SECTION

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APPENDIX E.

GEOSYNTHETIC CONFORMANCE TESTING RESULTS

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
1	102153674	Passed	5/25/2010	10D1015	12150	4/25/2010	PGL	4/28/2010	G100407 C#65998
2	102153675	Passed	5/25/2010	10D1015	12150	4/25/2010			
3	102153677	Passed	5/25/2010	10D1015	12150	4/25/2010			
4	102153679	Passed	6/2/2010	10D1015	12150	4/25/2010			
5	102153680	Passed	5/25/2010	10D1015	12150	4/25/2010	PGL	4/28/2010	G100407 C#65999
6	102153682	Passed	5/25/2010	10D1015	12150	4/25/2010			
7	102153684	Passed	6/2/2010	10D1015	12150	4/25/2010			
8	102153685	Passed	5/25/2010	10D1015	12150	4/25/2010			
9	102153686	Passed	6/2/2010	10D1015	12150	4/26/2010	PGL	4/28/2010	G100407 C#66000
10	102153687	Passed	5/25/2010	10D1015	12150	4/26/2010			
11	102153689	Passed	6/2/2010	10D1015	12150	4/26/2010			
12	102153690	Passed	6/2/2010	10D1015	12150	4/26/2010			
13	102153698	Passed	5/25/2010	10D1015	12150	4/26/2010	PGL	4/28/2010	G100407 C#66001
14	102153701	Passed	5/25/2010	10D1015	12150	4/26/2010			
15	102153706	Passed	5/25/2010	10D1015	12150	4/27/2010			
16	102153707	Passed	5/25/2010	10D1015	12150	4/27/2010			
17	102153710	Passed	5/25/2010	10D1015	12150	4/27/2010	PGL	4/28/2010	G100408 C#66002
18	102153711	Passed	5/25/2010	10D1015	12150	4/27/2010			
19	102153712	Passed	5/25/2010	10D1015	12150	4/27/2010			
20	102153714	Passed	5/25/2010	10D1015	12150	4/27/2010	PGL	4/28/2010	G100408 C#66003
21	102153715	Passed	5/25/2010	10D1015	12150	4/27/2010			
Sub Total ft^2 =					255150			Subtotal =	6

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
22	102153716	Passed	5/25/2010	10D1017	12150	4/27/2010			
23	102153717	Passed	5/25/2010	10D1017	12150	4/27/2010			
24	102153718	Passed	5/25/2010	10D1017	12150	4/27/2010	PGL	4/28/2010	G100408 C#66004
25	102153719	Passed	5/25/2010	10D1017	12150	4/27/2010			
26	102153721	Passed	5/25/2010	10D1017	12150	4/27/2010			
27	102153723	Passed	5/25/2010	10D1017	12150	4/28/2010	PGL	4/28/2010	G100408 C#66005
28	102153724	Passed	6/2/2010	10D1017	12150	4/28/2010			
29	102153725	Passed	6/2/2010	10D1017	12150	4/28/2010			
30	102153728	Passed	5/25/2010	10D1017	12150	4/28/2010			
31	102153730	Passed	5/25/2010	10D1017	12150	4/28/2010	PGL	4/29/2010	G100433 C#66163
32	102153731	Passed	5/25/2010	10D1017	12150	4/28/2010			
33	102153732	Passed	5/25/2010	10D1017	12150	4/28/2010			
34	102153735	Passed	5/25/2010	10D1017	12150	4/28/2010			
35	102153736	Passed	5/25/2010	10D1017	12150	4/28/2010	PGL	4/29/2010	G100433 C#66164
36	102153737	Passed	5/25/2010	10D1017	12150	4/28/2010			
37	102153739	Passed	5/25/2010	10D1017	12150	4/28/2010			
38	102153740	Passed	6/2/2010	10D1017	12150	4/29/2010			
39	102153741	Passed	6/2/2010	10D1017	12150	4/29/2010	PGL	4/29/2010	G100433 C#66165
40	102153742	Passed	6/2/2010	10D1017	12150	4/29/2010			
41	102153745	Passed	6/2/2010	10D1017	12150	4/29/2010			
42	102153746	Passed	6/2/2010	10D1017	12150	4/29/2010			
43	102153747	Passed	6/17/2010	10D1017	12150	4/29/2010	PGL	4/30/2010	G100444 L#66214

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
44	102153748	Passed	6/2/2010	10D1017	12150	4/29/2010			
45	102153749	Passed	6/25/2010	10D1017	12150	4/29/2010			
46	102153751	Passed	6/2/2010	10D1017	12150	4/29/2010	PGL	4/30/2010	G100444 L#66215
47	102153753	Passed	6/2/2010	10D1017	12150	4/29/2010			
48	102153754	Passed	6/2/2010	10D1017	12150	4/29/2010			
49	102153755	Passed	6/2/2010	10D1017	12150	4/30/2010	PGL	4/30/2010	G100444 L#66216
Sub Total ft^2 =					340200			Subtotal =	8
50	102153756	Passed	6/4/2010	10D1013	12150	4/30/2010			
51	102153757	Passed	6/4/2010	10D1013	12150	4/30/2010			
52	102153758	Passed	6/4/2010	10D1013	12150	4/30/2010			
53	102153760	Passed	6/17/2010	10D1013	12150	4/30/2010	PGL	5/3/2010	G100456 C#66261
54	102153761	Passed	6/17/2010	10D1013	12150	4/30/2010			
55	102153764	Passed	6/25/2010	10D1013	12150	4/30/2010			
56	102153768	Passed	6/17/2010	10D1013	12150	4/30/2010			
57	102153770	Passed	6/25/2010	10D1013	12150	5/1/2010	PGL	5/3/2010	G100456 C#66262
58	102153771	Passed	6/25/2010	10D1013	12150	5/1/2010			
59	102153772	Passed	6/25/2010	10D1013	12150	5/1/2010			
60	102153773	Passed	6/25/2010	10D1013	12150	5/1/2010			
61	102153775	Passed	6/4/2010	10D1013	12150	5/1/2010	PGL	5/3/2010	G100456 C#66263
62	102153776	Passed	6/4/2010	10D1013	12150	5/1/2010			
63	102153779	Passed	6/4/2010	10D1013	12150	5/1/2010			
64	102153781	Passed	6/4/2010	10D1013	12150	5/1/2010			

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
65	102153782	Passed	6/4/2010	10D1013	12150	5/1/2010	PGL	5/3/2010	G100456 C#66264
66	102153783	Passed	6/17/2010	10D1013	12150	5/1/2010			
67	102153784	Passed	6/17/2010	10D1013	12150	5/1/2010			
68	102153785	Passed	6/25/2010	10D1013	12150	5/1/2010			
69	102153787	Passed	6/17/2010	10D1013	12150	5/2/2010	PGL	5/3/2010	G100457 C#66265
70	102153790	Passed	6/17/2010	10D1013	12150	5/2/2010			
71	102153791	Passed	6/4/2010	10D1013	12150	5/2/2010			
72	102153792	Passed	6/4/2010	10D1013	12150	5/2/2010			
73	103153794	Passed	6/4/2010	10D1013	12150	5/2/2010	PGL	5/3/2010	G100457 C#66266
Sub Total ft^2 =					**291,600**			Subtotal =	6
74	103153795	Passed	6/4/2010	10D1050	12150	5/2/2010			
75	103153796	Passed	6/4/2010	10D1050	12150	5/2/2010			
76	103153797	Passed	6/4/2010	10D1050	12150	5/2/2010			
77	102153800	Passed	6/4/2010	10D1050	12150	5/3/2010	PGL	5/3/2010	G100457 C#66267
78	102153801	Passed	6/4/2010	10D1050	12150	5/3/2010			
79	102153802	Passed	6/4/2010	10D1050	12150	5/3/2010			
80	102153803	Passed	6/4/2010	10D1050	12150	5/3/2010			
81	102153804	Passed	6/4/2010	10D1050	12150	5/3/2010	PGL	5/4/2010	G100459 C#66338
82	102153805	Passed	6/4/2010	10D1050	12150	5/3/2010			
83	102153806	Passed	6/4/2010	10D1050	12150	5/3/2010			
84	102153807	Passed	6/4/2010	10D1050	12150	5/3/2010			
85	102153808	Passed	6/4/2010	10D1050	12150	5/3/2010	PGL	5/4/2010	G100459 C#66339

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1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 60mil HDPE Textured Black/White Geomembrane

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: GSE

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
86	102153812	Passed	6/4/2010	10D1050	12150	5/3/2010			
87	102153813	Passed	6/4/2010	10D1050	12150	5/3/2010			
88	102153814	Passed	6/4/2010	10D1050	12150	5/3/2010			
89	102153816	Passed	6/4/2010	10D1050	12150	5/4/2010	PGL	5/4/2010	G100459 C#66340
90	102153817	Passed	6/4/2010	10D1050	12150	5/4/2010			
91	102153818	Passed	6/4/2010	10D1050	12150	5/4/2010			
92	102153819	Passed	6/4/2010	10D1050	12150	5/4/2010			
93	102153820	Passed	6/4/2010	10D1050	12150	5/4/2010	PGL	5/5/2010	G100469 C#66382
94	102153821	Passed	6/4/2010	10D1050	12150	5/4/2010			
95	102153822	Passed	6/18/2010	10D1050	12150	5/4/2010			
96	102153829	Passed	6/18/2010	10D1050	12150	5/4/2010			
97	102153830	Passed	6/25/2010	10D1050	12150	5/5/2010	PGL	5/5/2010	G100463 C#66360
98	102153831	Passed	6/25/2010	10D1050	12150	5/5/2010			
99	102153832	Passed	6/25/2010	8100297	12150	5/5/2010			
100	102153835	Passed	6/25/2010	8100297	12150	5/5/2010	PGL	5/5/2010	G100463 C#66361
Sub Total ft^2 =					**24300**			Subtotal =	7
101	108151734	Passed	6/18/2010	10D1025	12150	5/17/2010	PGL	5/19/2010	G100540 C#66788
102	108151735	Passed	6/18/2010	10D1025	12150	5/18/2010			
103	108151736	Passed	6/18/2010	10D1025	12150	5/18/2010			
				Sub Total ft^2 =	**36450**			Subtotal =	1
104	108151737	Passed	6/18/2010	10D1021	12150	5/18/2010			
105	108151738	Passed	6/18/2010	10D1021	12150	5/18/2010	PGL	5/19/2010	G100540 C#66789

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 60mil HDPE Textured Black/White Geomembrane

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: GSE

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
106	108151739	Passed	6/18/2010	10D1021	12150	5/18/2010			
107	108151740	Passed	6/25/2010	10D1021	12150	5/18/2010			
108	108151741	Passed	6/25/2010	10D1021	12150	5/18/2010			
109	108151742	Passed	6/18/2010	10D1021	12150	5/18/2010	PGL	5/19/2010	G100540 C#66790
110	108151743	Passed	6/18/2010	10D1021	12150	5/18/2010			
111	108151744	Passed	6/18/2010	10D1021	12150	5/18/2010			
112	108151745	Passed	6/18/2010	10D1021	12150	5/18/2010			
113	108151746	Passed	6/25/2010	10D1021	12150	5/18/2010	PGL	5/19/2010	G100540 C#66791
114	108151747	Passed	6/18/2010	10D1021	12150	5/18/2010			
115	108151748	Passed	6/25/2010	10D1021	12150	5/18/2010			
116	108151749	Passed	6/18/2010	10D1021	12150	5/19/2010			
117	108151750	Passed	6/18/2010	10D1021	12150	5/19/2010	PGL	5/19/2010	G100540 C#66792
118	108151751	Passed		10D1021	12150	5/19/2010			
119	108151752	Passed	6/25/2010	10D1021	12150	5/19/2010			
120	108151753	Passed	6/25/2010	10D1021	12150	5/19/2010			
121	108151756	Passed	6/25/2010	10D1021	12150	5/19/2010	PGL	5/21/2010	G100555 C#66844
122	108151757	Passed	6/25/2010	10D1021	12150	5/19/2010			
123	108151758	Passed	6/16/2010	10D1021	12150	5/19/2010			
124	108151759	Passed	6/18/2010	10D1021	12150	5/19/2010			
125	108151760	Passed	6/18/2010	10D1021	12150	5/19/2010	PGL	5/21/2010	G100555 C#66845
126	108151761	Passed	6/18/2010	10D1021	12150	5/19/2010			
127	108151762	Passed	6/18/2010	10D1021	12150	5/20/2010			

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
128	108151763	Passed	6/18/2010	10D1021	12150	5/20/2010			
129	108151764	Passed	6/16/2010	10D1021	12150	5/20/2010	PGL	5/21/2010	G100555 C#66846
130	108151765	Passed	6/18/2010	10D1021	12150	5/20/2010			
				Sub Total ft^2 =	**328050**			Subtotal =	7
131	108151768	Passed	6/25/2010	10D1029	12150	5/20/2010			
132	108151769	Passed	6/25/2010	10D1029	12150	5/20/2010			
133	108151770	Passed	6/25/2010	10D1029	12150	5/20/2010	PGL	5/21/2010	G100555 C#66847
134	108151771	Passed	6/18/2010	10D1029	12150	5/20/2010			
135	108151772	Passed	6/25/2010	10D1029	12150	5/20/2010			
136	108151773	Passed	6/18/2010	10D1029	12150	5/20/2010			
137	108151774	Passed	6/18/2010	10D1029	12150	5/20/2010	PGL	5/21/2010	G100555 C#66848
138	108151775	Passed	6/18/2010	10D1029	12150	5/20/2010			
139	108151776	Passed	6/18/2010	10D1029	12150	5/20/2010			
140	108151777	Passed	6/18/2010	10D1029	12150	5/21/2010			
141	108151779	Passed	6/18/2010	10D1029	12150	5/21/2010	PGL	5/21/2010	G100555 C#66849
142	108151780	Passed	6/18/2010	10D1029	12150	5/21/2010			
143	108151781	Passed	6/25/2010	10D1029	12150	5/21/2010			
144	108151782	Passed	6/25/2010	10D1029	12150	5/21/2010			
145	108151783	Passed	6/25/2010	10D1029	12150	5/21/2010	PGL	5/24/2010	G100568 C#66909
146	108151784	Passed	6/25/2010	10D1029	12150	5/21/2010			
147	108151785	Passed	6/25/2010	10D1029	12150	5/21/2010			
148	108151786	Passed	6/25/2010	10D1029	12150	5/21/2010			

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 60mil HDPE Textured Black/White Geomembrane

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: GSE

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
149	108151787	Passed	6/25/2010	10D1029	12150	5/21/2010	PGL	5/24/2010	G100568 C#66910
150	108151788	Passed	6/25/2010	10D1029	12150	5/21/2010			
151	108151789	Passed	6/25/2010	10D1029	12150	5/21/2010			
152	108151790	Passed	6/25/2010	10D1029	12150	5/21/2010			
153	108151791	Passed	6/25/2010	10D1029	12150	5/21/2010	PGL	5/25/2010	G100583 C#67001
154	108151792	Passed	6/25/2010	10D1029	12150	5/22/2010			
155	108151793	Passed	6/25/2010	10D1029	12150	5/22/2010			
156	108151794	Passed	6/25/2010	10D1029	12150	5/22/2010			
157	108151795	Passed	6/25/2010	10D1029	12150	5/22/2010	PGL	5/24/2010	G100568 C#66911
158	108151796	Passed	6/25/2010	10D1029	12150	5/22/2010			
159	108151797	Passed	6/25/2010	10D1029	12150	5/22/2010	PGL	5/24/2010	G100660 C#67424
				Sub Total ft^2 =	**352,350**			Subtotal =	8
160	108151798	Passed	6/25/2010	10D1052	12150	5/22/2010			
161	108151799	Passed	6/25/2010	10D1052	12150	5/22/2010	PGL	5/24/2010	G100568 C#66912
162	108151800	Passed	6/25/2010	10D1052	12150	5/22/2010			
163	108151801	Passed	6/25/2010	10D1052	12150	5/22/2010			
164	108151803	Passed	6/25/2010	10D1052	12150	5/22/2010			
165	108151804	Passed	6/25/2010	10D1052	12150	5/22/2010	PGL	5/24/2010	G100568 C#66913
166	108151805	Passed	6/25/2010	10D1052	12150	5/22/2010			
167	108151806	Passed	6/25/2010	10D1052	12150	5/23/2010			
168	108151807	Passed	6/25/2010	10D1052	12150	5/23/2010			
169	108151808	Passed	6/25/2010	10D1052	12150	5/23/2010	PGL	5/24/2010	G100569 C#66914

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
170	108151809	Passed	6/25/2010	10D1052	12150	5/23/2010			
171	108151810	Passed	6/25/2010	10D1052	12150	5/23/2010			
172	108151811	Passed	6/25/2010	10D1052	12150	5/23/2010			
173	108151812	Passed	6/25/2010	10D1052	12150	5/23/2010	PGL	5/24/2010	G100569 C#66915
174	108151813	Passed	6/25/2010	10D1052	12150	5/23/2010			
175	108151814	Passed	6/25/2010	10D1052	12150	5/23/2010			
176	108151815	Passed	6/25/2010	10D1052	12150	5/23/2010			
177	108151816	Passed	6/25/2010	10D1052	12150	5/23/2010	PGL	5/24/2010	G100569 C#66916
178	108151817	Passed	6/25/2010	10D1052	12150	5/23/2010			
179	108151818	Passed	6/25/2010	10D1052	12150	5/23/2010			
180	108151819	Passed	6/25/2010	10D1052	12150	5/24/2010			
181	108151820	Passed	6/25/2010	10D1052	12150	5/24/2010	PGL	5/24/2010	G100569 C#66917
182	108151821	Passed	6/25/2010	10D1052	12150	5/24/2010			
183	108151822	Passed	6/25/2010	10D1052	12150	5/24/2010			
184	108151823	Passed	6/25/2010	10D1052	12150	5/24/2010			
185	108151824	Passed	6/25/2010	10D1052	12150	5/24/2010	PGL	5/25/2010	G100583 C#67002
186	108151825	Passed	6/25/2010	10D1052	12150	5/24/2010			
187	108151828	Passed	6/25/2010	10D1052	12150	5/24/2010			
188	108151829	Passed	6/25/2010	10D1052	12150	5/24/2010	PGL	5/25/2010	G100583 C#67003
189	108151831	Passed	6/25/2010	10D1052	12150	5/24/2010			
				Sub Total ft^2 =	**364,500**			Subtotal =	8
190	108151832	Passed	6/25/2010	10D1031	12150	5/24/2010			

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
191	108151833	Passed	6/25/2010	10D1031	12150	5/25/2010			
192	108151835	Passed	6/25/2010	10D1031	12150	5/25/2010	PGL	5/25/2010	G100583 C#67004
193	108151837	Passed	6/25/2010	10D1031	12150	5/25/2010			
194	108151838	Passed	6/25/2010	10D1031	12150	5/25/2010			
195	108151839	Passed	6/25/2010	10D1031	12150	5/25/2010			
196	108151844	Passed	6/25/2010	10D1031	12150	5/25/2010	PGL	5/27/2010	G100580 C#67025
197	108151847	Passed	6/25/2010	10D1031	12150	5/26/2010			
198	108151848	Passed	6/25/2010	10D1031	12150	5/26/2010			
199	108151849	Passed	6/25/2010	10D1031	12150	5/26/2010			
200	108151850	Passed	6/25/2010	10D1031	12150	5/26/2010	PGL	5/27/2010	G100580 C#67026
201	108151851	Passed	6/25/2010	10D1031	12150	5/26/2010			
202	108151852	Passed	6/25/2010	10D1031	12150	5/26/2010			
203	108151853	Passed	6/25/2010	10D1031	12150	5/26/2010			
204	108151854	Passed	6/25/2010	10D1031	12150	5/26/2010	PGL	5/27/2010	G100597 C#67147
205	108151855	Passed	6/25/2010	10D1031	12150	5/26/2010			
206	108151856	Passed	6/25/2010	10D1031	12150	5/26/2010			
207	108151857	Passed	6/25/2010	10D1031	12150	5/26/2010			
208	108151858	Passed	6/25/2010	10D1031	12150	5/26/2010	PGL	5/27/2010	G100580 C#67027
209	108151859	Passed	6/25/2010	10D1031	12150	5/26/2010			
210	108151860	Passed	6/25/2010	10D1031	12150	5/26/2010			
211	108151861	Passed	6/25/2010	10D1031	12150	5/27/2010			
212	108151862	Passed	6/25/2010	10D1031	12150	5/27/2010	PGL	5/28/2010	G100604 C#67173

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 60mil HDPE Textured Black/White Geomembrane

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: GSE

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
213	108151863	Passed	6/25/2010	10D1031	12150	5/27/2010			
214	108151864	Passed	6/25/2010	10D1031	12150	5/27/2010			
215	108151865	Passed	6/25/2010	10D1031	12150	5/27/2010			
216	108151866	Passed	6/25/2010	10D1031	12150	5/27/2010	PGL	5/28/2010	G100604 C#67174
217	108151867	Passed	6/25/2010	10D1031	12150	5/27/2010			
218	108151868	Passed	6/25/2010	10D1031	12150	5/27/2010			
219	108151870	Passed	6/25/2010	10D1031	12150	5/27/2010			
220	108151871	Passed	6/25/2010	10D1031	12150	5/27/2010	PGL	5/28/2010	G100604 C#67175
221	108151872	Passed	6/25/2010	10D1031	12150	5/27/2010			
222	108151873	Passed	6/25/2010	10D1031	12150	5/27/2010			
223	108151874	Passed	6/25/2010	10D1031	12150	5/27/2010			
224	108151875	Passed	6/25/2010	10D1031	12150	5/28/2010	PGL	6/1/2010	G100609 C#67187
225	108151876	Passed	6/25/2010	10D1031	12150	5/28/2010			
226	108151877	Passed	6/25/2010	10D1031	12150	5/28/2010			
				Sub Total ft^2 =	**449,550**			Subtotal =	9
227	108151878	Passed	6/25/2010	10D1018	12150	5/28/2010			
228	108151879	Passed	6/25/2010	10D1018	12150	5/28/2010	PGL	6/1/2010	G100609 C#67188
229	108151880	Passed	6/25/2010	10D1018	12150	5/28/2010			
230	108151881	Passed	7/12/2010	10D1018	12150	5/28/2010			
231	108151882	Passed	7/12/2010	10D1018	12150	5/28/2010			
232	108151883	Passed	7/12/2010	10D1018	12150	5/28/2010	PGL	6/1/2010	G100609 C#67189
233	108151884	Passed	7/12/2010	10D1018	12150	5/28/2010			

Precision Geosynthetic Laboratories
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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 60mil HDPE Textured Black/White Geomembrane

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: GSE

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
234	108151885	Passed	7/12/2010	10D1018	12150	5/28/2010			
235	108151886	Passed	7/12/2010	10D1018	12150	5/28/2010			
236	108151887	Passed	7/12/2010	10D1018	12150	5/28/2010	PGL	6/1/2010	G100609 C#67190
237	108151888	Passed	7/12/2010	10D1018	12150	5/29/2010			
238	108151889	Passed	7/12/2010	10D1018	12150	5/29/2010			
239	108151890	Passed	7/12/2010	10D1018	12150	5/29/2010			
240	108151891	Passed	7/12/2010	10D1018	12150	5/29/2010	PGL	6/1/2010	G100609 C#67191
241	108151892	Passed	7/12/2010	10D1018	12150	5/29/2010			
242	108151893	Passed	7/12/2010	10D1018	12150	5/29/2010			
243	108151894	Passed	7/12/2010	10D1018	12150	5/29/2010			
244	108151895	Passed	7/12/2010	10D1018	12150	5/29/2010	PGL	6/1/2010	G100609 C#67192
245	108151896	Passed	7/12/2010	10D1018	12150	5/29/2010			
246	108151897	Passed	7/12/2010	10D1018	12150	5/29/2010			
247	108151898	Passed	7/12/2010	10D1018	12150	5/29/2010			
248	108151899	Passed	7/12/2010	10D1018	12150	5/29/2010	PGL	6/1/2010	G100609 C#67193
249	108151900	Passed	7/12/2010	10D1018	12150	5/29/2010			
250	108151901	Passed	7/12/2010	10D1018	12150	5/29/2010			
251	108151902	Passed	7/12/2010	10D1018	12150	5/30/2010			
252	108151903	Passed	7/12/2010	10D1018	12150	5/30/2010	PGL	6/1/2010	G100610 C#67194
253	108151904	Passed	7/12/2010	10D1018	12150	5/30/2010			
254	108151912	Passed	7/12/2010	10D1018	12150	5/30/2010	PGL	6/1/2010	G100610 C#67195
255	108151914	Passed	7/12/2010	10D1018	12150	5/30/2010			

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

Material: 60mil HDPE Textured Black/White Geomembrane

Manufacturer: GSE

TYPE OF MQA: LEVEL (2)

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
256	108151915	Passed	7/12/2010	10D1018	12150	5/30/2010			
257	108151916	Passed	7/12/2010	10D1018	12150	5/31/2010			
258	108151917	Passed	7/12/2010	10D1018	12150	5/31/2010	PGL	6/1/2010	G100610 C#67196
259	108151918	Passed	7/12/2010	10D1018	12150	5/31/2010			
260	108151919	Passed	7/12/2010	10D1018	12150	5/31/2010			
261	108151920	Passed	7/12/2010	10D1018	12150	5/31/2010			
262	108151921	Passed	7/12/2010	10D1018	12150	5/31/2010	PGL	6/1/2010	G100610 C#67197
263	108151922	Passed	7/12/2010	10D1018	12150	5/31/2010			
264	108151923	Passed	7/12/2010	10D1018	12150	5/31/2010			
265	108151924	Passed	7/7/2010	10D1018	12150	5/31/2010			
266	108151925	Passed	7/12/2010	10D1018	12150	5/31/2010	PGL	6/1/2010	G100610 C#67198
267	108151926	Passed	7/7/2010	10D1018	12150	5/31/2010			
268	108151927	Passed	7/12/2010	10D1018	12150	5/31/2010			
269	108151928	Passed	7/7/2010	10D1018	12150	5/31/2010			
270	108151929	Passed	7/12/2010	10D1018	12150	6/1/2010	PGL	6/1/2010	G100610 C#67199
271	108151930	Passed	7/12/2010	10D1018	12150	6/1/2010			
272	108151931	Passed	7/7/2010	10D1018	12150	6/1/2010			
273	108151932	Passed	7/7/2010	10D1018	12150	6/1/2010			
274	108151933	Passed	7/12/2010	10D1018	12150	6/1/2010	PGL	6/2/2010	G100622 C#67266
275	108151934	Passed	7/12/2010	10D1018	12150	6/1/2010			
276	108151935	Passed	7/7/2010	10D1018	12150	6/1/2010			
277	108151936	Passed	7/12/2010	10D1018	12150	6/1/2010			

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN[illegible]MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 60mil HDPE Textured Black/White Geomembrane

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: GSE

No.	Roll #	CQC Testing Passed	On-Site	Lot #	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Reference Job No/ Control No
278	108151937	Passed	7/7/2010	10D1018	12150	6/1/2010	PGL	6/2/2010	G100622 C#67267
279	108151938	Passed	7/7/2010	10D1018	12150	6/1/2010			
280	108151939	Passed	7/7/2010	10D1018	12150	6/1/2010			
281	108151940	Passed	7/12/2010	10D1018	12150	6/1/2010			
282	108151941	Passed	7/7/2010	10D1018	12150	6/1/2010			
283	108151942	Passed	7/12/2010	10D1018	12150	6/1/2010			
Sub Total ft^2 =		283	282		692,550			Subtotal =	14
Total ft^2 =					3,134,700		Total Tests Required =		63
							Total num of Tests =		74
							Frequency =		42,361

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 8oz Non-Woven Geotextile **SAMPLING FREQUENCY:** 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
1	147581.001	Passed	6/17/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100445 C#66217
2	147581.002	Passed	6/17/2010	GE180	12000	N/A				
3	147581.003	Passed	6/17/2010	GE180	12000	N/A				
4	147581.004	Passed	6/17/2010	GE180	12000	N/A				
5	147581.005	Passed	6/17/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100445 C#66218
6	147581.006	Passed	6/17/2010	GE180	12000	N/A				
7	147581.007	Passed	6/17/2010	GE180	12000	N/A				
8	147581.008	Passed	6/17/2010	GE180	12000	N/A				
9	147581.009	Passed	6/17/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100445 C#66219
10	147581.010	Passed	6/4/2010	GE180	12000	N/A				
11	147581.011	Passed	6/17/2010	GE180	12000	N/A				
12	147581.012	Passed	6/17/2010	GE180	12000	N/A				
13	147581.013	Passed	6/17/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100445 C#66220
14	147581.014	Passed	6/17/2010	GE180	12000	N/A				
15	147581.015	Passed	6/17/2010	GE180	12000	N/A				
16	147581.016	Passed	6/17/2010	GE180	12000	N/A				
17	147581.017	Passed	6/17/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100445 C#66221
18	147581.018	Passed	6/17/2010	GE180	12000	N/A				
19	147581.019	Passed	6/17/2010	GE180	12000	N/A				
20	147581.020	Passed	6/17/2010	GE180	12000	N/A				
21	147581.021	Passed	6/17/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100445 C#66222

