



# HUB TESTING LABORATORY, INC.

Environmental Testing and Consulting Service

*Certified Woman-owned Business Enterprise (WBE)*

June 12, 2017

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Report For: Westford Gateway LLC.  
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Hub ID: 27171

Project ID: 66-68-3

Date Received: May 31, 2017

Scope: One sample was received by Hub Testing Laboratory. It was requested that the sample be analyzed for Volatile Organic Compounds (VOCs), Pesticides, pH, organics and nutrients.

Methodology: Volatile Organic Compounds (VOCs) were analyzed using Method SW846 8260C. Pesticides were analyzed using Method SW846 8081B. Nutrients and pH testing were performed using wet chemistry techniques. Organic content was determined by weight loss upon ignition.

Results:

## **Volatile Organic Compounds**

	<u>Results ug/Kg</u>
1,1,2-Trichlorotrifluoroethane (Freon 113)	<6.30
Acetone	<63.0
Acrylonitrile	<6.30
Benzene	<6.30
Bromobenzene	<6.30
Bromochloromethane	<6.30
Bromodichloromethane	<6.30
Bromoform	<6.30
Bromomethane	<12.6
2-Butanone (MEK)	<12.6
n-Butylbenzene	<6.30
sec-Butylbenzene	<6.30
tert-Butylbenzene	<6.30
Carbon disulfide	<12.6
Carbon tetrachloride	<6.30
Chlorobenzene	<6.30
Chloroethane	<12.6
Chloroform	<6.30
Chloromethane	<12.6
2-Chlorotoluene	<6.30
4-Chlorotoluene	<6.30
1,2-Dibromo-3-chloropropane (DBCP)	<12.6
Dibromochloromethane	<6.30
1,2-Dibromoethane (EDB)	<6.30

Results:

**Volatile Organic Compounds**

	<u>Results ug/Kg</u>
Dibromomethane	<6.30
1,2-Dichlorobenzene	<6.30
1,3-Dichlorobenzene	<6.30
1,4-Dichlorobenzene	<6.30
Dichlorodifluoromethane (Freon 12)	<12.6
1,1-Dichloroethane	<6.30
1,2-Dichloroethane	<6.30
1,1-Dichloroethene	<6.30
cis-1,2-Dichloroethene	<6.30
trans-1,2-Dichloroethene	<6.30
1,2-Dichloropropane	<6.30
1,3-Dichloropropane	<6.30
2,2-Dichloropropane	<6.30
1,1-Dichloropropene	<6.30
cis-1,3 Dichloropropene	<6.30
trans-1,3 Dichloropropene	<6.30
Ethylbenzene	<6.30
Hexachlorobutadiene	<6.30
2-Hexanone (MBK)	<12.6
Isopropylbenzene	<6.30
4-Isopropyltoluene	<6.30
Methyl-tert-butyl ether (MTBE)	<6.30
4-Methyl-2-pentanone (MIBK)	<12.6
Methylene chloride	<12.6
Naphthalene	<6.30
n-Propylbenzene	<6.30
Styrene	<6.30
1,1,1,2-Tetrachloroethane	<6.30
1,1,2,2-Tetrachloroethane	<6.30
Tetrachloroethene (PCE)	<6.30
Toluene	<6.30
1,2,3-Trichlorobenzene	<6.30
1,2,4-Trichlorobenzene	<6.30
1,3,5- Trichlorobenzene	<6.30
1,1,1-Trichloroethane	<6.30
1,1,2-Trichloroethane	<6.30
Trichloroethene (TCE)	<6.30
Trichlorofluoromethane (Freon 11)	<6.30
1,2,3-Trichloropropane	<6.30
1,2,4-Trimethylbenzene	<6.30
1,3,5-Trimethylbenzene	<6.30
Vinyl chloride	<6.30
m,p-Xylenes	<12.6
o-Xylene	<6.30
Tetrahydrofuran	<12.6
Ethyl ether	<6.30
Tert-amyl methyl ether	<6.30
Ethyl tert-butyl ether	<6.30
Di-isopropyl ether	<6.30
Tert-Butanol/butyl alcohol	<63.0
1,4-Dioxane	<126

