exploration Limited will liaise with CALM fully informing them of the planned seismic survey and obtaining advice on acceptable land management practices.

18. Ampol Exploration Limited will submit weekly reports to the Petroleum Division of the Western Australia Mines Department and the designated manager of the Department of Conservation and Land Management on the progress of the seismic generations in the National Park and Location 97.

19. Prior to cessation of seismic crew activity in the subject area, Ampol Exploration Limited will notify the Petroleum Division of the Western Australian Mines Department and the designated manager of the Department of Conservation and Land Management so that arrangements can be made for an inspection of the area if required.

APPENDIX 2

LIST OF ADDITIONAL ENVIRONMENTAL COMMITMENTS BY THE PROPONENT

1. After discussions with earthmoving contractors and experienced seismic consultants it was determined that the use of a roller on the rock terrain has the potential to cause more damage than the bulldozer alone with the blade raised above ground level. Please note that I am informed that the grader would not be capable of pulling a roller over the rocky terrain and several cuts would be needed since the roller is only 8 feet wide.

2. The programmed location of line A89-29 has been changed using topographic maps to avoid traversing any sand dunes within the Cape Range National Park as shown on the attached enclosure (Figure 2). The line bends may reduce the quality of resulting seismic data but is preferential to moving the entire line 1 km northeast. In the National Park vehicles will not traverse any sand dunes.

3. Provision will be made to have a quantity of absorbent sand carried by the crew. In the unlikely event of an oil or fuel spill sand will be spread on the spill and then be removed from the area. This should leave no trace of oil or fuel.

4. Restoration requirements will be minimal after redistribution of cut flora back on the line because it is intended to minimise root disturbance by not cutting root stock, ie the bulldozer blade will not move soil or rock material. Regrowth should be natural and although it may take more than 12 months should be complete. The CALM will inspect and advise if restoration work done is adequate.

5. As stated in item 19 of page 10 of the Notice of Intent, representation from the CALM or other environmental officer can review the result of field work.

6. No mud or additives will be used therefore no slurry will be made. The volume of natural rock cuttings will be approximately 0.5 cubic metres for each of the three 4" holes drilled in the park. Much of this material will be shovelled back in the hole after the recording is made leaving very little in the way of remnant cuttings.

7. There will be no seismic recording on the creek banks. Vibrator sweep locations will be skipped to accommodate this.

8. As stated in the Notice of Intent a detailed field review was carried out. At this time no caves were evidenced in the proximity of seismic lines within the National Park.

9. All seismic crew personnel will be instructed not to disturb any fauna in the area.