



Department of Environmental Protection

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March 31, 2014

Ms. Wendy Henderson
Director of Public Health
Town of Dartmouth Board of Health
Town Hall, Room 119
400 Slocum Road
Dartmouth, MA 02747

Dear Ms. Henderson:

I understand that the Dartmouth Board of Health asked Professor Wendy Heiger-Bernays to identify the potential public health issues associated with movement and use of “COMM-97” soils, and has posted the document containing Dr. Heiger-Bernays’ response (dated March 3, 2014) on the Town’s web site (<http://town.dartmouth.ma.us/pages/cecilsmith>). Scientists from the Massachusetts Department of Environmental Protection (MassDEP) have reviewed Dr. Heiger-Bernays’ response to your request. MassDEP is very concerned about inaccuracies and misinterpretation of regulatory requirements in her document. I am writing to set the record straight regarding the most significant inaccuracies.

Please note that “COMM-97” refers to a policy adopted by MassDEP in 1997 to provide guidance to the regulated community about the Department of Environmental Protection's requirements, standards, and approvals for testing, tracking, transport, and reuse or disposal of contaminated soil at Massachusetts lined and unlined landfills. This Policy was designed to complement the Massachusetts Contingency Plan (“MCP”, 310 CMR 40.0000), which establishes rules for notification, assessment, and remediation of sites that have been contaminated by oil or hazardous materials and implements the requirements of M.G.L. c. 21E.

I want to call the following inaccurate statements to your attention:

1. Page 1, “Incoming Soil Materials”, “Testing Frequency”:

Statement: “The testing frequency required by the COMM-97 Policy for incoming soil materials is one sample per 500 cubic yards”.

MassDEP response: COMM-97 does not prescribe any specific testing regime for soil to be brought to a Massachusetts landfills for re-use or disposal, and does not establish a requirement for taking one sample per 500 cubic yards. The soil that is being addressed by this policy is generated at sites that have been reported and assessed under the oversight of Licensed Site Professionals (LSPs) in accordance with the requirements of the MCP, which establishes a performance standard for sampling that is adequate to characterize the nature and extent of contamination at a site. Any soil re-used pursuant to COMM-97 must be characterized both as part of the overall site assessment and as necessary to document suitability for re-use. We would appreciate it if Dr. Heiger-Bernays supplied the source for this statement.

2. Page 2, “Incoming Soil Materials”, “Testing for Contaminants”:

Statement: “The contaminants tested for in the COMM-97 Policy, Table 1, includes five metals...total volatile and semi-volatile organic compounds, Total Petroleum Hydrocarbons (TPH), and polychlorinated biphenyls (PCB). Table 1 does not fully address other contaminants of concern (which could potentially be toxic to humans and the environment) that are typically found in urban fill and used in soil fill projects ...”

MassDEP response: Table 1 in the COMM-97 Policy was developed specifically to provide a list of maximum concentrations for specific common chemicals in soil that can be used as daily cover, intermediate cover, and pre-capping contour material at Massachusetts landfills without prior approval from MassDEP, provided that the material is managed consistent with all the provisions of the COMM- 97 Policy, the facility’s permit, and 310 CMR 19.000. However, Section 4.3 of COMM-97 (addressing Unlined Landfills) states that:

“A Landfill - Minor Modification, BWP SW 22 permit or other approval by the Department shall be obtained prior to the reuse at an unlined landfill of any Contaminated Soil which:

- **exceeds** the contaminant levels in **Table 1**, or;
- may not be managed consistent with the guidelines of **Section 7.0, Landfill Operation Practices**, or;
- contains oil and/or hazardous materials for which no threshold is provided in **Table 1**”.

If a landfill owner/operator wants to bring in soil containing chemicals that are not listed in Table 1, the Policy states clearly that a MassDEP permit is required. As part of its review of an application for this permit, MassDEP would consider the proposed maximum concentrations of chemicals in the subject soil and would determine whether the soil would present a risk to the health of workers at the site or residents living near the facility’s fence line. By not referencing the requirement for soil containing soil and/or hazardous materials for which no threshold is provided in Table 1, the statement in this section of Dr. Heiger-Bernays’ document implies that contaminants that are not listed in this Table are not regulated, which is not true.

3. Page 2/3, “Incoming Soil Materials, “Averaging Soil Concentrations”:

Statement (on page 3): “The COMM-97 Policy allows the test data for soil samples collected from the same source area to be averaged.”

MassDEP response: The COMM-97 policy states, “The Department has determined that Contaminated Soil which **does not exceed** the contaminant levels in Table 1 may be reused as daily cover, intermediate cover and pre-capping contour material at Massachusetts landfills

provided it is managed consistent with all the provisions of this Policy, the facility's permit and 310 CMR 19.000.” [Emphasis in the original]

The values in Table 1 are based upon risk assessment calculations that consider potential exposure of workers and nearby residents to the soil over an extended period of time. As such, the average concentration over that time – and the average concentration in each soil shipment – is the appropriate measure. The use of an average value in this context is identical to the way the MCP Method 1 Standards are applied. To the extent that Dr. Heiger-Bernays argues that the COMM-97 criteria should be consistent with the Method 1 Standards (see #5 and #6 below), then the method of comparison should be similar as well. Further, if the intent were to compare the COMM-97 criteria to something other than an average soil concentration, then the derivation of the criteria would have been different and the criteria correspondingly higher.

