

ENVIRONMENTAL IMPACT ASSESSMENT ADDENDUM

FOR THE PROPOSED CEMENT PLANT AND QUARRY OPERATION
BY CEMENT JAMAICA LIMITED AT PORT ESQUIVEL
INDUSTRIAL COMPLEX, ST CATHERINE AND
ROSE HALL DISTRICT CLARENDON,
JAMAICA

October 6, 2011

PUBLIC PRESENTATION MINUTES



EnviroPlanners Limited

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1.0 Introduction

This document presents a report on the public presentation of the EIA Addendum for the Limestone Quarry, the Clay Quarry and Cement Plant being proposed by Cement Jamaica Limited at Rose Hall in Clarendon and Port Esquivel Industrial Complex in St Catherine. The meeting was held at the Lions Club Center, Old Harbour, St Catherine on October 6, 2011.

2.0 Background

Cement Jamaica Limited (CJL) proposes the construction of a cement production facility at the Port Esquivel Industrial Complex and Rose Hall District St. Catherine/Clarendon, to be built and operated using the most modern design and technological standards. The facility will be nominally capable of producing 1.5 million ton per annum of clinker (the main component of cement).

The National Environmental and Planning Agency (NEPA), as a part of its permitting process require that projects of this nature conduct an EIA of the proposed development. EnviroPlanners Limited was contracted to conduct the study in accordance with the terms of reference approved by NEPA.

The EIA that was submitted in December 2010 to the NEPA presented a detail description of the project, applicable laws, and the existing environment. It also describes the key impacts of the proposed development on the environment and local people throughout the construction, operation, and decommissioning phases of the project and presented mitigation measures to minimize the potential negative impacts.

The EIA was reviewed by NEPA and other relevant agencies and a public presentation was made on February 5, 2011. Comments were raised by NEPA, other Agencies, Environmental Groups and other Interested Parties on the Environmental Impact Assessment (EIA) of the proposed *Cement Plant and Quarry Operation by Cement Jamaica Limited at Port Esquivel Industrial Complex and Rose Hall District St Catherine/Clarendon*. The National Environmental and Planning Agency (NEPA), as a part of its permitting process, requires that the projects proponents/the environmental consultant responsible for conducting the EIA to provide appropriate responses to comments received on the EIA.

Based on their review and comments received from other stakeholders, NEPA determined that the EIA, submitted in December 2010 was inadequate. The shortcomings of the original EIA were compiled by NEPA in two documents identified as “Comments on EIA”, dated February 19, 2011 and “Additional Comments on EIA” dated March 29, 2011. In discussions with NEPA it was agreed that an ADDENDUM to the EIA should be

written and submitted to the Agency addressing all the concerns raised in the comments and a second public presentation made.

The public presentation was therefore to present information contained in the ADDENDUM to the EIA which address all comments received. The presentation followed the document structure of the Addendum such that the comments received from NEPA are stated first and the responses that address the comments follow immediately after each comment.

3.0 Public Presentation

The public presentation was conducted in accordance with NEPA's guidelines for conducting EIA public presentation.

The public presentation was held on Thursday, October 6, 2011 at 5.00 p.m. at the Lions Club Centre, Old Harbour, St Catherine. The session was chaired by Mr. Randy Finnikin, of the Old Harbour Development Council.

The meeting agenda is presented in **Appendix II**.

The meeting was attended by a wide cross section of interested parties comprising environmental groups government agencies, business sector and community members. Based on the persons who signed the attendance register there were at least 48 persons present. A copy of the registration sheets is presented in **Appendix III**.

Two presentations were made, the first by Mr. Fitz Jackson, consultant to the project proposers on the company responsible for the development (Cemcorp); and the second by Mr. Timon Waugh of EnviroPlanners Limited on the summary of the Addendum to the EIA.

The question and answer section generated great interest. The main issues raise had to do with; air and water pollution from the project; impact on the community; employment and other benefits to the community and the timeframe for start up of construction and operations of the project. The full details are presented in the verbatim minutes in **Appendix V**.

APPENDICES

- Appendix 1A: Notice of Meeting – Flyer**
- Appendix 1B Notice of Meeting - Advertisement**
- Appendix II: Agenda**
- Appendix III: Registration Sheets**
- Appendix IV: Presentation – EIA Summary (EnviroPlanners Ltd).**
- Appendix V: Verbatim Minutes**

APPENDICES

Appendix 1A

Notice of Meeting - Flyer

PUBLIC NOTICE

There will be a Public Presentation of an Addendum to the Environmental Impact Assessment Report FOR THE PROPOSED CEMENT PLANT AND QUARRY OPERATION BY CEMENT JAMAICA LIMITED AT PORT ESQUIVEL INDUSTRIALCOMPLEX, ST CATHERINE AND ROSE HALL DISTRICT CLARENDON, JAMAICA.

Venue: Lions Club Center, Old Harbour,
St. Catherine.

