Waite
Environmental Management, LLC.

March 18, 2009

Mr. Hugo Martínez Cazón, P.E
Vermont DEC
103 S. Main Street
West Building
Waterbury, Vermont 05671-0404

RE: Corrective Action Plan for Building Cleanup
Moran Plant
Burlington, Vermont (SMS Site #2005-3357)

Dear Hugo:

Waite Environmental Management, LLC (WEM) is pleased to present two (2) copies of the revised *Corrective Action Plan for Building Cleanup* for the Moran Plant. This document describes work that is anticipated to be completed during the spring/summer of 2009.

Also enclosed is an extra copy of the Executive Summary/News Brief. Mr. David Weinstein will be posting a copy of this news brief at the Burlington City Hall for two weeks to allow for public comment.

Sincerely,

Miles E. Waite, Ph.D.
Principal Hydrogeologist

Enclosure

CC: David Weinstein, City of Burlington, CEDO
Alan Liptak, KAS, Inc.
Julie Potter, CCRPC
Jessica Dominguez, US EPA (electronic only)
Alan Peterson, US EPA (electronic only)
Razelle Hoffman-Contois (electronic only)

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CORRECTIVE ACTION PLAN FOR BUILDING CLEANUP

MORAN PLANT
475 Lake Street
Burlington, Vermont

SMS Site #2005-3357

Prepared for:

The City of Burlington
Community and Economic Development Office
Room 32, City Hall
149 Church Street
Burlington, Vermont 05401

With Funding and Support from:

KAS, Inc.
PO Box 787
Williston, Vermont 05495
and
Chittenden County Regional Planning Commission
30 Kimball Avenue, Suite 206
South Burlington, Vermont 05403

Prepared by:

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March 11, 2009
Revised March 17, 2009

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PROFESSIONAL ENGINEER'S REVIEW:

I have reviewed this ***Corrective Action Plan for Building Cleanup*** for the Moran Plant in Burlington, Vermont prepared by Waite Environmental Management, LLC for the City of Burlington, dated March 11, 2009.

March 11, 2009
Date

Erik C. Sandblom, P.E.
VT. License No. 7316

STATE OF VERMONT
ERIK C.
SANDBLOM
NO. 7316
PROFESSIONAL ENGINEER

3/11/2009

CAP CHECKLIST

A document cover that includes the site name, location, and SMS site number as well as the responsible party's name, address, and phone number.	See Cover Page
An Executive Summary that includes a statement of the problem (why corrective action is needed), a review of the results of the investigation(s), a description of the chosen corrective action technology, a statement of site operations and monitoring activities, and an estimation of the duration of the cleanup.	See page vi
A one-page News Brief (under separate cover) that consists of the CAP Executive Summary.	With cover letter
A Table of Contents.	See page i
A copy of the Executive Summary from the Site Investigation.	Not Applicable
Tabular, time series summaries of contaminant concentrations by media and water table elevations.	See Appendix B
Appropriately scaled maps including a detailed site plan, area plan (including sensitive receptors and neighboring properties), and a USGS 7.5 minute topographical map.	See Appendix A
At least two cross-sections of the contaminated zone (ideally, along the long axis and perpendicular to the contaminated zone) depicting well or boring depths, soil stratigraphy, recent soil contaminant concentrations, and recent water levels.	Not Applicable
A recent groundwater elevation contour map.	See Appendix A
A recent contaminant concentration map.	See Appendix A
A list of all sensitive receptors at risk of affected as well as all interested, threatened, or impacted third parties including contact names, locations and addresses, and phone numbers.	See Section 2.4
A discussion of the reasons for and goals of the corrective action.	See Section 1.0
A qualitative feasibility study of various corrective action alternatives (e.g. CAFI).	Not required for this project
An in-depth, quantitative review of the recommended remedial alternative(s) chosen with a discussion of 'real world' limitations.	Not required for this project

CAP CHECKLIST, CONT.

A schedule for CAP implementation	See Section 5.0
An estimate of the contaminant mass of volume, expected removal rates, and the duration of cleanup.	See Section 4.0 & 5.0
Plans and specifications of the corrective action remedial design and related calculations.	See Appendix A
All CAFI data	Not required for this project
A list of all contractors and sub-contractors, including contact people, addresses and phone numbers.	See Section 4.1
A list of all permits required for the project, and the contacts necessary to obtain these permits.	See Section 4.1
A discussion of all hazardous and solid waste disposal issues.	See Section 4.2-4.7
A separate itemized cost estimate for CAP implementation and system operations and maintenance (O&M). This cost estimate should be broken down by task and by labor cost, sub-contractor costs, and equipment costs. The requirement for a cost estimate may be waived for sites using private funds.	See Appendix C
A schedule for evaluation of start-up of remedial system.	Not required for this project
A formal long-term monitoring and O&M plan for the corrective action.	Not required for this project
An updated Health & Safety Plan.	See Appendix D
A Professional Engineers signature of review.	See Page iii

Former Moran Generating Plant, Burlington, Vermont

EXECUTIVE SUMMARY/NEWS BRIEF

Waite Environmental Management, LLC (WEM) is working with the City of Burlington to coordinate and oversee the cleanup of the Moran Plant building. Preparation of this Corrective Action Plan (CAP) was funded by a Brownfield grant from the US Environmental Protection Agency (USEPA) to support an ongoing effort toward the future reuse of this Brownfield property. Partners in this environmental effort include KAS, Inc. and the Chittenden County Regional Planning Commission. The CAP was prepared per requirement of the Vermont Department of Environmental Conservation (VT DEC). The VT DEC contact is Mr. Hugo Martínez Cazón, P.E. (address: 103 S. Main Street, Waterbury, VT 05671-0404; phone: (802) 241-3892; email: hugo.martinezcazon@state.vt.us). Electronic copies of the CAP can be requested from the VT DEC.

The objective of the phased corrective action proposed in this document is to address the known physical obstacles and regulated waste issues that currently prohibit the interior rehabilitation of the Moran Plant building for the proposed redevelopment. Future interior issues (indoor air quality, concrete quality, pre-occupancy wipe sampling) that may arise during redevelopment process as well as exterior issues (soil quality, groundwater quality) will need to be addressed in future phases under separate corrective action guidance(s) as part of the redevelopment and reoccupation process.

The Moran Plant is a 120 ft by 140 ft steel, brick and concrete structure on a mat concrete foundation. The basement of the building is at an elevation of 96 ft, and the roof is at an elevation of 184 ft. There are several levels of the building (basement, main, front entrance, deaerator, upper platform), all of which require some corrective action work. The work, anticipated to take place between April and August 2009, is described below:

- **Basement**: Since the Plant ceased operation in 1986, the basement has been filled with water for much of the year due to the fact that until January 2009 the building was connected to Lake Champlain by a sub-basement channel system. Testing of this water in 2008 revealed high concentrations of lead assumed to be from the years of degradation of metallic objects and lead paint. The basement also has a thin layer of sediment that has accumulated from both the influx of Lake water and the deposition of dust/lead paint flakes/pigeon guano. Testing of this sediment in 2008 revealed high levels of lead as wells as much lower levels of residual contaminants from the former burning of coal and cleaning of coal burning machinery. This CAP calls for the dewatering of the basement by pumping it to the sanitary sewer system, removal of accumulated scrap metal debris, additional sediment testing, and removal and disposal of the sediment as hazardous waste.
- **Main Level**: The main level has an accumulated layer of pigeon guano, flaking lead paint on much of the steelwork, and assumed trace amounts of asbestos dust under the guano. This CAP calls for cleaning of the guano (non hazardous) and stabilization of the lead paint (hazardous) by properly trained contractors in conformance with OSHA and VT DOH guidelines.
- **Deaerator and Upper Platform Levels**: The steel grate flooring at the deaerator and upper platform have pigeon guano. This CAP calls for cleaning of the guano in conformance with OSHA and VT DOH guidelines.
- **Windows and Roof**: Friable asbestos is present in the caulking around many of the windows and non-friable asbestos is present in several window panels and in roof flashing. This CAP calls for removal/disposal of the asbestos in conformance with OSHA and VT DOH guidelines. This work must be coordinated with window replacement and re-roofing during refurbishing of the building.

1.0 INTRODUCTION

The following Corrective Action Plan (CAP) was prepared by Waite Environmental Management, LLC (WEM) for the former Moran Electrical Generating Plant site ("Moran Plant"; refer to Site Location Map in Appendix A) at 475 Lake Street in Burlington, Vermont. This CAP was prepared for the City of Burlington, and was funded by a Brownfield grant (#BF-97165901-0) from the US Environmental Protection Agency (USEPA) to support environmental assessment and cleanup planning in an ongoing effort toward the future reuse of this Brownfield property. WEM is under contract with KAS, Inc., which is under contract with the Chittenden County Regional Planning Commission (CCRPC), which is engaged in a cooperative agreement with the Burlington Community and Economic Development Office (CEDO). As the Site is also a state-listed hazardous waste site (Site #2005-3357), the Vermont Department of Environmental Conservation (VT DEC) is also involved.

The objective of the corrective action proposed in this document is to address the known physical obstacles and regulated waste issues that currently prohibit the rehabilitation of the of the Moran Plant building for the proposed redevelopment. The work proposed is the first of potentially several phases of corrective action and is geared toward addressing potential risks to construction workers. Future interior issues (indoor air quality, concrete quality, pre-occupancy wipe ssampling) that may arise during redevelopment process as well as exterior issues (soil quality, groundwater quality) will need to be addressed in future phases under separate corrective action guidance(s) as part of the redevelopment and reoccupation process. The exterior issues are more fully addressed in WEM's recent *Work Plan: Moran Cleanup Activities* [1]

2.0 SITE DESCRIPTION

The "Site" is defined as an approximately 600 ft by 350 ft area at the edge of Lake Champlain (see Figure 1). The Moran Plant, a 120 ft by 140 ft steel, brick and concrete structure on a mat concrete foundation, is the only building on the Site. Currently the building is vacant. Access to the Site is via Penny Lane off of Lake Street.

The Moran Plant is constructed on flat lowland terrain at the edge of Lake Champlain; there is less than 4 feet of topographical relief over the Site (refer to Figure 1 in Appendix A). The average ground surface elevation in the vicinity of the building is 103 ft above mean sea level (AMSL). The Lake level typically varies between 95-101 ft. Given the low relief, this Site is within the 100-year floodplain of Lake Champlain. Topographical relief to the east of the Site is much greater, where the ground surface rises steeply to the east.

This part of the Burlington waterfront was constructed through the placement of fill into areas adjacent to the lake; the fill boundary is roughly the line of the bike path, so the entire Site is located within this fill area. The soil east of the fill material is mapped as Adams-Windsor

series, characterized as deep, loose, and excessively well-drained sandy loams. Bedrock under the site, which was not encountered during any drilling efforts, is mapped as Dunham Dolomite.

The Moran Plant was operated by the Burlington Electric Department (BED) as a coal-burning power plant from 1953 to 1986. Prior to 1953, this portion of Burlington was used for a wide range of industrial purposes, including railroad, lumber yard and mill, and storage/transportation of petroleum products. Petroleum tanks were abundant to the north of the Plant until the early 1990s. One of these tanks (#109) was formerly partially located within the Site boundaries (see Figure 1). However, records review and site assessment activities have not revealed the presence of in-ground petroleum storage tanks at the Site. Electric transformers were also abundant at the Plant, and records provided by the BED showed low concentrations of PCBs adjacent to several transformers in the 1980s [2]. Since decommissioning of the Moran Plant in 1986, the building has generally remained vacant, with the exception of the Lake Champlain Community Sailing Center (LCCSC) which until recently occupied a small area of the west end of the building. The grounds surrounding the building continue to be used by LCCSC for boat storage.

2.1 Abutters

This Site is abutted to the north by the Urban Reserve and to the east by the Burlington bike path and railroad right-of-way. Directly to the south is a facility operated by the Burlington Electric Department (BED) and the Burlington Water Treatment facility. Lake Champlain abuts the property to the west.

2.2 Building Construction / Layout

A cross-sectional view of the Moran Plant building is shown in Figure 4. A brief description of the components of the building are described below:

- **Sub-Basement**: The building is constructed on a mat foundation that extends to an elevation of 83 ft (20 ft below grade) at its deepest point under the building. The top of the mat is at 91 ft. Between the top of the mat and the basement floor is a water flume and a series of open cells. The water flume is connected to an inlet sluiceway and an outlet sluiceway and formerly provided a direct connection between the building and the Lake. The purpose of the flume was to provide Lake water for operation/cooling of the former steam boilers. The openings to the flume at the inlet and outlet were recently blocked using subaqueous grout in an effort to separate the building from the Lake and prevent annual flooding of the basement in the spring when the Lake level rises.
- **Basement Level**. The basement level is located between 96 and 106 ft. A layout of the basement is also shown in Figure 3. The floor area at 96 ft is approximately 14,500 ft^2 and is penetrated by a series of steel and concrete columns that support the structure. Most of the floor is at an elevation of 96 ft, but there are some trenches that are slightly deeper. While most of the equipment was removed from the basement during decommissioning, there is significant debris (steel, concrete, wood, plastic) that was either left behind or discarded in the space. The basement floor is covered with water for much of the year. There is also a thin layer of sediment/grime that has accumulated on the basement floor. The concrete walls are mostly unpainted, but most of the structural steel has a flaking layer of paint.

- **Mezzanine, Front Entry, Rear Access Level**: Between 106 and 116 ft is the front (west) entry space (formerly used by the LCCSC), a steel grate mezzanine system that provides access to the basement, and a rear (east) access/landing area. The front entry space is empty and free of physical or environmental constraints. The mezzanine and stairs are well rusted but are still functional. The rear access area is clean and has a functional large overhead door.
- **Operations Level**: The operations level ("main level") is located between 116 ft and 141 ft. The main floor used to house the boilers, which have since been removed. The concrete floor is primarily empty with the exception of a layer of pigeon guano that has accumulated over the years. It is also assumed that trace amounts of asbestos dust are present on this layer. Much of concrete surfaces are painted, as is most of the structural steel. The flaking paint is primarily on the steel surfaces. The western end of this level has offices, a bathroom/locker room, and a break room that were formerly used by the employees of the Moran Plant.
- **Deaerator Level**: The deaerator level is located between 141 and 176 ft. This level has large hoppers that were formerly used to deliver coal to the boilers. The floor is steel grating, so only minimal amount of pigeon guano is present. The concrete walls and steel structure are unpainted. Asbestos material was removed from this level in the 1980s. It appears that this level is generally free of environmental constraints.
- **Upper Platform/Catwalk**: This level is located between 176 and the roof at 184 ft. It consists of a grated steel catwalk and a large conveyor belt that delivered coal to the hoppers. Minimal amount of guano is present, and the concrete block walls and exposed steel are unpainted. Other than several (3-4) window openings that are filled with a corrugated cement material that tested positive for asbestos, this level is generally free of environmental constraints.

