



**Review of the Environmental Impact Assessment for  
The Establishment of a Port, Stockpile Area and Transportation Corridor at Rocky  
Point, Clarendon  
Jamaica**

**Prepared by  
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for Rinker Jamaica Limited**

**Review done by the  
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**With technical assistance from the  
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July 2008

*This document contains the professional opinion of the Jamaica Environment Trust (JET). In arriving at our opinion, we have made every reasonable attempt to ensure that our resource persons are informed and reliable and experts in the area in which their comment and analysis is sought. JET encourages readers to apply their own critical analysis to the information provided in this document and by others, particularly where JET's opinion differs from those others.*

## **Summary Statement**

With technical assistance from the Environmental Law Alliance Worldwide (ELAW), the Jamaica Environment Trust (JET) evaluated the Environmental Impact Assessment (EIA) for the establishment of a Port, Stockpile Area and Transportation Corridor at Rocky Point, Clarendon Jamaica prepared by Conrad Douglas & Associates Limited for Rinker Jamaica Limited.

The EIA for the Rinker Port Aggregate Stockpile and Transportation Corridor project entails the construction of a port and stockpile area at Rocky Point to export washed, crushed and sized limestone; and a transportation corridor linking the port to the existing Braziletto quarry. The project involves dredging of a ship channel and turning basin adjacent to the existing JAMALCO Rocky Point port; land reclamation with the dredged material to create a stockpile area and berthing facilities; and construction of a hooded conveyor belt from the port to the Braziletto quarry.

The following are some of the most relevant weaknesses of the EIA:

- 1. The statements in Chapter 7 regarding the determination of the potential impacts of the proposed project lack the support of a comprehensive technical data analysis and referenced sources of information.**

Section 3.1.2 of the Jamaican National Environment and Planning Agency (NEPA) Guidelines for conducting Environmental Impact Assessment state that information for the EIA studies should be obtained from recognized and specialized sources such as libraries, academic institutions, government agencies, non-governmental organizations, international funded projects, legal instruments, policies and regulations from NEPA and other relevant agencies, international documents relevant to the proposed development.

Therefore the statements of Chapter 7 of the EIA about the significance and magnitude of the environmental impacts are subjective and lack the background necessary to have a reasonable level of credibility. The overall assessment of impacts in the EIA is not technically rigorous enough to enable the authorities and citizens means to verify its statements and conclusions. The conclusions regarding the characterization, magnitude and significance of impacts does not have supporting data, referenced sources so their credibility is questionable.

## **2. The EIA failed to do a comprehensive assessment of the impacts of dredging in the environment.**

The construction of the proposed RINKER berth at Rocky Point requires dredging approximately 1,524 (5,000 ft.) long navigation channel extending from 14 m (46 ft.) MLLW depth contour in the offshore areas to the proposed berth. The proposed berth design includes dredging of approximately 79 acres of bay bottom to a depth of -14 m, MLLW. The volume of material to be dredged is approximately 0.885 million cubic metres (1,158,500 cubic yards). Dredging will be conducted hydraulically and/or mechanically using a clamshell dredge depending on the available equipment, schedule and cost. Dredged material will be transferred by barge or pipeline to the DMCA. (EIA, p.2-24).

The potential environmental effects of maintenance dredging are generally two-fold, firstly as a result of the dredging process itself and secondly as a result of the disposal of the dredged material. During the dredging process effects may arise due to the excavation of sediments at the bed, loss material during transport to the surface, overflow from the dredger while loading and loss of material from the dredger and during transport. The magnitude, location and frequency of the dredging operations would affect severely the animal and plant communities (including birds, sensitive benthic communities, fish and shellfish). The EIA failed to carry out a detailed assessment of significant impacts such as the following:

### **2.1 The EIA failed to analyze how the plume of suspended sediments will impact marine aquatic life**

Marine aggregate dredging necessarily disturbs the seabed, churning up sediment and debris that smother and impact marine ecology in wide area down current from the dredging activity.

