

40-9015

STATE OF MICHIGAN



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October 23, 1997

Mr. Jack D. Parrott  
Materials Decommissioning Section  
Low Level Waste & Decommissioning Projects Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
Mail Stop T-8F37  
Washington, DC 20555

Subject: Summary of the Tobico Marsh State Game Area (SGA)  
Scoping Survey Work Plan

Dear Mr. Parrott:

On September 16, 1997, the State of Michigan and ABB Environmental Services of Michigan Inc. (ABB), initiated a telephone conference call with you. The State of Michigan was requesting authorization to proceed with the Scoping Survey for the referenced site, prior to issuance of the Tobico Marsh Site SGA Nuclear Regulatory Commission (NRC) License. NRC authorization was granted contingent upon the NRC receiving a letter from the State of Michigan summarizing the Scoping Survey activities prior to the start of onsite work. This letter has been prepared to fulfill this request.

The following is a summary of site characteristics and Scoping Survey units. The site is divided into two survey units: 1) the area inside the slurry wall; and 2) the area outside of the slurry wall as depicted in Figures 6 and 7 attached. The second survey unit will include pond sediments on the north end. This unit is also irregularly shaped on the southern side due to the boundary shared with a separate decommissioning project owned by Waste Management, Inc.

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SCOPE OF WORK

The goal of the Scoping Survey is to gather sufficient data regarding radiological conditions (and some chemical conditions) at the site, including background radionuclide levels, to support the design and implementation of a Characterization Survey. Work performed in support of the Scoping Survey will be in accordance with the following Tobico Marsh SGA documents: Scoping Survey Work Plan; NRC License Application; Radiation Safety Plan; associated Health Physics Procedures; and Scoping



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Survey Health and Safety Plan. The Scoping Survey activities will also be conducted in accordance with Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), 10 Code of Federal Regulations(CFR) Parts 19 and 20, 29 CFR - Occupational Safety and Health Administration and the Manual for Conducting Radiological Surveys in Support of License Termination NUREG/CR-5849.

The following is a list of Scoping Survey tasks that will be completed in accordance with the Scoping Survey Work plan:

- Scoping Survey Preparation
- Gross Gamma Walkover Scan Survey
- Geoprobe Volumetric Sampling and Gross Gamma Surveys
- Down Hole and Surface In-Situ Gamma Spectrometry
- Collection of Surface Soil and Sediment Volumetric Samples

The following is a brief description of each Scoping Survey task.

#### Scoping Survey Preparation

Prior to conducting the Scoping Survey on both survey units, vegetation and other obstacles will be cleared. Existing vegetation will be cleared from both survey units down to maximum height of 4-inches from ground surface, where possible. Once both survey units have been cleared of vegetation and obstacles, the survey units will be divided into smaller survey areas using a 10 x 10 meter grid system.

#### Gross Gamma Walkover Scan Survey

A 100% gross gamma walkover scan survey will be performed in accessible areas within both (inside and outside slurry wall) survey units. The results from the gamma walkover survey will be used to screen locations for other types of measurements and volumetric sampling. In the absence of readings significantly above background, evenly-spaced sample locations will be employed.

#### Geoprobe Volumetric Sampling and Gross Gamma Surveys

Geoprobe volumetric sampling will be performed only on the inside survey unit to obtain data regarding the physical, radiological characteristics of the landfill as a function of depth. Volumetric samples will be collected in the sub-cap sand cover, landfill waste material and native depositional sand/clay unit underlying the landfill. This activity will result in a vertical profile that considers radiological, and physical characteristics of the landfill. The Geoprobe volumetric samples will be obtained using Marco Soil Sampler Probes that will result in an approximately 2-inch diameter push hole with no cuttings coming to the surface. The Geoprobe is a push sampling technology that does not generate soil cuttings at ground surface. A gross gamma survey using a sodium iodide detector will be conducted on each sample that is retrieved from the 2-inch push hole.

The gross gamma survey results from the volumetric soil sampling will be used to determine which samples are sent to an independent analytical laboratory for radiological analyses. Information collected during the Geoprobe operations will assist in choosing depths for performing down hole in-situ gamma spectroscopy. The 2-inch Geoprobe push holes will be pilot holes for subsequent use in the down hole in-situ gamma spectrometry surveys.

#### Down Hole and Surface In-Situ Gamma Spectrometry Measurements

Down hole in-situ gamma spectroscopy will be performed on both the inside and outside survey units to obtain data regarding the presence of specific radionuclides and their associated concentration at selected depths. The 2-inch diameter push holes will be expanded to approximately 6-inch to allow for down hole gamma spectrometry measurements.

Surface in-situ gamma spectrometry measurements will be made on the outside survey unit. Surface in-situ gamma spectroscopy will be performed to obtain data regarding the presence of specific radionuclides and their associated concentrations within the top several inches of the landfill cap surface.

After insitu gamma spectrometry measurements are completed all excess soil (i.e., soil not sent for laboratory analysis) will be returned to the hole of origin prior to abandonment.

