

SANDPIPER PHOSPHATE PROJECT

Environmental Impact Assessment (EIA) of the Proposed Development of Phosphate Deposits off the Coast of Namibia

Background Information Document

Note

1. This BID addresses the proposed activities within the offshore Project area (mining licence has been issued). In addition, to provide relevance to the offshore activities proposed, the BID also provides supplementary information on the shore transfer of the material, the concentrate processing/beneficiation and handling on land. These matters are to be addressed comprehensively in separate BID and EIA processes (Terrestrial Processes).
2. The BID provides details of the preferred technological approach to the recovery of the phosphate deposits in the offshore license area. However, the Company acknowledges that the final technical approach to the various aspects of the operation may change as a result of the outcomes of various technical and environmental investigations associated with the project. These will be evaluated during the EIA process. In December 2010, the environmental process was registered with the Ministry of Environment and Tourism (MET).

The Background Information Document ("BID" or "Document") serves to provide Interested and Affected Parties (I&APs) with information on the proposed project, relating to:

- The proposed development of phosphate deposits off the coast of Namibia south of Walvis Bay;
- The strategic business approach of the project;
- The Environmental Impact Assessment (EIA) process; and
- The opportunity to register as an I&AP and to participate in the EIA process.

Key operational elements and initial phases of the proposed project are:

- a. The recovery of phosphate enriched marine sediments;
- b. Transfer of the recovered sediments to the shore;
- c. Onshore beneficiation; (washing, sorting and drying) of the phosphate rich sediments; and
- d. Transfers of final product (concentrate) for export, potentially a combination of truck, rail, conveyor and export vessel.

Public Participation Process

Your role as a stakeholder / Interested & Affected Party (I&AP)

The EIA process provides you with the opportunity to:

- Attend meetings and obtain information about the proposed project;
- Raise any issues that you have in respect of the proposed project;
- Provide the proponents with additional information which needs to be considered in the project design; process of evaluating the impacts; and the decision making process;
- Review and comment on the draft reports prepared during this EIA process; and
- Appeal against; if an I&AP determines it necessary, the environmental authorization as issued by the Ministry of Environment & Tourism (MET).

You can become involved

- By responding to the invitation for your participation (to be advertised in local newspapers);
- By registering as an I&AP (**this is necessary to ensure your name is added to the contact list**);
- By submitting your comments or requests for information to our stakeholder liaison team in Windhoek (see details on the last page of this document);
- By attending public meetings held during the EIA process.

The Proponent

Namibian Marine Phosphate (Pty) Ltd is a joint venture project between Minemakers (Pty) Ltd (Australian), Union Resources (Pty) Ltd, (Australian) and Tungeni Investments cc (Namibian).



Minemakers
Limited



Tungeni
Investments
cc



Union
Resources
Limited

(42.5%)
Australian



(15%)
Namibian



(42.5%)
Australian



**Namibian Marine Phosphate
(Pty) Ltd**



**Sandpiper Phosphate
Project**

Provisional technical investigations have established that the proposed project is robust. Detailed investigations including full feasibility studies and environmental evaluations are now in progress.

Project development information updates can be viewed at (<http://www.envirod.com>).

Enviro Dynamics has been appointed to manage the environmental public consultation process. The entire environmental project is independently coordinated by J Midgley and Associates.

Registration as an I&AP

Your registration as an I&AP is a key component of the EIA process. Through your participation you actively take responsibility for the utilisation of our legislation, as well as contributing to ensuring responsible environmental management and decision making. Registration will ensure that you are kept up to date with developments in the EIA process, and that you are invited to the relevant meetings.

Please find the registration form on the last page of this document.

Your registration as an I&AP as well as any comments you wish to make on this BID need to reach Enviro Dynamics by Friday, 16 September 2011.

The EIA Process

The EIA is based on the Namibian Environmental Management Act (Act. No. 7 of 2007), as well as supporting policies and guidelines, which include the draft environmental regulations. Further compliance requirements include the Equator Principles as well as the International Finance Corporation (IFC) Standards. These international criteria prescribe social and environmental compliance requirements that are to be met, such that financing agreements can be considered.

