Field Report

To: Rick Fuller

CC:

From: Tony Miller and Laura Nokes

Date: August 6, 2008

Re: Adsorb-it Filter Blankets as a Stormwater BMP for the Business Improvement Authority (BIA)

Personnel: Environmental Compliance Field Support Staff

Tony Miller
Laura Nokes

Field Date: July 29, 2008

Project Description: The Business Improvement Authority (BIA) has the task of keeping downtown Tacoma clean. Their duties include pressure washing the city's sidewalks and buildings. This activity mobilizes large amounts of particulates as well as other pollutants (e.g. bird fecal matter, cigarettes, etc.). Standard practice used to be to let this runoff water discharge into the storm system which then discharges directly into the Thea Foss Waterway.

Due to the requirements to minimize contaminants going into receiving waters placed on the City of Tacoma through the NPDES permit, Environmental Services implemented the use of Adsorb-it filter blankets as an experimental BMP to filter the runoff water generated by the BIA's cleaning practices. The producers of the filter blankets claim that the blankets will greatly decrease the turbidity of runoff, remove oil sheen, as well as other contaminants. They also claim that these blankets have the ability to be used several times. Once used, the large particulates collected by the blankets can be shaken out and disposed of into the trash, then the blanket can either be washed in a washing machine or rinsed off as long as the water is discharged into the sanitary system. This process can be repeated until the blanket becomes worn out to the point where it develops holes and becomes no longer effective.

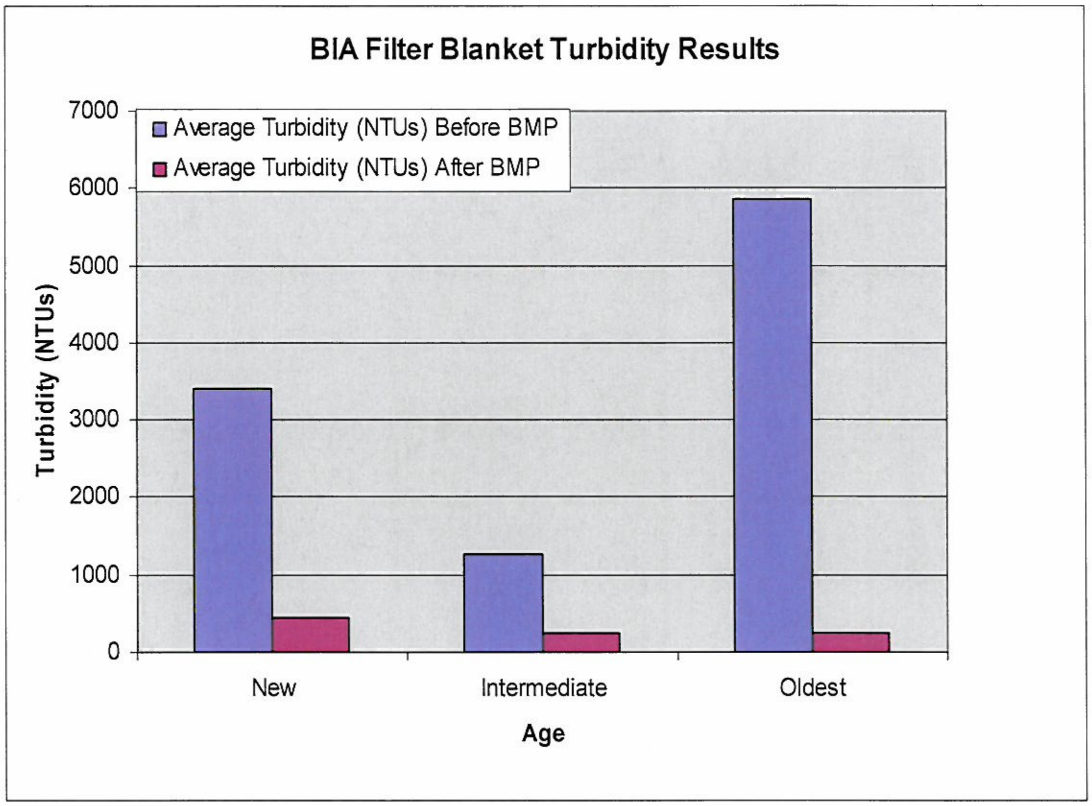
It was requested by Rick Fuller (Sr. Environmental Specialist w/ The City of Tacoma) that we field test the effectiveness of the filter blankets for decreasing turbidity of the wash water runoff. Laura Nokes and I went out to an area where the BIA was actively cleaning. It was set up so that we could gather samples from a new filter blanket, an intermediately used filter blanket, and an old filter blanket starting to show signs of wear. Samples were pulled in triplicate from each of the filter blankets, both of the influent pre filter blanket and the effluent post filter blanket. These samples were then submitted to the City of Tacoma's lab following proper chain of custody procedures.