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 8oz Non-Woven Geotextile **SAMPLING FREQUENCY:** 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
22	147581.022	Passed	6/17/2010	GE180	12000	N/A				
23	147581.023	Passed	6/17/2010	GE180	12000	N/A				
24	147581.024	Passed	6/17/2010	GE180	12000	N/A				
25	147581.025	Passed	6/17/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100446 C#66223
26	147581.026	Passed	6/17/2010	GE180	12000	N/A				
27	147581.027	Passed	6/17/2010	GE180	12000	N/A				
28	147581.028	Passed	6/4/2010	GE180	12000	N/A				
29	147581.029	Passed	6/4/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100446 C#66224
30	147581.030	Passed	6/4/2010	GE180	12000	N/A				
31	147581.031	Passed	6/4/2010	GE180	12000	N/A				
32	147581.032	Passed	6/4/2010	GE180	12000	N/A				
33	147581.033	Passed	6/4/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100446 C#66225
34	147581.034	Passed	6/4/2010	GE180	12000	N/A				
35	147581.035	Passed	6/4/2010	GE180	12000	N/A				
36	147581.036	Passed	6/4/2010	GE180	12000	N/A				
37	147581.037	Passed	6/4/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100446 C#66226
38	147581.038	Passed	6/4/2010	GE180	12000	N/A				
39	147581.039	Passed	6/4/2010	GE180	12000	N/A				
40	147581.040	Passed	6/4/2010	GE180	12000	N/A				
41	147581.041	Passed	6/4/2010	GE180	12000	N/A	TP	4/27/2010	5/5/2010	G100446 C#66227
42	147581.042	Passed	6/4/2010	GE180	12000	N/A				

Precision Geosynthetic Laboratories
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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 8oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
43	147581.043	Passed	6/4/2010	GE180	12000	N/A				
44	147581.044	Passed	6/4/2010	GE180	12000	N/A				
45	147581.045	Passed	6/4/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100460 C#66341
46	147581.046	Passed	6/4/2010	GE180	12000	N/A				
47	147581.047	Passed	6/4/2010	GE180	12000	N/A				
48	147581.048	Passed	6/4/2010	GE180	12000	N/A				
49	147581.049	Passed	6/4/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100460 C#66342
50	147581.050	Passed		GE180	12000	N/A				
51	147581.051	Passed	6/4/2010	GE180	12000	N/A				
52	147581.052	Passed	6/4/2010	GE180	12000	N/A				
53	147581.053	Passed	6/4/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100460 C#66343
54	147581.054	Passed	6/4/2010	GE180	12000	N/A				
55	147581.055	Passed	6/16/2010	GE180	12000	N/A				
56	147581.056	Passed	6/16/2010	GE180	12000	N/A				
57	147581.057	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100460 C#66344
58	147581.058	Passed	6/16/2010	GE180	12000	N/A				
59	147581.059	Passed	6/16/2010	GE180	12000	N/A				
60	147581.060	Passed	6/16/2010	GE180	12000	N/A				
61	147581.061	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100460 C#66345
62	147581.062	Passed	6/16/2010	GE180	12000	N/A				
63	147581.063	Passed	6/16/2010	GE180	12000	N/A				

Precision Geosynthetic Laboratories
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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 8oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
64	147581.064	Passed	6/16/2010	GE180	12000	N/A				
65	147581.065	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100460 C#66346
66	147581.066	Passed	6/16/2010	GE180	12000	N/A				
67	147581.067	Passed	6/16/2010	GE180	12000	N/A				
68	147581.068	Passed	6/16/2010	GE180	12000	N/A				
69	147581.069	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100461 C#66347
70	147581.070	Passed	6/16/2010	GE180	12000	N/A				
71	147581.071	Passed	6/16/2010	GE180	12000	N/A				
72	147581.072	Passed	6/16/2010	GE180	12000	N/A				
73	147581.073	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100461 C#66348
74	147581.074	Passed	6/16/2010	GE180	12000	N/A				
75	147581.075	Passed	6/16/2010	GE180	12000	N/A				
76	147581.076	Passed	6/16/2010	GE180	12000	N/A				
77	147581.077	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100461 C#66349
78	147581.078	Passed	6/16/2010	GE180	12000	N/A				
79	147581.079	Passed	6/16/2010	GE180	12000	N/A				
80	147581.080	Passed	6/16/2010	GE180	12000	N/A				
81	147581.081	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100461 C#66350
82	147581.082	Passed	6/16/2010	GE180	12000	N/A				
83	147581.083	Passed	6/16/2010	GE180	12000	N/A				
84	147581.084	Passed	6/16/2010	GE180	12000	N/A				

Precision Geosynthetic Laboratories
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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 8oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
85	147581.085	Passed	6/16/2010	GE180	12000	N/A				
86	147581.086	Passed	6/16/2010	GE180	12000	N/A				
87	147581.087	Passed	6/16/2010	GE180	12000	N/A				
88	147581.088	Passed	6/16/2010	GE180	12000	N/A				
89	147581.089	Passed	6/16/2010	GE180	12000	N/A	TP	4/29/2010	5/7/2010	G100461 C#66351
90	147581.090	Passed	6/16/2010	GE180	12000	N/A				
TOTAL ft^2 =		90	0		**1,080,000**			Total Tests Required =		22
								Total num of Tests =		22
								Frequency =		49,091

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 16 oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
1	14758.001	Passed	6/22/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100262 C#65374
2	14758.002	Passed	6/22/2010	GE116	5400	N/A				
3	14758.003	Passed	6/22/2010	GE116	5400	N/A				
4	14758.004	Passed	6/22/2010	GE116	5400	N/A				
5	14758.005	Passed	6/22/2010	GE116	5400	N/A				
6	14758.006	Passed	6/22/2010	GE116	5400	N/A				
7	14758.007	Passed	6/22/2010	GE116	5400	N/A				
8	14758.008	Passed	6/22/2010	GE116	5400	N/A				
9	14758.009	Passed	6/22/2010	GE116	5400	N/A				
10	14758.010	Passed	6/22/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100262 C#65375
11	14758.011	Passed	6/22/2010	GE116	5400	N/A				
12	14758.012	Passed	6/22/2010	GE116	5400	N/A				
13	14758.013	Passed	6/22/2010	GE116	5400	N/A				
14	14758.014	Passed	6/22/2010	GE116	5400	N/A				
15	14758.015	Passed	6/22/2010	GE116	5400	N/A				
16	14758.016	Passed	6/22/2010	GE116	5400	N/A				
17	14758.017	Passed	6/22/2010	GE116	5400	N/A				
18	14758.018	Passed	6/22/2010	GE116	5400	N/A				
19	14758.019	Passed	6/22/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100262 C#65376
20	14758.020	Passed	6/22/2010	GE116	5400	N/A				
21	14758.021	Passed	6/22/2010	GE116	5400	N/A				

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 16 oz Non-Woven Geotextile **SAMPLING FREQUENCY:** 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
22	14758.022	Passed	6/22/2010	GE116	5400	N/A				
23	14758.023	Passed	6/22/2010	GE116	5400	N/A				
24	14758.024	Passed	6/22/2010	GE116	5400	N/A				
25	14758.025	Passed	6/22/2010	GE116	5400	N/A				
26	14758.026	Passed	6/22/2010	GE116	5400	N/A				
27	14758.027	Passed	6/22/2010	GE116	5400	N/A				
28	14758.028	Passed	6/22/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100262 C#65377
29	14758.029	Passed	6/22/2010	GE116	5400	N/A				
30	14758.030	Passed	6/22/2010	GE116	5400	N/A				
31	14758.031	Passed	7/1/2010	GE116	5400	N/A				
32	14758.032	Passed	7/1/2010	GE116	5400	N/A				
33	14758.033	Passed	7/1/2010	GE116	5400	N/A				
34	14758.034	Passed	7/1/2010	GE116	5400	N/A				
35	14758.035	Passed	7/1/2010	GE116	5400	N/A				
36	14758.036	Passed	7/1/2010	GE116	5400	N/A				
37	14758.037	Passed	7/1/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100263 C#65378
38	14758.038	Passed	7/1/2010	GE116	5400	N/A				
39	14758.039	Passed	7/1/2010	GE116	5400	N/A				
40	14758.040	Passed	7/1/2010	GE116	5400	N/A				
41	14758.041	Passed	7/1/2010	GE116	5400	N/A				
42	14758.042	Passed	7/1/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 16 oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
43	14758.043	Passed	7/1/2010	GE116	5400	N/A				
44	14758.044	Passed	7/1/2010	GE116	5400	N/A				
45	14758.045	Passed	7/1/2010	GE116	5400	N/A				
46	14758.046	Passed	7/1/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100263 C#65379
47	14758.047	Passed	7/1/2010	GE116	5400	N/A				
48	14758.048	Passed	7/1/2010	GE116	5400	N/A				
49	14758.049	Passed	7/1/2010	GE116	5400	N/A				
50	14758.050	Passed	7/1/2010	GE116	5400	N/A				
51	14758.051	Passed	7/1/2010	GE116	5400	N/A				
52	14758.052	Passed	7/1/2010	GE116	5400	N/A				
53	14758.053	Passed	7/1/2010	GE116	5400	N/A				
54	14758.054	Passed	7/1/2010	GE116	5400	N/A				
55	14758.055	Passed	7/1/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100263 C#65380
56	14758.056	Passed	7/1/2010	GE116	5400	N/A				
57	14758.057	Passed	7/1/2010	GE116	5400	N/A				
58	14758.058	Passed	7/1/2010	GE116	5400	N/A				
59	14758.059	Passed	7/1/2010	GE116	5400	N/A				
60	14758.060	Passed	7/1/2010	GE116	5400	N/A				
61	14758.061	Passed	7/1/2010	GE116	5400	N/A				
62	14758.062	Passed	7/1/2010	GE116	5400	N/A				
63	14758.063	Passed	7/1/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 16 oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
64	14758.064	Passed	7/1/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100263 C#65381
65	14758.065	Passed	7/1/2010	GE116	5400	N/A				
66	14758.066	Passed	7/1/2010	GE116	5400	N/A				
67	14758.067	Passed	7/1/2010	GE116	5400	N/A				
68	14758.068	Passed	7/1/2010	GE116	5400	N/A				
69	14758.069	Passed	7/1/2010	GE116	5400	N/A				
70	14758.070	Passed	7/1/2010	GE116	5400	N/A				
71	14758.071	Passed	7/1/2010	GE116	5400	N/A				
72	14758.072	Passed	7/1/2010	GE116	5400	N/A				
73	14758.073	Passed	7/1/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100264 C#65382
74	14758.074	Passed	7/1/2010	GE116	5400	N/A				
75	14758.075	Passed	7/1/2010	GE116	5400	N/A				
76	14758.076	Passed	7/1/2010	GE116	5400	N/A				
77	14758.077	Passed	7/1/2010	GE116	5400	N/A				
78	14758.078	Passed	7/1/2010	GE116	5400	N/A				
79	14758.079	Passed	7/1/2010	GE116	5400	N/A				
80	14758.080	Passed	7/1/2010	GE116	5400	N/A				
81	14758.081	Passed	7/1/2010	GE116	5400	N/A				
82	14758.082	Passed	7/1/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100264 C#65383
83	14758.083	Passed	7/1/2010	GE116	5400	N/A				
84	14758.084	Passed	7/1/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 16 oz Non-Woven Geotextile **SAMPLING FREQUENCY:** 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
85	14758.085	Passed	7/1/2010	GE116	5400	N/A				
86	14758.086	Passed	7/1/2010	GE116	5400	N/A				
87	14758.087	Passed	7/1/2010	GE116	5400	N/A				
88	14758.088	Passed	7/1/2010	GE116	5400	N/A				
89	14758.089	Passed	7/1/2010	GE116	5400	N/A				
90	14758.090	Passed	7/1/2010	GE116	5400	N/A				
91	14758.091	Passed	7/1/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100264 C#65384
92	14758.092	Passed	7/1/2010	GE116	5400	N/A				
93	14758.093	Passed	7/1/2010	GE116	5400	N/A				
94	14758.094	Passed	7/1/2010	GE116	5400	N/A				
95	14758.095	Passed	7/1/2010	GE116	5400	N/A				
96	14758.096	Passed	7/1/2010	GE116	5400	N/A				
97	14758.097	Passed	6/29/2010	GE116	5400	N/A				
98	14758.098	Passed	6/29/2010	GE116	5400	N/A				
99	14758.099	Passed	6/29/2010	GE116	5400	N/A				
100	14758.100	Passed	6/29/2010	GE116	5400	N/A	TP	3/31/2010	4/7/2010	G100264 C#65385
101	14758.101	Passed	6/29/2010	GE116	5400	N/A				
102	14758.102	Passed	6/29/2010	GE116	5400	N/A				
103	14758.103	Passed	6/29/2010	GE116	5400	N/A				
104	14758.104	Passed	6/29/2010	GE116	5400	N/A				
105	14758.105	Passed	6/29/2010	GE116	5400	N/A				

Precision Geosynthetic Laboratories
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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 16 oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
106	14758.106	Passed	6/29/2010	GE116	5400	N/A				
107	14758.107	Passed	6/29/2010	GE116	5400	N/A				
108	14758.108	Passed	6/29/2010	GE116	5400	N/A				
109	14758.109	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65421
110	14758.110	Passed	6/29/2010	GE116	5400	N/A				
111	14758.111	Passed	6/29/2010	GE116	5400	N/A				
112	14758.112	Passed	6/29/2010	GE116	5400	N/A				
113	14758.113	Passed	6/29/2010	GE116	5400	N/A				
114	14758.114	Passed	6/29/2010	GE116	5400	N/A				
115	14758.115	Passed	6/29/2010	GE116	5400	N/A				
116	14758.116	Passed	6/29/2010	GE116	5400	N/A				
117	14758.117	Passed	6/29/2010	GE116	5400	N/A				
118	14758.118	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65422
119	14758.119	Passed	6/29/2010	GE116	5400	N/A				
120	14758.120	Passed	6/29/2010	GE116	5400	N/A				
121	14758.121	Passed	6/29/2010	GE116	5400	N/A				
122	14758.122	Passed	6/29/2010	GE116	5400	N/A				
123	14758.123	Passed	6/29/2010	GE116	5400	N/A				
124	14758.124	Passed	6/29/2010	GE116	5400	N/A				
125	14758.125	Passed	6/29/2010	GE116	5400	N/A				
126	14758.126	Passed	6/29/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 16 oz Non-Woven Geotextile **SAMPLING FREQUENCY:** 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
127	14758.127	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#654323
128	14758.128	Passed	6/29/2010	GE116	5400	N/A				
129	14758.129	Passed	6/29/2010	GE116	5400	N/A				
130	14758.130	Passed	6/29/2010	GE116	5400	N/A				
131	14758.131	Passed	6/29/2010	GE116	5400	N/A				
132	14758.132	Passed	6/29/2010	GE116	5400	N/A				
133	14758.133	Passed	6/29/2010	GE116	5400	N/A				
134	14758.134	Passed	6/29/2010	GE116	5400	N/A				
135	14758.135	Passed	6/29/2010	GE116	5400	N/A				
136	14758.136	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65424
137	14758.137	Passed	6/29/2010	GE116	5400	N/A				
138	14758.138	Passed	6/29/2010	GE116	5400	N/A				
139	14758.139	Passed	6/29/2010	GE116	5400	N/A				
140	14758.140	Passed	6/29/2010	GE116	5400	N/A				
141	14758.141	Passed	6/29/2010	GE116	5400	N/A				
142	14758.142	Passed	6/29/2010	GE116	5400	N/A				
143	14758.143	Passed	6/29/2010	GE116	5400	N/A				
144	14758.144	Passed	6/29/2010	GE116	5400	N/A				
145	14758.145	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65425
146	14758.146	Passed	6/29/2010	GE116	5400	N/A				
147	14758.147	Passed	6/29/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 16 oz Non-Woven Geotextile **SAMPLING FREQUENCY:** 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
148	14758.148	Passed	6/29/2010	GE116	5400	N/A				
149	14758.149	Passed	6/29/2010	GE116	5400	N/A				
150	14758.150	Passed	6/29/2010	GE116	5400	N/A				
151	14758.151	Passed	6/29/2010	GE116	5400	N/A				
152	14758.152	Passed	6/29/2010	GE116	5400	N/A				
153	14758.153	Passed	6/29/2010	GE116	5400	N/A				
154	14758.154	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65426
155	14758.155	Passed	6/29/2010	GE116	5400	N/A				
156	14758.156	Passed	6/29/2010	GE116	5400	N/A				
157	14758.157	Passed	6/29/2010	GE116	5400	N/A				
158	14758.158	Passed	6/29/2010	GE116	5400	N/A				
159	14758.159	Passed	6/29/2010	GE116	5400	N/A				
160	14758.160	Passed	6/29/2010	GE116	5400	N/A				
161	14758.161	Passed	6/29/2010	GE116	5400	N/A				
162	14758.162	Passed	6/29/2010	GE116	5400	N/A				
163	14758.163	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65427
164	14758.164	Passed	6/29/2010	GE116	5400	N/A				
165	14758.165	Passed	6/29/2010	GE116	5400	N/A				
166	14758.166	Passed	6/29/2010	GE116	5400	N/A				
167	14758.167	Passed	6/29/2010	GE116	5400	N/A				
168	14758.168	Passed	6/29/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 16 oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
169	14758.169	Passed	6/29/2010	GE116	5400	N/A				
170	14758.170	Passed	6/29/2010	GE116	5400	N/A				
171	14758.171	Passed	6/29/2010	GE116	5400	N/A				
172	14758.172	Passed	6/29/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65428
173	14758.173	Passed	6/16/2010	GE116	5400	N/A				
174	14758.174	Passed	6/16/2010	GE116	5400	N/A				
175	14758.175	Passed	6/16/2010	GE116	5400	N/A				
176	14758.176	Passed	6/16/2010	GE116	5400	N/A				
177	14758.177	Passed	6/16/2010	GE116	5400	N/A				
178	14758.178	Passed	6/16/2010	GE116	5400	N/A				
179	14758.179	Passed	6/16/2010	GE116	5400	N/A				
180	14758.180	Passed	6/16/2010	GE116	5400	N/A				
181	14758.181	Passed	6/16/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65429
182	14758.182	Passed	6/16/2010	GE116	5400	N/A				
183	14758.183	Passed	6/16/2010	GE116	5400	N/A				
184	14758.184	Passed	6/16/2010	GE116	5400	N/A				
185	14758.185	Passed	6/16/2010	GE116	5400	N/A				
186	14758.186	Passed	6/16/2010	GE116	5400	N/A				
187	14758.187	Passed	6/16/2010	GE116	5400	N/A				
188	14758.188	Passed	6/16/2010	GE116	5400	N/A				
189	14758.189	Passed	6/16/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 16 oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
190	14758.190	Passed	6/16/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65430
191	14758.191	Passed	6/16/2010	GE116	5400	N/A				
192	14758.192	Passed	6/16/2010	GE116	5400	N/A				
193	14758.193	Passed	6/16/2010	GE116	5400	N/A				
194	14758.194	Passed	6/16/2010	GE116	5400	N/A				
195	14758.195	Passed	6/16/2010	GE116	5400	N/A				
196	14758.196	Passed	6/16/2010	GE116	5400	N/A				
197	14758.197	Passed	7/1/2010	GE116	5400	N/A				
198	14758.198	Passed	7/1/2010	GE116	5400	N/A				
199	14758.199	Passed	7/1/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#65431
200	14758.200	Passed	7/1/2010	GE116	5400	N/A				
201	14758.201	Passed	7/1/2010	GE116	5400	N/A				
202	14758.202	Passed	7/1/2010	GE116	5400	N/A				
203	14758.203	Passed	7/1/2010	GE116	5400	N/A				
204	14758.204	Passed	7/1/2010	GE116	5400	N/A				
205	14758.205	Passed	7/1/2010	GE116	5400	N/A				
206	14758.206	Passed	7/1/2010	GE116	5400	N/A				
207	14758.207	Passed	7/1/2010	GE116	5400	N/A				
208	14758.208	Passed	7/1/2010	GE116	5400	N/A	TP	4/28/2010	4/9/2010	G100273 C#654323
209	14758.209	Passed	7/1/2010	GE116	5400	N/A				
210	14758.210	Passed	7/1/2010	GE116	5400	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 16 oz Non-Woven Geotextile

SAMPLING FREQUENCY: 1/50,000 sq.ft. Per Lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
211	14758.211	Passed	7/1/2010	GE116	5400	N/A				
212	14758.212	Passed	7/1/2010	GE116	5400	N/A				
213	14758.213	Passed	7/1/2010	GE116	5400	N/A				
214	14758.214	Passed	7/1/2010	GE116	5400	N/A				
215	14758.215	Passed	7/1/2010	GE116	5400	N/A				
TOTAL ft^2 =		215	215		1,161,000			Total Tests Required =		24
								Total num of Tests =		24
								Frequency =		48,375

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
1	354710001	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100311 C#65624
2	354710002	Passed	7/9/2010	TN 300-2-8	2520	N/A				
3	354710003	Passed	7/9/2010	TN 300-2-8	2520	N/A				
4	354710004	Passed	6/26/2010	TN 300-2-8	2520	N/A				
5	354710005	Passed	6/26/2010	TN 300-2-8	2520	N/A				
6	354710006	Passed	7/9/2010	TN 300-2-8	2520	N/A				
7	354710007	Passed	7/9/2010	TN 300-2-8	2520	N/A				
8	354710008	Passed	6/9/2010	TN 300-2-8	2520	N/A				
9	354710009	Passed	6/9/2010	TN 300-2-8	2520	N/A				
10	354710010	Passed	6/9/2010	TN 300-2-8	2520	N/A				
11	354710011	Passed	6/9/2010	TN 300-2-8	2520	N/A				
12	354710012	Passed	6/26/2010	TN 300-2-8	2520	N/A				
13	354710013	Passed	7/9/2010	TN 300-2-8	2520	N/A				
14	354710014	Passed	6/26/2010	TN 300-2-8	2520	N/A				
15	354710015	Passed	6/9/2010	TN 300-2-8	2520	N/A				
16	354710016	Passed	6/26/2010	TN 300-2-8	2520	N/A				
17	354710017	Passed	6/26/2010	TN 300-2-8	2520	N/A				
18	354710018	Passed	6/26/2010	TN 300-2-8	2520	N/A				
19	354710019	Passed	6/9/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100311 C#65625
20	354710020	Passed	6/22/2010	TN 300-2-8	2520	N/A				
21	354710021	Passed	6/26/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
22	354710022	Passed	6/9/2010	TN 300-2-8	2520	N/A				
23	354710023	Passed	6/26/2010	TN 300-2-8	2520	N/A				
24	354710024	Passed	6/26/2010	TN 300-2-8	2520	N/A				
25	354710025	Passed	6/26/2010	TN 300-2-8	2520	N/A				
26	354710026	Passed		TN 300-2-8	2520	N/A				
27	354710027	Passed	6/26/2010	TN 300-2-8	2520	N/A				
28	354710028	Passed	6/26/2010	TN 300-2-8	2520	N/A				
29	354710029	Passed	6/9/2010	TN 300-2-8	2520	N/A				
30	354710030	Passed	6/9/2010	TN 300-2-8	2520	N/A				
31	354710031	Passed	6/26/2010	TN 300-2-8	2520	N/A				
32	354710032	Passed	6/26/2010	TN 300-2-8	2520	N/A				
33	354710033	Passed	6/9/2010	TN 300-2-8	2520	N/A				
34	354710034	Passed	6/9/2010	TN 300-2-8	2520	N/A				
35	354710035	Passed	6/26/2010	TN 300-2-8	2520	N/A				
36	354710036	Passed	6/9/2010	TN 300-2-8	2520	N/A				
37	354710037	Passed	6/9/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100311 C#65626
38	354710038	Passed	6/9/2010	TN 300-2-8	2520	N/A				
39	354710039	Passed	6/9/2010	TN 300-2-8	2520	N/A				
40	354710040	Passed	6/9/2010	TN 300-2-8	2520	N/A				
41	354710041	Passed	6/9/2010	TN 300-2-8	2520	N/A				
42	354710042	Passed	6/9/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
43	354710043	Passed	6/9/2010	TN 300-2-8	2520	N/A				
44	354710044	Passed	6/9/2010	TN 300-2-8	2520	N/A				
45	354710045	Passed	6/9/2010	TN 300-2-8	2520	N/A				
46	354710046	Passed	6/9/2010	TN 300-2-8	2520	N/A				
47	354710047	Passed	6/9/2010	TN 300-2-8	2520	N/A				
48	354710048	Passed	6/9/2010	TN 300-2-8	2520	N/A				
49	354710049	Passed	6/9/2010	TN 300-2-8	2520	N/A				
50	354710050	Passed	6/9/2010	TN 300-2-8	2520	N/A				
51	354710051	Passed	6/9/2010	TN 300-2-8	2520	N/A				
52	354710052	Passed	6/9/2010	TN 300-2-8	2520	N/A				
53	354710053	Passed	6/9/2010	TN 300-2-8	2520	N/A				
54	354710054	Passed	6/9/2010	TN 300-2-8	2520	N/A				
55	354710055	Passed	6/9/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100311 C#65627
56	354710056	Passed	6/9/2010	TN 300-2-8	2520	N/A				
57	354710057	Passed	6/9/2010	TN 300-2-8	2520	N/A				
58	354710058	Passed	6/9/2010	TN 300-2-8	2520	N/A				
59	354710059	Passed	6/26/2010	TN 300-2-8	2520	N/A				
60	354710060	Passed	6/9/2010	TN 300-2-8	2520	N/A				
61	354710061	Passed	6/9/2010	TN 300-2-8	2520	N/A				
62	354710062	Passed	6/26/2010	TN 300-2-8	2520	N/A				
63	354710063	Passed	6/9/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN . MPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
64	354710064	Passed	6/26/2010	TN 300-2-8	2520	N/A				
65	354710065	Passed	6/9/2010	TN 300-2-8	2520	N/A				
66	354710066	Passed	6/26/2010	TN 300-2-8	2520	N/A				
67	354710067	Passed	6/26/2010	TN 300-2-8	2520	N/A				
68	354710068	Passed	6/26/2010	TN 300-2-8	2520	N/A				
69	354710069	Passed	6/26/2010	TN 300-2-8	2520	N/A				
70	354710070	Passed	6/26/2010	TN 300-2-8	2520	N/A				
71	354710071	Passed	7/9/2010	TN 300-2-8	2520	N/A				
72	354710072	Passed	7/9/2010	TN 300-2-8	2520	N/A				
73	354710073	Passed	7/9/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100312 C#65632
74	354710074	Passed	7/9/2010	TN 300-2-8	2520	N/A				
75	354710075	Passed	7/9/2010	TN 300-2-8	2520	N/A				
76	354710076	Passed	6/26/2010	TN 300-2-8	2520	N/A				
77	354710077	Passed	7/9/2010	TN 300-2-8	2520	N/A				
78	354710078	Passed	7/9/2010	TN 300-2-8	2520	N/A				
79	354710079	Passed	7/9/2010	TN 300-2-8	2520	N/A				
80	354710080	Passed	6/3/2010	TN 300-2-8	2520	N/A				
81	354710081	Passed	7/9/2010	TN 300-2-8	2520	N/A				
82	354710082	Passed	7/9/2010	TN 300-2-8	2520	N/A				
83	354710083	Passed	7/9/2010	TN 300-2-8	2520	N/A				
84	354710084	Passed	7/9/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
85	354710085	Passed	7/9/2010	TN 300-2-8	2520	N/A				
86	354710086	Passed	7/9/2010	TN 300-2-8	2520	N/A				
87	354710087	Passed	6/3/2010	TN 300-2-8	2520	N/A				
88	354710088	Passed	6/26/2010	TN 300-2-8	2520	N/A				
89	354710089	Passed	6/3/2010	TN 300-2-8	2520	N/A				
90	354710090	Passed	6/26/2010	TN 300-2-8	2520	N/A				
91	354710091	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100312 C#65633
92	354710092	Passed	6/3/2010	TN 300-2-8	2520	N/A				
93	354710093	Passed	6/3/2010	TN 300-2-8	2520	N/A				
94	354710094	Passed	6/3/2010	TN 300-2-8	2520	N/A				
95	354710095	Passed	6/3/2010	TN 300-2-8	2520	N/A				
96	354710096	Passed	6/9/2010	TN 300-2-8	2520	N/A				
97	354710097	Passed	6/26/2010	TN 300-2-8	2520	N/A				
98	354710098	Passed	6/26/2010	TN 300-2-8	2520	N/A				
99	354710099	Passed	6/9/2010	TN 300-2-8	2520	N/A				
100	354710100	Passed	6/26/2010	TN 300-2-8	2520	N/A				
101	354710101	Passed	6/26/2010	TN 300-2-8	2520	N/A				
102	354710102	Passed	6/9/2010	TN 300-2-8	2520	N/A				
103	354710103	Passed	6/26/2010	TN 300-2-8	2520	N/A				
104	354710104	Passed	7/9/2010	TN 300-2-8	2520	N/A				
105	354710105	Passed	7/9/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
106	354710106	Passed	6/26/2010	TN 300-2-8	2520	N/A				
107	354710107	Passed	6/26/2010	TN 300-2-8	2520	N/A				
108	354710108	Passed	7/9/2010	TN 300-2-8	2520	N/A				
109	354710109	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100312 C#65634
110	354710110	Passed	6/26/2010	TN 300-2-8	2520	N/A				
111	354710111	Passed		TN 300-2-8	2520	N/A				
112	354710112	Passed	6/26/2010	TN 300-2-8	2520	N/A				
113	354710113	Passed	7/9/2010	TN 300-2-8	2520	N/A				
114	354710114	Passed	6/26/2010	TN 300-2-8	2520	N/A				
115	354710115	Passed	7/9/2010	TN 300-2-8	2520	N/A				
116	354710116	Passed	7/9/2010	TN 300-2-8	2520	N/A				
117	354710117	Passed	6/9/2010	TN 300-2-8	2520	N/A				
118	354710118	Passed	7/9/2010	TN 300-2-8	2520	N/A				
119	354710119	Passed	6/22/2010	TN 300-2-8	2520	N/A				
120	354710120	Passed	6/26/2010	TN 300-2-8	2520	N/A				
121	354710121	Passed	7/9/2010	TN 300-2-8	2520	N/A				
122	354710122	Passed	6/9/2000	TN 300-2-8	2520	N/A				
123	354710123	Passed	6/9/2000	TN 300-2-8	2520	N/A				
124	354710124	Passed	6/22/2010	TN 300-2-8	2520	N/A				
125	354710125	Passed	6/9/2010	TN 300-2-8	2520	N/A				
126	354710126	Passed	7/9/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
127	354710127	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100312 C#65635
128	354710128	Passed	7/9/2010	TN 300-2-8	2520	N/A				
129	354710129	Passed	7/9/2010	TN 300-2-8	2520	N/A				
130	354710130	Passed	7/9/2010	TN 300-2-8	2520	N/A				
131	354710131	Passed	7/9/2010	TN 300-2-8	2520	N/A				
132	354710132	Passed	6/22/2010	TN 300-2-8	2520	N/A				
133	354710133	Passed	7/9/2010	TN 300-2-8	2520	N/A				
134	354710134	Passed	6/9/2010	TN 300-2-8	2520	N/A				
135	354710135	Passed	6/9/2010	TN 300-2-8	2520	N/A				
136	354710136	Passed	6/22/2010	TN 300-2-8	2520	N/A				
137	354710137	Passed	6/26/2010	TN 300-2-8	2520	N/A				
138	354710138	Passed	6/22/2010	TN 300-2-8	2520	N/A				
139	354710139	Passed	7/9/2010	TN 300-2-8	2520	N/A				
140	354710140	Passed	7/9/2010	TN 300-2-8	2520	N/A				
141	354710141	Passed	7/9/2010	TN 300-2-8	2520	N/A				
142	354710142	Passed	6/9/2010	TN 300-2-8	2520	N/A				
143	354710143	Passed	6/22/2010	TN 300-2-8	2520	N/A				
144	354710144	Passed	6/9/2010	TN 300-2-8	2520	N/A				
145	354710145	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100313 C#65640
146	354710146	Passed	6/22/2010	TN 300-2-8	2520	N/A				
147	354710147	Passed	7/9/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
148	354710148	Passed	6/22/2010	TN 300-2-8	2520	N/A				
149	354710149	Passed	6/22/2010	TN 300-2-8	2520	N/A				
150	354710150	Passed	7/9/2010	TN 300-2-8	2520	N/A				
151	354710151	Passed	6/22/2010	TN 300-2-8	2520	N/A				
152	354710152	Passed	6/9/2010	TN 300-2-8	2520	N/A				
153	354710153	Passed	6/22/2010	TN 300-2-8	2520	N/A				
154	354710154	Passed	6/9/2010	TN 300-2-8	2520	N/A				
155	354710155	Passed	6/22/2010	TN 300-2-8	2520	N/A				
156	354710156	Passed	6/22/2010	TN 300-2-8	2520	N/A				
157	354710157	Passed	7/9/2010	TN 300-2-8	2520	N/A				
158	354710158	Passed	7/9/2010	TN 300-2-8	2520	N/A				
159	354710159	Passed	7/9/2010	TN 300-2-8	2520	N/A				
160	354710160	Passed	6/22/2010	TN 300-2-8	2520	N/A				
161	354710161	Passed	7/9/2010	TN 300-2-8	2520	N/A				
162	354710162	Passed	6/9/2010	TN 300-2-8	2520	N/A				
163	354710163	Passed	6/9/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100313 C#65641
164	354710164	Passed	6/22/2010	TN 300-2-8	2520	N/A				
165	354710165	Passed	6/22/2010	TN 300-2-8	2520	N/A				
166	354710166	Passed	7/7/2010	TN 300-2-8	2520	N/A				
167	354710167	Passed	7/7/2010	TN 300-2-8	2520	N/A				
168	354710168	Passed	7/7/2010	TN 300-2-8	2520	N/A				

