

**PRELIMINARY REPORT ON LOCAL VISUAL
EMISSION OBSERVER TRAINING
JANUARY 25 to 27 2011**



**Prepared by
Environmental Management Subdivision
National Environment and Planning Agency
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Background

The Visual Emission Observer Training in method 9 (opacity), which was held on the 25-27 of January 2011 is one of the prescribed methods of monitoring opacity to verify compliance under the Natural Resources Conservation Authority (Air Quality Regulations 2006). Under this regulation the Agency has licensed thirty one (31) facilities whom all are required to maintain a 20% opacity standard for their air emission points.

On the 13 October 2010 the Agency received funding from the NRCA to send two of its officers on this specialize training which was previously only offered overseas. The method also requires the individual to be recertified every six month so this cost would become recurrent on the Agency's budget. In order for the Agency to be effective in its monitoring and enforcement of this opacity standard it was necessary to have a greater portion of the Agency's field officers trained in this method.

As mentioned before 31 Air Pollutant Discharge licences have been issued to the various industries across the island. In all the Licences issued the licensee is required to monitor and report Opacity to the Agency. The reference method 9 is also the prescribed method to be used by each licensee and hence the cost to train one of their employees would basically equate to the same cost experienced by the Agency when it trained its officers in October 2010.

Opacity of exhaust air emissions from a stack or any other source is directly related to the release of Criteria Air Pollutants, Lead, Hydrogen Sulphide, Green House Gases and Priority Air Pollutants that will contribute to a rise in ambient air concentrations which intern will affect human health and the environment negatively. The reduction and control of Opacity levels from exhaust emissions into the air will result in reduced air pollution and the reduction of our annual ambient air quality particulate matter measurements which have been languishing in the high $70\text{ug}/\text{m}^3$ (Jamaica's Ambient Air Quality Standard for annual averages is $60\text{ug}/\text{m}^3$) for the past three years especially in the Kingston and St. Andrew region.

The five major goals of this project are:

1. Expand Agency's and other government department's capacity in Method 9 at a reduced cost so that the necessary monitoring and enforcement of the regulations can be effective.
2. Reduce the recurrent cost for recertification every six months for training of government employees.

3. Provide training in method 9 for license facilities at a reduced cost so that they can maintain the National standard of 20% Opacity by monitoring, reporting and taking corrective action.
4. A reduction in emissions and the improvement of our ambient air quality.
5. Raise the general awareness of operators of air pollutant sources to the importance of proper source management to reduce emissions, improve efficiency of their process and save energy by better fuel use.

Goals one to three were all achieved upon completion of a successful training and from unofficial reports from the trainees goal five seems to have been achieved. However an official survey will be conducted on the participants to confirm this. Goal four will be determined after an analysis of the ambient air quality for 2011 is done.

Strategy to achieve goals 1-3

Eastern Technical Associates (ETA) who trained both NEPA officers in October 2010 made a proposal to the Agency to have the training done locally. The proposal was reviewed by the Agency's legal team, the NRCA board and approved for funding on 14 December 2010 with conditions and after commitment of 45 private sector participants, so that a joint partnership between the ETA Smoke School and NEPA could achieve the goals of the Agency. The conditions were as follows:

1. Eastern Technical Associates will conduct Visible Emissions Training and Certification courses as outlined in this proposal on the proposed dates of January 25-27, 2011 and at a six month interval there-of this first scheduled program for up to three (3) consecutive years. After the three (3) year period the proposal will be eligible for renewal. ETA reserves the right to adjust cost accordingly after the proposed three year period.

All non NEPA employees shall register in advance through www.smokeschool.com, or at the program location by ETA employees only. All non NEPA employees shall pay the national advertised rates of \$150usd for lecture, \$400usd for field certification, \$550usd for both lecture and field certification. All fees will be collected by ETA only.

2. Upon acceptance of this proposal NEPA agreed to pay for shipping cost for the Smoke Generator and peripheral equipment from Raleigh, NC (US) to Kingston, Jamaica. NEPA also agreed to provide safe inside storage for the equipment and materials at no cost to ETA for the length of the proposal period.

3. Upon acceptance NEPA agreed to provide an adequate classroom for the lecture portion of the program accessible to all program attendees and a sufficient field certification location