Date: Thursday, October 6, 2011

Time: 5:00 pm – 7:00 pm

The public is invited to participate in the presentation by way of asking questions relating to the proposed project.

A copy of the Addendum to the Environmental Impact Assessment Report is available at:

- Old Harbour Branch Library, **Open: 10:00Am- 4:00 p.m.**
- May Pen Bay Branch Library, **Open: 10:00 a.m. - 4:00 p.m.**
- NEPA Documentation Centre, **11 Caledonia Ave., Kingston 5. Open: 9:00 a.m. - 4:00 p.m.**
- NEPA Website. – **www.nepa.gov.jm**

For further information contact:

EnviroPlanners Ltd.

17 Munroe Road, Kingston 6

Telephone: (876) 977-7590

Email: enviroplannersltd@yahoo.com

Appendix 1B

Notice of Meeting - Advertisement

PUBLIC NOTICE

Notice of Completion of Addendum to the Environmental Impact Assessment Study & Invitation to Public Presentation

FOR THE PROPOSED CEMENT PLANT AND QUARRY OPERATIONS BY CEMENT JAMAICA LIMITED AT PORT ESQUIVEL INDUSTRIAL COMPLEX, ST CATHERINE AND ROSE HALL DISTRICT CLARENDON, JAMAICA

In accordance with the Natural Resources Conservation (Permits and Licenses) Regulations of the Natural Resources Conservation Authority (NRCA) Act 1991, the NRCA has exercised its right to require that an Addendum be prepared to address comments that were generated from the environmental impact assessment (EIA) and public presentation of February 5, 2011, before a decision to issue a Permit and/or License is made.

The project involves the construction and operation of a Cement Manufacturing Plant, the development of a Limestone and a Clay Quarry, including access road to the quarry and a belt conveyor between the plant and the quarry that will facilitate the transportation of the limestone to the cement plant.

Cement Jamaica Ltd. retained **EnviroPlanners Limited** to conduct the now completed EIA study and prepare the required Addendum. A review of EIA and associated Addendum will be the basis upon which a decision is made by the NRCA to grant a permit and/or license for the development or not. Accordingly, as was done for the EIA report, the Addendum needs to be reviewed by the relevant government agencies and interested members of the public.

The Addendum report is available for public inspections at the following locations:

- **Old Harbour Branch Library, Old Harbour.** Open: 10:00Am- 4:00PM
- **May Pen Branch Library, May Pen.** Open: 10:00Am- 4:00PM
- **NEPA Documentation Centre, 11 Caledonia Ave., Kingston 5,** Open: 9:00AM-4:00PM
- **NEPA Website – www.nepa.gov.jm**
- **EnviroPlanners Ltd. – 17 Munroe Rd, Kingston 6**

Public Comment Invited

If you wish to comment on the EIA Addendum report please do so within 2 weeks of the publication of this notice and address them to:

Manager, Applications Secretariat Branch
National Environment and Planning Agency
10 Caledonia Ave., Kingston 5
Tele: (816) 754-7547 – 40
E-mail: applications@nepa.gov.jm

Invitation to Public Presentation

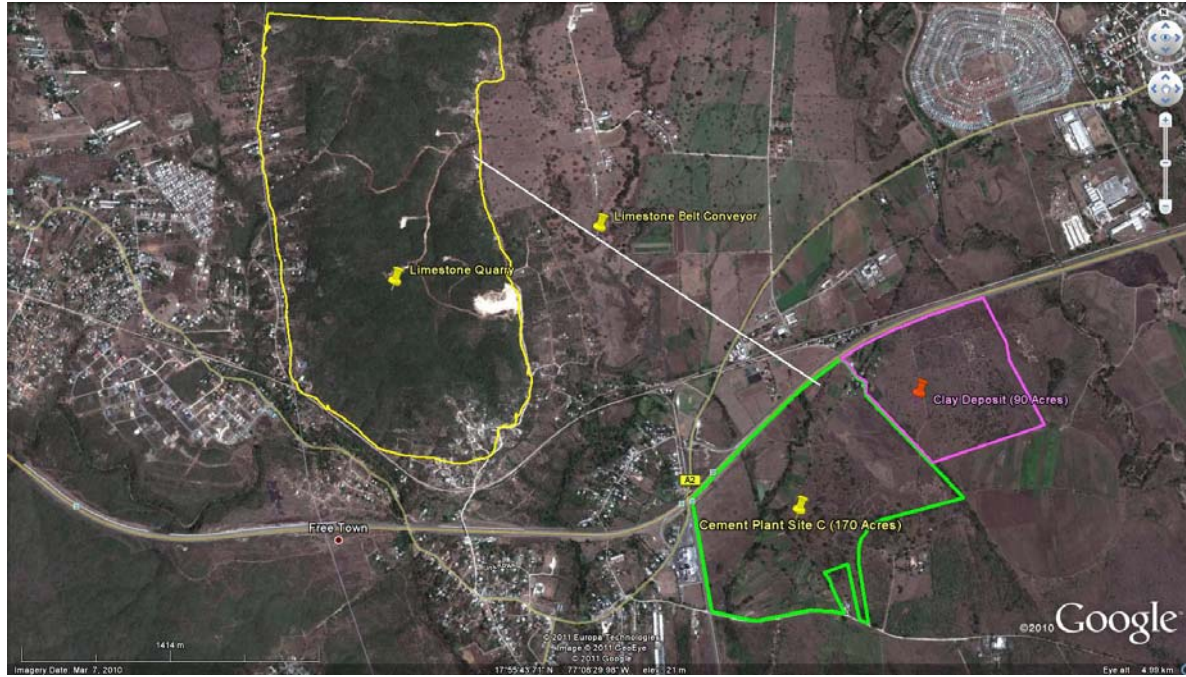
There will be a Public Presentation of the Addendum to the EIA of the proposed at the **Lions Club Centre**, Old Harbour, St Catherine on **Thursday October 6, 2011, at 5:00 p.m.** You are invited to attend and participate in the presentation.