Findings: Our findings show a decrease in turbidity ranging from 80-96% as shown in this table and graph. While not sampled for we visually noticed a removal of oil sheen from influent water to effluent water. Visual results show turbidity greatly decreased as shown in attached pictures of before and after samples.

BIA Turbidity Samples

Sample	Turbidity (NTUs)		% Change
	Before	After	
New 1	3400	540	-84
New 2	4000	420	-90
New 3	2800	390	-86
New Average	3400	450	-87
Intermediate 1	1500	200	-87
Intermediate 2	1100	270	-75
Intermediate 3	1200	300	-75
Intermediate Average	1267	257	-80
Oldest 1	8400	260	-97
Oldest 2	6600	240	-96
Oldest 3	2600	220	-92
Oldest Average	5867	240	-96

Filter Blanket	Average Turbidity (NTUs)		% Change
	Before BMP	After BMP	
New	3400	450	-87
Intermediate	1267	257	-80
Oldest	5867	240	-96



The variability in removal capabilities could be contributed to several different factors. We speculate that it could be from how the blankets are set up, due to differing locations, curb and gutter shapes it is difficult to make sure that all of the water is being filtered through the blanket. Another scenario might be that the older blankets' fibers are not bound as tightly therefore allowing the water to pass through easier, while the newer blankets pool up more water before it passes through and might allow some water to escape around the blanket before it gets filtered. In general these blankets did a satisfactory job in decreasing the turbidity of the runoff water created by the BIA's cleaning activities.

