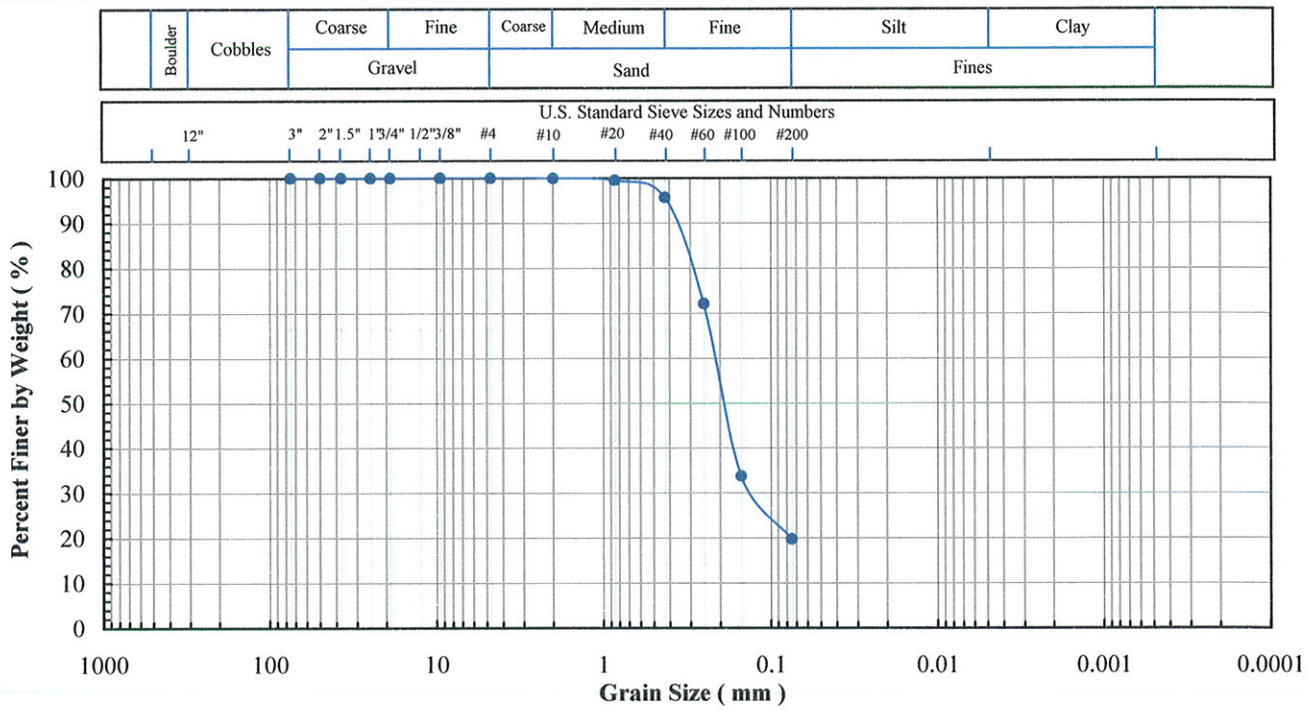
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-01
Lab Sample No:	B016

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



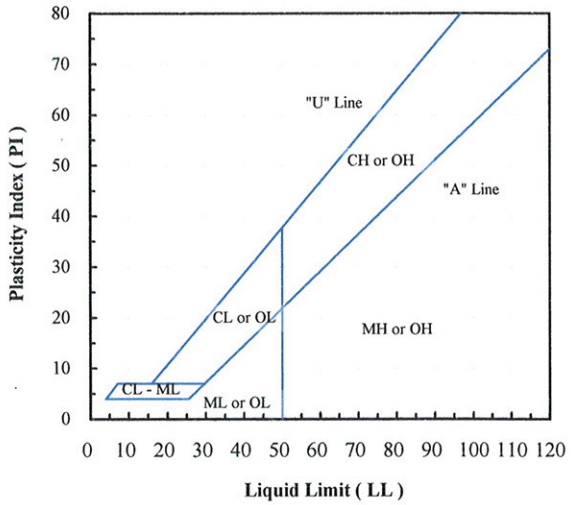
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.5
#40	0.425	95.7
#60	0.250	72.1
#100	0.150	33.8
#200	0.075	19.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	80.3
Fines (%):	19.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-01	B016	9.3	19.7				

Note(s):

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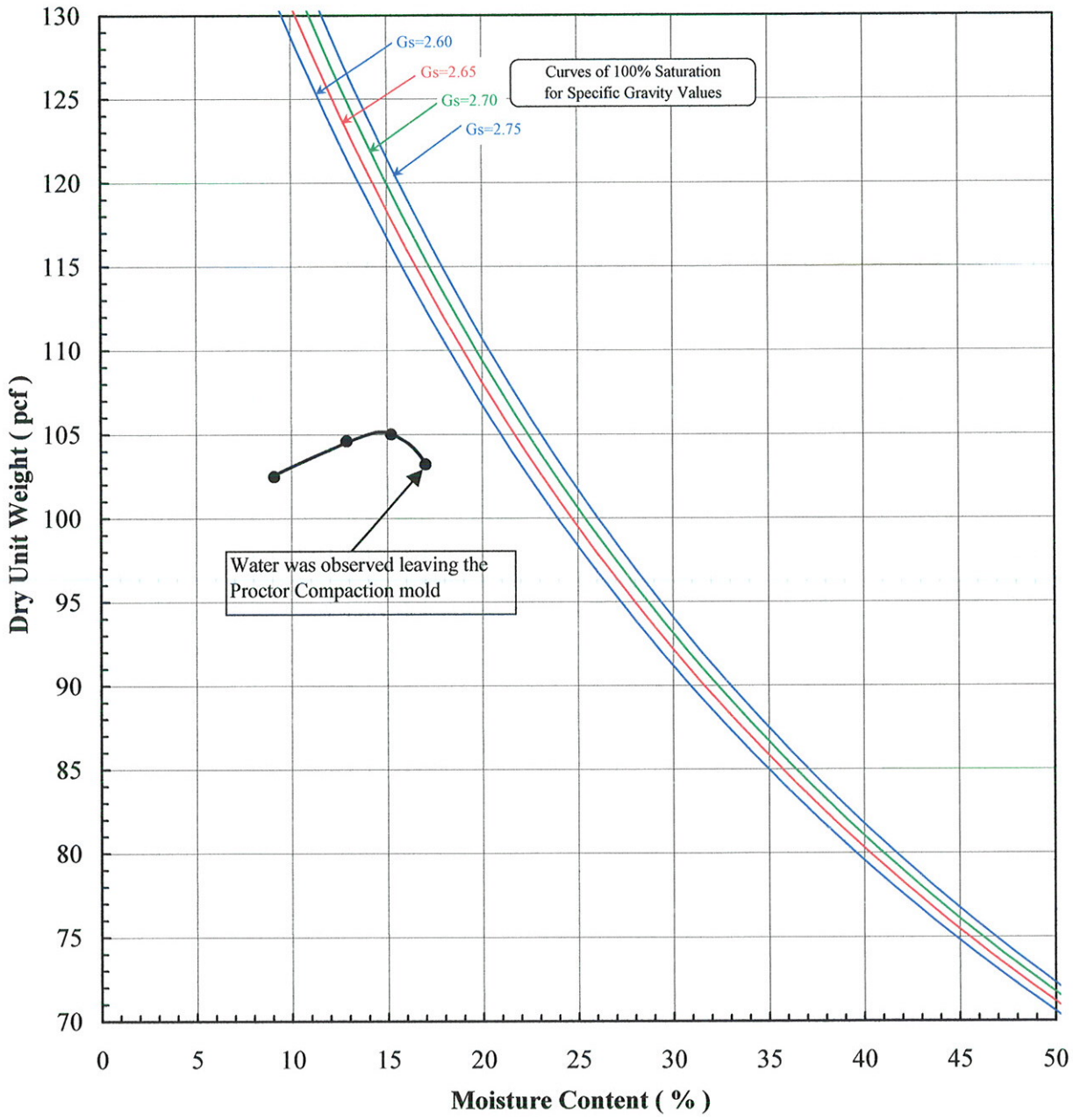
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID	GF-6-01
Lab Sample No:	B016

ASTM D 698 **COMPACTION MOISTURE-DENSITY RELATIONSHIP** **Standard - Method B**



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moisture Content (%)	Remarks
GF-6-01	B016	105.1	15.0	

Note(s):

Excel Geotechnical Testing, Inc.
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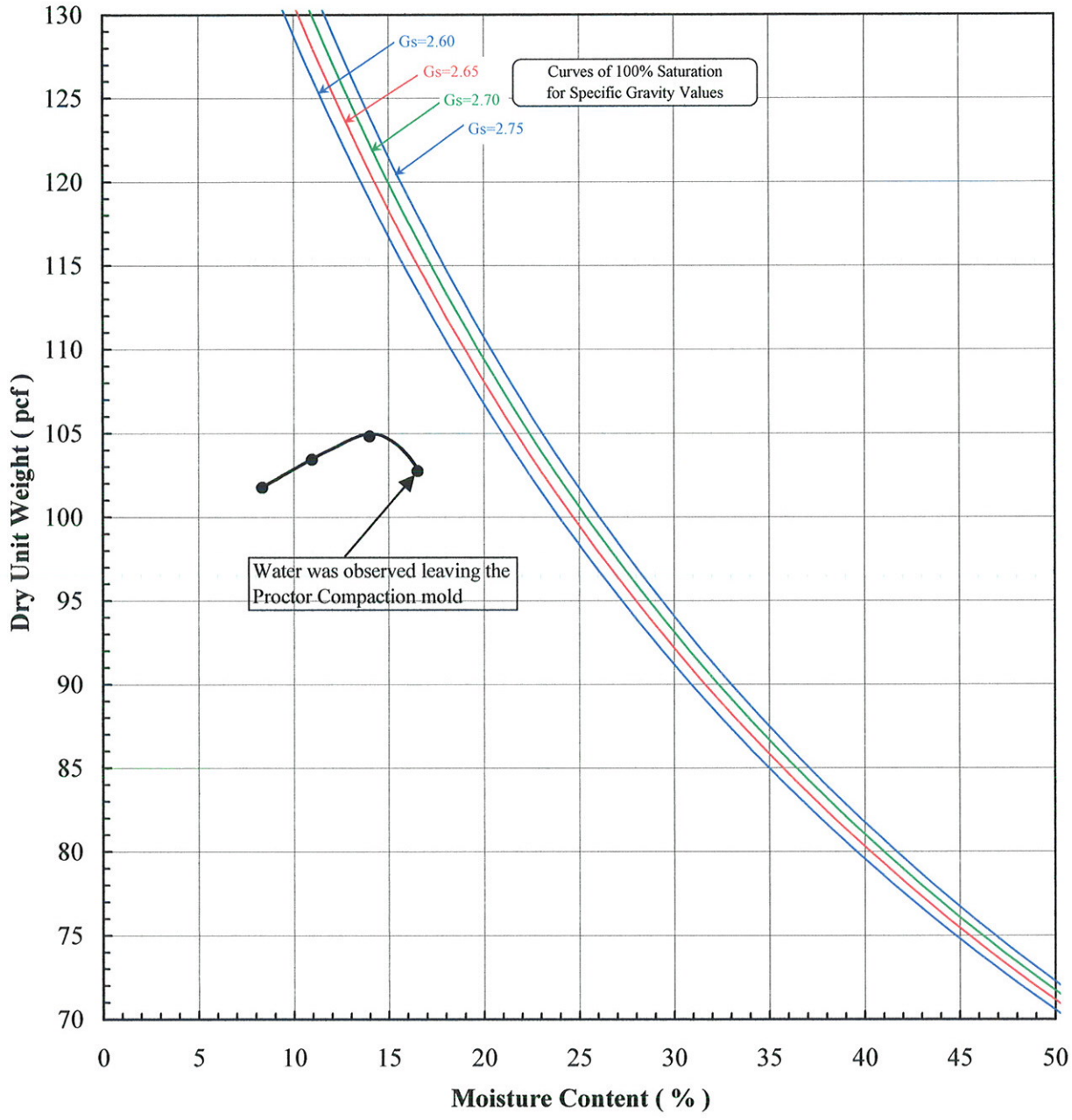
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID	GF-6-02
Lab Sample No:	B018

ASTM D 698 **COMPACTION MOISTURE-DENSITY RELATIONSHIP** **Standard - Method B**



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moisture Content (%)	Remarks
GF-6-02	B018	105.0	14.3	

Note(s):

Excel Geotechnical Testing, Inc.
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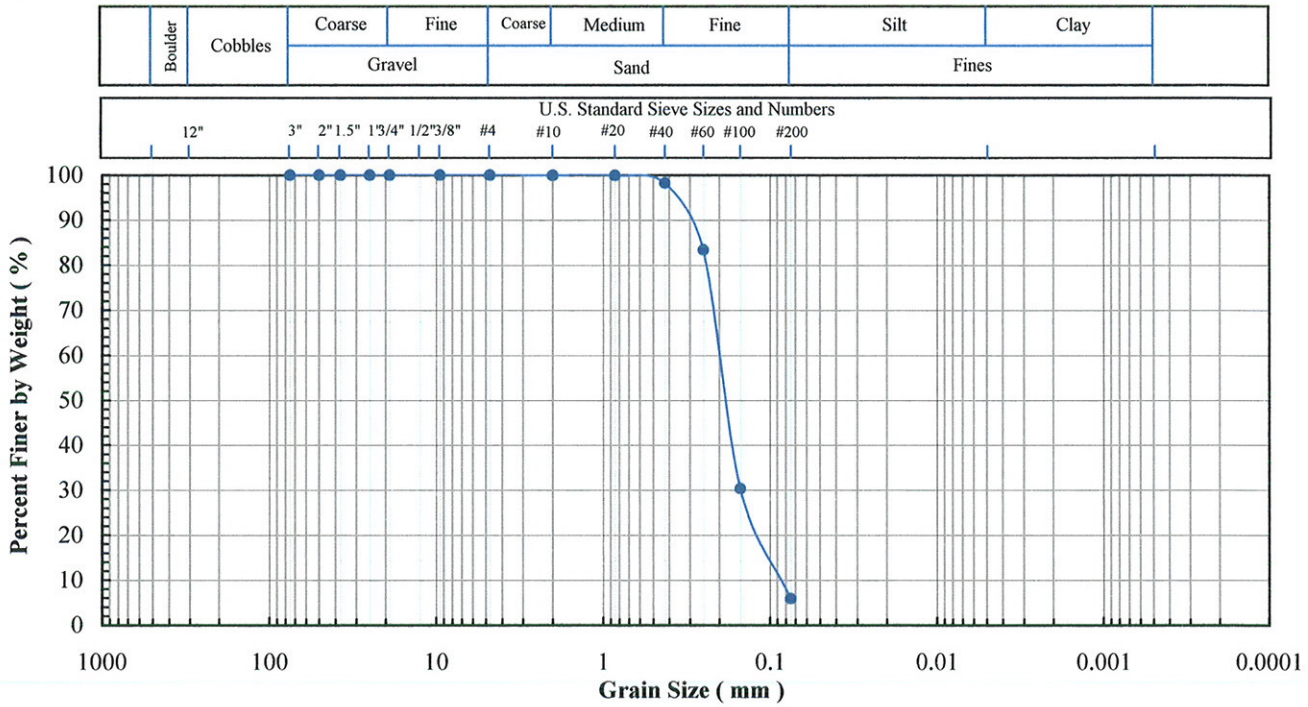
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-02
Lab Sample No:	B018

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



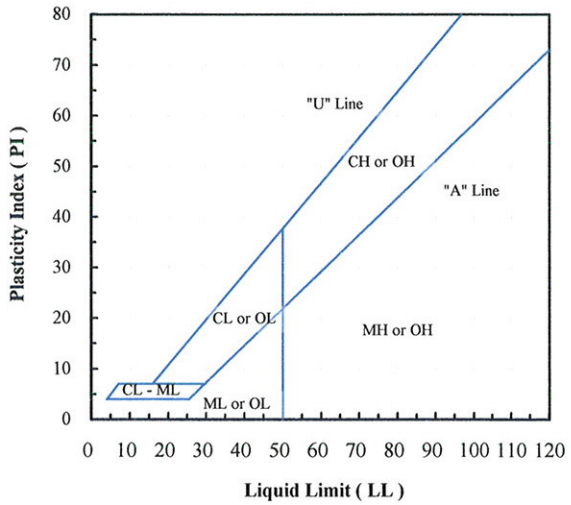
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.9
#40	0.425	98.2
#60	0.250	83.4
#100	0.150	30.4
#200	0.075	5.9

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	94.1
Fines (%):	5.9
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-02	B018	8.2	5.9				

Note(s):

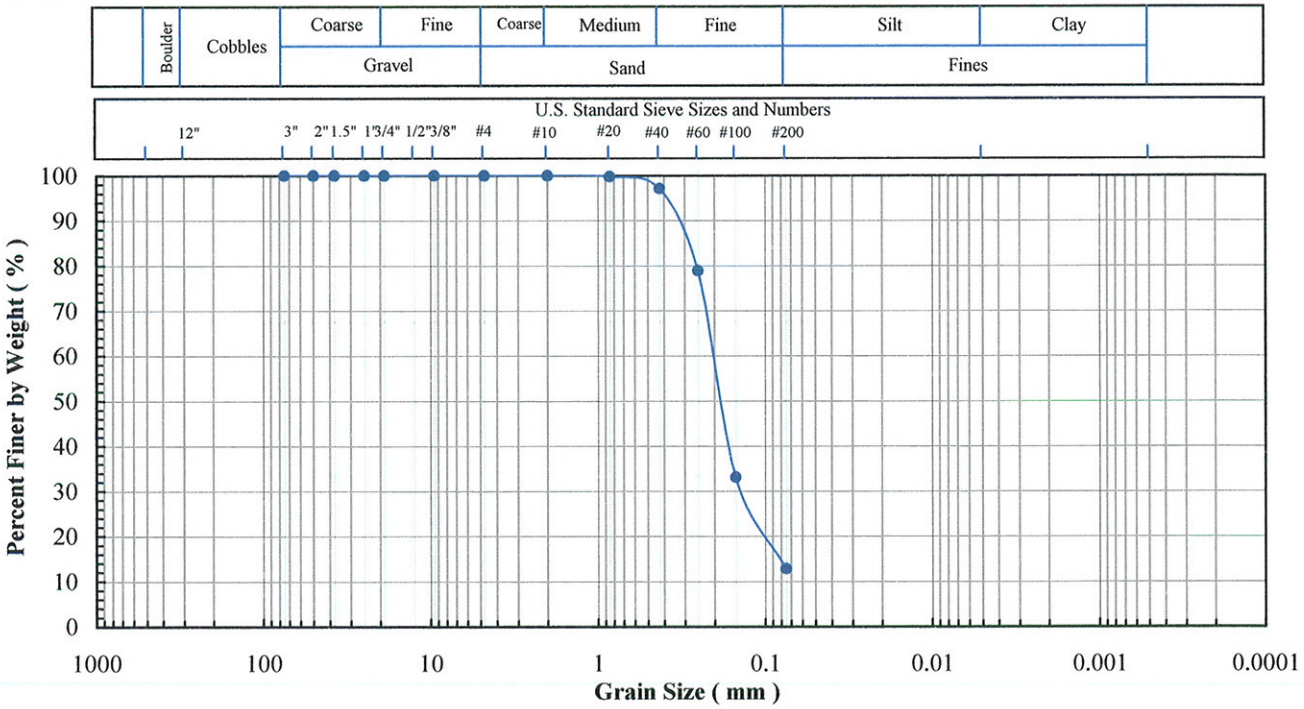
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-03
Lab Sample No:	B073

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



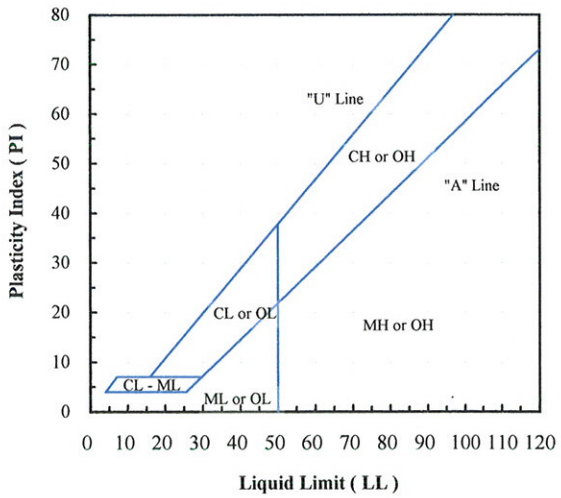
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.8
#40	0.425	97.1
#60	0.250	78.9
#100	0.150	33.1
#200	0.075	12.8

