



Hon Mark McGowan MLA
Minister for the Environment;
Racing and Gaming

Statement No.

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000731

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

**HAMERSLEY IRON DREDGING PROGRAM
FOR THE DAMPIER PORT UPGRADE**

Proposal: The dredging of approximately 2.9 million cubic metres (for capital dredging) and approximately 0.54 million cubic metres (for maintenance dredging), as documented in schedule 1 of this statement.

Proponent: Hamersley Iron Pty. Limited

Proponent Address: Level 22, Central Park, 152-158 St George's Terrace,
PERTH WA 6837

Assessment Number: 1645

Report of the Environmental Protection Authority: Bulletin 1225

The proposal referred to in the above report of the Environmental Protection Authority may be implemented. The implementation of that proposal is subject to the following conditions and procedures:

1 Proposal Description

- 1-1 The proponent shall implement the proposal as documented and described in schedule 1 of this statement subject to the conditions and procedures of this statement.

2 Proponent Environmental Management Commitments

- 2-1 The proponent shall fulfil the environmental management commitments contained in schedule 3 of this statement.

Published on

22 NOV 2006

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 under section 38(6a) and provide the name and address of the person who will assume responsibility for the proposal, together with a letter from that person which states that the proposal will be carried out in accordance with the conditions and procedures of this statement, and documentation on the capability of that person to implement the proposal and fulfil the conditions and procedures.
- 3-3 The nominated proponent shall notify the Department of Environment and Conservation of any change of the name and address of the proponent within 30 days of such change.

4 Time Limit of Approval to Commence

- 4-1 The proponent shall provide evidence to the Department of Environment and Conservation that the proposal has been substantially commenced within five years from the date of this statement or the approval granted in this statement shall lapse and be void.
- 4-2 The proponent shall make an application for any extension of approval for the substantial commencement of the proposal to the Minister for the Environment prior to five years from the date of this statement, which shall demonstrate that:
 - 1. the environmental factors of the proposal reported in Bulletin 1225 have not changed significantly;
 - 2. new, significant, environmental factors have not arisen; and
 - 3. all relevant decision-making authorities and stakeholders have been consulted.

5 Compliance Reporting

- 5-1 The proponent shall submit annually an audit compliance report, for the previous twelve-month period.

The audit compliance report shall:

- 1. be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the proponent's Managing Director's behalf;
- 2. include a statement as to whether the proponent has complied with the conditions, procedures, commitments and actions within the Environmental Management Plans;

3. identify all non-compliances and describe the related corrective and preventative actions taken;
 4. review the effectiveness of all corrective and preventative actions taken;
 5. provide verifiable evidence of compliance with the conditions, procedures and commitments;
 6. describe the state of implementation of the proposal; and
 7. be prepared in accordance with an audit program and in a format acceptable to the Department of Environment and Conservation.
- 5-2 The proponent shall make the audit compliance report required by condition 5-1 publicly available in a manner approved by the Department of Environment and Conservation.

6 Control and Management of Dredging and Spoil Disposal

- 6-1 Prior to the commencement of dredging, the proponent shall prepare a Coral Spawning Monitoring Plan aimed at identifying and predicting significant coral spawning periods that could occur during the dredging program.

This Plan shall include:

1. identification of dominant coral species in the area of the zone of influence of dredging and spoil disposal;
2. identification of other less dominant corals using genus level grouping in the area of the zone of influence of dredging and spoil disposal;
3. the protocols for preliminary investigations to determine the sex of corals;
4. protocols and procedures for sampling of corals to determine if they will spawn;
5. methodology to identify, and if required, to relocate corals monitored;
6. establishment of a definition of significance which will be used as a basis for determining whether corals are deemed to be spawning;
7. the reporting of results and predicted coral spawning periods (as identified in condition 6-2); and
8. the timing of the reporting of results.

Note: the Coral Spawning Monitoring Plan should be prepared on the advice of the Department of Environment and Conservation.

- 6-2 The proponent shall prepare a report prior to each predicted significant coral spawning period, including:
1. spring coral mass spawning periods of September to November; and
 2. periods over which there is predicted to be a significant spawning of any dominant or subdominant coral species,

analysing the results arising from the monitoring of coral required by condition 6-1 and submit this report to the Department of Environment and Conservation.