NOTE: THE DATE FOR THE MEETING IS OCTOBER 6, 2011 AND NOT SEPTEMBER 28 AS WAS STATED IN A PREVIOUS ADVERTISEMENT

For further information contact:

EnviroPlanners Ltd.
17 Munroe Road, Kingston 6
Telephone: (876)906-3492
Email: enviroplannersltd@yahoo.com

Map showing location of project:



Appendix 11

Meeting Agenda

CEMENT JAMAICA LIMITED



EIA ADDENDUM PUBLIC PRESENTATION

**FOR THE PROPOSED CEMENT PLANT AND QUARRY OPERATION BY CEMENT
JAMAICA LIMITED AT PORT ESQUIVEL INDUSTRIAL COMPLEX, ST CATHERINE
AND ROSE HALL DISTRICT CLARENDON, JAMAICA.**

Lions Club Centre, Old Harbour, St. Catherine.
Thursday, October 6, 2011

AGENDA

1. Welcome and Introduction (Chairman) Mr. Randy Finnikin
2. Prayers
3. Greetings -
4. Presentation – Project Overview Mr. Fitz Jackson
5. Presentation – Summary of EIA Findings Timon
Waugh
6. Questions and Answers

7. Closing Remarks

Mr. Randy Finnikin

Appendix 111

Registration Sheet

**ADDENDUM TO ENVIRONMENTAL IMPACT
ASSESSMENT – PUBLIC PRESENTATION**
FOR THE PROPOSED CEMENT PLANT AND QUARRY OPERATION
BY CEMENT JAMAICA LIMITED AT PORT ESQUIVEL INDUSTRIAL
COMPLEX, ST CATHERINE AND ROSE HALL DISTRICT
CLARENDON, JAMAICA

ATTENDANCE REGISTER

October 6, 2011

NAME	COMMUNITY/AGENCY	SIGNATURE
Monica Douglas Gardener	S. D. C.	
Errol A. Lewis	Jamaica Bldg / O Jay Roberts	
Errol Morris	NEPA	
Natalie Fearon	NEPA	
Allan Hamilton	NEPA	
Israel Simms	Cool Air Maintenance Services	
ANTHONY ENBANKS	S/O ST. CATH.	
Diana Jones	Colbeck District	
Samuel Gauze	Red Ground	
Keith Oliver	Rose Hall	
WINSTON R. MOLLISON	CLAREMONT HEIGHT CITIZEN ASSOCIATION	
Beverley Holness	Claremont Height Citizen Association	
Rudolph Smith	Long Valley Park	
Washington Coats	Coats	
Marlon Freeman	Bodley Crescent	
Johnny Board	O/D Harbour	
Frances Blair	NEPA	
Ruth Ann Alexander	NEPA	

**ADDENDUM TO ENVIRONMENTAL IMPACT
ASSESSMENT – PUBLIC PRESENTATION**
FOR THE PROPOSED CEMENT PLANT AND QUARRY OPERATION
BY CEMENT JAMAICA LIMITED AT PORT ESQUIVEL INDUSTRIAL
COMPLEX, ST CATHERINE AND ROSE HALL DISTRICT
CLARENDON, JAMAICA

ATTENDANCE REGISTER

October 6, 2011

NAME	COMMUNITY/AGENCY	SIGNATURE
RALPH A. CHEN	(Consumer Affairs Advocate)	Ralph Chen
Esso J. JARXON	King's Life Audio Visual	J. Jarxon
MR U. VAN BLOKE	DIVINE POWER MINISTRY PIAKE INTERNATIONAL CONVERSION	U. Van Blake
Tipunigan	H B O	Tipunigan
Delroy Stephen	Bodles Crescent old Harbor	Delroy 3819424
Mark Brown	Bodles Crescent Old Har	867-2732
Yachetia Stephenson	Bodles Crescent	372-0557
Marlon Wynter	Bodles youth club	864-1209
Darius Smith	Bodles youth club	849-2216
Floyd Burton	Smith Ave youth club	882-2563
Onervo Stewart	Smith Ave youth club	475-2034
Owen Blake	Smith Ave. y club	355-0283
PETER-SOHN WESTCARR	JB Ethanol Ltd	JB Ethanol Ltd
KENAR SMITH	JB Ethanol Ltd.	Kenar Smith
JOHN CARBERY	JB Ethanol Ltd.	John Carbery
STEPHEN HUGHSON	AIR QUALITY CONSULTANTS LTD	Stephen Hughson
Benjamin	Jaham	Benjamin