2.3 Hydrologic Setting

Overburden groundwater is relatively shallow under the Site, ranging in depth from 1-6 feet below grade. This translates to elevations between 96.5 to 101.5 ft. Groundwater elevations fluctuate seasonally, often by several feet. Refer to Table 1 and Graph 1 in Appendix B for historical groundwater elevation data. It should be noted that top of the groundwater, or water table, is consistently above the basement floor elevation of 96.0 ft.

Groundwater flow under the Moran Plant is generally to the west/southwest at with a lateral hydraulic gradient between 0.01 – 0.02 ft/ft. The flow direction and gradient in the northern portion of the Site is slightly different due to the presence of the wetland. A recent groundwater contour map is shown in Figure 2 in Appendix A.

While not specifically addressed in this CAP, groundwater surrounding the Moran Plant is contaminated by volatile organic compounds (VOCs). The VOCs can be separated into two plumes, one consisting of tetrachloroethene (PCE) and trichloroethene (TCE), and one consisting of 1,1-dichloroethane (1,1-DCA) and 1,1,1-trichloroethane (1,1,1-TCA). The limits of the two VOC plumes in groundwater are shown on Figure 2. With the exception of a small zone north of

the Plant, concentrations are generally below state and federal guidance levels. Historical groundwater quality data are also provided in Table 2 in Appendix B.

In regard to water inside the Moran Plant, the basement is flooded throughout much of the year, which has been the case since the Plant ceased operation. The water freezes in the winter and remains frozen until late spring. During 2008, the basement had 4.3 ft of water/ice in mid-April and was nearly dry in late November. As of February 16, 2009, there was 15 inches of ice present above the floor.

Research into former plant operation and review of blueprints of the basement indicate that catch basins and sumps were actively utilized to keep the basement space dry. The water inside the plant stems from both Lake water intrusion and groundwater seepage. The Lake water intrusion has now hopefully been stemmed by the closure of the sluicegates (see Section 3.4). The extent of groundwater intrusion cannot be fully evaluated until the dewatering effort is undertaken.

2.4 Sensitive Receptors

The sensitive receptors being considered for this phase of corrective action are construction workers and future occupants/users of the building.

3.0 PREVIOUS WORK SUMMARY

A summary of the environmental work completed to date on the Moran Plant building is described below.

3.1 Decommissioning: 1987

During decommissioning of the Moran Plant in 1987, the vast majority of the asbestos containing materials (ACMs) were removed. Based on records provided to the State by the asbestos contractor, Eastern Refractories Company, Inc. [3], a total of 236 bags of ACMs were removed from the “condenser”, and 128 bags of ACMs were removed from the “deaerator tank”. Upon removal, the final air clearance results ranged between 0.0013 and 0.0036 fibers per cubic centimeter. During a survey conducted in March – April 1987 [4], dust samples collected throughout the building were determined positive for asbestos, indicating that there was a “definite asbestos hazard to personnel” working inside the Plant. It was recommended that asbestos danger signs be posted throughout the building.

3.2 Interior Hazard Survey: 2005

Asbestos Containing Materials: On March 29, 2005, a total of 24 samples of suspect ACMs were collected for analysis by polarized light microscopy (PLM). Interior materials sampled included: gypsum wall board panels, table tops, fiber wall panels, window panels, flooring, and plaster. Exterior materials sampled included: window caulking, window glazing, and roof materials. Further description of the sampling and testing is provided in WEM’s Phase II ESA Report [5].

The results indicate that of the 24 samples collected, only 3 types of material tested positive for asbestos: 1) exterior window caulk between the masonry and window frames; 2) corrugated window panels in the upper platform/catwalk; and 3) exterior roof flashing. In each case the asbestos was classified as chrysotile. The only friable asbestos was noted to be the window caulking. It should be noted that while an effort was made to find materials hidden from view, there may be materials above permanent ceilings, enclosed within walls, or otherwise inaccessible that may not have been sampled.

In regard to the potential presence of asbestos in dust inside the Plant, it was determined that the sampling for dust was impractical and meaningless, since most of the interior surfaces are covered with bird droppings. Also, dust sampling is typically used to determine the nature of an obvious and suspicious dust or debris rather than a screening method for a large area such as the Moran Plant. However, because asbestos was found in dust in 1987 [3, 4] and there has been no further mitigation since that time, there continues to be an asbestos hazard to future construction workers during any demolition or cleanup activities.

Lead Paint: On March 29, 2005, 11 paint samples from inside the Moran Plant were collected as part of a screening for lead containing surface coatings. The screening was not intended to be a comprehensive testing of all surfaces and building components, but rather a indication of what is typical and what a contractor can expect to encounter during demolition or remodeling. The paint samples were collected from the front entry area occupied by the LCCSC, basement level, main level, and deaerator level. The samples were submitted for analysis of lead by Flame AAS (SW 846, 7420) by EMSL Analytical. Further description of the sampling and testing is provided in WEM's Phase II ESA Report [5].

The results indicate that lead was found to be present in all of the surfaces tested. Lead concentrations ranged from 0.01% to 14.0%. The lead paint was stable on much of the painted concrete surfaces, but flaking on most of the painted steel structure. The painted concrete and steel are primarily limited to the basement and main levels.

Pigeon Guano: On March 29, 2005, an inspection of the pigeon guano was made. With the grated floors in the deaerator and upper platform levels, much of the guano has fallen through the grating and accumulated on the main level. Some has fallen through the openings (former boiler locations) on the main level into the basement where it has mixed with water over the years. The layer of guano on the main floor is as much as 2 inches deep in some locations.

Pigeons as well as their droppings can be a source of dangerous fungi and bacteria. Inhalation of dust from dropping or feathers can cause pulmonary infections. There is a group of pulmonary disorders that can result, the most common being histoplasmosis, an infection caused by the bacteria Histoplasma capsulatum. The susceptibility to these disorders varies from person to persons, but those with compromised immune systems are at particular risk.

3.3 Pre-Dewatering Characterization: 2008

In anticipation of dewatering the building, WEM undertook an initial characterization of the water and sediment quality in the basement of the Moran Plant in May 2008 [6]. During sampling activities on May 13, 2008 WEM measured 3.25 ft of water above the basement floor, meaning that the elevation of the top of water was 99.25 ft. The Lake level on this day (USGS, Rouses Point Station) was recorded at 99.2 ft.

3.3 1 Interior & Lake Water Sampling

Water samples were collected from two locations inside the basement and one location outside the building in the sluiceway (control sample). Water sampling locations are shown as DBS-1, DBS-2, and DBS-3 in the Figure 1 and Figure 3 in Appendix A.

The water samples for analysis of VOCs were collected using passive diffusion bag samplers that were filled with deionized water . These samplers were submerged into the water attached to 8 oz. stainless steel weights using hanging devices on May 13, 2008. One week later on May 20, WEM retrieved the samplers and decanted them into the appropriate containers for VOC analysis (EPA Method 8620B). Also on May 20, water samples were collected with disposable bailers at locations DBS-1, DBS-2, and DBS-3. The bailers were dropped into the water slowly as not to disturb the sediment on the floor. These unfiltered samples were submitted for analysis of PAHs (EPA Method 8270C), PCBs (EPA Method 8082), metals (EPA Method 6010B & 7470A), and pH. All samples were placed on ice and transported to TestAmerica (TA) laboratory under chain-of-custody procedures.

Water quality results are tabulated in Table 3 in Appendix B. These results are summarized below:

- The Lake water sample collected in the sluiceway (DBS-1) had detectable levels of the metals barium, chromium and lead. This sample has no detectable VOCs, PAHs, or PCBs and a normal pH of 7.7.
- Interior water sample collected in the western end of the Moran Plant (DBS-2) had no detectable VOCs, but one PCB compound, several of PAHs and several metals were detected. The pH of the water was measured at 7.5. Compared to applicable groundwater standards (Vermont Groundwater Enforcement Standards, or VGES), only one (1) PAH compound, one (1) PCB compound, and four (4) metals are above the standards. Compared to applicable surface water standards (Vermont Water Quality Standards for Consumption of Water and Organisms), seven (7) PAHs, one (1) PCB, and two (2) metals are above the standards. The results that stand out above others are the high concentrations of arsenic and lead.
- Interior water sample collected from the eastern end of the Plant (DBS-3) had no detectable PAHs or PCB, but one (1) VOC and several metals were detected. The pH of the water was measured at 7.6. Compared to applicable groundwater standards only the metal lead is above the standard. Compared to applicable surface water standards, only the compounds arsenic and mercury are above the standards. The result that stands out above others is the relatively high concentration of lead.

3.3.2 Interior Sediment Sampling

Also on May 20, 2008, WEM collected sediment samples from two locations on the basement floor, shown as SED-2 and SED-3 in Figure 3 in Appendix A. These sampling locations were in the immediate vicinity of the water sampling locations DBS-2 and DBS-3.

Less than 0.5-inch of sediment was observed at both sampling locations. To collect the sediment, WEM used a steel hoe to scrape sediment from the concrete floor into a small pile that could be slowly lifted out of the water and placed into the sampling containers. Inspection of the sediment revealed fine particles as well as evidence of paint chips, rust flakes, concrete pieces, wood, feathers, and egg shells. The color was reddish brown. These samples were collected for analysis of PAHs (EPA Method 8270C), PCBs (EPA Method 8082), metals (EPA Method 6010B & 7470A), and pH. All samples were placed on ice and transported to TA laboratory under chain-of-custody procedures.

Sediment quality results are tabulated in Table 4 and are summarized below:

- Sediment had detectable concentrations of the VOCs PCE, 1,1-DCA, 1,1,1-TCA, and 1,4-DCB. The source of these VOCs, which are also present in aqueous form in groundwater collected outside the building, is the former use of degreasers/cleaners on the power generation equipment. The concentrations of VOCs are below hazardous waste thresholds.
- Sediment had detectable levels of the VOCs acetone and 2-butanone. These compounds are not typically detected in groundwater outside the building, but are also likely from the former use of degreasers/cleaners.
- Sediment had detectable levels of several PAHs, including benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a)anthracene), and dibenzo(1,2,3-cd)pyrene. These compounds, which are also present in shallow soil outside the building, are a residual by-product of the former coal burning process.
- Sediment had detectable levels of two PCB compounds. The highest concentration was for the compound Arochlor-1254 in SED-3. These compounds have also been detected in the shallow soil outside the building [5] and are from the former use of PCB oils in the former transformers. The concentration of one PCB compound in sample SED-3 is above the 1 mg/Kg threshold for high occupancy use specified by the Toxic Substance Control Act (TSCA).
- Sediment had detectable levels of the metals arsenic, barium, cadmium, chromium, lead, mercury, and selenium. While the presence of these metals is not surprising given the former presence of coal and metallic objects/paint inside the building that have been degrading for years, the concentrations of lead at 10,300 - 11,900 mg/Kg are higher than anticipated. In addition to lead, several other metals (arsenic, chromium, mercury) appear to exceed the hazardous waste thresholds (inferred TCLP concentration), meaning that the sediment must be treated as a RCRA hazardous waste.

3.4 Sluiceway Closure: 2008-2009

Between December 23, 2008 and January 7, 2009 the inlet and outlet sluiceways were closed [7] in order to disconnect the Lake from the building. To achieve this, the connections between the inlet sluiceway and the two flumes that extend under the basement were plugged with subaqueous grout, accessed from inside the two screening chambers. The location of the plugs can be visualized in Figures 3 and 4 in Appendix A. In a similar manner, the connections between the outlet sluiceway and the two flumes were also plugged with concrete, accessed from the exterior of the building. During this process, there was no pumping of water into the Lake. Water from one of the screening chambers was pumped into the basement, as was some sediment from the outlet sluiceway. Permits from the US Army Corps of Engineers (USACOE) and City of Burlington were obtained prior to the start of work.

4.0 PROPOSED CORRECTIVE ACTION

4.1 Permits / Project Management / Reporting

WEM will coordinate all subcontractors and obtain all permits necessary for this work. No local permits are anticipated to be required by the City of Burlington, and the BDPW has already provided consent for the dewatering effort.

WEM will act as the project manager and the field hydrogeologist. KAS will also provide field support during dewatering, sediment sampling, and additional tasks as necessary. The proposed contractor for asbestos removal, lead paint stabilization, and guano removal is KD Associates of South Burlington, Vermont (contact information: John Madigan, (802) 862-7490). The proposed contractor for debris removal/disposal and sediment removal/disposal is Environmental Products & Services of Williston, Vermont (contact information: Steve Singer, (802) 862-1212). The proposed laboratory subcontractor for sediment analysis is Eastern Analytical of Concord, New Hampshire (contact information: Kathleen Noonan-Kelley, 603-228-0525). If required for the dewatering effort, the proposed frac tank contractor is Baker Corp. of Oxford, Massachusetts (contact Mike Deso, 508-987-0034).

WEM will document all cleanup activities and provide reports to describe the work that is completed. Reports will provide data collected and as-built drawings.

4.2 Interior Dewatering

WEM will lead an effort to dewater the basement in the spring of 2009 as soon as the ice has melted enough to allow for pump to operate. The City has preliminary approval for the dewatering from the USACOE, the Vermont Department of Environmental Conservation Water Quality Division, and the Burlington Department of Public Works (BDPW). The BDPW has reviewed the water and sediment sampling results (see section 3.3) and has approved the pumping of the water to the sanitary sewer system.

WEM will install a sump pump in an appropriate low spot in the eastern end of the basement. The pump will be connected to a temporary electrical service to be installed near the large overhead door on the southeast corner of building. Discharge hoses will extend from the building to the south over the Burlington Electric Department property to a catch basin (see catch basin "CB-1" on Figure 1) that is connected to a sewer pump station next to the water treatment plant. This catch basin will need to be cleaned/pumped out by the BDPW prior to the dewatering as it is currently plugged with leaves and debris.

The duration of pumping, limited by the BDPW to a flow rate of 5 gpm, will depend on the depth of water inside the building and the groundwater seepage rate into the building. Based on the square footage, there is 9,100 gallons of liquid for every inch of water above the basement floor. If the water level remains at the current 15 inches with no significant inflow from groundwater seepage, the duration of pumping would be 19 days.

If water seepage into the building is significant enough to hamper the ability of this pumping system to dewater the space, then a more aggressive technique will need to be utilized. A second pump will be installed for pumping to a temporary water storage tank (frac tank) to be set up in the yard east of the building. The water from this tank can then be discharged to the sanitary sewer over a longer period of time. This task involves frac tank mobilization, tank cleaning, and tank demobilization.

To manage infiltration into the building on a long-term basis, the sump pump may need to remain in use over the summer and fall months with continued discharge to the sanitary sewer system. If long-term sump pump dewatering is required for the future use of the building, sampling of the discharge may need to be conducted annually in conjunction with the groundwater monitoring program.