The EIA for the entire project is to be undertaken in two separate, yet integrated phases. Only activities within the proposed dredging area are detailed in this BID (see Note above). The EIA process remains the same for both the marine and terrestrial investigations but the content and scope of these investigations is different. The common process comprises three phases:

Scoping

- Identify Interested and Affected Parties (I&APs);
- Announce the EIA process / registration of I&APs;
- Distribution of the BID;
- Public and stakeholder consultation through electronic means, and public and focal meetings;
- Prepare a draft Scoping Report;
- Public review of the draft Scoping Report; and
- Prepare final Scoping Report and submit to the MET.

Specialist Studies

- Conduct specialist studies to address issues identified during the scoping phase and those identified by the EIA Team.

Assessment of Impacts

- Establish the environmental risk of the overall project, its alternatives and various components;
- Establish mitigation protocols;
- Prepare the draft EIA Report and Environmental Management Plan;
- Public review of draft EIA and EMP;
- Prepare the final EIA and EMP and submit to MET;
- Await decision of the authorities;
- Communicate the decision to I&APs and NMP; and
- Opportunity to appeal.

The World Perspective

The total current resource of 1,581Mt at 18.8% P_2O_5 establishes Namibia in seventh place behind Jordan (2,000Mt) in respect of world phosphate reserves.

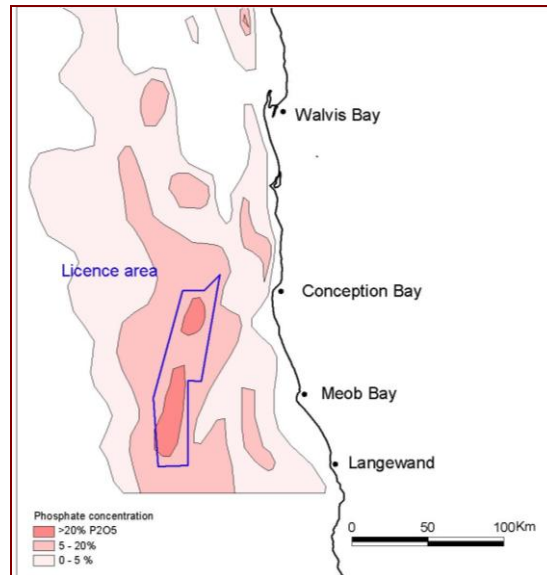
Morocco has the largest reserves (2,600Mt) in the world.

With a proposed 3Mt annual export; Namibia would be the eighth largest global exporter.

The three largest phosphate producers are China 550Mt (no longer exporting), United States 272Mt and Morocco, with 250Mt. The rest of the top fifteen world suppliers collectively produce less than 10.5Mt annually.

Project Overview

Namibian Marine Phosphate (Pty) Ltd has verified to internationally approved standards the existence of a world-class phosphate deposit in their marine licence area. The eastern boundary of these deposits are located approximately 40-60km off the coast (directly west of Conception Bay) in water depths ranging from 190 to 300m, at the eastern and western lease area boundaries respectively.



The intention is to develop these deposits using proven deep water dredging techniques, transfer the product to shore at Walvis Bay where minimal beneficiation is required to separate the phosphate from other marine sediments. The processed product is exportable as a fine sand referred to as "phosphate rock".

The traditional world supply of phosphate is traditionally from terrestrial deposits mainly in the United States of America, Morocco and China.

These suppliers are now facing significantly increased demand given the worldwide increase in food production, the loss of arable land to urban sprawl, desertification and burgeoning population. The demand is further pressured by world climatic variability.

Project Description

There are known phosphate enriched sediments of varying grades (economic and uneconomic) covering approximately 37,000km² of the Namibian continental shelf. The Company has secured exploration rights over known core areas of highest phosphate concentration.

During exploration within the lease area (2,298km²), a confirmed world-class resource has been established to the international JORC (Joint Ore Reserves Committee) ore reserve standard of identification.

