

# CODY EHLERS GROUP

*EHS CONSULTING AND SERVICES*

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*VIA EMAIL*

May 21, 2019

Mr. Stephen Edwards  
Westport Department of Public Works  
110 Myrtle Avenue  
Westport, CT 06880

Re: Soil Stockpile Sampling  
Westport Senior Center, 21 Imperial Avenue, Westport, CT

Dear Mr. Edwards,

Cody Ehlers Group (“CEG”) presents herein the results of the recent soil sampling and analysis project at the above location. The purpose of the project is to assist Westport Department of Public Works (DPW), in identifying the presence of contaminants in the soil that were previously excavated during a on-site construction project. According to Westport DPW representatives these soils are intended to be used as a base layer for an upcoming parking lot pavement project or other miscellaneous DPW projects. The results are to be used to determine if these soils have been impacted by any unknown sources and if off-site re-use of these soils is appropriate.

This summary report presents the soil stockpile sampling task. A summary of key findings and conclusions, with recommendations for re-use of soil is found on Page 4. Attachments include a site figure showing the sampling grid and test pit locations, tables of analytical results for the sampling task. A copy of the laboratory data package is attached following the table.

## **Initial Sample Collection**

The stockpile being sampled is located on the southern portion of the site. The area is approximately 250 feet x 150 feet. This area was divided into four equal sized areas approximately 62.5 ft wide by 150 ft long. One test pit was dug in each area to an approximate depth of 7 feet at which native soils were encountered. No groundwater was observed in any of the test pits. The layout of the stockpile figures is depicted on the attached Figure. Sample collection occurred on May 6, 2019.

The sampling protocol for each area included the collection of soil samples from each of the four test pits. At each pit, the soil was logged as to soil type, presence/absence of water, field evidence of any obvious contamination (staining, odors, petroleum sheen on water, etc., measurements for the possible presence of volatile organic compounds - "VOCs"). The attached sketch shows the approximate locations of the test pits.

For each of the four test pits, two samples were collected for laboratory analyses as follows:

- One grab sample was collected from each test pit to be analyzed for volatile organic compounds ("VOCs") using USEPA Method 8260C. The selected sample was determined using PID measurements and field observations as a guide.
- The second sample was a composite sample comprised of soil that was composited from soils dug from each of the test pits. Each composite sample was analyzed for semivolatile organic compounds ("SVOCS") using USEPA Method 8270, Extractable Total Petroleum Hydrocarbons ("ETPH"), PCBs/pesticides and Priority Pollutant metals ("PPM") including silver and nickel, and asbestos.

Complete Environmental Testing, Inc., Stratford, CT, a CT Public Health Certified Environmental Testing laboratory (Certification # PH0116).

### **Soil Screening Analytical Results**

The sample results were compared to the CT Department of Energy and Environmental Protection (CTDEEP) Remediation Standards Regulations ("RSRs"). Note that this site is not subject to the RSRs but the sample results have been compared to the published criteria to evaluate potential soil re-use options.

**Metals:** Arsenic was present in one of the samples (TP-1) at a concentration of 13 mg/kg, which is above both the Residential and Industrial/Commercial Direct Exposure Criteria (Res DEC and I/C DEC). All other metals were either not detected or present at concentrations well below their respective Res DEC. No silver, mercury, antimony, cadmium, beryllium and thallium were detected above laboratory reporting levels ("RLs").

The range of detected metals concentrations were similar in each sample, suggesting that the metals are naturally occurring and not the result of a spill or release.

**PCBs:** No PCBs were present in any of the samples.

**Asbestos:** No asbestos was present in any of the samples.

**Volatile Organic Compounds:** Toluene was the only VOC that was detected in the four samples. The concentrations of Toluene detected in TP-3 and TP-4 were well below their respective CT RSRs.

This suite of chemical compounds includes petroleum related compounds.

**ETPH:** ETPH was not detected above the laboratory RL in any of the four samples. ETPH is an indicator of the presence of petroleum hydrocarbons.

**Semivolatile Organic Compounds:** SVOCs were not present above the laboratory RL in TP-1. Fluoranthene and Pyrene were detected in samples TP-2, TP-3 and TP-4. TP-4 also had detections of benzo(a)anthracene, benzo(a) pyrene, benzo(b)fluoranthene and chrysene. None of these detected analytes were present concentrations above their respective CT RSRs.

The sample results were compared to the CTDEEP Residential DEC and the GA Pollutant Mobility Criteria (CTDEEP RSRs published 1996; Revised 2013) and to the CTDEEP Technical Support Document: "Recommended Criteria for Common Additional Polluting Substances," September 2017, for those PAHs with no published numerical criteria (yellow highlighted values on attached table).

**Pesticides:** All four samples had detections of 4,4-DDE and 4,4-DDT. Samples TP-3 and TP-4 also had detections of 4,4-DDD.

DDT was a commonly used pesticide for insect control in the United States until it was effectively banned in 1972 by the United States Environmental Protection Agency (EPA). DDT was also used in buildings for pest control until it was banned.

There are no published RSR criteria for DDT so the concentrations of 4,4-DDT in each sample (TP-1 (13 ug/kg), TP-2 (23 ug/kg), TP-3 (35 mg/kg) and TP-4 (66 ug/kg) were compared to the 2017 recommended criteria. These 4,4-DDT detections are well below the recommended Residential DEC and I/C DEC.

However, the concentrations in TP-2, TP-3 and TP-4 are greater than GA and GB PMC.

DDE and DDD are not pesticides, but they are breakdown products of DDT and have no uses, according to EPA literature.

**Findings and Conclusions**

This stockpile sampling task indicates that the stockpiled soils have likely been impacted by the historical use of arsenic and pesticides by landscaping or agricultural activities.

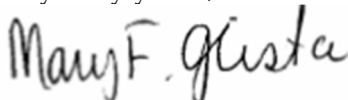
The detections of DDE and DDD, the DDT breakdown products, are above the laboratory RL. It should be noted that DDE and DDD are not used for any particular commercial or industrial use and are only found as a DDT breakdown product. Based on the concentrations of DDE, DDD and DDT above the CTDEEP guidance amounts, it is recommended that the soil be re-used in an application where it remains over two feet above the ground water surface and below the uppermost 1-2 feet of the final ground surface elevation.

The detection of arsenic at a concentration of 13 mg/kg is less than 2x the DEC of 10 mg/kg, therefore, it would need to be placed under at least 3 inches of pavement with a 2-foot clean layer of soil/stone between it and the pavement. In other words, the arsenic containing soil needs to be >2 feet below grade with an impervious surface. Otherwise, it needs to be >4 feet deep in an unpaved area.

Based on the results of this sampling task, CEG recommends that the Westport DPW discuss its potential use options prior to moving any of these soils off-site. CEG will be able to work with Westport DPW personnel to ensure that the soils be placed in a manner that is protective of both human health and the environment.

Please feel free to contact either Mary Glista (860-306-3080) or Michael Cody (203-216-6931) with any questions or comments.

Very truly yours,



Mary F. Glista  
Cody Ehlers Group

Attachments