



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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March 30, 2015

Michael Toomey
Boston Environmental Corporation
338 Howard Street
Brockton, MA 02302

RE: Comprehensive Site Assessment Interim Report

AT: Old Fall River Road Landfill
452 Old Fall River Road
Dartmouth, Massachusetts
Facility # 39200

Dear Mr. Toomey:

The Massachusetts Department of Environmental Protection, Solid Waste Management Section (the "MassDEP" or "Department"), has completed its review of the proposed Comprehensive Site Assessment Interim Report (the "Report") for the Old Fall River Road Landfill ("Cecil Smith Landfill") Dartmouth, Massachusetts (the "Landfill"). The Report was submitted to MassDEP on September 29, 2014 on behalf of Boston Environmental Corporation ("BEC") (the "Operator") by SITEC of Marshfield, Massachusetts (the "Consultant").

PROJECT BACKGROUND:

On March 28, 2014, MassDEP entered into Administrative Consent Order ACO-SE-14-4001 (the "ACO") with BEC which required that BEC's final/revised Conceptual Closure Proposal meet the requirements of the "Inactive Landfill Closure Guidelines". The revised conceptual closure proposal specified that the existing 25 acre footprint of the Landfill would be consolidated to a final size of approximately 23 acres, and an estimated 926,000 cubic yards³ of mildly contaminated soils and construction and demolition debris fines would be used as shaping and grading materials to close the Landfill.

The ACO required the submittal of a BWPSW12 – Initial Site Assessment/Comprehensive Site Assessment-Scope of Work ("ISA/CSA-SOW") permit application to MassDEP. The purpose of the Initial Site Assessment portion of the assessment is to gather and evaluate all existing information relating to the Landfill site, develop a conceptual model of the site, identify potential receptors surrounding the site and prepare a scope of work for the CSA. The purpose of the CSA-SOW is to propose investigations

and sampling programs that will be undertaken to characterize the source, nature, extent, and potential migration pathways associated with the Landfill. On August 14, 2014, MassDEP approved the ISA/CSA-SOW permit application.

Condition 52B of the ACO and Condition 9 of the ISA/CSA-SOW required the submittal of the Report following the first round of sampling at the Landfill:

- “**Within forty-five (45) days of MassDEP’s approval of the ISA/CSA-SOW**, the Respondents shall submit to MassDEP for review and approval, an “interim” ISA/CSA Report.”
- The interim report shall be consistent with the environmental monitoring requirements specified at 310 CMR 19.132(1)(f), and shall at a minimum include the following information:
 - i. Site plans or maps showing: the locations of all monitoring equipment, the ground water flow direction, and the location and distribution of measured contaminants;
 - ii. A summary of all analytical data inclusive of all applicable standards (MCP method GW-1 and 3, and the “*Massachusetts Drinking Water Guidelines*”), with a corresponding comparison to recent, previous and/or past historical data; and
 - iii. Identification of any particular issues of concern, including but not limited to assessment data that could affect the design of the CAD or implementation of the CSA.”

REPORT FINDINGS:

As part of the first round of sampling for the CSA, BEC:

- Installed six additional groundwater monitoring wells
- Installed five landfill soil gas probes
- Collected groundwater samples from 15 monitoring wells
- Collected surface water and sediment from 3 sample locations
- Collected landfill soil gas from five gas probes
- Collected drinking water samples from two residential wells
- Collected soil samples during monitoring well installation

The Consultant concluded that the concentrations of contaminants detected in groundwater during the September 2014 sampling round is consistent with groundwater impacts from an unlined construction and demolition waste landfill.

Groundwater Wells

- Bis(2-Ethylhexyl)phthalate was detected in groundwater samples at concentrations exceeding the MCP Method 1 GW-1 value of 6 ppb in monitoring wells HA-1D (13 ppb), SGA-01S (7.5 ppb), and MW-3B (6 ppb). Bis(2-Ethylhexyl)phthalate was detected at concentrations less than the MCP Method 1 GW-1 value of 6 ppb in groundwater samples collected from four other wells (SGA-01D (4.4 ppb), SGA-01B (4.1 ppb), HA-2D (3.4 ppb), and MW-5 (3.2 ppb)).
- Additionally, bis(2-Ethylhexyl)phthalate was detected at the concentration of 7.7 ppb exceeding the MCP Method 1 GW-1 value of 6 ppb in the groundwater sample collected from upgradient monitoring well SGA-01S.

- Cyanide was detected at the concentration of 42 ppb in the groundwater samples collected from MW-5 exceeding the MCP Method 1 GW-3 value of 30 ppb (refer to MassDEP comment #7).
- Groundwater samples collected from 8 of the 15 groundwater wells contained concentrations of iron exceeding the Massachusetts Secondary Drinking Water Standards (SMCL) and 13 out of 15 groundwater wells contained concentrations of manganese exceeding the SMCL.
- Groundwater wells HA-1 and HA-2 had Total Dissolved Solids (TDS) values above the Massachusetts Secondary Drinking Water Standard.
- Groundwater samples collected from 14 of the 15 groundwater wells contained elevated levels of Chemical Oxygen Demand (COD).
- Sodium was detected in groundwater samples at concentrations exceeding the Massachusetts Office of Research and Standards Drinking Water Guideline (ORSG) of 20,000 ppb in monitoring wells SGA-01B (23,000 ppb), HA-2B (24,000 ppb) and MW-3B (38,000 ppb).