6-3 The proponent shall not conduct dredging and/or spoil disposal activities during the predicted autumn mass coral spawning periods of March to May.

6-4 The proponent shall not conduct dredging and/or spoil disposal activities during:

1. the predicted spring mass coral spawning periods based on the results of the Coral Spawning Monitoring Plan required by condition 6-1; or
2. the spawning periods for any dominant or subdominant coral species based on the results of the Coral Spawning Monitoring Plan required by condition 6-1,

unless the proponent can demonstrate to the requirements of the Minister for the Environment acting on advice of the Department of Environment and Conservation (Conservation Division) that the corals within the area of influence of the dredge or spoil plumes are not significantly participating in a coral spawning event identified in points 1 and 2.

6-5 At least 14 days prior to the commencement of dredging and/or spoil disposal activities, the proponent shall commence a fortnightly coral health monitoring programme as set out in the Coral Health Monitoring Plan required by condition 10-1 to the requirements of the Minister for the Environment.

This monitoring programme shall also include prior baseline measurements of coral health for:

1. potential impact monitoring sites likely to be affected by dredging or disposal; and
2. appropriate reference sites outside the zones of influence of dredging and spoil disposal activities.

6-6 The proponent shall continue the implementation of the coral health monitoring programme referred to in condition 6-5 during dredging and/or spoil disposal activities and for at least two months after cessation of all dredging and spoil disposal activities.

6-7 Subject to condition 6-8, the proponent shall report the results of each fortnightly coral health monitoring survey to the Department of Environment and Conservation for the duration of coral health monitoring, at monthly intervals on the same day of each successive calendar month, with the first report being submitted one month after the commencement of monitoring.

6-8 If at any time during dredging and/or spoil disposal activities, net coral mortality at any potential impact monitoring site exceeds the 'limit' level of 10 per cent specified in condition 10-6, the proponent shall immediately cease all dredging and/or spoil disposal activities which are contributing to the observed mortality at the site(s) where that 'limit' level is exceeded, and shall report the exceedence to the Department of Environment and Conservation within 24 hours.

- 6-9 The proponent shall not recommence dredging and/or spoil disposal activities following any cessation required by condition 6-8 until such time as:
- the proponent has sought advice from the Dredging Management Group (refer procedure 3); and
 - the proponent has prepared a report on that advice;

and it can be demonstrated to the requirements of the Minister for the Environment that the recommencement of such activities will not contribute to further net mortality of corals at any potential impact monitoring site at which the 'limit' level of 10 per cent specified in condition 10-6 has been exceeded.

- 6-10 If for any reason, the fortnightly coral health monitoring surveys have not been undertaken during any four-week period (i.e. two consecutive coral health monitoring surveys) at any potential impact monitoring site, the proponent shall immediately cease dredging and disposal activities which may affect water quality at that site until such time as the level of net coral mortality at that site can be assessed and demonstrated to be below the 'limit' level of 10 per cent specified in condition 10-6.

- 6-11 The proponent shall report any cessation of dredging and/or disposal activities and subsequent recommencements which occur as a result of meeting the requirements of conditions 6-8 and 6-10 to the Department of Environment and Conservation within 24 hours.

7 Dredging and Spoil Disposal Management Plan

- 7-1 Prior to commencement of dredging and/or spoil disposal activities, the proponent shall prepare a Dredging and Spoil Disposal Management Plan, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: The Environmental Protection Authority expects that advice of the following agencies will be obtained:

- Commonwealth Department of the Environment and Heritage;
- Department for Planning and Infrastructure (Maritime Division); and
- Department of Fisheries.

The objectives of this Plan are to:

- evaluate the zone of influence of turbidity plumes generated by dredging and spoil disposal;
- protect the sensitive marine ecological attributes (ecological values) from the effects of sedimentation, deterioration in light climate, contamination and other impacts associated with dredging and spoil disposal; and
- protect the long term values of seafood quality, aquaculture production, recreational values and existing industrial water supply (social values) from the environmental effects of dredging and spoil disposal.