Indicated Resource; 73.9Mt at 20.57% P_2O_5 , covering an area of 38km², with an estimated 25 years of life of mine. Determined for an annual extraction rate of 3Mt concentrate.

Inferred Resource; 1,507Mt at 18.7% P_2O_5 , which will potentially extend the life of the mine to over 100 years.

A total marine resource thus has been established to be 1,581Mt at 18.8% P_2O_5 . The deposit is up to 6m thick in places with the current resources being estimated from sampling only in the upper 2m of the deposit. Additional, ongoing exploration programs are in the process of further defining and quantifying the resource.

The proposed development of these deposits will be undertaken to support an annual recovery of 5.5Mt of the phosphate rich sediment to produce a final export product of 3Mt phosphate rock concentrate. These levels of production are expected to require approximately 43 weeks of continuous dredging per year.

Potential Benefits of the Project

The following potential benefits are envisaged to flow from the proposed project:

- Development of the world's first marine phosphate deposit;
- Establishment of Namibia as a premier rock phosphate producer on the global market;
- Potential to establish production of upstream beneficiated fertilizer products in Namibia;
- Contribution to securing agricultural productivity and food production in Namibia, the surrounding regions in Africa as well as other parts of the world;
- Contribution to regional and national growth and GDP through employment, royalties and tax revenues;
- Creation of direct permanent employment and indirect job creation in supporting services;
- Short term employment during the construction of the beneficiation plant and supporting infrastructures; and
- The opportunity for capacity development and training.

Potential Recovery Methods

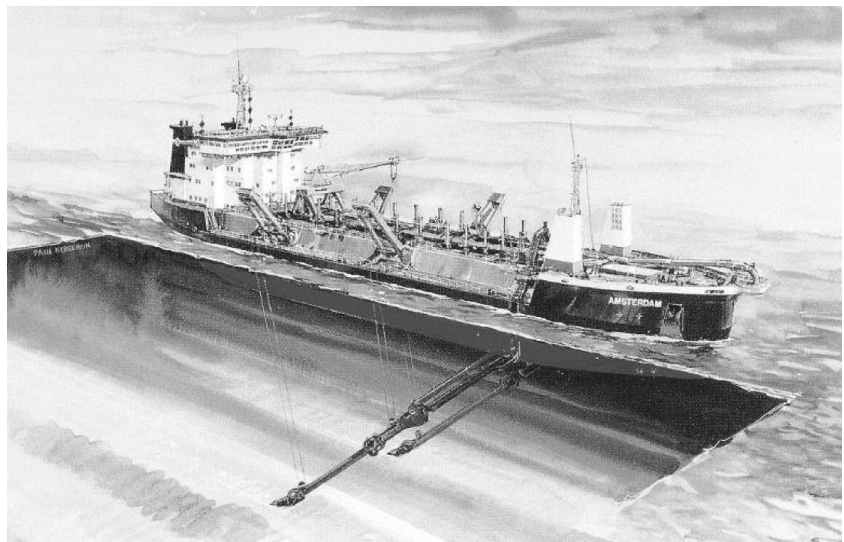
Six recovery methods have been evaluated by internationally qualified independent expert, in terms of: vessel availability; equipment availability; production capacity; material transport complexity (in part, relating to environmental and safety matters); capital cost; operator skill requirement; system integrity and mining accuracy. Of these systems, three have been identified as practically possible namely: Trailing Suction Hopper Dredge (TSHD), Wire Line Dredge and Fall Pipe-ROV. TSHD is the preferred method of sediment recovery, this being related to:

- The method being tried and tested;
- There are current internationally experienced dredge contractors with ability to operate in these water depths and marine conditions; and
- There are currently vessels available with the capacity to dredge the required annual production volumes (project viability).