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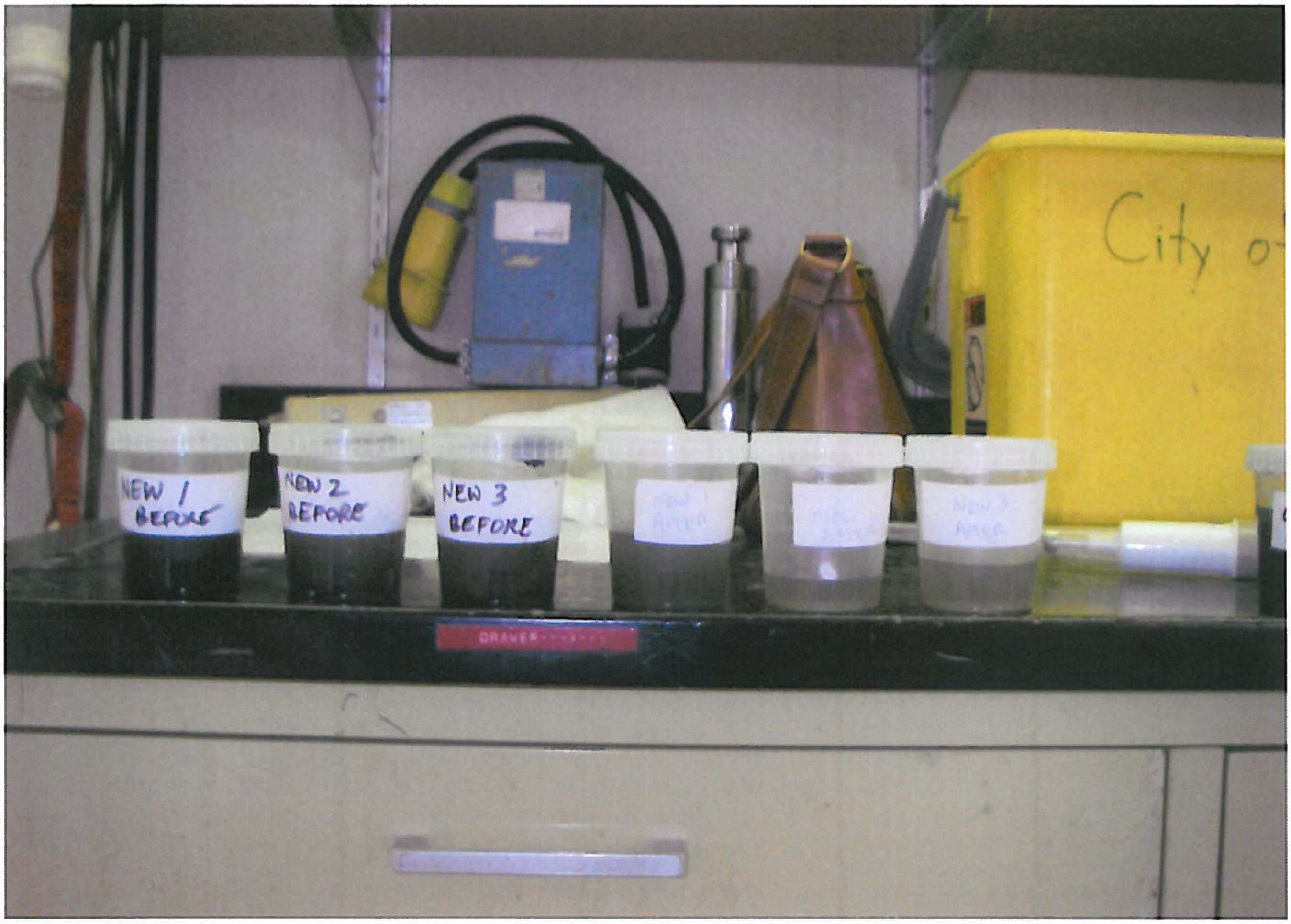
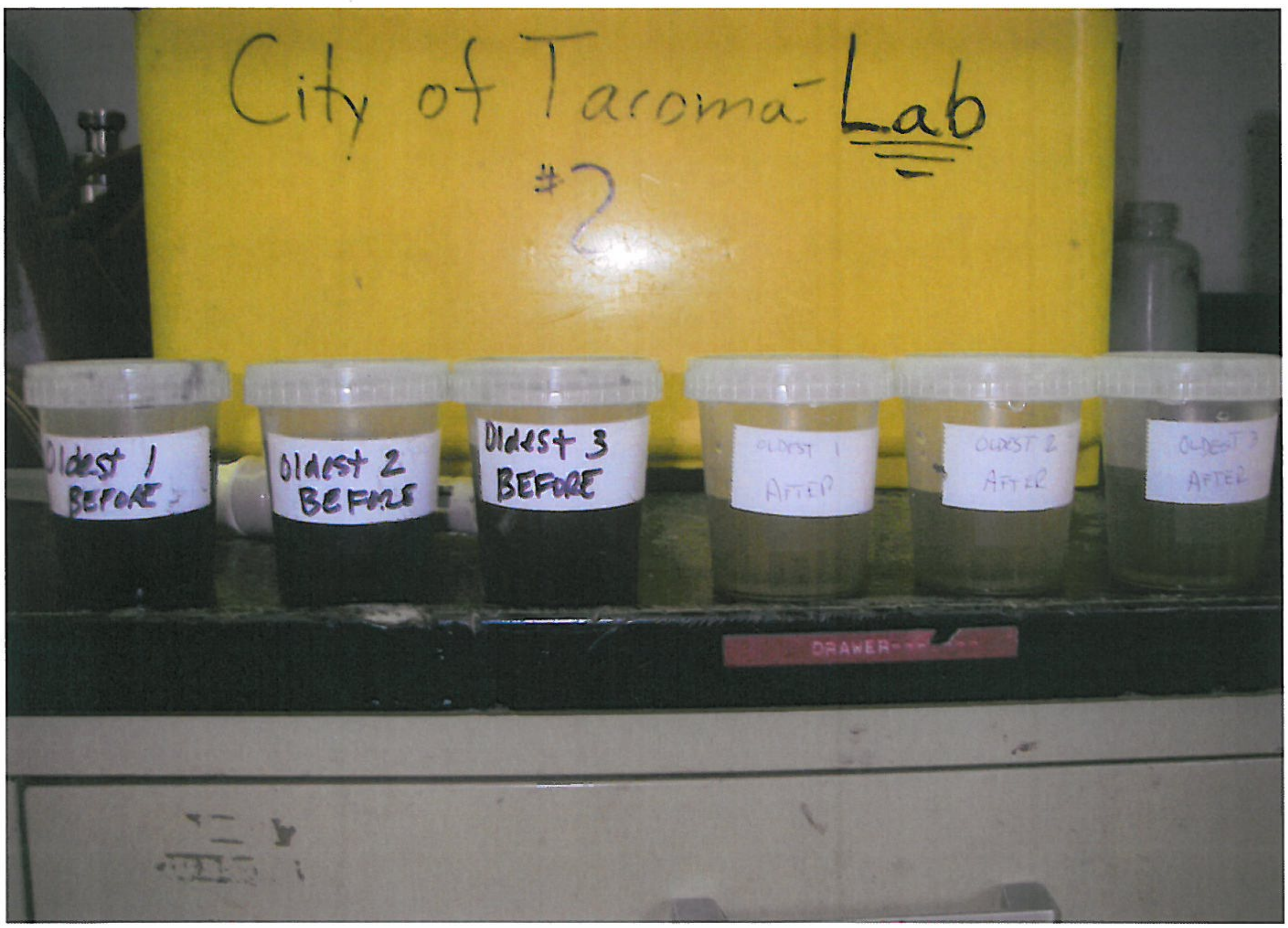
Attachments:
Picture of before and after samples (New)
Picture of before and after samples (Oldest)
Picture of before and after samples (Intermediate)
Pictures of water being filtered through the blankets (3)
Picture of BIA cleaning process.