Note: The term "sensitive marine ecological attributes" means "coral reefs, seagrass meadows and mangrove forests, and the biota associated with these habitats".

This Plan shall:

1. address monitoring requirements and management measures to protect sensitive marine ecological attributes and social values of Mermaid Sound consistent with the operational requirements of the Port, and any other areas within the potential zone of influence of the environmental effects of dredging and spoil disposal;
2. identify the ecological and social values to be protected as described in the *Pilbara Coastal Water Quality Consultation Outcomes: Environmental Values and Environmental Quality Objectives*, Department of Environment (March 2006);
3. identify and spatially define appropriate environmental quality objectives to be met during dredging and spoil disposal activities;
4. establish the environmental quality criteria to protect social values in the long term;
5. describe the type of dredge(s) to be used and mode of operation;
6. determine most probable and worst-case timing and duration of dredging and spoil disposal activities and contingencies for unforeseen delays;
7. contain a description of the potential zones of influence of dredging and spoil disposal activities on water quality, and explain the rationale underpinning the predictions;
8. using information gathered to meet the requirements of point 7 above, specify appropriate reference sites outside the potential zones of influence of dredging and spoil disposal activities on water quality and coral health;
9. specify potential impact sites adjacent to and between the source(s) of turbidity and sensitive marine ecological attributes which require protection from the effects of dredging and spoil disposal activities;
10. set out procedures, including frequency, probable flight paths and methods of recording information (e.g. photography), for routine aerial monitoring of the plume and the appropriateness of reference sites for the duration of dredging and spoil disposal activities and for a period after the completion of dredging and spoil disposal to confirm the time taken and area required for dispersion of residual turbidity;
11. set out the procedures for monitoring water quality at appropriate reference sites and potential impact sites;
12. set out the procedures for the deployment of an in-situ data logger throughout the dredging period at the TDPL site and King Bay coral impact sites, calibrated to provide an estimate of suspended sediment or sedimentation for continuous monitoring;
13. set out the procedure for the monitoring of sediment particle size at a network of sites adjacent to and at increasing distances from the dredging area;

14. specify the management actions and contingency measures to be implemented in the event of exceedance of the levels specified in condition 10-6 (See schedule 2); and
15. specify reporting procedures.

7-2 The proponent shall implement the Dredging and Spoil Disposal Management Plan required by condition 7-1.

7-3 The proponent shall make the Dredging and Spoil Disposal Management Plan required by condition 7-1 publicly available, in a manner approved by the Department of Environment and Conservation.

8 Water Quality Monitoring

8-1 During dredging and spoil disposal activities, at intervals not exceeding three days between measurements, the proponent shall undertake water quality monitoring at potential impact sites and appropriate reference sites as specified in the Dredging and Spoil Disposal Management Plan required by condition 7-1.

The objectives of this monitoring are to:

- calibrate relevant numerical models of turbidity generated through dredging and spoil disposal;
- validate the calibrated relevant numerical models;
- establish and document the extent and severity of turbidity plumes resulting from dredging and spoil disposal associated with this proposal in Mermaid Sound;
- facilitate the establishment of relationships between coral health and dredging and spoil disposal-induced turbidity; and
- establish a relationship between total suspended solids and light attenuation coefficient in dredging and spoil disposal-induced turbidity plumes.

8-2 The proponent shall take water quality measurements at "near surface", "near bottom" and at other appropriate depths within the water column, and the parameters to be measured shall include:

1. turbidity (in NTUs);
2. total suspended solids (mg/L);
3. light attenuation coefficient;
4. dissolved oxygen (mg/L);
5. pH; and
6. depth in the water column at which each measurement is taken.

8-3 The proponent shall report the results of monitoring required by condition 8-1 to the Department of Environment and Conservation for the duration of dredging and spoil disposal activities, at monthly intervals on the same day of each successive calendar month, with the first report being submitted one month after the commencement of dredging.

- 8-4 The proponent shall prepare a report analysing the results of water quality monitoring referred to in condition 8-1 against the objectives outlined in condition 8-1 which shall be submitted to the Department of Environment and Conservation.