Trailing Suction Hopper Dredge: Operation (TSHD)

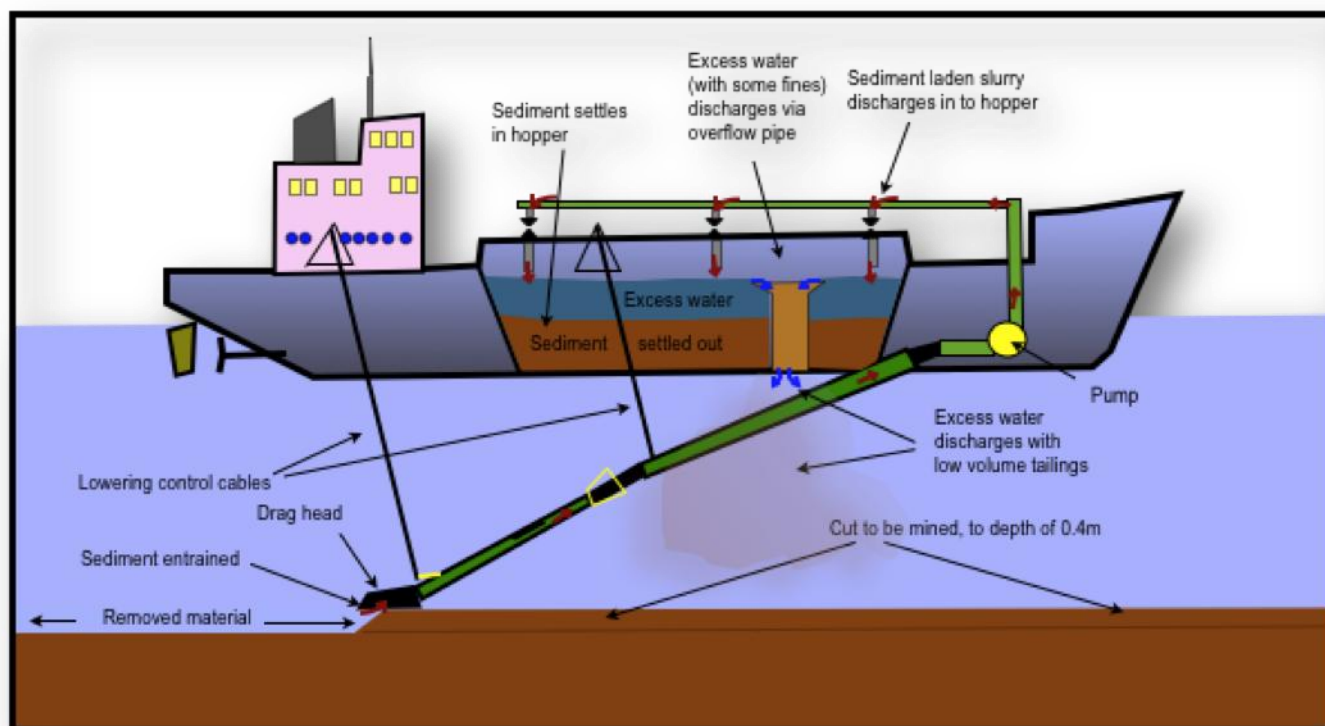
The preferred use of TSHD for the recovery of the phosphate rich sediments revolves around operational performance, delivery and reliability of the 'dredge cycle'; this is a four part process:

- Dredging on a north or south heading, (swell dependent) with the continual engagement of the dredge arm and draghead, recovering sediment in a 11m wide x 0.4m deep swath, until the vessel hopper of 46,000m³ is filled;
- Sailing to the point of discharge;
- Connecting to a single point mooring, with attached flexible pipeline (surf – shoreline crossing), pumping (ship's pumps) the slurry ashore to a holding pond, disengage; and
- Sailing back to the operational location and continue dredging.