#### Collection of Surface Soil and Sediment Volumetric Samples

Surface soil and shallow sediment sampling will be performed in the outside survey unit to obtain data regarding the physical and radiological characteristics of the outside survey unit. As indicated above, the outside survey unit includes a portion of a pond located north of the landfill. Pond sediment sampling will be performed to obtain data regarding the physical and radiological characteristics of the pond sediments. A gross gamma survey using a sodium iodide detector will be conducted on each surface soil and sediment sample that is retrieved from the bottom of the pond. The gross gamma survey results from the volumetric surface soil and sediment sampling will be used to determine which samples are sent to an independent laboratory for radiological analyses.

#### HEALTH AND SAFETY

Prior to performing any Scoping Survey activities, individuals will be trained to ensure they have an understanding of their work assignment and responsibility. The training will consist of radiological fundamentals, the Tobico Marsh Site Radiation Safety Program, the Scoping Survey Work Plan, and the Scoping Survey Health & Safety Plan. The radiological fundamentals will include 10 CFR Parts 19 and 20. Prior to attending the aforementioned training, the individual or individual's company must

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demonstrate, in writing, that the individual has successfully completed a forty-hour HAZWOPER course.

#### SCHEDULE

The removal of vegetation and gridding began October 20, 1997. The field activities for Scoping Survey intrusive sampling are scheduled start to beginning November 5, 1997. The field portion of the Scoping Survey is tentatively scheduled to last five weeks.

If you have any questions or comments regarding the above, please contact me at (517) 335-4036.

Sincerely,



Denise Gruben  
Office of Equal Opportunity, Litigation  
and Program Services

#### Attachment

cc: Mr. Thomas Kern, WMI  
Mr. Andrew Lonergan, ABB  
Mr. Timothy Bertram, MDEQ  
Mr. David Minnaar, MDEQ  
Mr. Christopher D. Dobyys, AAG

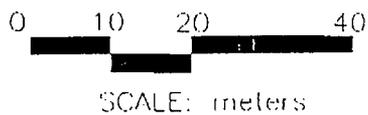
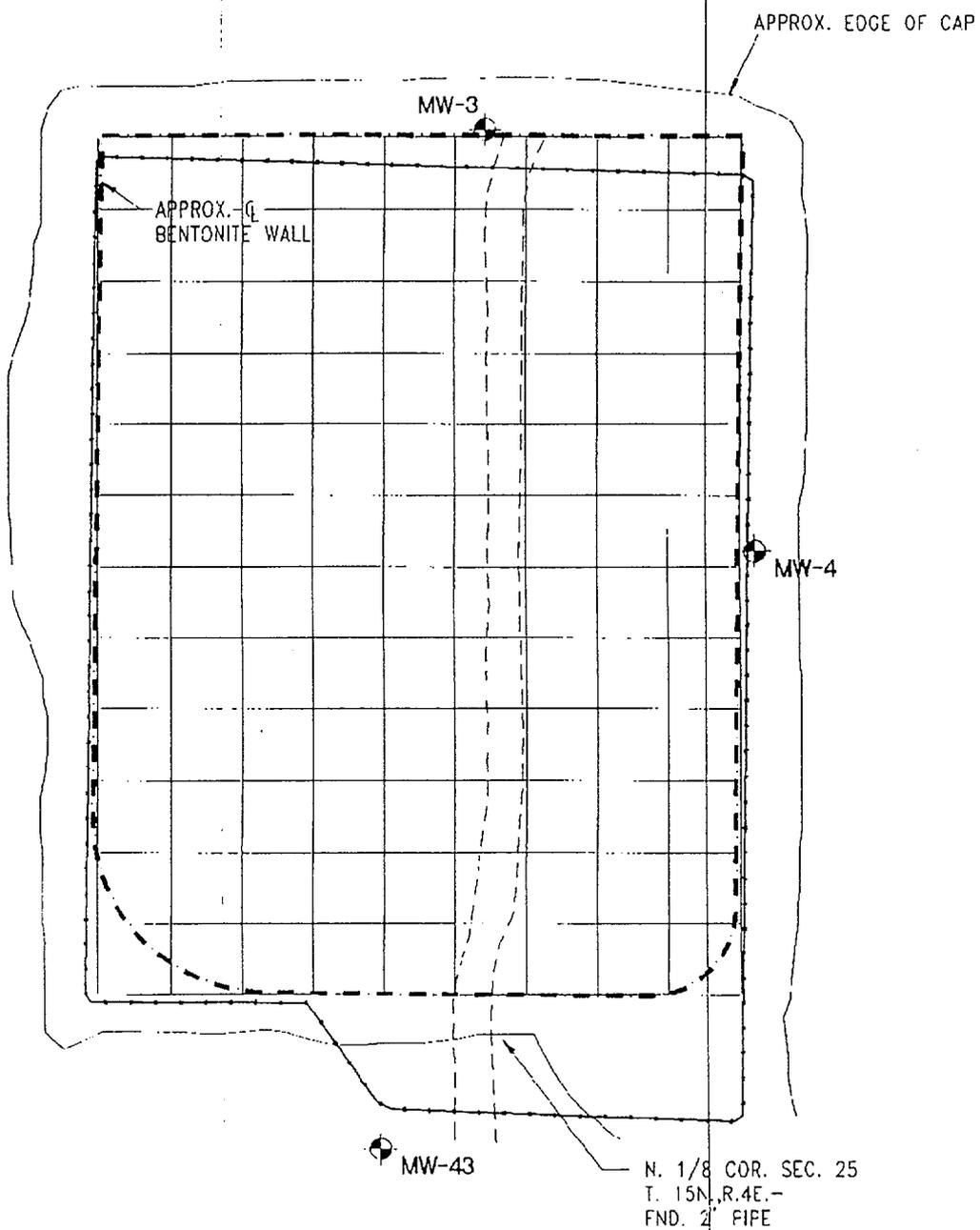


