



**44S TOTE**



**BiocharPEAT**  
Stormwater Treatment Filtration Media



Case Study 2020

Engineering Company Test Project Bellingham 2020

## Storage Warehouse

A storage warehouse in Northwest Washington, close to the Canadian border along I-5 with hundreds of trucks in and out weekly installed a **Pure Rain™** Stormwater Treatment Filter System, Passive, **44S TOTE** with **BiocharPEAT™** on January 29, 2020.

Note that the drainage area to the tote was huge because of roof water contribution. The following are the areas that contributed to the pilot tote:

- Relatively “clean” roof area: probably about 0.5 to 0.6 acres
- Dirty paved areas: about 0.2 acres
- Gravel parking lot area with turbid (not muddy, but turbid) runoff: 0.13 acres

Parameters Given: approximate inflow maximum concentrations that might help you prepare the biochar system:

- Turbidity: 400 NTU
- Zinc: 1,500 ug/L
- Copper: 50 ug/L
- BOD: 15 mg/L
- Nitrate/Nitrite: 1.6 mg/L
- Phosphorus: 1.0 mg/L



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**STORMWATER TREATMENT**

**TEN 10 YEARS STRONG**  
stormwater treatment with Biochar

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**Biochar** for stormwater treatment since 2010

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THE RIGHT **BLEND**, DIALED IN.™



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Test Results by  
Engineering  
Company:

Date	Gallons Treated	Parameter	Inlet	Outlet	Benchmark	% reduction
2/6/20	238,507	pH	<b>6</b>	<b>6.5</b>	Within 5 to 9	--
2/6/20	238,507	Turbidity	<b>500</b>	<b>45</b>	25 NTU	<b>91%</b>
2/6/20	238,507	Copper	<b>0.0398</b>	<b>0.0037</b>	0.014 mg/L	<b>91%</b>
2/6/20	238,507	Zinc	<b>0.533</b>	<b>0.0472</b>	0.117 mg/L	<b>91%</b>
2/6/20	238,507	N	<b>0.11</b>	<b>0.14</b>	0.68 mg/L	<b>-27%</b>
2/6/20	238,507	P	<b>1.3</b>	<b>0.261</b>	2.0 mg/L	<b>80%</b>
2/6/20	238,507	BOD	<b>25</b>	<b>5</b>	30 mg/L	<b>80%</b>
Date	Gallons Treated	Parameter	Inlet	Outlet	Benchmark	% reduction
2/13/20	283,471	pH	<b>6.5</b>	<b>7</b>	Within 5 to 9	--
2/13/20	283,471	Turbidity	<b>160</b>	<b>80</b>	25 NTU	<b>50%</b>
2/13/20	283,471	Copper	<b>0.0328</b>	<b>0.0149</b>	0.014 mg/L	<b>55%</b>
2/13/20	283,471	Zinc	<b>0.627</b>	<b>0.276</b>	0.117 mg/L	<b>56%</b>
2/13/20	283,471	N	<b>0.52</b>	<b>0.03</b>	0.68 mg/L	<b>94%</b>
2/13/20	283,471	P	<b>14.7</b>	<b>4.43</b>	2.0 mg/L	<b>70%</b>
2/13/20	283,471	BOD	<b>609</b>	<b>168</b>	30 mg/L	<b>72%</b>

Gray shading indicates a benchmark exceedance

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**44S TREATMENT TOTE INFORMATION**

**External Dimensions: 39" x 46 3/4" x 42 1/2" H**

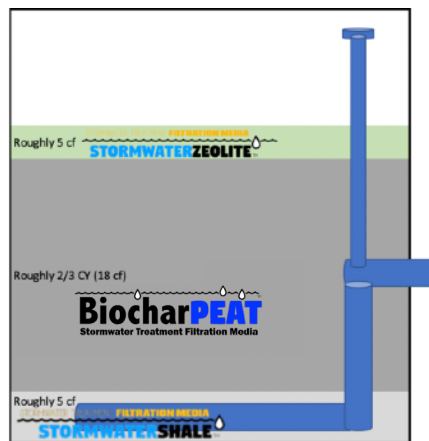
Internal Dimensions: 36" x 43 3/4" x 36 3/8" H

Volume Capacity: **240.7 Gallons** / 55,600 cubic inches

Cap ~5 cf of **STORMWATERZEOLITE™**

Treatment ~2/3 CY of **BiocharPEAT**  
Stormwater Treatment Filtration Media

Base ~5 cf of **STORMWATERSHALE™**



No maintenance was performed during the sixteen days that the water was pumped through the test unit.

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