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	87.2
Fines (%):	12.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-03	B073	9.0	12.8				

Note(s):

Excel Geotechnical Testing, Inc.
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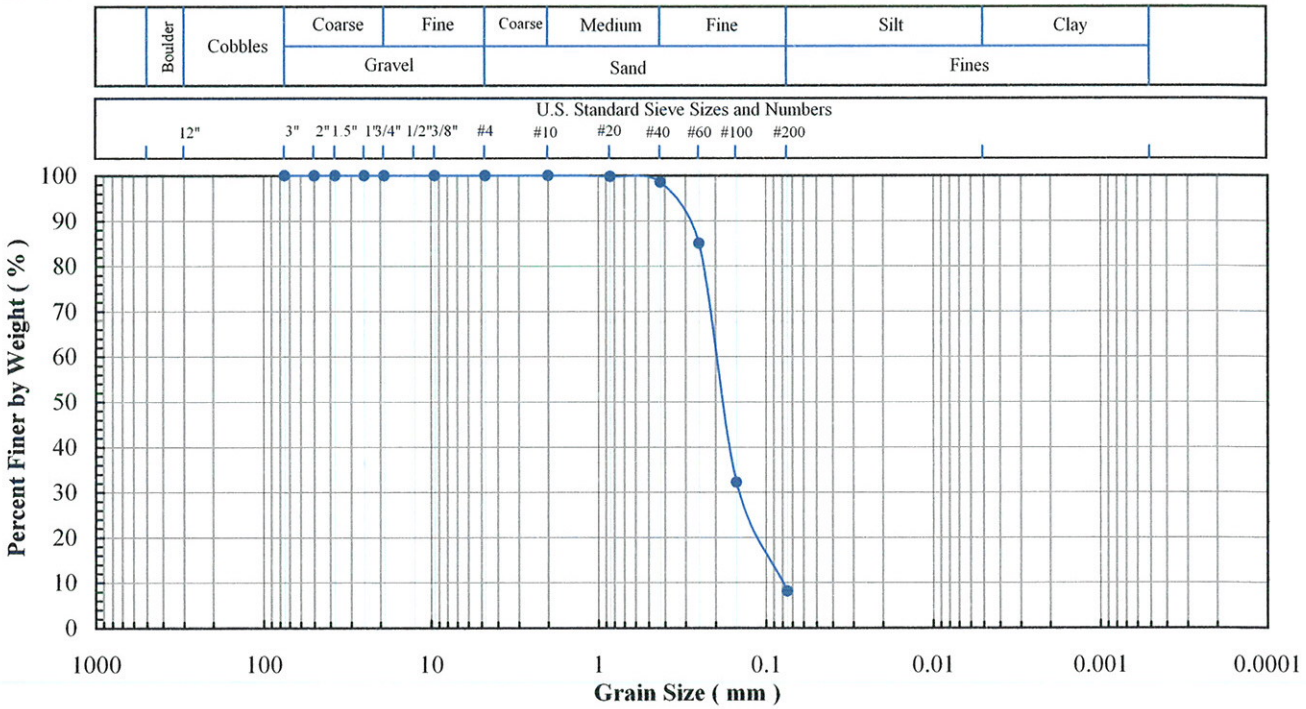
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-04
Lab Sample No:	B074

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



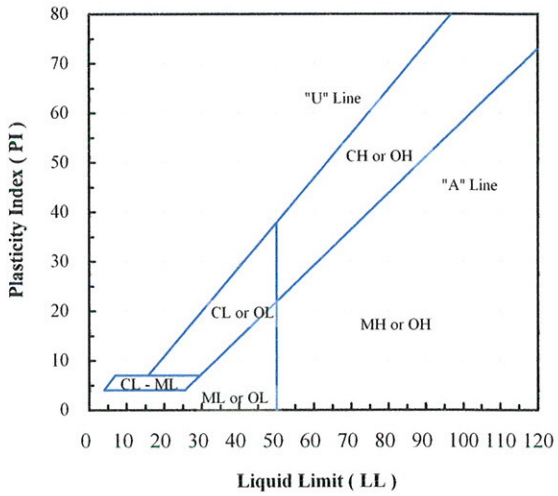
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.8
#40	0.425	98.5
#60	0.250	85.0
#100	0.150	32.2
#200	0.075	8.1

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	91.9
Fines (%):	8.1
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.5
Coeff. Curv. (Cc):	1.4



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-04	B074	9.8	8.1	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

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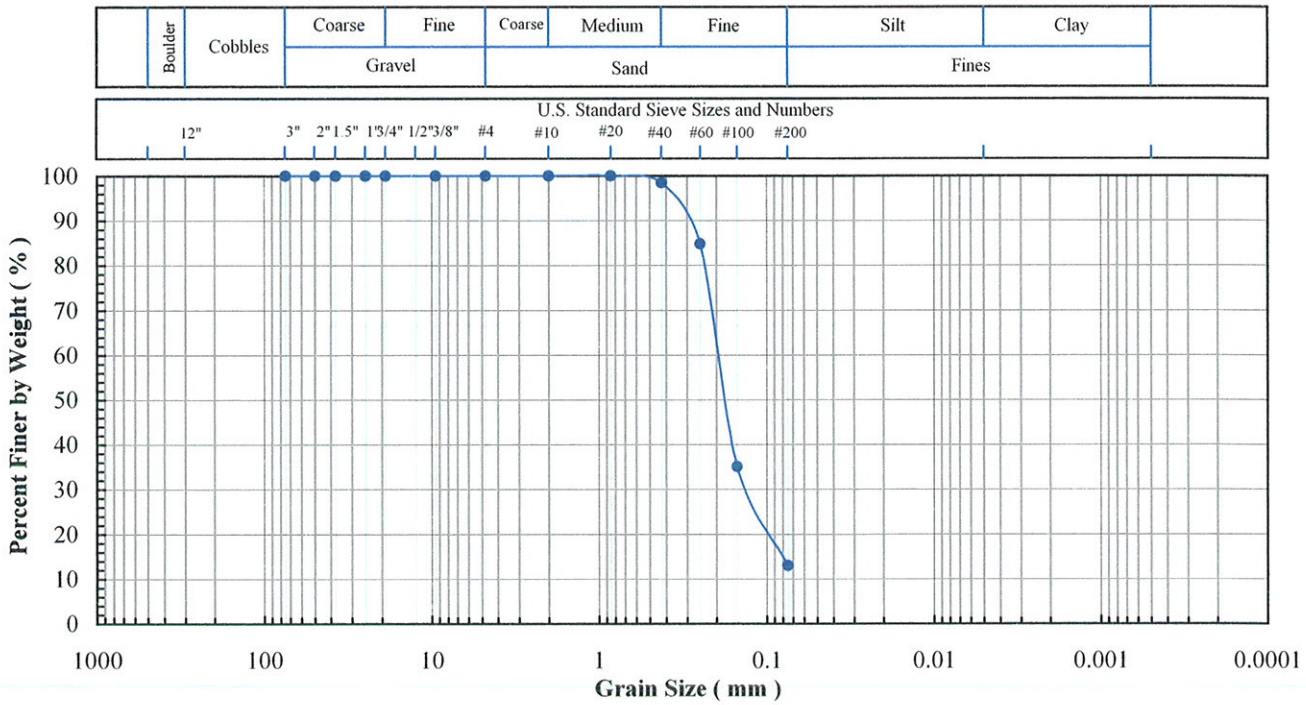
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-05
Lab Sample No:	B075

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



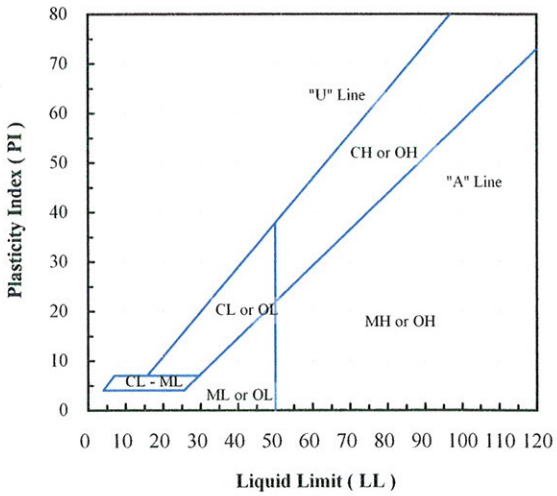
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.4
#60	0.250	84.8
#100	0.150	35.1
#200	0.075	13.0

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	87.0
Fines (%):	13.0
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
GF-6-05	B075	10.2	13.0	NP	NP	NP	SM - Silty sand

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

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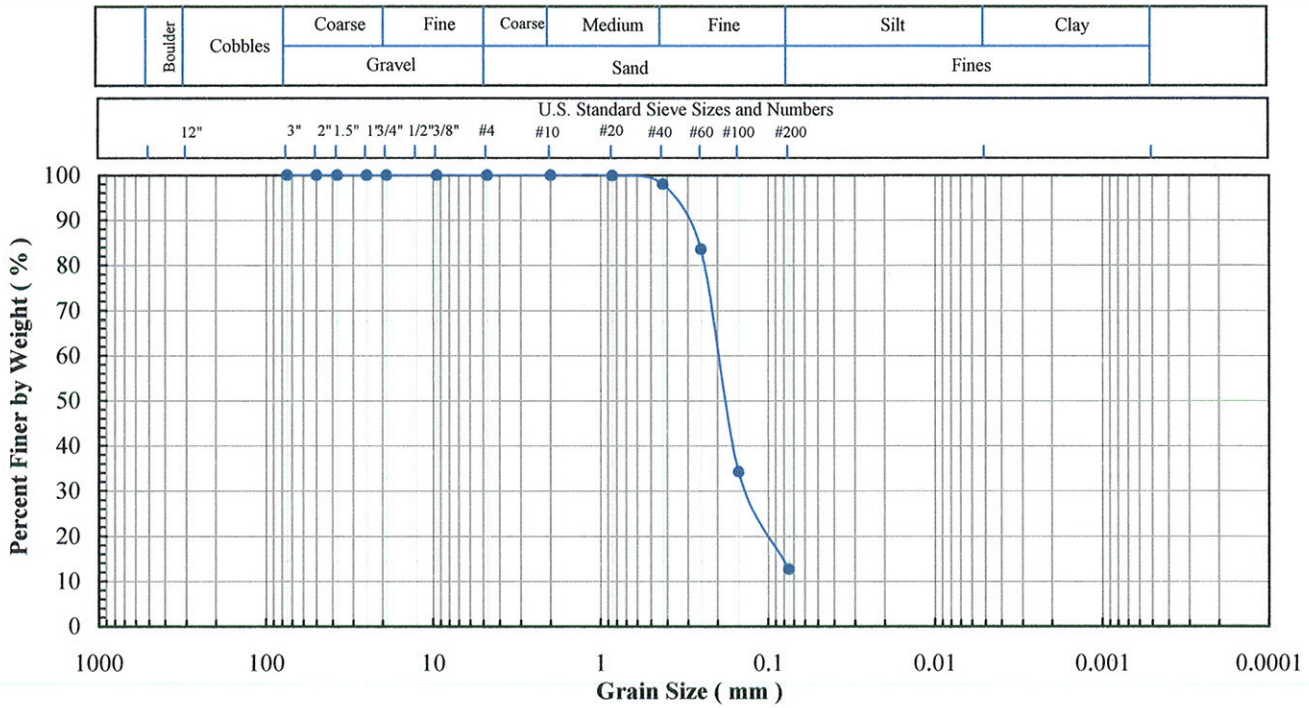
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-06
Lab Sample No:	B071

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



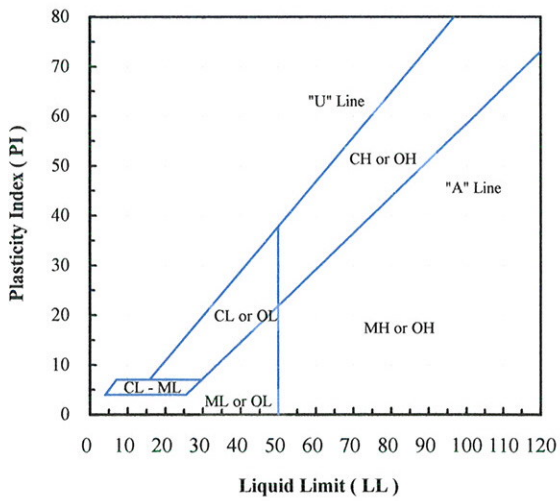
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	98.0
#60	0.250	83.6
#100	0.150	34.3
#200	0.075	12.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	87.3
Fines (%):	12.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-06	B071	8.1	12.7				

Note(s):

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941 Forrest Street, Roswell, Georgia 30075
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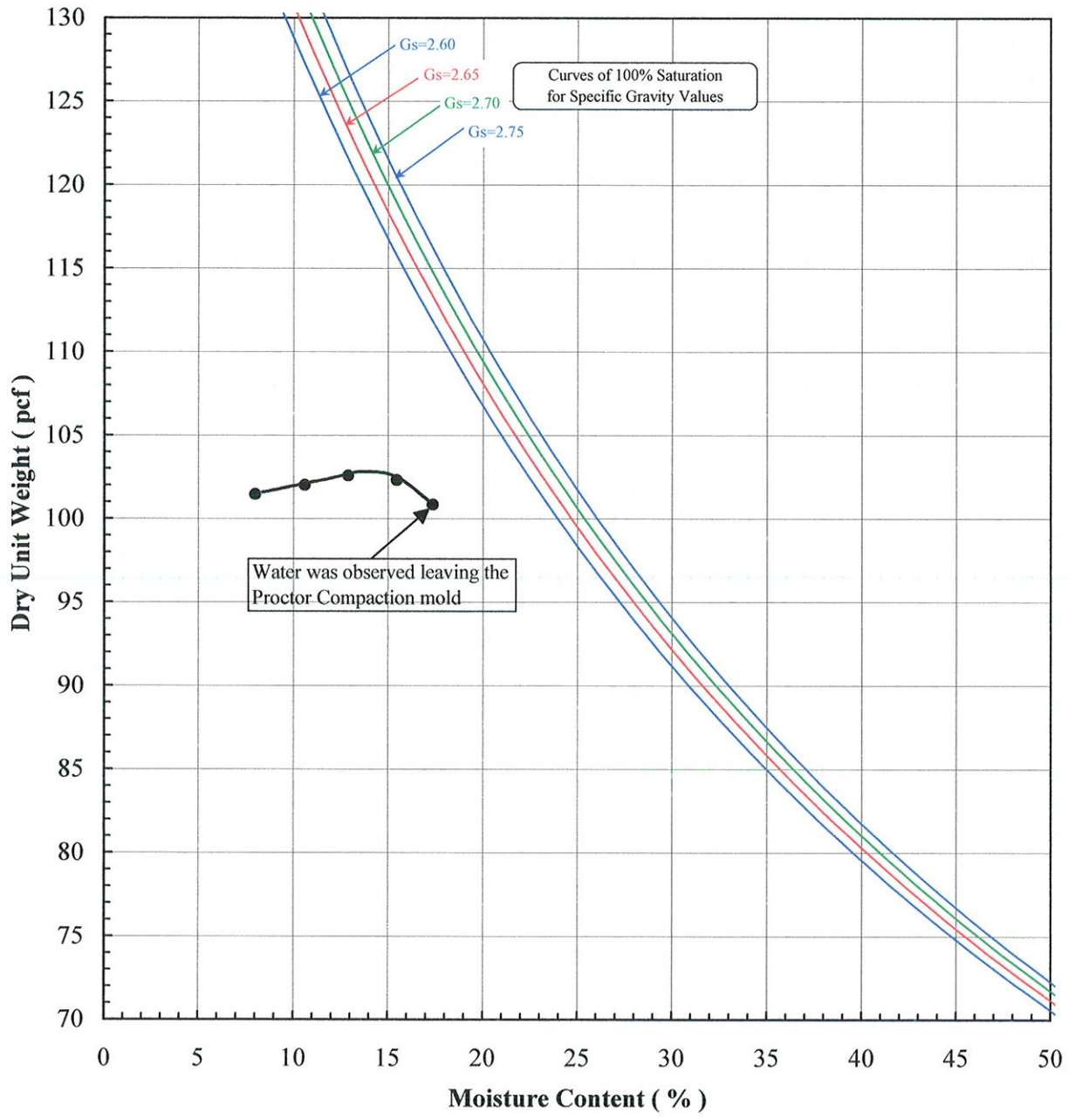
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID	GF-6-06
Lab Sample No:	B071

ASTM D 698 **COMPACTION MOISTURE-DENSITY RELATIONSHIP** **Standard - Method B**



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moisture Content (%)	Remarks
GF-6-06	B071	103.0	14.2	

Note(s):

Excel Geotechnical Testing, Inc.
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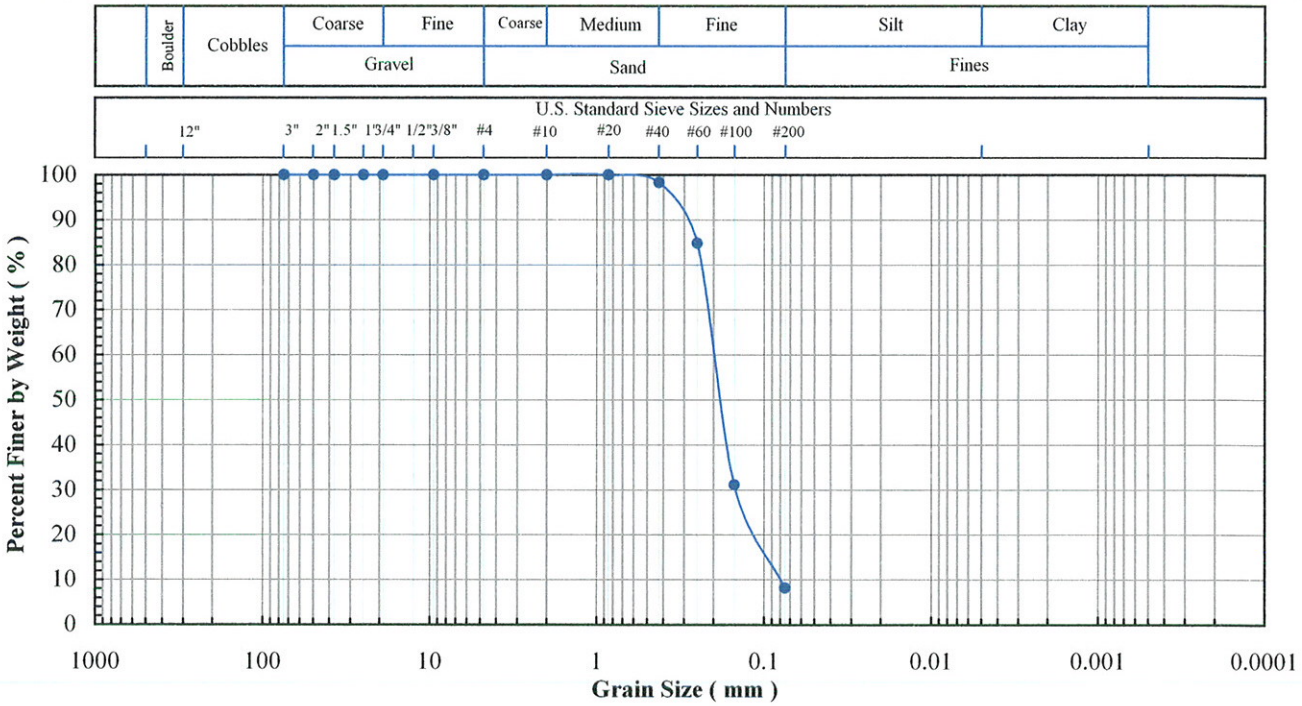
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-07
Lab Sample No:	B076