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Rec. 244 , DC 1972

MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
169	354710169	Passed	7/9/2010	TN 300-2-8	2520	N/A				
170	354710170	Passed	7/9/2010	TN 300-2-8	2520	N/A				
171	354710171	Passed	6/26/2010	TN 300-2-8	2520	N/A				
172	354710172	Passed	6/26/2010	TN 300-2-8	2520	N/A				
173	354710173	Passed	6/26/2010	TN 300-2-8	2520	N/A				
174	354710174	Passed	6/22/2010	TN 300-2-8	2520	N/A				
175	354710175	Passed	6/26/2010	TN 300-2-8	2520	N/A				
176	354710176	Passed	6/26/2010	TN 300-2-8	2520	N/A				
177	354710177	Passed	7/7/2010	TN 300-2-8	2520	N/A				
178	354710178	Passed	7/7/2010	TN 300-2-8	2520	N/A				
179	354710179	Passed	7/7/2010	TN 300-2-8	2520	N/A				
180	354710180	Passed	7/7/2010	TN 300-2-8	2520	N/A				
181	354710181	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100313 C#65642
182	354710182	Passed	6/3/2010	TN 300-2-8	2520	N/A				
183	354710183	Passed	6/3/2010	TN 300-2-8	2520	N/A				
184	354710184	Passed	6/3/2010	TN 300-2-8	2520	N/A				
185	354710185	Passed	7/9/2010	TN 300-2-8	2520	N/A				
186	354710186	Passed	7/9/2010	TN 300-2-8	2520	N/A				
187	354710187	Passed	6/3/2010	TN 300-2-8	2520	N/A				
188	354710188	Passed	6/3/2010	TN 300-2-8	2520	N/A				
189	354710189	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN. MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
190	354710190	Passed	6/3/2010	TN 300-2-8	2520	N/A				
191	354710191	Passed	7/9/2010	TN 300-2-8	2520	N/A				
192	354710192	Passed	7/9/2010	TN 300-2-8	2520	N/A				
193	354710193	Passed	7/9/2010	TN 300-2-8	2520	N/A				
194	354710194	Passed	7/9/2010	TN 300-2-8	2520	N/A				
195	354710195	Passed	6/26/2010	TN 300-2-8	2520	N/A				
196	354710196	Passed	6/26/2010	TN 300-2-8	2520	N/A				
197	354710197	Passed	6/26/2010	TN 300-2-8	2520	N/A				
198	354710198	Passed	6/26/2010	TN 300-2-8	2520	N/A				
199	354710199	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/9/2010	4/15/2010	G100313 C#65643
200	354710200	Passed	7/7/2010	TN 300-2-8	2520	N/A				
201	354710201	Passed	7/7/2010	TN 300-2-8	2520	N/A				
202	354710202	Passed	7/7/2010	TN 300-2-8	2520	N/A				
203	354710203	Passed	6/25/2010	TN 300-2-8	2520	N/A				
204	354710204	Passed	7/7/2010	TN 300-2-8	2520	N/A				
205	354710205	Passed	6/3/2010	TN 300-2-8	2520	N/A				
206	354710206	Passed	6/22/2010	TN 300-2-8	2520	N/A				
207	354710207	Passed	6/3/2010	TN 300-2-8	2520	N/A				
208	354710208	Passed	6/3/2010	TN 300-2-8	2520	N/A				
209	354710209	Passed	6/3/2010	TN 300-2-8	2520	N/A				
210	354710210	Passed	7/9/2010	TN 300-2-8	2520	N/A				

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1160 North Gilbert Street, Anaheim, CA 92801

Rec. 244 , DC 1972

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
211	354710211	Passed	7/9/2010	TN 300-2-8	2520	N/A				
212	354710212	Passed	6/3/2010	TN 300-2-8	2520	N/A				
213	354710213	Passed	6/26/2010	TN 300-2-8	2520	N/A				
214	354710214	Passed	7/9/2010	TN 300-2-8	2520	N/A				
215	354710215	Passed	6/26/2010	TN 300-2-8	2520	N/A				
216	354710216	Passed	6/26/2010	TN 300-2-8	2520	N/A				
217	354710217	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100361 C#65856
218	354710218	Passed	6/3/2010	TN 300-2-8	2520	N/A				
219	354710219	Passed	7/7/2010	TN 300-2-8	2520	N/A				
220	354710220	Passed	7/7/2010	TN 300-2-8	2520	N/A				
221	354710221	Passed	6/3/2010	TN 300-2-8	2520	N/A				
222	354710222	Passed	6/3/2010	TN 300-2-8	2520	N/A				
223	354710223	Passed	7/7/2010	TN 300-2-8	2520	N/A				
224	354710224	Passed		TN 300-2-8	2520	N/A				
225	354710225	Passed	7/7/2010	TN 300-2-8	2520	N/A				
226	354710226	Passed	6/25/2010	TN 300-2-8	2520	N/A				
227	354710227	Passed	7/7/2010	TN 300-2-8	2520	N/A				
228	354710228	Passed	7/7/2010	TN 300-2-8	2520	N/A				
229	354710229	Passed		TN 300-2-8	2520	N/A				
230	354710230	Passed	7/7/2010	TN 300-2-8	2520	N/A				
231	354710231	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
232	354710232	Passed	6/3/2010	TN 300-2-8	2520	N/A				
233	354710233	Passed	6/3/2010	TN 300-2-8	2520	N/A				
234	354710234	Passed	6/3/2010	TN 300-2-8	2520	N/A				
235	354710235	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100361 C#65857
236	354710236	Passed	6/3/2010	TN 300-2-8	2520	N/A				
237	354710237	Passed	6/3/2010	TN 300-2-8	2520	N/A				
238	354710238	Passed	6/3/2010	TN 300-2-8	2520	N/A				
239	354710239	Passed	7/9/2010	TN 300-2-8	2520	N/A				
240	354710240	Passed	6/3/2010	TN 300-2-8	2520	N/A				
241	354710241	Passed	7/9/2010	TN 300-2-8	2520	N/A				
242	354710242	Passed	7/9/2010	TN 300-2-8	2520	N/A				
243	354710243	Passed	7/7/2010	TN 300-2-8	2520	N/A				
244	354710244	Passed	7/9/2010	TN 300-2-8	2520	N/A				
245	354710245	Passed	6/26/2010	TN 300-2-8	2520	N/A				
246	354710246	Passed	6/26/2010	TN 300-2-8	2520	N/A				
247	354710247	Passed	6/3/2010	TN 300-2-8	2520	N/A				
248	354710248	Passed	7/7/2010	TN 300-2-8	2520	N/A				
249	354710249	Passed	6/3/2010	TN 300-2-8	2520	N/A				
250	354710250	Passed	6/3/2010	TN 300-2-8	2520	N/A				
251	354710251	Passed	6/3/2010	TN 300-2-8	2520	N/A				
252	354710252	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
253	354710253	Passed	7/9/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100361 C#65858
254	354710254	Passed	7/9/2010	TN 300-2-8	2520	N/A				
255	354710255	Passed	7/9/2010	TN 300-2-8	2520	N/A				
256	354710256	Passed	7/9/2010	TN 300-2-8	2520	N/A				
257	354710257	Passed	6/26/2010	TN 300-2-8	2520	N/A				
258	354710258	Passed	7/9/2000	TN 300-2-8	2520	N/A				
259	354710259	Passed	7/7/2010	TN 300-2-8	2520	N/A				
260	354710260	Passed	7/7/2010	TN 300-2-8	2520	N/A				
261	354710261	Passed	7/7/2010	TN 300-2-8	2520	N/A				
262	354710262	Passed	7/7/2010	TN 300-2-8	2520	N/A				
263	354710263	Passed	7/7/2010	TN 300-2-8	2520	N/A				
264	354710264	Passed	6/3/2010	TN 300-2-8	2520	N/A				
265	354710265	Passed	6/3/2010	TN 300-2-8	2520	N/A				
266	354710266	Passed	6/3/2010	TN 300-2-8	2520	N/A				
267	354710267	Passed	6/3/2010	TN 300-2-8	2520	N/A				
268	354710268	Passed	6/3/2010	TN 300-2-8	2520	N/A				
269	354710269	Passed	6/3/2010	TN 300-2-8	2520	N/A				
270	354710270	Passed	8/9/2010	TN 300-2-8	2520	N/A				
271	354710271	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100361 C#65859
272	354710272	Passed	7/9/2010	TN 300-2-8	2520	N/A				
273	354710273	Passed	7/7/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
274	354710274	Passed	7/7/2010	TN 300-2-8	2520	N/A				
275	354710275	Passed	7/9/2010	TN 300-2-8	2520	N/A				
276	354710276	Passed	6/25/2010	TN 300-2-8	2520	N/A				
277	354710277	Passed	6/3/2010	TN 300-2-8	2520	N/A				
278	354710278	Passed	7/7/2010	TN 300-2-8	2520	N/A				
279	354710279	Passed	6/22/2010	TN 300-2-8	2520	N/A				
280	354710280	Passed	6/3/2010	TN 300-2-8	2520	N/A				
281	354710281	Passed	7/7/2010	TN 300-2-8	2520	N/A				
282	354710282	Passed	6/3/2010	TN 300-2-8	2520	N/A				
283	354710283	Passed	6/3/2010	TN 300-2-8	2520	N/A				
284	354710284	Passed	6/3/2010	TN 300-2-8	2520	N/A				
285	354710285	Passed	6/3/2010	TN 300-2-8	2520	N/A				
286	354710286	Passed	6/3/2010	TN 300-2-8	2520	N/A				
287	354710287	Passed	6/3/2010	TN 300-2-8	2520	N/A				
288	354710288	Passed	6/3/2010	TN 300-2-8	2520	N/A				
289	354710289	Passed	7/7/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100362 C#65864
290	354710290	Passed	6/3/2010	TN 300-2-8	2520	N/A				
291	354710291	Passed	7/7/2010	TN 300-2-8	2520	N/A				
292	354710292	Passed	6/3/2010	TN 300-2-8	2520	N/A				
293	354710293	Passed	6/3/2010	TN 300-2-8	2520	N/A				
294	354710294	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
295	354710295	Passed	6/3/2010	TN 300-2-8	2520	N/A				
296	354710296	Passed	6/3/2010	TN 300-2-8	2520	N/A				
297	354710297	Passed	6/3/2010	TN 300-2-8	2520	N/A				
298	354710298	Passed	7/7/2010	TN 300-2-8	2520	N/A				
299	354710299	Passed	6/3/2010	TN 300-2-8	2520	N/A				
300	354710300	Passed	6/3/2010	TN 300-2-8	2520	N/A				
301	354710301	Passed	7/7/2010	TN 300-2-8	2520	N/A				
302	354710302	Passed	7/7/2010	TN 300-2-8	2520	N/A				
303	354710303	Passed	7/7/2010	TN 300-2-8	2520	N/A				
304	354710304	Passed	6/3/2010	TN 300-2-8	2520	N/A				
305	354710305	Passed	6/3/2010	TN 300-2-8	2520	N/A				
306	354710306	Passed	6/3/2010	TN 300-2-8	2520	N/A				
307	354710307	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100362 C#65865
308	354710308	Passed	7/7/2010	TN 300-2-8	2520	N/A				
309	354710309	Passed	6/3/2010	TN 300-2-8	2520	N/A				
310	354710310	Passed	6/3/2010	TN 300-2-8	2520	N/A				
311	354710311	Passed	6/3/2010	TN 300-2-8	2520	N/A				
312	354710312	Passed		TN 300-2-8	2520	N/A				
313	354710313	Passed	6/3/2010	TN 300-2-8	2520	N/A				
314	354710314	Passed	6/3/2010	TN 300-2-8	2520	N/A				
315	354710315	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
316	354710316	Passed	7/9/2010	TN 300-2-8	2520	N/A				
317	354710317	Passed	7/9/2010	TN 300-2-8	2520	N/A				
318	354710318	Passed	7/9/2010	TN 300-2-8	2520	N/A				
319	354710319	Passed	7/9/2010	TN 300-2-8	2520	N/A				
320	354710320	Passed	7/9/2010	TN 300-2-8	2520	N/A				
321	354710321	Passed	7/9/2010	TN 300-2-8	2520	N/A				
322	354710322	Passed	7/9/2010	TN 300-2-8	2520	N/A				
323	354710323	Passed	7/9/2010	TN 300-2-8	2520	N/A				
324	354710324	Passed	7/9/2010	TN 300-2-8	2520	N/A				
325	354710325	Passed	7/9/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100362 C#65866
326	354710326	Passed	7/9/2010	TN 300-2-8	2520	N/A				
327	354710327	Passed	6/22/2010	TN 300-2-8	2520	N/A				
328	354710328	Passed	7/9/2010	TN 300-2-8	2520	N/A				
329	354710329	Passed	6/22/2010	TN 300-2-8	2520	N/A				
330	354710330	Passed	7/9/2010	TN 300-2-8	2520	N/A				
331	354710331	Passed	7/9/2010	TN 300-2-8	2520	N/A				
332	354710332	Passed	7/9/2010	TN 300-2-8	2520	N/A				
333	354710333	Passed	7/9/2010	TN 300-2-8	2520	N/A				
334	354710334	Passed	7/9/2010	TN 300-2-8	2520	N/A				
335	354710335	Passed	7/9/2010	TN 300-2-8	2520	N/A				
336	354710336	Passed	7/9/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
337	354710337	Passed	7/9/2010	TN 300-2-8	2520	N/A				
338	354710338	Passed	7/9/2010	TN 300-2-8	2520	N/A				
339	354710339	Passed	6/22/2010	TN 300-2-8	2520	N/A				
340	354710340	Passed	7/9/2010	TN 300-2-8	2520	N/A				
341	354710341	Passed	7/9/2010	TN 300-2-8	2520	N/A				
342	354710342	Passed	7/9/2010	TN 300-2-8	2520	N/A				
343	354710343	Passed	7/9/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100362 C#65867
344	354710344	Passed	7/9/2010	TN 300-2-8	2520	N/A				
345	354710345	Passed	6/22/2010	TN 300-2-8	2520	N/A				
346	354710346	Passed	7/9/2010	TN 300-2-8	2520	N/A				
347	354710347	Passed	6/3/2010	TN 300-2-8	2520	N/A				
348	354710348	Passed	6/3/2010	TN 300-2-8	2520	N/A				
349	354710349	Passed	6/3/2010	TN 300-2-8	2520	N/A				
350	354710350	Passed	6/3/2010	TN 300-2-8	2520	N/A				
351	354710351	Passed	6/3/2010	TN 300-2-8	2520	N/A				
352	354710352	Passed	6/3/2010	TN 300-2-8	2520	N/A				
353	354710353	Passed	6/3/2010	TN 300-2-8	2520	N/A				
354	354710354	Passed	6/3/2010	TN 300-2-8	2520	N/A				
355	354710355	Passed	6/3/2010	TN 300-2-8	2520	N/A				
356	354710356	Passed	6/3/2010	TN 300-2-8	2520	N/A				
357	354710357	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
358	354710358	Passed	6/3/2010	TN 300-2-8	2520	N/A				
359	354710359	Passed	6/3/2010	TN 300-2-8	2520	N/A				
360	354710360	Passed	6/3/2010	TN 300-2-8	2520	N/A				
361	354710361	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100363 C#65872
362	354710362	Passed	6/2/2010	TN 300-2-8	2520	N/A				
363	354710363	Passed	6/3/2010	TN 300-2-8	2520	N/A				
364	354710364	Passed	6/3/2010	TN 300-2-8	2520	N/A				
365	354710365	Passed	6/3/2010	TN 300-2-8	2520	N/A				
366	354710366	Passed	6/3/2010	TN 300-2-8	2520	N/A				
367	354710367	Passed	6/3/2010	TN 300-2-8	2520	N/A				
368	354710368	Passed	6/3/2010	TN 300-2-8	2520	N/A				
369	354710369	Passed	6/3/2010	TN 300-2-8	2520	N/A				
370	354710370	Passed	6/3/2010	TN 300-2-8	2520	N/A				
371	354710371	Passed	6/3/2010	TN 300-2-8	2520	N/A				
372	354710372	Passed	6/3/2010	TN 300-2-8	2520	N/A				
373	354710373	Passed	6/3/2010	TN 300-2-8	2520	N/A				
374	354710374	Passed	6/3/2010	TN 300-2-8	2520	N/A				
375	354710375	Passed	6/3/2010	TN 300-2-8	2520	N/A				
376	354710376	Passed	6/3/2010	TN 300-2-8	2520	N/A				
377	354710377	Passed	6/3/2010	TN 300-2-8	2520	N/A				
378	354710378	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
379	354710379	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100363 C#65873
380	354710380	Passed	6/3/2010	TN 300-2-8	2520	N/A				
381	354710381	Passed	6/3/2010	TN 300-2-8	2520	N/A				
382	354710382	Passed	6/3/2010	TN 300-2-8	2520	N/A				
383	354710383	Passed	6/3/2010	TN 300-2-8	2520	N/A				
384	354710384	Passed	6/3/2010	TN 300-2-8	2520	N/A				
385	354710385	Passed	6/3/2010	TN 300-2-8	2520	N/A				
386	354710386	Passed	6/3/2010	TN 300-2-8	2520	N/A				
387	354710387	Passed	6/3/2010	TN 300-2-8	2520	N/A				
388	354710388	Passed	6/3/2010	TN 300-2-8	2520	N/A				
389	354710389	Passed	6/3/2010	TN 300-2-8	2520	N/A				
390	354710390	Passed	6/3/2010	TN 300-2-8	2520	N/A				
391	354710391	Passed	6/3/2010	TN 300-2-8	2520	N/A				
392	354710392	Passed		TN 300-2-8	2520	N/A				
393	354710393	Passed	7/7/2010	TN 300-2-8	2520	N/A				
394	354710394	Passed	7/7/2010	TN 300-2-8	2520	N/A				
395	354710395	Passed	7/7/2010	TN 300-2-8	2520	N/A				
396	354710396	Passed	7/7/2010	TN 300-2-8	2520	N/A				
397	354710397	Passed	7/7/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100363 C#65874
398	354710398	Passed	6/3/2010	TN 300-2-8	2520	N/A				
399	354710399	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
400	354710400	Passed	6/3/2010	TN 300-2-8	2520	N/A				
401	354710401	Passed	6/3/2010	TN 300-2-8	2520	N/A				
402	354710402	Passed	6/3/2010	TN 300-2-8	2520	N/A				
403	354710403	Passed	7/7/2010	TN 300-2-8	2520	N/A				
404	354710404	Passed	7/7/2010	TN 300-2-8	2520	N/A				
405	354710405	Passed		TN 300-2-8	2520	N/A				
406	354710406	Passed	6/3/2010	TN 300-2-8	2520	N/A				
407	354710407	Passed	7/7/2010	TN 300-2-8	2520	N/A				
408	354710408	Passed	7/7/2010	TN 300-2-8	2520	N/A				
409	354710409	Passed	7/7/2010	TN 300-2-8	2520	N/A				
410	354710410	Passed	7/7/2010	TN 300-2-8	2520	N/A				
411	354710411	Passed	7/7/2010	TN 300-2-8	2520	N/A				
412	354710412	Passed	7/7/2010	TN 300-2-8	2520	N/A				
413	354710413	Passed	7/7/2010	TN 300-2-8	2520	N/A				
414	354710414	Passed	7/7/2010	TN 300-2-8	2520	N/A				
415	354710415	Passed	7/7/2010	TN 300-2-8	2520	N/A	TP	4/16/2010	4/22/2010	G100363 C#65875
416	354710416	Passed	7/7/2010	TN 300-2-8	2520	N/A				
417	354710417	Passed	7/7/2010	TN 300-2-8	2520	N/A				
418	354710418	Passed	6/26/2010	TN 300-2-8	2520	N/A				
419	354710419	Passed	6/26/2010	TN 300-2-8	2520	N/A				
420	354710420	Passed	6/9/2010	TN 300-2-8	2520	N/A				

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1160 North Gilbert Street, Anaheim, CA 92801

Rec. 244 , DC 1972

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
421	354710421	Passed	6/26/2010	TN 300-2-8	2520	N/A				
422	354710422	Passed	6/26/2010	TN 300-2-8	2520	N/A				
423	354710423	Passed	6/26/2010	TN 300-2-8	2520	N/A				
424	354710424	Passed	6/26/2010	TN 300-2-8	2520	N/A				
425	354710425	Passed	6/26/2010	TN 300-2-8	2520	N/A				
426	354710426	Passed	6/26/2010	TN 300-2-8	2520	N/A				
427	354710427	Passed	6/26/2010	TN 300-2-8	2520	N/A				
428	354710428	Passed	6/26/2010	TN 300-2-8	2520	N/A				
429	354710429	Passed	6/26/2010	TN 300-2-8	2520	N/A				
430	354710430	Passed	7/9/2010	TN 300-2-8	2520	N/A				
431	354710431	Passed	6/9/2010	TN 300-2-8	2520	N/A				
432	354710432	Passed	6/26/2010	TN 300-2-8	2520	N/A				
433	354710433	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100415 C#66055
434	354710434	Passed	6/26/2010	TN 300-2-8	2520	N/A				
435	354710435	Passed	6/26/2010	TN 300-2-8	2520	N/A				
436	354710436	Passed	6/9/2010	TN 300-2-8	2520	N/A				
437	354710437	Passed	6/26/2010	TN 300-2-8	2520	N/A				
438	354710438	Passed	7/9/2010	TN 300-2-8	2520	N/A				
439	354710439	Passed	6/26/2010	TN 300-2-8	2520	N/A				
440	354710440	Passed	9/9/2010	TN 300-2-8	2520	N/A				
441	354710441	Passed	6/26/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN . MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
442	354710442	Passed	6/26/2010	TN 300-2-8	2520	N/A				
443	354710443	Passed	6/26/2010	TN 300-2-8	2520	N/A				
444	354710444	Passed	7/9/2010	TN 300-2-8	2520	N/A				
445	354710445	Passed	7/9/2010	TN 300-2-8	2520	N/A				
446	354710446	Passed		TN 300-2-8	2520	N/A				
447	354710447	Passed	6/25/2010	TN 300-2-8	2520	N/A				
448	354710448	Passed	6/26/2010	TN 300-2-8	2520	N/A				
449	354710449	Passed	6/26/2010	TN 300-2-8	2520	N/A				
450	354710450	Passed	7/9/2010	TN 300-2-8	2520	N/A				
451	354710451	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100415 C#66056
452	354710452	Passed	7/9/2010	TN 300-2-8	2520	N/A				
453	354710453	Passed	6/26/2010	TN 300-2-8	2520	N/A				
454	354710454	Passed	6/3/2010	TN 300-2-8	2520	N/A				
455	354710455	Passed	6/3/2010	TN 300-2-8	2520	N/A				
456	354710456	Passed	6/3/2010	TN 300-2-8	2520	N/A				
457	354710457	Passed	6/3/2010	TN 300-2-8	2520	N/A				
458	354710458	Passed	6/3/2010	TN 300-2-8	2520	N/A				
459	354710459	Passed	6/3/2010	TN 300-2-8	2520	N/A				
460	354710460	Passed	6/3/2010	TN 300-2-8	2520	N/A				
461	354710461	Passed	6/3/2010	TN 300-2-8	2520	N/A				
462	354710462	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
463	354710463	Passed	6/3/2010	TN 300-2-8	2520	N/A				
464	354710464	Passed	6/3/2010	TN 300-2-8	2520	N/A				
465	354710465	Passed	6/3/2010	TN 300-2-8	2520	N/A				
466	354710466	Passed	6/3/2010	TN 300-2-8	2520	N/A				
467	354710467	Passed	6/3/2010	TN 300-2-8	2520	N/A				
468	354710468	Passed	6/3/2010	TN 300-2-8	2520	N/A				
469	354710469	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100415 C#66057
470	354710470	Passed	6/3/2010	TN 300-2-8	2520	N/A				
471	354710471	Passed	6/3/2010	TN 300-2-8	2520	N/A				
472	354710472	Passed	6/3/2010	TN 300-2-8	2520	N/A				
473	354710473	Passed	6/3/2010	TN 300-2-8	2520	N/A				
474	354710474	Passed	6/3/2010	TN 300-2-8	2520	N/A				
475	354710475	Passed	6/3/2010	TN 300-2-8	2520	N/A				
476	354710476	Passed	6/3/2010	TN 300-2-8	2520	N/A				
477	354710477	Passed	6/3/2010	TN 300-2-8	2520	N/A				
478	354710478	Passed	6/3/2010	TN 300-2-8	2520	N/A				
479	354710479	Passed	6/3/2010	TN 300-2-8	2520	N/A				
480	354710480	Passed	6/3/2010	TN 300-2-8	2520	N/A				
481	354710481	Passed	6/3/2010	TN 300-2-8	2520	N/A				
482	354710482	Passed	6/3/2010	TN 300-2-8	2520	N/A				
483	354710483	Passed	6/3/2010	TN 300-2-8	2520	N/A				