Appendix 1V

Presentation – EIA ADDENDUM Summary

Appendix V

Verbatim Minutes

VERBATIM MINUTES
For
Public Presentation
Of
Environmental Impact
Assessment (EIA) Addendum for
Cement Jamaica Limited

Lions Club Centre – Old Harbour
Thursday, October 6, 2011 at 5:00pm

Minutes of public meeting held on Thursday, October 6, 2011 at the Lions Club Centre, Old Harbour, St. Catherine Jamaica to conduct a Public Hearing of the EIA Addendum for the Cement Plant and Quarry proposed by Cement Jamaica Limited.

The meeting commenced at 5:35 p.m. and ended at 7:10 p.m.

Welcome and Introduction – Mr. Randy Finnikin – Chairman

Mr. Finnikin introduced himself and welcomed all who were present to the community consultation. He also expressed his gratitude for their attendance. Mr. Finnikin then told the meeting that the agenda is to conduct a public hearing of an Addendum to the previously presented Environmental Impact Assessment (EIA) for Cement Jamaica Limited and allow residence, representatives of agencies and other organizations, and other stake holders to ask questions and voice their concerns and have these questions and concerns answered. He assured the attendees that he will allow ample time for the questions and answers section of the presentation, to ensure full participation. He then introduced the special guest.

Persons introduced were Dr. Arthur Geddes – *Geologist*; Mr. Fitz Jackson – *Member of Parliament and Representative of CemCorp Cement*; Mr. Brian Keefe – *Cement Processing Consultant, Bridge Gap Engineering Ltd* and Mr. Armand Namiachi – *Project Developer*.

National Anthem

Mr. Finnikin asked those present to stand for the singing of the National Anthem. All stood and sang both verses of the chorus of the anthem.

Prayer

Mr. Finnikin told everyone to remain standing for prayers. He then asked Miss Mintle Peterson to offer Prayers. Miss Peterson prayed.

Presentation – Project Overview – Mr. Fitz Jackson

Mr. Fitz Jackson addressed the meeting by first welcoming those in attendance and all community representatives and members on behalf of the CEMCORP team.

In his introduction, Mr. Jackson said CEMCORP is a Canadian company whose business is construction. They are no strangers to Jamaica because they have made a number of investments in the island before. He then explained the project to the audience and also explained the reason for the addendum and the purpose of the meeting.

NEPA Approval Process Update – Ms. Natalie Fearon

In her opening and update, the NEPA Officer, Ms. Natalie Fearon, stated that application for the cement plant was made in October 2008 to NEPA, the details of which were submitted on the 21st November 2008. The Re-submission was approved in January 2010 and the addendum submitted to NEPA, on September 18, 2011. She said that the public had 30 days after this meeting, to make written comments which would be evaluated and the recommendations will be made to the Technical Review Committee.

Questions on Mr. Jackson's Presentation

Chairman: Now ladies and gentlemen we have heard the overview and update on the project that was presented by Mr. Jackson and at this time we are not quite ready for the other presentation which is to be done by Mr. Waugh. So, we are going to take the questions that you have on what was presented by Mr. Jackson. OK, now if you have a question I would like for you to raise your hand and you will be given the opportunity to ask your question. OK, we will take this question over here.

Question Mr. Chen:

Thank you Mr. Chairman, my concern has to do with the organization of the meetings, I noted that in the first meeting for the EIA in February had refreshments included in the agenda, but none was provided. Now, this present meeting was advertised for the last Thursday and was changed, but no apology was offered. The other this is although no refreshment is on the agenda for this meeting, water is common courtesy and at least that should have been provided. The other issue I have with the organization of this meeting was that when I tried to contact EnviroPlanners using the number that was listed in the advertisement to get clarity about the meeting I could not get through to their office after several attempts.

Chairman: Thank you for those comments Mr. Chen, Mr. Jackson

Answers Mr. Jackson:

Let me first apologize to Mr. Chen and to all participants for first of all the matter concerning is absence of the refreshments at the meeting in February and for the absence of water for this meeting and also inform you that we will have water available for you later in this meeting. In regards to the change for the date of this meeting, it was necessary to ensure that the timeline required by NEPA to get the document to the different stated locations were met. However the subsequent advertisement clearly highlighted these changes and on behalf of Cemcorp I again apologize for any inconvenience that was caused by these changes.

Chairman: Thank you Mr. Jackson, next question.