4.3 Additional Interior Sediment Sampling

The sediment characterization undertaken in May 2008 (see Section 3.3) did not address the entire extent of the basement or provide the level of data required for waste characterization purposes. Additional sampling is merited, and will be undertaken as soon as the basement ice has thawed. WEM, working in conjunction with KAS, has proposed the collection of additional samples at the approximate locations shown in Figure 3. Lab analysis will be for VOCs, SVOCs, PCBs, and metals in a similar manner to the May 2008 event. This sediment sampling plan has already been approved by the VT DEC and CCRPC and has a Quality Assurance Project Plan (QAPP) [8] that has been approved by the USEPA. Since this work was already approved and funded, the cost is not included in Appendix C. The sampling work will be completed during one business day.

4.4 Interior Debris and Sediment Removal

After the basement has been successfully dewatered, WEM will work with a hazardous waste contractor to remove the scrap metal debris and gross clean the sediment from the basement. The debris will be removed by hand and lifted using a small excavator to be brought into the 1st floor space next to the large overhead door on the eastern side of the building. The scrap metal waste will be placed in two (2) 20-ton roll-off dumpsters for eventual disposal at a scrap metal yard. The sediment will be scraped/swept up using hand tools and a small skid steer to be lowered into the basement. The sediment will be contained in one (1) watertight 22-yard roll-off dumpster for eventual disposal at an approved RCRA hazardous waste disposal facility. All personnel working in the basement will be in low level C personal protective gear (Tyvek suits, half-mask respirators with HEPA filters, hard hats, eye protection, gloves). This work is estimated to be complete in 10 business days. WEM will coordinate the work and conduct checks on the progress but will not be conducting any of the cleanup activities.

4.5 Removal of Pigeon Guano

The guano will require initial gross cleaning with minimal usage of water followed by pressure washing. The gross cleaning effort will involve first sweeping and shoveling of guano from the grated steel flooring on the upper levels so that guano that falls through the grating will collect on the main level, followed by sweeping and shoveling of the main level. Once gross cleaned, the steel grating floors on the upper levels and the concrete floor on the main level will be pressure washed. A containment system will be installed in the basement to contain the washwater, which can be then pumped from the basement with the same sump pump(s) that will be used for the basement dewatering. Because the guano is considered non-hazardous, it can be disposed at a municipal landfill. Care will be taken not to mobilize any lead paint during the pressure washing to ensure that the guano-laden water remains non-hazardous and can be pumped to the sanitary sewer. WEM will coordinate this effort but not be directly involved with any of the cleanup activities. This work is estimated to be complete in 15 business days.

Because of inhalation threat of guano compounded by the possibility of trace amount of asbestos dust under the guano, all personnel working in the guano removal will have level C personal protective gear (Tyvek suits, half-mask respirators with HEPA filters, hard hats, eye protection, gloves).

Once the guano is cleaned, there may need to be work done to close all of the large openings into the building to deter pigeons from using the space until the final construction is complete. The cost of pigeon deterrence is NOT included in this estimate.

4.6 Interior Lead Paint Stabilization

The flaking lead paint, observed to be present primarily on structural steel on the main level and basement level, will be stabilized in a lead safe manner by properly trained and licensed personnel in accordance with OSHA guidelines (Title 29 C.F.R. 1962.62). WEM will coordinate this effort but not be directly involved with any of the stabilization activities. This effort will address the flaking and loose paint only, and not removal of all lead containing paint. All paint

chips will be contained and disposed of appropriately at a hazardous waste facility. This work is estimated to be complete in 10 business days.

This work should occur after the basement space is dewatered and gross cleaned of all sediment, and after the pigeon guano is cleaned from the main level. The containment and collection of lead paint chips will be most efficiently achieved with clean floor conditions.

4.7 Removal of Asbestos Containing Materials (ACMs)

The removal of ACMs (corrugated transite panels, roof flashing, and window frame caulking) will be conducted by Vermont licensed asbestos abatement workers in accordance with Vermont Regulations for Asbestos Control (V.S.A. Title 18, Chapter 26). All asbestos will be disposed of appropriately at an approved waste facility. WEM will coordinate this effort but not be directly involved with any of the removal activities.

This work should occur in conjunction with building refurbishing efforts. Combining the window caulk removal and transite panel removal effort with window replacement activities will allow for the most efficient use of resources and equipment (i.e. staging to access upper level windows). The roof flashing removal should occur in conjunction with re-roofing activities. Assuming a coordinated effort, this work is estimated to be complete in 10 business days.

5.0 IMPLEMENATION SCHEDULE

The implementation of this work should proceed as follows to assure most efficient use of resources:

1. Basement Dewatering: April 13 – May 15
    a. Open up building to promote ice melting
    b. Arrange for BDPW clean out catch basin CB-1
    c. Arrange for temporary electrical service installed at southeast entrance (overhead door)
    d. Set up sump pump, manifold with water meter, discharge hoses to CB-1
    e. Start dewatering
    f. Monitor progress of dewatering
    g. If progress is too slow, pursue plan to add secondary pump and frac tank
        i. Frac tank mobilization
        ii. Secondary pump installation
        iii. Pumping of 21,000 gallons @ 30 gpm
        iv. Discharge to sanitary sewer @ 5 gpm
        v. Frac tank cleaning/demobilization

2. Long term sump pump operation : May 15 - ?

3. Additional Sediment Sampling: April 27
    a. Sediment collection: April 27
    b. Results expected: May 11
    c. Report on sediment and dewatering effort: May 25

4. Basement Debris and Sediment Removal: May 25 – June 5

5. Guano Removal: June 15 – July 3

6. Lead Paint Stabilization: July 6 – July 17

7. Report on debris removal / lead paint stabilization / guano removal: July 31

8. ACM Removal: schedule dependent on building refurbishment timeframe.

The timeline for Tasks 1 through 7 are shown visually below.

Task / Week	April 13, 2009	April 20, 2009	April 27, 2009	May 4, 2009	May 11, 2009	May 18, 2009	May 25, 2009	June 1, 2009	June 8, 2009	June 15, 2009	June 22, 2009	June 29, 2009	July 6, 2009	July 13, 2009	July 20, 2009	July 27, 2009	August 3, 2009	August 10, 2009	August 17, 2009	August 24, 2009	August 31, 2009
Dewatering Preparation																					
Basement Dewatering																					
Long Term Sump Operation																					
Additional Sediment Sampling																					
Dewatering and Sediment Sampling Report																					
Basement Sediment and Debris Removal																					
Guano Removal																					
Lead Paint Stabilization																					
Interior Cleanup Report																					

6.0 ESTIMATED COSTS

Estimated costs to pursue the work described in this document are summarized in the spreadsheet in Appendix C.

7.0 HEALTH AND SAFETY PLAN

WEM's Health & Safety Plan (HASP) is provided in Appendix D. The purpose of this plan is to protect WEM personnel only. This HASP covers sediment sampling and dewatering work as well as other anticipated task outside the building. Because WEM will not be providing labor involving for lead paint work, asbestos work, or work requiring Level C protection (sediment removal and guano removal), these tasks are not addressed in WEM's HASP.

However, WEM will require that all subcontractors have their own HASPs which must be submitted to WEM for review and approval prior to the start of work.

8.0 REFERENCES

1. Waite Environmental Management, LLC, *Work Plan: Moran Cleanup Activities*, letter submitted to David Weinstein of CEDO, February 4, 2009.

2. Lamoureux & Dickinson Consulting Engineers, Inc., *Phase II Environmental Site Assessment, North 40 – Urban Reserve, Burlington, Vermont*, May 2000.

3. Letter from Eastern Refractories Company, Inc. to the State of Vermont, Department of Health, re: Burlington Electric Moran Station Asbestos Removal Work, May 25, 1987.

4. Letter from Shelburne Laboratories, Inc. to Burlington Electric Department, re: Moran Generating Plant, April 6, 1987.

5. Waite Environmental Management, LLC, *Phase II Environmental Site Assessment Report, Moran Generating Plant*, May 18, 2005, revised June 24, 2005.

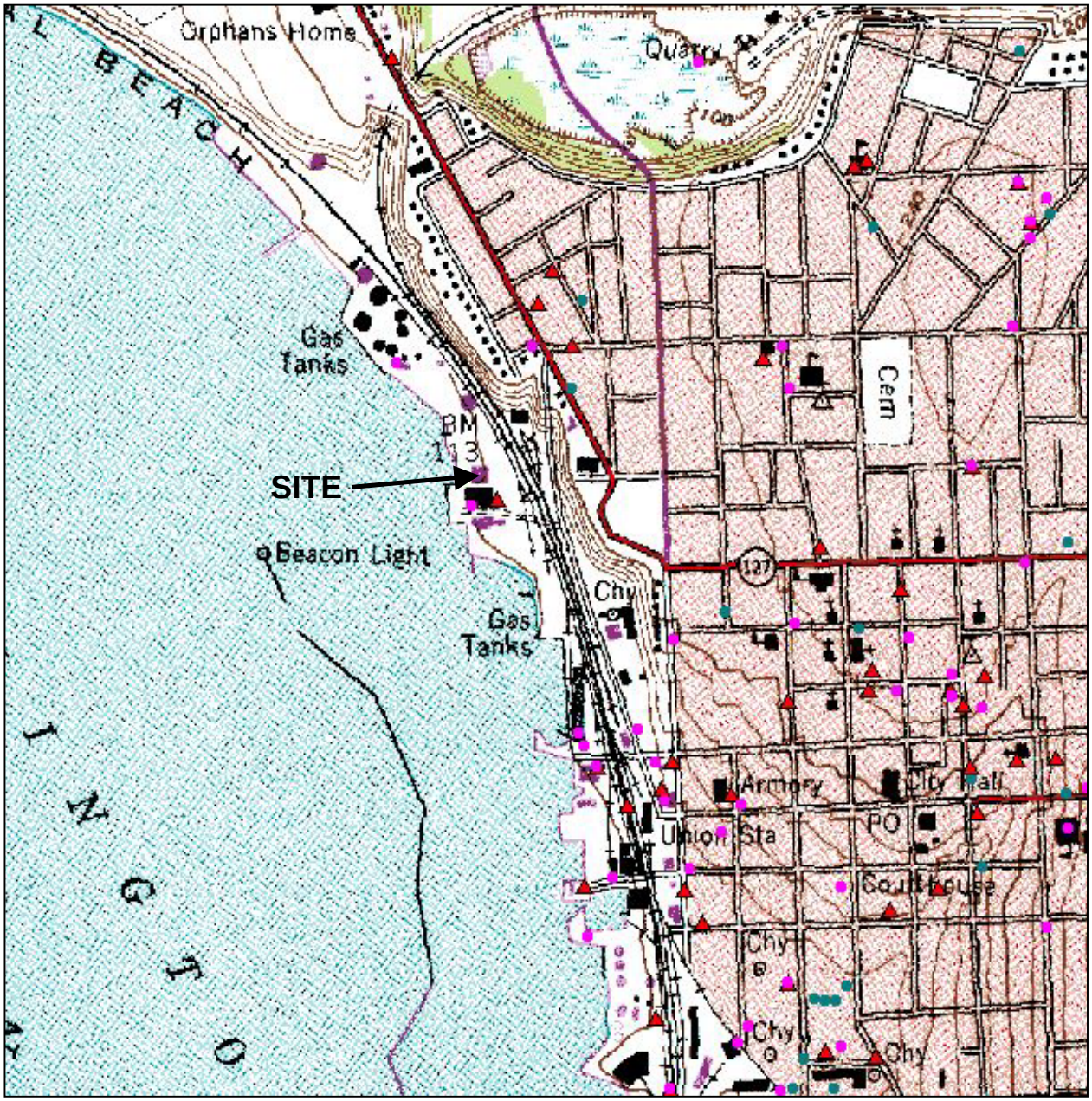
6. Waite Environmental Management, LLC, *Report: Semi-Annual Groundwater Monitoring and Pre-Dewatering Characterization*, July 21, 2008.

7. KAS, Inc., "Record Drawings – Moran Plant Sluiceway Permanent Closure", letter from Erick Sandblom to Julie Potter, February 10, 2009.

8. KAS, Inc., *Quality Assurance Project Plan Addendum: Groundwater Monitoring and Pre-Dewatering Characterization, Moran Project*, November 2008.

APPENDIX A
FIGURES

Site Location Map
Figure 1: Site Plan
Figure 2: Groundwater Elevation Contour Map – December 2008
Figure 3: Basement Layout Plan
Figure 4: Building Cross Section



LEGEND

- State-Listed Hazardous Waste Site
- Registered UST
- Registered Hazardous Waste Generator

N

WEM Job Number:	*02052-28*
Map Source:	*USGS Mapping 7.5 Minute Burlington, Vermont Quadrangle (1987)*
Data Source	*ANR databases, updated October 2003*

