

**Marinus Verhagen
Asbestos Waste Management Site

Operations Manual
&
Contingency Plan**

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1.0 INTRODUCTION

The Marinus Verhagen Enterprises Limited Asbestos Waste Management & Disposal Site will be constructed in 2012 to provide for disposal of asbestos waste. The site provides for disposal of asbestos materials, which can be disposed of by placement of a low permeability liner and final cover material. Only asbestos material properly contained are approved for disposal at the site by the Nova Scotia – Asbestos Waste Management Regulations.

The site is comprised of five major components, as follows:

- 1)** The buffer zone, which includes the surface and groundwater monitoring facilities and provides a visual screen of trees.
- 2)** The low permeability lined cell areas of the site which will received the acceptable asbestos waste so they can be placed and covered as required.
- 3)** The erosion and sediment control features of the site are intended to direct site storm water via ditches, silt fencing, etc., to the holding pond to allow for the settling and retention of same on site.
- 4)** The employees of Marinus Verhagen Enterprises Limited, who will be responsible for ensuring that the specifics of the Nova Scotia – Asbestos Waste Management Regulations approval for the site are followed.
- 5)** The employees of Marinus Verhagen Enterprises Limited, will have at their availability as per the Asbestos Waste Management Regulations the following items for handling the containers of asbestos:
 - a) a shovel
 - b) a broom
 - c) personal respirator equipment for anyone handling the asbestos containers.
 - d) protective clothing adequate to protect any one handling the asbestos containers from the harmful effects which asbestos waste may have on human life of health.
 - e) a supply of wetting agent
 - f) plastic bags having a thickness not less than 6 mil, sufficient to enable any repackaging of material.

2.0 INITIAL SITE LAYOUT - CONSTRUCTION

The site was chosen primarily because it is presently besides an existing and operational C & D Site. The site native soils are suitable to meet the permeability specification for liner material and placement of the asbestos waste.

The site soils were evaluated by LVM Maritime Testing with the results being reported in their memorandum dated June 05, 2012, which are included here in the Appendix. The testing program revealed that the site soils were suitable to provide the required permeability. The depth of the soil was in excess of 5.5 meters. Water table or bedrock was not encountered.

LVM Maritime Testing will provided field inspection for the required one meter thick low-permeability liner. The soil in the excavation site is suitable as a liner, with some reservations as noted in the geotechnical report. LVM Maritime Testing personnel will excavated test pits during the construction process to ensure the soil liner met the approval requirements. The soil liner is to be constructed over four areas to provide the cells for disposal for an estimated two-year initial asbestos waste generation for each cell. The topsoil and rootmat is to be removed from the cell areas prior to cell excavation and is to be stockpiled around the perimeter of same for use as final cover material over the cell cap, for the reinstatement of vegetation. The excavated area at the lower portion of the C&D site also serves as a site-settling pond and all surface runoff is directed to this area.

The initial layout and construction is planned to provide for several years of disposal area. The rate of filling of this area shall be monitored so that planning for and the construction of further cells can be effected. The progressive completion of the cells will require a final soil cap and stabilization such as seeding, tree planting, etc. as soon as possible to reduce the active areas of the site to a minimum.

3.0 OPERATION

To operate the site as required by the approval, the five major components must be maintained and utilized together.

- 1)** The buffer zone must be maintained, windblown debris picked up, windfalls cleared out, and additional planting of native species may be required to preserve the visual break. The perimeter of the buffer zone will be posted to discourage trespassers and hunters, whose presence may compromise safety requirements. The buffer zone contains the surface and groundwater monitoring points which provide the necessary data to confirm the site is meeting the approval requirements.
- 2)** The low permeability liners have been constructed to receive the asbestos waste and provide for a means of disposal which will minimize infiltration into the groundwater and provide for a layer of cover material to shed the surface water from the debris. The surface water must be shed to the sides of the cell to reduce infiltration through the asbestos waste and leachate production.
- 3)** The erosion and sediment control features are intended to allow for normal excavation, waste placement, and site filling activities which are recognized to produce silt laden water. The site drainage is directed to a pond which allows for retention of the silt laden water until the silt settles. The water from the pond is discharged through the buffer zone which provides for final silt removal and ensures that discharge limits are met when leaving the site.
- 4)** The employees responsibility shall be to familiarize themselves with the proceeding operations components of the site, so that their actions will conform to the requirements of the approval from the Nova Scotia Department of the Environment and Labour, and the Asbestos Waste Management Regulations to ensure the safe and acceptable operations of the site.