According to one reference:

“As the sand is suctioned, a plume of silt will develop, both over the bottom and near the surface. It will pollute the sea water for some time, and promote plankton blooms from the released nutrients. Poisons such as heavy metals and hydrogen sulphide, locked up over time within the sea soil, are released again. Whereas river plumes happen only after large rains, this plume will be there most of the year, although changing location frequently. In late summer, when a thermocline has developed in mid water, effectively preventing the bottom-released nutrients from reaching the surface, the surface plume will exercise its fertilizing effect most. ....” Environmental Consequence of Mining the Sea Sand. <http://www.seafriends.org.nz/oceano/seasand.htm#consequences>

For this reason, many jurisdictions, including the United Kingdom, require proponents of marine aggregate dredging projects to analyze how predicted suspended sediment plumes will impact marine aquatic life.

For example, in the United Kingdom, all proponents of proposed marine aggregate dredging projects must submit an EIA that contains an assessment of: “the physical impact of aggregate extraction on the hydrographic and seabed environments, information should be provided on: likely production of a sediment plume (from the drag head at the seabed, from hopper overflow, or on-board screening) and its subsequent transportation within the water column or along the seabed. This should be considered together with the background suspended load.” Office of the Deputy Prime Minister, Marine Minerals Guidance Note 1 (MMG1): Guidance on the Extraction by Dredging of Sand, Gravel and Other Minerals from the English Seabed, Annex A: Guidance on Environmental Impact Assessment in Relation to Marine Minerals Dredging Applications, <http://www.planning.odpm.gov.uk/mmg/mmg1/annexa.htm>

A summarized example of a suspended sediment plume analysis may be found in: The UK Marine Special Areas of Conservation (May 2001) “Guidelines on the impact of aggregate extraction on European marine sites,” page 40, Box 3.3.2, Case Study – Determining the movement of suspended sediment during aggregate dredging. <http://www.ukmarinesac.org.uk/pdfs/aggregates-report.pdf>

Page 2-8 of the EIA states that “the purpose of this EIA is to assess the impacts that may occur from the implementation of this project, inclusive of the proposed dredging works,” however it has largely failed to carry out an in-depth assessment of impacts. The evaluation of the environmental effects of dredging and disposal must take account of both the short-term and long-term effects that may occur both at the site of dredging or disposal (near field) and the surrounding area (far field). The EIA has failed to do so a thorough assessment of the impacts. It has some statements in Section 7.2.2 about the predicted impacts of dredging on seagrass and biodiversity. The assessment of impacts of dredging omitted an analysis of the consequences on protected species such as sea turtles and on the wildlife species dependent on the mangrove and coastal ecosystems. A review of the proposed mitigation measures in Section 7.2.2 reveal an over general approach and an underestimation of the potential consequences of dredging for the marine environment.

## **2.2. The EIA failed to do a comprehensive analysis of the effectiveness of the turbidity curtains as a way to control suspended sediments during the dredging operations.**

The developer proposes to use turbidity curtains “to contain suspended sediment within the work area.” Turbidity curtains should meet standards and design criteria in order to be effective. The EIA did not include information about design and standards of the turbidity curtain, and other relevant information such as the duration of dredging during the construction phase and operation phases. The EIA does not provide an assessment about whether or not the proposed turbidity curtains would effectively control and mitigate the impacts caused by the volume of materials dredged. According to the New York Standards and Specifications For Erosion and Sediment Control, a turbidity curtain is generally used when construction activity occurs within a waterbody or along its

shoreline and is of short duration, generally less than one month. Curtains are used in calm water surfaces. [http://www.dec.ny.gov/docs/water\\_pdf/sec5atemp4.pdf](http://www.dec.ny.gov/docs/water_pdf/sec5atemp4.pdf)

Turbidity curtains are prone to damage. The turbidity curtains should be inspected daily and repaired or replaced immediately. In addition, it is necessary to periodically remove silt accumulated and it should be stabilized away from the waterbody. The barrier needs to be removed by carefully in order to minimize the release of attached sediment (Id). The EIA does not have information about how this would be done and who would be responsible for failures. Moreover, turbidity curtains have a very limited effectiveness given the dimensions of the materials dredged.

### **2.3 Disposal of dredging materials.**

The developer intends to dispose part of the dredged materials on land back filling for proposed port and aggregate stockpile infrastructure; discard the spoil at an approved dump site on land, or at a facility specifically authorized for land filling of dredge spoil, and **discard the spoil at sea in an approved area(s)**, when “the dredged material is of suitable quality to be safely disposed in the marine environment” (EIA, 2-23). This statement is not supported by data analysis, studies, technical assessment, or references. The disposal of spoil in the sea may have short and long term impacts on the aquatic species, coastal ecosystems, and patterns of sea currents that could affect other productive activities in the area.

