

ENVIRONMENTAL MONITORING PLAN

**CONSTRUCTION WORKS AT RIU II, BLOODY BAY,
HANOVER, JAMAICA**

Submitted to
NATIONAL ENVIRONMENT & PLANNING AGENCY
10 Caledonia Avenue
Kingston 5



Taking Care of You and Your Environment.

JULY 2002

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INTRODUCTION

This document outlines the monitoring programme that will be instituted during the construction phase of RIU II in Bloody Bay, Negril, Hanover. Where possible it outlines the proposed locations of the monitoring exercises and includes a list of parameters that will be monitored.

NOISE

Noise level readings will be taken by using a Quest 2700 Sound Level Meter and octave band analysis will be conducted by using Quest OB - 50 which provides 9 octave bands from 31.5 Hz to 8 kHz. Octave band analysis will be conducted to determine the frequency distribution of the noise at four (4) stations (Figure 1) on the landward side of the property. These readings will be taken at approximately 50m from the property fence where possible.

Records of the high and low dBA readings and the level at which it rests at most will be noted on forms (Appendix I). In addition, any abnormal activity for example excessive impulse noise from machinery will be noted.

These readings will be taken at three distinct times per day on one (1) day and compared to NEPA noise standards.

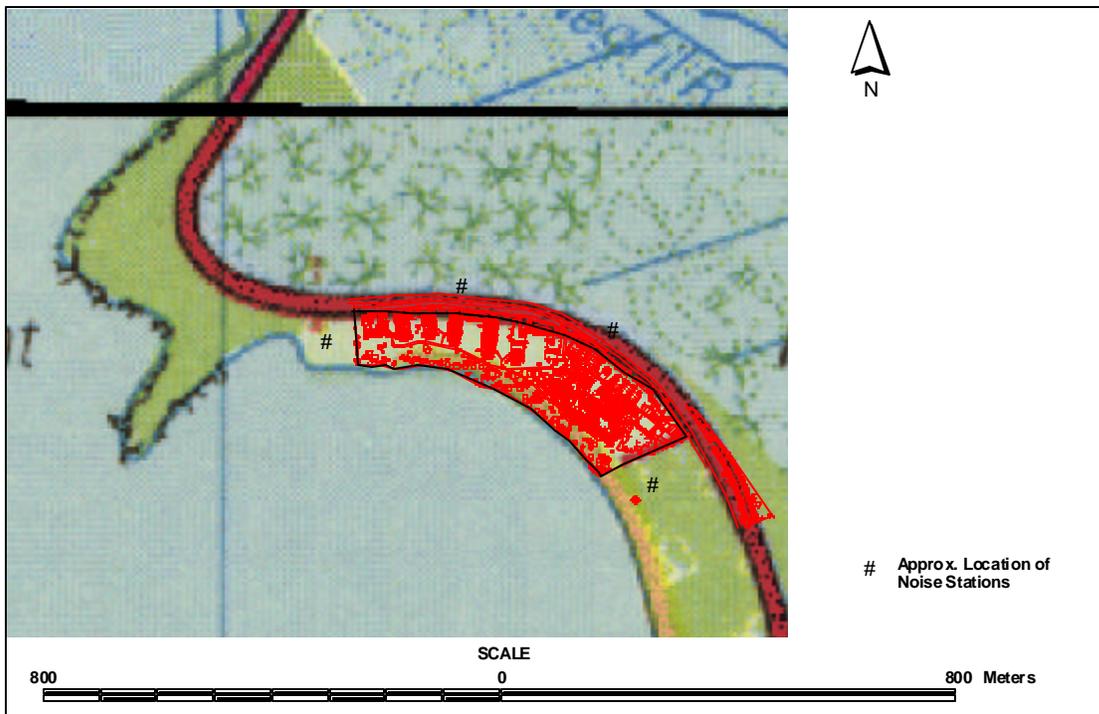


Figure 1 Approximate location of noise stations

WATER QUALITY

Physical, chemical and biological data will be collected at a total of eight (8) stations, seven (7) stations within the Bloody Bay and one outside the Bay (Figure 2). **Salinity, dissolved oxygen, nitrates, phosphates and turbidity** will be done *in situ* using a Hydrolab H₂O datalogger. **Faecal and total coliforms** will be sent to a laboratory for analysis.