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1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
484	354710484	Passed		TN 300-2-8	2520	N/A				
485	354710485	Passed	6/3/2010	TN 300-2-8	2520	N/A				
486	354710486	Passed	6/3/2010	TN 300-2-8	2520	N/A				
487	354710487	Passed	6/3/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100415 C#66058
488	354710488	Passed	6/3/2010	TN 300-2-8	2520	N/A				
489	354710489	Passed	6/3/2010	TN 300-2-8	2520	N/A				
490	354710490	Passed	6/3/2010	TN 300-2-8	2520	N/A				
491	354710491	Passed		TN 300-2-8	2520	N/A				
492	354710492	Passed	6/26/2010	TN 300-2-8	2520	N/A				
493	354710493	Passed	6/26/2010	TN 300-2-8	2520	N/A				
494	354710494	Passed	6/26/2010	TN 300-2-8	2520	N/A				
495	354710495	Passed	6/26/2010	TN 300-2-8	2520	N/A				
496	354710496	Passed	6/26/2010	TN 300-2-8	2520	N/A				
497	354710497	Passed	6/26/2010	TN 300-2-8	2520	N/A				
498	354710498	Passed	6/26/2010	TN 300-2-8	2520	N/A				
499	354710499	Passed	6/26/2010	TN 300-2-8	2520	N/A				
500	354710500	Passed	6/26/2010	TN 300-2-8	2520	N/A				
501	354710501	Passed	6/26/2010	TN 300-2-8	2520	N/A				
502	354710502	Passed	6/26/2010	TN 300-2-8	2520	N/A				
503	354710503	Passed	6/26/2010	TN 300-2-8	2520	N/A				
504	354710504	Passed	6/26/2010	TN 300-2-8	2520	N/A				

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
505	354710505	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100416 C#66059 In Progress
506	354710506	Passed	6/26/2010	TN 300-2-8	2520	N/A				
507	354710507	Passed	6/26/2010	TN 300-2-8	2520	N/A				
508	354710508	Passed	6/26/2010	TN 300-2-8	2520	N/A				
509	354710509	Passed	6/26/2010	TN 300-2-8	2520	N/A				
510	354710510	Passed	6/26/2010	TN 300-2-8	2520	N/A				
511	354710511	Passed	6/26/2010	TN 300-2-8	2520	N/A				
512	354710512	Passed	6/26/2010	TN 300-2-8	2520	N/A				
513	354710513	Passed	6/26/2010	TN 300-2-8	2520	N/A				
514	354710514	Passed	6/26/2010	TN 300-2-8	2520	N/A				
515	354710515	Passed	6/26/2010	TN 300-2-8	2520	N/A				
516	354710516	Passed	6/26/2010	TN 300-2-8	2520	N/A				
517	354710517	Passed	6/26/2010	TN 300-2-8	2520	N/A				
518	354710518	Passed	6/26/2010	TN 300-2-8	2520	N/A				
519	354710519	Passed	6/26/2010	TN 300-2-8	2520	N/A				
520	354710520	Passed	6/26/2010	TN 300-2-8	2520	N/A				
521	354710521	Passed	6/26/2010	TN 300-2-8	2520	N/A				
522	354710522	Passed	6/26/2010	TN 300-2-8	2520	N/A				
523	354710523	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100416 C#66060 In Progress
524	354710524	Passed	6/26/2010	TN 300-2-8	2520	N/A				

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
525	354710525	Passed	6/26/2010	TN 300-2-8	2520	N/A				
526	354710526	Passed	6/26/2010	TN 300-2-8	2520	N/A				
527	354710527	Passed	6/26/2010	TN 300-2-8	2520	N/A				
528	354710528	Passed	6/26/2010	TN 300-2-8	2520	N/A				
529	354710529	Passed	6/26/2010	TN 300-2-8	2520	N/A				
530	354710530	Passed	6/26/2010	TN 300-2-8	2520	N/A				
531	354710531	Passed	6/26/2010	TN 300-2-8	2520	N/A				
532	354710532	Passed	6/26/2010	TN 300-2-8	2520	N/A				
533	354710533	Passed	6/26/2010	TN 300-2-8	2520	N/A				
534	354710534	Passed	6/26/2010	TN 300-2-8	2520	N/A				
535	354710535	Passed	6/26/2010	TN 300-2-8	2520	N/A				
536	354710536	Passed	6/26/2010	TN 300-2-8	2520	N/A				
537	354710537	Passed	6/26/2010	TN 300-2-8	2520	N/A				
538	354710538	Passed	6/26/2010	TN 300-2-8	2520	N/A				
539	354710539	Passed	6/26/2010	TN 300-2-8	2520	N/A				
540	354710540	Passed	6/26/2010	TN 300-2-8	2520	N/A				
541	354710541	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100416 C#66061 In Progress
542	354710542	Passed	6/26/2010	TN 300-2-8	2520	N/A				
543	354710543	Passed	6/26/2010	TN 300-2-8	2520	N/A				
544	354710544	Passed	6/26/2010	TN 300-2-8	2520	N/A				

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
545	354710545	Passed	6/26/2010	TN 300-2-8	2520	N/A				
546	354710546	Passed	6/26/2010	TN 300-2-8	2520	N/A				
547	354710547	Passed	6/26/2010	TN 300-2-8	2520	N/A				
548	354710548	Passed	6/26/2010	TN 300-2-8	2520	N/A				
549	354710549	Passed	6/26/2010	TN 300-2-8	2520	N/A				
550	354710550	Passed	8/9/2010	TN 300-2-8	2520	N/A				
551	354710551	Passed	6/26/2010	TN 300-2-8	2520	N/A				
552	354710552	Passed	6/26/2010	TN 300-2-8	2520	N/A				
553	354710553	Passed	6/26/2010	TN 300-2-8	2520	N/A				
554	354710554	Passed	6/26/2010	TN 300-2-8	2520	N/A				
555	354710555	Passed	6/26/2010	TN 300-2-8	2520	N/A				
556	354710556	Passed	6/26/2010	TN 300-2-8	2520	N/A				
557	354710557	Passed	6/26/2010	TN 300-2-8	2520	N/A				
558	354710558	Passed	6/26/2010	TN 300-2-8	2520	N/A				
559	354710559	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100416 C#66062 In Progress
560	354710560	Passed	6/26/2010	TN 300-2-8	2520	N/A				
561	354710561	Passed	6/26/2010	TN 300-2-8	2520	N/A				
562	354710562	Passed	6/26/2010	TN 300-2-8	2520	N/A				
563	354710563	Passed	6/26/2010	TN 300-2-8	2520	N/A				
564	354710564	Passed	6/26/2010	TN 300-2-8	2520	N/A				

Precision Geosynthetic Laboratories
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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
565	354710565	Passed	6/26/2010	TN 300-2-8	2520	N/A				
566	354710566	Passed	6/26/2010	TN 300-2-8	2520	N/A				
567	354710567	Passed	6/26/2010	TN 300-2-8	2520	N/A				
568	354710568	Passed	6/26/2010	TN 300-2-8	2520	N/A				
569	354710569	Passed	6/26/2010	TN 300-2-8	2520	N/A				
570	354710570	Passed	6/26/2010	TN 300-2-8	2520	N/A				
571	354710571	Passed	6/26/2010	TN 300-2-8	2520	N/A				
572	354710572	Passed	6/26/2010	TN 300-2-8	2520	N/A				
573	354710573	Passed	6/26/2010	TN 300-2-8	2520	N/A				
574	354710574	Passed	6/26/2010	TN 300-2-8	2520	N/A				
575	354710575	Passed	6/26/2010	TN 300-2-8	2520	N/A				
576	354710576	Passed	6/26/2010	TN 300-2-8	2520	N/A				
577	354710577	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100417 C#66063
578	354710578	Passed	6/26/2010	TN 300-2-8	2520	N/A				
579	354710579	Passed	6/26/2010	TN 300-2-8	2520	N/A				
580	354710580	Passed	6/26/2010	TN 300-2-8	2520	N/A				
581	354710581	Passed	6/26/2010	TN 300-2-8	2520	N/A				
582	354710582	Passed	6/26/2010	TN 300-2-8	2520	N/A				
583	354710583	Passed	6/26/2010	TN 300-2-8	2520	N/A				
584	354710584	Passed	6/26/2010	TN 300-2-8	2520	N/A				
585	354710585	Passed	6/26/2010	TN 300-2-8	2520	N/A				

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1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
586	354710586	Passed	6/26/2010	TN 300-2-8	2520	N/A				
587	354710587	Passed	6/26/2010	TN 300-2-8	2520	N/A				
588	354710588	Passed	6/26/2010	TN 300-2-8	2520	N/A				
589	354710589	Passed	6/26/2010	TN 300-2-8	2520	N/A				
590	354710590	Passed	6/26/2010	TN 300-2-8	2520	N/A				
591	354710591	Passed	6/26/2010	TN 300-2-8	2520	N/A				
592	354710592	Passed	6/26/2010	TN 300-2-8	2520	N/A				
593	354710593	Passed	6/26/2010	TN 300-2-8	2520	N/A				
594	354710594	Passed	6/26/2010	TN 300-2-8	2520	N/A				
595	354710595	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100417 C#66064
596	354710596	Passed	6/26/2010	TN 300-2-8	2520	N/A				
597	354710597	Passed	6/26/2010	TN 300-2-8	2520	N/A				
598	354710598	Passed	6/26/2010	TN 300-2-8	2520	N/A				
599	354710599	Passed	8/9/2010	TN 300-2-8	2520	N/A				
600	354710600	Passed	6/26/2010	TN 300-2-8	2520	N/A				
601	354710601	Passed	6/26/2010	TN 300-2-8	2520	N/A				
602	354710602	Passed	6/26/2010	TN 300-2-8	2520	N/A				
603	354710603	Passed	6/26/2010	TN 300-2-8	2520	N/A				
604	354710604	Passed	6/26/2010	TN 300-2-8	2520	N/A				
605	354710605	Passed	6/26/2010	TN 300-2-8	2520	N/A				
606	354710606	Passed	6/26/2010	TN 300-2-8	2520	N/A				
607	354710607	Passed	6/26/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
608	354710608	Passed	6/26/2010	TN 300-2-8	2520	N/A				
609	354710609	Passed	6/26/2010	TN 300-2-8	2520	N/A				
610	354710610	Passed	6/26/2010	TN 300-2-8	2520	N/A				
611	354710611	Passed	6/26/2010	TN 300-2-8	2520	N/A				
612	354710612	Passed	6/26/2010	TN 300-2-8	2520	N/A				
613	354710613	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100417 C#66065
614	354710614	Passed	6/26/2010	TN 300-2-8	2520	N/A				
615	354710615	Passed	6/26/2010	TN 300-2-8	2520	N/A				
616	354710616	Passed	6/26/2010	TN 300-2-8	2520	N/A				
617	354710617	Passed	6/26/2010	TN 300-2-8	2520	N/A				
618	354710618	Passed	6/26/2010	TN 300-2-8	2520	N/A				
619	354710619	Passed	6/26/2010	TN 300-2-8	2520	N/A				
620	354710620	Passed	6/26/2010	TN 300-2-8	2520	N/A				
621	354710621	Passed	6/26/2010	TN 300-2-8	2520	N/A				
622	354710622	Passed	6/26/2010	TN 300-2-8	2520	N/A				
623	354710623	Passed	6/26/2010	TN 300-2-8	2520	N/A				
624	354710624	Passed	6/26/2010	TN 300-2-8	2520	N/A				
625	354710625	Passed	6/26/2010	TN 300-2-8	2520	N/A				
626	354710626	Passed	6/26/2010	TN 300-2-8	2520	N/A				
627	354710627	Passed	6/22/2010	TN 300-2-8	2520	N/A				
628	354710628	Passed	6/22/2010	TN 300-2-8	2520	N/A				
629	354710629	Passed	6/22/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
630	354710630	Passed	6/22/2010	TN 300-2-8	2520	N/A				
631	354710631	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/23/2010	4/30/2010	G100417 C#66066
632	354710632	Passed	6/22/2010	TN 300-2-8	2520	N/A				
633	354710633	Passed	6/22/2010	TN 300-2-8	2520	N/A				
634	354710634	Passed	6/22/2010	TN 300-2-8	2520	N/A				
635	354710635	Passed	6/22/2010	TN 300-2-8	2520	N/A				
636	354710636	Passed	6/22/2010	TN 300-2-8	2520	N/A				
637	354710637	Passed	6/22/2010	TN 300-2-8	2520	N/A				
638	354710638	Passed	6/22/2010	TN 300-2-8	2520	N/A				
639	354710639	Passed	6/22/2010	TN 300-2-8	2520	N/A				
640	354710640	Passed	6/22/2010	TN 300-2-8	2520	N/A				
641	354710641	Passed	6/22/2010	TN 300-2-8	2520	N/A				
642	354710642	Passed	6/22/2010	TN 300-2-8	2520	N/A				
643	354710643	Passed	6/22/2010	TN 300-2-8	2520	N/A				
644	354710644	Passed	6/22/2010	TN 300-2-8	2520	N/A				
645	354710645	Passed	6/22/2010	TN 300-2-8	2520	N/A				
646	354710646	Passed	6/22/2010	TN 300-2-8	2520	N/A				
647	354710647	Passed	6/22/2010	TN 300-2-8	2520	N/A				
648	354710648	Passed	6/22/2010	TN 300-2-8	2520	N/A				
649	354710649	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100434 C#66166
650	354710650	Passed	6/22/2010	TN 300-2-8	2520	N/A				
651	354710651	Passed	6/22/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
652	354710652	Passed	6/22/2010	TN 300-2-8	2520	N/A				
653	354710653	Passed	6/22/2010	TN 300-2-8	2520	N/A				
654	354710654	Passed	6/26/2010	TN 300-2-8	2520	N/A				
655	354710655	Passed	6/26/2010	TN 300-2-8	2520	N/A				
656	354710656	Passed	6/26/2010	TN 300-2-8	2520	N/A				
657	354710657	Passed	6/26/2010	TN 300-2-8	2520	N/A				
658	354710658	Passed	6/26/2010	TN 300-2-8	2520	N/A				
659	354710659	Passed	6/26/2010	TN 300-2-8	2520	N/A				
660	354710660	Passed	6/26/2010	TN 300-2-8	2520	N/A				
661	354710661	Passed	6/26/2010	TN 300-2-8	2520	N/A				
662	354710662	Passed	6/26/2010	TN 300-2-8	2520	N/A				
663	354710663	Passed	6/26/2010	TN 300-2-8	2520	N/A				
664	354710664	Passed	6/26/2010	TN 300-2-8	2520	N/A				
665	354710665	Passed	6/26/2010	TN 300-2-8	2520	N/A				
666	354710666	Passed	6/26/2010	TN 300-2-8	2520	N/A				
667	354710667	Passed	6/26/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100434 C#66167
668	354710668	Passed	6/26/2010	TN 300-2-8	2520	N/A				
669	354710669	Passed	6/26/2010	TN 300-2-8	2520	N/A				
670	354710670	Passed	6/26/2010	TN 300-2-8	2520	N/A				
671	354710671	Passed	6/26/2010	TN 300-2-8	2520	N/A				
672	354710672	Passed	6/26/2010	TN 300-2-8	2520	N/A				
673	354710673	Passed	6/26/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
674	354710674	Passed	6/26/2010	TN 300-2-8	2520	N/A				
675	354710675	Passed	6/26/2010	TN 300-2-8	2520	N/A				
676	354710676	Passed	6/26/2010	TN 300-2-8	2520	N/A				
677	354710677	Passed	6/26/2010	TN 300-2-8	2520	N/A				
678	354710678	Passed	6/26/2010	TN 300-2-8	2520	N/A				
679	354710679	Passed	6/26/2010	TN 300-2-8	2520	N/A				
680	354710680	Passed	6/26/2010	TN 300-2-8	2520	N/A				
681	354710681	Passed	6/22/2010	TN 300-2-8	2520	N/A				
682	354710682	Passed	6/22/2010	TN 300-2-8	2520	N/A				
683	354710683	Passed	6/22/2010	TN 300-2-8	2520	N/A				
684	354710684	Passed	6/22/2010	TN 300-2-8	2520	N/A				
685	354710685	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100434 C#66168
686	354710686	Passed	6/22/2010	TN 300-2-8	2520	N/A				
687	354710687	Passed	6/22/2010	TN 300-2-8	2520	N/A				
688	354710688	Passed	6/22/2010	TN 300-2-8	2520	N/A				
689	354710689	Passed	6/22/2010	TN 300-2-8	2520	N/A				
690	354710690	Passed	6/22/2010	TN 300-2-8	2520	N/A				
691	354710691	Passed	6/22/2010	TN 300-2-8	2520	N/A				
692	354710692	Passed	6/22/2010	TN 300-2-8	2520	N/A				
693	354710693	Passed	6/22/2010	TN 300-2-8	2520	N/A				
694	354710694	Passed	6/22/2010	TN 300-2-8	2520	N/A				
695	354710695	Passed	6/22/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
696	354710696	Passed	6/22/2010	TN 300-2-8	2520	N/A				
697	354710697	Passed	6/22/2010	TN 300-2-8	2520	N/A				
698	354710698	Passed	6/22/2010	TN 300-2-8	2520	N/A				
699	354710699	Passed	6/22/2010	TN 300-2-8	2520	N/A				
700	354710700	Passed	6/22/2010	TN 300-2-8	2520	N/A				
701	354710701	Passed	6/22/2010	TN 300-2-8	2520	N/A				
702	354710702	Passed	6/22/2010	TN 300-2-8	2520	N/A				
703	354710703	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100434 C#66169
704	354710704	Passed	6/22/2010	TN 300-2-8	2520	N/A				
705	354710705	Passed	6/22/2010	TN 300-2-8	2520	N/A				
706	354710706	Passed	6/22/2010	TN 300-2-8	2520	N/A				
707	354710707	Passed	6/22/2010	TN 300-2-8	2520	N/A				
708	354710708	Passed	7/7/2010	TN 300-2-8	2520	N/A				
709	354710709	Passed	7/7/2010	TN 300-2-8	2520	N/A				
710	354710710	Passed	7/7/2010	TN 300-2-8	2520	N/A				
711	354710711	Passed	7/7/2010	TN 300-2-8	2520	N/A				
712	354710712	Passed	7/7/2010	TN 300-2-8	2520	N/A				
713	354710713	Passed	7/7/2010	TN 300-2-8	2520	N/A				
714	354710714	Passed	7/7/2010	TN 300-2-8	2520	N/A				
715	354710715	Passed	7/7/2010	TN 300-2-8	2520	N/A				
716	354710716	Passed	7/7/2010	TN 300-2-8	2520	N/A				
717	354710717	Passed	7/7/2010	TN 300-2-8	2520	N/A				

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Rec. 244 , DC 1972

MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
718	354710718	Passed	7/7/2010	TN 300-2-8	2520	N/A				
719	354710719	Passed	7/7/2010	TN 300-2-8	2520	N/A				
720	354710720	Passed	7/7/2010	TN 300-2-8	2520	N/A				
721	354710721	Passed	7/7/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100435 C#66170
722	354710722	Passed	7/7/2010	TN 300-2-8	2520	N/A				
723	354710723	Passed	7/7/2010	TN 300-2-8	2520	N/A				
724	354710724	Passed	7/7/2010	TN 300-2-8	2520	N/A				
725	354710725	Passed	7/7/2010	TN 300-2-8	2520	N/A				
726	354710726	Passed	7/7/2010	TN 300-2-8	2520	N/A				
727	354710727	Passed	7/7/2010	TN 300-2-8	2520	N/A				
728	354710728	Passed	7/7/2010	TN 300-2-8	2520	N/A				
729	354710729	Passed	7/7/2010	TN 300-2-8	2520	N/A				
730	354710730	Passed	7/7/2010	TN 300-2-8	2520	N/A				
731	354710731	Passed	7/7/2010	TN 300-2-8	2520	N/A				
732	354710732	Passed	7/7/2010	TN 300-2-8	2520	N/A				
733	354710733	Passed	7/7/2010	TN 300-2-8	2520	N/A				
734	354710734	Passed	7/7/2010	TN 300-2-8	2520	N/A				
735	354710735	Passed	7/7/2010	TN 300-2-8	2520	N/A				
736	354710736	Passed	7/7/2010	TN 300-2-8	2520	N/A				
737	354710737	Passed	7/7/2010	TN 300-2-8	2520	N/A				
738	354710738	Passed	6/22/2010	TN 300-2-8	2520	N/A				
739	354710739	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100435 C#66171

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
740	354710740	Passed	7/1/2010	TN 300-2-8	2520	N/A				
741	354710741	Passed	6/22/2010	TN 300-2-8	2520	N/A				
742	354710742	Passed	7/1/2010	TN 300-2-8	2520	N/A				
743	354710743	Passed	7/1/2010	TN 300-2-8	2520	N/A				
744	354710744	Passed	7/1/2010	TN 300-2-8	2520	N/A				
745	354710745	Passed	7/1/2010	TN 300-2-8	2520	N/A				
746	354710746	Passed	7/1/2010	TN 300-2-8	2520	N/A				
747	354710747	Passed	7/1/2010	TN 300-2-8	2520	N/A				
748	354710748	Passed	7/1/2010	TN 300-2-8	2520	N/A				
749	354710749	Passed	7/1/2010	TN 300-2-8	2520	N/A				
750	354710750	Passed	6/22/2010	TN 300-2-8	2520	N/A				
751	354710751	Passed	7/1/2010	TN 300-2-8	2520	N/A				
752	354710752	Passed	6/22/2010	TN 300-2-8	2520	N/A				
753	354710753	Passed	6/22/2010	TN 300-2-8	2520	N/A				
754	354710754	Passed	6/22/2010	TN 300-2-8	2520	N/A				
755	354710755	Passed	6/22/2010	TN 300-2-8	2520	N/A				
756	354710756	Passed	6/22/2010	TN 300-2-8	2520	N/A				
757	354710757	Passed	6/22/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100435 C#66172
758	354710758	Passed	7/1/2010	TN 300-2-8	2520	N/A				
759	354710759	Passed	6/22/2010	TN 300-2-8	2520	N/A				
760	354710760	Passed	6/22/2010	TN 300-2-8	2520	N/A				
761	354710761	Passed	6/22/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
762	354710762	Passed	6/25/2010	TN 300-2-8	2520	N/A				
763	354710763	Passed	6/25/2010	TN 300-2-8	2520	N/A				
764	354710764	Passed	6/25/2010	TN 300-2-8	2520	N/A				
765	354710765	Passed	6/25/2010	TN 300-2-8	2520	N/A				
766	354710766	Passed	6/25/2010	TN 300-2-8	2520	N/A				
767	354710767	Passed	6/25/2010	TN 300-2-8	2520	N/A				
768	354710768	Passed	6/25/2010	TN 300-2-8	2520	N/A				
769	354710769	Passed	6/25/2010	TN 300-2-8	2520	N/A				
770	354710770	Passed	6/25/2010	TN 300-2-8	2520	N/A				
771	354710771	Passed	6/25/2010	TN 300-2-8	2520	N/A				
772	354710772	Passed	6/25/2010	TN 300-2-8	2520	N/A				
773	354710773	Passed	6/25/2010	TN 300-2-8	2520	N/A				
774	354710774	Passed	6/25/2010	TN 300-2-8	2520	N/A				
775	354710775	Passed	6/25/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100435 C#66173
776	354710776	Passed	6/25/2010	TN 300-2-8	2520	N/A				
777	354710777	Passed	6/25/2010	TN 300-2-8	2520	N/A				
778	354710778	Passed	6/25/2010	TN 300-2-8	2520	N/A				
779	354710779	Passed	6/25/2010	TN 300-2-8	2520	N/A				
780	354710780	Passed	6/25/2010	TN 300-2-8	2520	N/A				
781	354710781	Passed	6/25/2010	TN 300-2-8	2520	N/A				
782	354710782	Passed	6/25/2010	TN 300-2-8	2520	N/A				
783	354710783	Passed	6/25/2010	TN 300-2-8	2520	N/A				

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MANUFACTURING QA IN-PLANT SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
784	354710784	Passed	6/25/2010	TN 300-2-8	2520	N/A				
785	354710785	Passed	6/25/2010	TN 300-2-8	2520	N/A				
786	354710786	Passed	6/25/2010	TN 300-2-8	2520	N/A				
787	354710787	Passed	6/25/2010	TN 300-2-8	2520	N/A				
788	354710788	Passed	6/25/2010	TN 300-2-8	2520	N/A				
789	354710789	Passed	6/25/2010	TN 300-2-8	2520	N/A				
790	354710790	Passed	6/25/2010	TN 300-2-8	2520	N/A				
791	354710791	Passed	6/25/2010	TN 300-2-8	2520	N/A				
792	354710792	Passed	6/25/2010	TN 300-2-8	2520	N/A				
793	354710793	Passed	6/25/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100436 C#66174
794	354710794	Passed	6/25/2010	TN 300-2-8	2520	N/A				
795	354710795	Passed	6/25/2010	TN 300-2-8	2520	N/A				
796	354710796	Passed	6/25/2010	TN 300-2-8	2520	N/A				
797	354710797	Passed	6/25/2010	TN 300-2-8	2520	N/A				
798	354710798	Passed	6/25/2010	TN 300-2-8	2520	N/A				
799	354710799	Passed	6/25/2010	TN 300-2-8	2520	N/A				
800	354710800	Passed	6/25/2010	TN 300-2-8	2520	N/A				
801	354710801	Passed	6/25/2010	TN 300-2-8	2520	N/A				
802	354710802	Passed	6/25/2010	TN 300-2-8	2520	N/A				
803	354710803	Passed	6/25/2010	TN 300-2-8	2520	N/A				
804	354710804	Passed	6/25/2010	TN 300-2-8	2520	N/A				
805	354710805	Passed	6/25/2010	TN 300-2-8	2520	N/A				

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN MPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
806	354710806	Passed	6/25/2010	TN 300-2-8	2520	N/A				
807	354710807	Passed	6/25/2010	TN 300-2-8	2520	N/A				
808	354710808	Passed	6/25/2010	TN 300-2-8	2520	N/A				
809	354710809	Passed	6/25/2010	TN 300-2-8	2520	N/A				
810	354710810	Passed	6/25/2010	TN 300-2-8	2520	N/A				
811	354710811	Passed	6/25/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100436 C#66175
812	354710812	Passed	6/25/2010	TN 300-2-8	2520	N/A				
813	354710813	Passed	6/25/2010	TN 300-2-8	2520	N/A				
814	354710814	Passed	6/25/2010	TN 300-2-8	2520	N/A				
815	354710815	Passed	6/25/2010	TN 300-2-8	2520	N/A				
816	354710816	Passed	6/25/2010	TN 300-2-8	2520	N/A				
817	354710817	Passed	6/25/2010	TN 300-2-8	2520	N/A				
818	354710818	Passed	6/25/2010	TN 300-2-8	2520	N/A				
819	354710819	Passed	6/25/2010	TN 300-2-8	2520	N/A				
820	354710820	Passed	6/25/2010	TN 300-2-8	2520	N/A				
821	354710821	Passed	6/25/2010	TN 300-2-8	2520	N/A				
822	354710822	Passed	6/25/2010	TN 300-2-8	2520	N/A	TP	4/27/2010	5/4/2010	G100436 C#66176
823	354710823	Passed	8/9/2010	TN 300-2-8	2520	N/A				
824	354710824	Passed	8/9/2010	TN 300-2-8	2520	N/A				
825	354710825	Passed	8/9/2010	TN 300-2-8	2520	N/A				
826	354710826	Passed	8/9/2010	TN 300-2-8	2520	N/A				
827	354710827	Passed	8/9/2010	TN 300-2-8	2520	N/A				

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN SAMPLING/INSPECTION REPORT

Project Name: ERDF **TYPE OF MQA:** LEVEL (2)