- 5) The employees of Marinus Verhagen Enterprises Limited, who will be responsible for ensuring that the specifics of the Asbestos Waste Management Regulations for the site are followed, will have at their availability the following items for handling the containers of asbestos.

A personal respirator is required for anyone handling the asbestos or involved in repair or repackaging of any damaged asbestos containers. A personal respirator is required for anyone with in the immediate area of the asbestos transfer to the disposal site.

Any person in the immediate area or handling asbestos containers is required to wear protective clothing, adequate to protect from any harmful effects which asbestos waste may have on human life or health.

A supply of a wetting agent is used to reduce airborne asbestos particles, No person shall handle asbestos material, unless it is completely wetted.

A broom and shovel to ensure that if any of the asbestos has spilled from its container that it will be completely cleaned up and properly repackaged.

A supply of plastic bags having a thickness of not less than 6 mil, which are used to repackage any damaged asbestos containers.

4.0 SPECIFIC APPROVAL REQUIREMENTS

The Nova Scotia Department of the Environment and Labour Approval and the Asbestos Waste Management Regulations for this site contains specific requirements which must be adhered to as part of the ongoing operations.

- 1)** All asbestos waste entering the site must be accompanied with a shipping document as is laid out in Transportation of Dangerous Goods Act (Canada) The approval requires a yearly report as to the quantity and type of material disposed of at the site.
- 2)** A groundwater and surface water monitoring program requires sampling and reporting on a quarterly basis. The results of this sampling shall be included with the yearly report as to the type and quantity of material disposed of at the site.
- 3)** When the site is open an employee of Marinus Verhagen Enterprises Limited shall be present to ensure all loads are inspected prior to dumping and that materials received are not in damaged containers, and that only properly packaged asbestos material is received at the site.
- 4)** All Materials received at the site shall be placed in its final location in the cell and covered with in 24 hours of the material being deposited in place.
- 5)** The ongoing disposal activity at the site will require the construction of additional areas of the one meter thick low-permeability liner. The owner will engage the appropriate engineering consultants to provide for the inspection, testing and location of the liner. The consultants will provide plans and reports showing the area of liner prepared and the results of the permeability testing. The consultants will also prepare a plan showing areas which have been filled with debris and capped off. The plans shall be prepared in accordance with the approval requirements and the site operation requirements.

5.0 CONTINGENCY PLAN**1.0 SCOPE**

A Contingency plan is defined as a predetermined communications and action sequence which can be initiated immediately to cope with an unauthorized release which has caused, is causing or may cause an adverse effect. The purpose of the plan is to provide details of who is to be notified and what procedures to undertake to minimize and/or mitigate the potential effects of the unauthorized release which is defined as an unauthorized release of deleterious substances into the environment and includes substances regulated under the *Environment Act* and regulations made pursuant to the *Act*.

The site is located adjacent to Highway, East of the East River Road exit (#25), New Glasgow, Pictou County. The site is accessed from McLellans Brook Road (#941) approximately 2.5 km up the Old Mill Road.

The following organizations have responsibility for various aspects of the plan:

GENERAL EMERGENCY	911
ROYAL CANADIAN MOUNTED POLICE	
Stellarton Detachment:	1-902-755-4141
THORBURN FIRE BRIGADE	
Thorburn:	1-902-922-3105
LINACY FIRE BRIGADE	
Linacy:	1-902-755-5595
NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT	
24 Hours:	1-800-565-1633
Pictou District Office:	1-902-396-4194
NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES	
24 Hours:	1-800-565-2224
MacLellan's Brook Office:	1-902-922-4020
NOVA SCOTIA DEPARTMENT OF TRANSPORTATION & INFRASTRUCTURE RENEWAL	
New Glasgow Area Manager:	1-902-755-7060
HOSPITAL - Aberdeen Regional	1-902-752-8311
AMBULANCE	911
	1-888-346-9999