City of
NEW 1 BEFORE
NEW 2 BEFORE
NEW 3 BEFORE
NEW 3 AFTER
DRAWER


City of Tacoma Lab
#2
Oldest 1 BEFORE
Oldest 2 BEFORE
Oldest 3 BEFORE
OLDEST 1 AFTER
OLDEST 2 AFTER
OLDEST 3 AFTER
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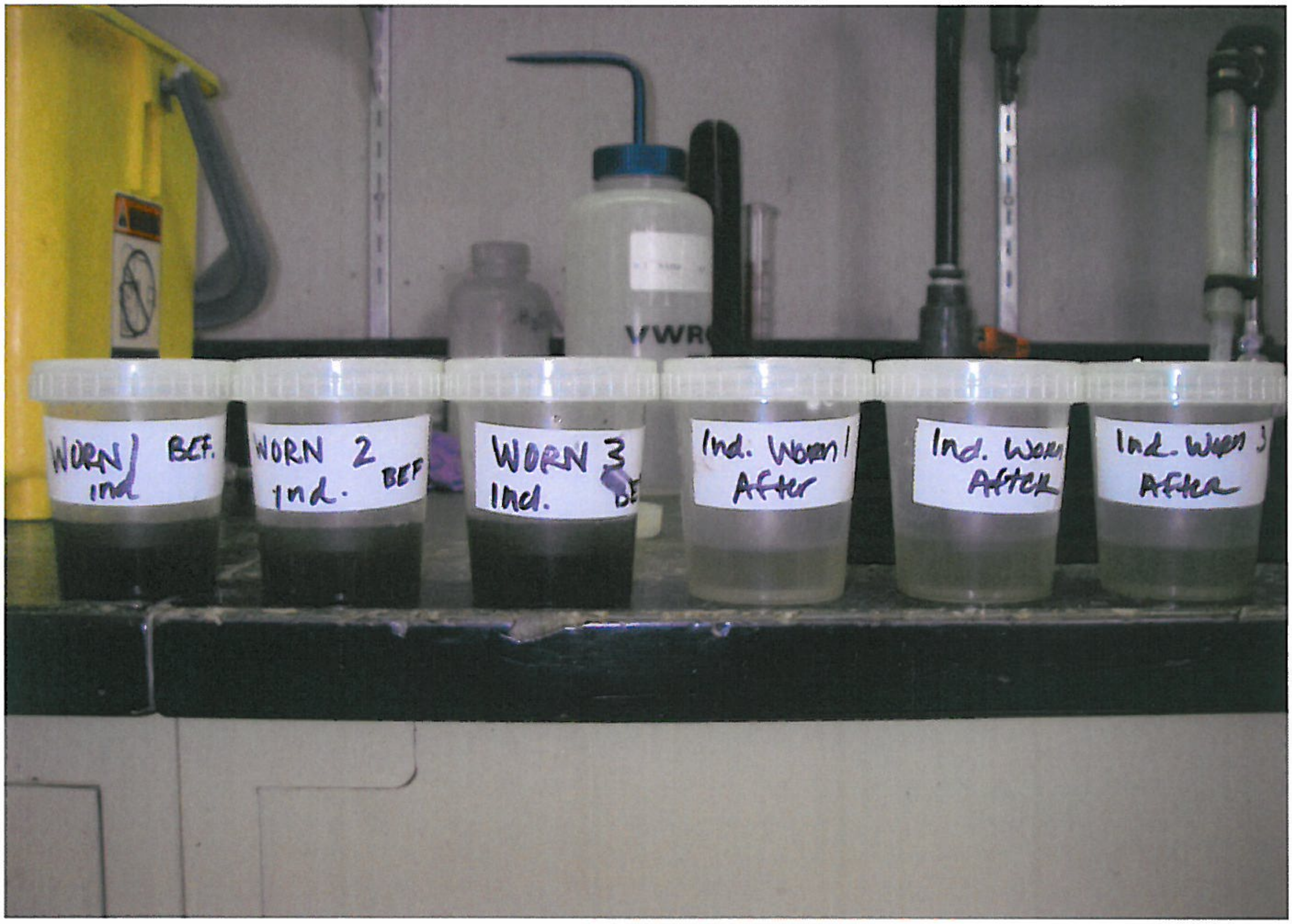
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