9 Introduced Marine Pests and Ballast Water

- 9-1 Prior to commencement of dredging and within 48 hours following entry of the dredging equipment and other vessels associated with the proposal into the Port of Dampier, the proponent shall have an inspection carried out by an appropriately qualified marine scientist to ensure that;
1. there is no sediment in the dredging equipment; and
 2. any fouling organisms on the dredging equipment and other vessels associated with the proposal and any organisms in the ballast waters of the equipment and vessels do not present a risk to the ecosystem integrity of the marine waters of the Dampier Archipelago.
- 9-2 Prior to the commencement of dredging, the proponent shall report to the Department of Environment and Conservation on the results of the inspection referred to in condition 9-1.
- 9-3 The proponent shall manage any sediment or fouling organisms found as a consequence of the inspection required by condition 9-1, to the timing and other requirements of the Minister for the Environment on the advice of the Department of Environment and Conservation.
- 9-4 If, following the completion of dredging and disposal activities, the dredging equipment is to be transferred to another location within Western Australia's territorial waters, the proponent shall undertake an investigation employing an appropriately qualified marine scientist to identify the presence of / the potential for introduced marine pests, to the requirements of the Minister for the Environment on advice of the Department of Environment and Conservation.
- 9-5 In the event that any introduced marine pests are detected, the proponent shall put in place a Marine Pests Management Strategy to ensure that introduced marine pests are not transferred to other locations within Western Australia's territorial waters, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: In the preparation of the report required by condition 9-2, and in the development of any actions required by conditions 9-3 to 9-5, it is expected that the advice of the following agencies will be obtained:

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

10 Coral Health Monitoring

10-1 Prior to the commencement of dredging or spoil disposal activities, the proponent shall prepare a Coral Health Monitoring Plan, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The objectives of this Plan are to:

- establish the baseline health condition of coral prior to any dredging or spoil disposal activities undertaken as part of this proposal as indicated by the extent of living coral at appropriate reference and monitoring sites;
- monitor and assess any changes in the health of corals, as indicated by the net extent of coral mortality which occurs subsequent to the commencement of dredging and/or spoil disposal activities; and
- compare net coral mortality at potential impact monitoring sites with the 10 per cent limit level for net coral mortality set out in condition 10-6, within the zones of influence of dredging and spoil disposal activities.

This Plan shall include the following:

1. the location of appropriate coral health potential impact monitoring sites and reference sites;
2. protocols and procedures for monitoring and quantitatively determining the extent of coral mortality using fortnightly coral health monitoring surveys at all of the potential impact monitoring sites;
3. calculations of statistical power of the monitoring procedures referred to in point 2 above to demonstrate that the procedures are appropriate to determine the extent of mortality against the 'limit' level set out in condition 10-6;
4. provision for pre-dredging field surveys at appropriate potential impact and reference sites to be conducted at least two weeks prior to the commencement of this proposal, establishing the baseline conditions in terms of live coral cover at those sites;
5. reporting procedures for the regular fortnightly coral health monitoring surveys required by condition 10-1; and
6. the results of pre-dredging juvenile recruitment surveys at all potential impact sites and related reference sites.

10-2 The results of the pre-dredging field surveys referred to Condition 10-1, point 4 above are to be provided to the Department of Environment and Conservation before dredging commences.

10-3 During dredging and spoil disposal activities, notwithstanding conditions 6-6 to 6-10, the proponent shall undertake regular fortnightly coral health monitoring at all potential impact sites and appropriate reference sites, in such a manner as set out in the Coral Health Monitoring Plan required by condition 10-1.

- 10-4 Within three days following each coral health survey required by condition 10-3, the proponent shall determine the gross extent of coral mortality at each potential impact monitoring site and at each reference site, based on the survey data, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The gross extent of coral mortality shall be calculated as the total reduction in cover of living coral at a site occurring after the date of establishment of the original extent of live coral cover (See condition 10-1), expressed as a percentage of the established original extent of live coral cover at that site.

- 10-5 In the event that gross coral mortality at any potential impact monitoring site, as determined in accordance with condition 10-4, is greater than 10 per cent, the proponent shall determine the net extent of coral mortality at each potential impact monitoring site, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The net extent of coral mortality at each potential impact monitoring site shall be calculated by subtracting the gross percentage of mortality measured at the appropriate reference site(s) from the gross percentage of mortality at the potential impact monitoring site.