2.0 NOTIFICATION PROCEDURES

Any and all occurrences which are not in keeping with daily site activities shall be reported. These occurrences could include, but not be limited to the following examples:

- x **hazardous material in load of debris,**
- x **contamination of debris by oil or other substances,**
- x **fire,**
- x **accident or personal injury,**
- x **spill or contamination due to equipment malfunction,**
- x **presence of wildlife and hunters thereof,**
- x **unauthorized dumping of material,**
- x **etc.**

The employee at the site, who first detects the occurrence shall notify the General Manager and/or the appropriate emergency organization immediately. Efforts shall be made to control the occurrence until those trained in handling same arrive at the site. The employee shall not place himself at risk in controlling the occurrence and shall consider his personal safety paramount over attempts to control the occurrence.

2.1 NOTIFICATION LIST

- 1.) RESPONSE TEAM LEADER:** Russell Hayman, Supervisor
Marinus Verhagen Enterprises Limited
Office: 1-902-752-6411
Home: 1-902-695-2900
Cell: 1-902-396-7770
- 2.) ALTERNATE TEAM LEADER:** Marinus Verhagen, Owner
Marinus Verhagen Enterprises Limited
Office: 1-902-752-6411
Home: 1-902-752-6411
Cell: 1-902-396-6715
- 3.) ALTERNATE TEAM LEADER:** Darcin Verhagen
Marinus Verhagen Enterprises Limited
Office: 1-902-752-6411
Home: 1-902-752-1983
Cell: 1-902-759-1425
- 4.) ALTERNATE TEAM LEADER:** Florence Clarke, For Site Access Only
Marinus Verhagen Enterprises Limited
Office: 1-902-752-6411
Home: 1-902-895-0176
Cell: 1-902-899-6464
- 5.) Emergency response numbers as listed in Part 1.0 - Scope of the Contingency plan.

2.2 RESPONSE TEAM LEADER

The response team leader is the person in charge of the occurrence from the time it is first observed until the completion of all required procedures, including the filing of a report detailing the response as required. The response team leader will make all decisions, commit all resources and direct their use, act as a focal point for information exchange and communicate with government agencies to ensure that all tests and samples are effected to provide proof of compliance with the applicable regulations. The response team leader shall also prepare and submit a report detailing the incident and response when necessary.

2.3 CONTAINMENT AND CLEAN-UP PROCEDURES

The containment and clean-up procedures will be specific to the particular occurrence. Employees at the site will be expected to act with due diligence with respect to an occurrence, however it is anticipated that emergency response organizations such as Fire, Police, Department of Transportation, Environment, Natural Resources, etc., will have specific procedures to deal with the nature of the occurrence. The employee and the Response Team Leader will endeavor to meet the requirements of the specific procedures or engage private organizations who specialize in dealing with the occurrence to the regulatory agencies satisfaction.

2.3.1 ON-SITE EMERGENCY EQUIPMENT

The following emergency equipment and supplies are to be kept on-site at all times. The items listed are considered to be the minimum requirement. All employees shall be aware of their presence and trained to use them properly. The employees shall also be trained to comply with the Department of Environment and Labour Safety Standards.

- ✓ First Aid Kits
- ✓ Fire Extinguishers
- ✓ Oil Absorbent Materials - Spill Kits

The Response Team Leader is responsible for maintenance of emergency equipment and supplies. All employees are responsible for observed deficiencies with any safety equipment and supplies.

5.3.2 TYPICAL EVENTS AND RESPONSES

The contingency plan is generally prepared for dealing with unforeseen occurrences. The nature of the activities at the site and the type of equipment utilized produces circumstances from which probable or previously encountered occurrences can be expected. The occurrences are classified as typical rather than unforeseen and include, but are not limited to the following:

1). PERSONAL INJURY

- ✓ Determine severity of injury, whether individual can be moved,
- ✓ Remove individual from immediate danger,
- ✓ Apply first aid as required,
- ✓ Report to Response Team Leader,
- ✓ Summon emergency personnel (such as ambulance, police, etc.),
- ✓ Notify of details ahead of arrival.