4. Page 3, “Maximum Contaminant Levels (how much contaminant is allowed in the soil)”

Statement: “The regulations for hazardous waste in Massachusetts are set forth in the Massachusetts Contingency Plan (MCP) and overseen by MassDEP. “

MassDEP response: The regulation governing generation, storage, collection, transport, treatment, disposal, use, reuse and recycling of hazardous waste in Massachusetts is 310 CMR 30.000, Massachusetts Hazardous Waste Regulation, NOT 310 CMR 40.0000, the Massachusetts Contingency Plan. COMM-97 specifically excludes the re-use of hazardous waste as daily cover or grading/shaping material at lined or unlined landfills. The treatment and disposal of hazardous waste is highly regulated and hazardous waste can only be brought to facilities that are specifically licensed to accept it. There are no such facilities in Massachusetts. By not distinguishing between “hazardous waste” and “remediation waste,” Dr. Heiger-Bernays implies that COMM-97 allows for the re-use of hazardous waste at solid waste landfills, which is not correct.

5. Page 3, “Maximum Contaminant Levels”, Description of Cleanup Standards (first paragraph)

Statement. “MassDEP has set concentrations (called MCP standards) for soils that can be used in residential yards (called S-1 standards that have the lowest allowable concentrations for each contaminant), concentrations for soils that have contaminants that can vaporize into buildings (S-2 standards) and standards that require that the soil be located deep in the ground (S-3 standards that have higher allowable concentrations), where humans have little contact. In addition to the soil categories, there are also groundwater categories. These are based on whether the groundwater is used for drinking water or not...”

MassDEP response: The descriptions of both the soil and groundwater standards (which are used to determine whether a site at which a release of oil or hazardous material has occurred needs to be remediated and if so to what extent it needs to be remediated) are wrong. The S-1 standard for soil is designed to address situations in which people, including children, could be exposed to contamination remaining in soil on a daily basis. This category includes residential exposures but can also be relevant for other situations (e.g., schools, day care centers, and playgrounds where large numbers of children can be expected to be there frequently). The S-2

category applies where soil is considered to be “accessible”, children are not present at the site frequently but adults are present frequently, or the soil is considered to be “potentially accessible” and children’s activities at the site are frequent or result in intensive contact with soil. This category has nothing to do with the potential for contamination to vaporize into buildings. The S-3 category applies to contamination to which there is minimal exposure over a long period of time, including isolated surficial soil, or soil located at depth. The isolation of the soil prevents casual exposure, or neither children nor adults use the site frequently or intensively so that they would come into contact with the soil.

Also, please note that only one category of groundwater standard addresses the potential of the groundwater to be used for drinking water (GW-1). The GW-2 category addresses the potential for certain contaminants to volatilize into enclosed structures such as building basements and ground floors. The GW-3 category addresses the potential for groundwater contamination to affect fish and other biota in the surface water to which the groundwater discharges. Due to the differences in routes of exposure for each category, the standards for some contaminants are higher in one category than in the others.

The description of the MCP soil and groundwater categories in Dr. Heiger-Bernays’ response indicate a basic misunderstanding of the MCP numerical standards, how they are derived and how they are used to evaluate contamination at a site.

6. Pages 3/4, “Maximum Contaminant Levels”, Comparison of Maximum Concentrations of Soil Contaminants in COMM-97 with the MCP Soil Standards

Statement. “The maximum “reuse” levels identified in the COMM-97 Policy are not consistent with MCP standards which were established by MassDEP to be protective of public health....The concentrations exceed the MCP standards, which are generally risk-based.” See also table on page 4 that compares COMM-97 Maximum Levels with MCP s-3 Levels.

MassDEP Response: The MCP soil standards are not relevant to decisions about whether contaminated soil can be safely reused for grading and shaping material at a closing landfill. The MCP soil standards address the levels of contamination that can remain at a site to meet the standard established in M.G.L. c. 21E for permanent solutions to oil and hazardous materials releases that “no significant risk of damage to health, safety, public welfare, or the environment” shall remain at the site [See M.G.L. c. 21E, Section 3A(g)]. The maximum contaminant levels established in COMM-97 address the use of contaminated soil in an end use (i.e., a closed landfill) which is a controlled and regulated environment, in which the soil will be covered by an impermeable layer and then at least three feet of clean material, which will prevent exposure through direct contact with the contaminated soil and will also prevent contamination from leaching into groundwater.

The maximum concentrations of chemicals listed in Table 1 of the COMM-97 Policy were developed using the same risk assessment equations that were used to develop the MCP’s Method 1 Soil Standards. The results are different because the assumptions about potential exposures to soil under a landfill cap are different from the assumptions about potential exposures to contamination remaining in soil at a site that has been the location of a release.