Results:

**Volatile Organic Compounds**

	<u>Results ug/Kg</u>
trans-1,4-Dichloro2-butene	<31.5
Ethanol	<1260

**Pesticides**

	<u>Results ug/Kg</u>
alpha-BHC	<5.62
beta-BHC	<5.62
delta-BHC	<5.62
gamma-BHC (Lindane)	<3.37
Heptachlor	<5.62
Aldrin	<5.62
Heptachlor epoxide	<5.62
Endosulfan I	<5.62
Dieldrin	<5.62
4,4'-DDE	12.1
Endrin	<8.99
Endosulfan II	<8.99
4,4'-DDD	<8.99
Endosulfan sulfate	<8.99
4,4'-DDT	17.1
Methoxychlor	<8.99
Endrin ketone	<8.99
Endrinn aldehyde	<8.99
alpha-Chlordane	<5.62
gamma-Chlordane	<5.62
Toxaphene	<112
Chlordane	<22.5
Alachlor	<5.62

Lab certification M MA138

**Nutrients**

<b>Nutrient</b>	<b>Results (ppm)</b>
Nitrate Nitrogen	1.25
Ammonia Nitrogen	10
Nitrite Nitrogen	0.25
Phosphorus	60
Potassium	60
Iron	20
Sulfur	8
Calcium	90
Magnesium	70
Chloride	120
Aluminum	5
Manganese	40

Results:

**Organic Content and pH**

Parameter	Results
Organic matter	4.0
pH	6.0

**ug/Kg** – micrograms per kilogram or parts per billion (ppb)

Comment:

A less than amount indicates that the analyte was detected below the lab reportable detection limit which is the lowest concentration that can reliably be achieved with specified limits of precision and accuracy during routine laboratory operating conditions.

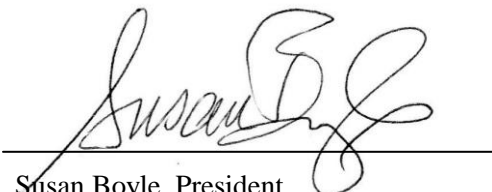
Two pesticides (4,4'-DDE & 4,4'-DDT) were identified in the soil; however the levels of pesticides detected were below 0.02 ppm or 20 ppb.

The pH is within the optimal range of 6.0 to 6.5 as many deciduous trees, shrubs, and vines require a pH of between 5.5 and 6.5. Ericaceous shrubs & ground coverings typically require soil with a pH between 3.5 and 5.5. If plantings require a lower pH, it can be **lowered** one half point by adding 1 to 2 pounds of sulfur. However it is best to find coverings that would thrive in the natural pH of the soil.

Most soils in this area have 2 to 7 percent (by weight) organic matter. The organic content of this soil is 4% which is typical of this area. The organic matter in should be okay for turfgrass, some woody ornamentals and some perennials. The addition of organic matter can greatly improve the soil's physical condition. Typical recommendations for topsoil low in organic matter are as follows; add two or three inches of organic matter tilled to a depth of 6 to 8 inches. Sources of organic matter include but are not limited to compost, peat moss, manure, leaf-mold, rotted sawdust and cover crops.

The levels of nitrate nitrogen and calcium are low; the level of phosphorus is high; and the levels of other macronutrients are within acceptable ranges. The micronutrient level of aluminum is low; the micronutrient levels of manganese and iron are high; and the levels of the other micronutrients are within acceptable ranges. An application of fertilizer to adjust other nutrient levels is not necessary unless deficiency symptoms in plant growth appear. The level of phosphorus in the sample is elevated. Therefore it is advised that if you use fertilizer, you avoid phosphorus-rich. Over fertilization can lead to inspect problems and plant nutritional disorders.

A light ground covering of mulch may also help establish new growth. Also watering at dusk or dawn is recommended.



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Susan Boyle, President  
Hub Testing Laboratory