The results of these tests will be compared with established water standards.

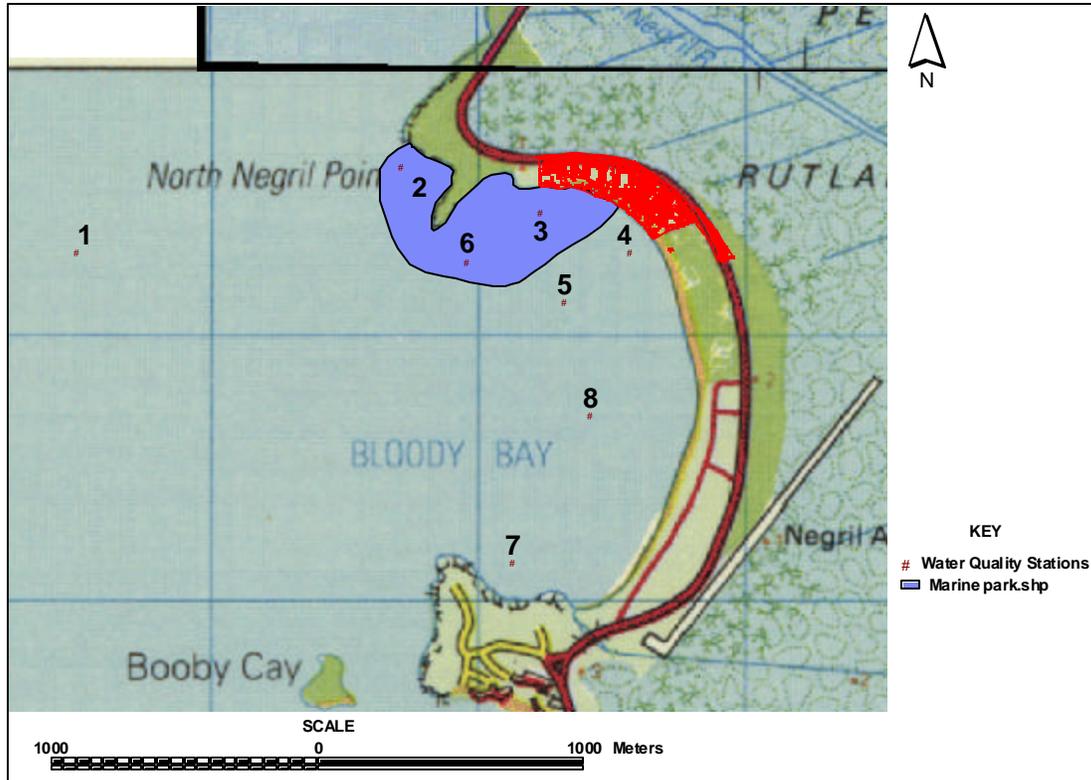


Figure 2 Approximate location of the water quality stations

NURSERY PLANTS

Fortnightly checks in the first three (3) months of construction and monthly checks thereafter until construction is completed will be conducted on the endemics and other trees that are relocated to the nursery to ascertain their conditions. In addition, there will be checks to ensure that the trees are replanted on the hotel site and the location of their replanting and health of the plants noted.

TREES MARK FOR PRESERVATION ON CONSTRUCTION SITE

Fortnightly checks in the first three (3) months of construction and monthly checks thereafter until construction is completed will be done to ensure that the trees marked to

be retained that remain on the site during construction are not damaged or removed. These include the original 154 trees marked in January 2002.