Material: 300mil Double-Sided Geocomposite **SAMPLING FREQUENCY:** 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
828	354710828	Passed	8/9/2010	TN 300-2-8	2520	N/A				
829	354710829	Passed	8/9/2010	TN 300-2-8	2520	N/A				
830	354710830	Passed	8/9/2010	TN 300-2-8	2520	N/A				
831	354710831	Passed	8/9/2010	TN 300-2-8	2520	N/A				
832	354710832	Passed	8/9/2010	TN 300-2-8	2520	N/A				
833	354710833	Passed	8/9/2010	TN 300-2-8	2520	N/A				
834	354710834	Passed	8/9/2010	TN 300-2-8	2520	N/A				
835	354710835	Passed	8/9/2010	TN 300-2-8	2520	N/A	PGL	7/28/2010	8/3/2010	G100960 C#68969
836	354710836	Passed	8/9/2010	TN 300-2-8	2520	N/A				
837	354710837	Passed	8/9/2010	TN 300-2-8	2520	N/A				
838	354710838	Passed	8/9/2010	TN 300-2-8	2520	N/A				
839	354710839	Passed	8/9/2010	TN 300-2-8	2520	N/A				
840	354710840	Passed	8/9/2010	TN 300-2-8	2520	N/A				
841	354710841	Passed	8/9/2010	TN 300-2-8	2520	N/A				
842	354710842	Passed	8/9/2010	TN 300-2-8	2520	N/A				
843	354710843	Passed	8/9/2010	TN 300-2-8	2520	N/A				
844	354710844A	Passed	8/9/2010	TN 300-2-8	2520	N/A				
845	354710844B	Passed	8/9/2010	TN 300-2-8	2520	N/A				
846	354710845A	Passed	8/9/2010	TN 300-2-8	2520	N/A				
847	354710845B	Passed	8/9/2010	TN 300-2-8	2520	N/A				
848	354710846	Passed	8/9/2010	TN 300-2-8	2520	N/A				
849	354710847	Passed	8/9/2010	TN 300-2-8	2520	N/A				

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

MANUFACTURING QA IN-PLAN SAMPLING/INSPECTION REPORT

Project Name: ERDF

TYPE OF MQA: LEVEL (2)

Material: 300mil Double-Sided Geocomposite

SAMPLING FREQUENCY: 1/50,000 sq.ft./ lot

Manufacturer: SKAPS

No.	Roll #	CQC Testing Passed	On-Site	Product	Area (ft^2)	Date Manufactured	Sampled by	Date Sampled	Date Received	Reference Job No/ Control No
850	354710848	Passed	8/9/2010	TN 300-2-8	2520	N/A				
851	354710849	Passed	8/9/2010	TN 300-2-8	2520	N/A				
852	354710850A	Passed	8/9/2010	TN 300-2-8	2520	N/A				
853	354710850B	Passed	8/9/2010	TN 300-2-8	2520	N/A				
854	354710851	Passed	8/9/2010	TN 300-2-8	2520	N/A	PGL	7/28/2010	8/3/2010	G100960 C#68970
855	354710852	Passed	8/9/2010	TN 300-2-8	2520	N/A				
856	354710853	Passed	8/9/2010	TN 300-2-8	2520	N/A				
857	354710854	Passed	8/9/2010	TN 300-2-8	2520	N/A				
858	354710855	Passed	8/9/2010	TN 300-2-8	2520	N/A				
859	354710856	Passed	8/9/2010	TN 300-2-8	2520	N/A				
860	354710857	Passed	8/9/2010	TN 300-2-8	2520	N/A				
861	354710858	Passed	8/9/2010	TN 300-2-8	2520	N/A				
862	354710859	Passed	8/9/2010	TN 300-2-8	2520	N/A				
863	354710860	Passed	8/9/2010	TN 300-2-8	2520	N/A				
864	354710861	Passed	8/9/2010	TN 300-2-8	2520	N/A				
865	354710862	Passed	8/9/2010	TN 300-2-8	2520	N/A				
866	354710863A	Passed	8/9/2010	TN 300-2-8	2520	N/A	PGL	7/28/2010	8/3/2010	G100960 C#68971
867	354710863B	Passed	8/9/2010	TN 300-2-8	2520	N/A				
Subtotal		867	857							
				TOTAL ft^2 =	2,071,440	113400		Total Tests Required =		42
								Total num of Tests =		50
								Frequency =		41,429

Precision Geosynthetic Laboratories
1160 North Gilbert Street, Anaheim, CA 92801

Rec. 244 , DC 1972

E.1

FACTORY INSPECTION VISIT DOCUMENTATION

ENVIROTECH

2500 North Eleventh Street ▢ Enid, OK 73701 ▢ (580) 234-8780 ▢ Fax (580) 237-4302 ▢ www.envirotechconsulting.com

May 4, 2010

Mr. Charles Skiba
Subcontract Technical Representative (STR)
Washington Closure Hanford
Hanford, WA

Re: *Surveillance of GSE's Houston Manufacturing Facility; Geomembrane for ERDF Cells 9 & 10 Construction; Submittal 05-12A-001*

Dear Mr. Skiba:

Pursuant to Specification 0600X-SP-C0077, the geomembrane manufacturer shall allow the Contractor or his designated representative to conduct an on-site visit and surveillance of the manufacturing plant at the Contractor's discretion. ENVIROTECH ENGINEERING & CONSULTING, INC. (CQA) was selected by Washington Closure Hanford as the designated representative. On April 26, 2010, Mr. Rob Stallings, P.E. (CQA Officer) visited GSE Lining Technology, Inc.'s Houston, Texas facility. In addition, Mr. Owen Robertson with the Richland Office of the Department of Energy and Mr. Dave Einan with Region 10 Environmental Protection Agency were present during the site visit.

Prior to conducting the plant visit and surveillance, a Geomembrane Manufacturing Inspection Plan developed by ENVIROTECH was submitted and approved. As per this Plan, the four (4) major areas identified for review during the visit included (1) the manufacturing process; (2) quality control; (3) laboratory facility; and (4) testing procedures. A summary of findings for each area is included in the following paragraphs of this correspondence.

1. **Manufacturing Process**: In order to manufacture the white-on-black textured 60-mil. geomembrane, it was necessary for GSE to convert from manufacturing black-on-black geomembrane to white-on-black material. This process requires a two-day period for purging the extrusion dye. During this process, clear resin flows through the dye to remove all of the black ruminants. On Sunday evening, April 25, 2010, GSE initiated the manufacture of 60-mil. white-on-black material. Following this type of changeover in the manufacturing process, it is normal that the first few rolls of manufactured material will not meet color, thickness, and asperity specification requirements. As a result of the changeover, the initial four (4) rolls of white-on-black 60-mil. material were scrapped. Upon arriving at the plant on Monday, April 26, 2010, GSE had manufactured twelve (12) rolls of 60-mil. white-on-black material that met contract specification requirements.

   Mr. Mike Johnson (Plant Manager) and Mr. Jimmy Youngblood (Technical Support Manager) provided a tour of the entire manufacturing process from receipt of the resin to storing the finished material. A brief synopsis of each step is summarized below.

1.1 **Resin.** Pellets of HDPE resin are received from several suppliers in the local area (Chevron-Phillips and Formosa) and normally transported to the GSE site via rail cars. The resin suppliers provide testing results for each lot (rail car) of material prior to its arrival at the facility. In addition, upon arrival at the GSE facility, each rail car is sampled by GSE staff in four (4) locations and each sample is analyzed for parameters to include density and melt index to confirm the testing results provided by the resin supplier. This quality control documentation follows the resin throughout the manufacturing process as the resin lot number is tied to each roll of produced material and ultimately provided as a submittal to purchasers of the material.

When it is confirmed that the resin pellets meet or exceed GSE specifications, they are unloaded into silos for on-site storage until use. The pure resin is mixed with other additives that provide protective properties (i.e., carbon black that provides UV resistance). During the site visit, the rail car unloading facility and process were observed.

1.2 **Liner Manufacturing Process.** After the pure resin is blended with the protective additives, it is fed (under heat and pressure) through extruders and into a circular material dye. The geomembrane is manufactured as a hollow, blown-tube of HDPE material. It is cut down the center during the cooling process to form a large 23-ft.-wide x 530-ft.-long rectangular sheet. As the material is rolled onto hollow tubes for shipping, it is spark tested to ensure there are no holes. This automated hole-detection system will shut-down the entire manufacturing process in the event a hole is detected. In addition, GSE staff visually observes each sheet for impurities during the manufacturing process.

Our inspection of the liner manufacturing process included extensive observations of the extruders, dyes, rollers, spark tester, and material spooler. GSE staff were very helpful in providing explanations for each step of the process.

During the plant visit, three (3) rolls of white-on-black 60-mil. HDPE material were manufactured. Periodic observations were made during the production run of these three (3) rolls to confirm that no holes, blisters, or contamination by foreign material was incurred.

Approximately 6-in. of material is removed from the end of each roll and utilized as a quality assurance sample. From this sample, each roll is tested utilizing a micrometer for thickness and visually inspected for imperfections. A full slate of tests are conducted by GSE personnel on one (1) roll sample every 50,000-sf.

During the manufacturing process tour, the area where scrap materials are chipped and recycled for reuse was observed. The Hanford specification for recycled material is conservative and very specific. GSE staff explained that the only recycled material being utilized for the Hanford project were the clean, trimmed edges from the Hanford-produced material. In addition, it was confirmed that the recycled material used was significantly less than the 2% maximum as set forth in the Hanford specification.

Following production of a completed roll **(a)** binding straps are attached to each roll to provide stability and security; **(b)** lifting straps are attached to each end to assist in material handling; and **(c)** three (3) identical labels are attached. The material is moved from the manufacturing area to an outdoor storage yard where selected rolls will undergo conformance testing. An overhead crane, utilizing the lifting straps attached to each roll, is used to transport the material throughout the GSE facility. This handling process was closely observed and in no instance was any damage to the geomembrane noted.

1.3 **Outdoor Storage Yard.** An inspection of the outdoor storage yard for both the 60- and 100-mil. materials was conducted. The two (2) different types of material were stored in separate bins. Twelve (12) rolls of 60-mil. HDPE textured white-on-black material were inspected and no visual sign of damage or manufacturing defect was observed. Three (3) labels attached to each roll included the name of the manufacturer, type of geomembrane, thickness, and roll number.

In addition, six (6) rolls of 100-mil. HDPE non-textured black material was inspected and no visual sign of damage or manufacturing defect was observed. Three (3) labels attached to each roll included the name of the manufacturer, type of geomembrane, thickness, and roll number.

1.4 **Extrusion Rod Manufacturing.** The tour included the area where extrusion rods were manufactured. Although the extrusion material was not yet manufactured, the GSE staff provided documentation verifying that Hanford's production sheet required that the same type of base resin be utilized for both the extrusion and liner materials.

2. **Quality Control.** Quality control is a very important component in GSE's manufacturing process. Each roll is labeled (in multiple areas) and sampled after each production run. As previously mentioned, the material thickness is verified and a visual check for imperfections made on each roll. All of the testing outlined in the specifications is conducted every 50,000-sf. or on each lot (whichever is less) and the results provided to the material purchaser. In the event the material does not meet GSE or customer specifications (whichever is more stringent), the material is rejected and scrapped.

A computerized production schedule is utilized by the operator to determine which roll samples should be forwarded to the laboratory for the testing. This schedule was reviewed during the site visit and conformed with the procedures described herein.

In summary, quality control begins with resin sampling and testing and continues throughout the manufacturing process. Quality control concludes with GSE laboratory conformance testing of the geomembrane (i.e., one (1) test every 50,000-sf or one (1) per lot). In addition, all of the geomembrane is visually inspected and the material's integrity is verified by conducting spark testing.

3. **Laboratory Facility.** GSE is equipped with a modern, geosynthetic in-house laboratory where all of the normal testing is conducted (utilizing ASTM or GRI methods) by their staff of highly-trained technicians. Ms. Jane Allen has a long tenure with GSE as their Laboratory Manager. On Monday, April 26, 2010, Ms. Allen and Mr. Youngblood conducted a tour of

the laboratory facility where each of the required tests outlined in Table 1 of the specifications was demonstrated. In several instances, testing was conducted on actual Hanford material. The laboratory holds both ISO 9001 and GAI-LAP certifications.

4. **Testing Procedures.** All testing procedures implemented by GSE personnel including sample collection, analytical procedures, and reporting of results are specified and conducted pursuant to the appropriate ASTM or GRI method. The observations made during the site visit revealed no discrepancies in appropriate ASTM or GRI method applications.

Other tasks accomplished during the visit included:

- ❒ *Manufacturer Submittals.* Documentation is normally supplied to purchasers in advance of material delivery. This submittal includes information on both the resin and actual material produced as discussed below.

  - *Resin Supplier Certification.* These documents are supplied for each lot of resin utilized during the manufacturing process of Hanford material to include a roll list of the material manufactured from the given lot. A copy of a resin certification for three (3) rolls of 100-mil. HDPE liner is included as *Attachment A.*

  - *Manufacturer Certification.* These documents are supplied with a shipment of produced material and include a roll list, associated resin lot for each roll, and associated testing, as applicable. A copy of the manufacturer's certification for three (3) rolls of 100-mil. HDPE liner is included as *Attachment B.*

- ❒ *Confirm that property measurements conducted by the Manufacturer are properly documented and that the test methods utilized are acceptable.* The visit to the GSE geosynthetics laboratory included a review of the testing methods and associated documentation. As previously mentioned, an inspection of the laboratory testing procedures required for both resin and geosynthetic material was conducted. In addition, actual testing of Hanford's 60-mil. material was observed. All of the testing set forth in the material specifications was being conducted and all of the material testing observed met or exceeded the applicable specification.

- ❒ *Spot inspection of the rolls to confirm that they were free of holes, blisters, or any sign of contamination by foreign matter.* Multiple rolls were observed during the manufacturing process and no holes, blisters, or any sign of contamination by foreign matter was detected. In addition, at no time during the observation process did the electronic hole detector's (spark detector) alarm sound.

- ❒ *Review packaging and transportation procedures to confirm that these procedures are not damaging the geomembrane.* A review of the packaging and transportation process (from the point where the rolls came off the production line to where they were loaded onto flatbed trucks for transportation) was conducted. In all cases, the methods and procedures utilized are designed to ensure that no damage to the material occurs during this handling process.

- ❒ *Confirm that roll packages are labeled and include the name of the manufacturer, type of geomembrane, thickness, and roll number.* Each roll of material manufactured to-date

includes multiple (3) labels that include the name of the manufacturer, type of geomembrane, thickness, and roll number.

- ❒ *If applicable, confirm that extrusion rods and/or beads are derived from the same resin type as the geomembrane.* An inquiry was made concerning the resin for the extrusion rod and although it was not yet manufactured, the documentation provided ensured that it would be manufactured of the same resin type as the geomembrane.

Based on my experience with the inspection of geomembrane manufacturers, GSE is fully-qualified to manufacture the material according to the Hanford specifications set forth in 0600X-SP-C0077. In addition, all of the manufacturing, testing, and handling procedures are acceptable and no non-conformance issues were noted.

Should you have any questions or require additional information, please contact me at your convenience.

Thank you.

Best regards,

ENVIROTECH ENGINEERING & CONSULTING, INC.

5/4/10

Rob Stallings, P.E.
President

ladw

Attachments

010032

ATTACHMENT A.

RESIN CERTIFICATION FOR THREE (3) ROLLS OF 100-MIL. HDPE LINER

A

GSE Roll Allocation

Order 60995
Customer Environmental Specialities Intl., Inc.
Site ERDF Cells 9 & 10

Roll#	*Resin Lot*	*Product Code*	*Description*	*Mfg. Date*	*Length*
104152724	10C1139	HDS-100ME-WSB-B-C0	HDE100M010	4/6/2010	340
104152725	10D1002	HDS-100ME-WSB-B-C0	HDE100M010	4/6/2010	340
104152726	10D1002	HDS-100ME-WSB-B-C0	HDE100M010	4/6/2010	340

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Wednesday, April 07, 2010

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Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS

. FORMOSA DRIVE
PO BOX 700
POINT COMFORT TX 77978

PHONE:(888)FPCUSA3

Certificate of Analysis

CUSTOMER:GSE LINING TECHNOLOGY, INC.
UP TRACK 14732 WESTFIELD
HOUSTON TX 77070
PRODUCT :DF3812A
RAILCAR FPAX970333

S/O NO : EK2A324
CUSTOMER PO : 03-061317
DATE SHIPPED: 3/19/10
LOT NO : 10C1139
WEIGHT : 190,500.00
CUSTID:FT03112 SPIDM4

TEST ITEM	REFERENCE METHOD	TEST VALUE
Melt Index,g/10min	ASTM D1238	.080
HLMI, g/10 min.	ASTM D1238	12.1
Density, g/cm3	ASTM D1505	.9382

QC SUPERVISOR: JESSE CHANG

Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS

. FORMOSA DRIVE
PO BOX 700
POINT COMFORT TX 77978

PHONE:(888)FPCUSA3

Certificate of Analysis

CUSTOMER:GSE LINING TECHNOLOGY, INC.
UP TRACK 14732 WESTFIELD
HOUSTON TX 77070
PRODUCT :DF3812A
TRUCK 894

S/O NO : EK4A020
CUSTOMER PO : 03-061621
DATE SHIPPED: 4/04/10
LOT NO : 10D1002
WEIGHT : 46,200.00
CUSTID:FT03112 SPIDM4

TEST ITEM	REFERENCE METHOD	TEST VALUE
Melt Index,g/10min	ASTM D1238	.080
HLMI, g/10 min.	ASTM D1238	12.0
Density, g/cm3	ASTM D1505	.9385

QC SUPERVISOR: JESSE CHANG

ATTACHMENT B.

MANUFACTURER CERTIFICATION FOR THREE (3) ROLLS OF 100-MIL. HDPE LINER

B

GSE Roll Allocation

Order 60995
Customer Environmental Specialities Intl., Inc.
Site ERDF Cells 9 & 10

Roll#	*Resin Lot*	*Product Code*	*Description*	*Mfg. Date*	*Length*
104152724	10C1139	HDS-100ME-WBB-B-00	HDE100M010	4/6/2010	340
104152725	10D1002	HDS-100ME-WBB-B-00	HDE100M010	4/6/2010	340
104152726	10D1002	HDS-100ME-WBB-B-00	HDE100M010	4/6/2010	340

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Wednesday, April 07, 2010

Page 1 of 1

GSE Lining Technology, LLC

19103 Gundle Road
Houston, TX 77073
800 435 2008 • 281 443 8564
281 230 8650 Fax
gseworld.com

April 8, 2010

Graydon Renshaw
Environmental Specialties Intl, Inc.
7943 Pecue Lane #A
Baton Rouge, LA 70809

RE: ERDF Hanford Cells 9 and 10 – 100 mil Smooth HDPE Geomembrane. Additives

Certification of Compliance

The undersigned, being qualified and authorized to do so, hereby certifies that GSE 100 mil smooth White HDPE Geomembrane will be manufactured is composed of 97 to 98% polyethylene, 2 to 3% carbon black, and ≤ 0.5% of additives such as heat stabilizers and antioxidants.

Sincerely,

Miguel Garcia
GSE Technical Support

cc: Mary Cruthirds, GSE Lining Technology, LLC

The Pioneer of Geosynthetics

MG10-005

GSE Lining Technology, LLC

19103 Gundle Road
Houston, TX 77073
800 435 2008 • 281 443 8564
281 230 8650 Fax
gseworld.com

April 8, 2010

Graydon Renshaw
Environmental Specialties Intl, Inc.
7943 Pecue Lane #A
Baton Rouge, LA 70809

RE: ERDF Hanford Cells 9 and 10 – 100 mil Smooth HDPE Geomembrane: Recycled Polymer

Certification of Compliance

The undersigned, being qualified and authorized to do so, hereby certifies that GSE 100 mil smooth White HDPE Geomembrane will meet or exceed the following specified property values and/or conditions:

- No recycled polymer and no more than 2% rework of the same type of material is added to the resin.

Sincerely,

Miguel Garcia
GSE Technical Support

cc: Mary Cruthirds, GSE Lining Technology, LLC

The Pioneer of Geosynthetics

MG10-0052

GSE Lining Technology, Inc

Roll Test Data Report

Sales Order No.	Project Number	Customer Name	Project Location	Product Name	Report Date
60995		Environmental Specialities Intl., Inc.	Richland, WA	HDS-100ME-WBB-B-00	4/7/2010

GSE QC Approved

Roll No	ASTM D 5199 Average Thickness (mils)	ASTM D 5199 Minimum Thickness (mils)	ASTM D 638, Type IV Break Tensile Strength (ppi)								ASTM D 6693 Tensile Elongation (%)		ASTM D 5994 Puncture Resistance (lbs)	ASTM D 3895 Density (g/cc)	ASTM D 4218/1603 Carbon Black Content (%)	ASTM D 5596 Carbon Black Dispersion Class in Cat1 - Cat2
	every roll		every lot								every lot		every lot	every lot	every lot	every lot
104152724	108	104	260	250	516	476	17	17	910	826	86	88	215	0.944	2.20	10
104152725	106	103	260	250	516	476	17	17	910	826	86	88	215	0.944	2.20	10
104152726	105	102	260	250	516	476	17	17	910	826	96	88	215	0.944	2.20	10

Laboratory Manager: Joe Allen

GSE-8.2.4-029 Rev -- 03/05

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19103 Gundle Road - Houston, Texas 77073

Report Date
4/7/2010

Quality Assurance Laboratory Test Results

Job Name: ERDF Cells 9 & 10
Sales Order: 60995

Required Testing: ASTM D 3895 -- Standard Test Method for Oxidative Induction Time of Polyolefins by Differential Scanning Calorimetry

Custom Frequency: Certify

Custom Criteria: 140 Minutes

Product Code	Resin Lot Number	Test Results
HDS-100ME-WBB-B-00	10C1139	PASS
HDS-100ME-WBB-B-00	10D1002	PASS

Approved By:	Debra Gortemiller
Date Approved:	April 7, 2010

The above stated data shall not be reproduced except in full, without the written approval of the laboratory.

Report Date
4/7/2010

Quality Assurance Laboratory Test Results

Job Name: ERDF Cells 9 & 10
SO Number: 60995

The table below summarizes additive performance of GSE Houston products as perceived by OIT retention after Oven and UV Aging per GRI Test Method GM13:

		Oven Aging @ 85° C (ASTM D 5721)				UV Resistance per GRI GM11			
		90 days per ASTM D 5885				1600 hours UV Aging per ASTM D 5885			
Product Type	Formulation	Initial HP OIT (min)	Final HP OIT (min)	Retained (%)	GRI Criteria (%)	Initial HP OIT (min)	Final HP OIT (min)	Retained (%)	GRI Criteria (%)
HDPE Geomembrane	Formosa DF3812A	744	674	90	80	744	700	95	50

The above stated data shall not be reproduced except in full, without the written approval of the laboratory.

Report Date
4/7/2010

Quality Assurance Laboratory Test Results

Job Name:	ERDF Cells 9 & 10
Sales Order:	60995
Required Testing:	ASTM D 5397 - Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test
Custom Frequency:	Certify
Custom Criteria:	1000 hours

Product Code	Resin Lot Number	Test Results
HDS-100ME-WBB-B-00	10C1139	PASS
HDS-100ME-WBB-B-00	10D1002	PASS

Approved By:	Debra Gortemiller
Date Approved:	April 7, 2010

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GSE Lining Technology, LLC

19103 Gundle Road
Houston, TX 77073
800 435 2008 • 281 443 8564
281 230 8650 Fax
gseworld.com

April 8, 2010

Graydon Renshaw
Environmental Specialties Intl, Inc.
7943 Pecue Lane #A
Baton Rouge, LA 70809

RE: ERDF Hanford Cells 9 and 10 – 100 mil Smooth HDPE Geomembrane: Test Values

Certification of Compliance

The undersigned, being qualified and authorized to do so, hereby certifies that GSE 100 mil smooth White HDPE Geomembrane will meet or exceed the following specified property values and/or conditions:

- GSE certifies that the aforementioned products will meet the required test values specified in the technical specifications **Cell Construction – Geosynthetics Environmental Restoration Disposal Facility (ERDF) Cells 9 & 10 Construction, Specification No. 0600X-SP-C0077, Revision 0, 11/13/2009, page 40, Table 2.**

Sincerely,

Miguel Garcia
GSE Technical Support

cc: Mary Crutchfield, GSE Lining Technology, LLC

The Pioneer of Geosynthetics

MG10-0053

E.2

INTERFACE FRICTION ANGLE TEST RESULTS

ENVIROTECH

PO Box 6029 ■ Enid OK 73702 ■ (580) 234-8780

May 26, 2010

Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99352
Attn: Tim Wintle

RE: Interface Friction Angle Testing
ERDF Cells 9 & 10
Subcontract #S013213A00
Submittal 5-13-11 Conformance Testing

Dear Tim:

Find attached the required Interface Friction Testing for the above mentioned project as per the requirements of the project specification 0600X-SP-C0077 Rev. 0. This specification requires two sets of Interface Friction Testing to be performed according to ASTM D5321 for each of the listed interfaces:

- 60 mil textured geomembrane and the soil /bentonite admix
- 60 mil textured geomembrane and geocomposite
- Geocomposite and operations layer material (sand)

The specification further requires that the tests be conducted under saturated conditions at normal loads of 200, 400 and 600 psf, to determine the peak angle and residual angle measured at 2-in displacement. The specification requires that the following minimum residual friction angles when evaluated at 400 psf, 2-in of displacement and a cohesion of 0.00:

- 60 mil. geomembrane/Soil-bentonite admix 24.0 degrees
- 60 mil. geomembrane/Geocomposite 24.0 degrees
- Geocomposite/Operations layer material (sand) 24.0 degrees

Testing of the interface friction angle was performed by TRI/Environmental, Inc. located in Austin, Texas. TRI collected samples of the geosynthetics for the testing while Envirotech Engineering and Consulting, Inc. provided the soil/bentonite admix and operations layer material. The results of this testing are attached to this document. It should be noted that the data provided by TRI in the box annotated "Test Results" is not the friction angle as defined in the specification cited above. The TRI friction angle is calculated between the 200, 400, and 600-psf normal loads. The specification requires the friction angle to be calculated at 400-psf normal load, 2-in of displacement and cohesion of 0. Table 1 provides a summary of the Interface Friction Angle testing results.

ERDF Friction Angle Results Table 1			
	ERDF Specification	**TRI Friction Angle**	**ERDF Friction Angle**
Admix vs. 60 mil liner Test 1 of 2	24.0 °	22.7 °	24.8 °
Admix vs. 60 mil liner Test 2 of 2	24.0 °	22.2 °	28.7 °
60 mil liner vs. Composite Test 1 of 2	24.0 °	25.2 °	25.2 °
60 mil liner vs. Composite Test 2 of 2	24.0 °	26.0 °	28.5 °
Composite vs. Operations Test 1 of 2	24.0 °	29.2 °	32.3 °
Composite vs. Operations Test 2 of 2	24.0 °	35.0 °	38.6 °

In addition, a graphical representation of the ERDF friction angle results are attached to this document as well as the actual friction angle reports from TRI laboratories. Based on TRI testing results it is our opinion that all of the required interface friction angle testing for the ERFD Cells 9 & 10 is complete and meets the specification.

If you have any questions or would like to discuss this in more detail, please feel free to contact me at your conveniences.

Sincerely yours,
ENVIROTECH ENGINEEING AND CONSULTING, INC.

Joseph Voss, P.E.
Senior CQA Engineer

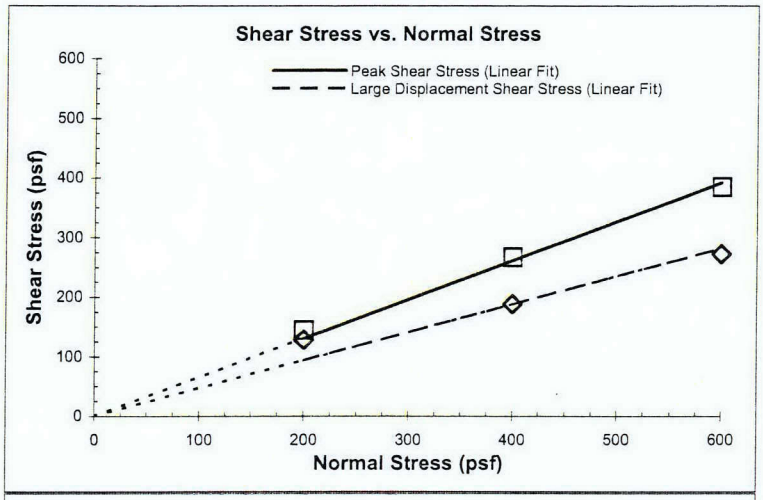
Interface Friction Test Report

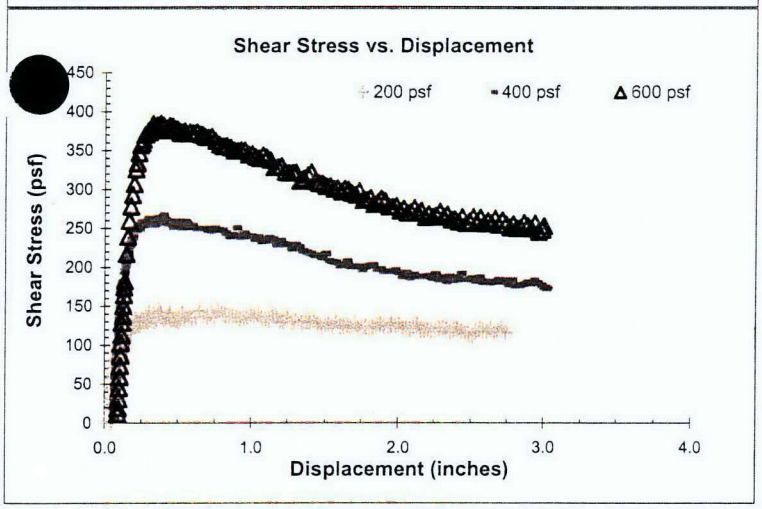
Client: **Envirotech**
Project: **Hanford**
Test Date: 05/14/10-05/14/10

TRI Log#: E2337-33-07
Test Method: ASTM D 5321

John M. Allen, P.E., 05/14/2010
Quality Review/Date

Tested Interface: Skaps TN300-2-8 Double-sided Geocomposite (354710005) vs. GSE 60 mil HDPE Textured Geomembrane (102153690), Test 1 of 2





Test Results

	Peak	Large Displacement (@ 2.0 in.)
Friction Angle (degrees):	33.2	25.2
Y-intercept or Adhesion (psf):	0	0

Peak & large displacement friction angle regression analyses were adjusted to fit a zero y-intercept.