Discharging dredged material without a comprehensive environmental assessment is unlawful in several countries because the potential effects of ocean disposal of dredged material on marine organisms and human uses of the ocean may be significant. Permits for ocean disposal of dredged material in the U.S. require “a discussion of alternatives and the information required for use in evaluating the proposed dredged material.” The Evaluation of Dredged Material Proposed for Ocean Disposal Includes “development, approval and implementation of a sampling and analysis plan and an assessment of compliance with the ocean dumping criteria.” Title 33 of the U.S. Code of Federal Regulations, Part 325.1 describes the requirements of the permit application. In addition, the application should include: a. An evaluation of dredged material disposal alternatives including an examination of potential beneficial uses of the proposed dredged material. b. Written documentation of the site dredging history and a general survey of other prior or current dredging activities at or near the site, among other relevant information.

The U.S. Environmental Protection Agency Evaluation of Dredged Material Proposed for Ocean Disposal Testing Manual<sup>1</sup> has a description of the assessments necessary to carry out to evaluate the possibility of ocean disposal of dredged material. These guidelines have an emphasis on the assessment of biological impact prior to the disposal of dredged material in the ocean prior to an authorization to do so. The EPA document states:

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<sup>1</sup> <http://www.epa.gov/owow/oceans/gbook/gbook.pdf>

“The application and authorization for ocean disposal of dredged material are outlined in Part 225. Section 225.2 establishes the informational requirements for evaluating proposed dredged-material actions, and 225.3 describes the procedure for evaluating the economic feasibility of alternative methods or sites.”

“Subpart C is primarily an evaluation of the need for ocean dumping. Initially, no disposal alternative is considered more desirable than any other, and the evaluation is made on a case-by-case basis... ocean disposal cannot automatically be considered the most desirable alternative.”

Australia’s National Ocean Disposal Guidelines for Dredged Material also recognizes the significance of the mentioned environmental impacts:

“Disposal of dredge spoil at sea will still result in physical impacts upon the marine biota at, and adjacent to, the disposal site. In addition, the dredging and disposal of contaminated material may reduce water quality, have toxic effects on organisms in the vicinity of the disposal site... In all cases, impacts on water quality, marine species, environmentally sensitive sites, marine resources, (including fisheries and geological resources), marine infrastructure (including outfalls, cables and pipelines, and monitoring stations), native title interests, the general amenity of the marine environment and other legitimate uses of the sea must be assessed. Dredging and spoil disposal may be prohibited or restricted in protected areas such as Marine Parks or Aquatic Reserves.”

Australian Guidelines also require an assessment of alternatives:

“A comparative risk assessment should be carried out by applicants on sea dumping and the alternatives.”

The EIA for the RINKER port, Aggregate Stockpile and Transportation Corridor has not done an analysis of alternatives nor a detailed assessment of the potential environmental impacts therefore it would be technically inadequate and illegal in other countries.

### **3. Wastes management**

#### **3.1 Solid wastes**

The EIA says all solid waste will be stored in “appropriate containment and discarded through the local waste management program”. It is not clear which entity would be liable for the management and final disposal of the solid wastes generated in all phases of the project. The project does not have a comprehensive solid waste management plan including the assessment of the final disposal sites. Section 2.6 Solid Wastes Management is a one-paragraph section, impressively superficial. It only has in page 2-83 says: “collected solid waste will be transported by an approved solid wastes haulage contractor for disposal at an approved landfill.”

The same happens with the hazardous and chemical wastes: The EIA only says “a Chemical Waste & Spillage Management Plan *will be* prepared, which will include implementation and monitoring of the use of chemicals and chemical wastes to cover materials such as fuel and oils, paints, solvents, and concrete additives.

Considering the dimensions of the project and the significance of the environmental and public health risks, this is unacceptable.

### **3.2 Sewage handling**

Section 2.7 of the EIA proposes the use the temporary portable chemical toilets in the construction and operation phases managed by a private contracted firm who would be responsible to “maintain, remove and dispose of the sewage. Clearly RINKER wants to be excluded any liability of the inadequate disposal and management of these wastes when the EIA says that the private contracted firm would provide a manifest to RINKER about the point of final disposal.