OTHER

During the fortnightly checks in the first three (3) months of construction and monthly checks until the completion of construction the following will be done,

1. Inspection of site clearance activities to ensure that they are following the proposed building plan and to ensure that site drainage and wastewater system are being constructed as planned.
2. Inspections to ensure that construction activities are not being conducted outside of regular working hours (e.g. 7 am – 7 pm).
3. Monitoring to ensure that fugitive dust from cleared areas, access roads and raw materials are not being entrained in the wind and creating a dust nuisance.
4. Inspections of trucks carrying raw material to ensure that they are not over laden as this will damage the public thoroughfare and onsite lead to soil compaction.
5. Inspections to ensure that trucks carrying raw materials and heavy equipment are parked at the designated area on the proposed site so as to prevent traffic congestion along Norman Manley Boulevard.
6. Inspections to ensure that trucks carrying solid waste, raw materials and heavy equipment are covered adequately.
7. Inspections to ensure that flagmen are in place and that adequate signs are posted along the roadway. This is to ensure that traffic along the Norman Manley Boulevard have adequate warnings and direction.
8. Assessment of the records of the quantity of solid waste generated and records of its ultimate disposal.
9. Inspection of quarry and sawmill licences to ensure that they are legal. Copies of these licences should be kept on file.
10. While not a necessity at this time a one off beach profile is proposed to be undertaken on the beach associated with and just adjacent to the hotel to determine the baseline beach's plan form. This profiling will be undertaken at least six locations (100 m intervals) along the beach. Either permanent Bench marks or fixed infrastructure points will be employed to assure that profiles are consistently taken at the same location. The profiles will extend to the 1.5m water depth from fixed point on the back of beach.

MONITORING EXERCISE

It is proposed that the monitoring exercises will be conducted over a two (2) day period using the forms in Appendices I and II. In addition, a summary form will be filled in (Appendix III) and included in the reports being submitted to NEPA.

APPENDICES

APPENDIX I NOISE FORM

APPENDIX II MONITORING CHECK LIST

Monitoring Checklist

QUESTION	YES	NO	COMMENTS
1. Are construction activities being conducted within regular working hours 7 am – 7 pm.			
2. Are the trees relocated to the nursery?			
3. Are the trees in the nursery in a health condition?			
4. Are the marked trees on the construction site damaged or removed?			
5. Are the proposed building plan, site drainage and wastewater systems being constructed as planned?			
6. Is there a problem with fugitive dust?			
7. Is the solid waste being stored adequately?			
8. Are the trucks carrying solid waste materials over laden?			
9. Are the trucks carrying solid waste materials covered?			
10. Is the solid waste being disposed adequately?			
11. Are there records of the amount of solid waste generated and the location of its ultimate disposal?			
12. Are the trucks carrying raw materials over laden?			
13. Are the trucks carrying raw materials covered?			
14. Are the trucks carrying raw materials and heavy equipment parked at the designated area on the proposed site?			
15. Are flagmen in place and adequate signs posted along the roadway?			

APENDIX III SUMMARY CHECKLIST

Summary Checklist

QUESTION	YES	NO	COMMENTS
1. Are construction activities being conducted within regular working hours 7 am – 7 pm.			
2. Are the trees relocated to the nursery?			
3. Are the trees in the nursery in a health condition?			
4. Are the marked trees on the construction site damaged or removed?			
5. Are the proposed building plan, site drainage and wastewater systems being constructed as planned?			
6. Is there a problem with fugitive dust?			
7. Is the solid waste being stored adequately?			
8. Are the trucks carrying solid waste materials over laden?			
9. Are the trucks carrying solid waste materials covered?			
10. Is the solid waste being disposed adequately?			
11. Are there records of the amount of solid waste generated and the location of its ultimate disposal?			
12. Are the trucks carrying raw materials over laden?			
13. Are the trucks carrying raw materials over laden?			
14. Are the trucks carrying raw materials and heavy equipment parked at the designated area on the proposed site?			
15. Are flagmen in place and adequate signs posted along the roadway?			
16. Are the water quality parameters within acceptable limits?			
17. Are the noise levels 50 m from the property boundary within the 70 dB stipulated by NEPA?			
18. Are there licences for the quarry, sawmill and approval for the block factory being used?			