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



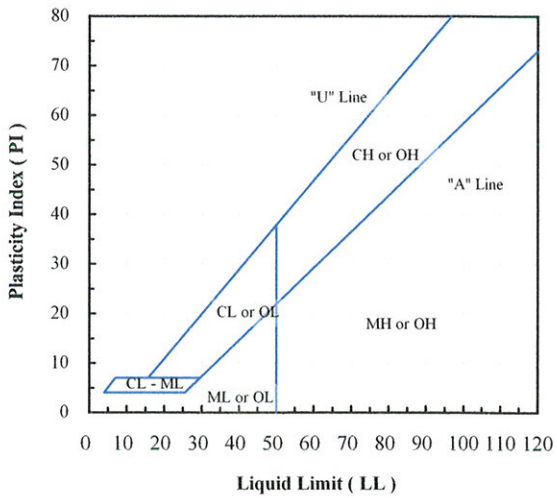
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.3
#60	0.250	84.8
#100	0.150	31.1
#200	0.075	8.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	91.8
Fines (%):	8.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	2.5
Coeff. Curv. (Cc):	1.5



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-07	B076	11.0	8.2	NP	NP	NP	SP-SM - Poorly graded sand with silt

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

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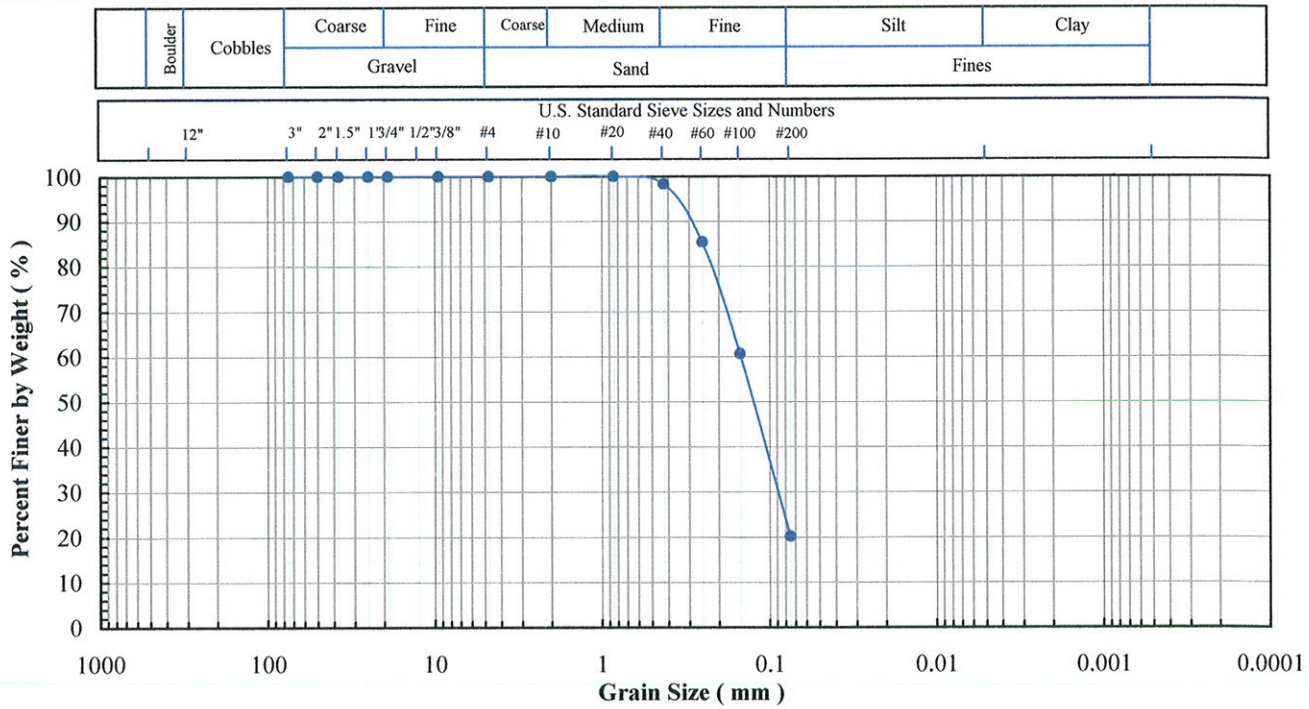
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-08
Lab Sample No:	B072

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



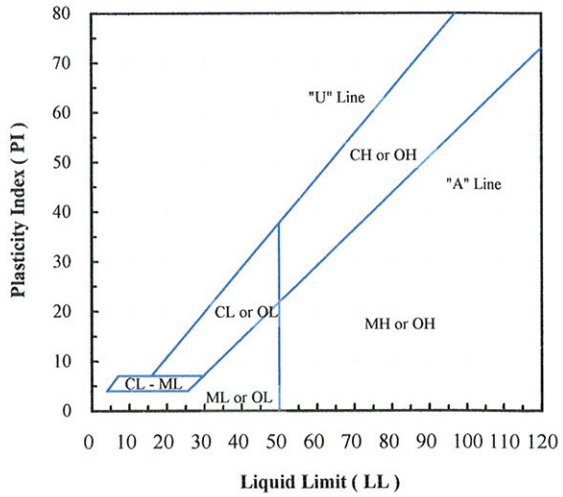
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.3
#60	0.250	85.4
#100	0.150	60.6
#200	0.075	20.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	79.8
Fines (%):	20.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-08	B072	5.8	20.2				

Note(s):

Excel Geotechnical Testing, Inc.
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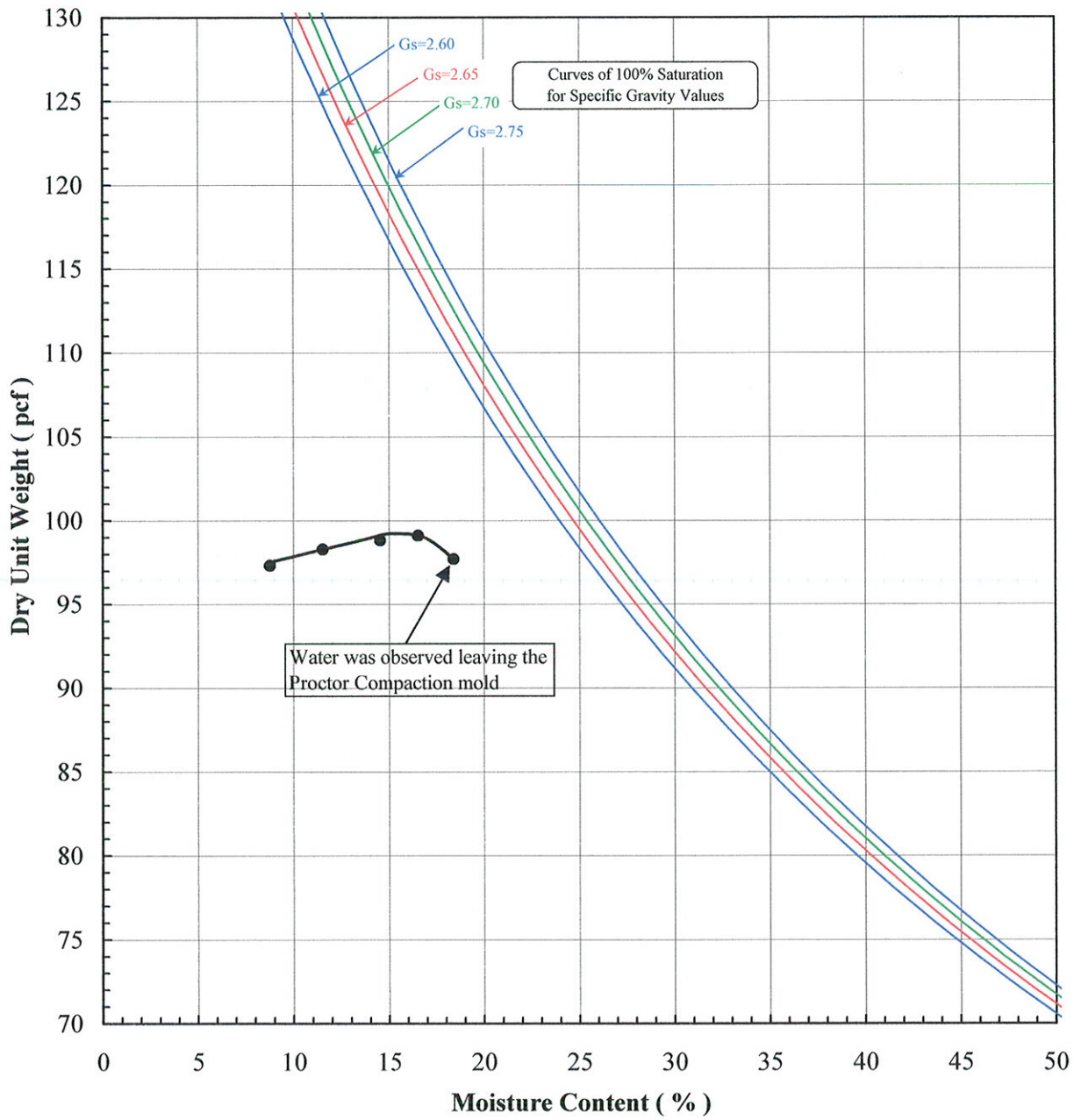
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID	GF-6-08
Lab Sample No:	B072

ASTM D 698

COMPACTION MOISTURE-DENSITY RELATIONSHIP

Standard - Method B



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moisture Content (%)	Remarks
GF-6-08	B072	99.4	15.9	

Note(s):

Excel Geotechnical Testing, Inc.
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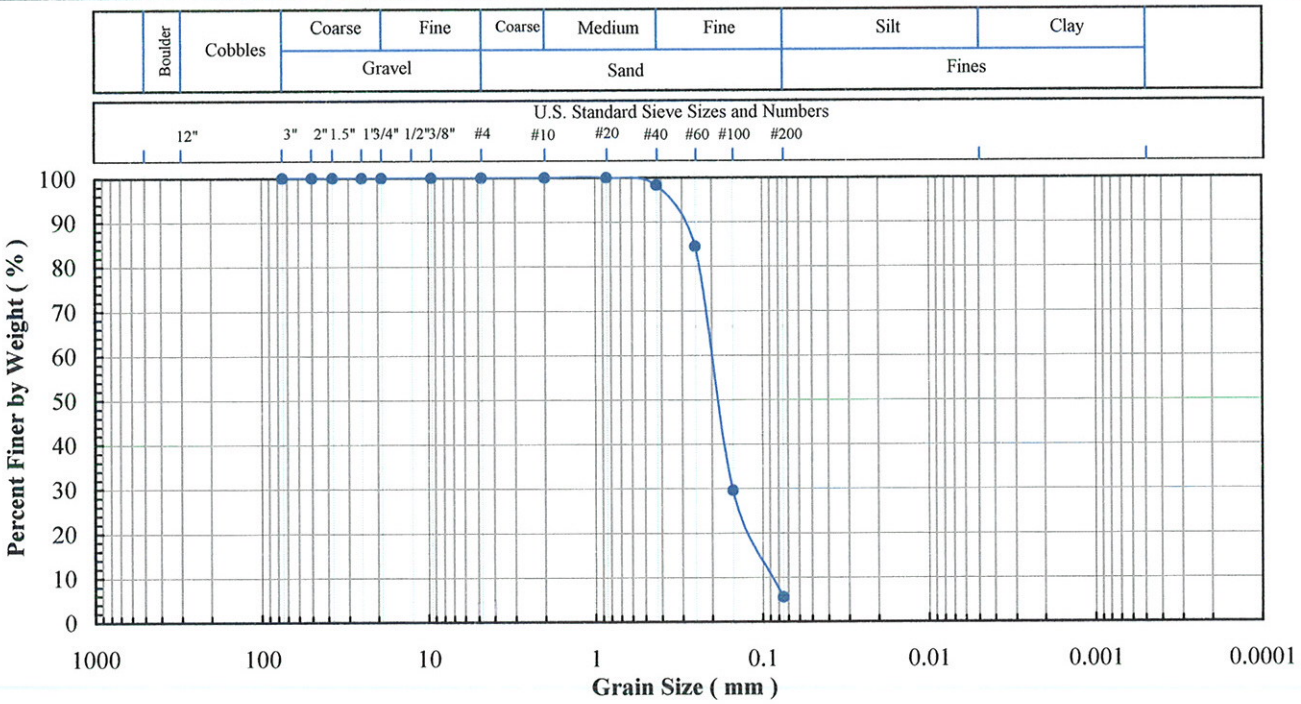
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-09
Lab Sample No:	C006

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



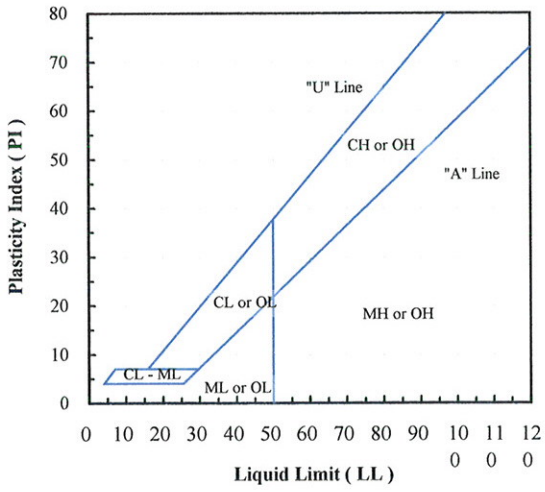
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.3
#60	0.250	84.5
#100	0.150	29.6
#200	0.075	5.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	94.5
Fines (%):	5.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-09	C006	6.8	5.5				

Note(s):

Excel Geotechnical Testing, Inc.
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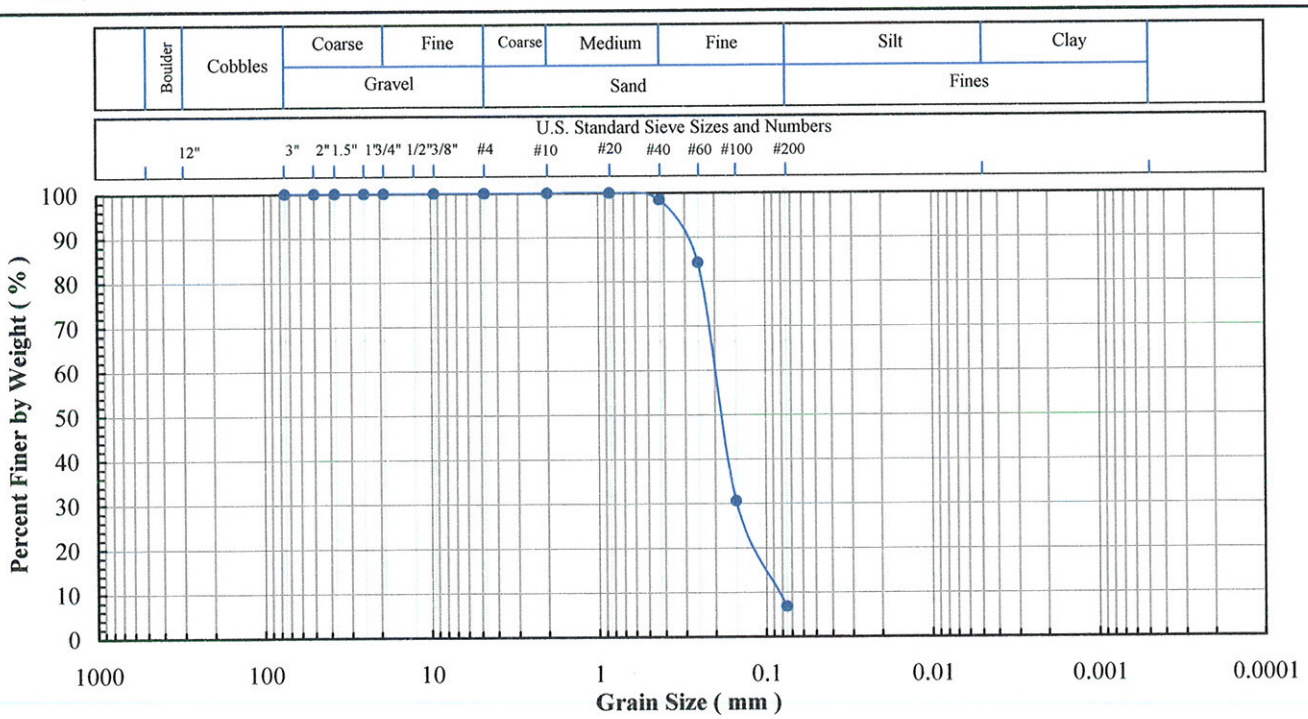
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	GF-6-10
Lab Sample No:	C007

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



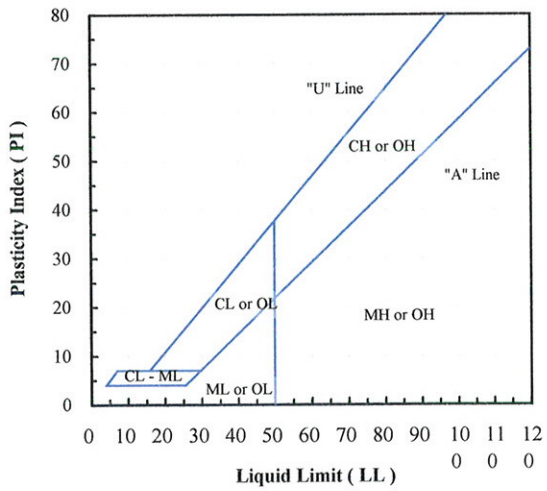
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	100.0
#40	0.425	98.4
#60	0.250	84.3
#100	0.150	30.6
#200	0.075	6.8

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	93.2
Fines (%):	6.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GF-6-10	C007	6.2	6.8				

Note(s):

Excel Geotechnical Testing, Inc.
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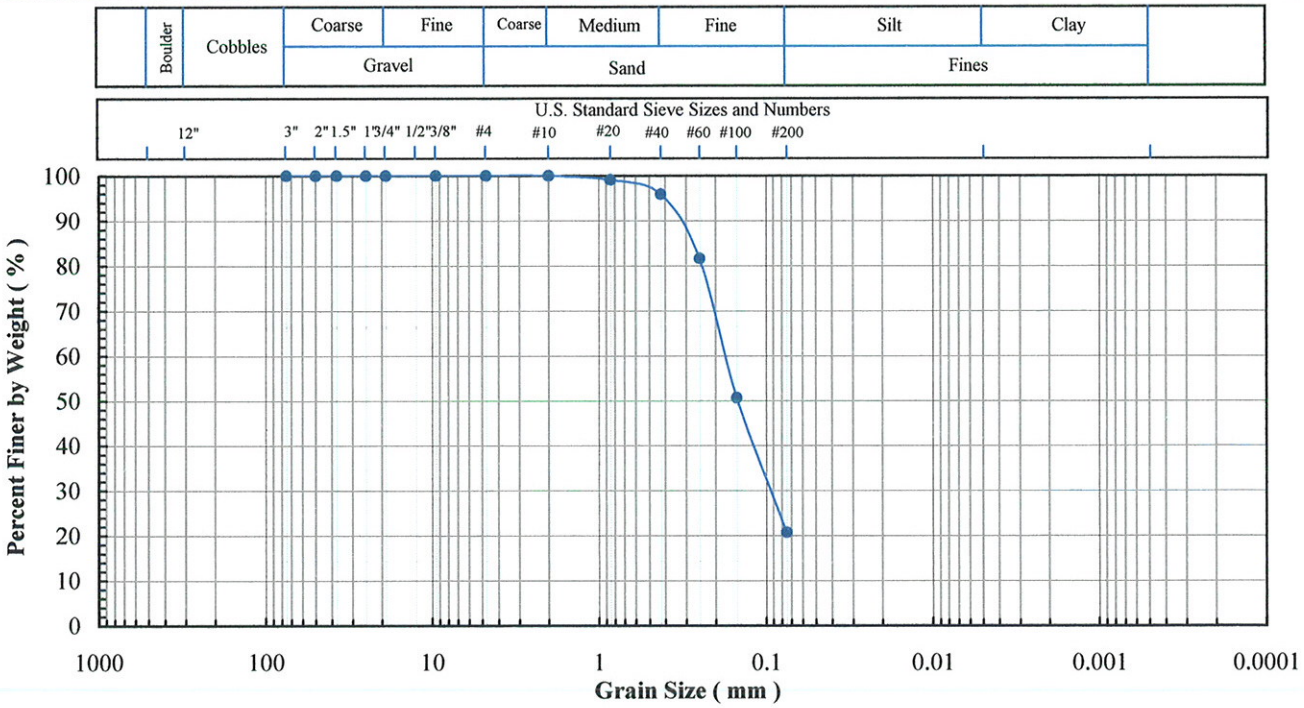
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-01
Lab Sample No:	B017