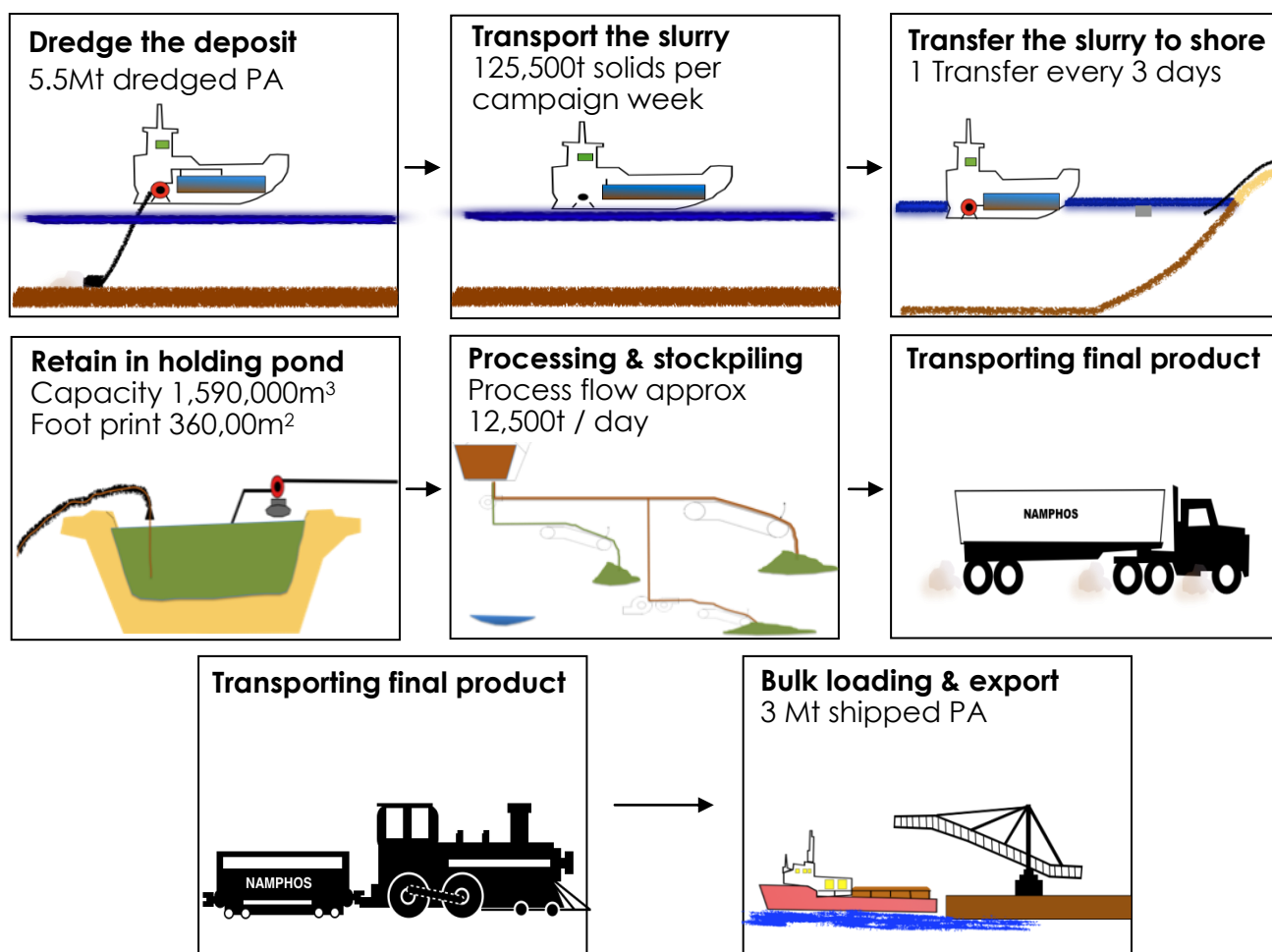


Alternate options include the transfer of sediments at sea (in the mining licence application area) with the dredged material transferred to barges and subsequent transfer to shore via single point mooring or through the port.

The Marine Dredging Operation



The Mining Development Concept



Provisionally Identified Environmental Impacts

Any new commercial, mining or industrial development in the terrestrial or marine environment will result in some degree of impact or disturbance. Identifying the potential impacts and determining their relative significance is the key to determining a responsible and effective environmental management programme and protocol under which the project may be developed and operated on a sustainable basis.

The objective is to eliminate or mitigate risks in order to develop a project that does not have a significant impact on the local and regional environment.