The fortnightly coral health surveys at potential impact sites shall then continue for the duration of dredging and spoil disposal, and for at least two months after completion of dredging and spoil disposal.

- 10-6 Within twenty-four hours of calculating the net extent of coral mortality referred to in condition 10-5, the proponent shall compare the net extent of coral mortality at each potential impact monitoring site with the 10 per cent limit level for net coral mortality, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

11 Long Term Coral Habitat Monitoring and Management

- 11-1 Prior to the commencement of dredging and spoil disposal activities, the proponent shall prepare a Long Term Coral Habitat Monitoring and Management Plan, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: The Environmental Protection Authority expects that advice of the following agencies will be obtained:

- Commonwealth Department of the Environment and Heritage;
- Department of Fisheries; and
- the Department of Environment and Conservation (Conservation Division).

The objectives of this Plan are to:

- establish pre-dredging baseline conditions of coral reef location, spatial extent, biodiversity and community structure (e.g. community composition and per cent cover of coral communities), and the different scleractinian coral communities currently present at appropriate reference and monitoring sites;
- monitor the effects of dredging and spoil disposal activities on the biodiversity, structure, health and reproductive success of coral reef habitats which occur within predicted zones of influence of dredging and spoil disposal activities;
- maintain the ecological integrity and biodiversity of coral reef habitats consistent with the operational requirements of the Port; and
- rehabilitate coral communities where impacts during dredging or disposal has been greater than the 10 per cent limit level for net coral mortality specified in Condition 10-6 or where a significant change to community structure caused by dredging and/or spoil disposal has occurred.

This Plan shall include the following:

1. the location of appropriate potential impact sites and reference sites;
2. provision for pre-dredging field surveys describing baseline conditions at all sites specified in point 1 above in terms of the species of scleractinian corals present and community structure to be conducted prior to dredging commencing;
3. criteria for spawning success and coral health against which to report monitoring data and to evaluate environmental performance;
4. protocols and procedures for monitoring coral reef health;
5. calculations of statistical power of the monitoring procedures in point 4 above to demonstrate that the procedures are appropriate to detect impacts associated with dredging and spoil disposal activities, in the event that impacts occur;
6. the timing and frequency of coral reef health monitoring;
7. the management response(s) to be implemented in the event that criteria established in point 3 above are not met;
8. completion criteria for management response(s) in point 7 above; and
9. reporting procedures.

11-2 In the event that the 10 per cent limit level for net coral mortality specified in Condition 10-6 is exceeded, the proponent shall develop and implement a rehabilitation program, including completion criteria, for coral communities where impacts during dredging or disposal associated with the proposal has been greater than the 10 per cent limit level for net coral mortality or where a significant change to community structure caused by dredging and/or spoil disposal associated with the proposal has occurred on advice of the Department of Environment and Conservation.

11-3 The results of the pre-dredging field surveys referred to in Condition 11-1, point 2 above are to be provided to the Department of Environment and Conservation within one (1) month of dredging commencing.

11-4 Prior to the commencement of dredging, and for at least two years following the completion of dredging and disposal activities, or until completion criteria required by condition 11-1 have been met, the proponent shall implement the Long Term Coral Habitat Monitoring and Management Plan required by condition 11-1.

11-5 The proponent shall make the Long Term Coral Habitat Monitoring and Management Plan required by condition 11-1 publicly available, in a manner approved by the Department of Environment and Conservation.

12 Liaison with Port Authority

12-1 At all stages of the proposal, including post-dredging monitoring, the proponent shall liaise with the Dampier Port Authority and provide to the Port Authority the following:

- 1 the results / summaries of fortnightly monitoring;
- 2 reports of environmental significance; and
- 3 notice of any events or occurrences of environmental concern.

