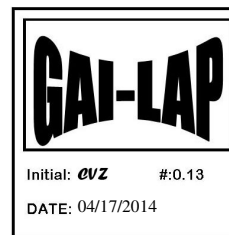




April 17, 2014

Allan Brantley
Brantley Engineering, LLC.
13933 Tree Loft Road
Milton, GA 30004



Re: FINAL LABORATORY TEST REPORT

Dear Mr. Brantley:

Thank you for consulting TRI California for your material testing needs.

Enclosed is the **final** laboratory report for the conformance testing of one (1) 60mil HDPE Microspike Geomembrane sample.

PROJECT NAME: Jed Cell 10

DATE REPORTED: April 17, 2014

REFERENCE TRI JOB NO.: G140327

DATE RECEIVED: April 16, 2014

SAMPLES SENT BY: AGRU, SC

SAMPLE IDENTIFICATIONS:

SAMPLE ID

1. R# G14D162021 L# H7240412

TRI CONTROL NUMBER

97329

TESTS REQUIRED / PERFORMED:

TEST METHOD

1. ASTM D5994
2. ASTM D1505
3. ASTM D6639
4. ASTM D1603
5. ASTM D5596

DESCRIPTION

Thickness
Density
Tensile Properties
Carbon Black Content
Carbon Black Dispersion

TEST RESULTS: The test results are summarized in the attached Table 1.

Respectfully,

TRI Environmental, Inc. - California

Maria Espitia
Quality Assurance

Carmelo V. Zantua
Technical Director

Signatures are on file

It shall be noted that the samples tested are believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from pertinent entity duly authorized by the respective client or from the client itself. It is our policy to keep physical records of each job for two (2) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. **Retained conformance samples are disposed of after one (1) month.** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

2 Pages Total



TABLE 1.
MATERIAL PROPERTIES
CLIENT: Brantley Engineering, LLC.
PROJECT: Jed Cell 10

Date Received: 4/16/2014
 Date Reported: 4/17/2014
 Client Sample ID: R# G14D162021 L# 7240412
 Material Description: 60mil HDPE Microspike Geomembrane

QC'd By: *Maria Espitia*
 TRI Job No.: G140327
 TRI Control No.: 97329

SPECIMENS											Avg.	Std. Dev.	Min	Max	Proj. Specs.
	1	2	3	4	5	6	7	8	9	10					
METHOD	DESCRIPTION														
ASTM D5994	Thickness (mils) <i>Apparatus: Dead-weight dial micrometer with gauge points tapered at an angle of 60° +/- 2° to the horizontal with the tip rounded to a radius of 0.8+/-0.1 mm(0.031+/-0.004 in), with a specified force of 0.56+/-0.05 N (2+/-0.2 oz)</i> <i>Loading Time: 5 sec Specimen Size: 4" x 4"</i>														60 nominal
	60	60	60	60	61	60	60	60	60	61	60	1	60	61	54 min.
ASTM D1505	Density (grams/ cm. ³) 0.9462 0.9468 0.9452										0.9461	0.0008	0.9452	0.9468	.94 min.
ASTM D6693	<u>Tensile Properties:</u> <i>Test Specimens: Type IV, Width of narrow section:0.25in, Length of narrow section:1.3in, Width Overall:0.75in, Length Overall: 4.5in Conditioning: Conducted test in standard laboratory atmosphere of 23+/-2° C (73.4+/-3.6° F), and 50+/-5% relative humidity. Rate of Separation: 2"/min</i>														
Type IV	Tensile Strength at Yield (lbs/ in.-width)														126 min.
	MD	158	151	158	144	153					153	6	144	158	
	TD	161	144	155	161	159					156	7	144	161	
	Tensile Strength at Break (lbs/ in.- width)														90 min.
	MD	179	193	170	164	172					176	11	164	193	
	TD	173	176	176	177	178					176	2	173	178	
	Elongation at Yield (percent, %)														12 min.
	MD	21	18	18	17	18					18	2	17	21	
	TD	14	17	16	15	18					16	2	14	18	
	Elongation at Break (percent, %) <i>Gauge Length = 2.0 in.</i>														100 min.
	MD	420	484	413	384	441					428	37	384	484	
	TD	519	536	515	524	513					521	9	513	536	
ASTM D1603	Carbon Black Content (percent, %) 2.05 2.08										2.07	0.02	2.05	2.08	2-3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)														9 of 10 in Cat. 1 or 2
	1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				All in Cat. 1,2, or 3

(End of Table 1)

(Sheet 1 of 1)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI Environmental, Inc. from Client and all other parties for claims on issues, due to the use of this data, to the cost for the respective tests presented in this report; and the Client agrees to indemnify and hold harmless TRI Environmental, Inc. from and against all liabilities in excess of the aforementioned limit.

LEGENDS:
 MD - MACHINE DIRECTION
 TD- TRANSVERSE DIRECTION