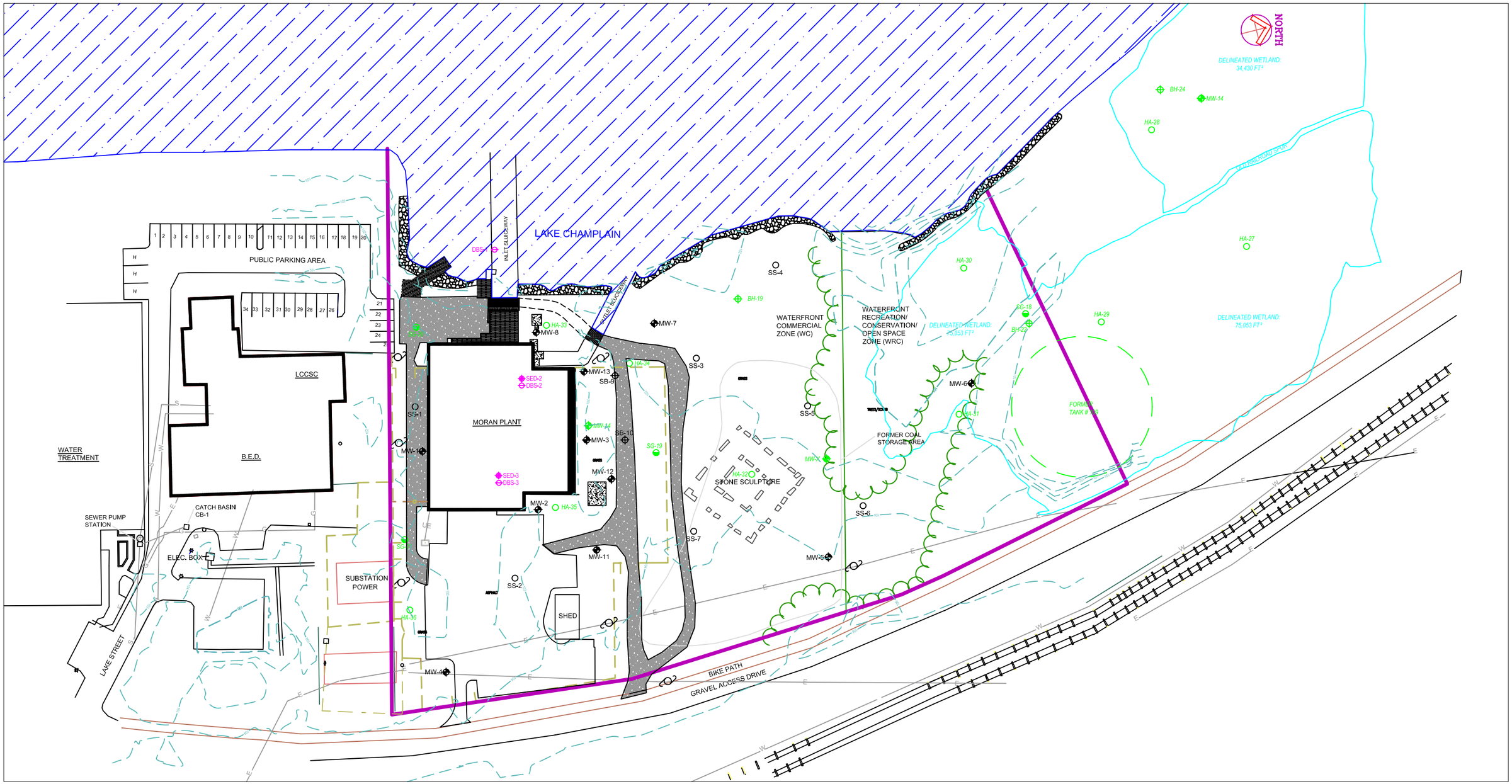
Waite Environmental Management, LLC

FIGURE 1
SITE LOCATION MAP

Moran Generating Plant (SMS Site #2005-3357)

Burlington, VT

Date: 03/07/05	Drawing No. 1	Scale: 1" = 1,200	By: MEW



DRAWING LEGEND

- DBS-3 WATER SAMPLE COLLECTED BY WEM (2008)
- SED-3 INTERIOR SEDIMENT SAMPLE COLLECTED BY WEM (2008)
- SS-1 SHALLOW SOIL SAMPLE COLLECTED BY WEM (2005)
- MW-1 MONITORING WELL INSTALLED BY WEM (2005)
- MW-X MONITORING WELL INSTALLED BY OTHERS (1991,1999)
- HA-31 HAND AUGER INSTALLED BY OTHERS (1999)
- SG-21 SOIL GAS POINT INSTALLED BY OTHERS (1999)
- BH-19 SOIL BORING INSTALLED BY OTHERS (1999)

- SITE BOUNDARY
- E ELECTRIC LINE
- G UNDERGROUND GAS LINE
- W UNDERGROUND WATER LINE
- FENCE
- WETLAND DELINEATION (2006)
- SURFACE TOPOGRAPHY (ft AMSL)

80 40 0 80 240

GRAPHIC SCALE

Sources: Base maps provided by: 1) Smith, Alvarez & Sienkiewycz Architects, titled "Moran model with topo#A212E"; 2) Lamoureaux & Dickinson, "Moran Plant Topographic Site Plan", January 2009.

WAITE ENVIRONMENTAL MANAGEMENT
P.O. BOX 4602
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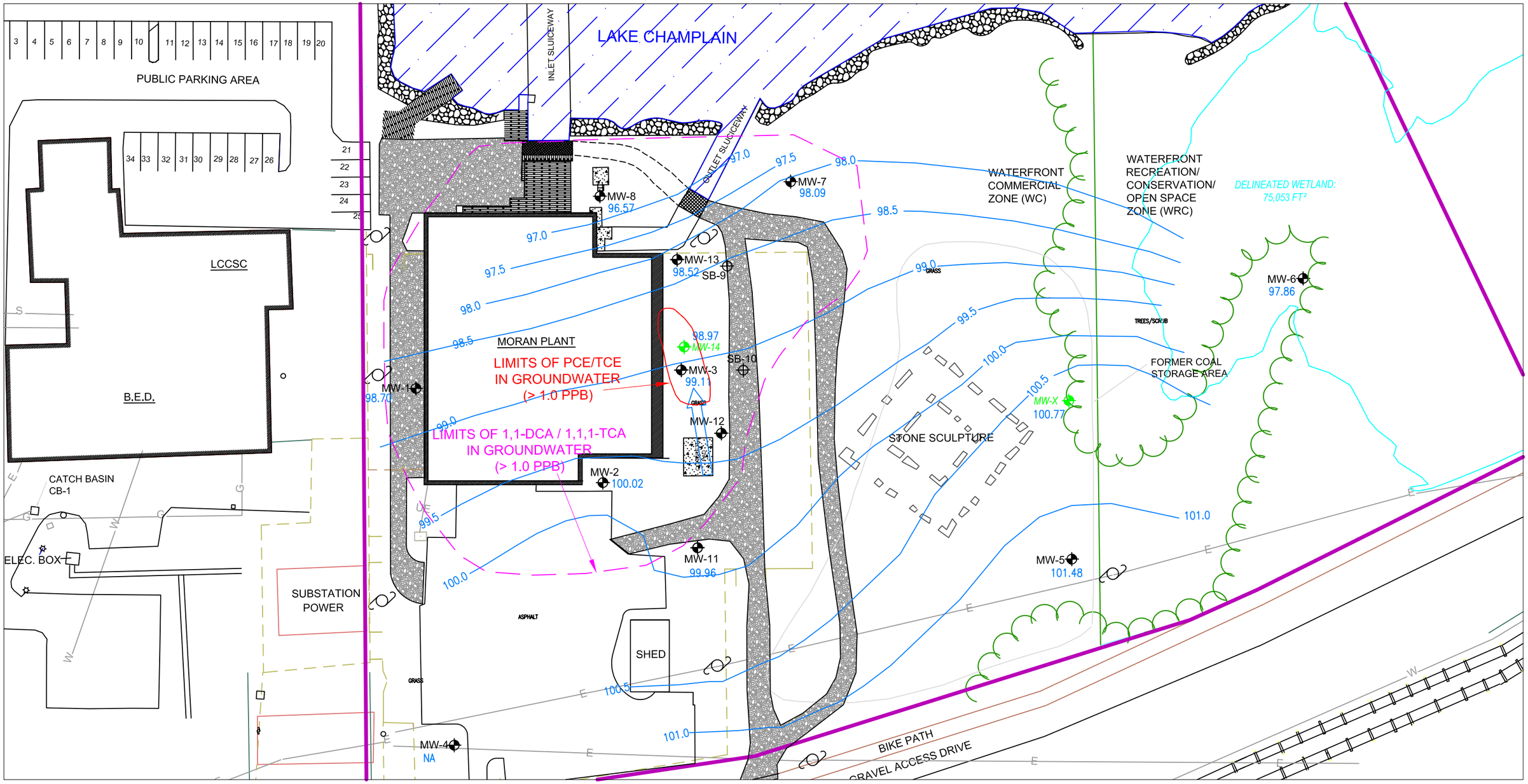
SCALE:1" = 80'	REVISION:	DRAWN BY: MEW
DATE: 2/18/09	DATE:	PROJECT #: 02052-28

SITE PLAN

MORAN GENERATING PLANT
BURLINGTON, VERMONT



Data collected by W.E.M on December 1, 2008.

50 25 0 50 150

GRAPHIC SCALE

DRAWING LEGEND

MW–1 98.70	MONITORING WELL WITH GROUNDWATER ELEVATION (FT)
100.0	GROUNDWATER ELEVATION CONTOUR (FT)
	GROUNDWATER FLOW DIRECTION

Source: Base maps provided by: 1) Smith, Alvarez & Sienkiewycz Architects, titled "Moran model with topo#A212E"; 2) Lamoureax & Dickinson, "Moran Plant Topographic Site Plan", January 2009.

All elevations are in units of ft above mean sea level (based on NGS Benchmark utilized by Lamoureux & Dickinson survey in January 2009). Groundwater elevations measured by WEM on December 1, 2008. This map was revised to reflect the new (January 2009) top-of-casing elevations.

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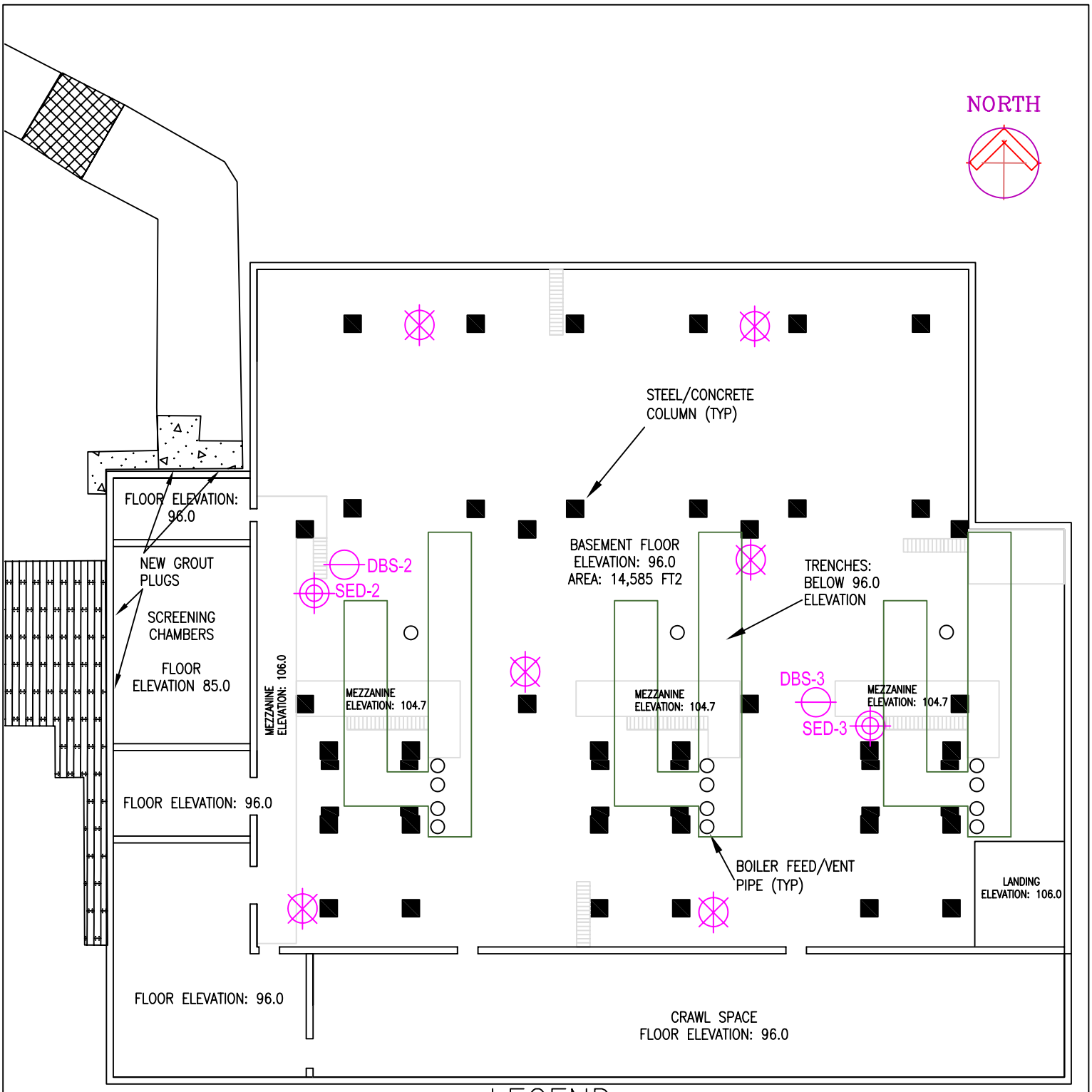
SCALE:1" = 50'	REVISION: #1	DRAWN BY: MEW
DATE: 1/12/09	DATE: 2/19/09	PROJECT #: 02052-28

GROUNDWATER ELEVATION CONTOUR MAP
DECEMBER 2008
MORAN GENERATING PLANT
BURLINGTON, VERMONT
VT DEC SITE #2005-3357



LEGEND

DBS-3 — EXISTING WATER SAMPLING LOCATION (7/08)

SED-2 — EXISTING SEDIMENT SAMPLING LOCATION (7/08)

PROPOSED SEDIMENT SAMPLING LOCATION

0 10 20 40

GRAPHIC SCALE: 1" = 20'

ALL ELEVATIONS ARE IN FT ABOVE MEAN SEA LEVEL.