Test Conditions

Upper Box & Lower Box: Skaps TN300-2-8 double-sided geocomposite

Lower Box: GSE 60 mil HDPE Textured Geomembrane

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 1 hour prior to shear.

Test Condition: Wet

Shearing Rate: 0.2 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	10	12	14
Normal Stress (psf)	200	400	600
Corrected Peak Shear Stress (psf)	144	267	385
Corrected Large Displacement Shear Stress (psf)	128	188	272
Peak Secant Angle (degrees)	35.8	33.7	32.7
Large Displacement Secant Angle (degrees)	32.6	25.2	24.4
Asperity (mils)	24.6	25.0	22.6

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

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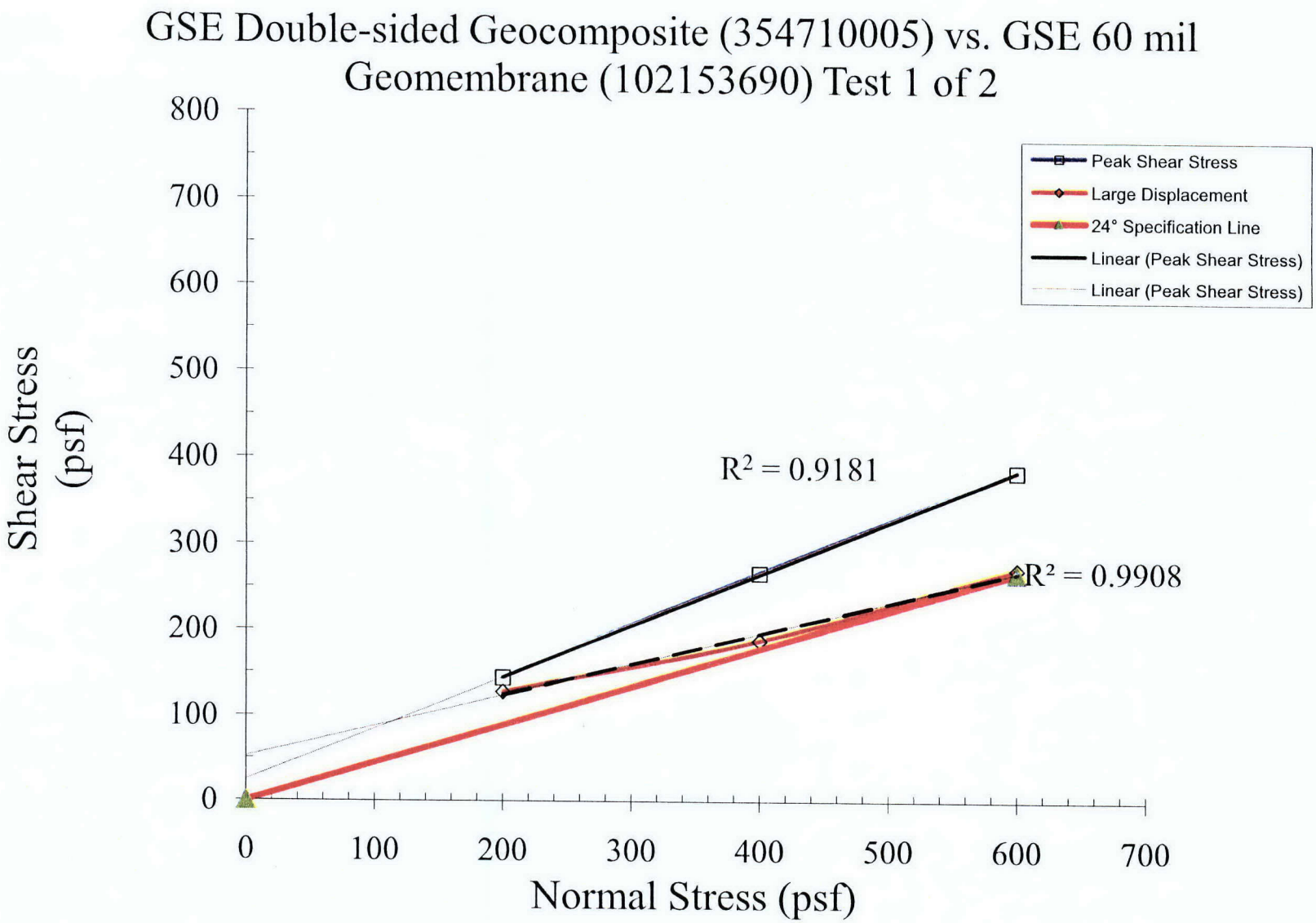

GSE Double-sided Geocomposite (354710005) vs. GSE 60 mil Geomembrane (102153690) Test 1 of 2
Shear Stress (psf)
800
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
Normal Stress (psf)
Peak Shear Stress
Large Displacement
24° Specification Line
Linear (Peak Shear Stress)
Linear (Peak Shear Stress)
R² = 0.9181
R² = 0.9908

TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

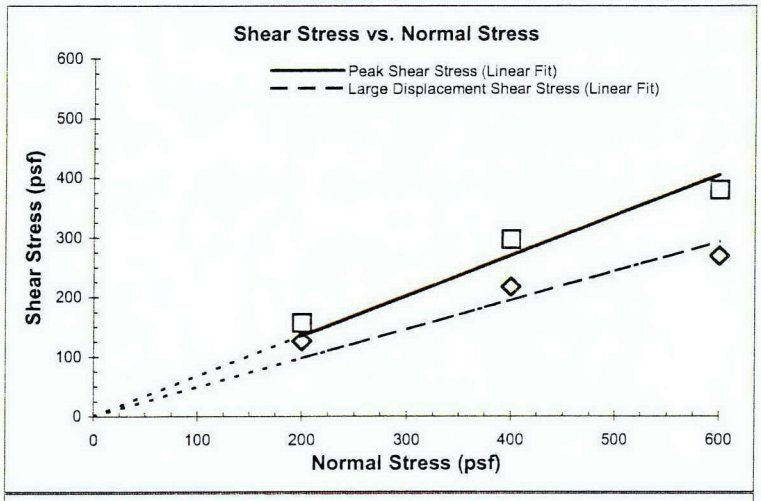
Interface Friction Test Report

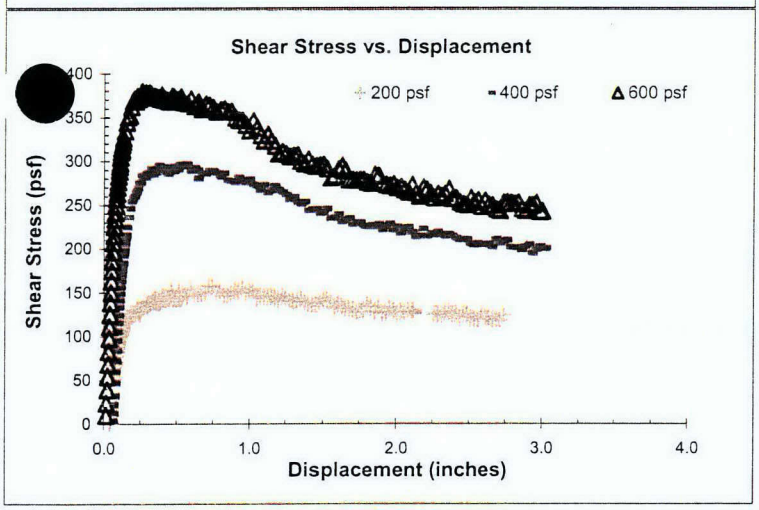
Client: **Envirotech**
Project: **Hanford**
Test Date: 05/14/10-05/14/10

TRI Log#: E2337-33-07
Test Method: ASTM D 5321

John M. Allen, P.E., 05/17/2010
Quality Review/Date

Tested Interface: Skaps TN300-2-8 Double-sided Geocomposite (354710570) vs. GSE 60 mil HDPE Textured Geomembrane (102153711), Test 2 of 2





Test Results

	Peak	Large Displacement (@ 2.0 in.)
Friction Angle (degrees):	34.0	26.0
Y-intercept or Adhesion (psf):	0	0

Peak & large displacement friction angle regression analyses were adjusted to fit a zero y-intercept.

Test Conditions

Upper Box & Lower Box: Skaps TN300-2-8 double-sided geocomposite; GSE 60 mil HDPE Textured Geomembrane

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 1 hour prior to shear.

Test Condition: Wet

Shearing Rate: 0.2 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	10	12	14
Normal Stress (psf)	200	400	600
Corrected Peak Shear Stress (psf)	157	297	380
Corrected Large Displacement Shear Stress (psf)	126	217	269
Peak Secant Angle (degrees)	38.1	36.6	32.3
Large Displacement Secant Angle (degrees)	32.2	28.5	24.1
Asperity (mils)	22.2	26.6	20.4

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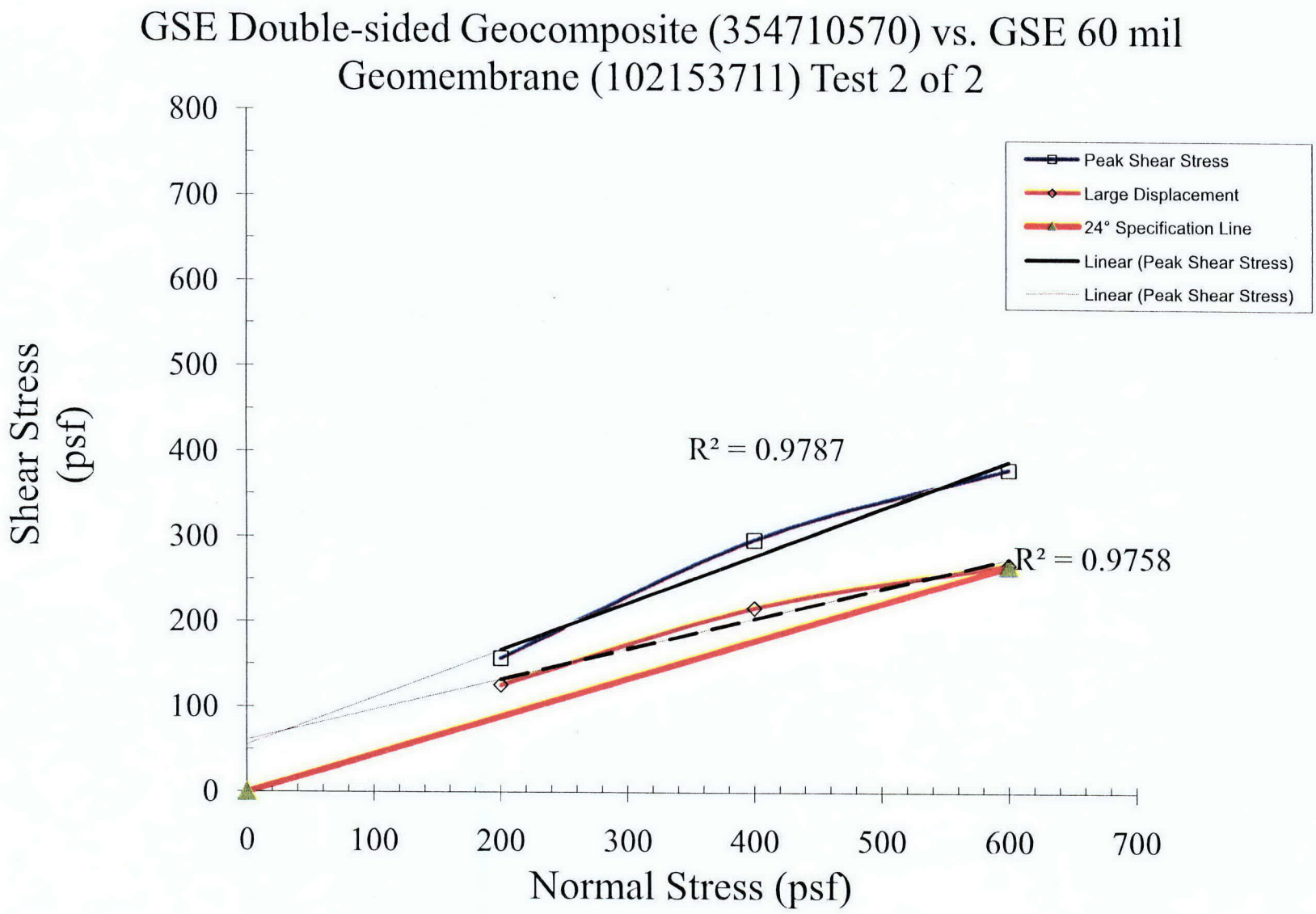

GSE Double-sided Geocomposite (354710570) vs. GSE 60 mil Geomembrane (102153711) Test 2 of 2
Shear Stress (psf)
Normal Stress (psf)
0
100
200
300
400
500
600
700
800
Peak Shear Stress
Large Displacement
24° Specification Line
Linear (Peak Shear Stress)
Linear (Peak Shear Stress)
R² = 0.9787
R² = 0.9758

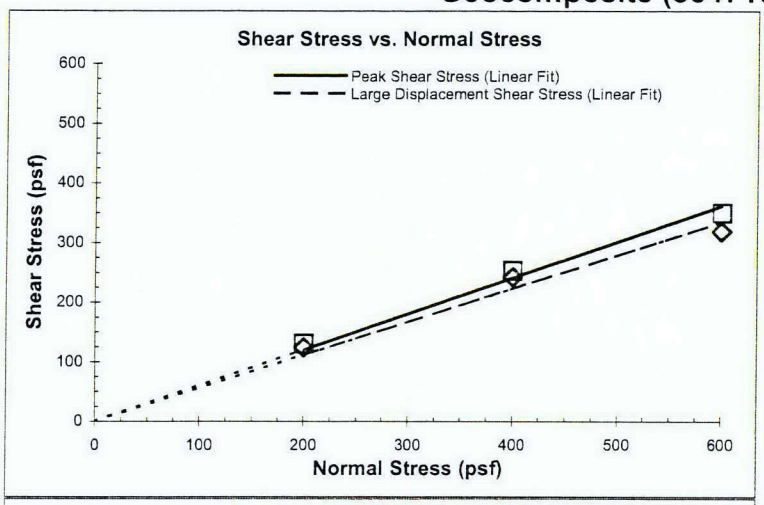
Interface Friction Test Report

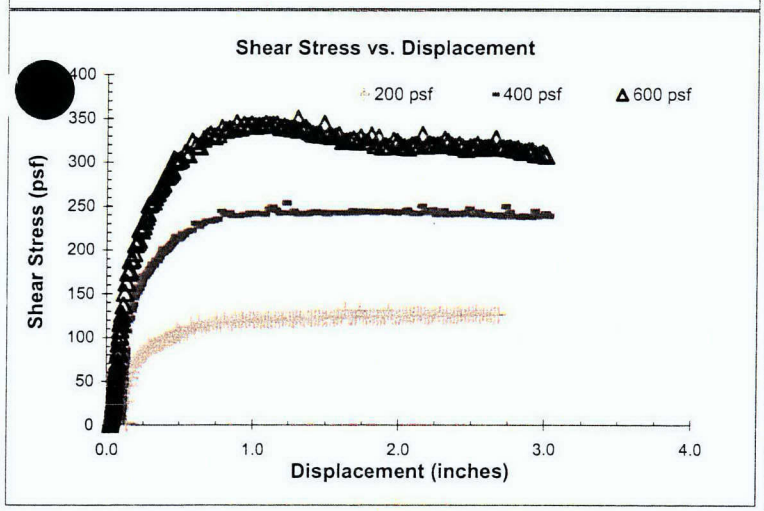
Client: **Envirotech**
Project: **Hanford**
Test Date: 05/13/10-05/14/10

TRI Log#: E2337-33-07
Test Method: ASTM D 5321

John M. Allen, P.E., 05/14/2010
Quality Review/Date

Tested Interface: Operations Layer Material (OP-01) vs. Skaps TN300-2-8 Double-sided Geocomposite (354710005), Test 1 of 2





Test Results

	Peak	Large Displacement (@ 2.0 in.)
Friction Angle (degrees):	31.1	29.2
Y-intercept or Adhesion (psf):	0	0

Peak & large displacement friction angle regression analyses were adjusted to fit a zero y-intercept.

Test Conditions

Upper Box & Lower Box: Operations Layer Material (OP-01) remolded to 95.6 pcf at 19.0% moisture content; Skaps TN300-2-8 double-sided geocomposite

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	10	12	14
Normal Stress (psf)	200	400	600
Corrected Peak Shear Stress (psf)	131	253	350
Corrected Large Displacement Shear Stress (psf)	124	242	319
Peak Secant Angle (degrees)	33.1	32.3	30.2
Large Displacement Secant Angle (degrees)	31.8	31.2	28.0

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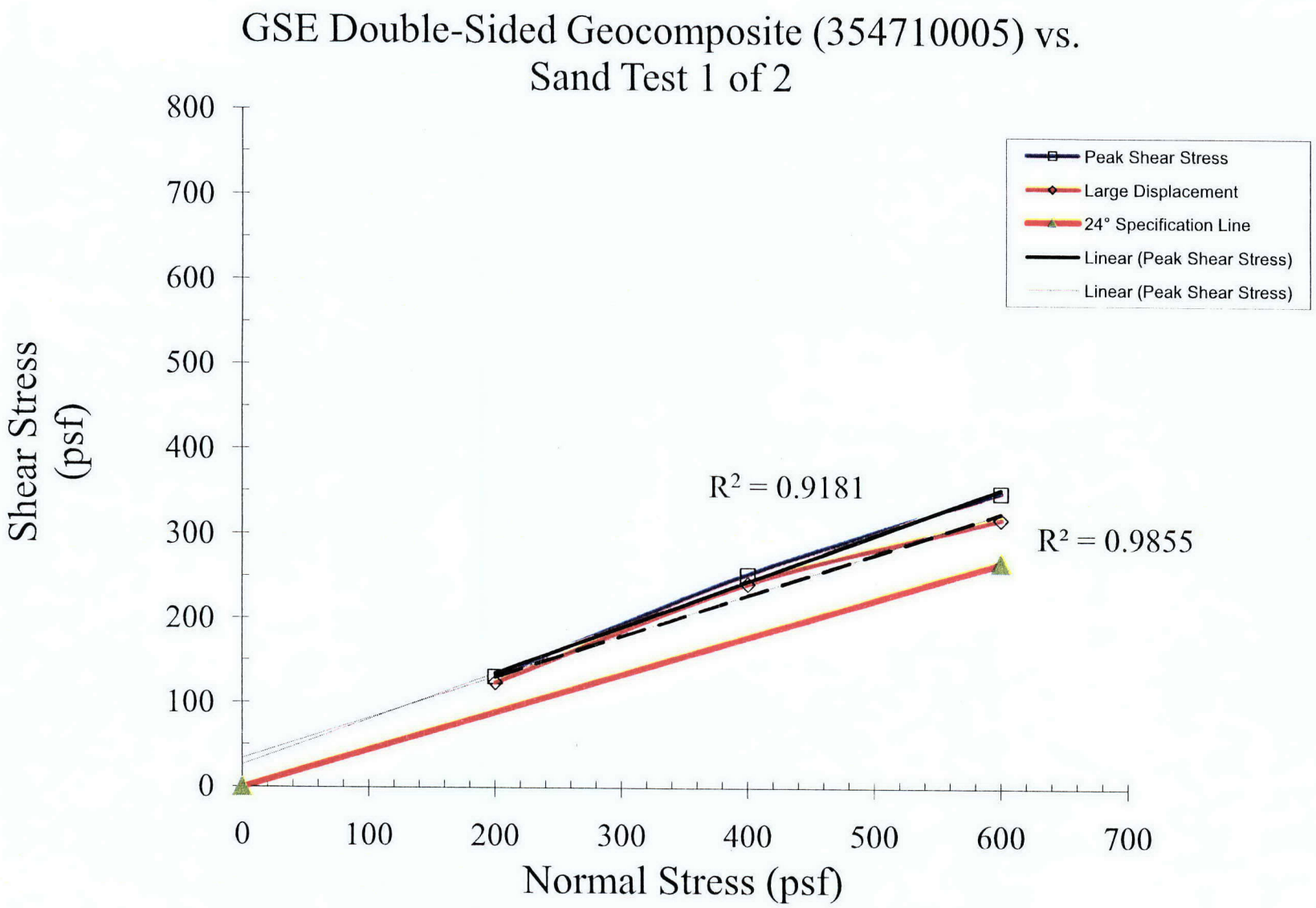

GSE Double-Sided Geocomposite (354710005) vs.
Sand Test 1 of 2
Shear Stress (psf)
Normal Stress (psf)
0
100
200
300
400
500
600
700
800
Peak Shear Stress
Large Displacement
24° Specification Line
Linear (Peak Shear Stress)
Linear (Peak Shear Stress)
R² = 0.9181
R² = 0.9855

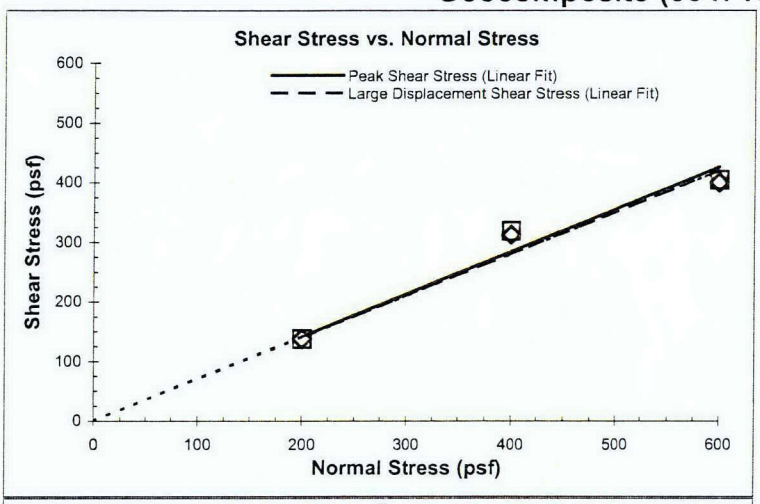
Interface Friction Test Report

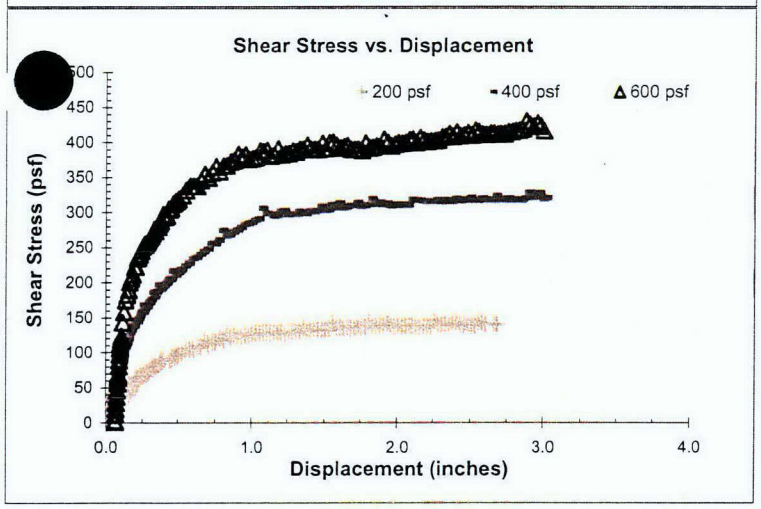
Client: **Envirotech**
Project: **Hanford**
Test Date: 05/15/10-05/17/10

TRI Log#: E2337-33-07
Test Method: ASTM D 5321

John M. Allen, P.E., 05/17/2010
Quality Review/Date

Tested Interface: Operations Layer Material (OP-01) vs. Skaps TN300-2-8 Double-sided Geocomposite (354710570), Test 2 of 2





Test Results

	Peak	Large Displacement (@ 2.0 in.)
Friction Angle (degrees):	35.4	35.0
Y-intercept or Adhesion (psf):	0	0

Peak & large displacement friction angle regression analyses were adjusted to fit a zero y-intercept.

Test Conditions

Upper Box & Lower Box: Operations Layer Material (OP-01) remolded to 95.6 pcf at 19.0% moisture content; Skaps TN300-2-8 double-sided geocomposite

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	10	12	14
Normal Stress (psf)	200	400	600
Corrected Peak Shear Stress (psf)	138	319	404
Corrected Large Displacement Shear Stress (psf)	138	312	400
Peak Secant Angle (degrees)	34.6	38.6	34.0
Large Displacement Secant Angle (degrees)	34.6	38.0	33.7

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

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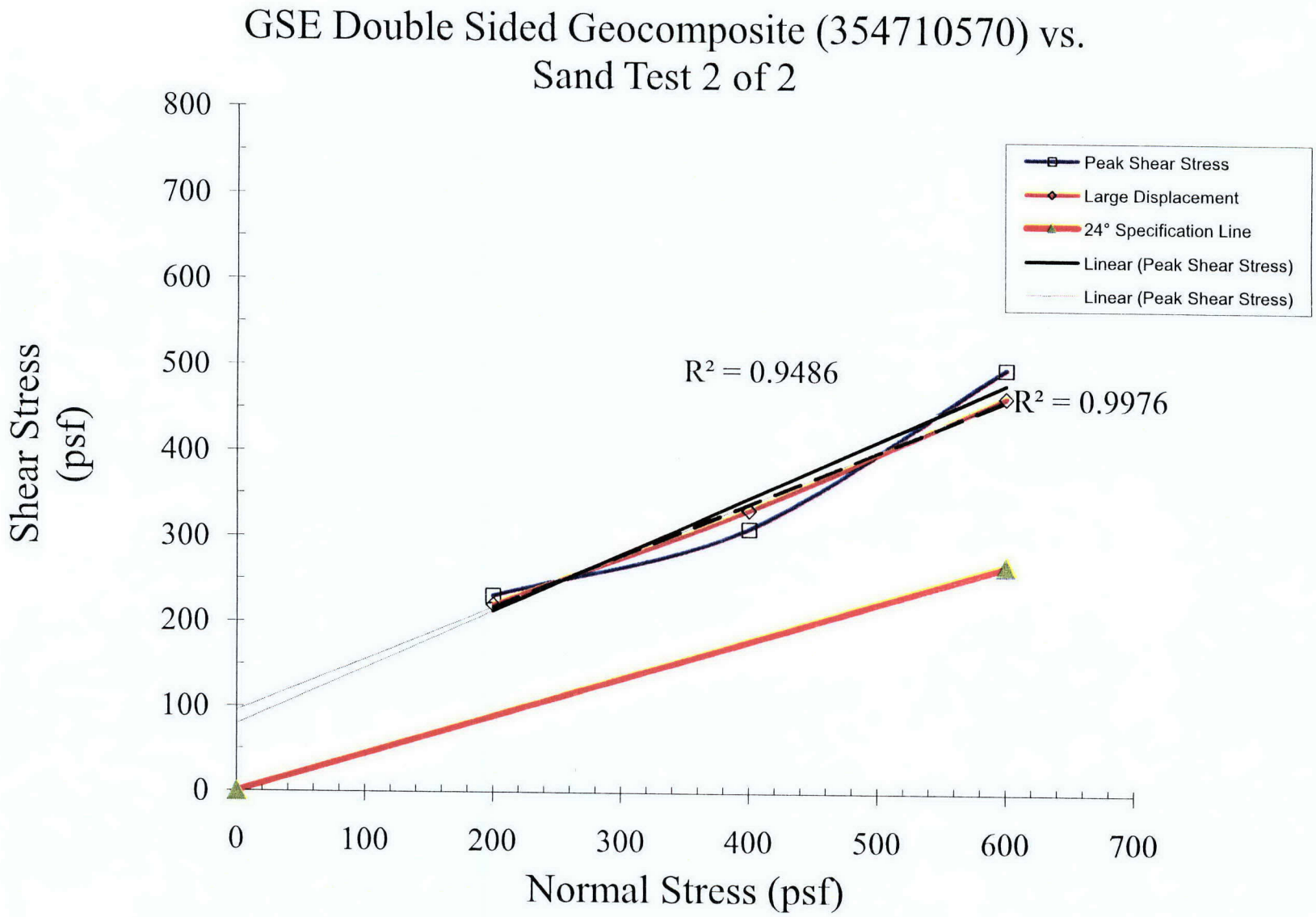

GSE Double Sided Geocomposite (354710570) vs.
Sand Test 2 of 2
Shear Stress (psf)
Normal Stress (psf)
0
100
200
300
400
500
600
700
800
Peak Shear Stress
Large Displacement
24° Specification Line
Linear (Peak Shear Stress)
Linear (Peak Shear Stress)
R² = 0.9486
R² = 0.9976

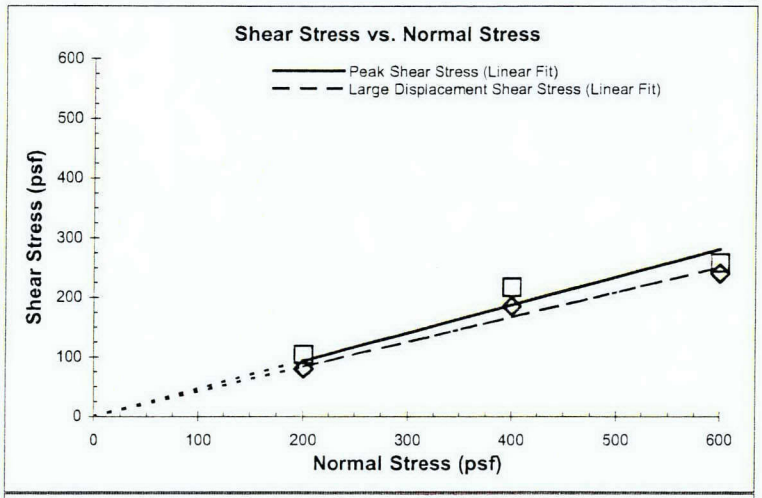
Interface Friction Test Report

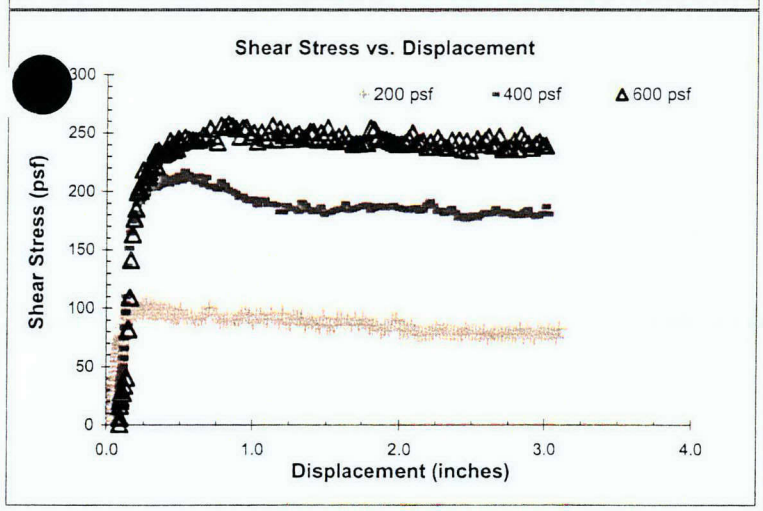
Client: **Envirotech**
Project: **Hanford**
Test Date: 05/07/10-05/08/10

TRI Log#: EE2337-33-07
Test Method: ASTM D 5321

John M. Allen, P.E., 05/10/2010
Quality Review/Date

Tested Interface: Admix Soil (AM-02) vs. GSE 60 mil HDPE Textured Geomembrane (102153690), Test 1 of 2





Test Results

	Peak	Large Displacement (@ 2.0 in.)
Friction Angle (degrees):	25.1	22.7
Y-intercept or Adhesion (psf):	0	0

Peak & large displacement friction angle regression analyses were adjusted to fit a zero y-intercept.

