Erosion EEL™ Information Packet

For More Information Contact:

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865-357-4EEL (865-357-4335)

sales@americanerosioncontrol.com

Table of Contents

1.a. Product Overview

Applications

The **Erosion EEL™** is an effective sediment-control and storm water diversion device used as a construction Best Management Practice (BMP). The **Erosion EEL™** can be used to replace traditional silt fence, rock check dams, temporary diversion berms, and storm drain protection, among others. The overall weight, the elliptical cross-section shape, and the material properties of the outer cover of the bag provide a tight seal along the base of the **Erosion EEL™** at the ground interface. The contact area of the **Erosion EEL™** with the ground can be seen in Figure 1 below. The **Erosion EEL™** can be placed over grass surfaces, bare soil, rock, asphalt, or concrete surfaces. Like silt fence, the **Erosion EEL™** can be applied to intercept sheet-flow runoff perpendicular to the flow direction along sloped surfaces. Unlike silt fence, the **Erosion EEL™** can also be placed within concentrated flow paths. It can also be used to direct flow as a temporary diversion berm.

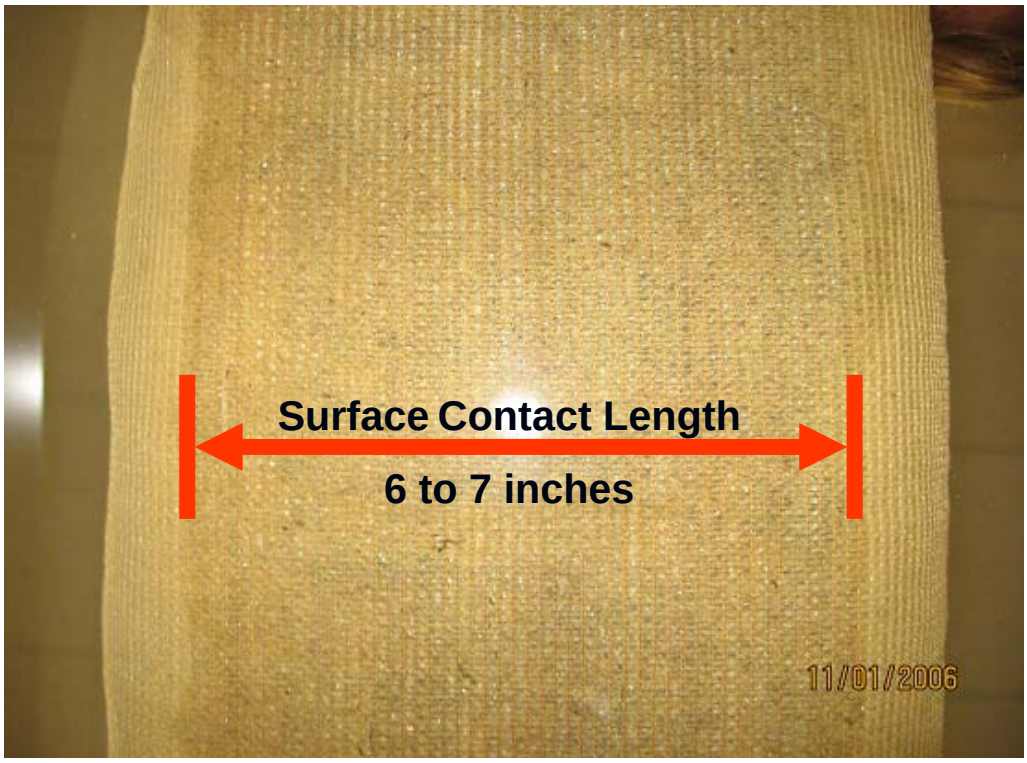


Figure 1 - Surface Contact of Erosion EEL™

Function

The **Erosion EEL™** is specifically designed to reduce the concentration of suspended particulates within the runoff flow through multiple attenuating mechanisms:

1. Velocity Reduction and Settling (Primary Mechanism)
2. Filtration (Secondary Mechanism)
3. Sorption Processes (Secondary Mechanism)

The filter media serves the purpose of reducing the velocity of runoff routed through the filter bag, as a result of a highly porous and tortuous filter media within the geotextile. Specific filter materials were tested and chosen to maximize surface area, porosity, and tortuosity. Suspended particles settle out behind the filter bags and are also captured within the filter media of the bags via sedimentation, filtration, and sorption mechanisms, resulting in high filter efficiencies. Figure 2 shows the effectiveness of this process.

Figure 2 - Erosion EEL™ Surface Contact Test

Advantages

- **Easy installation** with **NO TRENCHING REQUIRED**
- **Reusable product** that can be easily moved from one project site to another
- **Comparable cost** to silt fence
- **DOT Approved** in many states

- **High suspended solids capture** (filter efficiencies) comparable to standard silt fence
- **Increased flow rates** through the filter material as compared to silt fence preventing localized flooding during storm events
- The **Erosion EEL™** is **durable and is a reusable** resource for sediment control. It can be used over and over again on multiple sites, thereby making it a **very cost effective device**

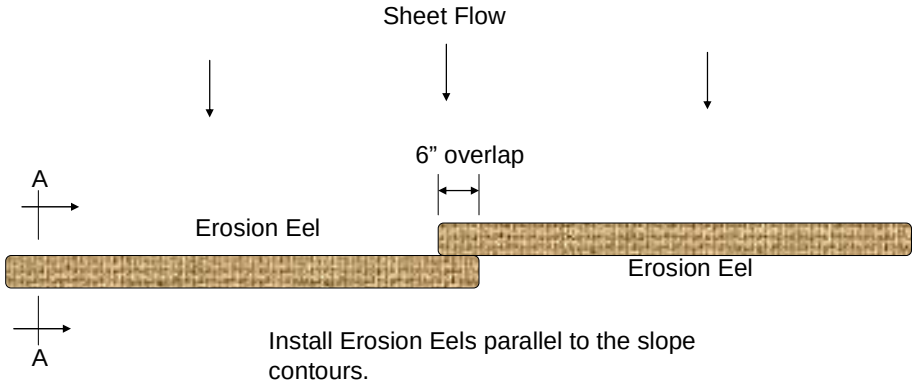
The **Erosion EEL™** has many advantages over traditional erosion control devices. As well as the high filter efficiency benefit, the **Erosion EELs™** are less expensive to install and maintain than conventional silt fence and rock check dams. In addition, removal of the **Erosion EELs™** are easier and much cleaner than the removal of conventional silt fence or rock checks.

Construction

The **Erosion EEL™** consists of a geotextile bag that is filled with porous filter media. This media consists of washed shredded rubber and AASHTO specified hardwood chips (specification MP 9-03). Using recycled shredded rubber from scrap tires is an environmentally safe material (per studies by Liu, et al., 1998 and Humphrey and Katz, 2001). A Synthetic Precipitation Leach Procedure (SPLP) test concluded that there were no detectable levels of metals, volatiles, surfactants, base/neutral extractables (PAHs), or acid extractables (phenols) and yielded a overall pH of 4.2. **Erosion EEL™** has dimensions of 10 feet in length per bag with a 9.5-inch diameter cross-section. Each **Erosion EEL™** weighs approximately 120 pounds and is equipped with multiple handles for easy movement from location to location.

1.b. Installation

Installation requirements for the **Erosion EEL™** are simple and easy. Unlike silt fence, the installation of the **Erosion EEL™** does not require any trenching or soil disturbance of any type. Each **Erosion EEL™** weighs approximately 120 pounds and is equipped with handles for easy movement from location to location. The overall weight, the elliptical cross-section shape, and the material properties of the outer cover of the bag provide a tight seal along the base of the **Erosion EEL™** at the ground interface. The **Erosion EEL™** can be placed over grass surfaces, bare soil, rock, asphalt, or concrete surfaces. Large stones, branches, and other bulky debris must be removed from the surface where the **Erosion EEL™** will lay in order to provide as smooth a contact surface as possible. To form a continuous particulate barrier, a minimum 6" overlap is required. Figures 3 and 4 show recommended installation practices for the **Erosion EEL™** over grass and bare soil surfaces.