WAITE ENVIRONMENTAL MANAGEMENT
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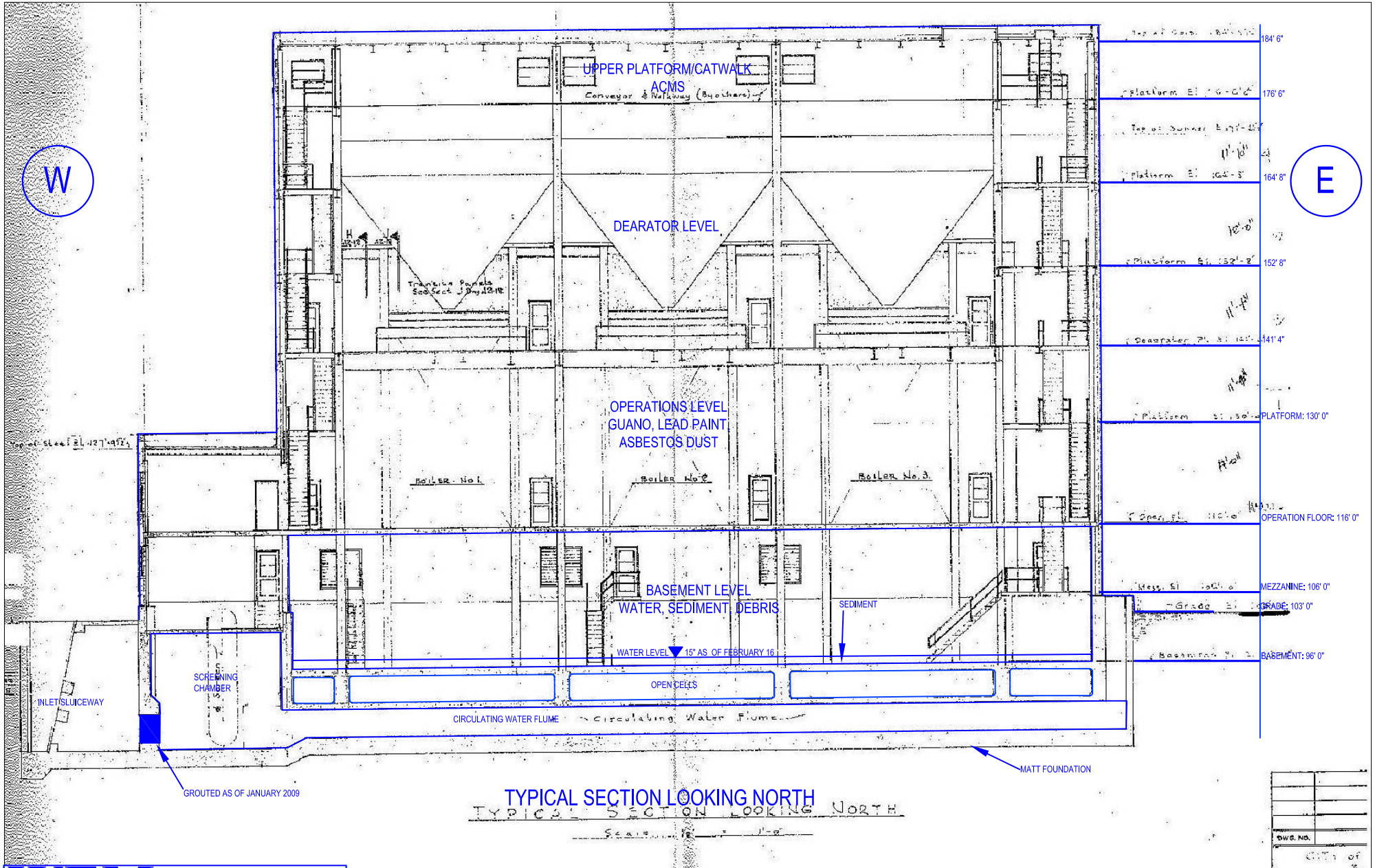
SCALE: 1" = 20'	REVISION:	DRAWN BY: MEW
DATE: 2/17/09	DATE:	PROJECT #: 02052-28

BASEMENT LAYOUT PLAN

MORAN GENERATING PLANT
BURLINGTON, VERMONT
VT DEC SITE #2005-3357



TYPICAL SECTION LOOKING NORTH

TYPICAL SECTION LOOKING NORTH

Scale: 1/8" = 1'-0"

WAITE ENVIRONMENTAL MANAGEMENT
P.O. BOX 4602
BURLINGTON, VT 05406
(P) 802-860-9400
(F) 802-860-9440

SCALE: 1" ~ 18.5'	REVISION:	DRAWN BY: MEW
DATE: 2/18/09	DATE:	PROJECT #: 02052-28

BUILDING CROSS-SECTION
MORAN GENERATING PLANT
BURLINGTON, VERMONT
VT DEC SITE #2005-3357

4 / 4

ORIGINAL PLAN:
J.F. PRITCHARD & CO., "CITY OF BURLINGTON, VERMONT, STEAM ELECTRICAL POWER PLANT, TYPICAL SECTION LOOKING NORTH", DRAWING A2-11, APRIL 1953

APR 9 1953

DWG. NO.

CITY OF B
STEAM
TYPICAL

J. F.
ENGI

APPENDIX B
TABLES AND GRAPHS

Table 1: Groundwater Elevation Data
Graph 1: Groundwater Elevation Data
Table 2: Groundwater Quality Summary: VOCs
Table 3: Interior Water Quality Data
Table 4: Interior Sediment Quality Data

TABLE 1
Groundwater Elevation Data
Moran Plant
Burlington, Vermont

Measurement Date: 5/20/2008

Well I.D.	Top of Casing Elevation	Depth To Product	Depth To Water	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-1	102.99	n/a	3.08					99.91
MW-2	103.02	n/a	1.82					101.20
MW-3	104.50	n/a	4.00					100.50
MW-4	102.85	n/a	1.04					101.81
MW-5	106.33	n/a	3.82					102.51
MW-6	102.20	n/a	3.10					99.10
MW-7	102.23	n/a	2.65					99.58
MW-8	102.36	n/a	3.82					98.54
MW-11	103.56	n/a	1.77					101.79
MW-12	103.21	n/a	2.33					100.88
MW-14	103.94	n/a	3.57					100.37
MW-X	104.94	n/a	3.31					101.63

Measurement Date: 9/26/2008

Well I.D.	Top of Casing Elevation	Depth To Product	Depth To Water	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-3	104.50	n/a	5.60					98.90
MW-13	102.94	n/a	4.62					98.32
MW-14	103.94	n/a	5.24					98.70

Measurement Date: 12/1/2008

Well I.D.	Top of Casing Elevation	Depth To Product	Depth To Water	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-1	102.99	n/a	4.29					98.70
MW-2	103.02	n/a	3.00					100.02
MW-3	104.50	n/a	5.39					99.11
MW-4	102.85	n/a	NA					
MW-5	106.33	n/a	4.85					101.48
MW-6	102.20	n/a	4.34					97.86
MW-7	102.23	n/a	4.14					98.09
MW-8	102.36	n/a	5.79					96.57
MW-11	103.56	n/a	3.60					99.96
MW-12	103.21	n/a	3.65					99.56
MW-13	102.94	n/a	4.42					98.52
MW-14	103.94	n/a	4.97					98.97
MW-X	104.94	n/a	4.17					100.77

All data in feet.

Elevations are in ft above MSL, referenced from a survey conducted by Lamoureaux & Dickinson, January 2009.

n/a signifies that free product (LNAPL) was not detected.

GRAPH 1:
GROUNDWATER ELEVATION DATA
Moran Plant, Burlington, Vermont

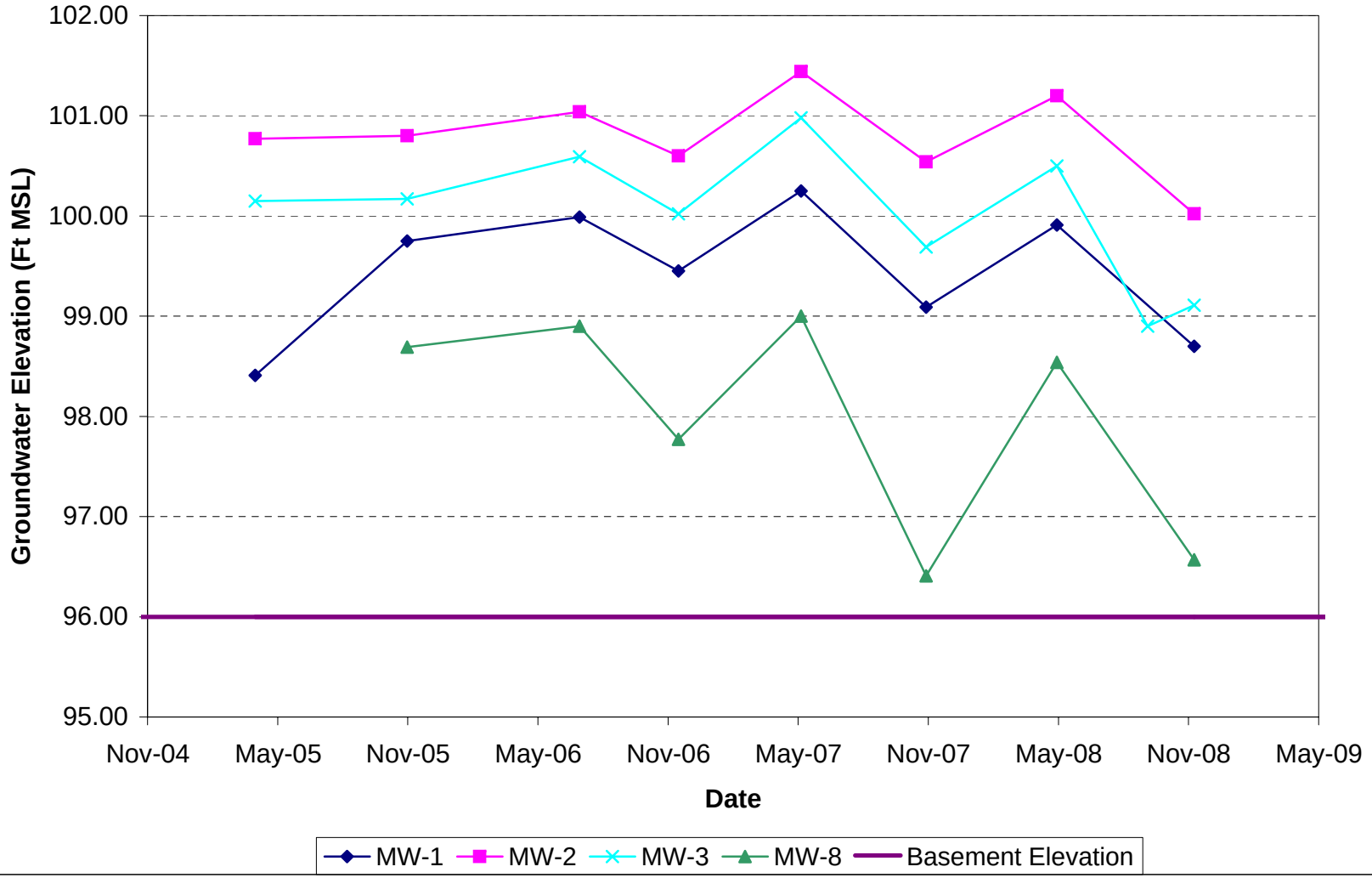


TABLE 2
Groundwater Quality Summary: VOCs
Moran Plant
Burlington, Vermont

MW-1											
Sample Date		VGES	4/6/2005	11/8/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Toluene	ug/L (ppb)	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Ethylbenzene	ug/L (ppb)	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Xylenes	ug/L (ppb)	10000	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
1,2,4-Trimethylbenzene	ug/L (ppb)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Naphthalene	ug/L (ppb)	20.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
MTBE	ug/L (ppb)	40.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	1.0 U	1.0 U	**0.22 J**	1.0 U	1.0 U	1.0 U	1.0 U		2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	**3.4**	**4.7**	**1.9**	**2.5**	**1.3**	**3.3**	**1.1**		**4**
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	1.0 U	1.0 U	**0.26 J**	1.0 U	**0.29 J**	1.0 U	**0.29 J**		1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*		***3.4***	***4.7***	***2.4***	***2.5***	***1.6***	***3.3***	***1.4***		***4***
UNIDENTIFIED PEAKS	#	--	0	0							

MW-2											
Sample Date		VGES	4/6/2005	11/8/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Toluene	ug/L (ppb)	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Ethylbenzene	ug/L (ppb)	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Xylenes	ug/L (ppb)	10000	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
1,2,4-Trimethylbenzene	ug/L (ppb)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Naphthalene	ug/L (ppb)	20.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
MTBE	ug/L (ppb)	40.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	1.0 U	1.0 U	1.0 U	**0.33 J**	1.0 U	**0.38** J	1.0 U		2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	**24.1**	**39.9**	**28**	**36**	**18**	**37**	**11**		**29**
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	**7.8**	**20.4**	**24**	**12**	**21**	**11**	**20**		**9**
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*		***31.9***	***60.3***	***52.0***	***48.3***	***39.0***	***48.4***	***31.0***		***38***
UNIDENTIFIED PEAKS	#	--	0	0							

MW-3											
Sample Date		VGES	4/6/2005	11/9/2005	7/11/2006	11/29/2006*	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
Toluene	ug/L (ppb)	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
Ethylbenzene	ug/L (ppb)	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
Xylenes	ug/L (ppb)	10000	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
1,2,4-Trimethylbenzene	ug/L (ppb)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
Naphthalene	ug/L (ppb)	20.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5 U
MTBE	ug/L (ppb)	40.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	**4.0**	**7.0**	**5.3**	**5.6**	**2.8**	**6.5**	**2.7**	**4.2**	**6**
Trichloroethane (TCE)	ug/L (ppb)	5.0	**11.8**	**28.0**	**32**	**26**	**15**	**13**	**15**	**19**	**11**
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	**3.6**	**4.4**	**3.0**	**3.9**	**3.1**	**4.8**	**3.1**	**8.5**	**4**
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.24 J**	**0.21 J**	1.0 U	2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	**2.7**	**2.2**	**1.7**	**1.4**	**2.7**	**2.0**	**2.1**	**1.9**	2 U
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	**1.7**	**2.7**	**2.0**	**2.1**	**0.87 J**	**2.5**	**0.71 J**	**2.6**	**2**
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*		***23.8***	***44.3***	***44.0***	***39.0***	***24.5***	***28.8***	***23.6***	***36.2***	***23***
UNIDENTIFIED PEAKS	#	--	0	0							

TABLE 2
Groundwater Quality Summary: VOCs
Moran Plant
Burlington, Vermont

MW-4											
Sample Date		VGES	4/6/2005		7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
Toluene	ug/L (ppb)	1000	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
Ethylbenzene	ug/L (ppb)	700	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
Xylenes	ug/L (ppb)	10000	2.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
1,3,5-Trimethylbenzene	ug/L (ppb)	350	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
1,2,4-Trimethylbenzene	ug/L (ppb)		1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
Naphthalene	ug/L (ppb)	20.0	2.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
MTBE	ug/L (ppb)	40.0	2.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	1.0 U		1.0 U	**0.23 J**	**0.44 J**	1.0 U	**0.32** J		
Trichloroethane (TCE)	ug/L (ppb)	5.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
TOTAL REPORTED VOCS	*ug/L (ppb)*		*ND*		*ND*	***0.2***	***0.4***	*ND*	***0.3***		
UNIDENTIFIED PEAKS	#	--	0								

MW-5											
Sample Date		VGES	4/6/2005	11/8/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Toluene	ug/L (ppb)	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Ethylbenzene	ug/L (ppb)	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Xylenes	ug/L (ppb)	10000	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
1,2,4-Trimethylbenzene	ug/L (ppb)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Naphthalene	ug/L (ppb)	20.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
MTBE	ug/L (ppb)	40.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	**1.2 J**	1.0 U	1.0 U	**0.21 J**	1.0 U	**0.48 J**	1.0 U		2 U
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*		***1.2***	*ND*	*ND*	***0.2***	*ND*	***0.5***	*ND*		*ND*
UNIDENTIFIED PEAKS	#	--	0	0							

MW-6											
Sample Date		VGES	4/6/2005	11/18/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Toluene	ug/L (ppb)	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Ethylbenzene	ug/L (ppb)	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Xylenes	ug/L (ppb)	10000	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U				
1,3,5-Trimethylbenzene	ug/L (ppb)	350	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
1,2,4-Trimethylbenzene	ug/L (ppb)		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Naphthalene	ug/L (ppb)	20.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U				
MTBE	ug/L (ppb)	40.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U				
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Trichloroethane (TCE)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U				
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
TOTAL REPORTED VOCS	*ug/L (ppb)*		*ND*	*ND*	*ND*	*ND*	*ND*				
UNIDENTIFIED PEAKS	#	--	0	0							