As noted above, landfills are controlled and regulated environments that (when they are properly closed) do not provide pathways for people to be exposed to the contamination in soil used for grading and shaping under the cap. The assumptions used to characterize potential exposure that were used to develop the COMM-97 criteria considered and quantified exposures to dust generated during the landfill operations both to on-site workers and to nearby residents potentially located at the facility's fenceline. While the resulting numbers are different, they protect public health equivalently and consistently. The table on page 4 of Dr. Heiger-Bernays' response presents an inaccurate comparison because it only compares values without considering differences in possible exposures.

7. Page 3, "Maximum Contaminant Levels":

Statement: The Table 1 levels in the COMM-97 Policy assume that contaminated soil will be disposed at a landfill, which will be capped upon closure however, the transfer of these materials to the project site, the potential human health and environmental impacts during the landfill operations/closure and post-closure were not considered in the derivation of the concentrations."

MassDEP response: This statement is wrong. The values in Table 1 of the COMM-97 Policy explicitly quantified the exposure to both landfill workers (from active landfill operations through closure activities) and to residents, including children, living at the facility's fence line. These potential exposures are the most likely routes for people to be exposed to the contamination in soil used for grading and shaping at landfills. While we understand that the Town of Dartmouth has some concern about the potential for people to be exposed while soil is transported from its site of generation to a closing landfill, MassDEP believes that no significant exposure would occur for people who live along transportation routes, particularly since MassDEP approvals of landfill closures require that trucks be covered while transporting soil. Please note that properly closing this landfill will remove the existing risks presented by the facility's uncontrolled state (e.g., to groundwater from leachate, to surface water from contaminated storm water runoff, landfill gas, and direct exposure to people who walk over the site).

8. Page 7, "Public Health Issues Relative to COMM-97 Soils", "Asbestos Materials"

Statement: The MassDEP Solid Waste Regulations allow for up to 1% by weight, of asbestos in soil however, no testing of incoming soil for asbestos is required by the COMM-97 Policy."

MassDEP response: The Massachusetts Solid Waste Regulation (310 CMR 19.000) refers to the definition of "Asbestos-Containing Material" and "Asbestos-Containing Waste Material in the Massachusetts Air Pollution Regulation (310 CMR 7.00). This regulation defines "Asbestos-Containing Waste Material" as: 'means any friable asbestos-containing material removed during a demolition/renovation project and anything contaminated in the course of a demolition/renovation project including asbestos waste from control devices, bags or containers that previously contained asbestos, contaminated clothing, materials used to enclose the work area during the demolition/renovation operation, and demolition/renovation debris.' This definition includes both building material that contains 1% or more asbestos and waste material that contains less than 1% asbestos that results from a demolition or renovation project. 310 CMR 19.061 requires that any Asbestos-Containing Waste Material be handled as a "Special Waste". Soil containing such material would not be allowed to be used for grading or shaping at

a landfill closure project. However, please note that asbestos is a naturally occurring mineral in the Massachusetts environment, and therefore it may be present in soil but not attributed to a building demolition or renovation. MassDEP believes that the levels of naturally occurring asbestos in soil do not represent a risk of harm to the public or landfill workers when the soil is transferred from the site at which it is generated to a landfill and placed to establish proper contours for closure. Once it is placed, it will be covered by an impermeable membrane and three feet of clean material, which will prevent fibers from being emitted into the ambient air.

9. “Public Health Issues Relative to COMM-97 Soils” (pages 4-8)

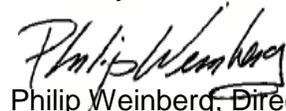
Statements: The discussion of “Public Health Issues Relative to COMM-97 Soils” (pages 4-8) list a number of different types of material that could be considered for use as grading and shaping material in support of a landfill closure.

MassDEP response: The discussion in this section does not analyze the potential risks from using this material (which would require the establishment of consistent assumptions about potential exposures), and appears to equate the mere presence of these materials – in any quantities) with unacceptable risk. This presentation does nothing to support a careful analysis of the risks that may be presented by a landfill closure.

MassDEP appreciates the Dartmouth Board of Health’s efforts to better understand how the COMM-97 Policy has been applied. However, the many inaccuracies in Dr. Heiger-Bernays’ response to the Board’s inquiry are troubling as they do not reflect the public health protections built into the regulations and policy under which MassDEP is operates in deciding whether to approve proposals to use contaminated soil in projects that will close landfills. We would appreciate it if the Board of Health would remove Dr. Heiger-Bernays’ document from its web site until it can be corrected. MassDEP will post this letter on the “Cecil Smith” web page that the Department has established until Dr. Heiger-Bernays’ document has been removed (<http://www.mass.gov/eea/agencies/massdep/about/contacts/old-fall-river-road-landfill.html>).

MassDEP is committed to ensuring that the closure of the former Cecil Smith Landfill is carried out in compliance with the regulations and is protective of human health and the environment.

Sincerely,



Philip Weinberg, Director

MassDEP Southeastern Regional Office

CC: Dr. Wendy Heiger-Bernays, Boston University School of Public Health
David Cressman, Administrator, Town of Dartmouth
Gary Moran, Deputy Commissioner for Operations, MassDEP
Ben Ericson, Assistant Commissioner, MassDEP Bureau of Waste Site Cleanup
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