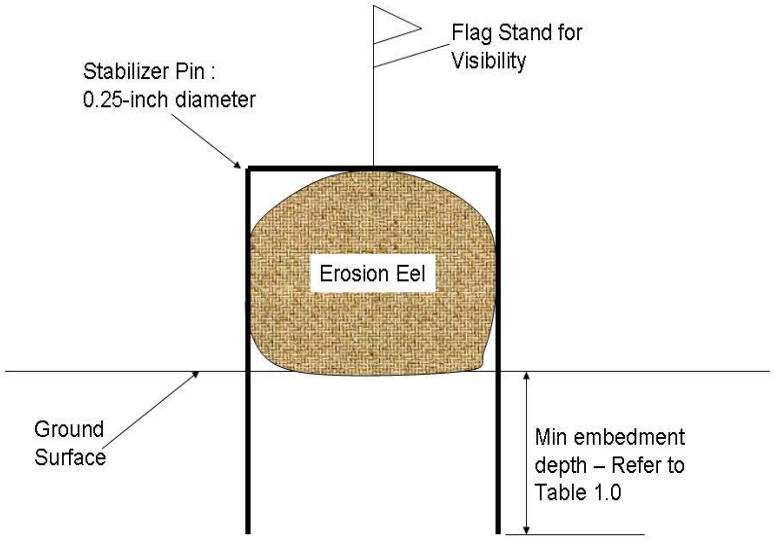


INTERCEPTING SHEET FLOW PERPENDICULAR TO FLOW PATH- PLAN VIEW

Figure 3 - Installation/Pinning for Erosion EELs™ Placed over Soil Surface

Like silt fence, the **Erosion EEL™** can be applied to intercept sheet-flow runoff perpendicular to the flow direction along sloped surfaces. Unlike silt fence, the **Erosion**

EEL™ can also be placed within concentrated flow paths. It can also be used to direct flow as a temporary diversion berm. Refer to Figure 4 and Table 1.0 for stabilizer/flag pin requirements.



Typical Cross-Section

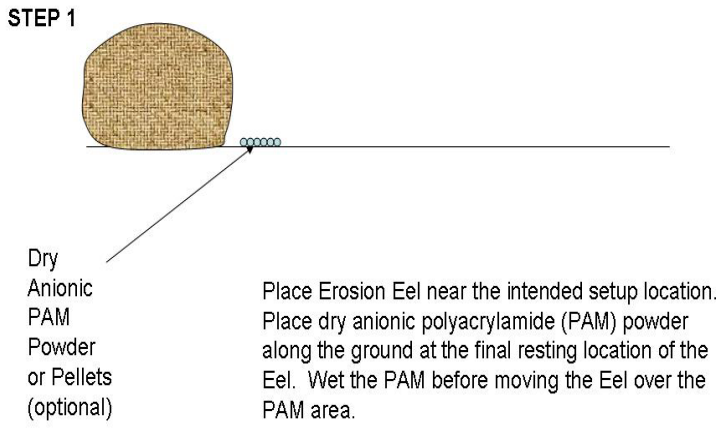
Figure 4 - Installation/Pinning for Erosion EELs™ Placed over Soil Surface

Slope (%)	Number of Stabilizer Pins per 10 ft. Eel	Minimum Depth of Embedment (inches)
1 to 10	None	Not Applicable
>10 to 33	2	6
>33 to 50	2	12

Table 1.0 – Stabilizer/Flag Pins for Erosion EEL™

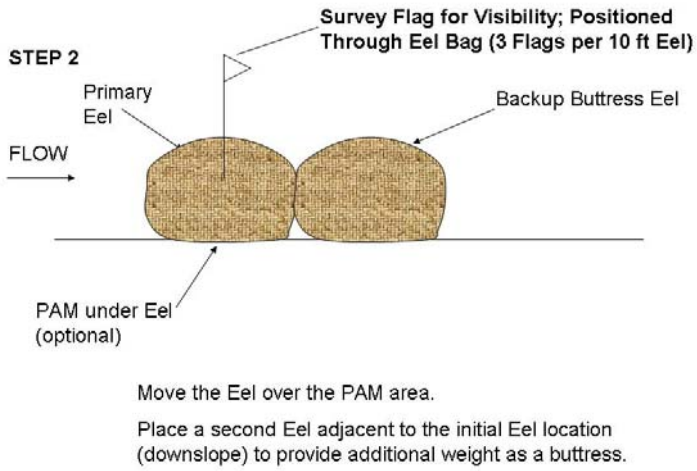
Stabilizer pins are also required (minimum 2 per 10 ft **Erosion EEL**™ at 12 inches depth) for **Erosion EEL**™ placed along streams, lakes, and wetlands.

Figures 5 and 6 show recommended installation practices for the **Erosion EEL™** over rock, asphalt, and concrete surfaces. Figure 7 demonstrates recommended installation steps for placing Eel **Erosion EELs™** over rough soil surfaces.



Cross-Section

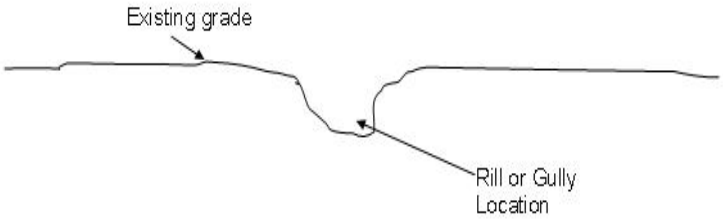
Figure 5 - Installation/Pinning for Erosion EELs™ Placed over Rock/Concrete Surface



Cross-Section

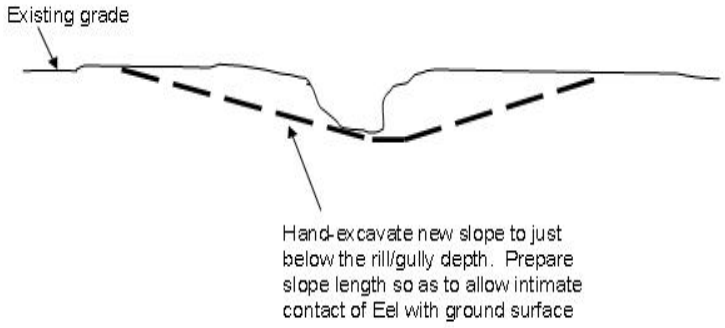
Figure 6 - Installation/Pinning for Erosion EELs™ Placed over Rock/Concrete Surface

Step 1



Cross-Section View

Step 2



Cross-Section View

Step 3

Cross-Section View

Figure 7 - Installation/Pinning for Erosion EELs™ Placed over Rough Soil Surfaces

2.a. Field Photographs - Traditional Silt Fence Replacement

2.a. Field Photographs - Traditional Silt Fence Replacement

2.a. Field Photographs - Traditional Silt Fence Replacement

2.b. Field Photographs – Check Dams

2.b. Field Photographs – Check Dams

2.b. Field Photographs – Check Dams

2.c. Field Photographs – Drain and Inlet Protection

2.c. Field Photographs – Drain and Inlet Protection

3.a. Flume Testing ASTM D5141-96 (Re-approved 2004)

Testing: Bench-scale testing was performed by Civil & Environmental Consultants, Inc. in Nashville, Tennessee. The tests were carried out comparing the performance of both standard silt fence and the **Erosion EEL™**. ASTM D5141-96 (Re-approved 2004) was utilized as the protocol for comparative testing of the **Erosion EEL™** and the silt fence. The ASTM tests provide results that demonstrate the particulate filter efficiency (percent particulate removed from the water) and the water flow rate per surface area of the product. Refer to Figure 8 for the flume set up.