Private Residential Wells

- The residential wells sampled were located at 460 Old Fall River Road (PW-265) and 1 Stonefield Lane (PW-266).
- There were no exceedances of Primary or Secondary Drinking Water Standards, Guidelines or Massachusetts Contingency Plan (MCP) Method 1 GW-1 Cleanup Standards.

Surface Water

- The consultant was unable to sample at SW-1 due to no flowing or standing surface waters at this location. This is the up-gradient location.
- SW-2 located by the unnamed stream at the northern most extent of the Landfill, contained concentrations of manganese in the surface water (77 ppb) exceeding the Secondary Drinking Water Standard of 50 ppb.
- SW-2 contained concentrations of sodium (24,000 ppb) exceeding the ORSG Guideline of 20,000 ppb.

Sediment

- SD-1, the up-gradient location, contained concentrations of mercury (.323 mg/kg) exceeding the .018 mg/kg Massachusetts Stage 1 Sediment Screening Criteria.

Landfill Soil gas

- Landfill soil gas was not detected during the first round of the CSA.

Soil Quality

- Soil samples were collected from HA-1B at an interval of 0-2 feet below ground surface (bgs), HA-2B at an interval of 4-6 bgs, and MW-3B at an interval of 0-2 bgs.
- Inorganic parameters (i.e. metals) were detected in each soil sample but their concentrations did not exceed MCP Method 1 Soil risk Standards (i.e. S-1/GW-1, S-2/GW-2, and S-3/GW-3).

The consultant concluded that the first round of CSA environmental monitoring data is consistent with the previous environmental monitoring data collected for the Landfill.

BEC PROPOSED THE FOLLOWING MODIFICATIONS TO CSA:

- Groundwater and Surface Water Analysis for 1,4 Dioxane: During the remaining three rounds of the CSA, 1,4 Dioxane be tested using EPA method 8260 with a "detection limit slightly above drinking water standards."

- Landfill soil gas: Consultant to perform the three remaining landfill gas screening events for the completion of the CSA.
- Private Wells: No further sampling of the private wells.
- Sediment Samples: No further sampling of sediment.
- Surface Water Sampling: No Additional monitoring locations for surface water.
- Ecological Risk Assessment: No need for ecological risk assessment.

MASSDEP COMMENTS:

MassDEP provides the following comments regarding the Report and the completion of the Comprehensive Site Assessment:

- 1) Groundwater and Surface water Analysis for 1, 4 Dioxane: BEC shall continue to use EPA Method 8270 SIM or EPA Method 522 M to test for 1,4 Dioxane for the remaining three rounds of the CSA. The 1,4 dioxane Method-Reporting-Limit (“MRL”) for groundwater samples collected from the groundwater monitoring wells shall be equal to (or less than) the MCP Method 1 GW-1 cleanup value of 0.3 ppb.
- 2) Groundwater Sampling: The well cluster identified as the up-gradient wells (SGA-01) is showing impacts from the Landfill. Well cluster SGA-01 is located immediately adjacent to the edge of waste. Well HA-4 is further from the Landfill and maybe a more suitable up-gradient well.
- 3) Private Well Testing: At this point in the assessment it is premature to determine that no further private well testing is necessary. The CSA permit application shall document the nature and extent of contamination and include an evaluation of the potential for impacts on private wells down gradient of the landfill. MassDEP reserves the right to require additional private well testing based on review of additional monitoring data and the conclusions presented in the CSA.
- 4) Surface Water Sampling: MassDEP has reviewed the data from the first round of surface water sampling. No samples were collected from SW-1, as there was not any surface water in this area during the time of testing. This area is identified as the up-gradient location, however MassDEP is concerned that this area maybe impacted by its proximity to the Landfill. A sampling location further upstream would be more appropriate for an up-gradient location to evaluate background conditions.
- 5) Sediment Sampling: The Consultant shall continue to characterize the sediment in the vicinity of the locations approved by MassDEP for the remainder of the CSA.
- 6) Ecological Risk Assessment: BEC shall perform, at a minimum, a Stage 1 Environmental Screening with the CSA.
- 7) Cyanide Testing: BEC is currently testing for total Cyanide at the Landfill. MassDEP recommends testing for Physiological Available Cyanide (PAC). The MassDEP PAC method is used for the determination of biologically available cyanides. Determination of PAC testing shall be done in accordance with 310 CMR 40.0017(2).

Please direct any questions regarding this matter to me at (508) 946-2847 or write to the letterhead address.

Very truly yours,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Mark Dakers, Chief
Solid Waste Management Section

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