TABLE 2
Groundwater Quality Summary: VOCs
Moran Plant
Burlington, Vermont

MW-7											
Sample Date		VGES		11/8/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Toluene	ug/L (ppb)	1000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Ethylbenzene	ug/L (ppb)	700		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Xylenes	ug/L (ppb)	10000		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
1,2,4-Trimethylbenzene	ug/L (ppb)			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Naphthalene	ug/L (ppb)	20.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
MTBE	ug/L (ppb)	40.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0		**8.5**	**8.1**	**7.0**	**6.1**	**4.0**	**5.6**		**5**
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0		1.0 U	**0.77 J**	1.0 U	**0.41 J**	1.0 U	1.0 U		2 U
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*			***8.5***	***8.9***	***7.0***	***7.5***	***4.0***	***5.6***		***5***
UNIDENTIFIED PEAKS	#	--		0							

MW-8											
Sample Date		VGES		11/8/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0		1.0 U	**0.45 J**	**0.49 J**	1.0 U	**0.53 J**	1.0 U		1 U
Toluene	ug/L (ppb)	1000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Ethylbenzene	ug/L (ppb)	700		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Xylenes	ug/L (ppb)	10000		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
1,2,4-Trimethylbenzene	ug/L (ppb)			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Naphthalene	ug/L (ppb)	20.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
MTBE	ug/L (ppb)	40.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0		1.0 U	**0.33 J**	**0.28 J**	**0.32 J**	**0.25 J**	**0.33 J**		2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0		1.0 U	**0.74 J**	**0.63 J**	**0.33 J**	**0.71 J**	**0.35 J**		2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0		1.0 U	**0.48 J**	**0.46 J**	1.0 U	**0.46 J**	1.0 U		2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0		**6.2**	**5.5**	**6.4**	**1.7**	**4.7**	**4.2**		**5**
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0		**1.8**	**2.4**	**1.8**	**3.5**	**0.58 J**	**4.9**		2 U
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*			***8.0***	***9.9***	***10.1***	***5.9***	***7.2***	***9.8***		***5***
UNIDENTIFIED PEAKS	#	--		**>10**							

MW-11											
Sample Date		VGES		11/8/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Toluene	ug/L (ppb)	1000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Ethylbenzene	ug/L (ppb)	700		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Xylenes	ug/L (ppb)	10000		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
1,2,4-Trimethylbenzene	ug/L (ppb)			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Naphthalene	ug/L (ppb)	20.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
MTBE	ug/L (ppb)	40.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0		1.0 U	**0.50 J**	**0.28 J**	**0.44 J**	**0.24 J**	**0.59 J**		2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0		1.0 U	1.0 U	**0.41 J**	**0.26 J**	**1.7**	1.0 U		2 U
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*			*ND*	***0.5***	***0.7***	***0.7***	***1.9***	***0.6***		*ND*
UNIDENTIFIED PEAKS	#	--		0							

TABLE 2
Groundwater Quality Summary: VOCs
Moran Plant
Burlington, Vermont

MW-12											
Sample Date		VGES		11/8/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Toluene	ug/L (ppb)	1000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Ethylbenzene	ug/L (ppb)	700		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Xylenes	ug/L (ppb)	10000		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
1,2,4-Trimethylbenzene	ug/L (ppb)			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
Naphthalene	ug/L (ppb)	20.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
MTBE	ug/L (ppb)	40.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2 U
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*			*ND*	*ND*	*ND*	*ND*	*ND*	*ND*		*ND*
UNIDENTIFIED PEAKS	#	--		0							

MW-13											
Sample Date		VGES								9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0								1.0 U	1 U
Toluene	ug/L (ppb)	1000								1.0 U	1 U
Ethylbenzene	ug/L (ppb)	700								1.0 U	1 U
Xylenes	ug/L (ppb)	10000								1.0 U	2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350								1.0 U	1 U
1,2,4-Trimethylbenzene	ug/L (ppb)									**0.65 J**	1 U
Naphthalene	ug/L (ppb)	20.0								**0.98 J**	5 U
MTBE	ug/L (ppb)	40.0								1.0 U	5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0								**0.60 J**	2 U
Trichloroethane (TCE)	ug/L (ppb)	5.0								1.0 U	2 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0								1.0 U	2 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0								1.0 U	2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0								1.0 U	2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0								**0.50 J**	**6**
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0								1.0 U	2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0								**0.97 J**	2 U
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0								1.0 U	1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*									***3.7***	***6***
UNIDENTIFIED PEAKS	#	--									

MW-14											
Sample Date		VGES	10/1/1999	11/9/2005	7/11/2006	11/29/2006	5/22/2007	11/16/2007	5/20/2008	9/26/2008	12/1/2008
VOCs (EPA Method 8260B)											
Benzene	ug/L (ppb)	5.0	2.0 U	1.0 U	**0.24 J**	1.0 U	**0.22 J**	**0.28 J**	1.0 U	1.0 U	1 U
Toluene	ug/L (ppb)	1000	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
Ethylbenzene	ug/L (ppb)	700	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
Xylenes	ug/L (ppb)	10000	4.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2 U
1,3,5-Trimethylbenzene	ug/L (ppb)	350	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
1,2,4-Trimethylbenzene	ug/L (ppb)		2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
Naphthalene	ug/L (ppb)	20.0	5.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5 U
MTBE	ug/L (ppb)	40.0	5.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5 U
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	**3.9**	**1.1**	**1.1**	**1.5**	**0.72 J**	**1.4**	**1.0**	**2.5**	**2**
Trichloroethane (TCE)	ug/L (ppb)	5.0	**12.0**	**6.7**	**6.3**	**6.0**	**3.1**	**6.3**	**4.6**	**8.7**	**7**
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	**13.0**	**2.2**	**1.8**	**4.1**	**0.74 J**	**4.2**	**2.3**	**8.8**	**8**
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2 U
Vinyl Chloride (VC)	ug/L (ppb)	2.0	5.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2 U
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	**9.2**	**9.6**	**6.6**	**5.2**	**2.1**	**5.5**	**3.8**	**4.9**	**5**
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0		1.0 U	1.0 U	1.0 U	1.0 U	**0.48** J	1.0 U	1.0 U	2 U
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	**20.0**	**3.4**	**18**	**16**	**6.5**	**2.5**	**5.8**	**7.0**	**7**
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
TOTAL REPORTED VOCS	*ug/L (ppb)*		***58.1***	***17.3***	***34.0***	***33.8***	***13.4***	***20.7***	***17.5***	***31.9***	***29***
UNIDENTIFIED PEAKS	#	--		**>10**							

NOTES:
"U" = not detected above listed quantitation limit; "J" = reported concentration is an estimated value;
VGES = Vermont Groundwater Enforcement Standard (Table 1 of the Groundwater Protection Rule and Strategy 1/00)
Blank spaces indicate data not collected
EPA Method 8260B compounds not shown indicate that they were not detected above respective quantitation limits.
Results reported above quantitation limits are indicated in bold; values in excess of the VGES are shaded.
1999 results from MW-14 were obtained from the report: "Phase II ESA, North 40 - Urban Reserve" prepared by Lamoureux & Dickenson, May 2000, and these data have not been formally validated.

TABLE 3
Interior Water Quality Data
Moran Plant
Burlington, Vermont

DBS-1 (LAKE WATER)					
Sample Date		VGES	VWQS	5/20/2008	
VOCs (EPA Method 8260B)					
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	0.8	1.0 U	
Trichloroethane (TCE)	ug/L (ppb)	5.0	2.7	1.0 U	
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	--	1.0 U	
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	--	1.0 U	
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0	1.0 U	
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	--	1.0 U	
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	0.38	1.0 U	
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	--	1.0 U	
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	400	1.0 U	
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (EPA Method 8270)					
Acenapthene	ug/L (ppb)	--	--	9.4 U	
Acenapthylene	ug/L (ppb)	--	--	9.4 U	
Anthracene	ug/L (ppb)	2,100	9,600	9.4 U	
Benzo(a)anthracene	ug/L (ppb)	--	0.0028	9.4 U	
Benzo(b)fluoranthene	ug/L (ppb)	--	0.0028	9.4 U	
Benzo(k)fluoranthene	ug/L (ppb)	--	0.0028	9.4 U	
Benzo(a)pyrene	ug/L (ppb)	0.2	0.0028	9.4 U	
Benzo(g,h,i)perylene	ug/L (ppb)	--	--	9.4 U	
Chrysene	ug/L (ppb)	--	0.0028	9.4 U	
Dibenzo(a,h)anthracene	ug/L (ppb)	--	0.0028	9.4 U	
Fluoranthene	ug/L (ppb)	280	300	9.4 U	
Fluorene	ug/L (ppb)	280	1300	9.4 U	
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	--	0.0028	9.4 U	
2-Methylnaphthalene	ug/L (ppb)		--	9.4 U	
Naphthalene	ug/L (ppb)	20	--	9.4 U	
Phenanthrene	ug/L (ppb)	--	--	9.4 U	
Pyrene	ug/L (ppb)	--	960	9.4 U	
POLYCHLORINATED BIPHENYLS (PCBs) (EPA Method 8082)					
Arochlor-1016	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1221	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1232	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1242	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1248	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1254	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1260	ug/L (ppb)	0.5	0.000044	0.47 U	
RCRA METALS					
Total Arsenic	ug/L (ppb)	10.0	0.02	1.1 U	
Total Barium	ug/L (ppb)	2000.0	--	**9.7** J	
Total Cadmium	ug/L (ppb)	5.0	--	0.14 U	
Total Chromium	ug/L (ppb)	100.0	--	**0.55** J	
Total Lead	ug/L (ppb)	15.0	--	**3.7** J	
Total Mercury	ug/L (ppb)	2.0	0.14	0.10 UJ	
Total Selenium	ug/L (ppb)	50.0	--	1.9 U	
Total Silver	ug/L (ppb)	--	--	0.37 U	

TABLE 3
Interior Water Quality Data
Moran Plant
Burlington, Vermont

DBS-2					
Sample Date		VGES	VWQS	5/20/2008	
VOCs (EPA Method 8260B)					
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	0.8	1.0 U	
Trichloroethane (TCE)	ug/L (ppb)	5.0	2.7	1.0 U	
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	--	1.0 U	
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	--	1.0 U	
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0	1.0 U	
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	--	1.0 U	
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	0.38	1.0 U	
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	--	1.0 U	
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	400	1.0 U	
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (EPA Method 8270)					
Acenapthene	ug/L (ppb)	--	--	**2.6** J	
Acenapthylene	ug/L (ppb)	--	--	9.4 U	
Anthracene	ug/L (ppb)	2,100	9,600	**7.8** J	
Benzo(a)anthracene	ug/L (ppb)	--	0.0028	**16**	
Benzo(b)fluoranthene	ug/L (ppb)	--	0.0028	**13**	
Benzo(k)fluoranthene	ug/L (ppb)	--	0.0028	**15**	
Benzo(a)pyrene	ug/L (ppb)	0.2	0.0028	**14**	
Benzo(g,h,i)perylene	ug/L (ppb)	--	--	**4.0** J	
Chrysene	ug/L (ppb)	--	0.0028	**19**	
Dibenzo(a,h)anthracene	ug/L (ppb)	--	0.0028	**1.2** J	
Fluoranthene	ug/L (ppb)	280	300	**41**	
Fluorene	ug/L (ppb)	280	1300	**2.7** J	
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	--	0.0028	**4.1** J	
2-Methylnaphthalene	ug/L (ppb)		--	**1.1** J	
Naphthalene	ug/L (ppb)	20	--	**1.1** J	
Phenanthrene	ug/L (ppb)	--	--	**31**	
Pyrene	ug/L (ppb)	--	960	**33**	
POLYCHLORINATED BIPHENYLS (PCBs) (EPA Method 8082)					
Arochlor-1016	ug/L (ppb)	0.5	0.000044	0.53 U	
Arochlor-1221	ug/L (ppb)	0.5	0.000044	0.53 U	
Arochlor-1232	ug/L (ppb)	0.5	0.000044	0.53 U	
Arochlor-1242	ug/L (ppb)	0.5	0.000044	0.53 U	
Arochlor-1248	ug/L (ppb)	0.5	0.000044	0.53 U	
Arochlor-1254	ug/L (ppb)	0.5	0.000044	**0.54**	
Arochlor-1260	ug/L (ppb)	0.5	0.000044	0.53 U	
RCRA METALS					
Total Arsenic	ug/L (ppb)	10.0	0.02	**77.0**	
Total Barium	ug/L (ppb)	2000.0	--	**146** J	
Total Cadmium	ug/L (ppb)	5.0	--	**10.2**	
Total Chromium	ug/L (ppb)	100.0	--	**23.4**	
Total Lead	ug/L (ppb)	15.0	--	**3,480**	
Total Mercury	ug/L (ppb)	2.0	0.14	**8.0** J	
Total Selenium	ug/L (ppb)	50.0	--	**4.3** J	
Total Silver	ug/L (ppb)	--	--	0.37 U	

TABLE 3
Interior Water Quality Data
Moran Plant
Burlington, Vermont

DBS-3					
Sample Date		VGES	VWQS	5/20/2008	
VOCs (EPA Method 8260B)					
Tetrachloroethane (PCE)	ug/L (ppb)	5.0	0.8	1.0 U	
Trichloroethane (TCE)	ug/L (ppb)	5.0	2.7	1.0 U	
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/L (ppb)	70.0	--	1.0 U	
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/L (ppb)	100.0	--	1.0 U	
Vinyl Chloride (VC)	ug/L (ppb)	2.0	2.0	1.0 U	
1,1-Dichloroethane (1,1-DCA)	ug/L (ppb)	70.0	--	1.0 U	
1,2-Dichloroethane (1,2-DCA)	ug/L (ppb)	5.0	0.38	1.0 U	
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L (ppb)	200.0	--	**0.27** J	
1,4-Dichlorobenzene (1,4-DCB)	ug/L (ppb)	75.0	400	1.0 U	
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (EPA Method 8270)					
Acenapthene	ug/L (ppb)	--	--	9.4 U	
Acenapthylene	ug/L (ppb)	--	--	9.4 U	
Anthracene	ug/L (ppb)	2,100	9,600	9.4 U	
Benzo(a)anthracene	ug/L (ppb)	--	0.0028	9.4 U	
Benzo(b)fluoranthene	ug/L (ppb)	--	0.0028	9.4 U	
Benzo(k)fluoranthene	ug/L (ppb)	--	0.0028	9.4 U	
Benzo(a)pyrene	ug/L (ppb)	0.2	0.0028	9.4 U	
Benzo(g,h,i)perylene	ug/L (ppb)	--	--	9.4 U	
Chrysene	ug/L (ppb)	--	0.0028	9.4 U	
Dibenzo(a,h)anthracene	ug/L (ppb)	--	0.0028	9.4 U	
Fluoranthene	ug/L (ppb)	280	300	9.4 U	
Fluorene	ug/L (ppb)	280	1300	9.4 U	
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	--	0.0028	9.4 U	
2-Methylnaphthalene	ug/L (ppb)		--	9.4 U	
Naphthalene	ug/L (ppb)	20	--	9.4 U	
Phenanthrene	ug/L (ppb)	--	--	9.4 U	
Pyrene	ug/L (ppb)	--	960	9.4 U	
POLYCHLORINATED BIPHENYLS (PCBs) (EPA Method 8082)					
Arochlor-1016	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1221	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1232	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1242	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1248	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1254	ug/L (ppb)	0.5	0.000044	0.47 U	
Arochlor-1260	ug/L (ppb)	0.5	0.000044	0.47 U	
RCRA METALS					
Total Arsenic	ug/L (ppb)	10.0	0.02	**9.9** J	
Total Barium	ug/L (ppb)	2,000.0	--	**32.9** J	
Total Cadmium	ug/L (ppb)	5.0	--	**1.6** J	
Total Chromium	ug/L (ppb)	100.0	--	**2.4** J	
Total Lead	ug/L (ppb)	15.0	--	**760**	
Total Mercury	ug/L (ppb)	2.0	0.14	**0.60** J	
Total Selenium	ug/L (ppb)	50.0	--	**2.6** J	
Total Silver	ug/L (ppb)	--	--	0.37 U	

NOTES

ug/Kg = migcrogram per kilogram; mg/Kg = milligrams per kilogram; ppb = parts per billion; ppm = parts per million.