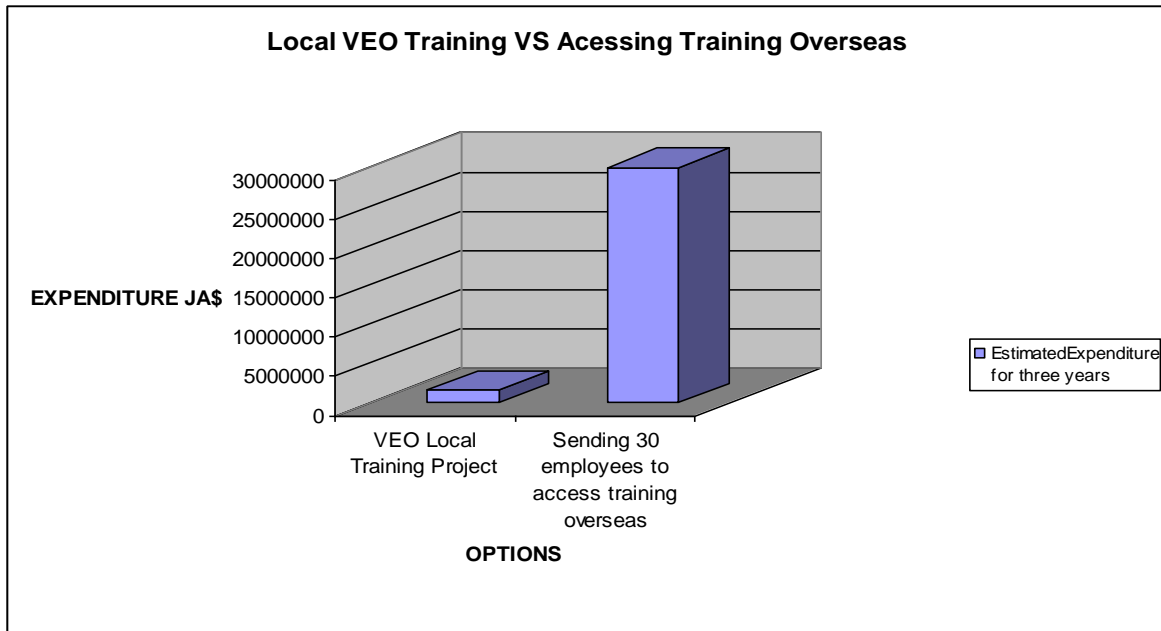
at no cost to ETA. NEPA will agree to transfer equipment from indoor storage facility, to the agreed field training area and return at no cost to ETA.

4. Upon acceptance of this proposal NEPA is eligible for a discount of ETA's Visible Emissions Observer Equipment Package to enhance the hands-on classroom documentation session and to provide selected groups with some of the more useful equipment for VE documentation. The Equipment Package includes: Sunto Compass, Bacharach Sling Psychrometer, and Bushnell 450 Laser Rangefinder, and Abney level all packaged in a hard shell case.

5. Upon contract approval, ETA will allow NEPA personnel, whose schedules do not allow them to attend the scheduled program, to attend any other commercial or state contract programs fee exempt during the contract period, up to the total number of attendees established in the contract.

Commitment emails and letters were received from the following private sector entities up to the 14 December 2010:

| COMPANIES | TRAINEES COMMITTED |
|---|---------------------------|
| 1. Redstripe | 3 |
| 2. Jamaica Public Service Company limited | 4 |
| 3. Jamaica Private Power Company Limited | 3 |
| 4. Jamaica Ethanol Processing limited | 4 |
| 5. Jamaica Energy Partners | 2 |
| 6. Jamaica broilers Group Limited | 8 |
| 7. Caribbean Cement Company limited | 4 |
| 8. Petrojam limited | 6 |
| 9. Noranda Jamaica Bauxite partners | 3 |
| 10. Worthy Park Estates | 2 |
| 11. J. Wray and Nephew | 5 |
| 12. WINDALCO Bauxite | 1 |



The above analysis does not include the revenue recovery aspect which the project has planned as well. The registration fee charged by the Agency to each private sector participant attending each training schedule for the year will result in a surplus of income recovered at each training event and will allow the training project to be self-sufficient and should not require any capital input for the remainder of the three years.

Strategy to achieve Goal 4

Each company is required to monitor and report on Opacity using Method 9 certification. These results for 2011 will be assessed in the year 2012 and compared with the ambient levels in the various areas directly affected by these emission points. The analysis will involve comparing a reduction in opacity levels from the stacks and identifying if a similar trend exist in the ambient levels for particulate matter and other criteria air Pollutants. The analysis will continue into 2013 where comparisons can also be made with data collected in 2011 to confirm if there is a correlation and to what extent the impact of air pollution is reduced.

Strategy to achieve Goal 5

As mentioned before a survey will be carried out on all the participants who attended the programme to see if this goal was achieved.

Recommendations and follow up actions:

The opportunity cost saved by the Agency hosting this training locally is exponential. In order to capitalize on this opportunity the Agency should:

1. Develop routine monitoring schedule for all trained certified Agency staff is developed and will be implemented by 28 February 2011.
2. Routine Opacity readings will be added to the work plans of all trained staff in the coming 2011-2012 year.
3. Data gathered from routine monitoring will be used in Air Shed modeling and added to the National Air Emission Inventory Data base being compiled by NEPA
4. Data gathered should be used to inform policy and standards.

APPENDIX A

ACTUAL PRIVATE SECTOR ATTENDEES AT TRAINING

| COMPANIES | TRAINEES CERTIFIED |
|---|---------------------------|
| 1. Redstripe | 1 |
| 2. Jamaica Public Service Company limited | 11 |
| 3. Jamaica Private Power Company Limited | 3 |
| 4. Jamaica Ethanol Processing limited | 4 |
| 5. Jamaica Energy Partners | 2 |
| 6. Jamaica broilers Group Limited | 8 |
| 7. Caribbean Cement Company limited | 1 |
| 8. Petrojam limited | 6 |
| 9. Noranda Jamaica Bauxite partners | 3 |
| 10. Worthy Park Estates | 2 |
| 11. J. Wray and Nephew | 4 |
| 12. WINDALCO Bauxite | 1 |
| 13. CL Environmental | 2 |

TOTAL

48

Government Attendance at the Training

| | |
|---------|----|
| 1. NEPA | 21 |
| 2. JBI | 2 |
| 3. EHU | 1 |
| 4. WMHU | 2 |
| 5. JFB | 1 |
| 6. MTW | 1 |

TOTAL

28

University Attendees

| | |
|----------|---|
| 1. UWI | 3 |
| 2. UTECH | 1 |

TOTAL

4

TOTAL ATTENDEES AT FIELD AND LECTURE

80