Test Conditions

Upper Box & Admix Soil (AM-02) remolded to 111.0 pcf at 17.5% moisture content

Lower Box GSE 60 mil HDPE Textured Geomembrane

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	10	12	14
Normal Stress (psf)	200	400	600
Corrected Peak Shear Stress (psf)	104	217	258
Corrected Large Displacement Shear Stress (psf)	80	185	240
Peak Secant Angle (degrees)	27.5	28.5	23.2
Large Displacement Secant Angle (degrees)	21.8	24.8	21.8
Asperity (mils)	23.2	22.4	18.4

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

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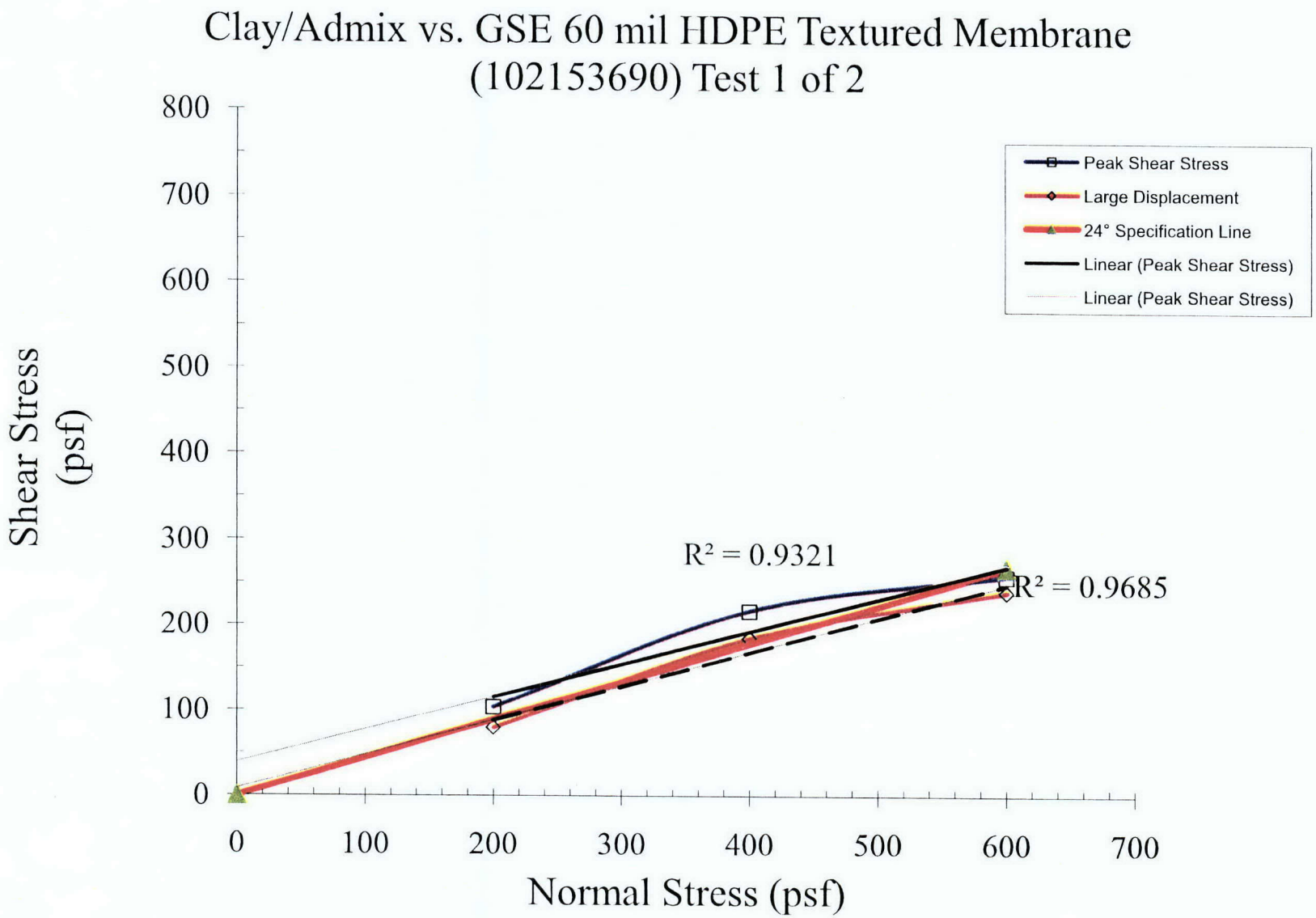

Clay/Admix vs. GSE 60 mil HDPE Textured Membrane
(102153690) Test 1 of 2
Shear Stress (psf)
Normal Stress (psf)
0
100
200
300
400
500
600
700
800
Peak Shear Stress
Large Displacement
24° Specification Line
Linear (Peak Shear Stress)
Linear (Peak Shear Stress)
R² = 0.9321
R² = 0.9685

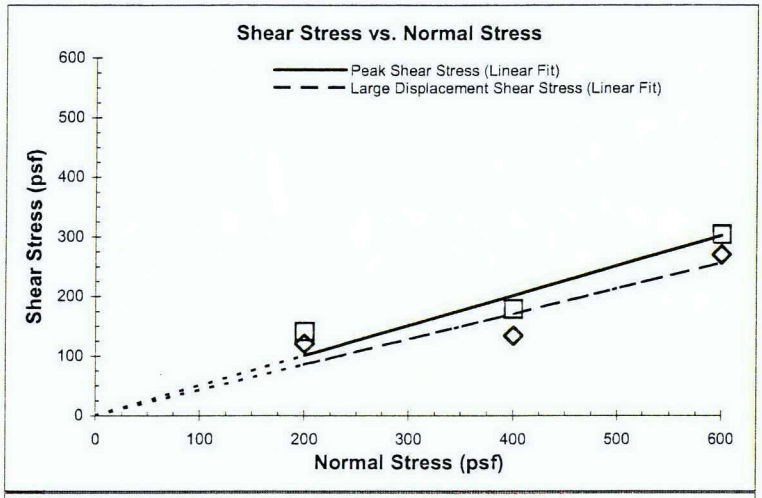
Interface Friction Test Report

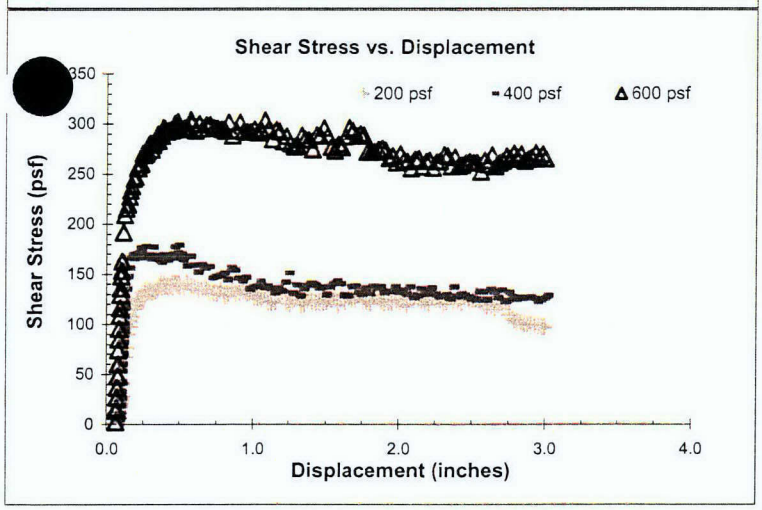
Client: **Envirotech**
Project: **Hanford**
Test Date: 05/14/10-05/15/10

TRI Log#: EE2337-33-07
Test Method: ASTM D 5321

John M. Allen, P.E., 05/16/2010
Quality Review/Date

Tested Interface: Admix Soil (AM-02) vs. GSE 60 mil HDPE Textured Geomembrane (102153711), Test 2 of 2





Test Results

	Peak	Large Displacement (@ 2.0 in.)
Friction Angle (degrees):	26.7	23.2
Y-intercept or Adhesion (psf):	0	0

Peak & large displacement friction angle regression analyses were adjusted to fit a zero y-intercept.

Test Conditions

Upper Box & Lower Box: Admix Soil (AM-02) remolded to 111.0 pcf at 17.5% moisture content; GSE 60 mil HDPE Textured Geomembrane

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	10	12	14
Normal Stress (psf)	200	400	600
Corrected Peak Shear Stress (psf)	141	179	304
Corrected Large Displacement Shear Stress (psf)	121	134	270
Peak Secant Angle (degrees)	35.1	24.1	26.9
Large Displacement Secant Angle (degrees)	31.2	18.5	24.2
Asperity (mils)	23.2	22.4	18.4

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

9063 Bee Caves Road □ Austin, TX 78733-6201 □ (512) 263-2101 □ (512) 263-2558 □ 1-800-880-TEST

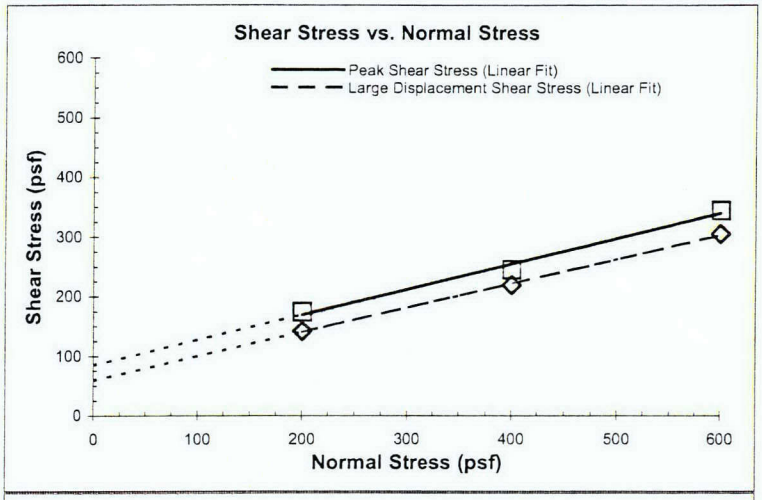
Interface Friction Test Report

Client: **Envirotech**
Project: **Hanford**
Test Date: 05/25/10-05/26/10

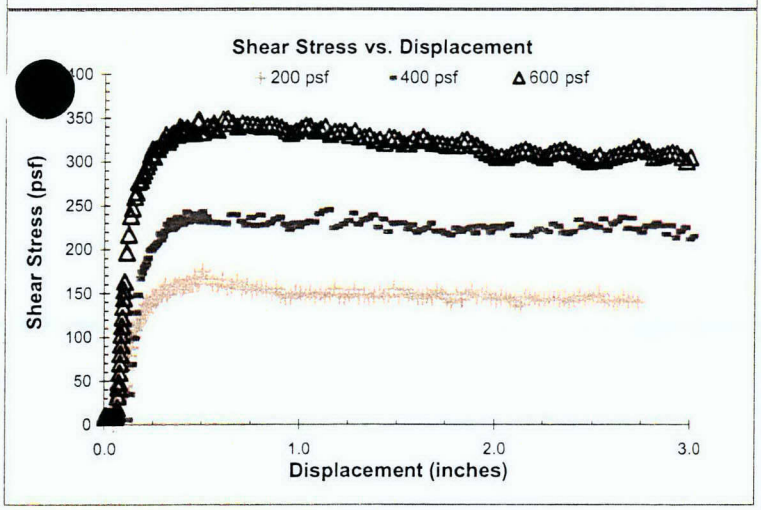
TRI Log#: EE2337-33-07
Test Method: ASTM D 5321

Richard Lacey, P.E. 05/26/2010
Quality Review/Date

Tested Interface: Admix Soil (AM-02) vs. GSE 60 mil HDPE Textured Geomembrane (102153711), Test 2 of 2 Retest



Test Results		
	Peak	Large Displacement (@ 2.0 in.)
Friction Angle (degrees):	23.0	22.2
Y-intercept or Adhesion (psf):	85	59



Test Conditions

Upper Box & Lower Box: Admix Soil (AM-02) remolded to 111.0 pcf at 17.5% moisture content; GSE 60 mil HDPE Textured Geomembrane

Box Dimensions: 12"x12"x4"

Interface Conditioning: Interface soaked and loading applied for a minimum of 24 hours prior to shear.

Test Condition: Wet

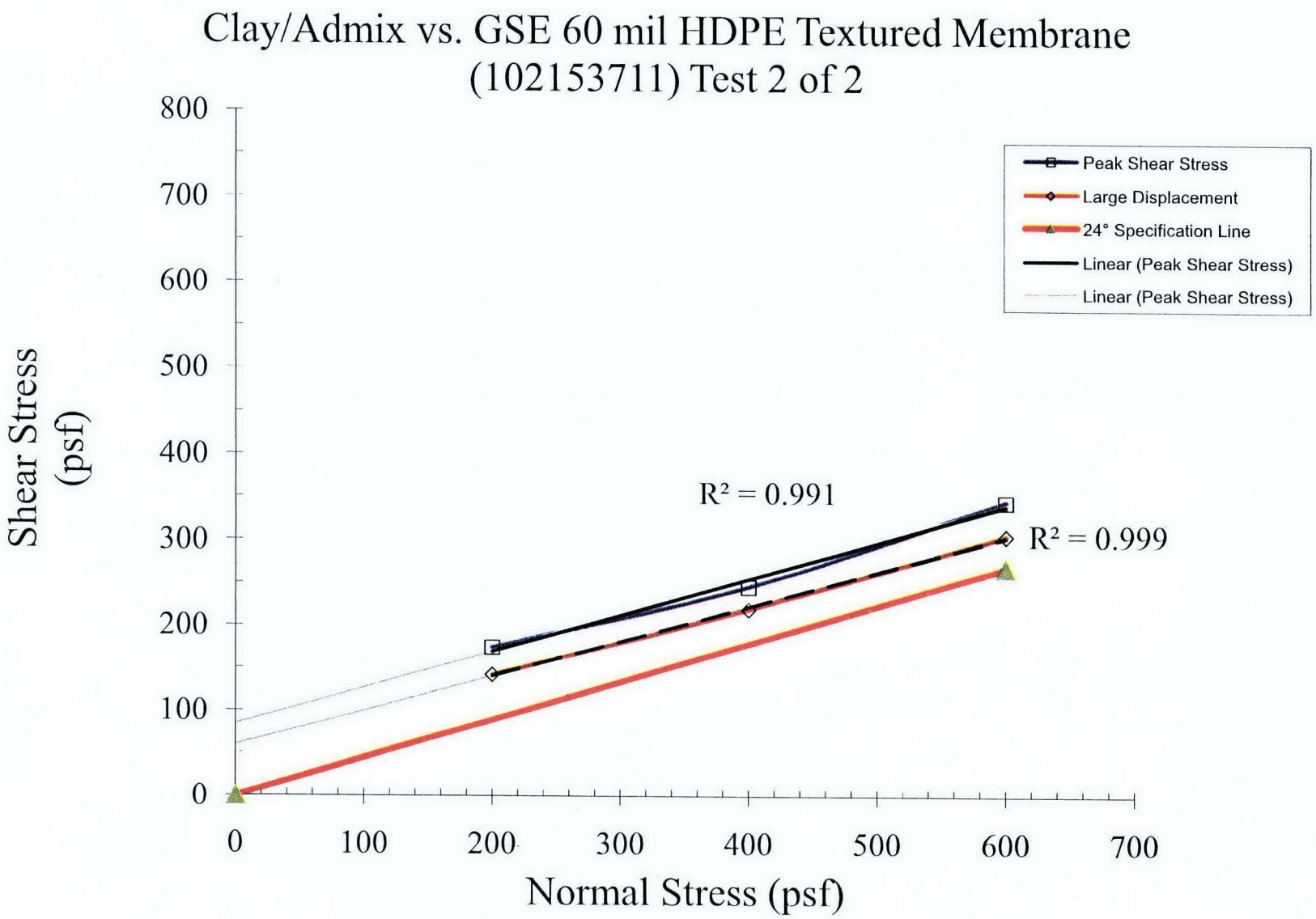
Shearing Rate: 0.04 inches/minute

Test Data

Specimen No.	1	2	3
Bearing Slide Resistance (lbs)	2	2	2
Normal Stress (psf)	200	400	600
Corrected Peak Shear Stress (psf)	174	245	344
Corrected Large Displacement Shear Stress (psf)	142	219	305
Peak Secant Angle (degrees)	41.1	31.5	29.8
Large Displacement Secant Angle (degrees)	35.4	28.7	26.9
Asperity (mils)	23.6	21.2	23.4

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

9063 Bee Caves Road □ Austin, TX 78733-6201 □ (512) 263-2101 □ (512) 263-2558 □ 1-800-880-TEST


Clay/Admix vs. GSE 60 mil HDPE Textured Membrane
(102153711) Test 2 of 2
Shear Stress (psf)
800
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
Normal Stress (psf)
Peak Shear Stress
Large Displacement
24° Specification Line
Linear (Peak Shear Stress)
Linear (Peak Shear Stress)
R² = 0.991
R² = 0.999

E.3

HDPE GEOMEMBRANE CONFORMANCE TEST RESULTS

Precision Geosynthetic Laboratories

GAI-LAP
Initial: *eVZ* #:0.13
DATE: 04/30/2010

Joseph Voss
Envirotech Consulting
P.O. Box 6029
Enid, OK 73702

Dear Mr. Voss:

Thank you for consulting Precision Geosynthetic Laboratories (PGL) for your material testing needs.

Enclosed is the ***final*** laboratory report for the conformance testing of four (4) 60mil HDPE Textured Black/White Geomembrane samples.

PROJECT NAME: Environmental Restoration Disposal Facility (ERDF)

REFERENCE PGL JOB NO.: G100407

DATE RECEIVED: April 29, 2010 **DATE REPORTED:** April 30, 2010

SAMPLED BY: PGL at GSE, TX.

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PGL CONTROL NUMBER
R#102153674 L#10D1015	65998
R#102153680 L#10D1015	65999
R#102153686 L#10D1015	66000
R#102153698 L#10D1015	66001

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D5994	Thickness
ASTM D1505	Density
ASTM D6693 (Type IV)	Tensile Strength
ASTM D1603	Carbon Black Content
ASTM D5596	Carbon Black Dispersion
ASTM D1004	Tear Resistance
ASTM D4833	Puncture Resistance
ASTM D7466	Asperity Height

TEST CONDITIONS: The samples were conditioned for a minimum of one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS: The test results are summarized in Tables 1 to 4.

PRECISION GEOSYNTHETIC LABORATORIES

Belinda Jade R. Yeo
Quality Assurance

Carmelo V. Zantua
Technical/Laboratory Director

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. Precision Geosynthetic Laboratories 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 a policy of the company 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 longer time, please advise us in writing.

1160 North Gilbert Street, Anaheim, CA. 92801, www.precisionlabs.net Tel# 714-520-9631, 800-522-4599 Fax#714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153674 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **65998**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		62	61	62	61	62	61	62	61	64	62	62	1	61	64	60	> 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	29	31	29	31	29	28	29	31	31	29	1	28	31	20	
	Black Side	31	29	36	32	31	28	26	28	26	28	29	3	26	36		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9476	0.9476	0.9476								0.9476	0.0000	0.9476	0.9476	> 0.94	
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	185	180	180	182	190						184	4	180	190	126	
	TD	182	189	184	180	183						184	3	180	189		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	180	176	191	178	179						181	6	176	191	90	
	TD	176	183	183	191	176						182	6	176	191		
	Elongation at Yield (percent, %)																
	MD	18	19	18	19	18						18	1	18	19	12	
	TD	18	18	17	17	17						17	0	17	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	391	401	441	406	401						408	19	391	441	100	
	TD	391	404	403	419	375						398	16	375	419		

Continued on next page

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000
GAI-LAP
ANSI-RAB
UKAS

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153674 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **65998**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	59	60	59	56	57	56	58	55	56	59	57	2	55	60	42	
	TD	58	54	53	56	56	54	58	57	54	57	56	2	53	58		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		150	142	143	140	142	150	148	145	143	150	145	4	140	153	90	
		153	142	146	143	142											
ASTM D1603	Carbon Black Content (percent, %)																
		2.46	2.45									2.45	0.01	2.45	2.46	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 In Category 1 or 2	
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				1 in Category 3	

End of Table 1

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

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Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153680 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **65999**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		64	62	62	63	64	64	62	62	64	62	63	1	62	64	60	
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	28	26	28	26	28	31	29	29	28	2	26	31	20	
	Black Side	28	29	31	36	28	26	28	28	31	31	29	3	26	36		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9484	0.9484	0.9484								0.9484	0.0000	0.9484	0.9484		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	184	183	184	180	184						183	2	180	184	126	
	TD	176	183	179	175	179						179	3	175	183		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	183	199	192	183	196						191	7	183	199	90	
	TD	191	195	183	184	183						187	5	183	195		
	Elongation at Yield (percent, %)																
	MD	18	19	18	17	18						18	1	17	19	12	
	TD	17	17	17	16	17						17	0	16	17		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	400	453	460	451	515						456	41	400	515	100	
	TD	501	539	390	451	449						466	57	390	539		

Continued on next page

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153680 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **65999**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	60	61	57	58	59	56	57	56	61	59	58	2	56	61	42
	TD	58	54	55	59	55	55	56	57	56	57	56	1	54	59	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		150	146	143	142	143	142	146	142	143	142	143	3	140	150	90
		144	140	142	144	140										
ASTM D1603	Carbon Black Content (percent, %)															
		2.46	2.44									2.45	0.01	2.44	2.46	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 in Category 1 or 2 1 in Category 3

End of Table 2

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

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Precision Geosynthetic Laboratories

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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153686 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **66000**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		63	62	61	62	64	65	64	63	62	62	63	1	61	65	60	> 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	28	26	26	29	31	28	25	29	27	2	25	31	20	
	Black Side	28	28	26	28	31	31	29	36	28	26	29	3	26	36		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9479	0.9479	0.9479								0.9479	0.0000	0.9479	0.9479		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	175	179	180	183	180						179	3	175	183	126	
	TD	184	183	184	183	179						183	2	179	184		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	168	184	176	191	184						181	9	168	191	90	
	TD	180	184	179	184	188						183	4	179	188		
	Elongation at Yield (percent, %)																
	MD	18	19	18	19	18						18	0	18	19	12	
	TD	17	16	16	17	17						17	0	16	17		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	383	449	394	450	419						419	31	383	450	100	
	TD	400	419	391	401	421						406	13	391	421		

Continued on next page

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153686 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **66000**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	56	52	58	60	58	55	53	54	56	56	56	2	52	60	42
	TD	53	56	52	58	51	54	53	54	52	51	53	2	51	58	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		159	148	152	153	150	143	146	152	160	158	151	6	142	160	90
		152	153	150	142	143										
ASTM D1603	Carbon Black Content (percent, %)															
		2.45	2.47									2.46	0.01	2.45	2.47	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 in Category 1 or 2 1 in Category 3

End of Table 3

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 4.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153698 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **66001**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		63	62	61	62	62	62	62	62	63	64	62	1	61	64	60	> 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	34	28	26	29	31	31	29	28	26	28	29	2	26	34	20	
	Black Side	34	28	26	31	29	29	28	31	31	29	30	2	26	34		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9484	0.9484	0.9484								0.9484	0.0000	0.9484	0.9484	> 0.94	
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	180	184	180	184	184						182	2	180	184	126	
	TD	175	175	184	183	179						179	4	175	184		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	176	184	187	179	184						182	4	176	187	90	
	TD	178	171	191	180	184						181	7	171	191		
	Elongation at Yield (percent, %)																
	MD	19	19	18	19	17						18	1	17	19	12	
	TD	19	17	17	15	16						17	1	15	19		
	Elongation at Break (percent, %)					*Gauge Length = 2.0 in.*											
	MD	401	450	452	406	425						427	24	401	452	100	
	TD	450	416	501	419	439						445	34	416	501		

Continued on next page

MD - MACHINE DIRECTION
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Precision Geosynthetic Laboratories

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TABLE 4.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153698 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100407**
PGL Control No.: **66001**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	60	57	55	60	61	56	60	55	59	61	58	2	55	61	42
	TD	59	55	61	59	60	59	59	56	57	57	58	2	55	61	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		150	142	143	140	142	150	142	142	140	143	144	4	140	150	90
		146	150	142	141	140										
ASTM D1603	Carbon Black Content (percent, %)															
		2.46	2.46									2.46	0.00	2.46	2.46	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Category 1 or 2 1 in Category 3
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				

End of Table 4

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
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Precision Geosynthetic Laboratories

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Precision Geosynthetic Laboratories

GAI-LAP
Initial: CVZ #:0.13
DATE: 04/30/2010

Joseph Voss
Envirotech Consulting
P.O. Box 6029
Enid, OK 73702

Dear Mr. Voss:

Thank you for consulting Precision Geosynthetic Laboratories (PGL) for your material testing needs.

Enclosed is the ***final*** laboratory report for the conformance testing of four (4) 60mil HDPE Textured Black/White Geomembrane samples.

PROJECT NAME: Environmental Restoration Disposal Facility (ERDF)

REFERENCE PGL JOB NO.: G100408

DATE RECEIVED: April 29, 2010 **DATE REPORTED:** April 30, 2010

SAMPLED BY: PGL at GSE, TX.

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PGL CONTROL NUMBER
R#102153710 L#10D1015	66002
R#102153714 L#10D1015	66003
R#102153718 L#10D1017	66004
R#102153723 L#10D1017	66005

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D5994	Thickness
ASTM D1505	Density
ASTM D6693 (Type IV)	Tensile Strength
ASTM D1603	Carbon Black Content
ASTM D5596	Carbon Black Dispersion
ASTM D1004	Tear Resistance
ASTM D4833	Puncture Resistance
ASTM D7466	Asperity Height

TEST CONDITIONS: The samples were conditioned for a minimum of one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS: The test results are summarized in Tables 1 to 4.

PRECISION GEOSYNTHETIC LABORATORIES

Belinda Jade R. Yeo
Quality Assurance

Carmelo V. Zantua
Technical/Laboratory Director

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. Precision Geosynthetic Laboratories 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 a policy of the company 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 longer time, please advise us in writing.