The potential impacts of the proposed marine activities associated with the Sandpiper Project have been provisionally identified to be:

The *primary impact* is identified as being the removal of sediments from the seabed. Potential impacts associated with this, include:

- Loss of habitat;
- Effects on the marine benthic fauna;
- Impairment of food chain functionality; and
- Creation of new habitat colonized by as yet unknown fauna.

Secondary impacts may include:

1. Modification to the water column, primarily turbidity:
 - Reduction in light penetration caused by a localized surface turbidity plume;
 - Change in, i.e. oxygen levels related to sediment releases into the water column; and
 - Possible release of hydrogen sulphide (H₂S) into the water column.
2. Fish and Fisheries
 - Removal of typical spawning substrate;
 - Removal of foraging substrate;
 - Interference with fish behavior; and
 - Associated implications for the commercial fishing industry.
3. Marine traffic
 - The increase of marine traffic in the vicinity of Walvis Bay.

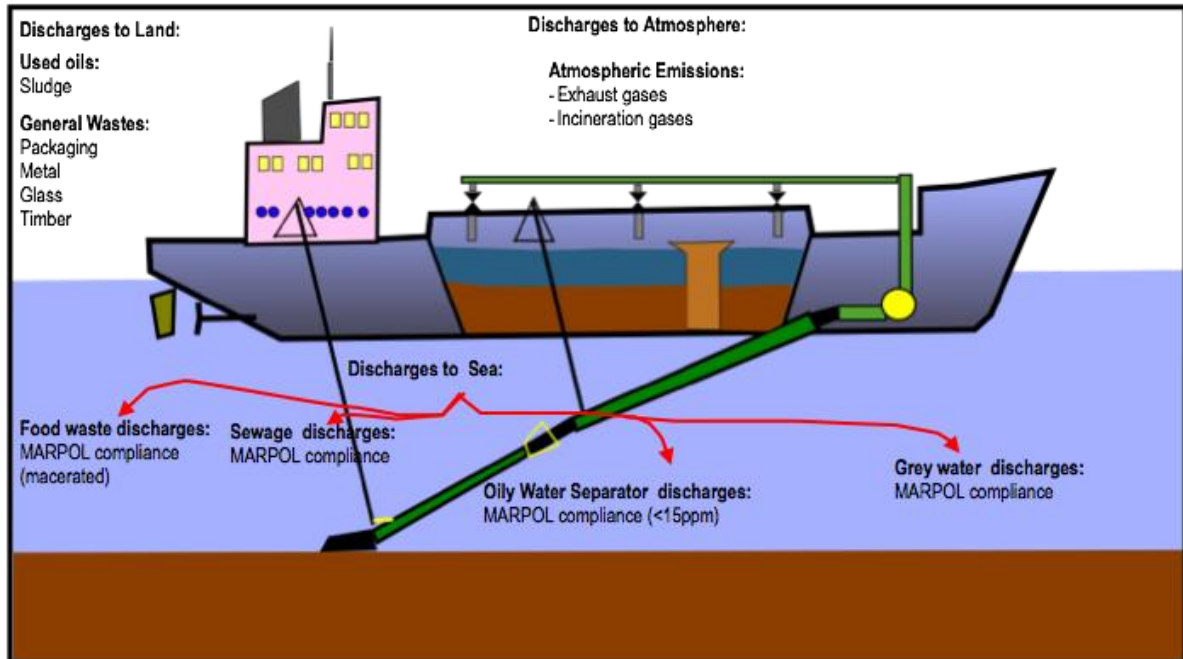
The significance of the provisionally identified impacts remains to be determined from specialist studies. Specialist consultants have been provisionally identified to undertake these studies (Dr. R Carter of Lwandle Technologies – water column, Mr. D Japp of CapFish – fisheries; Dr. Nina Steffani of Steffani Marine – benthic macro fauna; and Dr. Mark Gibbons – University of the Western Cape – jellyfish). These terms of reference will be refined by the I&AP-EIA process. New or expanded issues identified during the public participation process will be integrated into the provisional list of impacts and evaluated during the EIA phase.