Figure 8 - Discharge from Flume Testing of Erosion Eel

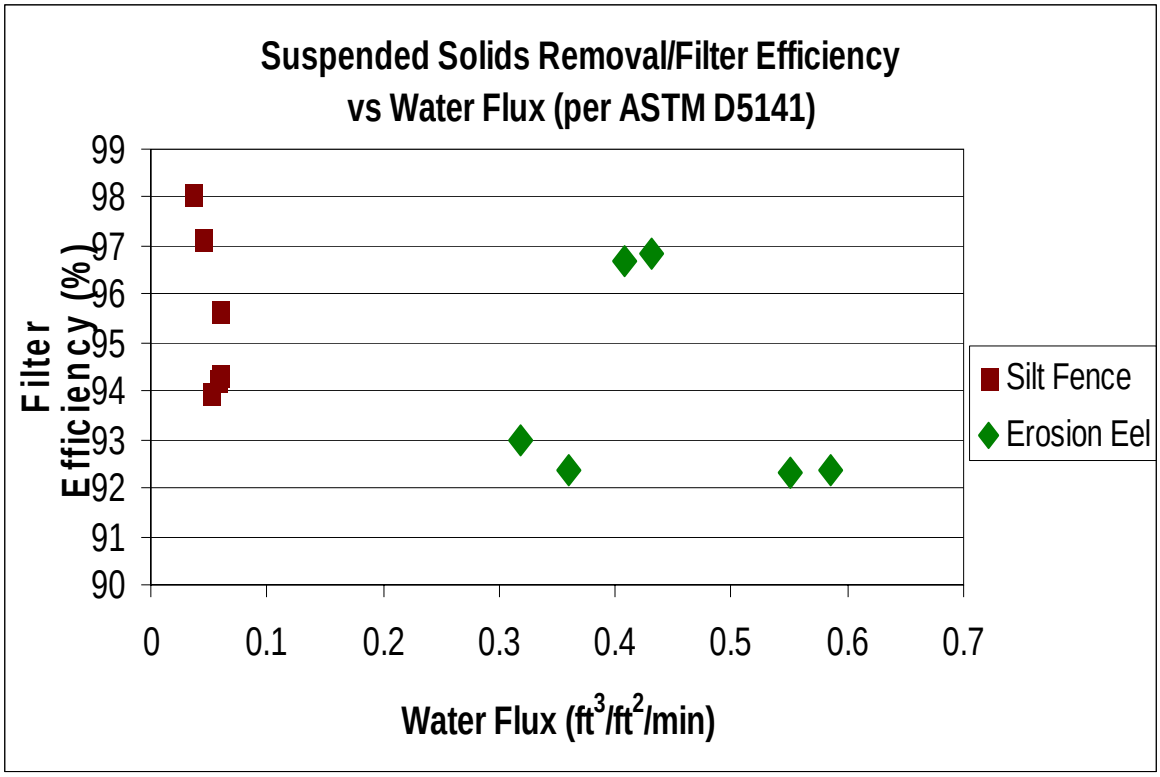
From the ASTM-based flume testing, the **Erosion EEL™** produced equivalent filter efficiencies as the silt fence with much higher water flow rates moving through the **Erosion EEL™** than with standard silt fence. Filter efficiency is calculated as follows:

$$FilterEfficiency = \left(\frac{TSS_i - TSS_e}{TSS_i} \right) \times 100$$

$TSS_i =$ Total Suspended Solids Influent Concentration

$TSS_e =$ Total Suspended Solids Effluent Concentration

In addition to excellent suspended soil removal, the **Erosion EEL™** allows higher flow-through rates. The superior hydraulic characteristics limit the extent of backwater behind the **Erosion EEL™** and the potential for localized flooding. This dual benefit of high-suspended solids removal coupled with higher flow-through rates is demonstrated in the data plot in Figure 9.



Note: Numbers Derived from Single Pass through Clean Silt Fence and Erosion Eel Filters

Figure 9 –Filter Efficiency vs. Water Flux (ASTM D5141)

The hydraulic capacity for the **Erosion EEL™** using clean water is conservatively 20 gpm per linear ft. of **Erosion EEL™** length. The **Erosion EEL™** bag is 10 feet in length. The maximum turbid water hydraulic capacity of the **Erosion EEL™** is 5 gallons per minute (gpm) per linear ft. of **Erosion EEL™** length, based on flume testing with a single pass of 3000 mg/L suspended solids solution at approximately 7 inches maximum head. The maximum hydraulic capacity of the tested silt fence was 0.26 gallons per minute (gpm) per linear ft. of

fence length, based on flume testing of the fence with a single pass of 3000 mg/L suspended solids solution at an equivalent head of approximately 7 inches maximum head.

A bar graph of the water flux distributions for silt fence, compost filter socks, fiber rolls/wattles, rock check dams, and **Erosion EELs™** are given in Figure 10.

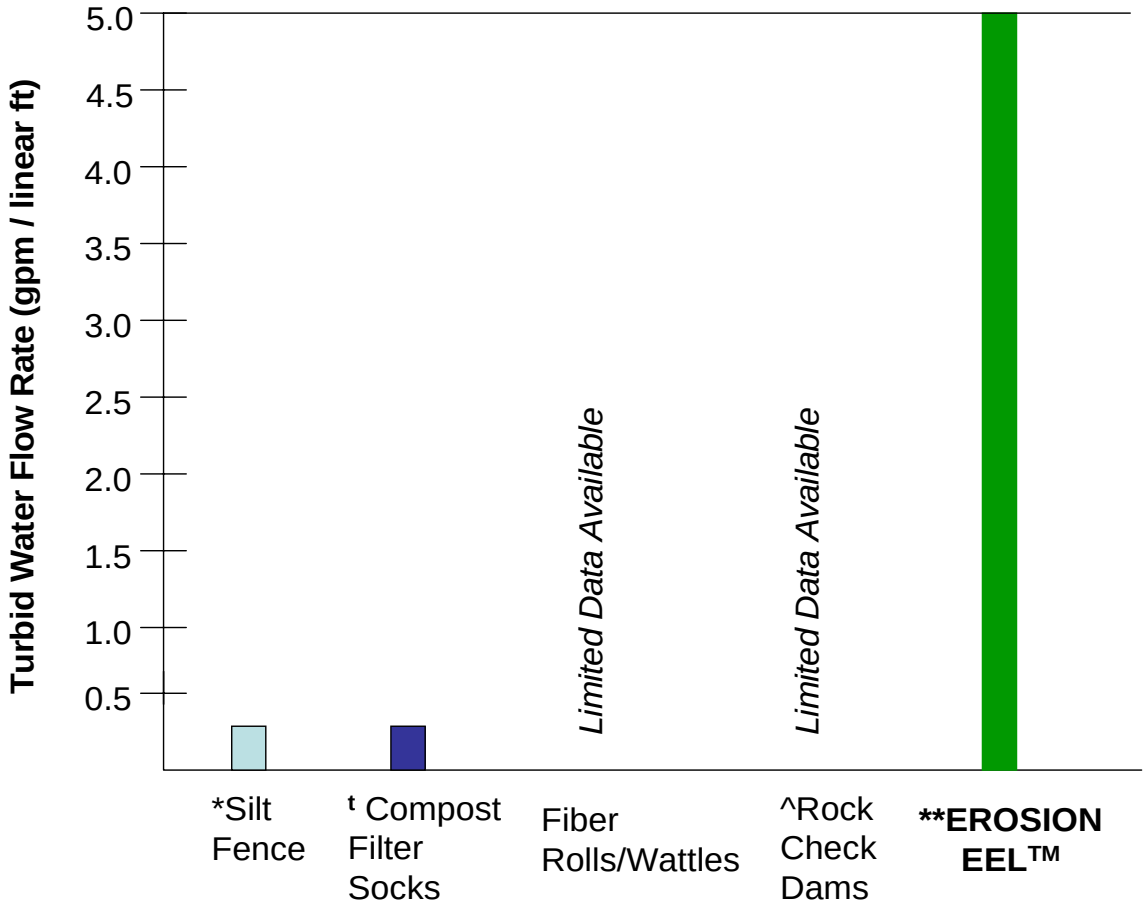


Figure 10 – Comparison of Water Flux Rates

* Based on the recommended sediment-laden flow rate for silt fence proposed by the US Environmental Protection Agency (US, EPA 2005. "Silt Fence: Construction Site Storm Water Runoff National Menu of Best Management Practices.) http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=56

Flow rate per linear ft calculated by multiplying the flux rate of 0.3 gpm/ square ft by the equivalent height of a standard eel at 9.5 inches (0.79 ft) = 0.24 gpm/linear ft.

t (Sadeghi, Ali M., L. Britt Faucette, and Kerry A. Sefton. “Sediment and Nutrient Removal from Storm Runoff with Compost Filter Socks and Silt Fence.” 2006 ASABE Annual International Meeting, Portland, Oregon, July 9-12, 2006). Silt loam used in testing. Flow Value for Iowa Silt Sock is given in chart at 0.0633 gpm/linear ft..

^ Dependent on rock size, gradation, and dimensions of check dam.

** Erosion EEL tests per ASTM D 5141 using silty clay soil (single concentration as given in the ASTM protocol) performed by CEC in 2006 produced a sediment-laden flow rate of a minimum value of 5 gpm/linear ft.

A bar graph of the distribution of the suspended solids test data for silt fence, compost filter socks, fiber rolls/wattles, rock check dams, and **Erosion EELs™** are given in Figure 11.