Question Ms Joan Forbes – Public Relation Officer, Planter District:

Good evening everyone, I would like to know about the changes that you mentioned to the project, can you explain some more.

Chairman: Thank you for that question.

Answer Mr. Jackson

The project has not really changed, what has happened is that since the meeting in February we have identified a new clay deposit adjacent to the cement plant site which is more convenient and will reduce the need for transportation. The only other change is that the size of the power plant

has been reduced from 54 to 39 MW. So the project is going ahead pretty much as plan except for those two changes which would be beneficial.

Chairman: Thank you again Mr. Jackson, next question.

Question Mr. Marlon Wynter – Bodles Crescent

It is a long time we have been hearing about this project and I want to know when exactly is it going to start and how can we the people from the community get some work when it start?

Answer Mr. Jackson

We are working on getting the approval from NEPA, which we are expecting to be not too long from now, actually we would love for this to happen say by the middle to end of November. If we are able to obtain the permit by that time, we should be looking at have the ground breaking for the project sometime in early January and work should start shortly after that.

Chairman: Thank you again Mr. Jackson – Mr. Waugh is now ready with the next presentation, so we are going to move to that now. After the presentation there will be time for more questions, so if you have any other question at this time you could hold them for later.

Presentation of EIA Addendum – Mr. Timon Waugh

Mr. Finnikin introduced Mr. Timon Waugh, Environmental Consultant from Enviroplanners Limited to the meeting. Mr. Waugh’s presentation outline was as follows:

1. Introduction
2. Background
3. Purpose of the Addendum
4. Summary of the EIA Addendum

Introduction

In the Introduction, Mr. Waugh outlined the location of the Cement Plant, Limestone Quarry and Clay Quarry Site and the project Components. Mr. This will include the construction of a 5,000 ton per day Cement Plant, a 39 MW power plant, that is, a 30 MW coal generating plant and a 9 MW cogeneration plant and the development of a Clay Quarry adjacent to the eastern boundary of the cement plant site.

The limestone quarry site will be located in Rose Hall and limestone from this site will be crushed and transported over two kilometers to the factory via a belt conveyor, an access road to the quarry will also be constructed. In addition, red mud will be transported to the plant from Ewarton via the rail way and gypsum will be transported from Rockfort in Kingston Jamaica by trucks along the high way and/or barge along the coastline. Cement will be transported to Port Esquivel via the rail way or trucking.

Approximately seventy-five per cent of the cement manufactured by the new plant will be exported.

Background

The EIA that was submitted in December 2010 and was reviewed by NEPA and other relevant agencies and a public presentation made on February 5, 2011. Comments were made by NEPA, other Agencies, Environmental Groups and other Interested Parties, based on their review and comments received from other stakeholders, NEPA determined that the EIA submitted in December 2010 needed more information.

The specific areas which needed more information were documented by NEPA and have been addressed. The ADDENDUM to the EIA addresses all the comments received.

Purpose of the Addendum

The purpose of the Addendum was stated as follows:

- To provide responses to the all comments (specific and general) identified by the National Environmental and Planning Agency (NEPA) in its “Comments” on EIA – February 19 2011 and its “Additional Comments” – March 29, 2011.
- To identify and provide details of the two (2) significant changes to the scope of the project that will have positive environmental impact.

Summary of EIA Findings

The EIA Addendum was arranged such that the comments raised by NEPA were first stated and the specific responses to each of the comment followed immediately.

Water Resource Requirements

Comments

- The EIA must clearly account for the total water demand requirements for a project.
- The EIA must clearly identify all proposed sources of water supply.
- A consultation with the Water Resources Authority is mandatory to determine the true state of existing and potential water resources in the area.

Response

- **The water demand is broken down as follows:**
 - *Cement Plant Production and Instrumentation 1,200 m³/d*
 - *Cement Plant Circulating Water Demand 720 m³/d*
 - *Waste heat power generation water 2,160 m³/d*

- Coal fired Power plant water $5,040 \text{ m}^3/\text{d}$
- Fire fighting supplemental water (2 days supply) $270 \text{ m}^3/\text{d}$
- Net Domestic Water Consumption $120 \text{ m}^3/\text{d}$
- Potable water $132 \text{ m}^3/\text{d}$
- Unforeseen water $180 \text{ m}^3/\text{d}$

Therefore, the total water demand in normal condition is $9,822 \text{ m}^3/\text{d}$ and $10,804 \text{ m}^3/\text{d}$ for unusual conditions

- **The proposed sources of water identified for the project is as follows:**
 - Lodge Farm 1 - licensed to Royden Reittie - Rated Capacity - $1472 \text{ m}^3/\text{day}$
 - Lodge Farm 2 - licensed to Royden Reittie - Rated Capacity - $4335 \text{ m}^3/\text{day}$
 - Marine Terminal - licensed to NIC - Rated Capacity - $8187.39 \text{ m}^3/\text{day}$

Therefore, the total water available to the project is $13,994 \text{ m}^3/\text{d}$.