"U" = not detected above listed quantitation limit; "J" = reported concentration is an estimated value.

VGES = Vermont Groundwater Enforcement Standard (Table 1 of the Groundwater Protection Rule and Strategy 1/00)

VWQS = Vermont Water Quality Standards: Consumption of Water & Organisms (Appendix C, Vermont Water Quality Standards, effective July 2000.

VOC samples collected via passive diffusion bag samplers that were sumberged in the water at each sampling location for 1 week prior to sampling. All other samples collected by bailer.

EPA Method 8260B compounds not shown indicate that they were not detected above respective quantitation limits.

Results reported above quantitation limits are indicated in bold.

Values greater than the standard are shaded.

TABLE 4
Interior Sediment Quality Data
Moran Plant
Burlington, Vermont

SED-2		Hazardous Waste Threshold		
Sample Date	Units		5/20/2008	
VOLATILE ORGANIC COMPOUNDS (EPA Method 8260)				
Tetrachloroethane (PCE)	ug/Kg (ppb)	14,000	**2.6** J	
Trichloroethane (TCE)	ug/Kg (ppb)	10,000	8.6 U	
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/Kg (ppb)		8.6 U	
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/Kg (ppb)		8.6 U	
Vinyl Chloride (VC)	ug/Kg (ppb)	4,000	8.6 U	
1,1-Dichloroethane (1,1-DCA)	ug/Kg (ppb)		**5.3** J	
1,2-Dichloroethane (1,2-DCA)	ug/Kg (ppb)		8.6 U	
1,1,1-Trichloroethane (1,1,1-TCA)	ug/Kg (ppb)		**7.5** J	
1,4-Dichlorobenzene (1,4-DCB)	ug/Kg (ppb)		**4.7** JB	
2-Butanone (Methly Ethyl Ketone)	ug/Kg (ppb)		**75**	
Acetone	ug/Kg (ppb)		**560** J	
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (EPA Method 8270)				
Acenapthene	ug/Kg (ppb)		**1,300** J	
Acenapthylene	ug/Kg (ppb)		**190** J	
Anthracene	ug/Kg (ppb)		**3,200**	
Benzo(a)anthracene	ug/Kg (ppb)		**6,700**	
Benzo(b)fluoranthene	ug/Kg (ppb)		**7,100**	
Benzo(k)fluoranthene	ug/Kg (ppb)		**5,900**	
Benzo(a)pyrene	ug/Kg (ppb)		**5,700**	
Benzo(g,h,i)perylene	ug/Kg (ppb)		**890** J	
Chrysene	ug/Kg (ppb)		**7,600**	
Dibenzo(a,h)anthracene	ug/Kg (ppb)		**310** J	
Fluoranthene	ug/Kg (ppb)		**22,000**	
Fluorene	ug/Kg (ppb)		**1,100** J	
Indeno(1,2,3-cd)pyrene	ug/Kg (ppb)		**1,000** J	
2-Methylnaphthalene	ug/Kg (ppb)		**860** J	
Naphthalene	ug/Kg (ppb)		**700** J	
Phenanthrene	ug/Kg (ppb)		**13,000**	
Pyrene	ug/Kg (ppb)		**11,000**	
PCBs (EPA METHOD 8082)				
Arochlor-1016	ug/Kg (ppb)		120 U	
Arochlor-1221	ug/Kg (ppb)		120 U	
Arochlor-1232	ug/Kg (ppb)		120 U	
Arochlor-1242	ug/Kg (ppb)		120 U	
Arochlor-1248	ug/Kg (ppb)		120 U	
Arochlor-1254	ug/Kg (ppb)		**580**	
Arochlor-1260	ug/Kg (ppb)		**360**	
RCRA METALS				
Total Arsenic	mg/Kg (ppm)	40	**136**	
Total Barium	mg/Kg (ppm)	2,000	**230**	
Total Cadmium	mg/Kg (ppm)	20	**9.4**	
Total Chromium	mg/Kg (ppm)	100	**89**	
Total Lead	mg/Kg (ppm)	100	**11,900**	
Total Mercury	mg/Kg (ppm)	4	**21.4** J	
Total Selenium	mg/Kg (ppm)	20	**8.9**	
Total Silver	mg/Kg (ppm)	100	0.067 U	

TABLE 4
Interior Sediment Quality Data
Moran Plant
Burlington, Vermont

SED-3		Hazardous Waste Threshold		
Sample Date	Units		5/20/2008	
VOLATILE ORGANIC COMPOUNDS (EPA Method 8260)				
Tetrachloroethane (PCE)	ug/Kg (ppb)	14,000	8.5 U	
Trichloroethane (TCE)	ug/Kg (ppb)	10,000	8.5 U	
cis-1,2-Dichloroethene (cis-1,2-DCE)	ug/Kg (ppb)		8.5 U	
trans-1,2-Dichloroethene (trans-1,2-DCE)	ug/Kg (ppb)		8.5 U	
Vinyl Chloride (VC)	ug/Kg (ppb)	4,000	8.5 U	
1,1-Dichloroethane (1,1-DCA)	ug/Kg (ppb)		**2.5** J	
1,2-Dichloroethane (1,2-DCA)	ug/Kg (ppb)		8.5 U	
1,1,1-Trichloroethane (1,1,1-TCA)	ug/Kg (ppb)		**4.6** J	
1,4-Dichlorobenzene (1,4-DCB)	ug/Kg (ppb)		**3.0** JB	
2-Butanone (Methly Ethyl Ketone)	ug/Kg (ppb)		**18**	
Acetone	ug/Kg (ppb)		**160** B	
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (EPA Method 8270)				
Acenapthene	ug/Kg (ppb)		**45,000**	
Acenapthylene	ug/Kg (ppb)		10,000 U	
Anthracene	ug/Kg (ppb)		**110,000**	
Benzo(a)anthracene	ug/Kg (ppb)		**140,000**	
Benzo(b)fluoranthene	ug/Kg (ppb)		**83,000** J	
Benzo(k)fluoranthene	ug/Kg (ppb)		**100,000**	
Benzo(a)pyrene	ug/Kg (ppb)		**97,000**	
Benzo(g,h,i)perylene	ug/Kg (ppb)		**23,000**	
Chrysene	ug/Kg (ppb)		**130,000**	
Dibenzo(a,h)anthracene	ug/Kg (ppb)		**12,000**	
Fluoranthene	ug/Kg (ppb)		**380,000**	
Fluorene	ug/Kg (ppb)		**48,000**	
Indeno(1,2,3-cd)pyrene	ug/Kg (ppb)		**30,000**	
2-Methylnaphthalene	ug/Kg (ppb)		**9,400** J	
Naphthalene	ug/Kg (ppb)		**16,000**	
Phenanthrene	ug/Kg (ppb)		**410,000**	
Pyrene	ug/Kg (ppb)		**310,000**	
PCBs (EPA METHOD 8082)				
Arochlor-1016	ug/Kg (ppb)		160 U	
Arochlor-1221	ug/Kg (ppb)		160 U	
Arochlor-1232	ug/Kg (ppb)		160 U	
Arochlor-1242	ug/Kg (ppb)		160 U	
Arochlor-1248	ug/Kg (ppb)		160 U	
Arochlor-1254	ug/Kg (ppb)		**1,100**	
Arochlor-1260	ug/Kg (ppb)		**520**	
RCRA METALS				
Total Arsenic	mg/Kg (ppm)	40	**155**	
Total Barium	mg/Kg (ppm)	2,000	**252**	
Total Cadmium	mg/Kg (ppm)	20	**8.9**	
Total Chromium	mg/Kg (ppm)	100	**105**	
Total Lead	mg/Kg (ppm)	100	**10,300**	
Total Mercury	mg/Kg (ppm)	4	**10.0** J	
Total Selenium	mg/Kg (ppm)	20	**8.6**	
Total Silver	mg/Kg (ppm)	100	0.083 U	

NOTES

ug/Kg = migcrogram per kilogram; mg/Kg = milligrams per kilogram; ppb = parts per billion; ppm = parts per million.

"U" = not detected above listed quantitation limit; "J" = reported concentration is an estimated value;

"B" = compound detected in laboratory blank

Hazardous Waste Threshold for VOCs and metals is the maximum concentration for characteristic of toxicity, Vermont Hazardous Waste Management Regulations (assumes a 20-fold dilution to convert to TCLP)

Results reported above quantitation limits are indicated in bold.

Values greater than the threshold are shaded.

APPENDIX C
COST ESTIMATE

WEM Waite Environmental Management, LLC.

MORAN GENERATING PLANT
BURLINGTON, VERMONT
COST ESTIMATE: INTERIOR MORAN CLEANUP
February 4, 2009

WORK ELEMENT / TASK	UNITS	CATEGORY	QTY	RATE	ELEMENT	COST
REPORTING / PROJECT MANAGEMENT / MEETINGS						
AS-BUILT REPORTING	HR	WEM -PRINCIPAL	4.0	$90.00	$360.00	
AS-BUILT REPORTING	HR	WEM -HYDROGEOLOGIST	16.0	$75.00	$1,200.00	
AS-BUILT REPORTING	HR	WEM - DRAFTING	5.0	$65.00	$325.00	
GENERAL PROJECT MANAGEMENT	HR	WEM -PRINCIPAL	15.0	$90.00	$1,350.00	
GENERAL CONSULTATION	HR	KAS - SENIOR	10.0	$99.00	$990.00	
ADMINISTRATIVE	HR	WEM - ADMIN	10.0	$45.00	$450.00	**$4,675**
INTERIOR DEWATERING						
COORDINATION / SITE PREPARATION	HR	WEM -PRINCIPAL	12.0	$90.00	$1,080.00	
EQUIPMENT SETUP/MAINTENANCE	HR	WEM -HYDROGEOLOGIST	20.0	$75.00	$1,500.00	
EQUIPMENT SETUP/MAINTENANCE	HR	KAS- FIELD TECH	20.0	$60.50	$1,210.00	
PUMP, HOSES, SUMP BASIN	EA	ESTIMATE	1.0	$600.00	$600.00	
REPORTING	HR	WEM -PRINCIPAL	6.0	$90.00	$540.00	
TEMPORARY ELECTRICAL SERVICE	LUMP	ESTIMATE	1.0	$1,000.00	$1,000.00	
ELECTRICAL CONSUMPTION	LUMP	ESTIMATE	1.0	$50.00	$50.00	**$5,980**
FRAC TANK CONTINGENCY (21,000 GALLON)						
COORDINATION / SITE PREP	HR	WEM -PRINCIPAL	6.0	$90.00	$540.00	
OVERSIGHT / DOCUMENTATION	HR	WEM - HYDROGEOLOGIST	40.0	$75.00	$3,000.00	
FRAC TANK MOB/DEMOB	EA	BAKER QUOTE	1.0	$2,420.00	$2,420.00	
FRAC TANK RENTAL	DAY	BAKER QUOTE	60.0	$49.50	$2,970.00	
PUMP RENTAL, HOSES, PLUMBING	EA	BAKER QUOTE	1.0	$1,100.00	$1,100.00	
FRAC TANK CLEANING	EST	EP&S	1.0	$4,400.00	$4,400.00	**$14,430**
LONG TERM SUMP OPERATION						
OPERATION AND MAINTENANCE	HR	WEM -HYDROGEOLOGIST	10.0	$75.00	$750.00	
ELECTRICAL CONSUMPTION	LUMP	ESTIMATE	1.0	$100.00	$100.00	**$850**
INTERIOR DEBRIS & SEDIMENT REMOVAL / DISPOSAL						
COORDINATION / SITE PREPARATION	HR	WEM -PRINCIPAL	8.0	$90.00	$720.00	
LABOR (LEVEL C PROTECTION)	LUMP	EP&S QUOTE	1.0	$42,570.00	$42,570.00	
VEHICLES/EQUIPMENT	LUMP	EP&S QUOTE	1.0	$17,050.00	$17,050.00	
MATERIALS	LUMP	EP&S QUOTE	1.0	$7,150.00	$7,150.00	
RCRA HAZARDOUS WASTE DISPOSAL	ROLLOFF	EP&S QUOTE	1.0	$10,560.00	$10,560.00	
SCRAP METAL DISPOSAL	ROLLOFF	EP&S QUOTE	1.0	$2,750.00	$2,750.00	
OVERSIGHT / DOCUMENTATION	HR	WEM -HYDROGEOLOGIST	20.0	$75.00	$1,500.00	**$82,300**
INTERIOR HAZARD ABATEMENT: LEAD PAINT, ASBESTOS, GUANO						
COORDINATION / SITE PREP	HR	WEM -PRINCIPAL	8.0	$90.00	$720.00	
ASBESTOS ABATEMENT	LUMP	KD QUOTE	1.0	$15,400.00	$15,400.00	
LEAD PAINT ABATEMENT	LUMP	KD QUOTE	1.0	$13,200.00	$13,200.00	
GUANO ABATEMENT	LUMP	KD QUOTE	1.0	$52,800.00	$52,800.00	
STAGING RENTAL/SETUP	LUMP	TO BE DETERMINED	1.0	$6,000.00	$6,000.00	
OVERSIGHT / DOCUMENTATION	HR	WEM -HYDROGEOLOGIST	20.0	$75.00	$1,500.00	**$89,620**
CONTINGENCY (10%)						**$19,790**
					TOTAL	**$217,645**

APPENDIX D
HEALTH & SAFETY PLAN

HEALTH AND SAFETY PLAN
for
ENVIRONMENTAL MONITORING AND CORRECTIVE ACTION MEASURES
at the
MORAN PLANT
475 LAKE STREET
BURLINGTON, VERMONT

February 2009

Prepared for:
City of Burlington
Community and Economic Development Office
City Hall, Room 32
Burlington, Vermont 05401

Prepared by:

Waite Environmental Management, LLC.