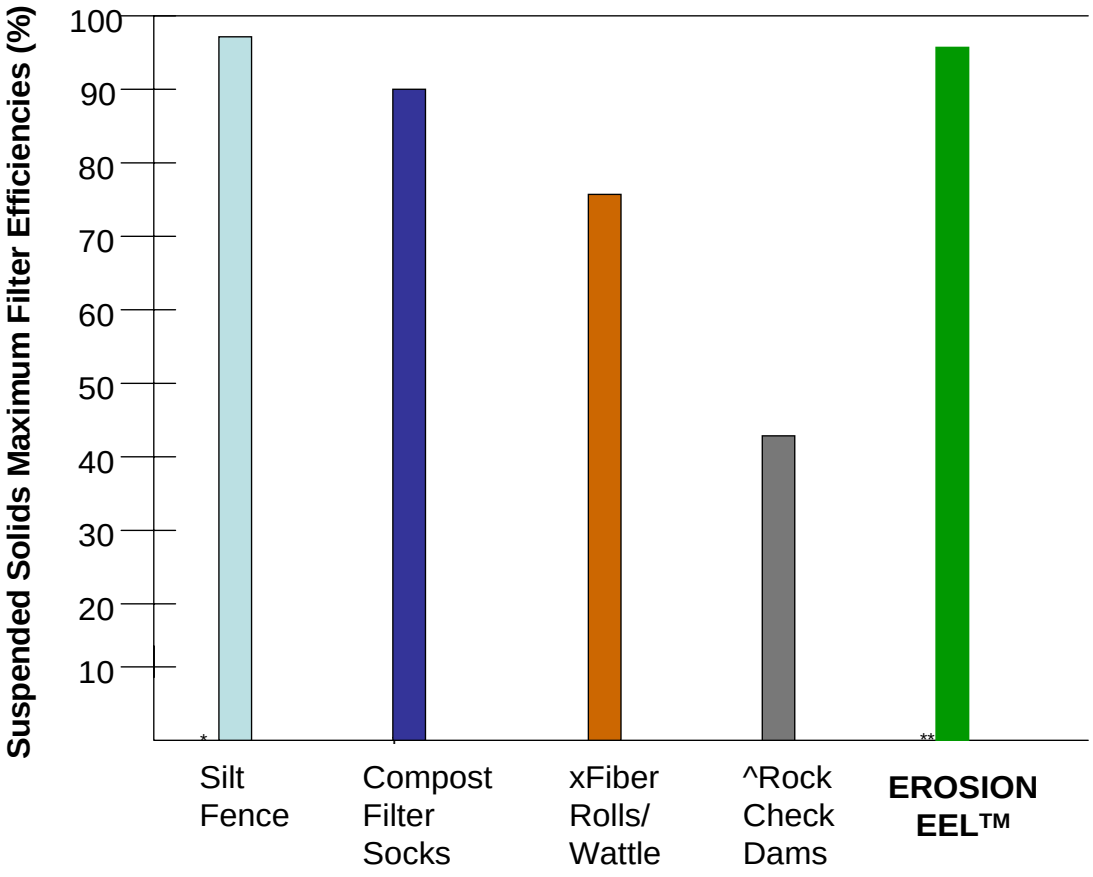


Figure 11 – Filter Efficiencies of Suspended Solids

* Silt fence (Type C) test per ASTM D5141 using clay (Risse, L. Mark, Sidney Thompson, Jason Governo, and Keith Harris. “Efficiency Testing of New Silt Fence Materials.” 2006 ASABE Annual International Meeting, Portland, Oregon, July 9-12, 2006) produced a filter efficiency of 89.6% for the single concentration as given in the ASTM protocol. Silt fence tests per ASTM D 5141 using silty clay soil (single concentration as given in the ASTM protocol) performed by CEC in 2006 produced a 95% confidence interval about the mean for Total Solids filter efficiency of [93.8%, 97.4%] with a Type I error of 0.05.

t (Sadeghi, Ali M., L. Britt Faucette, and Kerry A. Sefton. “Sediment and Nutrient Removal from Storm Runoff with Compost Filter Socks and Silt Fence.” 2006 ASABE Annual International Meeting, Portland, Oregon, July 9-12, 2006). Silt loam used in testing. Value for Iowa Silt Sock is given in chart at 89.7% (no flocculent used).

x Marc S Theisen and Kevin Spittle. “A Quantitative Comparison of Sediment Retention Devices Under Standardized Test Conditions.” Value for Coconut and Straw Fiber Rolls is shown in chart at 76%. Profile Products, LLC. 2004.

^ Barrett, Michael E., John Edmund Kearney, and Terry Glen McCoy. “An Evaluation of the Use and Effectiveness of Temporary Sediment Controls.” Center for Research in Water Resources. University of Texas at Austin, Austin, Texas. August, 1995.

** Erosion EEL tests per ASTM D 5141 using silty clay soil (single concentration as given in the ASTM protocol) performed by CEC in 2006 produced a 95% confidence interval about the mean for Total Solids filter efficiency for the Erosion EEL of [91.6%, 96.2%] with a Type I error of 0.05.

The water flux values decrease with continued use of the **Erosion EEL™** in heavy construction areas with high suspended solids runoff. However, this decrease in water flow-through rates increases the suspended solids filter efficiencies to values even higher than shown in Figures 10 and 11. This increasing trend in filter efficiencies with each storm event is plotted in Figure 12.

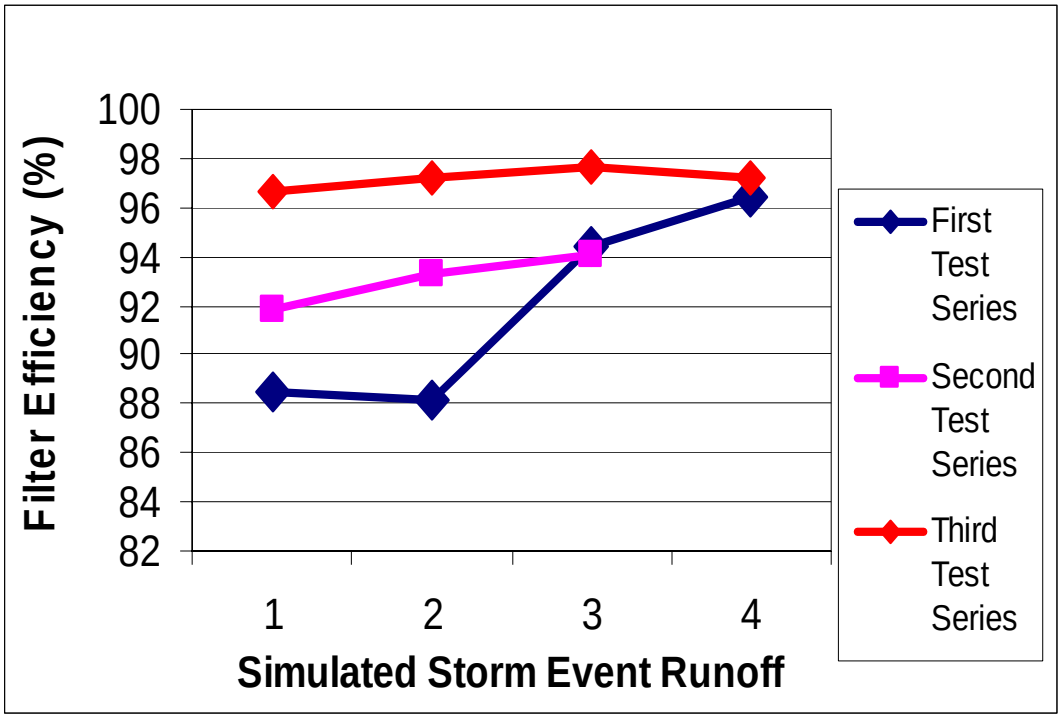
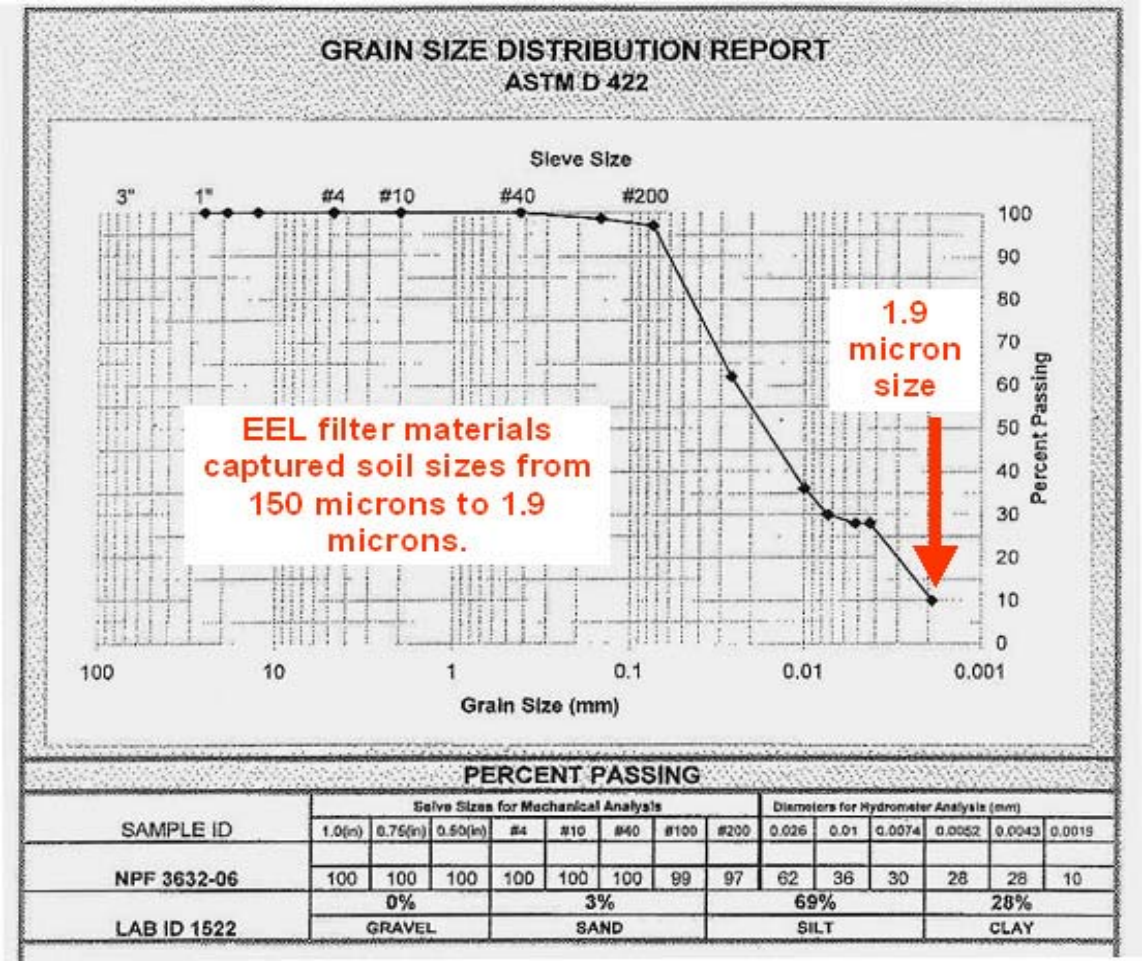