2). FIRE

- ✓ Check immediate area for injured individuals,
- ✓ Notify Response Team Leader - Fire Department,
- ✓ If fire is small, use on-site emergency equipment as immediate action to contain or extinguish fire with certainty,
- ✓ Take direction from the fire department personnel,

✗ Smoking or fires shall not be permitted at the site.

3). EXPLOSION

- ✓ Guard from immediate effects of explosion,
- ✓ Check immediate area for injured individuals,
- ✓ Determine whether fire is present or conditions exist which may allow a fire to start,
- ✓ Notify Response Team Leader - Fire Department, and other emergency organizations such as Police, Department of Environment and Labour, etc.

4). OIL SPILLS

- ✓ Identify the source,
- ✓ Apply the on-site emergency materials to contain the spill within the smallest area possible,
- ✓ Notify the Response Team Leader and Nova Scotia Department of the Environment and Labour,
- ✓ Take direction from NSDOEL regarding clean up and proper disposal.

5). DISCOVERY OF POTENTIALLY HAZARDOUS OR UNACCEPTABLE WASTE ON-SITE

- ✓ Stop work in the immediate area,
- ✓ Notify Response Team Leader,
- ✓ Notify appropriate authorities immediately and take direction from them (NSDOEL),
- ✓ Determine nature of the waste through sampling and testing as directed,
- ✓ Arrange for proper disposal.

6). ATTEMPTED DELIVERY OF UNACCEPTABLE OR HAZARDOUS WASTE

- ✓ The employee will determine if the waste requires an emergency response based on the nature of the waste and its condition,
- ✓ If an emergency response is not required, notify hauler that waste is unacceptable,
- ✓ Inform Response Team Leader and NSDOEL,
- ✓ Have the hauler remove the waste from the site and transport same to a location acceptable to NSDOEL.

2.4 SITE RESTORATION

When clean-up and containment procedures have been effected the site shall be restored to conditions which are suitable for its intended purpose prior to the occurrence. The nature of the occurrence will dictate the restoration procedures required to satisfy the applicable regulations. The restoration will be carried out in accordance with the recommendations provided by the applicable regulatory agency or a consultant engaged by the owner to determine the requirements and actions to be taken to ensure regulatory compliance.

2.5 DISPOSAL

Materials generated as result of an occurrence will require testing and classification to determine the final disposal location. The testing and classification shall be carried out to meet the applicable regulators requirements and disposed of as the testing and regulations would allow.

2.6 RESOURCES

The following resources and contracts shall be available in excess of those previously described in the event of an occurrence:

COUNTERMEASURES EQUIPMENT - MANPOWER - CONTRACTORS

- **Marinus Verhagen Enterprises Limited**
Marinus Verhagen 1-902-752-6411
- **PICTOU COUNTY EXCAVATORS**
Bert Livingston 1-902-755-1185
- **RED DEVIL DRAIN SERVICES**
Keith Smith 1-902-396-4011
- **UNITED RENTALS LIMITED**
New Glasgow 1-902-755-6756

TREATING AGENTS AND EXPERTISE

- **DEARBORNE CHEMICAL COMPANY**
Ron Marks, P.Eng 1-902-752-1323
- **BRIDGEPORT INDUSTRIES**
Bedford 1-902-468-0300
- **BLUEWATER AGENCIES LIMITED** 1-902-468-4900
- **MARITIME TESTING**
Scott Simms, P.Eng 1-902-468-6486
- **MEC ENGINEERING & CONSTRUCTION SERVICES LIMITED**
Kirby Thompson P.Eng 1-902-893-3799

APPENDICES

- 1.0 NOVA SCOTIA ASBESTOS WASTE MANAGEMENT REGULATIONS
- 2.0 NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT APPROVAL TO CONSTRUCT AND OPERATE AN ASBESTOS WASTE MANAGEMENT SITE - CONTINGENCY PLAN CRITERIA.
- 3.0 GEOTECHNICAL REPORTS – LVM MARITIME TESTING
- 4.0 SURFACE AND GROUNDWATER SAMPLING RESULTS
- 5.0 SAMPLE FORMS
 - Shipping Document
- 6.0 SITE RECORD DRAWINGS
- 7.0 EMERGENCY ACCESS ROUTE