A series of consultations were held with the WRA and it was agreed that the water requirements for the project could only be met from either one of two approaches

- Conduct a detail study of the aquifers in the project area to determine the feasibility for the sustainable extraction of the additional volume of water require by the project. If the study identifies the availability of the required water then it could be granted.
- Negotiate with entities that have existing permits for extraction for a reallocation to the project.
- *Option 2 was pursued by the project proponents and commitments have been received for the reallocation of existing extraction rites.*

Flooding and Drainage

Comments

- A proper hydrological assessment is required to consider the impact of increased run off on the gullies and waterways in the vicinity of both sites and to determine the potential for any localized flooding either onsite or adjacent offsite areas is properly assessed.

Response

- A comprehensive drainage plan to include the entire project area was done. The methodology employed is summarized as follows:
 - Perform Field investigations;

- Collect Topographical and geographical analysis;
 - Perform Hydraulic analysis of the existing and proposed drains and drainage features;
 - Prepare engineering designs and drawings for drainage infrastructure.
- The proposed cement plant will result in increased run-off rates and volumes, however CJL has proposed a site drainage plan that includes:
 - The upgrading (clearing and widening) of adjacent drains.
 - Low Impact development measures (rooftop run-off storage, infiltration trenches, etc.)
- Hence, any adverse impacts downstream of the site should be minimized.

Flora and Fauna

Comment

- The information provided in the EIA is inadequate and the methodology employed must also be clearly stated.
- A detailed assessment of the flora and fauna resources present at both sites, through a literature review and a rapid ecological assessment must be done and the findings presented.

Response

- A very detailed flora, fauna and ecological assessment of the sites proposed for the limestone quarry, the clay quarry and the cement plant was conducted. The following methods were used:
 - Line Transect (strip-census)
 - Point – Quarter sampling, Quadrant
 - **TRANSECT SAMPLING** with the **line-intercept technique.**
 - ***Belt transect***

Approximately 69 tree species and 52 shrubs made up the flora seen in the area proposed for the Limestone Quarry. The endangered species observed within the proposed project area that was not also observed in the surrounding areas is soapberry (*Sapindus* spp). Due to its potential value, attention should be given to its long term future.

Other plants of significance which were observed included the Lignum vitae, the national flower, guinep (food, probably introduced), flame of Jamaica (aesthetic), and hard woods (economic,

e.g., coal burning). Numerous medicinal shrubs were also observed, for example Virvine, pokeweed, etc.

In total, in excess of 189 species of Flora and Fauna were recognised within the area proposed for the Cement Plant and Clay Quarry. The area had signs of years of disturbance by farming activities and clearing of vegetation and habitation by people over time.

Approximately 60 tree species and 111 shrubs make up the flora seen in the area. The area showed signs of many years of disturbance by farming activities such as the clearing of vegetation and habitation by people over time. The displaced flora is to be found in neighbouring areas, especially since they are of very similar environmental conditions.

For the fauna, there were 60 species. The wide variety of fauna (e.g. bird and insect species) observed is due to the variety and source of food and shelter to these species. In total, in excess of 265 species of flora and fauna were identified within the project area.

The displaced fauna as a result of project activities, will migrate to neighbouring areas, especially since they are of very similar environmental conditions.

Sewage Treatment

Comment

- The EIA must provide more detailed descriptions of the sewage treatment system(s) being proposed.

Response

The components of the system are as follows:

- One sewage regulating pond, with effective volume of 100 m³;
- One recycle water operating room equipped with two sets of two-stage biochemical treatment devices with capacity of 3m³/h;
- One set of quartz sand filter and activated carbon filter;
- One set of chemical feeder and disinfectant generator.
- One set of sludge drying bed.

The two-stage biochemical treatment device includes: primary sludge, contact aeration basin and secondary sludge. After a two-stage biochemical treatment, sewage will be filtered by quartz sand filter and activated carbon filter, and after being disinfected, sewage will be recycled to water green belt, road or as circulating make up water or will be discharged.

Health Impact

Comment

- The approved Terms of Reference for the development included a requirement for the conducting of a Health Impact Study. The Report did not include this critical request. This requirement is being reiterated and this study must include those communities within the sphere of influence (zone of influence) of both the Cement Plant and Quarry.

Response

Discussions were held with both NEPA and the Ministry of Health to agree on a TOR for the required HIA. A TOR which is generally used by the MOH for such assessment was supplied. Subsequent discussions with the MOH it was agreed that the TOR could not have been applied in this instance as there were some requirements that were impractical.

After further discussion, it was agreed that the approach that was practical at this time was to:

- Identify the main components of the project that could impact the health of the community in the sphere of influence.
- Determine the likely health impact that could be expected.
- Conduct a survey to establish baseline data on existing level of illnesses that may be caused by the cement plant operations.
- Recommend a monitoring programme to monitor actual health impact during the life of the project.
- During the construction phase of the project the HIA as set out in the above TOR would be implemented, commencing with the first requirement for the collection and submission of one year of air quality data.