Procedures

- 1 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Minister for the Environment.
- 2 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 and Conservation.
3. A Dredging Management Group will be established by the proponent comprising representatives of, the proponent, the Dampier Port Authority, a person nominated by the Department of Environment and Conservation and an independent chairperson appointed by the Minister for the Environment. The Dredging Management Group shall:
 - (1) provide advice to the proponent on the (additional) management actions / options which could be implemented by the proponent where the 10 per cent limit level for net coral mortality specified in condition 10-6 has been exceeded at a site;
 - (2) provide incident-specific advice on which management options should apply on a case-by-case basis if the 'limit' referred to in condition 10-6 has been exceeded; and
 - (3) provide advice on the timing for recommencement of dredging and/or spoil disposal.

Notes

1. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment and Conservation over the fulfilment of the requirements of the conditions.



**HON MARK McGOWAN MLA
MINISTER FOR THE ENVIRONMENT;
RACING AND GAMING; PEEL AND THE SOUTH WEST**

22 NOV 2006

Schedule 1

The proposal (Assessment No. 1645)

The proposal, which is located near the Town of Dampier and within Mermaid Sound (see figure 1) involves dredging a total of approximately 3.44 million cubic metres as follows:

1. dredging
 - extend the existing northern and southern berth pockets at the Parker Point wharf and to enable four vessels to moor alongside the wharf at any one time;
 - widen and deepen the southern swing basin to provide safe approaches for vessels using the southern berths;
 - widen the northern approach route to provide safe navigation for arriving vessels and provide an escape route to the north of Parker Point in the event of immobilisation of a departing vessel in the channel;
 - dredge a new berth pocket east of the existing Parker Point Wharf to allow for new, upgraded tanker unloading facilities;
 - remove siltation in the existing northern approach route and approaches to the Service Wharf facility at Parker Point;
 - remove under wharf spillage from Parker Point and East Intercourse Island berths; and
 - remove a high spot adjacent to the main shipping channel to provide safe navigation for incoming vessels.
2. the disposal of the materials obtained by the above dredging to designated sites on land and on the ocean floor as set out in Table 2 below; and
3. environmental monitoring of water quality and coral communities within Mermaid Sound.

The key proposal characteristics are presented in Table 1.

Table 1 – Key Proposal Characteristics (Assessment No. 1645)

Element	Description / Quantity
Amount of material to be dredged and disposed	Maximum of 3.45 million cubic metres (estimated)
Major components (as shown in Figures 1 & 2) <ul style="list-style-type: none">• Dredging of material within areas A – D, G and H (capital) to the East Lewis and Northern spoil grounds.• Dredging of material within areas A and B (capital) to onshore disposal.• Dredging of material within areas E, F, PP and EII (maintenance) to the Northern spoil ground	<p>Combined maximum of approximately 2.47 million cubic metres</p> <p>Approximately 0.44 million cubic metres</p> <p>Approximately 0.54 million cubic metres</p>
Period of dredging and disposal	Dredging duration of approximately 8–10 weeks within a 3–4 month period, commencing in 4th Quarter 2006.

Tables attached

Table 2 - details of dredging and disposal volumes.

Figures attached

Figure 1 - Locality plan; and

Figure 2 - Location of dredging and spoil disposal areas.

Schedule 1 (continued)

Table 2 - Estimated dredging volumes and depths for dredging are as identified in Figure 2.

[illegible]