In addition, the EIA proposes a tertiary treatment facility “to facilitate treatment of the wastewater generated there”. The EIA did not include more details about the tertiary treatment system, capacity, methods, management, waste disposal, quality guidelines, maintenance, volume expected of water to be treated, quality monitoring, analysis of alternatives, and other relevant information to inform the authorities and the community about the viability and efficacy of the proposed system. JET maintains that all permits and licenses for projects should be submitted together.

In general, the information provided in the EIA for the solid, hazardous and liquid wastes is fundamentally incomplete, lacks any environmental assessment of the potential impacts caused by these sources, alternative management alternatives and other relevant analysis and information to evaluate their potential effects in the environment and the risks to public health.

## **4. The EIA failed to do a comprehensive assessment of the project on the Portland Bight Protected Area**

The proposed project site falls within the Portland Bight Protected Area (PBPA) -EIA, p. 4-1, and is part of a declared Ramsar Site. The PBPA is 250 km<sup>2</sup> of land and 1,356 of marine space with a total of 1,876 km<sup>2</sup> that has a complex ecosystem providing habitat for a wide variety of Jamaican wildlife. On the coastline is the largest mangrove system in Jamaica, sea grass beds provide the nursery area for marine fish and invertebrates in Jamaica’s territorial waters. The beaches on the mainland and on the inshore coral cays are major nesting sites for sea turtles (protected by Jamaican law).

As explained above, the EIA failed to carry out an assessment of critical issues such as the disposal of dredged materials, solid, liquid and hazardous wastes, among other relevant aspects of such a large operation.

The EIA does not have a detailed analysis of the potential effects in the Portland Bight Protected area including the impacts on mangroves, coastal ecosystem, turtles, corals, fish and invertebrates. The proposed dredging, land reclamation and alterations of the coastline will have a significant impact on the ecosystem balance and are contradictory to the biodiversity conservation objectives of the PBPA. Page 7-5 outlines the impacts of the construction and operation phases on the marine flora and fauna. It is not clear the criteria used to characterize the impacts of the project on various environmental resources. Construction of the project would require the removal of mangrove habitat to install footprints for the elevated conveyor corridor and other construction in the area. The EIA says “any resident wildlife will temporarily relocate to surrounding areas that are not affected.” This has now become a common statement in Jamaican EIAs and cannot stand up to scientific scrutiny. It is an expression of opinion, unsupported by any data analysis, studies, source materials, expert opinion or technical reports.

### **5. The environmental impacts of limestone mining**

The EIA says that the limestone material is to come from the expansion of the quarry in the Brazillito Mountains and that an EIA for this will be submitted separately. JET believes that these two applications should not be dealt with in isolation of each other. The Brazillito Mountains are an important dry limestone forest area. Similarly, the detailed plans for mangrove and seagrass replanting and the relevant permits should be part of a single application. Moreover, in the past Rinker has expressed interest in mining limestone in Canoe Valley, and the National Environment and Planning Agency (NEPA) carried out various public consultations on this matter. The Canoe Valley area has long been identified as being of environmental sensitivity and importance and in need of legal protection – what is the status of this? JET is concerned that this new application may result in an attempt to revive this earlier proposal.

### **6. Recommendation by EIA consultant/Objectivity**

Despite outlining significant negative environmental impacts in a protected area and Ramsar site, the EIA consultant recommends the project should go ahead. JET believes this is inappropriate. According to NEPA’s Terms of Reference, the EIA should assess environmental impacts and the mitigation measures proposed and make statements on the likelihood of damage to natural resources. The EIA should present scientific evidence, should be detailed in its assessments and comments, but JET believes the decision as to whether a project should go ahead or not should be left to the relevant regulatory authorities. Further, there are places in the EIA where the consultant refers to the two proponents as “we.” For example, at 8.2.3 in the environmental section, the EIA states with regard to Cemex: “For almost a century, we’ve worked to operate our business with care for our people, our communities and our environment...”

### **7. Analysis of alternatives**

The EIA consultant gives insufficient weight to the protection of natural resources, such as mangroves or seagrasses, either for their intrinsic value or for the ecosystem services

they provide. The consultant states that without this project, coal burning and other destructive activities will continue – a conclusion supported by no evidence whatsoever. A proper management regime for this area could be established with other income generating activities, such as ecotourism. The “analysis of alternatives section” is inadequate, especially given NEPA’s Minimum Standards for TORs which calls for alternative sites to be rigorously evaluated if the area is located in a Ramsar site.

**Submitted by:**  
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**July 2008**