The result of the survey revealed that the existing levels of the identified illness potentially associated with the project among residence within the sphere of influence (2 km) of the project were as follows:

- Lung Disease - ~ 2%
- Heart Disease - ~ 1%
- Asthma - ~ 12%
- Sinus Problems - ~ 24%
- Birth Defects - < 0.2%

Use of Clay

Comment

- Clay is also mentioned as one of the raw materials for the project however the EIA does not provide sufficient details on the source of the material, nor on the

possible environmental impacts from any mining of clay for the project. All of these issues must be detailed and suitable mitigation for all identified potential impacts provided

Response

The initial approach to source clay for the cement production process was to purchase from existing clay mine in the Tarentum area of Clarendon. Since the submission of the EIA, a more suitable clay deposit has been identified adjacent to the cement plant site.

The area designated for clay mining is flat, and its surface slopes gently to the south from 28-22 m ASL. In order to thoroughly extract the clay raw materials in the designated area, quarrying is proposed to take place on horizontal benches with 5 m high quarry faces, with an option involving gently sloping bench levels reflecting the gentle slope of the surface. At an extraction rate of 420,000 tonnes per year the mine should be able to provide 38 years of supply.

The reclamation and closure plan involves the establishment of a lake with a water level of 20-22 m ASL by natural flooding after the quarrying operations and mine water pumping are terminated. The borders of the mined-out area will be reclaimed by planting tree species or by natural succession.

Co-Generation Plant and Coal Fired Power Plant

Comment

- A proper environmental assessment is required for both the co-generation and the coal-fired power plants being proposed. This information should include details on the specifications of the systems and an assessment of all environmental and other issues related to the construction and operation of such systems.

Response

The design scale and planned capacity of the power plant is as follows:

- The total capacity of self-supply power plant is 39MW.
- One coal-fired power generation system with capacity of 30 MW
- Waste Heat Recovery (WHR) System with capacity of 9MW.

Details of the specification and environmental impacts were presented in a table and reference was made to the information in the full Addendum document and associated appendices.

Air Quality Review

Comment

- The proposed fuel of choice for the 45MW Power Plant and Kiln is Coal, the Report failed to identify or make mention of the potential impacts of Mercury, Lead and other Persistent and Priority Air Pollutants known to be common in emissions from the combustion of this type of fuel.

Response

A revised Air Dispersion Modeling was done, taking into consideration the potential impact of Mercury, Lead and other Persistent and Priority Pollutants known to be common in emission from the combustion of this type of fuel.

The emission rates for PM, NO_x and SO₂ that will be emitted from the proposed cement manufacturing facility are in compliance with their respective emission standards

The model predictions for the proposed cement manufacturing facility revealed compliance with the CO, PM₁₀, NO₂ and SO₂ ambient air quality standards and the all priority air pollutant guideline concentrations for the requisite averaging periods.

General Comment

Comment

- Based on the nature and magnitude of the proposed development a detailed landscape plan should be developed for the project.

Response

A digital landscape model of the project area was presented to give a visual indication of what the project area would be like after the development.

Comment

- The phasing and rehabilitation to include ecological restoration of mined out areas must be considered as a part of the analysis for the quarry site.

Response

Digital landscape models giving a side view and an aerial view of the restored mined out area was presented to give a visual indication of what the area would be like after the development.

While wrapping up the presentation, Mr. Waugh told the meeting that they can see a full report of the EIA Addendum at; the May Pen Library; the Old Harbour Library and at the NEPA and the website www.nepa.gov.jm

Question and Answer Section

Chairman: Thank you Mr. Waugh, now you have listened to the presentation from Mr. Waugh on the information contained in the Addendum is there any questions?

Question Mr. Winston Mollison

Thank you Mr. Chairman. You mention about widening of the drains, what will happen to that water and how will it be controlled to not cause any flooding?

Chairman: OK Mr. Waugh could you take that question.

Answer - Mr. Waugh:

The drain widening that is proposed will be for the storm water leaving the cement plant site. At the moment this water flows in a sheet form into the wetlands along the coast and then into the sea. The drainage system in the plant will channel the storm water into one drain and discharge it to the south of the plant. The drain widening is to control this run-off and return it to the normal sheet flow into the wet land. There are no structures south of the plant site to be impacted by this flow either.

Chairman: Thank you Mr. Waugh – lets take the next question from this lady.

Question Ms. Ava Tomlinson - Longville Park

I am from the Longville Park community and I would like to know about the Health Impact Study. What was the sample size? What communities were included in the study and what areas were considered to be in the sphere of influence and what contingency measures will be put in place to address these health problems?