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HEALTH & SAFETY PLAN REVIEW
SIGNATURE PAGE

INSTRUCTIONS: Field personnel of Waite Environmental Management, LLC (WEM) are required to receive a copy of the Health and Safety Plan (HASP), and to read, understand, and agree to the provisions of this plan. The Project Manager (PM) is responsible for distributing the HASP to personnel as they are assigned to the project. Personnel are required to sign this form indicating receipt of the HASP.

SITE NAME: Moran Plant
475 Lake Street, Burlington, Vermont

PROJECT MANAGER: _____
Miles E. Waite, PhD

I have received a copy, read, understood, and agree to comply with the provisions of the above referenced HASP for work activities on this project.

PRINTED NAME	SIGNATURE	DATE

HEALTH AND SAFETY PLAN

1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been prepared by Waite Environmental Management, LLC (WEM) to provide maximum protection to workers without significantly compromising the progress of the project. The Plan is only of value if read, understood, and adhered to by all affected personnel.

By signing this document, the reader acknowledges that all pages of the text are present, have been read, understood, and will be adhered to during operations at the former Moran Generating Plant ("Site") in Burlington, Vermont. WEM assumes that the reader will also adhere to all OSHA General Industry Standards.

This Plan governs the operations of WEM field personnel. It does not extend to any contractors working under the supervision of WEM. It is assumed that all contractors have their own health and safety plan and that they are fully and completely OSHA certified for the position they are working in. WEM offers a copy of our Plan so that contractors can have the general knowledge of the conditions on the Site as understood by WEM. Any questions about this Plan should be addressed to Miles E. Waite, the Project Manager.

This document provides a general Heath and Safety Plan for responding to hazardous material releases. This Plan is not all-inclusive and should be only used as a guide, not a standard.[1]

2.0 GENERAL SITE INFORMATION

The "Site" is defined as an approximately 600 ft by 350 ft area at the edge of Lake Champlain. The Moran Plant, a 120 ft by 140 ft steel, brick and concrete structure on a mat concrete foundation, is the only building on the Site. This Site is surrounded to the north and east by open space/parks owned and operated by the City of Burlington. Directly to the south is the Burlington Water Treatment facility and a facility operated by the Burlington Electric Department. Lake Champlain abuts the property to the west. Access to the Site is via Lake Street.

The Moran Plant was operated by the Burlington Electric Department (BED) as a coal-burning power plant from 1953 to 1986. Prior to 1953, this portion of Burlington was used for a wide range of industrial purposes, including railroad, lumber yard and mill, and storage/transportation of petroleum products. Petroleum tanks were abundant to the north of the Plant until the early 1990s. Since decommissioning of the Moran Plant in 1986, the building has generally remained

[1] Plan patterned after document developed by the U.S. Coast Guard.

vacant, with the exception of the Lake Champlain Community Sailing Center (LCCSC) occupation of a small area in the west end on the main level.

The building levels are: 1) basement level at elevation of 96 ft, 2) front entry/mezzanine/rear entry level at 106 ft, 3) main level at 116 ft, 4) deaerator level at 141 ft, and 5) upper platform/catwalk level at 176 ft.

3.0 PURPOSE

The purpose of this HASP is to provide standards for worker safety and protection during field activities conducted on a routine basis. The plan outlines standards and mandatory procedures relative to physical and chemical hazards encountered at sites, communication, training, worker health monitoring, decontamination procedures and levels of personal protection.

This plan is applicable to all personnel working at sites where mandatory worker health and safety training is required by State of Federal agencies. It is intended for use at sites where information regarding potential site hazards is available in the form of background research, pervious sampling results, etc.

Activities to which this plan is applicable include the following:

- Purging and sampling groundwater monitoring wells
- Capping and excavation of soil
- Soil borings, monitoring well installation
- Surveying
- Interior building sampling and dewatering
- Oversight/inspections of interior cleanup work

This plan does not cover procedures for entry into trenches, excavations, or confined spaces, cleanup or handling of lead paint, guano, or asbestos containing materials, or cleanup or handling of contaminated sediment in dry basement conditions.

4.0 ONSITE ORGANIZATION AND COORDINATION

The following personnel are designated to carry out the stated job functions. (Note: one person may carry out more than one job function.)

Project Manager/Safety Officer:	Miles Waite, WEM
Field Hydrogeologist	Miles Waite, WEM
Field Technician	personnel from KAS, Inc.

In the event that contamination is encountered and an exclusion zone is established, all personnel arriving and departing the Site will log in and out with the Project Manager/Safety Officer. All activities onsite must be cleared through the Project Manager/Safety Officer.

5.0 ONSITE CONTROL

WEM has been designated to coordinate access control and security at the Site during site work. The groundwater sampling area is generally delineated by the fence that surrounds the building. The soil capping/excavation areas are in the grassy area north of the building and the fenced area immediately surrounding the building. The interior work area includes all five levels of the building. No unauthorized personnel will be allowed inside the building or fenced area, and all entry inside the building must be with the Safety Officer present. Where necessary, work area boundaries shall be identified by flagging/caution tape supported by steel rods, wooden stakes, or other suitable barriers.

Absolutely no smoking shall be permitted within 50 feet of the work area.

No confined space entry will be permitted without authorization of the WEM Site Inspector. Confined space entry shall be conducted only by those with OSHA confined space training, and shall be supervised/monitored by the buddy system.

Only OSHA-certified hazardous operations personnel should be permitted to physically handle or sample hazardous or contaminated materials.

Pursuant to 29 CFR 1910-120 (the OSHA standard for hazardous waste operations), an uncontrolled release site should be properly marked to delineate the following site safety zones:

The **Exclusion Zone** is defined as the immediate vicinity surrounding an area where a release has occurred or contaminated materials have been encountered.

The **Contaminant Reduction Zone** is defined as the area designated by the Safety Officer for the decontamination of tools and personal protective equipment (PPE), and is located between the Exclusion Zone and the Support Zone.

The **Support Zone** is defined as those portions of the Site where no personnel or equipment having contact with hazardous materials may enter without decontamination procedures. This will be the primarily assembly point in the event of an emergency. Alternate assembly areas may be chosen at the discretion of the Safety Officer.

6.0 SITE HAZARD EVALUATION SUMMARY

Physical Hazards at the Site

1. Exterior Terrain: No specific terrain hazards are known at the time of this plan.

2. Traffic: No specific traffic hazards are anticipated at the time of this plan.

4. Interior Building: There are several interior building hazards. Residual asbestos dust may be present in the dry spaces on the main level. Flaking lead paint is present on many of the painted steel framework on the main level. Pigeon guano is present on the floor of the main level and in limited quantity in the upper levels. Falling hazards are present due to gaps in the steel mezzanine that access the stairs to the basement level and the grated steel upper platforms. Water hazards are present in the basement level which is flooded for much of the year, compounded by the freezing of the ice during winter months. The presence of the ice means that trips/slips/falls and hypothermia are additional hazards.

3. Equipment: Equipment used during the sampling events may include water level probes, groundwater pumps, water quality meters, and portable generators. Personnel should follow the manufacturer's equipment operation instructions and take required safety precautions. In addition, some heavy machinery is involved with the soil capping and excavation processes and in the soil boring process.

Chemical Hazards at the Site

1. Materials Used/Stored at Site: coal, electrical generating equipment.

2. Materials Released at Site: Low levels of chlorinated volatile organic compounds (tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, 1,1-dichloroethane, and 1,1,1-trichlorethane) have been reported in the groundwater. The source of these chlorinated VOCs is not well established, but is assumed to be from the solvents used to clean the former electrical generating equipment. The shallow soil contains residual semi-volatile organic compounds, specifically benzo(a)pyrene, a by-product of the former coal burning operation. The shallow soil also contains the metal arsenic, also a by-product of the storage of coal at the Site. The interior sediment contains residual SVOCs, the metal lead from the flaking lead paint, and trace levels of PCBs.

   Action levels for the listed compounds are summarized below (action levels apply to measured concentrations in worker breathing space and not measurements collected from soil screening).

Contaminant Action Levels

Chemical Name	IDLH (ppm)	PEL TWA (ppm)	Odor Threshold (ppm)	Upgrade to Level C (ppm)	Cease Works and Evacuate (ppm)
Tetrachloroethene	150	100	1.0-4.7	PID readings of 25	PID Readings of 50
Trichloroethene	1,000	100	28		
Cis-1,2-Dichlorethene	1,000	200	400-1400		
1,1-Dichlorethane	3,000	100	NA		
1,1,1-Trichlorethane	700	350	NA		
Benzo(a)pyrene	NA	NA	NA	ND	ND
Arsenic	NA	NA	NA	ND	ND
Lead	NA	NA	NA	ND	ND

Notes:
PPM = parts per million
IDLH = Immediately Dangerous to Life or Health
PEL = OSHA Permissible Exposure Limit
TWA = Time weighted average (8-hour average)
NA = data not available
PID = photo-ionization detector
ND = Not detectable with a PID

7.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Based on evaluation of the potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Location	Job Function	Level of Protection
Basement Level	Sediment sampling, dewatering, inspection	Level D
Basement Level	Sediment removal (dry conditions)	Level C
Main Level	Inspection	Level D
Main Level	Guano removal, sweeping, dust generating activities	Level C
Deaerator & Upper Platform	Inspection	Level D
Deaerator & Upper Platform	Guano removal, removal of ACMs	Level C

Specific protective equipment of each level of protection is as follows:

Level A:	Fully-encapsulating suit SCBA Disposable coveralls	Level C:	Rain Suit Full-face or half-mask canister respirator Gloves (latex or nitrile) Over-boots
Level B:	Splash gear SCBA	Level D:	Hard hat Work boots (steel toed) Gloves (latex or nitrile) Eye protection

For tasks that require Level C Protection, respirators shall have combined organic vapor & P100 HEPA particulate filters.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFTEY OFFICER.

8.0 COMMUNICATION PROCEDURES

Three (3) horn blasts is the emergency signal to indicate that all personnel should leave the exclusion zone.

The following standard hand signals will be used:

SIGNAL	MEANING
Hand gripping throat	Out of air, can't breathe
Grip partner's wrist or Both hands around waist	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	OK, I am alright, I understand
Thumbs down	No, negative

9.0 DECONTAMINATION PROCEDURES

Decontamination procedures will be required for all personnel receiving direct exposure to contaminated materials.

Decontamination will consist of removing all outer protective clothing and cleaning all non-disposable equipment with a soapy solution, followed by clean water rinse.

10.0 EMERGENCY CONTACTS

		PHONE #
Fire Department:	Burlington Fire Department	911
Police Department:	Burlington Police Dept	911
	State Police (Williston)	(802) 878-7111

Hospital: Fletcher Allen Hospital (802) 847-0000
Directions from site: Take Lake Street back to Battery Street. Take a left onto Battery to the top of the hill, and then turn right onto Pearl Street. Follow Pearl Street to the top of the hill past University and turn right into hospital entrance.

Other Applicable Emergency Contacts:

City of Burlington	(802) 865-7144
Burlington DPW	(802) 863-9094

Information for Emergency Personnel:
Address of site: 475 Lake Street; Nearest cross road: Depot Street

11.0 EMERGENCY PROCEDURES

The following standard emergency procedures shall be used by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible of the appropriate procedures are followed. These procedures may be modified depending on the type of emergency.

Personal injury in the Exclusion Zone:

Upon notification of any injury in the Exclusion Zone, the designated emergency signal of three (3) horn blasts shall be sounded. All site personnel shall assemble at the decontamination line. The rescue team will enter the Exclusion Zone (if required) to remove the injured person. The rescue personnel and injured person should attempt to decontaminate to the extent possible prior to movement into the Support Zone. The onsite EMT shall initiate the appropriate first aid, and contact should be made for an ambulance with the designated medical facility (if required). No persons shall re-enter the Exclusion Zone until the cause of injury or symptoms is determined.

Personal injury in Support Zone:

Upon notification of an injury in the Support Zone, the Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the onsite EMT initiating the appropriate first aid and necessary follow-up as stated above. If the injury increases the risk to others, the designated emergency signal of three horn blasts shall be sounded and all site personnel shall move into the Decontamination Zone for further instructions. Onsite activities will stop until the added risk is removed or minimized.

Fire/Explosion:

Upon notification of a fire or explosion onsite, the designated emergency signal of three horn blasts shall be sounded and all onsite personnel shall assemble in the Decontamination Zone. The fire department shall be alerted and all personnel moved a safe distance from the involved area. Small fires will be fought with hand-held extinguishers.

PPE Failure

If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure

If any other equipment onsite fails to operate properly, the Site Inspector and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations onsite. If the failure affects the safety of personnel, than all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

In situations when an onsite emergency results in the evacuation of the Exclusion Zone, personnel shall not re-enter until:

(1) The conditions resulting in the emergency have been corrected.
(2) The hazards of been reassessed.
(3) The HASP has been reviewed.
(4) Site personnel have been briefed on any changes in the HASP.

12.0 PLAN LIMITATIONS

This health and safety plan governs the operations of WEM staff/employees[2]. It does not extend to any contractors or subcontractors working under the supervision of WEM. WEM assumes that all contractors have their own heath and safety plan and that they are fully and completely OSHA certified for the position that they are working in. WEM offers a copy of this Plan to that the contractors can have a general knowledge of the conditions of the Site as known to WEM, and how these conditions guide personnel site operations.

[2] At the time of the creation of this HASP, there are no employees of WEM. Miles Waite of WEM will initially be the only worker to be covered under this plan.

EMERGENCY PHONE NUMBERS

VERMONT POISON CENTER.....1-800-658-3456

HOSTPIAL.....(802) 847-0000

FIRE.....911

POLICE.....911

AMBULANCE.....911

U.S. COAST GUARD, BOSTON.....(617) 565-9000

VT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPILL REPONSE.....(802) 241-3888
SITES MANAGMENT.....(802) 241-3888

WAITE ENVIRONMENTAL MANAGEMENT.....(802) 860-9400

KAS, INC…….....(802) 383-0486

BURLINGTON CEDO…….....(802) 865-7144

BURLINGTON DPW.....…….(802) 863-9094

DIGSAFE ID# .....