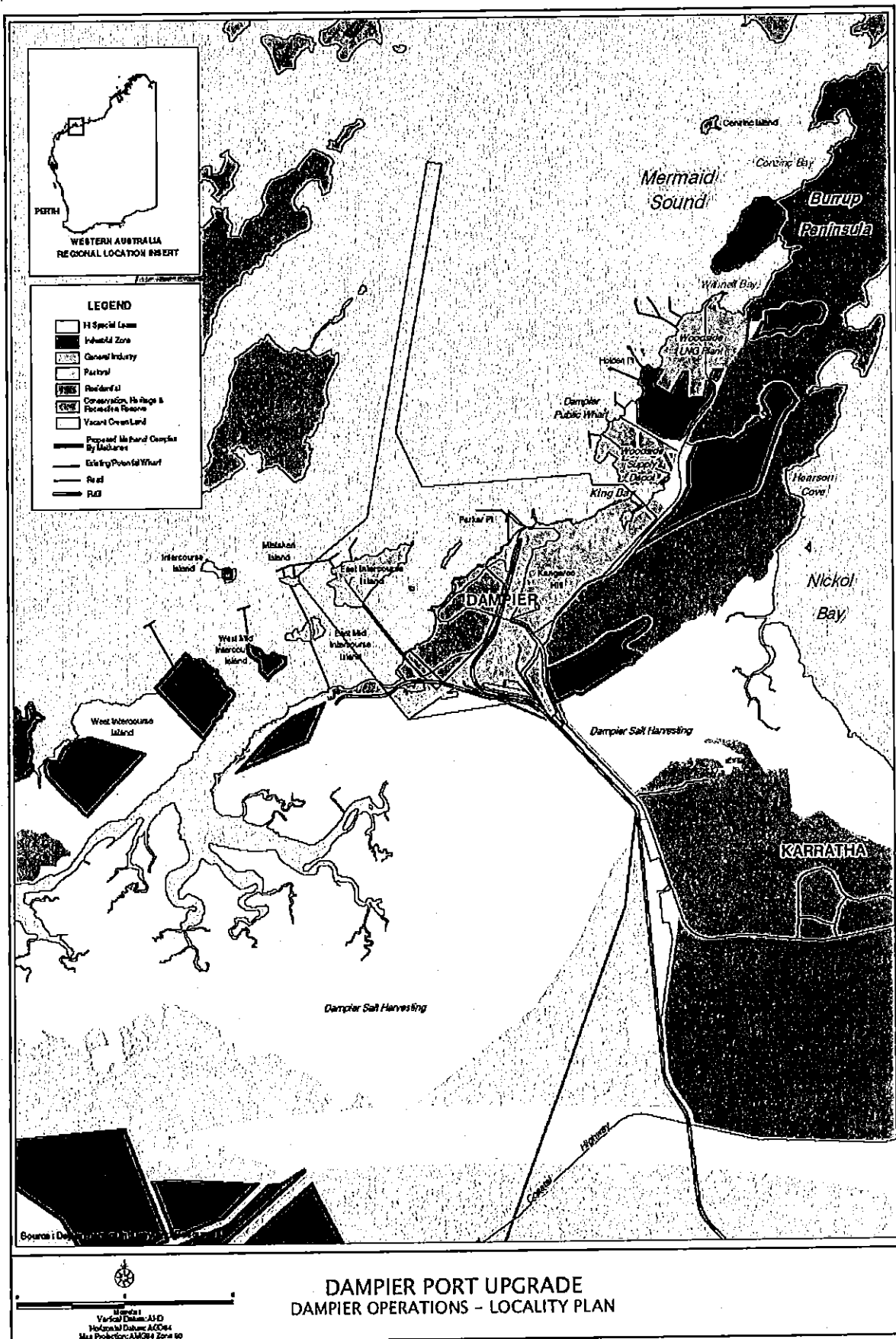


Figure 1:

Locality plan

Schedule 2

Dredging Program for the Dampier Port Upgrade Hamersley Iron Pty. Limited (Assessment No. 1645)

Possible management measures required by condition 7-1(14)

Possible Management Measures (Any combination of at least one of the following management actions.)
<ul style="list-style-type: none">• Relocate dredge;• Relocate position for spoil disposal within spoil ground;• Use alternative spoil ground;• Reduce dredge overflow;• Deploy silt curtain barrier between dredging and/or disposal areas and coral sites;• Reduce dredging to single shift.

Proponent's Environmental Management Commitments

August 2006

**HAMERSLEY IRON DREDGING
PROGRAM
FOR THE
DAMPIER PORT UPGRADE**

(Assessment No. 1645)

Hamersley Iron Pty. Limited

Proponent's Environmental Management Commitments

HAMERSLEY IRON DREDGING PROGRAM FOR THE DAMPIER PORT UPGRADE – HAMERSLEY IRON PTY. LIMITED (Assessment No. 1645) - August 2006.

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 “action” to be undertaken by the proponent;
- the objective of the commitment;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment and Conservation.