Figure 12 – Erosion Eel Filter Efficiency Improvement with Use

3.b. Gradation of Soil Particles Retained by the Erosion EEL™



PERCENT PASSING

SAMPLE ID	Sieve Sizes for Mechanical Analysis								Diameters for Hydrometer Analysis (mm)					
	1.0(in)	0.75(in)	0.50(in)	#4	#10	#40	#100	#200	0.026	0.01	0.0074	0.0052	0.0043	0.0019
NPF 3632-06	100	100	100	100	100	100	99	97	62	36	30	28	28	10
LAB ID 1522	0% GRAVEL			3% SAND					69% SILT			28% CLAY		

Figure 13 – Grain Size Distribution Report

Test Results

A wet sieving with hydrometer analysis was performed on the soil sample to determine the range of soil particle sizes. This test was conducted using soil that had been removed from the inside of an **Erosion EEL™** that had been in the field for over 4 months. The **Erosion EEL™** captured sizes in the range of 150 microns (0.15 mm) down to <1.9 microns (0.0019 mm). 10% of the soil captured in the **Erosion EEL™** was less than 1.9 microns in size. See Figure 13 above.

The fine clay soils that have been used in our ASTM testing of the **Erosion EEL™** in the flume have a size range (after sieving) of from 2000 microns down to less than 1.3 microns. Therefore, the **Erosion EEL™** has the capability to capture at least a portion of the smallest particles associated with clay soils. Per ASTM and AASHTO standards, 1 micron is the threshold size for colloids (i.e., colloid sizes are<= 1 micron). A colloid does not readily settle out but will remain in suspension due to its small size and repulsive negative charge. This signifies that the **Erosion EEL™** is capturing solids near (or possibly within) the colloidal range.

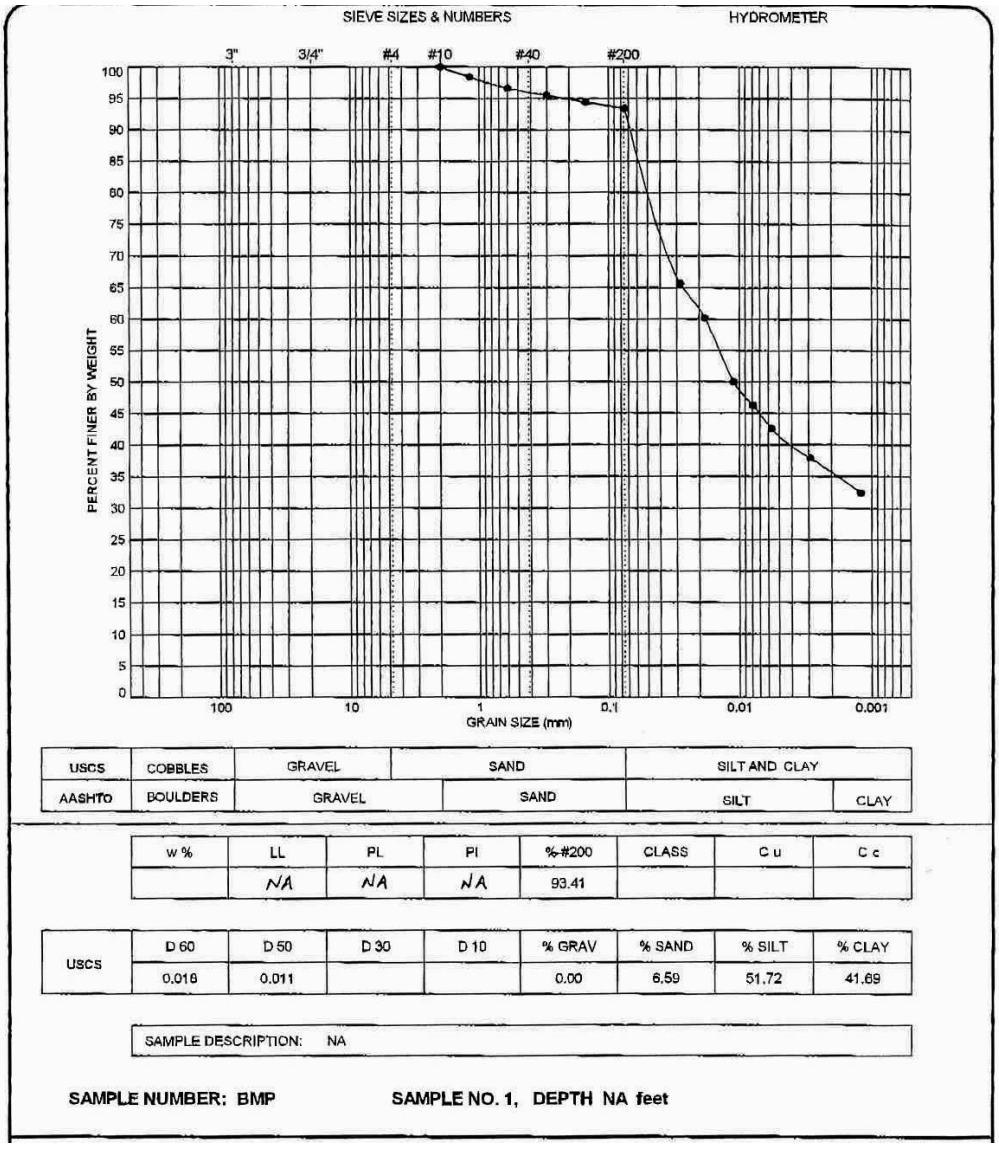
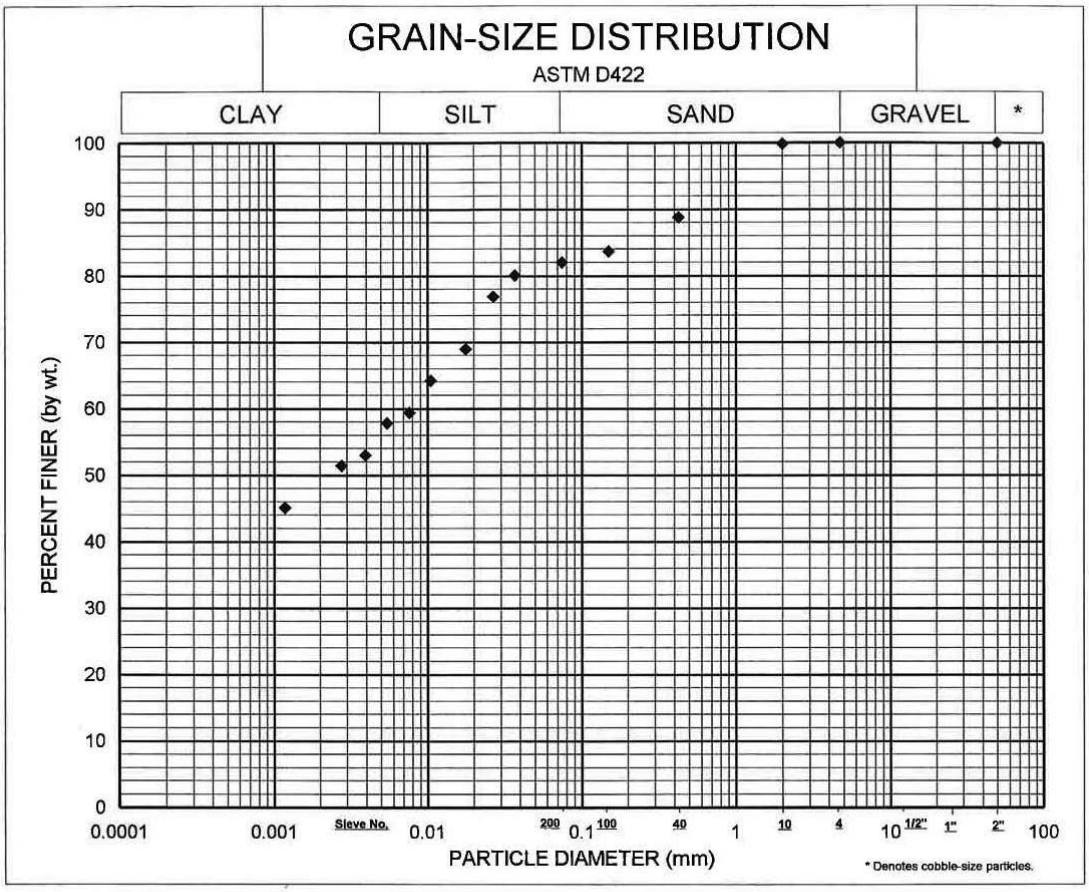