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



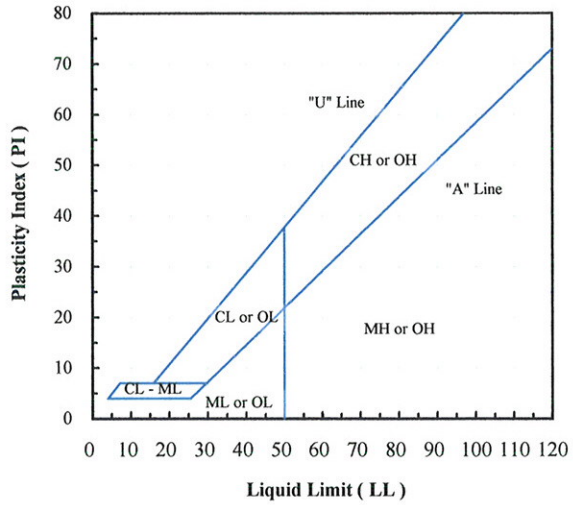
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.1
#40	0.425	95.9
#60	0.250	81.6
#100	0.150	50.7
#200	0.075	20.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	79.3
Fines (%):	20.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PC-6-01	B017	15.3	20.7				

Note(s):

Excel Geotechnical Testing, Inc.
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RIGID WALL PERMEABILITY TEST [1]

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-01
Lab Sample Number:	B017
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	2/11/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content [3] (%)		(-)	(cm/s)
1	R	14.0	7.6	98.3	0.0	TW	0.22 - 0.46	2.6E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

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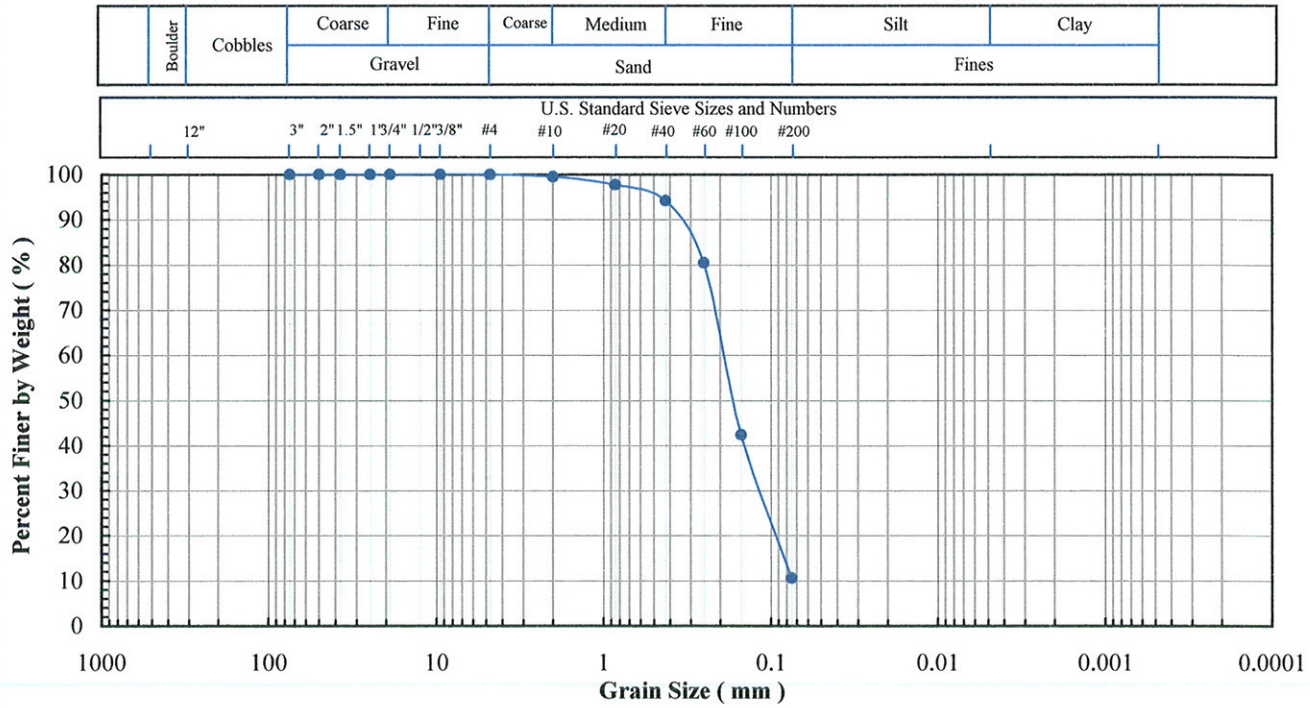
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-02
Lab Sample No:	B019

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



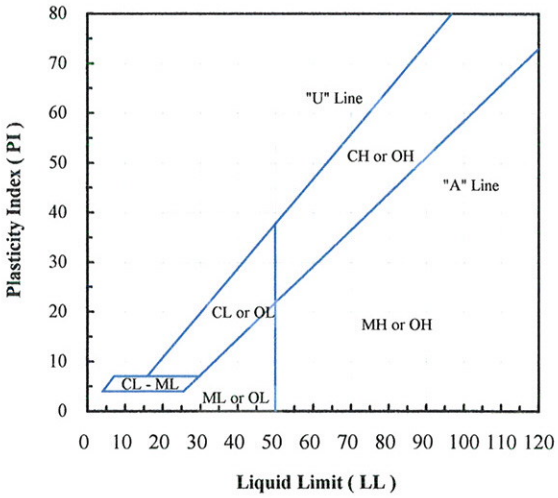
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.5
#20	0.850	97.7
#40	0.425	94.2
#60	0.250	80.5
#100	0.150	42.4
#200	0.075	10.6

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	89.4
Fines (%):	10.6
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PC-6-02	B019	19.1	10.6				

Note(s):

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RIGID WALL PERMEABILITY TEST (1)

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-02
Lab Sample Number:	B019
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	2/11/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)		(-)	(cm/s)
1	R	14.0	7.6	94.0	0.0	TW	0.22 - 0.68	3.4E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

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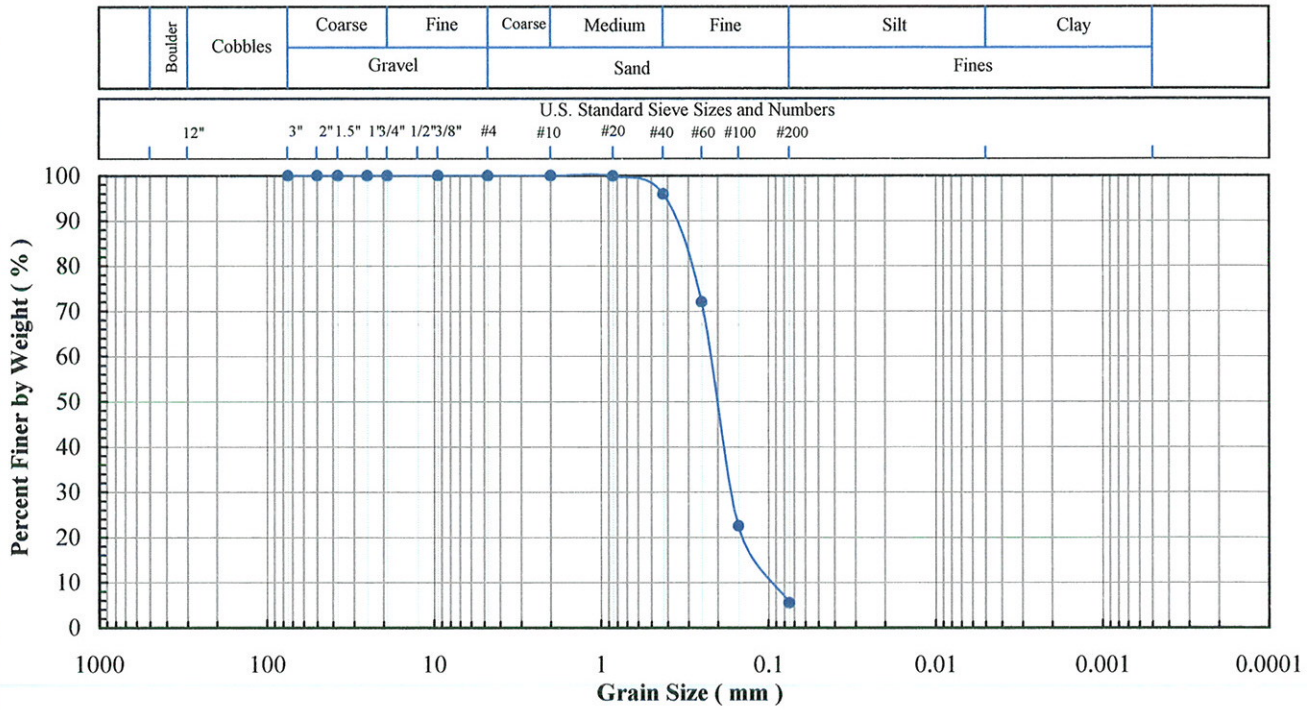
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-03
Lab Sample No:	B077

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



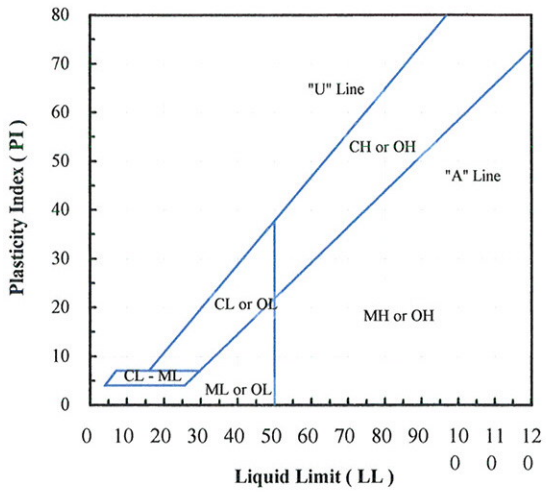
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	95.9
#60	0.250	72.0
#100	0.150	22.5
#200	0.075	5.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	94.5
Fines (%):	5.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PC-6-03	B077	7.0	5.5				

Note(s):

Excel Geotechnical Testing, Inc.
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RIGID WALL PERMEABILITY TEST (1)

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-03
Lab Sample Number:	B077
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	2/25/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)		(-)	(cm/s)
1	R	13.9	7.6	101.9	0.0	TW	0.16 - 0.41	7.1E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

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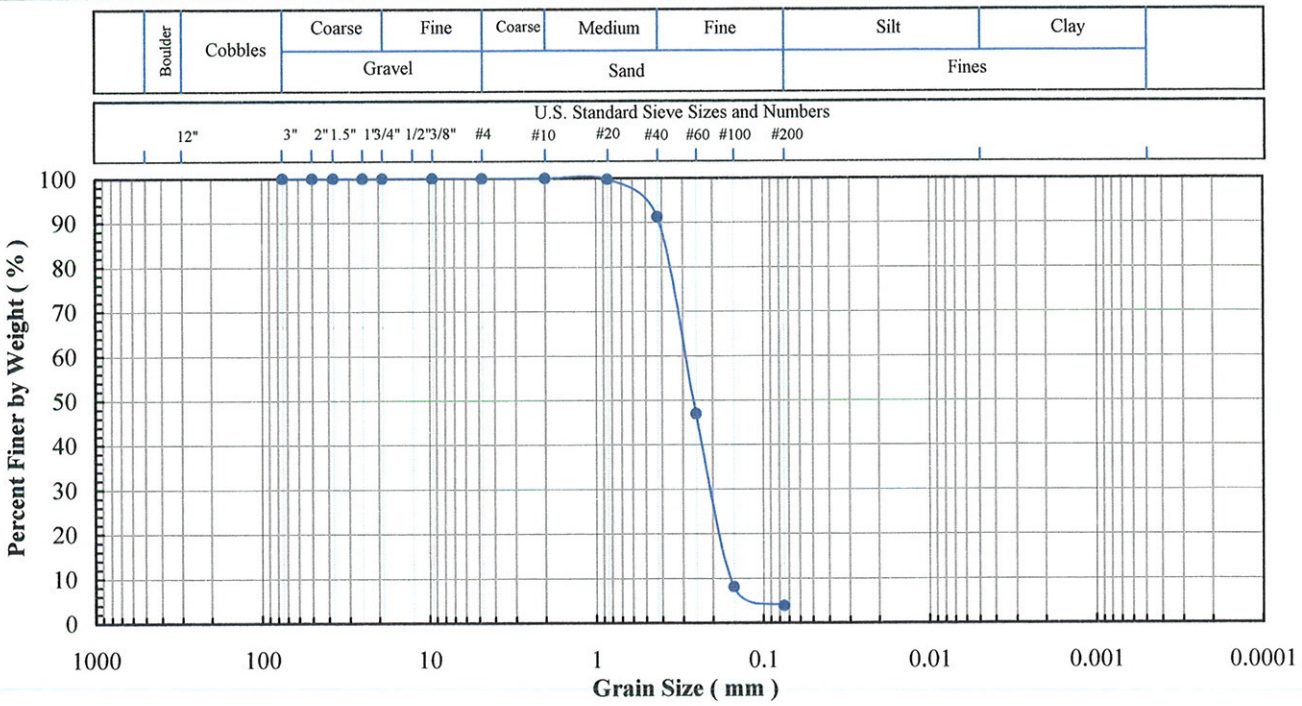
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-04
Lab Sample No:	C008

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



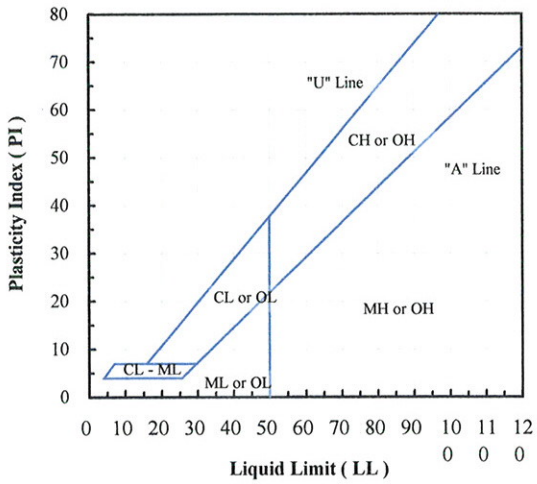
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.8
#40	0.425	91.3
#60	0.250	47.0
#100	0.150	8.1
#200	0.075	3.9

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	96.1
Fines (%):	3.9
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PC-6-04	C008	11.2	3.9				

Note(s):

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RIGID WALL PERMEABILITY TEST (1)

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-04
Lab Sample Number:	C008
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	3/04/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)		(-)	(cm/s)
1	R	14.2	7.6	98.6	0.0	TW	0.16 - 0.42	1.7E-2

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

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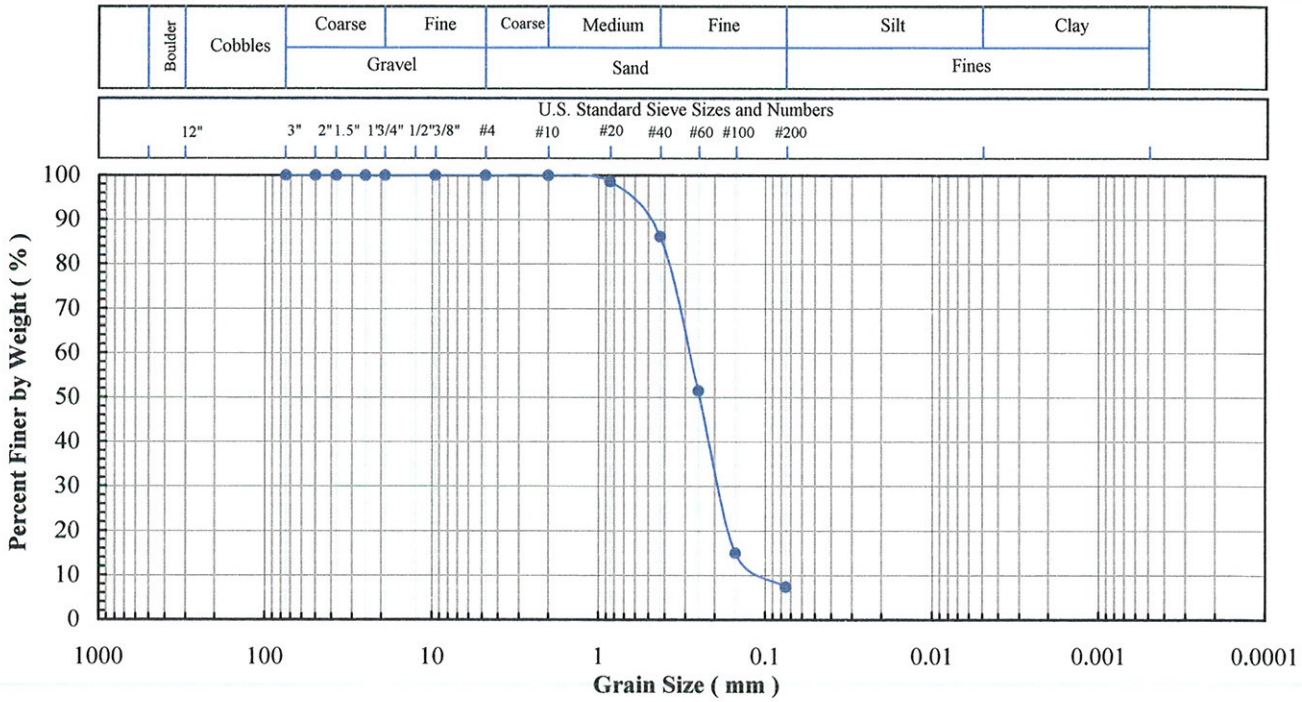
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-05
Lab Sample No:	C009

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



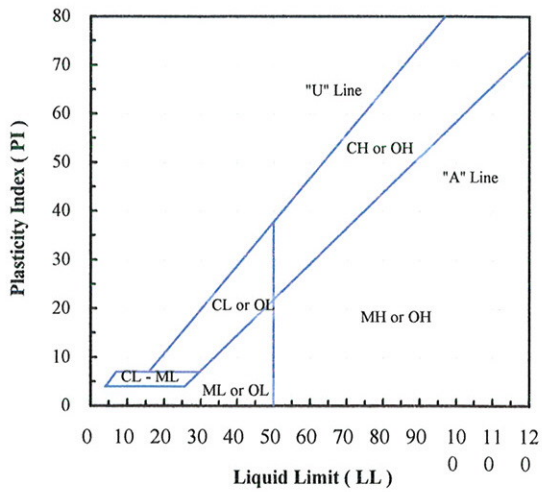
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	98.6
#40	0.425	86.2
#60	0.250	51.5
#100	0.150	15.0
#200	0.075	7.4

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	92.6
Fines (%):	7.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PC-6-05	C009	13.3	7.4				

Note(s):

Excel Geotechnical Testing, Inc.
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RIGID WALL PERMEABILITY TEST[1]

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-05
Lab Sample Number:	C009
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	3/04/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content[3] (%)		(-)	(cm/s)
1	R	14.4	7.6	96.4	0.0	TW	0.17 - 0.47	3.5E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