Answer - Mr. Waugh:

The targeted sample size was 200, but approximately 240 persons were included in the survey. The communities included Aviary, Bodles Crescent, Rose Hall, Palmeto, Toby Height, Longville, Freetown, and Sandy Bay. The sphere of influence was taken to be communities within a 2 km radius of the project. The full details are available in the Addendum document and associated Appendix, but it must be pointed out that the illnesses mention are not what will necessarily happen, but has the potential to occur. I want to assure you though that the plant will be built with all the most modern pollution control technology that will ensure the illnesses do not become an issue.

Chairman: OK, we have time for a few more questions

Question Mr. Gordon

What I want to know is - will local persons be employed?

Chairman: Who will take that question – Mr. Jackson?

Answer - Mr. Fitz Jackson:

The direct answer to that question is yes, local persons will be employed both in construction and operation, and however the persons that will be employed must have the required skills and competence. I am therefore encouraging those who will be seeking employment to start from now to get certified whether through HEART or some other programme.

Chairman: Thank you Mr. Jackson – next question.

Question Mr. Delroy Stephenson – Heavy equipment operator

How long will the plant take to construct and what will be needed for employment?

Chairman: Will you take this too Mr. Jackson?

Answer - Fitz Jackson:

It will take approximately 24 months and will utilize different skills at different times during the construction.

Question - Eric Bell

It was mentioned that coal will be used as fuel for the power plant and the cement kiln, and coal is known to cause serious environmental problems. How will the project ensure that this does not become a problem for the people living near the plant?

Chairman: Mr. Waugh will you take this one?

Answer - Mr. Waugh:

Alright, I appreciate the concern, but I want to assure the gentleman that there has been very good advances made in the technology for burning coal and controlling the emissions from it. Both the cement plant and the power plant have incorporated in their design the latest technology for pollution control. It includes desulphurization systems, bag filters and continuous monitoring with automatic shut down. This will ensure that all emissions are maintained within the requirements established by the Air Quality Regulations.

Chairman: Thank you Mr. Waugh – OK this gentleman over here has a question, we take his question.

Question - Mr. Chen

I like the project and I think it is a good for Jamaica and will make a big contribution to national development. There are two things I would like to mention; an aerobic system was mentioned as the system that will be used for the treatment of the sewage. I want to recommend that consideration be given to the use of anaerobic technology as this is a better system which generates bio-gas that can be burned as a fuel. You can contact Ms. Julia Brown at the Scientific Research Council to get more information on that. Also from the first meeting in February I raised the suggestion of issuing shares to the public, I want to know if this is still being considered.

Chairman: Mr. Waugh

Answer – Mr. Waugh:

I will deal with the first part of that question and I believe Mr. Jackson will take the second part. Yes, we are aware of anaerobic technology and it is something that we can look into it.

Answer contd – Mr. Jackson

As we promised when the suggestion was made in February I promised that it is something we would look into at the appropriate time and that commitment still stands.

Chairman: OK, thank you Mr. Jackson and Mr. Waugh – we will take the next question from this gentleman.

Question Mr. Keith Oliver

Good evening, this project is being talk about for a long time now and we have been hearing about it on and off. What I want to know is when is the project really going to start?

Chairman: Mr. Jackson, I guess you will take this one.

Answer - Mr. Fitz Jackson:

As I said earlier in the meeting we are hoping that the approval can be received from NEPA by the middle of November and once the approval is in place we should be able to have the ground breaking by early January 2012.

Chairman: Let go to this gentleman for the next question

Question Mr. Romaine Miller

I am from the Longville Park community and if you are going to be using the road to transport the clay from Torrentum, I would ask that you ensure that you maintain the roads. We have gone through a lot to get the roads repaired and we do not want the trucks transporting the clay to destroy the roads again.

Chairman: OK, who will take this question?

Answer - Mr. Waugh:

The clay for the process will be obtained from a clay mine to be established on the property adjoining the eastern boundary of the cement plant site. The deposit is estimated to last for approximately 38 years and therefore there will not be any transportation of clay on the public roads.

Chairman: Now it seems like we are close to the end, we will take this other question.

Question Mr. Marlon Freeman

What I want to know is about the waste from the factory and how will the waste water from the cement plant affect the communities near to the plant? Will it cause any kind of disease for the people?

Answer - Mr. Waugh:

There will be no waste water discharged from the plant. Two types of waste water will be generated, domestic waste and process waste. Both types of waste water will be treated and recycled at various point in the system, so there is no need for concern about waste water.

Chairman: Alright now OK is that a question around there?

Question Johnny Carburry – JB Ethanol

My question is that I would like some clarity about the location of the clay quarry, where exactly on the site will it be located and what is the size of it?

Chairman: OK – Mr. Waugh

Answer: Mr. Waugh

As shown in the area surrounded by the red line, the clay quarry site is adjoining the cement plant site. It is directly to the east and I believe it is approximately 37 hectares or about 90 acres.

Chairman's closing remarks:

Thank you everyone, if there are no further questions, we must close at this point. Now ladies and gentlemen I want to thank you for coming out and participated in the way you did. Special thanks to the cement personnel, consultant, environmental planners and others, thank you everyone. Enjoy the rest of the evening.