Figure 13a – Gradation of Soil Used in Testing



Project Name:	Laboratory Testing / Seagroves BMP Testing
Geotek Project No.:	00-5510-A
Client:	CEC
Date:	10/11/2006
Sample I.D.:	2, wet bag sample delivered by client on 10/06/2006
Depth (ft.):	N/A
Description:	CLAY w/ silt, fine sand, red tan
% NATURAL MOISTURE:	67.2
% GRAVEL-SIZE:	0.0
% SAND-SIZE:	18.0
% SILT-SIZE:	26.6
% CLAY-SIZE:	55.4

Figure 13b – Soil Gradation Analysis

Refer to Figure 13a for the gradation of the soil used during the ASTM D5141 flume testing. Soil gradations for material captured via settling behind the **Erosion EEL™** were also analyzed. Refer to Figure 13b for a soil gradation analysis taken during ASTM testing of material captured behind the **Erosion EEL™** At least 40 percent of the soil sample caught behind the **Erosion EEL™** is equal to or less than 1 micron.

REPORT NO.
F06276-6008
ACCOUNT NUMBER
29507

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274
www.algreatlakes.com • lab@algreatlakes.com

TO: FRIENDLY ENVIRONMENT
100 PRINCE ST
SHELBYVILLE, TN 37160-3456

FOR: AASHTO

ATTN: KYLE SEGROVES

COMPOST ANALYSIS REPORT

LAB NUMBER: 33195
SAMPLE ID: OCT 2, 2006

DATE RECEIVED: 10/03/2006
DATE REPORTED: 10/10/2006 PAGE: 1

PARAMETER	UNIT	ANALYSIS RESULT	DRY BASIS RESULT	ANALYSIS METHOD
Moisture @ 70 C	%	44.32		TMECC 03.09-A
Dry Matter	%	55.68		TMECC 03.09-A
Organic Matter by LOI @ 550C	%	54.29	97.50	TMECC 05.07-A
Foreign Material	%		0.00	TMECC 03.08-A
Passing U.S. 3-inch Sieve	%		99.73	TMECC 02.02-B
Passing U.S. 1-inch Sieve	%		99.73	TMECC 02.02-B
Passing U.S. 3/4-inch Sieve	%		99.73	TMECC 02.02-B
Passing U.S. 1/4-inch Sieve	%		52.67	TMECC 02.02-B
Maximum Particle Length	inches		3.3	TMECC 02.02-B

TMECC - Test Methods for the Examination of Composting and Compost, The U.S. Composting Council.

COMPOST

4.b. Certificate of Analysis – Rubber

Certificate of Analysis

Company: TTRI / Greenman
Address: 105 5th Avenue West
Suite 103
Springfield, Tennessee 37172
Contact: Mike Henning
Project: Tire Analysis

Report Date: May 1, 2003

Client Sample ID: Tire Tread
Sample ID: 7890100I
Matrix: Misc Solid
Collect Date: 22-APR-03 12:00
Receive Date: 24-APR-03
Collector: Client

Project: TTRI00103
Client ID: TTRI001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW9056/SW5050 Chlorine, Total											
Chlorine	J	230	80.8	502	mg/kg	1	MAR1	04/30/03	1335	247304	1
Sulfur		10600	161	3360	mg/kg	10	MAR1	04/30/03	1603	247304	2
Mercury Analysis-CVAA											
7471 Cold Vapor Hg in Solid											
Mercury		0.0113	0.000968	0.00985	mg/kg	1	NOR1	04/29/03	1431	247587	3
Metals Analysis-ICP											
3050/6010 Arsenic											
Antimony		5.42	0.399	2.00	mg/kg	2	RMJ	05/01/03	1326	247357	4
Arsenic	U	ND	0.362	1.00	mg/kg	2					
Barium		4.87	0.0533	1.00	mg/kg	2					
Beryllium	J	0.0714	0.0339	1.00	mg/kg	2					
Cadmium	U	ND	0.0359	1.00	mg/kg	2					
Chromium		13.9	0.260	1.00	mg/kg	2					
Lead		3.29	0.219	1.00	mg/kg	2					
Silver	U	ND	0.357	1.00	mg/kg	2					
Thallium	U	ND	0.576	2.00	mg/kg	2					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	846 3050BS PREP	CWS1	04/30/03	1900	247356
SW846 5050 PREP	SW846-9056 5050 prep	MAR1	04/29/03	1530	247303
SW846 7471A Prep	EPA 7471A Mercury Prep Soil	KHN	04/28/03	1600	247586

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056	
2	SW846 9056	
3	SW846 7471A	
4	SW846 3050B/6010B	

Notes:
The Qualifiers in this report are defined as follows :

< Actual result is less than amount reported

Certificate of Analysis

Company: TTRI / Greenman
Address: 105 5th Avenue West
Suite 103
Springfield, Tennessee 37172
Contact: Mike Henning
Project: Tire Analysis

Report Date: May 1, 2003

Client Sample ID: Tire Tread
Sample ID: 78901001

Project: TTRI00103
Client ID: TTRI001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison

Reviewed by

4.c. Synthetic Precipitation Leach Procedure of Rubber–pH 4.2

ENVIRONMENTAL SCIENCE CORP.