1160 North Gilbert Street, Anaheim, CA. 92801, www.precisionlabs.net Tel# 714-520-9631, 800-522-4599 Fax#714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153710 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66002**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		64	64	64	66	65	64	62	64	62	61	64	1	61	66	60	> 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	31	29	28	29	31	31	29	31	29	28	30	1	28	31	20	
	Black Side	28	28	26	26	31	29	28	28	31	29	28	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9474	0.9474	0.9474								0.9474	0.0000	0.9474	0.9474		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	180	172	173	168	168						172	5	168	180	126	
	TD	174	183	172	171	175						175	5	171	183		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	208	182	204	211	199						201	11	182	211	90	
	TD	191	211	193	199	202						199	8	191	211		
	Elongation at Yield (percent, %)																
	MD	19	18	17	17	19						18	1	17	19	12	
	TD	17	18	17	17	17						17	0	17	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	456	433	495	479	541						481	41	433	541	100	
	TD	427	544	483	488	519						492	44	427	544		

Continued on next page

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

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TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153710 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66002**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	59	57	57	55	58	58	59	59	60	57	58	1	55	60	42
	TD	59	60	63	58	57	58	62	56	58	56	59	2	56	63	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		155	154	153	152	158	160	158	150	154	153	154	3	150	160	90
		150	152	153	150	152										
ASTM D1603	Carbon Black Content (percent, %)															
		2.43	2.46									2.44	0.02	2.43	2.46	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 in Category 1 or 2 1 in Category 3

End of Table 1

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

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Precision Geosynthetic Laboratories

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153714 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66003**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D5994	Thickness (mils)															
	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)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															
		64	64	62	62	64	62	64	62	64	62	63	1	62	64	60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)															> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).															
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner															
	The highest reading from 3 readings were taken per specimen.															
	White Side	29	28	28	26	28	29	31	29	31	28	29	2	26	31	20
	Black Side	27	26	30	30	36	28	26	28	26	28	28	3	26	36	
ASTM D1505	Density (grams/ cm.^{3})															
		0.9471	0.9471	0.9471								0.9471	0.0000	0.9471	0.9471	> 0.94
ASTM D6693 Type IV	Tensile Properties:															
	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															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	179	187	183	175	176						180	5	175	187	126
	TD	176	168	175	179	188						177	7	168	188	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	199	184	200	208	216						202	12	184	216	90
	TD	184	192	191	200	199						193	7	184	200	
	Elongation at Yield (percent, %)															
	MD	19	20	19	18	19						19	1	18	20	12
	TD	17	17	17	18	17						17	1	17	18	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	450	441	489	494	500						475	27	441	500	100
	TD	451	480	449	541	510						486	39	449	541	

Continued on next page

MD - MACHINE DIRECTION
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Precision Geosynthetic Laboratories

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153714 L#10D1015**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66003**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	60	64	58	62	57	63	54	58	60	59	59	3	54	64	42	
	TD	54	56	58	58	57	54	57	56	59	57	57	2	54	59		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		150	153	152	153	159	158	158	150	150	152	152	4	148	159	90	
		150	151	150	148	148											
ASTM D1603	Carbon Black Content (percent, %)																
		2.43	2.44									2.43	0.01	2.43	2.44	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)																
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 in Category 1 or 2 1 in Category 3	

End of Table 2

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

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Precision Geosynthetic Laboratories

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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153718 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66004**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		62	61	61	64	64	64	62	61	62	62	62	1	61	64		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	28	26	27	26	30	31	28	28	28	2	26	31		20
	Black Side	26	29	31	29	28	36	37	28	28	31	30	4	26	37		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9474	0.9474	0.9474								0.9474	0.0000	0.9474	0.9474		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	179	176	179	184	180						180	3	176	184		126
	TD	178	168	172	179	179						175	5	168	179		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	200	191	192	191	199						195	5	191	200		90
	TD	175	199	199	200	207						196	12	175	207		
	Elongation at Yield (percent, %)																
	MD	18	18	17	18	17						18	1	17	18		12
	TD	15	18	18	18	17						17	1	15	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	457	439	451	416	453						443	17	416	457		100
	TD	430	491	491	501	548						492	42	430	548		

Continued on next page

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
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Precision Geosynthetic Laboratories

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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153718 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66004**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	57	57	58	55	60	59	55	57	59	62	58	2	55	62	42	
	TD	61	57	59	56	59	56	56	58	59	58	58	2	56	61		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		150	152	151	148	150	150	152	153	159	161	153	5	148	161	90	
		160	158	158	148	150											
ASTM D1603	Carbon Black Content (percent, %)																
		2.43	2.43									2.43	0.00	2.43	2.43	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)																
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 In Category 1 or 2 1 in Category 3	

End of Table 3

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
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Precision Geosynthetic Laboratories

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TABLE 4.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153723 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66005**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		63	62	64	64	65	62	61	64	64	62	63	1	61	65	60	> 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	31	29	28	29	31	34	28	26	28	28	29	2	26	34	20	
	Black Side	28	26	28	28	29	31	28	26	28	26	28	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9484	0.9484	0.9484								0.9484	0.0000	0.9484	0.9484	> 0.94	
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	180	183	184	180	184						182	2	180	184	126	
	TD	178	168	172	179	179						175	5	168	179		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	200	184	204	212	212						203	12	184	212	90	
	TD	180	204	192	199	208						197	11	180	208		
	Elongation at Yield (percent, %)																
	MD	19	19	19	18	17						18	1	17	19	12	
	TD	17	18	17	17	17						17	0	17	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	501	445	530	499	501						495	31	445	530	100	
	TD	491	501	489	516	541						507	21	489	541		

Continued on next page

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

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TABLE 4.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **4/29/2010**
Date Reported: **4/30/2010**
Client Sample ID: **R#102153723 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100408**
PGL Control No.: **66005**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	63	60	58	63	59	62	60	64	59	59	61	2	58	64	42
	TD	54	59	59	61	59	56	56	56	62	59	58	3	54	62	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		153	152	153	150	156	158	158	153	155	159	157	4	150	163	90
		160	162	163	160	160										
ASTM D1603	Carbon Black Content (percent, %)															
		2.44	2.44									2.44	0.00	2.44	2.44	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Category 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				1 in Category 3

End of Table 4

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

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Precision Geosynthetic Laboratories

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/07/2010

Joseph Voss
Envirotech Consulting
P.O. Box 6029
Enid, OK 73702

Dear Mr. Voss:

Thank you for consulting Precision Geosynthetic Laboratories (PGL) for your material testing needs.

Enclosed is the ***final*** laboratory report for the conformance testing of three (3) 60mil HDPE Textured Black/White Geomembrane samples.

PROJECT NAME: Environmental Restoration Disposal Facility (ERDF)

REFERENCE PGL JOB NO.: G100433

DATE RECEIVED: May 4, 2010 **DATE REPORTED:** May 7, 2010

SAMPLED BY: PGL at GSE, TX.

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PGL CONTROL NUMBER
R#102153730 L#10D1017	66163
R#102153736 L#10D1017	66164
R#102153741 L#10D1017	66165

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D5994	Thickness
ASTM D1505	Density
ASTM D6693 (Type IV)	Tensile Strength
ASTM D1603	Carbon Black Content
ASTM D5596	Carbon Black Dispersion
ASTM D1004	Tear Resistance
ASTM D4833	Puncture Resistance
ASTM D7466	Asperity Height

TEST CONDITIONS: The samples were conditioned for a minimum of one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS: The test results are summarized in Tables 1 to 3.

PRECISION GEOSYNTHETIC LABORATORIES

Belinda Jade R. Yeo
Quality Assurance

Carmelo V. Zantua
Technical/Laboratory Director

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. Precision Geosynthetic Laboratories 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 a policy of the company 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 longer time, please advise us in writing.

1160 North Gilbert Street, Anaheim, CA. 92801, www.precisionlabs.net Tel# 714-520-9631, 800-522-4599 Fax#714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/4/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153730 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100433**
PGL Control No.: **66163**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		62	61	61	62	61	61	61	61	61	61	61	0	61	62	60	> 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	28	28	26	31	28	36	29	30	29	3	26	36	20	
	Black Side	28	26	31	30	31	29	28	26	28	26	28	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9474	0.9474	0.9474								0.9474	0.0000	0.9474	0.9474		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	194	193	194	199	200						196	3	193	200	126	
	TD	191	200	215	208	200						203	9	191	215		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	240	239	235	227	208						230	13	208	240	90	
	TD	227	220	220	199	211						216	11	199	227		
	Elongation at Yield (percent, %)																
	MD	19	18	19	18	18						18	0	18	19	12	
	TD	17	18	16	17	17						17	1	16	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	510	501	487	419	438						471	40	419	510	100	
	TD	485	487	491	391	413						453	48	391	491		

Continued on next page

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

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TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/4/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153730 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100433**
PGL Control No.: **66163**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	62	56	58	60	60	58	61	55	58	60	59	2	55	62	42	
	TD	54	54	53	57	50	55	56	56	54	53	54	2	50	57		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		140	140	142	143	140	140	140	142	142	144	141	1	139	144	90	
		141	140	142	139	140											
ASTM D1603	Carbon Black Content (percent, %)																
		2.45	2.43									2.44	0.01	2.43	2.45	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Category 1 or 2	
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				1 in Category 3	

End of Table 1

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/4/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153736 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100433**
PGL Control No.: **66164**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D5994	Thickness (mils)															
	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)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															
		61	61	61	61	61	61	62	61	61	61	61	0	61	62	60 > 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)															
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).															
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner The highest reading from 3 readings were taken per specimen.															
	White Side	31	29	31	28	28	28	26	31	31	28	29	2	26	31	20
	Black Side	28	26	29	30	31	31	28	26	28	28	28	2	26	31	
ASTM D1505	Density (grams/ cm.^{3})															
		0.9474	0.9474	0.9474								0.9474	0.0000	0.9474	0.9474	> 0.94
ASTM D6693 Type IV	Tensile Properties:															
	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															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	190	185	187	192	190						189	3	185	192	126
	TD	199	195	199	200	201						199	2	195	201	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	239	240	229	237	232						235	5	229	240	90
	TD	219	224	232	224	224						225	5	219	232	
	Elongation at Yield (percent, %)															
	MD	19	19	19	19	18						19	0	18	19	12
	TD	18	17	17	15	17						17	1	15	18	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	491	501	469	500	499						492	13	469	501	100
	TD	469	510	569	506	520						515	36	469	569	

Continued on next page

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/4/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153736 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100433**
PGL Control No.: **66164**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	55	57	55	58	59	57	55	57	55	53	56	2	53	59	42	
	TD	58	54	54	53	52	54	54	57	53	54	54	2	52	58		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		138	140	142	143	140	139	140	142	144	142	141	2	138	144	90	
		142	142	140	143	140											
ASTM D1603	Carbon Black Content (percent, %)																
		2.46	2.43									2.44	0.02	2.43	2.46	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)																
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 in Category 1 or 2 1 in Category 3	

End of Table 2

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/4/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153741 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100433**
PGL Control No.: **66165**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		61	61	61	61	61	62	61	61	61	61	61	0	61	62		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	28	31	28	29	28	31	31	32	31	30	2	28	32		20
	Black Side	28	31	31	28	26	28	28	29	31	31	29	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9468	0.9468	0.9468								0.9468	0.0000	0.9468	0.9468		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	184	180	194	194	199						190	8	180	199		126
	TD	192	196	200	202	199						198	4	192	202		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	229	228	236	230	216						228	7	216	236		90
	TD	220	224	226	212	211						219	7	211	226		
	Elongation at Yield (percent, %)																
	MD	19	18	19	18	19						18	0	18	19		12
	TD	18	18	17	18	19						18	1	17	19		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	433	430	492	427	406						438	32	406	492		100
	TD	491	501	510	449	421						474	38	421	510		

Continued on next page

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/4/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153741 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100433**
PGL Control No.: **66165**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	58	53	58	55	57	53	59	58	51	56	56	3	51	59	42
	TD	52	56	55	55	51	52	58	55	52	55	54	2	51	58	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		138	141	138	139	140	142	142	138	140	138	140	1	138	142	90
		141	140	140	141	138										
ASTM D1603	Carbon Black Content (percent, %)															
		2.44	2.44									2.44	0.00	2.44	2.44	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Category 1 or 2
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				1 in Category 3

End of Table 3

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

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Precision Geosynthetic Laboratories

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/07/2010

Joseph Voss
Envirotech Consulting
P.O. Box 6029
Enid, OK 73702

Dear Mr. Voss:

Thank you for consulting Precision Geosynthetic Laboratories (PGL) for your material testing needs.

Enclosed is the ***final*** laboratory report for the conformance testing of three (3) 60mil HDPE Textured Black/White Geomembrane samples.

PROJECT NAME: Environmental Restoration Disposal Facility (ERDF)

REFERENCE PGL JOB NO.: G100444

DATE RECEIVED: May 5, 2010 **DATE REPORTED:** May 7, 2010

SAMPLED BY: PGL at GSE, TX.

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PGL CONTROL NUMBER
R#102153747 L#10D1017	66214
R#102153751 L#10D1017	66215
R#102153755 L#10D1017	66216

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D5994	Thickness
ASTM D1505	Density
ASTM D6693 (Type IV)	Tensile Strength
ASTM D1603	Carbon Black Content
ASTM D5596	Carbon Black Dispersion
ASTM D1004	Tear Resistance
ASTM D4833	Puncture Resistance
ASTM D7466	Asperity Height

TEST CONDITIONS: The samples were conditioned for a minimum of one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS: The test results are summarized in Tables 1 to 3.

PRECISION GEOSYNTHETIC LABORATORIES

Belinda Jade R. Yeo
Quality Assurance

Carmelo V. Zantua
Technical/Laboratory Director

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. Precision Geosynthetic Laboratories 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 a policy of the company 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 longer time, please advise us in writing.

1160 North Gilbert Street, Anaheim, CA. 92801, www.precisionlabs.net Tel# 714-520-9631, 800-522-4599 Fax#714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/5/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153747 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100444**
PGL Control No.: **66214**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		62	61	62	62	61	61	61	62	61	62	61	1	61	62		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	26	29	31	31	28	26	28	26	28	2	26	31		20
	Black Side	28	26	26	26	31	30	30	29	29	31	28	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9486	0.9486	0.9486								0.9486	0.0000	0.9486	0.9486		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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+/-2^0 C (73.4+/-3.6^0 F), and 50+/-5% relative humidity. Rate of Separation: 2"/min																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	193	190	201	194	195						195	4	190	201		126
	TD	194	200	192	202	200						198	4	192	202		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	216	210	212	212	232						217	9	210	232		90
	TD	207	196	217	224	213						211	11	196	224		
	Elongation at Yield (percent, %)																
	MD	17	17	18	17	18						17	0	17	18		12
	TD	16	18	17	16	17						17	1	16	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	481	401	410	456	495						448	42	401	495		100
	TD	498	458	530	550	486						504	36	458	550		

Continued on next page

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/5/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153747 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100444**
PGL Control No.: **66214**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	57	59	56	60	59	58	57	58	61	60	59	2	56	61	42	
	TD	55	54	54	59	59	60	58	54	53	56	56	3	53	60		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		138	140	143	142	137	140	139	140	143	140	140	2	137	143	90	
		137	140	140	142	140											
ASTM D1603	Carbon Black Content (percent, %)																
		2.46	2.46									2.46	0.00	2.46	2.46	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)																
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 in Category 1 or 2 1 in Category 3	

End of Table 1

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/5/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153751 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100444**
PGL Control No.: **66215**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		62	61	61	61	61	61	61	61	61	61	61	0	61	62		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	29	31	31	30	28	28	26	28	28	2	26	31		20
	Black Side	28	26	31	28	26	31	31	30	29	28	29	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9476	0.9476	0.9476								0.9476	0.0000	0.9476	0.9476		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	196	197	191	194	187						193	4	187	197		126
	TD	196	191	200	200	200						197	4	191	200		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	269	236	224	224	216						234	21	216	269		90
	TD	212	204	204	199	216						207	7	199	216		
	Elongation at Yield (percent, %)																
	MD	18	19	19	17	18						18	1	17	19		12
	TD	16	16	16	16	17						16	0	16	17		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	495	431	510	521	451						481	39	431	521		100
	TD	501	498	500	419	530						489	42	419	530		

Continued on next page

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/5/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153751 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100444**
PGL Control No.: **66215**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	56	60	56	58	57	59	57	54	60	59	58	2	54	60	42
	TD	56	57	56	57	55	53	57	56	56	58	56	1	53	58	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		140	140	139	140	139	140	142	142	138	140	140	1	138	142	90
		139	140	142	139	140										
ASTM D1603	Carbon Black Content (percent, %)															
		2.48	2.46									2.47	0.01	2.46	2.48	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Category 1 or 2 1 in Category 3
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				

End of Table 2

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
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DC#1987 Record #268

Precision Geosynthetic Laboratories

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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/5/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153755 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100444**
PGL Control No.: **66216**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D5994	Thickness (mils)															
	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)															
	Loading Time: 5 sec Specimen Size: 4" x 4"															
		61	61	61	61	61	61	62	62	61	61	61	0	61	62	60 > 57
ASTM D7466	Asperity Height of Textured Geomembrane (mils)															
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).															
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner															
	The highest reading from 3 readings were taken per specimen.															
	White Side	28	28	26	29	29	29	31	31	31	25	29	2	25	31	20
	Black Side	28	28	26	31	30	30	31	31	36	31	30	3	26	36	
ASTM D1505	Density (grams/ cm.^{3})															
		0.9481	0.9481	0.9481								0.9481	0.0000	0.9481	0.9481	> 0.94
ASTM D6693 Type IV	Tensile Properties:															
	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															
	Tensile Strength at Yield (lbs/ in.-width)															
	MD	206	194	205	191	194						198	7	191	206	126
	TD	204	205	205	200	199						203	3	199	205	
	Tensile Strength at Break (lbs/ in.- width)															
	MD	191	232	228	206	230						218	18	191	232	90
	TD	216	225	223	224	203						218	9	203	225	
	Elongation at Yield (percent, %)															
	MD	17	17	17	19	18						18	1	17	19	12
	TD	17	17	16	16	17						17	1	16	17	
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*															
	MD	406	494	486	433	491						462	40	406	494	100
	TD	491	523	488	506	412						484	42	412	523	

Continued on next page

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/5/2010**
Date Reported: **5/7/2010**
Client Sample ID: **R#102153755 L#10D1017**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100444**
PGL Control No.: **66216**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	56	57	57	55	56	58	57	56	60	60	57	2	55	60	42	
	TD	54	59	55	57	52	55	56	57	52	51	55	3	51	59		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		138	142	142	143	140	138	140	140	142	142	140	2	138	143	90	
		140	140	138	138	140											
ASTM D1603	Carbon Black Content (percent, %)																
		2.44	2.44									2.44	0.00	2.44	2.44	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Category 1 or 2	
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				1 in Category 3	

End of Table 3

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
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Precision Geosynthetic Laboratories

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Precision Geosynthetic Laboratories

GAI-LAP
Initial: CVZ #:0.13
DATE: 05/12/2010

Joseph Voss
Envirotech Consulting
P.O. Box 6029
Enid, OK 73702

Dear Mr. Voss:

Thank you for consulting Precision Geosynthetic Laboratories (PGL) for your material testing needs.

Enclosed is the ***final*** laboratory report for the conformance testing of four (4) 60mil HDPE Textured Black/White Geomembrane samples.

PROJECT NAME: Environmental Restoration Disposal Facility (ERDF)

REFERENCE PGL JOB NO.: G100456

DATE RECEIVED: May 6, 2010 **DATE REPORTED:** May 12, 2010

SAMPLED BY: PGL at GSE, TX.

SAMPLE IDENTIFICATIONS:

SAMPLE ID	PGL CONTROL NUMBER
R#102153760 L#10D1013	66261
R#102153770 L#10D1013	66262
R#102153775 L#10D1013	66263
R#102153782 L#10D1013	66264

TESTS REQUIRED:

TEST METHOD	DESCRIPTION
ASTM D5994	Thickness
ASTM D1505	Density
ASTM D6693 (Type IV)	Tensile Strength
ASTM D1603	Carbon Black Content
ASTM D5596	Carbon Black Dispersion
ASTM D1004	Tear Resistance
ASTM D4833	Puncture Resistance
ASTM D7466	Asperity Height

TEST CONDITIONS: The samples were conditioned for a minimum of one hour in the laboratory at 22 ± 2°C (71.6 ± 3.6°F) and at 60 ± 10% relative humidity prior to test.

TEST RESULTS: The test results are summarized in Tables 1 to 4.

PRECISION GEOSYNTHETIC LABORATORIES

Belinda Jade R. Yeo
Quality Assurance

Carmelo V. Zantua
Technical/Laboratory Director

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. Precision Geosynthetic Laboratories 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 a policy of the company 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 longer time, please advise us in writing.

1160 North Gilbert Street, Anaheim, CA. 92801, www.precisionlabs.net Tel# 714-520-9631, 800-522-4599 Fax#714-520-9637

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153760 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66261**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		62	61	61	64	64	62	63	65	65	63	63	1	61	65		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	29	31	31	32	31	30	28	26	29	2	26	32		20
	Black Side	28	26	26	26	26	26	28	29	31	29	27	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9484	0.9484	0.9484								0.9484	0.0000	0.9484	0.9484		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	195	200	202	201	194						198	4	194	202		126
	TD	192	195	192	191	207						195	7	191	207		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	240	247	246	255	241						246	6	240	255		90
	TD	184	248	230	235	228						225	24	184	248		
	Elongation at Yield (percent, %)																
	MD	19	19	18	17	17						18	1	17	19		12
	TD	17	16	17	18	19						17	1	16	19		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	522	537	529	552	533						534	11	522	552		100
	TD	445	624	580	590	501						548	73	445	624		

Continued on next page

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 1.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.

PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153760 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66261**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	62	61	61	61	63	64	63	62	65	60	62	1	60	65	42
	TD	63	57	57	60	58	61	62	63	61	60	60	2	57	63	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		148	142	143	142	141	146	142	145	147	143	143	2	140	148	90
		142	144	143	140	142										
ASTM D1603	Carbon Black Content (percent, %)															
		2.44	2.44									2.44	0.00	2.44	2.44	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 In Category 1 or 2 1 in Category 3
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				

End of Table 1

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
TD - TRANSVERSE DIRECTION
DC#1987 Record #268

Precision Geosynthetic Laboratories

ISO 9001 - 2000

TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153770 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66262**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		63	64	64	64	65	66	64	65	64	64	64	1	63	66		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	28	31	31	28	26	25	26	28	26	27	2	25	31		20
	Black Side	28	26	28	26	26	28	28	26	28	26	27	1	26	28		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9479	0.9479	0.9479								0.9479	0.0000	0.9479	0.9479		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	195	200	199	194	198						197	3	194	200		126
	TD	194	194	191	199	194						195	3	191	199		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	228	248	240	255	248						244	10	228	255		90
	TD	200	251	236	228	216						226	19	200	251		
	Elongation at Yield (percent, %)																
	MD	18	17	17	17	18						17	1	17	18		12
	TD	17	17	17	17	17						17	0	17	17		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	430	541	510	549	539						514	49	430	549		100
	TD	493	501	590	531	419						507	62	419	590		

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Precision Geosynthetic Laboratories

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TABLE 2.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153770 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66262**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	58	60	67	60	62	55	58	65	62	65	61	4	55	67	42
	TD	56	56	59	60	61	54	58	61	58	57	58	2	54	61	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		143	142	142	142	140	143	142	142	140	146	142	3	140	150	90
		142	142	140	142	150										
ASTM D1603	Carbon Black Content (percent, %)															
		2.46	2.43									2.44	0.02	2.43	2.46	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 in Category 1 or 2 1 in Category 3
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				

End of Table 2

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

MD - MACHINE DIRECTION
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Precision Geosynthetic Laboratories

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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153775 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66263**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		65	64	65	64	66	66	65	64	65	66	65	1	64	66		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)																> 57
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	28	26	26	26	31	31	29	28	26	28	28	2	26	31		20
	Black Side	36	38	34	29	31	31	28	26	28	28	31	4	26	38		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9474	0.9474	0.9474								0.9474	0.0000	0.9474	0.9474		> 0.94
ASTM D6693 Type IV	Tensile Properties:																
	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																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	185	184	186	191	184						186	3	184	191		126
	TD	200	192	196	208	208						201	7	192	208		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	240	228	230	245	254						239	11	228	254		90
	TD	194	208	238	219	254						222	24	194	254		
	Elongation at Yield (percent, %)																
	MD	19	18	19	18	19						19	0	18	19		12
	TD	17	18	17	16	16						17	1	16	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	550	532	518	584	588						554	31	518	588		100
	TD	460	519	569	500	572						524	48	460	572		

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TABLE 3.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153775 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66263**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D1004 Die C	Tear Resistance (lbs)																
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.																
	MD	61	59	61	55	62	62	63	61	55	53	59	3	53	63	42	
	TD	58	58	55	62	56	54	53	58	63	54	57	3	53	63		
ASTM D4833	Puncture Resistance (lbs)																
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.																
		147	146	145	141	142	150	141	148	147	145	145	3	140	150	90	
		146	147	143	140	147											
ASTM D1603	Carbon Black Content (percent, %)																
		2.46	2.44									2.45	0.01	2.44	2.46	2 - 3	
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)																
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				9 In Category 1 or 2 1 in Category 3	

End of Table 3

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

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TABLE 4.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153782 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66264**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum	Proj. Specs. Average
ASTM D5994	Thickness (mils)																
	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)																
	Loading Time: 5 sec Specimen Size: 4" x 4"																
		64	64	64	64	65	65	64	64	64	64	64	0	64	65		60
ASTM D7466	Asperity Height of Textured Geomembrane (mils)															> 57	
	Apparatus: Has a dial indicator that travels at least 2.5mm (0.1 in), and a depth gauge with contact point that travels up and down with in the setting block with a base dimension of 50 mm x 20 mm (2.0 in x 0.75 in) and a height of 15 mm (0.5 in). The contact point is 1.3 mm (0.051 in) in diameter with the tip tapered to a point with an extension of 17 mm (0.66 in).																
	Sampling: Ten (10) 3" diameter specimens were cut across the width of the sample in a randomly distributed manner																
	The highest reading from 3 readings were taken per specimen.																
	White Side	31	32	24	28	26	28	28	29	34	36	30	4	24	36		20
	Black Side	29	31	28	26	26	28	26	28	26	26	27	2	26	31		
ASTM D1505	Density (grams/ cm.^{3})																
		0.9479	0.9479	0.9479								0.9479	0.0000	0.9479	0.9479	> 0.94	
ASTM D6693 Type IV	Tensile Properties:																
	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+/-2^0 C (73.4+/-3.6^0 F), and 50+/-5% relative humidity. Rate of Separation: 2"/min																
	Tensile Strength at Yield (lbs/ in.-width)																
	MD	188	192	187	188	187						189	2	187	192	126	
	TD	212	204	202	204	200						205	5	200	212		
	Tensile Strength at Break (lbs/ in.- width)																
	MD	240	228	232	240	248						238	8	228	248	90	
	TD	216	238	248	224	239						233	13	216	248		
	Elongation at Yield (percent, %)																
	MD	19	19	19	18	19						19	0	18	19	12	
	TD	15	16	16	17	18						16	1	15	18		
	Elongation at Break (percent, %) *Gauge Length = 2.0 in.*																
	MD	565	534	545	534	565						549	16	534	565	100	
	TD	501	560	563	521	549						539	27	501	563		

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TABLE 4.

MATERIAL PROPERTIES

CLIENT: Envirotech Engineering & Consulting, Inc.
PROJECT: Environmental Restoration Disposal Facility (ERDF)

Date Received: **5/6/2010**
Date Reported: **5/12/2010**
Client Sample ID: **R#102153782 L#10D1013**
Material Description: **60mil HDPE Textured Black/White Geomembrane**

QC'd By: **B. Yeo**
PGL Job No.: **G100456**
PGL Control No.: **66264**

METHOD	DESCRIPTION	SPECIMENS 1	2	3	4	5	6	7	8	9	10	Avg.	Std. Dev.	Min	Max	Proj. Specs. Minimum Average
ASTM D1004 Die C	Tear Resistance (lbs)															
	Machine: Tensile machine equipped with constant rate of extension and chart recorder.															
	MD	64	61	64	60	66	64	62	62	63	65	63	2	60	66	42
	TD	60	61	59	59	60	57	60	60	55	61	59	2	55	61	
ASTM D4833	Puncture Resistance (lbs)															
	Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens were extended beyond the outer edges of the clamping plates.															
		150	147	146	150	143	143	146	147	145	146	147	2	143	150	90
		147	148	147	146	150										
ASTM D1603	Carbon Black Content (percent, %)															
		2.44	2.50									2.47	0.04	2.44	2.50	2 - 3
ASTM D5596	Carbon Black Dispersion (category rating per reference chart PCN: 12-455960-38)															9 In Category 1 or 2 1 in Category 3
		1	1	1	1	1	1	1	1	1	1	10 out of 10 in Category 1				

End of Table 4

By accepting the data and results presented on this report, the Client agrees to limit the liability of Precision Geosynthetic Laboratories 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 Precision Geosynthetic Laboratories from and against all liabilities in excess of the aforementioned limit.

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