Environmental Work to Date

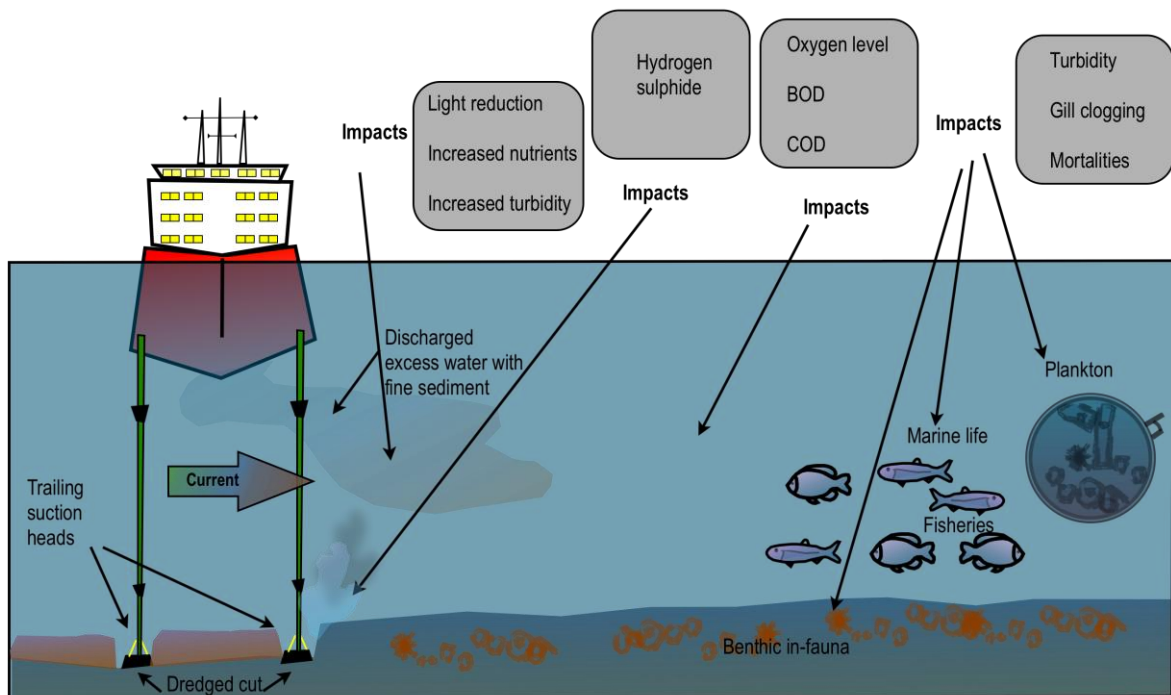
The company has current and valid environmental contracts in place for all of its exploration licence areas. Other than the annual environmental reports required by the authorities (Ministry of Mines & Energy, Ministry of Environment & Tourism and Ministry of Fisheries & Marine Resources), which contain a range of observations on metocean and ecological conditions, the Company has commissioned a baseline benthic macrofauna survey. The 100-sample assemblage has been collected from across the core provisional dredging area (*inferred resource area*, 38km²).

Whilst there are no other publicly available data on macrofaunal assemblages for this specific area and water depths, the recovered samples show similar compositional or assemblage variations to other Namibian marine areas. Further, compared to other oxygen minimum zones around the world, the Namibian samples show a similar trend in general phyla contribution of the benthic fauna.

Potential Vessel Related Impacts



Potential Environmental Impacts



Sandpiper Phosphate Project

Registration and Comments

I request to be registered as an Interested and Affected Party in respect of the proposed project. Please ensure that I receive all updates of information and that I am invited to the meetings, as well as kept fully informed of the Environmental Impact Assessment (EIA) process.

Name:	Telephone:
Organization:	Fax:
Designation:	Email:
Postal address/City:	
My interest in this project:	
Comments and matters of concern:	
Signature:	Date:

Please return this completed document (with all requested details) to:

To: Carla Saayman		Socio-Economic Practitioner at Enviro Dynamics cc	
Fax: +264 61 307-437	Tel: +264 61 223-336	Email: carla@envirod.com	
Address: PO Box 4039; Windhoek; Namibia			