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Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

October 17, 2006

Date Received : October 10, 2006
Description : Seagroves BMP Testing

Sample ID : RUBBER SAMPLE

Collected By : K Wolfe
Collection Date : 10/10/06 00:00

ESC Sample # : L264540-01

Site ID :

Project # : 060-925

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH (On Site)	4.2		su			
SPLP ZHE Extraction	-			1312	10/12/06	1
MBAS	BDL	0.10	mg/l	425.1	10/13/06	1
SPLP Extraction	-			1312	10/12/06	1
Thallium	BDL	0.0010	mg/l	6020	10/13/06	1
Mercury	BDL	0.00020	mg/l	7470A	10/13/06	1
Antimony	BDL	0.010	mg/l	6010B	10/17/06	1
Arsenic	BDL	0.020	mg/l	6010B	10/17/06	1
Beryllium	BDL	0.0020	mg/l	6010B	10/17/06	1
Cadmium	BDL	0.0050	mg/l	6010B	10/17/06	1
Chromium	BDL	0.010	mg/l	6010B	10/17/06	1
Cobalt	BDL	0.010	mg/l	6010B	10/17/06	1
Copper	BDL	0.020	mg/l	6010B	10/17/06	1
Lead	BDL	0.0050	mg/l	6010B	10/17/06	1
Nickel	BDL	0.020	mg/l	6010B	10/17/06	1
Selenium	BDL	0.020	mg/l	6010B	10/17/06	1
Silver	BDL	0.010	mg/l	6010B	10/17/06	1
Zinc	BDL	0.030	mg/l	6010B	10/17/06	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	10/17/06	1
Acrolein	BDL	0.050	mg/l	8260B	10/17/06	1
Acrylonitrile	BDL	0.010	mg/l	8260B	10/17/06	1
Benzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Bromobenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	10/17/06	1
Bromoform	BDL	0.0010	mg/l	8260B	10/17/06	1
Bromomethane	BDL	0.0010	mg/l	8260B	10/17/06	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	10/17/06	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	10/17/06	1
Chloroethane	BDL	0.0010	mg/l	8260B	10/17/06	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	10/17/06	1
Chloroform	BDL	0.0050	mg/l	8260B	10/17/06	1
Chloromethane	BDL	0.0010	mg/l	8260B	10/17/06	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

October 17, 2006

ESC Sample # : L264540-01

Site ID :

Project # : 060-925

Date Received : October 10, 2006
Description : Seagroves BMP Testing

Sample ID : RUBBER SAMPLE

Collected By : K Wolfe
Collection Date : 10/10/06 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/06	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/l	8260B	10/17/06	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	10/17/06	1
Dibromomethane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/06	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/06	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/06	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/06	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	10/17/06	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	10/17/06	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	10/17/06	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	10/17/06	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	10/17/06	1
2-Butanone (MEK)	BDL	0.010	mg/l	8260B	10/17/06	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	10/17/06	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/l	8260B	10/17/06	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	10/17/06	1
Naphthalene	BDL	0.0050	mg/l	8260B	10/17/06	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Styrene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	10/17/06	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	10/17/06	1
Toluene	BDL	0.0050	mg/l	8260B	10/17/06	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	10/17/06	1
Trichloroethene	BDL	0.0010	mg/l	8260B	10/17/06	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	10/17/06	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

October 17, 2006

ESC Sample # : L264540-01

Site ID :

Project # : 060-925

Date Received : October 10, 2006
Description : Seagroves BMP Testing

Sample ID : RUBBER SAMPLE

Collected By : K Wolfe
Collection Date : 10/10/06 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	10/17/06	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	10/17/06	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	10/17/06	1
Surrogate Recovery						
Toluene-d8	96.6		% Rec.	8260B	10/17/06	1
Dibromofluoromethane	103.		% Rec.	8260B	10/17/06	1
4-Bromofluorobenzene	100.		% Rec.	8260B	10/17/06	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.010	mg/l	8270C	10/13/06	1
Acenaphthylene	BDL	0.010	mg/l	8270C	10/13/06	1
Anthracene	BDL	0.010	mg/l	8270C	10/13/06	1
Benzidine	BDL	0.050	mg/l	8270C	10/13/06	1
Benzo(a)anthracene	BDL	0.010	mg/l	8270C	10/13/06	1
Benzo(b)fluoranthene	BDL	0.010	mg/l	8270C	10/13/06	1
Benzo(k)fluoranthene	BDL	0.010	mg/l	8270C	10/13/06	1
Benzo(g,h,i)perylene	BDL	0.010	mg/l	8270C	10/13/06	1
Benzo(a)pyrene	BDL	0.010	mg/l	8270C	10/13/06	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	8270C	10/13/06	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	8270C	10/13/06	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	8270C	10/13/06	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	8270C	10/13/06	1
2-Chloronaphthalene	BDL	0.010	mg/l	8270C	10/13/06	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	8270C	10/13/06	1
Chrysene	BDL	0.010	mg/l	8270C	10/13/06	1
Dibenz(a,h)anthracene	BDL	0.010	mg/l	8270C	10/13/06	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	8270C	10/13/06	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	8270C	10/13/06	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	8270C	10/13/06	1
Fluoranthene	BDL	0.010	mg/l	8270C	10/13/06	1
Fluorene	BDL	0.010	mg/l	8270C	10/13/06	1
Hexachlorobenzene	BDL	0.010	mg/l	8270C	10/13/06	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	8270C	10/13/06	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	8270C	10/13/06	1
Hexachloroethane	BDL	0.010	mg/l	8270C	10/13/06	1
Indeno(1,2,3-cd)pyrene	BDL	0.010	mg/l	8270C	10/13/06	1
Isophorone	BDL	0.010	mg/l	8270C	10/13/06	1
Naphthalene	BDL	0.010	mg/l	8270C	10/13/06	1
Nitrobenzene	BDL	0.010	mg/l	8270C	10/13/06	1
n-Nitrosodimethylamine	BDL	0.050	mg/l	8270C	10/13/06	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	8270C	10/13/06	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	8270C	10/13/06	1
Phenanthrene	BDL	0.010	mg/l	8270C	10/13/06	1
Benzylbutyl phthalate	BDL	0.010	mg/l	8270C	10/13/06	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

October 17, 2006

ESC Sample # : L264540-01

Date Received : October 10, 2006
Description : Seagroves BMP Testing

Site ID :

Sample ID : RUBBER SAMPLE

Project # : 060-925

Collected By : K Wolfe
Collection Date : 10/10/06 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bis(2-ethylhexyl)phthalate	BDL	0.010	mg/l	8270C	10/13/06	1
Di-n-butyl phthalate	BDL	0.010	mg/l	8270C	10/13/06	1
Diethyl phthalate	BDL	0.010	mg/l	8270C	10/13/06	1
Dimethyl phthalate	BDL	0.010	mg/l	8270C	10/13/06	1
Di-n-octyl phthalate	BDL	0.010	mg/l	8270C	10/13/06	1
Pyrene	BDL	0.010	mg/l	8270C	10/13/06	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8270C	10/13/06	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	8270C	10/13/06	1
2-Chlorophenol	BDL	0.010	mg/l	8270C	10/13/06	1
2,4-Dichlorophenol	BDL	0.010	mg/l	8270C	10/13/06	1
2,4-Dimethylphenol	BDL	0.010	mg/l	8270C	10/13/06	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	8270C	10/13/06	1
2,4-Dinitrophenol	BDL	0.010	mg/l	8270C	10/13/06	1
2-Nitrophenol	BDL	0.010	mg/l	8270C	10/13/06	1
4-Nitrophenol	BDL	0.010	mg/l	8270C	10/13/06	1
Pentachlorophenol	BDL	0.010	mg/l	8270C	10/13/06	1
Phenol	BDL	0.010	mg/l	8270C	10/13/06	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	8270C	10/13/06	1
Surrogate Recovery						
Nitrobenzene-d5	52.5		% Rec.	8270C	10/13/06	1
2-Fluorobiphenyl	74.6		% Rec.	8270C	10/13/06	1
p-Terphenyl-d14	117.		% Rec.	8270C	10/13/06	1
Phenol-d5	65.9		% Rec.	8270C	10/13/06	1
2-Fluorophenol	67.1		% Rec.	8270C	10/13/06	1
2,4,6-Tribromophenol	82.6		% Rec.	8270C	10/13/06	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 10/17/06 15:41 Printed: 10/17/06 15:42

4.d. Synthetic Precipitation Leach Procedure of Rubber–pH 7.0

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REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

January 29, 2007

Date Received : December 27, 2006
Description : Seagroves BMP Testing

Sample ID : RUBBER SAMPLE

Collected By : Kevin Wolfe
Collection Date : 12/27/06 10:45

ESC Sample # : L276544-01

Site ID :