FIGURE - 6  
 CELL GRID WITHIN BENTONITE WALL  
 MDNR THREE ACRE SITE  
 - ABB Environmental Services, Inc.

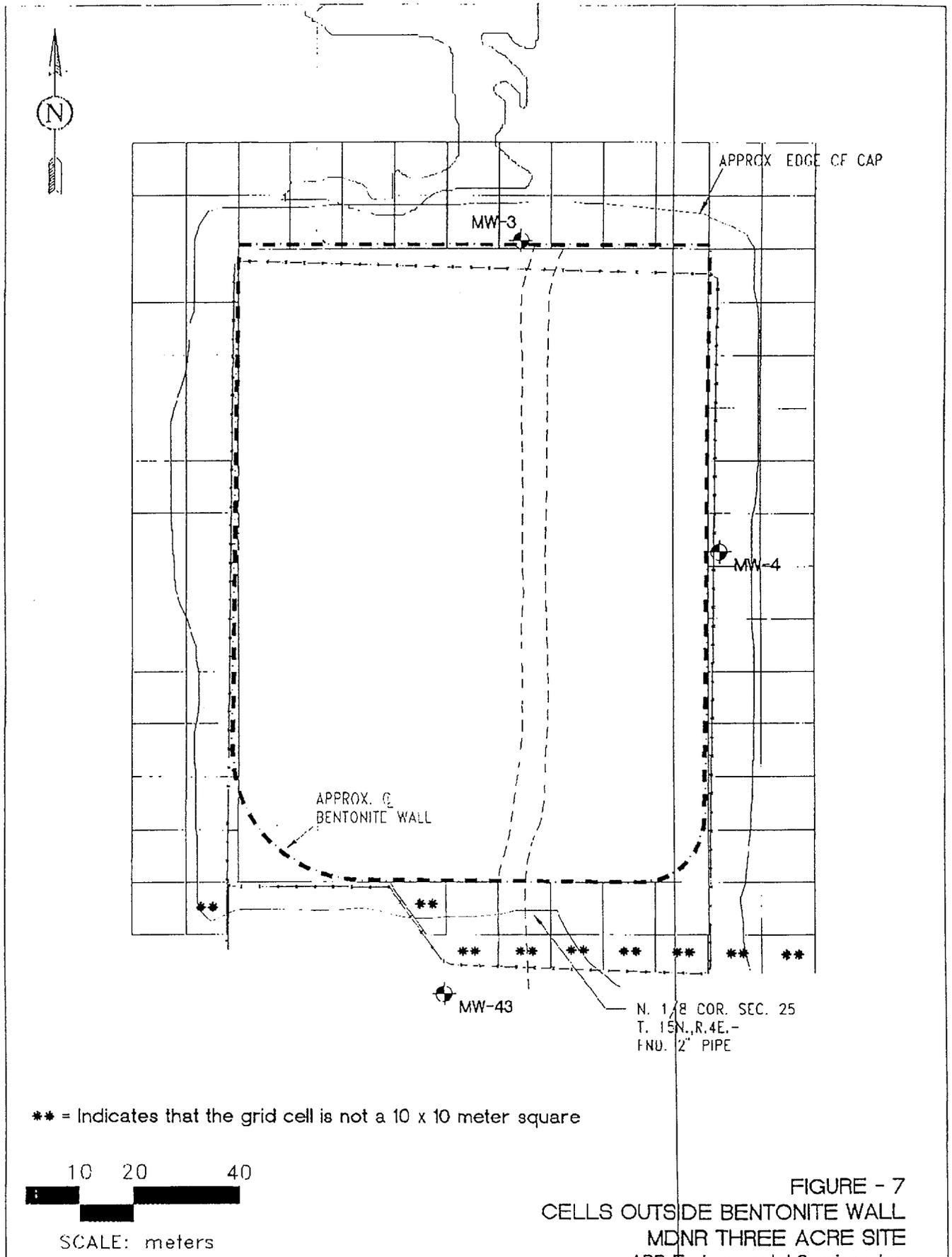


FIGURE - 7  
 CELLS OUTSIDE BENTONITE WALL  
 MDNR THREE ACRE SITE  
 ABB Environmental Services, Inc.