Commitment No.	Topic	Action	Objective	Timing	Advice
1.	Environmental Management	Develop an Environmental Management Plan (EMP) which will address the management of: <ul style="list-style-type: none"> 1. Hydrocarbons 2. Wastes 3. Ballast Water and Marine Pests (See also conditions 9-1 to 9-5); and 4. Vessel Movements. 	Manage all relevant environmental factors associated with the maintenance and capital dredging.	Pre-dredging	Dampier Port Authority Department of Fisheries
2.		Implement the approved EMP	To achieve outcomes of commitment 1.	During dredging	

Attachment to Statement 731

Change to Description of Proposal

Proposal: Hamersley Iron Dredging Program for the Dampier Port Upgrade

Proponent: Hamersley Iron Pty. Limited

Change: Increased extent of dredging

Amendment of Schedule 1 – Key Proposal Characteristics (Table 2)

Features of previously approved Proposal:

Element	Quantities/Description
Existing sea bed level (RL-m CD)	Location EII: 19
Dredging depth level (RL-m CD)	Location C: 10 Location EII: 19.7
Depth of dredging (m)	Location C: 2.0-3.5 Location EII: 0.7
Area to be dredged (ha)	Location EII: 0.3
TBT material for offshore disposal (m ³)	Location EII: 5,000
Clean material for offshore disposal (m ³)	Location E: 230,000
Total material to be dredged (m ³)	Location E: 300,000 Location EII: 5,000

Features of changed Proposal:

Element	Quantities/Description
Existing sea bed level (RL-m CD)	Location EII: 20.5
Dredging depth level (RL-m CD)	Location C: 10-15.4 Location EII: 21.5
Depth of dredging (m)	Location C: 2.0-8.9 Location EII: 1.0
Area to be dredged (ha)	Location EII: 2.0
TBT material for offshore disposal (m ³)	Location EII: 20,000
Clean material for offshore disposal (m ³)	Location E: 215,000
Total material to be dredged (m ³)	Location E: 285,000 Location EII: 20,000

Date: 18.01.07

Attachment to Statement 731
2
Change to Description of Proposal

Proposal: Hamersley Iron Dredging Program for the Dampier Port Upgrade

Proponent: Hamersley Iron Pty Limited

Change: Marine drill and blast to remove rock outcrops from within approved dredging area

Amendment of Schedule 1 – Key Proposal Characteristics (Table 2)

Features of previously approved Proposal:

Element	Quantities/Description
General scope	Dredge 3.45 million cubic metres of material from specified areas (Figure 2 of Ministerial Statement)
Period of dredging and disposal	Dredging duration of approximately 8-10 weeks within a 3-4 month period.
Dredging equipment	Trailer Suction Hopper Dredge and a Cutter Suction Dredge.
Nature of material to be removed	Fine silts with some sand, with underlying consolidated material typically firm to stiff clays, overlying dense clayey gravel, overlying low to medium strength calcarenite, overlying high strength granophyre or dolerite.
Methodology of removal of material	The trailer suction hopper dredge uses suction pipes fitted to dragheads. The cutter suction dredge uses a rotating cutter head (to break up material) and a suction pipe.
Means of spoil disposal	Trailer Suction Hopper Dredge hauls spoil direct to the East Lewis Island Spoil Ground and Northern Spoil Ground. Cutter Suction Dredge pipes spoil to shore for land disposal.

Features of changed Proposal:

Element	Quantities/Description
General scope	Drill and blast two areas (total 17,000 square metres) of rock outcrop and remove up to 35,000 cubic metres for disposal at the Northern Spoil Ground. Volumes within that previously approved. Refer Figure.
Period of dredging and disposal	Dredging, drilling and blasting duration approximately 8 weeks.
Dredging equipment	Excavator dredge mated with two split hopper barges and a tug.
Nature of material to be removed	Rock outcrops comprised of high strength granophyre or similar igneous rock (basalt) unable to be removed with dredging equipment.
Methodology of removal of material	Initially attempt to excavate rock using excavator dredge to reduce volume requiring drill and blast. Remaining rock will be drilled using a self elevating platform with marine drill towers. Drill holes will be loaded using divers and packaged explosives. Blasted material will be collected by the excavator dredge and loaded into barges.
Means of spoil disposal	Loaded barges will be towed to the East Lewis Island Spoil Ground or Northern Spoil Ground and spoil emptied from the barges.

Date: 2 JUL 2007