Project # : 060-925

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
MBAS	BDL	0.10	mg/l	425.1	01/23/07	1
Thallium	BDL	0.0010	mg/l	6020	01/24/07	1
Mercury	BDL	0.00020	mg/l	7470A	01/23/07	1
Antimony	BDL	0.010	mg/l	6010B	01/23/07	1
Arsenic	BDL	0.020	mg/l	6010B	01/23/07	1
Beryllium	BDL	0.0020	mg/l	6010B	01/23/07	1
Cadmium	BDL	0.0050	mg/l	6010B	01/23/07	1
Chromium	BDL	0.010	mg/l	6010B	01/23/07	1
Cobalt	BDL	0.010	mg/l	6010B	01/23/07	1
Copper	0.036	0.020	mg/l	6010B	01/23/07	1
Lead	BDL	0.0050	mg/l	6010B	01/23/07	1
Nickel	BDL	0.020	mg/l	6010B	01/23/07	1
Selenium	BDL	0.020	mg/l	6010B	01/23/07	1
Silver	BDL	0.010	mg/l	6010B	01/23/07	1
Zinc	BDL	0.030	mg/l	6010B	01/23/07	1
Water Extraction	-			D3987-85	01/22/07	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	01/26/07	1
Acrolein	BDL	0.050	mg/l	8260B	01/26/07	1
Acrylonitrile	BDL	0.010	mg/l	8260B	01/26/07	1
Benzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Bromobenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	01/26/07	1
Bromoform	BDL	0.0010	mg/l	8260B	01/26/07	1
Bromomethane	BDL	0.0050	mg/l	8260B	01/26/07	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	01/26/07	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	01/26/07	1
Chloroethane	BDL	0.0010	mg/l	8260B	01/26/07	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	01/26/07	1
Chloroform	BDL	0.0050	mg/l	8260B	01/26/07	1
Chloromethane	BDL	0.0010	mg/l	8260B	01/26/07	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	01/26/07	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/l	8260B	01/26/07	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	01/26/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Page 1 of 6

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REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

January 29, 2007

ESC Sample # : L276544-01

Site ID :

Project # : 060-925

Date Received : December 27, 2006
Description : Seagroves BMP Testing

Sample ID : RUBBER SAMPLE

Collected By : Kevin Wolfe
Collection Date : 12/27/06 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Dibromomethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Dichlorodifluoromethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	01/26/07	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	01/26/07	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	01/26/07	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	01/26/07	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	01/26/07	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	01/26/07	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	01/26/07	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Hexachlorobutadiene	BDL	0.0010	mg/l	8260B	01/26/07	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	01/26/07	1
2-Butanone (MEK)	BDL	0.010	mg/l	8260B	01/26/07	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	01/26/07	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/l	8260B	01/26/07	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	01/26/07	1
Naphthalene	BDL	0.0050	mg/l	8260B	01/26/07	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Styrene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.0010	mg/l	8260B	01/26/07	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	01/26/07	1
Toluene	BDL	0.0050	mg/l	8260B	01/26/07	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	01/26/07	1
Trichloroethene	BDL	0.0010	mg/l	8260B	01/26/07	1
Trichlorofluoromethane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2,3-Trichloropropane	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	01/26/07	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	01/26/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

January 29, 2007

ESC Sample # : L276544-01

Date Received : December 27, 2006
Description : Seagroves BMP Testing

Site ID :

Sample ID : RUBBER SAMPLE

Project # : 060-925

Collected By :
Collection Date : 12/27/06 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Xylenes, Total	BDL	0.0030	mg/l	8260B	01/26/07	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	01/26/07	1
Dibromofluoromethane	105.		% Rec.	8260B	01/26/07	1
4-Bromofluorobenzene	107.		% Rec.	8260B	01/26/07	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.010	mg/l	8270C	01/24/07	1
Acenaphthylene	BDL	0.010	mg/l	8270C	01/24/07	1
Anthracene	BDL	0.010	mg/l	8270C	01/24/07	1
Benzidine	BDL	0.050	mg/l	8270C	01/24/07	1
Benzo(a)anthracene	BDL	0.010	mg/l	8270C	01/24/07	1
Benzo(b)fluoranthene	BDL	0.010	mg/l	8270C	01/24/07	1
Benzo(k)fluoranthene	BDL	0.010	mg/l	8270C	01/24/07	1
Benzo(g,h,i)perylene	BDL	0.010	mg/l	8270C	01/24/07	1
Benzo(a)pyrene	BDL	0.010	mg/l	8270C	01/24/07	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	8270C	01/24/07	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	8270C	01/24/07	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	8270C	01/24/07	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	8270C	01/24/07	1
2-Chloronaphthalene	BDL	0.010	mg/l	8270C	01/24/07	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	8270C	01/24/07	1
Chrysene	BDL	0.010	mg/l	8270C	01/24/07	1
Dibenz(a,h)anthracene	BDL	0.010	mg/l	8270C	01/24/07	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	8270C	01/24/07	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	8270C	01/24/07	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	8270C	01/24/07	1
Fluoranthene	BDL	0.010	mg/l	8270C	01/24/07	1
Fluorene	BDL	0.010	mg/l	8270C	01/24/07	1
Hexachlorobenzene	BDL	0.010	mg/l	8270C	01/24/07	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	8270C	01/24/07	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	8270C	01/24/07	1
Hexachloroethane	BDL	0.010	mg/l	8270C	01/24/07	1
Indeno(1,2,3-cd)pyrene	BDL	0.010	mg/l	8270C	01/24/07	1
Isophorone	BDL	0.010	mg/l	8270C	01/24/07	1
Naphthalene	BDL	0.010	mg/l	8270C	01/24/07	1
Nitrobenzene	BDL	0.010	mg/l	8270C	01/24/07	1
n-Nitrosodimethylamine	BDL	0.050	mg/l	8270C	01/24/07	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	8270C	01/24/07	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	8270C	01/24/07	1
Phenanthrene	BDL	0.010	mg/l	8270C	01/24/07	1
Benzylbutyl phthalate	BDL	0.010	mg/l	8270C	01/24/07	1
Bis(2-ethylhexyl)phthalate	BDL	0.010	mg/l	8270C	01/24/07	1
Di-n-butyl phthalate	BDL	0.010	mg/l	8270C	01/24/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. Kevin Wolfe
Civil & Environmental Consultants -
405 Duke Drive, Suite 270
Franklin, TN 37067

January 29, 2007

ESC Sample # : L276544-01

Site ID :

Project # : 060-925

Date Received : December 27, 2006
Description : Seagroves BMP Testing

Sample ID : RUBBER SAMPLE

Collected By : Kevin Wolfe
Collection Date : 12/27/06 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Diethyl phthalate	BDL	0.010	mg/l	8270C	01/24/07	1
Dimethyl phthalate	BDL	0.010	mg/l	8270C	01/24/07	1
Di-n-octyl phthalate	BDL	0.010	mg/l	8270C	01/24/07	1
Pyrene	BDL	0.010	mg/l	8270C	01/24/07	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8270C	01/24/07	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	8270C	01/24/07	1
2-Chlorophenol	BDL	0.010	mg/l	8270C	01/24/07	1
2,4-Dichlorophenol	BDL	0.010	mg/l	8270C	01/24/07	1
2,4-Dimethylphenol	BDL	0.010	mg/l	8270C	01/24/07	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	8270C	01/24/07	1
2,4-Dinitrophenol	BDL	0.010	mg/l	8270C	01/24/07	1
2-Nitrophenol	BDL	0.010	mg/l	8270C	01/24/07	1
4-Nitrophenol	BDL	0.010	mg/l	8270C	01/24/07	1
Pentachlorophenol	BDL	0.010	mg/l	8270C	01/24/07	1
Phenol	BDL	0.010	mg/l	8270C	01/24/07	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	8270C	01/24/07	1
Surrogate Recovery						
Nitrobenzene-d5	65.1		% Rec.	8270C	01/24/07	1
2-Fluorobiphenyl	78.4		% Rec.	8270C	01/24/07	1
p-Terphenyl-d14	83.1		% Rec.	8270C	01/24/07	1
Phenol-d5	33.3		% Rec.	8270C	01/24/07	1
2-Fluorophenol	44.2		% Rec.	8270C	01/24/07	1
2,4,6-Tribromophenol	89.8		% Rec.	8270C	01/24/07	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 01/29/07 09:34 Printed: 01/29/07 11:30

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L276544-01	Acrolein	J3
	Bromomethane	J4
	Hexachloroethane	J3J4
	1,2,4-Trichlorobenzene	J3
	4,6-Dinitro-2-methylphenol	J3J4
	2,4-Dinitrophenol	J3J4
	4-Nitrophenol	J3J4
	Pentachlorophenol	J3J4
	2,4,6-Trichlorophenol	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits				(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

5. References

Humphrey, Dana N. and Lynn E. Katz. (November, 2001). "Field Study of Water Quality Effects of Tire Shreds Placed Below The Water Table." Proceedings of the Conference on Beneficial Use of Recycled Materials in Transportation Applications. Air and Waste Management Association. Pittsburgh, PA.

Liu, Helen S., Joey L. Mead, and Ross G. Stacer. (August, 1998). "Environmental Impacts of Recycled Rubber In Light Fill Applications: Summary & Evaluation of Existing Literature." Chelsea Center for Recycling and Economic Development. University of Massachusetts Lowell. Chelsea, MA.