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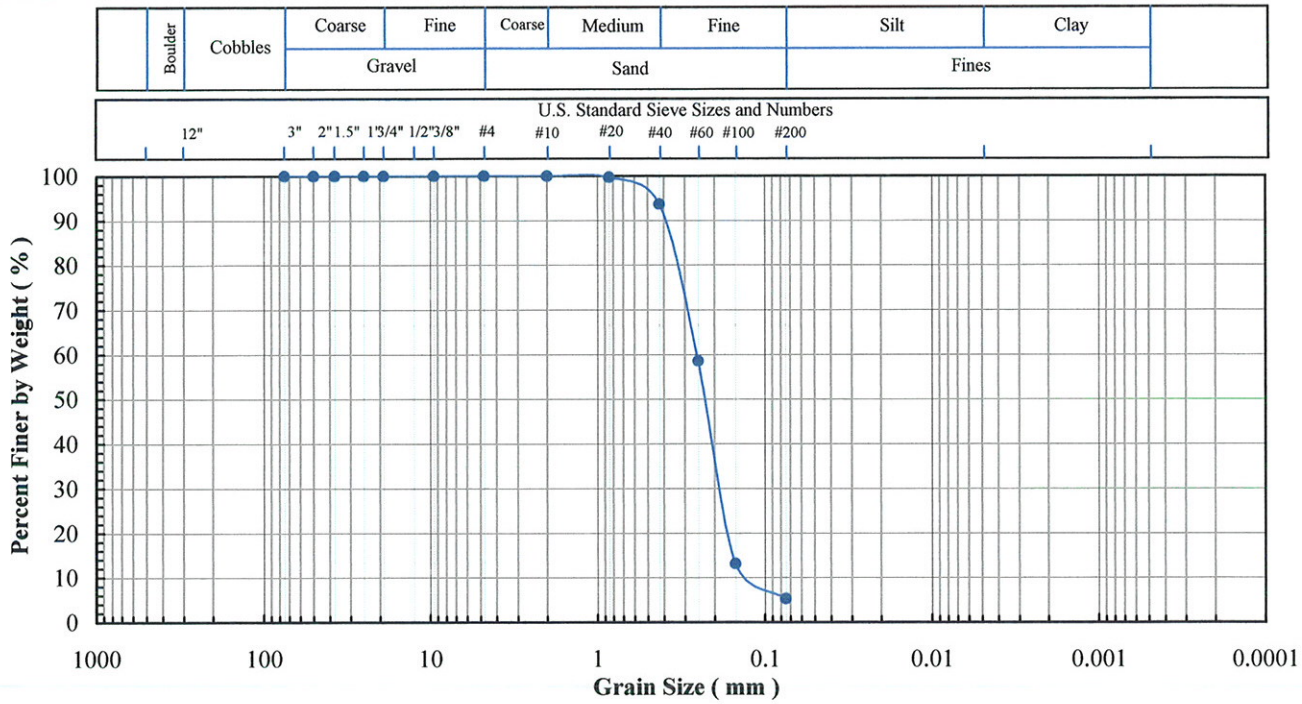
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-06
Lab Sample No:	E086

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



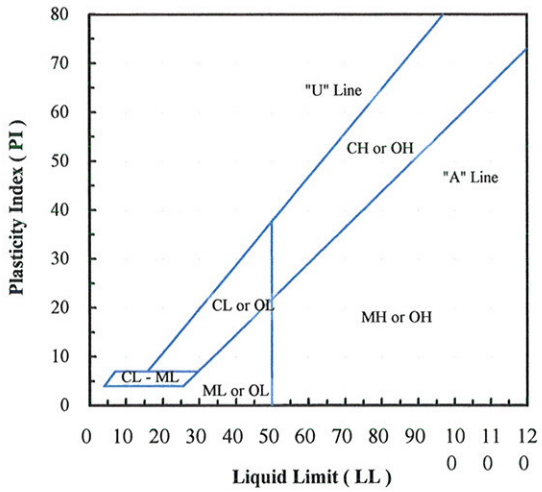
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.7
#40	0.425	93.7
#60	0.250	58.6
#100	0.150	13.2
#200	0.075	5.3

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	94.7
Fines (%):	5.3
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PC-6-06	E086	7.0	5.3				

Note(s):

Excel Geotechnical Testing, Inc.
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RIGID WALL PERMEABILITY TEST (1)

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-06
Lab Sample Number:	E086
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	5/19/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)		(-)	(cm/s)
1	R	14.1	7.6	102.8	0.0	TW	0.18 - 0.34	7.9E-3

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

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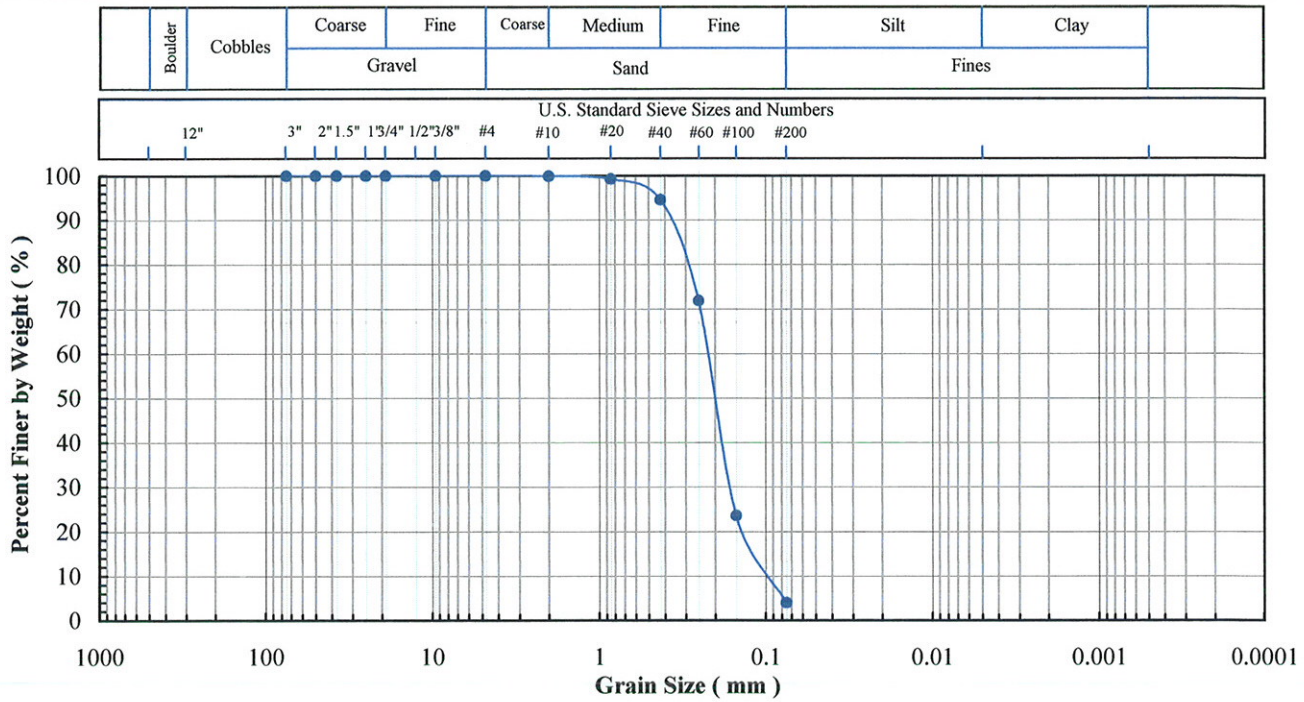
Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-07
Lab Sample No:	E087

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



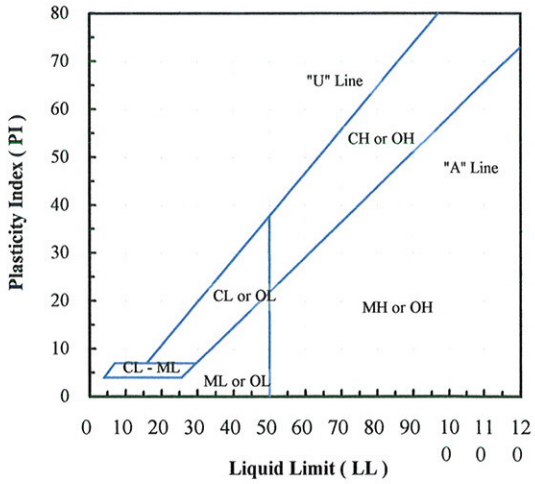
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.3
#40	0.425	94.6
#60	0.250	71.9
#100	0.150	23.6
#200	0.075	4.0

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	96.0
Fines (%):	4.0
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
PC-6-07	E087	6.3	4.0				

Note(s):

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

RIGID WALL PERMEABILITY TEST [1]

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-07
Lab Sample Number:	E087
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	5/21/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content [3] (%)		(-)	(cm/s)
1	R	14.1	7.6	98.8	0.0	TW	0.14 - 0.38	1.2E-2

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.

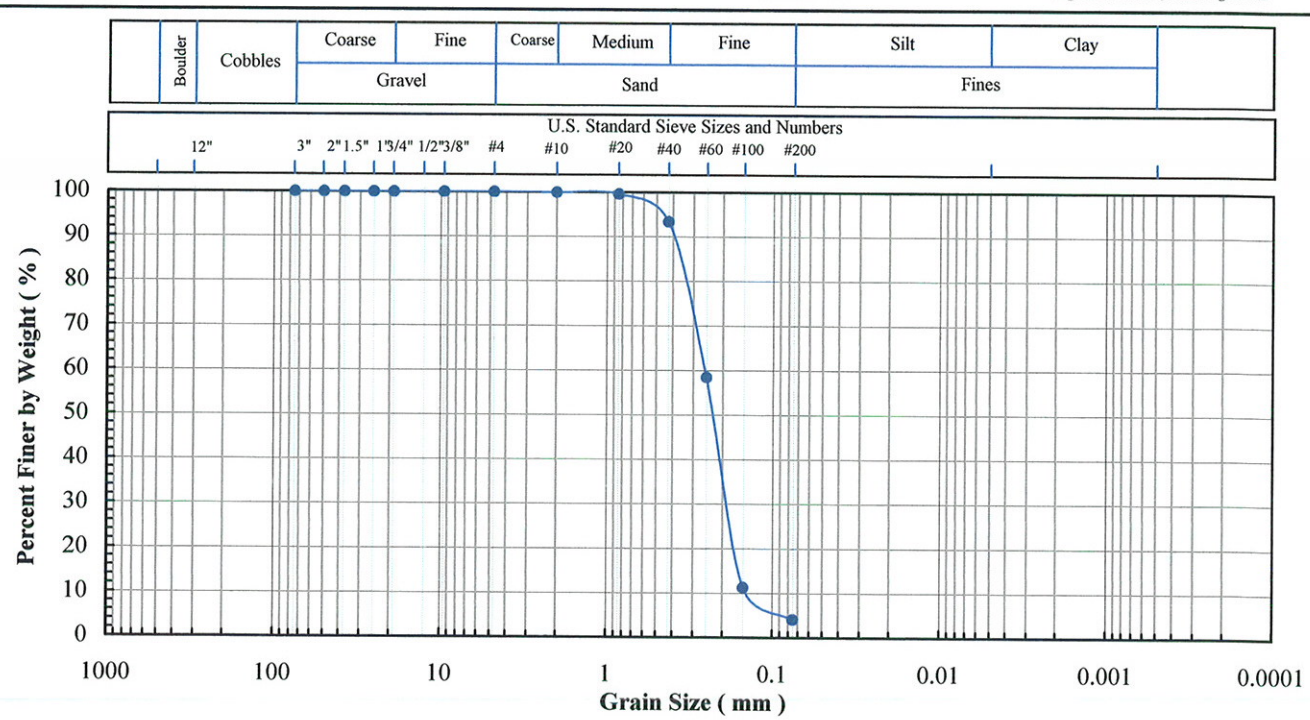
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	PC-6-08
Lab Sample No:	E088

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



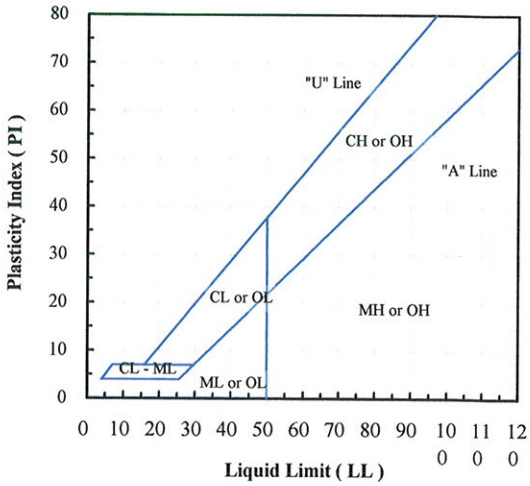
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.6
#40	0.425	93.4
#60	0.250	58.5
#100	0.150	11.3
#200	0.075	4.1

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	
Sand (%):	95.9
Fines (%):	4.1
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
PC-6-08	E088	4.9	4.1				

Note(s):

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

RIGID WALL PERMEABILITY TEST (1)

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	PC-6-08
Lab Sample Number:	E088
Material Type:	Sand
Specified Value (cm/sec):	NA
Date Tested:	5/22/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)		(-)	(cm/s)
1	R	13.7	7.6	97.6	0.0	TW	0.21 - 0.51	1.0E-2

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 7 layers, each approximately 2.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

Date: 3/4/2008
Purchase Order: JED LF CELL 6
ORDER NUMBER: 023596901

Mike Kaiser
Waste Services

Boca Raton, FL 33431
mkaiser@wasteservicesinc.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Waste Services. The shipments left our Cartersville, Georgia plant on 03/03/2008.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
ORDER NUMBER: 023596901
PREPARED FOR: Waste Services

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

PRODUCTION CERTIFICATION

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
PREPARED FOR: Waste Services

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION PROCEDURE

CETCO hereby affirms that all Bentomat® geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat® to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Ship Date: 03/03/2008
Order Number: 023596901
Prepared For: Waste Services

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties listed in the tables below.

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 4632	GCL Grab Strength	1/45,000sf	90lbs/ft	Standard
ASTM D 4632	GCL Peel Strength	1/40,000 sf	15 lbs	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000 sf	5x10-9 cm/sec	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/inch	Standard
ASTM D 4643	GCL Moisture	1/40,000 sf	35% max	Standard
ASTM D 6768	Tensile	1/45,000sf	23lbs/inch	Standard

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.
All tensile testing is in the machine direction.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.

CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King
Quality Assurance Coordinator

CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 023596901

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596901	CV-BENTOMAT ST	200810CV	00001849	150	15	2250	2702
023596901	CV-BENTOMAT ST	200810CV	00001850	150	15	2250	2720
023596901	CV-BENTOMAT ST	200810CV	00001851	150	15	2250	2722
023596901	CV-BENTOMAT ST	200810CV	00001852	150	15	2250	2718
023596901	CV-BENTOMAT ST	200810CV	00001873	150	15	2250	2766
023596901	CV-BENTOMAT ST	200810CV	00001879	150	15	2250	2702
023596901	CV-BENTOMAT ST	200810CV	00001881	150	15	2250	2720
023596901	CV-BENTOMAT ST	200810CV	00001882	150	15	2250	2718
023596901	CV-BENTOMAT ST	200810CV	00001906	150	15	2250	2704
023596901	CV-BENTOMAT ST	200810CV	00001907	150	15	2250	2718
023596901	CV-BENTOMAT ST	200810CV	00001908	150	15	2250	2754
023596901	CV-BENTOMAT ST	200810CV	00001925	150	15	2250	2718
			Totals:	**1800**	**180**	**27000**	**32662**
						Total Number of Rolls Certified: **12**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 023596901

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	**GCL Roll #**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
200810CV	00001849	00001843	200747CV	00004633	00004632	2009764597	841520B
200810CV	00001850	00001843	200747CV	00004633	00004632	2009764597	841520B
200810CV	00001851	00001843	200747CV	00004633	00004632	2009764597	841520B
200810CV	00001852	00001843	200747CV	00004633	00004632	2009764597	841520B
200810CV	00001873	00001873	200809CV	00000760	00000759	2009651419	841520B
200810CV	00001879	00001873	200810CV	00000779	00000776	2009651419	841520B
200810CV	00001881	00001873	200810CV	00000779	00000776	2009821454	842520B
200810CV	00001882	00001873	200810CV	00000779	00000776	2009821454	841520B
200810CV	00001906	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001907	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001908	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001925	00001917	200809CV	00000665	00000665	2009651426	842574A

GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 023596901 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 6768	ASTM D 6496
		Standard Specification:	0.75 lb/sq ft MARV	30lbs/in MARV	3.5lbs/in MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200810CV	00001843	0.92	80.0	6.7
CV-BENTOMAT ST	200810CV	00001873	0.92	41.9	10.6
CV-BENTOMAT ST	200810CV	00001902	0.92	52.2	8
CV-BENTOMAT ST	200810CV	00001917	0.88	62.8	8.01

Product	Lot # Tested	Roll # Tested	Moisture	PEEL 4632	GRAB 4632
CV-BENTOMAT ST	200810CV	00001843	26.7	32.9	320.2
CV-BENTOMAT ST	200810CV	00001873	26.3	54.8	167.4
CV-BENTOMAT ST	200810CV	00001902	26.8	41.6	208.8
CV-BENTOMAT ST	200810CV	00001917	28.2	38.4	251.3

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 023596901 has been tested by American Colloid Company and yeilded the following test results.

Reference	Swell	Fluid Loss
Test Method:	ASTM D 5890	ASTM D 5891
Specification:	24 Min	18 ml Max
841520B	26.0	16.0
842574A	26.0	17.0

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 023596901 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200747CV	00004632	6.3	48.5
CV-NON-WOVEN	200809CV	00000665	6.3	42.4
CV-NON-WOVEN	200809CV	00000734	7.2	31.1
CV-NON-WOVEN	200809CV	00000759	7.3	26.4
CV-NON-WOVEN	200810CV	00000776	6.8	33.4

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 023596901 was manufactured with geotextiles which were tested with the following results.

BASE			
Material	**Roll Number**	**Mass Area oz/yd2**	**Grab Strenth lbs**
PPX 82TEX	2009651419	3.4	179.0
PPX 82TEX	2009651426	3.5	153.0
PPX 82TEX	2009764597	3.3	157.0
PPX 82TEX	2009821454	3.4	169.0

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

Date: 3/7/2008
Purchase Order: JED LF CELL 6
ORDER NUMBERS: 023596902, 023596904

Mike Kaiser
Waste Services

Boca Raton, FL 33431
mkaiser@wasteservicesinc.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Waste Services. The shipments left our Cartersville, Georgia plant on 03/04/2008.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
ORDER NUMBERS: 023596902, 023596904
PREPARED FOR: Waste Services

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

PRODUCTION CERTIFICATION

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
PREPARED FOR: Waste Services

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION PROCEDURE

CETCO hereby affirms that all Bentomat® geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat® to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

CETCO LINING TECHNOLOGIES
800.527.9948 www.cetco.com

Ship Date: 03/04/2008
Order Numbers: 023596902, 023596904
Prepared For: Waste Services

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties listed in the tables below.

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 4632	GCL Grab Strength	1/45,000sf	90lbs/ft	Standard
ASTM D 4632	GCL Peel Strength	1/40,000 sf	15 lbs	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000 sf	5x10-9 cm/sec	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/inch	Standard
ASTM D 4643	GCL Moisture	1/40,000 sf	35% max	Standard
ASTM D 6768	Tensile	1/45,000sf	23lbs/inch	Standard

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.
All tensile testing is in the machine direction.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.

CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King
Quality Assurance Coordinator

CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 023596902

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596904	CV-BENTOMAT ST	200809CV	00001696	150	15	2250	2716
023596902	CV-BENTOMAT ST	200809CV	00001728	150	15	2250	2722
023596904	CV-BENTOMAT ST	200809CV	00001785	150	15	2250	2708
023596904	CV-BENTOMAT ST	200810CV	00001792	150	15	2250	3038
023596904	CV-BENTOMAT ST	200810CV	00001827	150	15	2250	2664
023596904	CV-BENTOMAT ST	200810CV	00001843	150	15	2250	2734
023596904	CV-BENTOMAT ST	200810CV	00001874	150	15	2250	2728
023596902	CV-BENTOMAT ST	200810CV	00001878	150	15	2250	2708
023596904	CV-BENTOMAT ST	200810CV	00001887	150	15	2250	2710
023596904	CV-BENTOMAT ST	200810CV	00001919	150	15	2250	2732
023596904	CV-BENTOMAT ST	200810CV	00001923	150	15	2250	2716
023596902	CV-BENTOMAT ST	200810CV	00001927	150	15	2250	2708
023596904	CV-BENTOMAT ST	200810CV	00001931	150	15	2250	2744
023596904	CV-BENTOMAT ST	200810CV	00001941	150	15	2250	2734
023596904	CV-BENTOMAT ST	200810CV	00001947	150	15	2250	2756
023596902	CV-BENTOMAT ST	200810CV	00001950	150	15	2250	2744
023596902	CV-BENTOMAT ST	200810CV	00001954	150	15	2250	2778
023596902	CV-BENTOMAT ST	200810CV	00001958	150	15	2250	2776
023596904	CV-BENTOMAT ST	200810CV	00001961	150	15	2250	2812
023596904	CV-BENTOMAT ST	200810CV	00001973	150	15	2250	2780
023596904	CV-BENTOMAT ST	200810CV	00001975	150	15	2250	2772
023596902	CV-BENTOMAT ST	200810CV	00001976	150	15	2250	2758
023596902	CV-BENTOMAT ST	200810CV	00001981	150	15	2250	2760
023596902	CV-BENTOMAT ST	200810CV	00001983	150	15	2250	2764
023596902	CV-BENTOMAT ST	200810CV	00001985	150	15	2250	2886
023596902	CV-BENTOMAT ST	200810CV	00001994	150	15	2250	2990
023596902	CV-BENTOMAT ST	200810CV	00001997	150	15	2250	2916

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596902	CV-BENTOMAT ST	200810CV	00001998	150	15	2250	2912
023596902	CV-BENTOMAT ST	200810CV	00001999	150	15	2250	2896
023596904	CV-BENTOMAT ST	200810CV	00002000	150	15	2250	2918
023596902	CV-BENTOMAT ST	200810CV	00002001	150	15	2250	2884
023596902	CV-BENTOMAT ST	200810CV	00002002	150	15	2250	2878
023596902	CV-BENTOMAT ST	200810CV	00002003	150	15	2250	2996
023596904	CV-BENTOMAT ST	200810CV	00002008	150	15	2250	3448
			Totals:	**5100**	**510**	**76500**	**95786**
						Total Number of Rolls Certified: **34**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 023596902

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	**GCL Roll #**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
200809CV	00001696	00001696	200809CV	00000753	00000751	2009474565	842569B
200809CV	00001728	00001726	200809CV	00000743	00000740	2009862091	842570A
200809CV	00001785	00001785	200809CV	00000740	00000740	2009651425	842570B
200810CV	00001792	00001792	200809CV	00000759	00000759	2009651425	842570B
200810CV	00001827	00001814	200809CV	00000763	00000762	2009764597	841520A
200810CV	00001843	00001843	200747CV	00004655	00004651	2009764597	841520B
200810CV	00001874	00001873	200809CV	00000760	00000759	2009651419	841520B
200810CV	00001878	00001873	200810CV	00000779	00000776	2009651419	841520B
200810CV	00001887	00001887	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001919	00001917	200810CV	00000776	00000776	2009651426	842574A
200810CV	00001923	00001917	200809CV	00000665	00000665	2009651426	842574A
200810CV	00001927	00001917	200809CV	00000773	00000772	2009651426	842574A
200810CV	00001931	00001931	200809CV	00000773	00000772	2009651426	842574B
200810CV	00001941	00001931	200809CV	00000771	00000762	2009732687	842574B
200810CV	00001947	00001946	200810CV	00000800	00000796	2009732687	842574B
200810CV	00001950	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001954	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001958	00001946	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001961	00001961	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001973	00001961	200810CV	00000788	00000786	2009801864	842573A
200810CV	00001975	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001976	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001981	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001983	00001975	200810CV	00000804	00000802	2009801864	842573A
200810CV	00001985	00001975	200810CV	00000804	00000802	2009801864	842573A
200810CV	00001994	00001990	200810CV	00000805	00000802	2007961600	842573A
200810CV	00001997	00001990	200810CV	00000805	00000802	2007961600	842573A
200810CV	00001998	00001990	200810CV	00000805	00000802	2007961600	842573A
200810CV	00001999	00001990	200810CV	00000805	00000802	2007961600	842573A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200810CV	00002000	00001990	200810CV	00000787	00000786	2007961600	842573A
200810CV	00002001	00001990	200810CV	00000787	00000786	2007961600	842573A
200810CV	00002002	00001990	200810CV	00000787	00000786	2007961600	842573A
200810CV	00002003	00001990	200810CV	00000787	00000786	2007961600	842573A
200810CV	00002008	00002005	200810CV	00000787	00000786	2007961600	842573A

GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 023596902 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 6768	ASTM D 6496
		Standard Specification:	0.75 lb/sq ft MARV	30lbs/in MARV	3.5lbs/in MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200809CV	00001696	0.95	86.3	5.1
CV-BENTOMAT ST	200809CV	00001726	0.93	45.7	9.8
CV-BENTOMAT ST	200809CV	00001785	0.89	67.4	6.4
CV-BENTOMAT ST	200810CV	00001792	0.80	69.3	6.8
CV-BENTOMAT ST	200810CV	00001814	0.90	79.9	3.9
CV-BENTOMAT ST	200810CV	00001843	0.92	80.0	6.7
CV-BENTOMAT ST	200810CV	00001873	0.92	41.9	10.6
CV-BENTOMAT ST	200810CV	00001887	0.88	49.8	10
CV-BENTOMAT ST	200810CV	00001917	0.88	62.8	8.01
CV-BENTOMAT ST	200810CV	00001931	0.86	64.9	6.7
CV-BENTOMAT ST	200810CV	00001946	0.87	68.6	5.4
CV-BENTOMAT ST	200810CV	00001961	0.91	67.4	3.9
CV-BENTOMAT ST	200810CV	00001975	0.91	75.8	5
CV-BENTOMAT ST	200810CV	00001990	1.18	76.3	6.1
CV-BENTOMAT ST	200810CV	00002005	1.06	82.1	4.4

Product	Lot # Tested	Roll # Tested	Moisture	PEEL 4632	GRAB 4632
CV-BENTOMAT ST	200809CV	00001696	25.6	25.5	345.0
CV-BENTOMAT ST	200809CV	00001726	26.3	49.0	183.0
CV-BENTOMAT ST	200809CV	00001785	28.4	31.7	269.4
CV-BENTOMAT ST	200810CV	00001792	10.3	33.1	277.2
CV-BENTOMAT ST	200810CV	00001814	27.8	20.7	319.8
CV-BENTOMAT ST	200810CV	00001843	26.7	32.9	320.2
CV-BENTOMAT ST	200810CV	00001873	26.3	54.8	167.4
CV-BENTOMAT ST	200810CV	00001887	28.1	50.0	199.3
CV-BENTOMAT ST	200810CV	00001917	28.2	38.4	251.3
CV-BENTOMAT ST	200810CV	00001931	26.8	33.1	259.6
CV-BENTOMAT ST	200810CV	00001946	27.9	27.1	274.5

CV-BENTOMAT ST	200810CV	00001961	27.5	21.4	269.5
CV-BENTOMAT ST	200810CV	00001975	26.6	24.9	303.3
CV-BENTOMAT ST	200810CV	00001990	25.6	28.7	305.2
CV-BENTOMAT ST	200810CV	00002005	27.7	22.5	328.5

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 023596902 has been tested by American Colloid Company and yeilded the following test results.

Reference	Swell	Fluid Loss
Test Method:	ASTM D 5890	ASTM D 5891
Specification:	24 Min	18 ml Max
841520A	25.0	16.8
841520B	26.0	16.0
842569B	28.0	16.0
842570A	28.0	16.0
842570B	29.0	16.2
842573A	27.0	17.2
842574A	26.0	17.0
842574B	26.0	16.8

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 023596902 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200747CV	00004651	6.8	52.5
CV-NON-WOVEN	200809CV	00000665	6.3	42.4
CV-NON-WOVEN	200809CV	00000740	7.1	32.2
CV-NON-WOVEN	200809CV	00000751	7.1	23.8
CV-NON-WOVEN	200809CV	00000759	7.3	26.4
CV-NON-WOVEN	200809CV	00000762	6.9	44.1
CV-NON-WOVEN	200809CV	00000772	6.5	42.5
CV-NON-WOVEN	200810CV	00000776	6.8	33.4
CV-NON-WOVEN	200810CV	00000786	6.7	39.7
CV-NON-WOVEN	200810CV	00000796	6.8	41.0
CV-NON-WOVEN	200810CV	00000802	6.4	21.1

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 023596902 was manufactured with geotextiles which were tested with the following results.

BASE			
Material	**Roll Number**	**Mass Area oz/yd2**	**Grab Strenth lbs**
PPX 82TEX	2007961600	3.5	150.0
PPX 82TEX	2009474565	3.5	172.0
PPX 82TEX	2009651419	3.4	179.0
PPX 82TEX	2009651425	3.5	153.0
PPX 82TEX	2009651426	3.5	153.0
PPX 82TEX	2009732687	3.5	184.0
PPX 82TEX	2009764597	3.3	157.0
PPX 82TEX	2009801864	3.3	190.0
PPX 82TEX	2009821454	3.4	169.0
PPX 82TEX	2009862091	3.3	140.0

Date: 3/11/2008
Purchase Order: JED LF CELL 6
ORDER NUMBER: 023596904

Mike Kaiser
Waste Services

Boca Raton, FL 33431
mkaiser@wasteservicesinc.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Waste Services. The shipments left our Cartersville, Georgia plant on 03/04/2008.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
ORDER NUMBER: 023596904
PREPARED FOR: Waste Services

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

PRODUCTION CERTIFICATION

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
PREPARED FOR: Waste Services

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION PROCEDURE

CETCO hereby affirms that all Bentomat® geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat® to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Ship Date: 03/04/2008
Order Number: 023596904
Prepared For: Waste Services

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties listed in the tables below.

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 4632	GCL Grab Strength	1/45,000sf	90lbs/ft	Standard
ASTM D 4632	GCL Peel Strength	1/40,000 sf	15 lbs	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000 sf	5x10-9 cm/sec	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/inch	Standard
ASTM D 4643	GCL Moisture	1/40,000 sf	35% max	Standard
ASTM D 6768	Tensile	1/45,000sf	23lbs/inch	Standard

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.
All tensile testing is in the machine direction.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.

CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King
Quality Assurance Coordinator

CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 023596904

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596904	CV-BENTOMAT ST	200809CV	00001696	150	15	2250	2716
023596904	CV-BENTOMAT ST	200809CV	00001785	150	15	2250	2708
023596904	CV-BENTOMAT ST	200810CV	00001792	150	15	2250	3038
023596904	CV-BENTOMAT ST	200810CV	00001827	150	15	2250	2664
023596904	CV-BENTOMAT ST	200810CV	00001843	150	15	2250	2734
023596904	CV-BENTOMAT ST	200810CV	00001887	150	15	2250	2710
023596904	CV-BENTOMAT ST	200810CV	00001919	150	15	2250	2732
023596904	CV-BENTOMAT ST	200810CV	00001923	150	15	2250	2716
023596904	CV-BENTOMAT ST	200810CV	00001931	150	15	2250	2744
023596904	CV-BENTOMAT ST	200810CV	00001941	150	15	2250	2734
023596904	CV-BENTOMAT ST	200810CV	00001947	150	15	2250	2756
023596904	CV-BENTOMAT ST	200810CV	00001961	150	15	2250	2812
023596904	CV-BENTOMAT ST	200810CV	00001973	150	15	2250	2780
023596904	CV-BENTOMAT ST	200810CV	00001974	150	15	2250	2782
023596904	CV-BENTOMAT ST	200810CV	00001975	150	15	2250	2772
023596904	CV-BENTOMAT ST	200810CV	00002000	150	15	2250	2918
023596904	CV-BENTOMAT ST	200810CV	00002008	150	15	2250	3448
			Totals:	**2550**	**255**	**38250**	**47764**
						Total Number of Rolls Certified: **17**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 023596904

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	**GCL Roll #**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
200809CV	00001696	00001696	200809CV	00000753	00000751	2009474565	842569B
200809CV	00001785	00001785	200809CV	00000740	00000740	2009651425	842570B
200810CV	00001792	00001792	200809CV	00000759	00000759	2009651425	842570B
200810CV	00001827	00001814	200809CV	00000763	00000762	2009764597	841520A
200810CV	00001843	00001843	200747CV	00004655	00004651	2009764597	841520B
200810CV	00001887	00001887	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001919	00001917	200810CV	00000776	00000776	2009651426	842574A
200810CV	00001923	00001917	200809CV	00000665	00000665	2009651426	842574A
200810CV	00001931	00001931	200809CV	00000773	00000772	2009651426	842574B
200810CV	00001941	00001931	200809CV	00000771	00000762	2009732687	842574B
200810CV	00001947	00001946	200810CV	00000800	00000796	2009732687	842574B
200810CV	00001961	00001961	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001973	00001961	200810CV	00000788	00000786	2009801864	842573A
200810CV	00001974	00001961	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001975	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00002000	00001990	200810CV	00000787	00000786	2007961600	842573A
200810CV	00002008	00002005	200810CV	00000787	00000786	2007961600	842573A

GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 023596904 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 6768	ASTM D 6496
		Standard Specification:	0.75 lb/sq ft MARV	30lbs/in MARV	3.5lbs/in MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200809CV	00001696	0.95	86.3	5.1
CV-BENTOMAT ST	200809CV	00001785	0.89	67.4	6.4
CV-BENTOMAT ST	200810CV	00001792	0.80	69.3	6.8
CV-BENTOMAT ST	200810CV	00001814	0.90	79.9	3.9
CV-BENTOMAT ST	200810CV	00001843	0.92	80.0	6.7
CV-BENTOMAT ST	200810CV	00001887	0.88	49.8	10
CV-BENTOMAT ST	200810CV	00001917	0.88	62.8	8.01
CV-BENTOMAT ST	200810CV	00001931	0.86	64.9	6.7
CV-BENTOMAT ST	200810CV	00001946	0.87	68.6	5.4
CV-BENTOMAT ST	200810CV	00001961	0.91	67.4	3.9
CV-BENTOMAT ST	200810CV	00001975	0.91	75.8	5
CV-BENTOMAT ST	200810CV	00001990	1.18	76.3	6.1
CV-BENTOMAT ST	200810CV	00002005	1.06	82.1	4.4

Product	Lot # Tested	Roll # Tested	Moisture	PEEL 4632	GRAB 4632
CV-BENTOMAT ST	200809CV	00001696	25.6	25.5	345.0
CV-BENTOMAT ST	200809CV	00001785	28.4	31.7	269.4
CV-BENTOMAT ST	200810CV	00001792	10.3	33.1	277.2
CV-BENTOMAT ST	200810CV	00001814	27.8	20.7	319.8
CV-BENTOMAT ST	200810CV	00001843	26.7	32.9	320.2
CV-BENTOMAT ST	200810CV	00001887	28.1	50.0	199.3
CV-BENTOMAT ST	200810CV	00001917	28.2	38.4	251.3
CV-BENTOMAT ST	200810CV	00001931	26.8	33.1	259.6
CV-BENTOMAT ST	200810CV	00001946	27.9	27.1	274.5
CV-BENTOMAT ST	200810CV	00001961	27.5	21.4	269.5
CV-BENTOMAT ST	200810CV	00001975	26.6	24.9	303.3
CV-BENTOMAT ST	200810CV	00001990	25.6	28.7	305.2
CV-BENTOMAT ST	200810CV	00002005	27.7	22.5	328.5

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 023596904 has been tested by American Colloid Company and yeilded the following test results.

Reference	Swell	Fluid Loss
Test Method:	ASTM D 5890	ASTM D 5891
Specification:	24 Min	18 ml Max
841520A	25.0	16.8
841520B	26.0	16.0
842569B	28.0	16.0
842570B	29.0	16.2
842573A	27.0	17.2
842574A	26.0	17.0
842574B	26.0	16.8

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 023596904 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200747CV	00004651	6.8	52.5
CV-NON-WOVEN	200809CV	00000665	6.3	42.4
CV-NON-WOVEN	200809CV	00000740	7.1	32.2
CV-NON-WOVEN	200809CV	00000751	7.1	23.8
CV-NON-WOVEN	200809CV	00000759	7.3	26.4
CV-NON-WOVEN	200809CV	00000762	6.9	44.1
CV-NON-WOVEN	200809CV	00000772	6.5	42.5
CV-NON-WOVEN	200810CV	00000776	6.8	33.4
CV-NON-WOVEN	200810CV	00000786	6.7	39.7
CV-NON-WOVEN	200810CV	00000796	6.8	41.0
CV-NON-WOVEN	200810CV	00000802	6.4	21.1

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 023596904 was manufactured with geotextiles which were tested with the following results.

BASE			
Material	**Roll Number**	**Mass Area oz/yd2**	**Grab Strenth lbs**
PPX 82TEX	2007961600	3.5	150.0
PPX 82TEX	2009474565	3.5	172.0
PPX 82TEX	2009651425	3.5	153.0
PPX 82TEX	2009651426	3.5	153.0
PPX 82TEX	2009732687	3.5	184.0
PPX 82TEX	2009764597	3.3	157.0
PPX 82TEX	2009801864	3.3	190.0
PPX 82TEX	2009821454	3.4	169.0

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

Date: 3/7/2008
Purchase Order: JED LF CELL 6
ORDER NUMBERS: 023596905, 023596908, 023596909, 023596911, 023596912

Mike Kaiser
Waste Services

Boca Raton, FL 33431
mkaiser@wasteservicesinc.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Waste Services. The shipments left our Cartersville, Georgia plant on 03/06/2008.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
ORDER NUMBERS: 023596905, 023596908, 023596909, 023596911, 023596912
PREPARED FOR: Waste Services

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

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CETCO
LINING TECHNOLOGIES
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PRODUCTION CERTIFICATION

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
PREPARED FOR: Waste Services

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION PROCEDURE

CETCO hereby affirms that all Bentomat® geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat® to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Ship Date: 03/06/2008
Order Numbers: 023596905, 023596908, 023596909, 023596911, 023596912
Prepared For: Waste Services

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties listed in the tables below.

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 4632	GCL Grab Strength	1/45,000sf	90lbs/ft	Standard
ASTM D 4632	GCL Peel Strength	1/40,000 sf	15 lbs	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000 sf	5x10-9 cm/sec	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/inch	Standard
ASTM D 4643	GCL Moisture	1/40,000 sf	35% max	Standard
ASTM D 6768	Tensile	1/45,000sf	23lbs/inch	Standard

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.
All tensile testing is in the machine direction.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.

CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King
Quality Assurance Coordinator

CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 023596905

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596905	CV-BENTOMAT ST	200809CV	00001703	150	15	2250	2686
023596905	CV-BENTOMAT ST	200809CV	00001709	150	15	2250	2688
023596905	CV-BENTOMAT ST	200809CV	00001710	150	15	2250	2860
023596912	CV-BENTOMAT ST	200809CV	00001712	150	15	2250	2724
023596905	CV-BENTOMAT ST	200809CV	00001713	150	15	2250	2728
023596905	CV-BENTOMAT ST	200809CV	00001720	150	15	2250	2712
023596908	CV-BENTOMAT ST	200809CV	00001740	150	15	2250	2800
023596909	CV-BENTOMAT ST	200809CV	00001750	150	15	2250	2752
023596909	CV-BENTOMAT ST	200809CV	00001754	150	15	2250	2748
023596905	CV-BENTOMAT ST	200809CV	00001760	150	15	2250	2746
023596908	CV-BENTOMAT ST	200809CV	00001772	150	15	2250	2712
023596908	CV-BENTOMAT ST	200809CV	00001773	150	15	2250	2694
023596909	CV-BENTOMAT ST	200809CV	00001774	150	15	2250	2744
023596909	CV-BENTOMAT ST	200809CV	00001781	150	15	2250	2728
023596908	CV-BENTOMAT ST	200810CV	00001814	150	15	2250	2712
023596905	CV-BENTOMAT ST	200810CV	00001822	150	15	2250	2684
023596909	CV-BENTOMAT ST	200810CV	00001824	150	15	2250	2674
023596909	CV-BENTOMAT ST	200810CV	00001825	150	15	2250	2676
023596908	CV-BENTOMAT ST	200810CV	00001828	150	15	2250	2774
023596908	CV-BENTOMAT ST	200810CV	00001832	150	15	2250	2710
023596905	CV-BENTOMAT ST	200810CV	00001838	150	15	2250	2730
023596912	CV-BENTOMAT ST	200810CV	00001839	150	15	2250	2710
023596908	CV-BENTOMAT ST	200810CV	00001857	150	15	2250	2726
023596908	CV-BENTOMAT ST	200810CV	00001859	150	15	2250	2724
023596908	CV-BENTOMAT ST	200810CV	00001861	150	15	2250	2730
023596908	CV-BENTOMAT ST	200810CV	00001862	150	15	2250	2730
023596909	CV-BENTOMAT ST	200810CV	00001863	150	15	2250	2720

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596909	CV-BENTOMAT ST	200810CV	00001864	150	15	2250	2716
023596905	CV-BENTOMAT ST	200810CV	00001868	150	15	2250	2902
023596905	CV-BENTOMAT ST	200810CV	00001877	150	15	2250	2706
023596911	CV-BENTOMAT ST	200810CV	00001884	150	15	2250	2698
023596905	CV-BENTOMAT ST	200810CV	00001885	150	15	2250	2696
023596911	CV-BENTOMAT ST	200810CV	00001886	150	15	2250	2672
023596911	CV-BENTOMAT ST	200810CV	00001888	150	15	2250	2690
023596911	CV-BENTOMAT ST	200810CV	00001889	150	15	2250	2682
023596908	CV-BENTOMAT ST	200810CV	00001890	150	15	2250	2704
023596909	CV-BENTOMAT ST	200810CV	00001891	150	15	2250	2692
023596909	CV-BENTOMAT ST	200810CV	00001892	150	15	2250	2676
023596912	CV-BENTOMAT ST	200810CV	00001902	150	15	2250	2966
023596911	CV-BENTOMAT ST	200810CV	00001909	150	15	2250	2762
023596911	CV-BENTOMAT ST	200810CV	00001911	150	15	2250	2732
023596911	CV-BENTOMAT ST	200810CV	00001912	150	15	2250	2744
023596911	CV-BENTOMAT ST	200810CV	00001913	150	15	2250	2742
023596911	CV-BENTOMAT ST	200810CV	00001914	150	15	2250	2736
023596911	CV-BENTOMAT ST	200810CV	00001915	150	15	2250	2726
023596908	CV-BENTOMAT ST	200810CV	00001916	150	15	2250	2722
023596905	CV-BENTOMAT ST	200810CV	00001918	150	15	2250	2720
023596909	CV-BENTOMAT ST	200810CV	00001920	150	15	2250	2722
023596911	CV-BENTOMAT ST	200810CV	00001926	150	15	2250	2710
023596909	CV-BENTOMAT ST	200810CV	00001929	150	15	2250	2726
023596911	CV-BENTOMAT ST	200810CV	00001930	150	15	2250	2720
023596911	CV-BENTOMAT ST	200810CV	00001932	150	15	2250	2700
023596905	CV-BENTOMAT ST	200810CV	00001933	150	15	2250	2900
023596905	CV-BENTOMAT ST	200810CV	00001934	150	15	2250	2756
023596911	CV-BENTOMAT ST	200810CV	00001935	150	15	2250	2702
023596911	CV-BENTOMAT ST	200810CV	00001936	150	15	2250	2734
023596911	CV-BENTOMAT ST	200810CV	00001937	150	15	2250	2734
023596908	CV-BENTOMAT ST	200810CV	00001938	150	15	2250	2730
023596909	CV-BENTOMAT ST	200810CV	00001956	150	15	2250	2780

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596909	CV-BENTOMAT ST	200810CV	00001960	150	15	2250	2770
023596909	CV-BENTOMAT ST	200810CV	00001963	150	15	2250	2766
023596911	CV-BENTOMAT ST	200810CV	00001964	150	15	2250	2764
023596908	CV-BENTOMAT ST	200810CV	00001965	150	15	2250	2762
023596905	CV-BENTOMAT ST	200810CV	00001966	150	15	2250	2772
023596908	CV-BENTOMAT ST	200810CV	00001967	150	15	2250	2780
023596908	CV-BENTOMAT ST	200810CV	00001968	150	15	2250	2773
023596909	CV-BENTOMAT ST	200810CV	00001969	150	15	2250	2776
023596912	CV-BENTOMAT ST	200810CV	00001970	150	15	2250	2778
023596912	CV-BENTOMAT ST	200810CV	00001971	150	15	2250	2780
023596912	CV-BENTOMAT ST	200810CV	00001972	150	15	2250	2782
023596912	CV-BENTOMAT ST	200810CV	00001977	150	15	2250	2776
023596912	CV-BENTOMAT ST	200810CV	00001978	150	15	2250	2746
023596912	CV-BENTOMAT ST	200810CV	00001979	150	15	2250	2750
023596912	CV-BENTOMAT ST	200810CV	00001980	150	15	2250	2770
023596912	CV-BENTOMAT ST	200810CV	00001982	150	15	2250	2762
023596912	CV-BENTOMAT ST	200810CV	00001984	150	15	2250	2792
023596912	CV-BENTOMAT ST	200810CV	00001988	150	15	2250	3570
023596905	CV-BENTOMAT ST	200810CV	00001989	150	15	2250	3532
023596908	CV-BENTOMAT ST	200810CV	00001990	150	15	2250	3590
023596905	CV-BENTOMAT ST	200810CV	00001991	150	15	2250	3591
023596912	CV-BENTOMAT ST	200810CV	00001992	150	15	2250	3324
023596912	CV-BENTOMAT ST	200810CV	00001993	150	15	2250	2910
023596912	CV-BENTOMAT ST	200810CV	00001995	150	15	2250	2910
023596912	CV-BENTOMAT ST	200810CV	00002004	150	15	2250	3170
023596909	CV-BENTOMAT ST	200810CV	00002006	150	15	2250	3372
			Totals:	**12750**	**1275**	**191250**	**238288**
						Total Number of Rolls Certified: **85**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 023596905

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	**GCL Roll #**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
200809CV	00001703	00001696	200809CV	00000742	00000740	2009474565	842569B
200809CV	00001709	00001696	200809CV	00000742	00000740	2009862091	842569B
200809CV	00001710	00001696	200809CV	00000742	00000740	2009862091	842569B
200809CV	00001712	00001711	200809CV	00000754	00000751	2009862091	842569B
200809CV	00001713	00001711	200809CV	00000754	00000751	2009862091	842570A
200809CV	00001720	00001711	200809CV	00000755	00000751	2009862091	842570A
200809CV	00001740	00001740	200809CV	00000741	00000740	2009862091	842570A
200809CV	00001750	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001754	00001740	200809CV	00000757	00000751	2009494422	842570A
200809CV	00001760	00001756	200809CV	00000757	00000751	2009494422	842570B
200809CV	00001772	00001771	200809CV	00000758	00000751	2009651425	842570B
200809CV	00001773	00001771	200809CV	00000758	00000751	2009651425	842570B
200809CV	00001774	00001771	200809CV	00000758	00000751	2009651425	842570B
200809CV	00001781	00001771	200809CV	00000740	00000740	2009651425	842570B
200810CV	00001814	00001814	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001822	00001814	200809CV	00000763	00000762	2009676640	841520A
200810CV	00001824	00001814	200809CV	00000763	00000762	2009676640	841520A
200810CV	00001825	00001814	200809CV	00000763	00000762	2009676640	841520A
200810CV	00001828	00001814	200809CV	00000763	00000762	2009764597	841520A
200810CV	00001832	00001829	200809CV	00000763	00000762	2009764597	842520A
200810CV	00001838	00001829	200747CV	00004655	00004651	2009764597	841520A
200810CV	00001839	00001829	200747CV	00004655	00004651	2009764597	841520A
200810CV	00001857	00001843	200747CV	00004631	00004622	2009651419	841520B
200810CV	00001859	00001858	200747CV	00004631	00004622	2009651419	841520B
200810CV	00001861	00001858	200810CV	00000778	00000776	2009651419	841520B
200810CV	00001862	00001858	200810CV	00000778	00000776	2009651419	841520B
200810CV	00001863	00001858	200810CV	00000778	00000776	2009651419	841520B
200810CV	00001864	00001858	200810CV	00000778	00000776	2009651419	841520B
200810CV	00001868	00001858	200809CV	00000760	00000759	2009651419	841520B

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200810CV	00001877	00001873	200810CV	00000779	00000776	2009651419	841520B
200810CV	00001884	00001873	200810CV	00000779	00000776	2009821454	841520B
200810CV	00001885	00001873	200810CV	00000780	00000776	2009821454	841520B
200810CV	00001886	00001873	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001888	00001887	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001889	00001887	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001890	00001887	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001891	00001887	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001892	00001887	200810CV	00000780	00000776	2009821454	842574A
200810CV	00001902	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001909	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001911	00001902	200810CV	00000782	00000776	2009651426	842574A
200810CV	00001912	00001902	200810CV	00000782	00000776	2009651426	842574A
200810CV	00001913	00001902	200810CV	00000782	00000776	2009651426	842574A
200810CV	00001914	00001902	200810CV	00000782	00000776	2009651426	842574A
200810CV	00001915	00001902	200810CV	00000782	00000776	2009651426	842574A
200810CV	00001916	00001902	200810CV	00000782	00000776	2009651426	842574A
200810CV	00001918	00001917	200810CV	00000776	00000776	2009651426	842574A
200810CV	00001920	00001917	200810CV	00000776	00000776	2009651426	842574A
200810CV	00001926	00001917	200809CV	00000665	00000665	2009651426	842574A
200810CV	00001929	00001917	200809CV	00000773	00000772	2009651426	842574B
200810CV	00001930	00001917	200809CV	00000773	00000772	2009651426	842574B
200810CV	00001932	00001931	200809CV	00000773	00000772	2009651426	842574B
200810CV	00001933	00001931	200809CV	00000773	00000772	2009651426	842574B
200810CV	00001934	00001931	200809CV	00000771	00000762	2009651426	842574B
200810CV	00001935	00001931	200809CV	00000771	00000762	2009651426	842574B
200810CV	00001936	00001931	200809CV	00000771	00000762	2009651426	842574B
200810CV	00001937	00001931	200809CV	00000771	00000762	2009651426	842574B
200810CV	00001938	00001931	200809CV	00000771	00000762	2009651426	842574B
200810CV	00001956	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001960	00001946	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001963	00001961	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001964	00001961	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001965	00001961	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001966	00001961	200810CV	00000788	00000786	2009801864	842574B

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200810CV	00001967	00001961	200810CV	00000788	00000786	2009801864	842574B
200810CV	00001968	00001961	200810CV	00000788	00000786	2009801864	842574B
200810CV	00001969	00001961	200810CV	00000788	00000786	2009801864	842574B
200810CV	00001970	00001961	200810CV	00000788	00000786	2009801864	842574B
200810CV	00001971	00001961	200810CV	00000788	00000786	2009801864	842574B
200810CV	00001972	00001961	200810CV	00000788	00000786	2009801864	842573A
200810CV	00001977	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001978	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001979	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001980	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001982	00001975	200810CV	00000803	00000802	2009801864	842573A
200810CV	00001984	00001975	200810CV	00000804	00000802	2009801864	842573A
200810CV	00001988	00001975	200810CV	00000804	00000802	2007961600	842573A
200810CV	00001989	00001975	200810CV	00000804	00000802	2007961600	842573A
200810CV	00001990	00001990	200810CV	00000804	00000802	2007961600	842573A
200810CV	00001991	00001990	200810CV	00000805	00000802	2007961600	842573A
200810CV	00001992	00001990	200810CV	00000805	00000802	2007961600	842573A
200810CV	00001993	00001990	200810CV	00000805	00000802	2007961600	842573A
200810CV	00001995	00001990	200810CV	00000805	00000802	2007961600	842573A
200810CV	00002004	00001990	200810CV	00000787	00000786	2007961600	842573A
200810CV	00002006	00002005	200810CV	00000787	00000786	2007961600	842573A

GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 023596905 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 6768	ASTM D 6496
		Standard Specification:	0.75 lb/sq ft MARV	30lbs/in MARV	3.5lbs/in MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200809CV	00001696	0.95	86.3	5.1
CV-BENTOMAT ST	200809CV	00001711	0.86	37.8	10.8
CV-BENTOMAT ST	200809CV	00001740	0.93	52.8	8.4
CV-BENTOMAT ST	200809CV	00001756	0.84	61.3	9
CV-BENTOMAT ST	200809CV	00001771	0.86	64.3	7.7
CV-BENTOMAT ST	200810CV	00001814	0.90	79.9	3.9
CV-BENTOMAT ST	200810CV	00001829	0.87	73.6	7.5
CV-BENTOMAT ST	200810CV	00001843	0.92	80.0	6.7
CV-BENTOMAT ST	200810CV	00001858	0.91	86.3	5.6
CV-BENTOMAT ST	200810CV	00001873	0.92	41.9	10.6
CV-BENTOMAT ST	200810CV	00001887	0.88	49.8	10
CV-BENTOMAT ST	200810CV	00001902	0.92	52.2	8
CV-BENTOMAT ST	200810CV	00001917	0.88	62.8	8.01
CV-BENTOMAT ST	200810CV	00001931	0.86	64.9	6.7
CV-BENTOMAT ST	200810CV	00001946	0.87	68.6	5.4
CV-BENTOMAT ST	200810CV	00001961	0.91	67.4	3.9
CV-BENTOMAT ST	200810CV	00001975	0.91	75.8	5
CV-BENTOMAT ST	200810CV	00001990	1.18	76.3	6.1
CV-BENTOMAT ST	200810CV	00002005	1.06	82.1	4.4

Product	Lot # Tested	Roll # Tested	Moisture	PEEL 4632	GRAB 4632
CV-BENTOMAT ST	200809CV	00001696	25.6	25.5	345.0
CV-BENTOMAT ST	200809CV	00001711	25.9	58.7	151.3
CV-BENTOMAT ST	200809CV	00001740	26.6	42.6	211.1
CV-BENTOMAT ST	200809CV	00001756	25.5	43.7	245.1
CV-BENTOMAT ST	200809CV	00001771	29.1	39.3	257.3
CV-BENTOMAT ST	200810CV	00001814	27.8	20.7	319.8
CV-BENTOMAT ST	200810CV	00001829	25.1	36.0	294.0

CV-BENTOMAT ST	200810CV	00001843	26.7	32.9	320.2
CV-BENTOMAT ST	200810CV	00001858	26.4	27.7	345.0
CV-BENTOMAT ST	200810CV	00001873	26.3	54.8	167.4
CV-BENTOMAT ST	200810CV	00001887	28.1	50.0	199.3
CV-BENTOMAT ST	200810CV	00001902	26.8	41.6	208.8
CV-BENTOMAT ST	200810CV	00001917	28.2	38.4	251.3
CV-BENTOMAT ST	200810CV	00001931	26.8	33.1	259.6
CV-BENTOMAT ST	200810CV	00001946	27.9	27.1	274.5
CV-BENTOMAT ST	200810CV	00001961	27.5	21.4	269.5
CV-BENTOMAT ST	200810CV	00001975	26.6	24.9	303.3
CV-BENTOMAT ST	200810CV	00001990	25.6	28.7	305.2
CV-BENTOMAT ST	200810CV	00002005	27.7	22.5	328.5

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 023596905 has been tested by American Colloid Company and yeilded the following test results.

Reference	Swell	Fluid Loss
Test Method:	ASTM D 5890	ASTM D 5891
Specification:	24 Min	18 ml Max
841520A	25.0	16.8
841520B	26.0	16.0
842569B	28.0	16.0
842570A	28.0	16.0
842570B	29.0	16.2
842573A	27.0	17.2
842574A	26.0	17.0
842574B	26.0	16.8

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 023596905 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200747CV	00004622	6.8	50.6
CV-NON-WOVEN	200747CV	00004651	6.8	52.5
CV-NON-WOVEN	200809CV	00000665	6.3	42.4
CV-NON-WOVEN	200809CV	00000734	7.2	31.1
CV-NON-WOVEN	200809CV	00000740	7.1	32.2
CV-NON-WOVEN	200809CV	00000751	7.1	23.8
CV-NON-WOVEN	200809CV	00000759	7.3	26.4
CV-NON-WOVEN	200809CV	00000762	6.9	44.1
CV-NON-WOVEN	200809CV	00000772	6.5	42.5
CV-NON-WOVEN	200810CV	00000776	6.8	33.4
CV-NON-WOVEN	200810CV	00000786	6.7	39.7
CV-NON-WOVEN	200810CV	00000802	6.4	21.1

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 023596905 was manufactured with geotextiles which were tested with the following results.

BASE			
Material	**Roll Number**	**Mass Area oz/yd2**	**Grab Strenth lbs**
PPX 82TEX	2007961600	3.5	150.0
PPX 82TEX	2009474565	3.5	172.0
PPX 82TEX	2009494422	3.3	188.0
PPX 82TEX	2009651419	3.4	179.0
PPX 82TEX	2009651425	3.5	153.0
PPX 82TEX	2009651426	3.5	153.0
PPX 82TEX	2009676640	3.5	146.0
PPX 82TEX	2009764597	3.3	157.0
PPX 82TEX	2009801864	3.3	190.0
PPX 82TEX	2009821454	3.4	169.0
PPX 82TEX	2009862091	3.3	140.0

Date: 3/7/2008
Purchase Order: JED LF CELL 6
ORDER NUMBERS: 023596906, 023596907, 023596910, 023596913, 023596916, 023596917

Mike Kaiser
Waste Services

Boca Raton, FL 33431
mkaiser@wasteservicesinc.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Waste Services. The shipments left our Cartersville, Georgia plant on 03/07/2008.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
ORDER NUMBERS: 023596906, 023596907, 023596910, 023596913, 023596916, 023596917
PREPARED FOR: Waste Services

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

PRODUCTION CERTIFICATION

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
PREPARED FOR: Waste Services

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION PROCEDURE

CETCO hereby affirms that all Bentomat® geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat® to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Ship Date: 03/07/2008
Order Numbers: 023596906, 023596907, 023596910, 023596913, 023596916, 023596917
Prepared For: Waste Services

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties listed in the tables below.

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 4632	GCL Grab Strength	1/45,000sf	90lbs/ft	Standard
ASTM D 4632	GCL Peel Strength	1/40,000 sf	15 lbs	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000 sf	5x10-9 cm/sec	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/inch	Standard
ASTM D 4643	GCL Moisture	1/40,000 sf	35% max	Standard
ASTM D 6768	Tensile	1/45,000sf	23lbs/inch	Standard

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.
All tensile testing is in the machine direction.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.

CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King
Quality Assurance Coordinator

CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 023596906

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596906	CV-BENTOMAT ST	200809CV	00001711	150	15	2250	2866
023596906	CV-BENTOMAT ST	200809CV	00001721	150	15	2250	2728
023596906	CV-BENTOMAT ST	200809CV	00001741	150	15	2250	2712
023596906	CV-BENTOMAT ST	200809CV	00001747	150	15	2250	2748
023596906	CV-BENTOMAT ST	200809CV	00001748	150	15	2250	2750
023596906	CV-BENTOMAT ST	200809CV	00001749	150	15	2250	2750
023596906	CV-BENTOMAT ST	200809CV	00001751	150	15	2250	2760
023596906	CV-BENTOMAT ST	200809CV	00001752	150	15	2250	2764
023596906	CV-BENTOMAT ST	200809CV	00001764	150	15	2250	2742
023596916	CV-BENTOMAT ST	200809CV	00001766	150	15	2250	2724
023596916	CV-BENTOMAT ST	200809CV	00001767	150	15	2250	2714
023596916	CV-BENTOMAT ST	200809CV	00001768	150	15	2250	2730
023596916	CV-BENTOMAT ST	200809CV	00001769	150	15	2250	2730
023596906	CV-BENTOMAT ST	200809CV	00001771	150	15	2250	2724
023596916	CV-BENTOMAT ST	200809CV	00001775	150	15	2250	2742
023596906	CV-BENTOMAT ST	200809CV	00001776	150	15	2250	2728
023596913	CV-BENTOMAT ST	200809CV	00001778	150	15	2250	2800
023596913	CV-BENTOMAT ST	200809CV	00001779	150	15	2250	2706
023596906	CV-BENTOMAT ST	200809CV	00001780	150	15	2250	2706
023596913	CV-BENTOMAT ST	200809CV	00001782	150	15	2250	2724
023596906	CV-BENTOMAT ST	200809CV	00001783	150	15	2250	2714
023596906	CV-BENTOMAT ST	200809CV	00001784	150	15	2250	2706
023596916	CV-BENTOMAT ST	200809CV	00001787	150	15	2250	2686
023596916	CV-BENTOMAT ST	200809CV	00001788	150	15	2250	2706
023596913	CV-BENTOMAT ST	200809CV	00001789	150	15	2250	2708
023596916	CV-BENTOMAT ST	200809CV	00001790	150	15	2250	2710
023596906	CV-BENTOMAT ST	200809CV	00001791	150	15	2250	2712

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596906	CV-BENTOMAT ST	200810CV	00001796	150	15	2250	2694
023596916	CV-BENTOMAT ST	200810CV	00001797	150	15	2250	2712
023596916	CV-BENTOMAT ST	200810CV	00001798	150	15	2250	2722
023596916	CV-BENTOMAT ST	200810CV	00001799	150	15	2250	2742
023596906	CV-BENTOMAT ST	200810CV	00001801	150	15	2250	2732
023596913	CV-BENTOMAT ST	200810CV	00001802	150	15	2250	2730
023596916	CV-BENTOMAT ST	200810CV	00001805	150	15	2250	2840
023596913	CV-BENTOMAT ST	200810CV	00001806	150	15	2250	2770
023596913	CV-BENTOMAT ST	200810CV	00001807	150	15	2250	2714
023596916	CV-BENTOMAT ST	200810CV	00001808	150	15	2250	2720
023596916	CV-BENTOMAT ST	200810CV	00001809	150	15	2250	2714
023596916	CV-BENTOMAT ST	200810CV	00001810	150	15	2250	2706
023596916	CV-BENTOMAT ST	200810CV	00001812	150	15	2250	2718
023596913	CV-BENTOMAT ST	200810CV	00001815	150	15	2250	2744
023596913	CV-BENTOMAT ST	200810CV	00001816	150	15	2250	2718
023596916	CV-BENTOMAT ST	200810CV	00001817	150	15	2250	2714
023596913	CV-BENTOMAT ST	200810CV	00001818	150	15	2250	2718
023596913	CV-BENTOMAT ST	200810CV	00001819	150	15	2250	2710
023596913	CV-BENTOMAT ST	200810CV	00001820	150	15	2250	2688
023596913	CV-BENTOMAT ST	200810CV	00001823	150	15	2250	2680
023596907	CV-BENTOMAT ST	200810CV	00001830	150	15	2250	2696
023596913	CV-BENTOMAT ST	200810CV	00001831	150	15	2250	2702
023596913	CV-BENTOMAT ST	200810CV	00001833	150	15	2250	2714
023596913	CV-BENTOMAT ST	200810CV	00001834	150	15	2250	2740
023596910	CV-BENTOMAT ST	200810CV	00001836	150	15	2250	2726
023596910	CV-BENTOMAT ST	200810CV	00001837	150	15	2250	2734
023596910	CV-BENTOMAT ST	200810CV	00001840	150	15	2250	2696
023596910	CV-BENTOMAT ST	200810CV	00001846	150	15	2250	2706
023596917	CV-BENTOMAT ST	200810CV	00001854	150	15	2250	2708
023596917	CV-BENTOMAT ST	200810CV	00001855	150	15	2250	2704
023596907	CV-BENTOMAT ST	200810CV	00001858	150	15	2250	2778
023596907	CV-BENTOMAT ST	200810CV	00001865	150	15	2250	2714

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596907	CV-BENTOMAT ST	200810CV	00001866	150	15	2250	2710
023596907	CV-BENTOMAT ST	200810CV	00001867	150	15	2250	2712
023596910	CV-BENTOMAT ST	200810CV	00001869	150	15	2250	2732
023596910	CV-BENTOMAT ST	200810CV	00001870	150	15	2250	2696
023596913	CV-BENTOMAT ST	200810CV	00001871	150	15	2250	2664
023596910	CV-BENTOMAT ST	200810CV	00001872	150	15	2250	2714
023596910	CV-BENTOMAT ST	200810CV	00001875	150	15	2250	2702
023596910	CV-BENTOMAT ST	200810CV	00001876	150	15	2250	2706
023596917	CV-BENTOMAT ST	200810CV	00001883	150	15	2250	2708
023596907	CV-BENTOMAT ST	200810CV	00001894	150	15	2250	2692
023596907	CV-BENTOMAT ST	200810CV	00001895	150	15	2250	2694
023596907	CV-BENTOMAT ST	200810CV	00001896	150	15	2250	2700
023596907	CV-BENTOMAT ST	200810CV	00001897	150	15	2250	2668
023596910	CV-BENTOMAT ST	200810CV	00001898	150	15	2250	2680
023596910	CV-BENTOMAT ST	200810CV	00001899	150	15	2250	2676
023596910	CV-BENTOMAT ST	200810CV	00001900	150	15	2250	2680
023596910	CV-BENTOMAT ST	200810CV	00001901	150	15	2250	2690
023596910	CV-BENTOMAT ST	200810CV	00001903	150	15	2250	2742
023596907	CV-BENTOMAT ST	200810CV	00001904	150	15	2250	2704
023596910	CV-BENTOMAT ST	200810CV	00001905	150	15	2250	2706
023596907	CV-BENTOMAT ST	200810CV	00001917	150	15	2250	2804
023596907	CV-BENTOMAT ST	200810CV	00001921	150	15	2250	2746
023596907	CV-BENTOMAT ST	200810CV	00001922	150	15	2250	2734
023596907	CV-BENTOMAT ST	200810CV	00001924	150	15	2250	2706
023596907	CV-BENTOMAT ST	200810CV	00001928	150	15	2250	2738
023596907	CV-BENTOMAT ST	200810CV	00001939	150	15	2250	2740
023596907	CV-BENTOMAT ST	200810CV	00001940	150	15	2250	2740
023596917	CV-BENTOMAT ST	200810CV	00001942	150	15	2250	2740
023596917	CV-BENTOMAT ST	200810CV	00001945	150	15	2250	2752
023596917	CV-BENTOMAT ST	200810CV	00001946	150	15	2250	2750
023596917	CV-BENTOMAT ST	200810CV	00001948	150	15	2250	2752
023596917	CV-BENTOMAT ST	200810CV	00001951	150	15	2250	2768

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596917	CV-BENTOMAT ST	200810CV	00001952	150	15	2250	2778
023596917	CV-BENTOMAT ST	200810CV	00001953	150	15	2250	2780
023596917	CV-BENTOMAT ST	200810CV	00001955	150	15	2250	2774
023596917	CV-BENTOMAT ST	200810CV	00001957	150	15	2250	2782
023596917	CV-BENTOMAT ST	200810CV	00001959	150	15	2250	2776
023596910	CV-BENTOMAT ST	200810CV	00001962	150	15	2250	2756
023596910	CV-BENTOMAT ST	200810CV	00002005	150	15	2250	3228
			Totals:	**14700**	**1470**	**220500**	**267714**
						Total Number of Rolls Certified: **98**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 023596906

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	**GCL Roll #**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
200809CV	00001711	00001711	200809CV	00000742	00000740	2009862091	842569B
200809CV	00001721	00001711	200809CV	00000755	00000751	2009862091	842570A
200809CV	00001741	00001740	200809CV	00000741	00000740	2009862091	842570A
200809CV	00001747	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001748	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001749	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001751	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001752	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001764	00001756	200809CV	00000737	00000734	2009494422	842570B
200809CV	00001766	00001756	200809CV	00000737	00000734	2009494422	842570B
200809CV	00001767	00001756	200809CV	00000737	00000734	2009494422	842570B
200809CV	00001768	00001756	200809CV	00000737	00000734	2009494422	842570B
200809CV	00001769	00001756	200809CV	00000737	00000734	2009494422	842570B
200809CV	00001771	00001771	200809CV	00000758	00000751	2009651425	842570B
200809CV	00001775	00001771	200809CV	00000758	00000751	2009651425	842570B
200809CV	00001776	00001771	200809CV	00000758	00000751	2009651425	842570B
200809CV	00001778	00001771	200809CV	00000740	00000740	2009651425	842570B
200809CV	00001779	00001771	200809CV	00000740	00000740	2009651425	842570B
200809CV	00001780	00001771	200809CV	00000740	00000740	2009651425	842570B
200809CV	00001782	00001771	200809CV	00000740	00000740	2009651425	842570B
200809CV	00001783	00001771	200809CV	00000740	00000740	2009651425	842570B
200809CV	00001784	00001771	200809CV	00000740	00000740	2009651425	842570B
200809CV	00001787	00001785	200809CV	00000759	00000759	2009651425	842570B
200809CV	00001788	00001785	200809CV	00000759	00000759	2009651425	842570B
200809CV	00001789	00001785	200809CV	00000759	00000759	2009651425	842570B
200809CV	00001790	00001785	200809CV	00000759	00000759	2009651425	842570B
200809CV	00001791	00001785	200809CV	00000759	00000759	2009651425	842570B
200810CV	00001796	00001792	200809CV	00000764	00000762	2009651425	842570B
200810CV	00001797	00001792	200809CV	00000764	00000762	2009651425	842570B

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200810CV	00001798	00001792	200809CV	00000764	00000762	2009651425	842570B
200810CV	00001799	00001792	200809CV	00000764	00000762	2009651425	842570B
200810CV	00001801	00001792	200809CV	00000764	00000762	2009676640	841520A
200810CV	00001802	00001792	200809CV	00000764	00000762	2009676640	841520A
200810CV	00001805	00001792	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001806	00001792	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001807	00001792	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001808	00001792	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001809	00001792	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001810	00001792	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001812	00001792	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001815	00001814	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001816	00001814	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001817	00001814	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001818	00001814	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001819	00001814	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001820	00001814	200809CV	00000762	00000762	2009676640	841520A
200810CV	00001823	00001814	200809CV	00000763	00000762	2009676640	841520A
200810CV	00001830	00001829	200809CV	00000763	00000762	2009764597	842520A
200810CV	00001831	00001829	200809CV	00000763	00000762	2009764597	841520A
200810CV	00001833	00001829	200809CV	00000765	00000762	2009764597	841520A
200810CV	00001834	00001829	200809CV	00000765	00000762	2009764597	841520A
200810CV	00001836	00001829	200809CV	00000765	00000762	2009764597	841520A
200810CV	00001837	00001829	200809CV	00000765	00000762	2009764597	841520A
200810CV	00001840	00001829	200747CV	00004655	00004651	2009764597	841520A
200810CV	00001846	00001843	200747CV	00004633	00004632	2009764597	841520B
200810CV	00001854	00001843	200747CV	00004631	00004622	2009764597	841520B
200810CV	00001855	00001843	200747CV	00004631	00004622	2009764597	841520B
200810CV	00001858	00001858	200747CV	00004631	00004622	2009651419	841520B
200810CV	00001865	00001858	200810CV	00000778	00000776	2009651419	841520B
200810CV	00001866	00001858	200810CV	00000778	00000776	2009651419	841520B
200810CV	00001867	00001858	200810CV	00000778	00000776	2009651419	841520B
200810CV	00001869	00001858	200809CV	00000760	00000759	2009651419	841520B
200810CV	00001870	00001858	200809CV	00000760	00000759	2009651419	841520B
200810CV	00001871	00001858	200809CV	00000760	00000759	2009651419	841520B

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200810CV	00001872	00001858	200809CV	00000760	00000759	2009651419	841520B
200810CV	00001875	00001873	200809CV	00000760	00000759	2009651419	841520B
200810CV	00001876	00001873	200809CV	00000760	00000759	2009651419	841520B
200810CV	00001883	00001873	200810CV	00000779	00000776	2009821454	841520B
200810CV	00001894	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001895	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001896	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001897	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001898	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001899	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001900	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001901	00001887	200810CV	00000781	00000776	2009821454	842574A
200810CV	00001903	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001904	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001905	00001902	200809CV	00000738	00000734	2009821454	842574A
200810CV	00001917	00001917	200810CV	00000782	00000776	2009651426	842574A
200810CV	00001921	00001917	200810CV	00000776	00000776	2009651426	842574A
200810CV	00001922	00001917	200810CV	00000776	00000776	2009651426	842574A
200810CV	00001924	00001917	200809CV	00000665	00000665	2009651426	842574A
200810CV	00001928	00001917	200809CV	00000773	00000772	2009651426	842574A
200810CV	00001939	00001931	200809CV	00000771	00000762	2009651426	842574B
200810CV	00001940	00001931	200809CV	00000771	00000762	2009651426	842574B
200810CV	00001942	00001931	200809CV	00000771	00000762	2009732687	842574B
200810CV	00001945	00001931	200809CV	00000771	00000762	2009732687	842574B
200810CV	00001946	00001946	200809CV	00000771	00000762	2009732687	842574B
200810CV	00001948	00001946	200810CV	00000800	00000796	2009732687	842574B
200810CV	00001951	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001952	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001953	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001955	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001957	00001946	200810CV	00000789	00000786	2009801864	842574B
200810CV	00001959	00001946	200810CV	00000802	00000802	2009801864	842574B
200810CV	00001962	00001961	200810CV	00000802	00000802	2009801864	842574B
200810CV	00002005	00002005	200810CV	00000787	00000786	2007961600	842573A

GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 023596906 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 6768	ASTM D 6496
		Standard Specification:	0.75 lb/sq ft MARV	30lbs/in MARV	3.5lbs/in MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200809CV	00001711	0.86	37.8	10.8
CV-BENTOMAT ST	200809CV	00001740	0.93	52.8	8.4
CV-BENTOMAT ST	200809CV	00001756	0.84	61.3	9
CV-BENTOMAT ST	200809CV	00001771	0.86	64.3	7.7
CV-BENTOMAT ST	200809CV	00001785	0.89	67.4	6.4
CV-BENTOMAT ST	200810CV	00001792	0.80	69.3	6.8
CV-BENTOMAT ST	200810CV	00001814	0.90	79.9	3.9
CV-BENTOMAT ST	200810CV	00001829	0.87	73.6	7.5
CV-BENTOMAT ST	200810CV	00001843	0.92	80.0	6.7
CV-BENTOMAT ST	200810CV	00001858	0.91	86.3	5.6
CV-BENTOMAT ST	200810CV	00001873	0.92	41.9	10.6
CV-BENTOMAT ST	200810CV	00001887	0.88	49.8	10
CV-BENTOMAT ST	200810CV	00001902	0.92	52.2	8
CV-BENTOMAT ST	200810CV	00001917	0.88	62.8	8.01
CV-BENTOMAT ST	200810CV	00001931	0.86	64.9	6.7
CV-BENTOMAT ST	200810CV	00001946	0.87	68.6	5.4
CV-BENTOMAT ST	200810CV	00001961	0.91	67.4	3.9
CV-BENTOMAT ST	200810CV	00002005	1.06	82.1	4.4

Product	Lot # Tested	Roll # Tested	Moisture	PEEL 4632	GRAB 4632
CV-BENTOMAT ST	200809CV	00001711	25.9	58.7	151.3
CV-BENTOMAT ST	200809CV	00001740	26.6	42.6	211.1
CV-BENTOMAT ST	200809CV	00001756	25.5	43.7	245.1
CV-BENTOMAT ST	200809CV	00001771	29.1	39.3	257.3
CV-BENTOMAT ST	200809CV	00001785	28.4	31.7	269.4
CV-BENTOMAT ST	200810CV	00001792	10.3	33.1	277.2
CV-BENTOMAT ST	200810CV	00001814	27.8	20.7	319.8
CV-BENTOMAT ST	200810CV	00001829	25.1	36.0	294.0

CV-BENTOMAT ST	200810CV	00001843	26.7	32.9	320.2
CV-BENTOMAT ST	200810CV	00001858	26.4	27.7	345.0
CV-BENTOMAT ST	200810CV	00001873	26.3	54.8	167.4
CV-BENTOMAT ST	200810CV	00001887	28.1	50.0	199.3
CV-BENTOMAT ST	200810CV	00001902	26.8	41.6	208.8
CV-BENTOMAT ST	200810CV	00001917	28.2	38.4	251.3
CV-BENTOMAT ST	200810CV	00001931	26.8	33.1	259.6
CV-BENTOMAT ST	200810CV	00001946	27.9	27.1	274.5
CV-BENTOMAT ST	200810CV	00001961	27.5	21.4	269.5
CV-BENTOMAT ST	200810CV	00002005	27.7	22.5	328.5

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 023596906 has been tested by American Colloid Company and yeilded the following test results.

Reference	Swell	Fluid Loss
Test Method:	ASTM D 5890	ASTM D 5891
Specification:	24 Min	18 ml Max
841520A	25.0	16.8
841520B	26.0	16.0
842569B	28.0	16.0
842570A	28.0	16.0
842570B	29.0	16.2
842573A	27.0	17.2
842574A	26.0	17.0
842574B	26.0	16.8

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 023596906 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200747CV	00004622	6.8	50.6
CV-NON-WOVEN	200747CV	00004632	6.3	48.5
CV-NON-WOVEN	200747CV	00004651	6.8	52.5
CV-NON-WOVEN	200809CV	00000665	6.3	42.4
CV-NON-WOVEN	200809CV	00000734	7.2	31.1
CV-NON-WOVEN	200809CV	00000740	7.1	32.2
CV-NON-WOVEN	200809CV	00000751	7.1	23.8
CV-NON-WOVEN	200809CV	00000759	7.3	26.4
CV-NON-WOVEN	200809CV	00000762	6.9	44.1
CV-NON-WOVEN	200809CV	00000772	6.5	42.5
CV-NON-WOVEN	200810CV	00000776	6.8	33.4
CV-NON-WOVEN	200810CV	00000786	6.7	39.7
CV-NON-WOVEN	200810CV	00000796	6.8	41.0
CV-NON-WOVEN	200810CV	00000802	6.4	21.1

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 023596906 was manufactured with geotextiles which were tested with the following results.

BASE			
Material	**Roll Number**	**Mass Area oz/yd2**	**Grab Strenth lbs**
PPX 82TEX	2007961600	3.5	150.0
PPX 82TEX	2009494422	3.3	188.0
PPX 82TEX	2009651419	3.4	179.0
PPX 82TEX	2009651425	3.5	153.0
PPX 82TEX	2009651426	3.5	153.0
PPX 82TEX	2009676640	3.5	146.0
PPX 82TEX	2009732687	3.5	184.0
PPX 82TEX	2009764597	3.3	157.0
PPX 82TEX	2009801864	3.3	190.0
PPX 82TEX	2009821454	3.4	169.0
PPX 82TEX	2009862091	3.3	140.0

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

Date: 3/10/2008
Purchase Order: JED LF CELL 6
ORDER NUMBERS: 023596914, 023596915

Mike Kaiser
Waste Services

Boca Raton, FL 33431
mkaiser@wasteservicesinc.com

To Whom it May Concern:

Please find enclosed the MQA/MQC test data package for Geosynthetic Clay Liner shipments to Waste Services. The shipments left our Cartersville, Georgia plant on 03/07/2008.

If you have any questions regarding this information, please contact me at (770) 387-7773.

Sincerely,

Melanie King

Melanie King
Quality Assurance Coordinator
CETCO Cartersville Plant

GEOSYNTHETIC CLAY LINER
MANUFACTURING QUALITY ASSURANCE DATA PACKAGE

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
ORDER NUMBERS: 023596914, 023596915
PREPARED FOR: Waste Services

CONTENTS:

- Daily production and needle detection certification
- GCL property specifications
- Order packing list
- GCL MQA tracking form
- GCL manufacturing quality control test data
- Bentonite clay certification
- Raw material test results

PREPARED BY: Melanie King
Quality Assurance Coordinator
CETCO
218 Industrial Park

Cartersville, GA 30121

Telephone: (770) 387-7773
Fax:
E-Mail: melanie.king@cetco.com

CETCO
LINING TECHNOLOGIES
800.527.9948 www.cetco.com

PRODUCTION CERTIFICATION

PROJECT NAME: Oak Hammock LF
CUSTOMER P.O.: JED LF CELL 6
PREPARED FOR: Waste Services

CETCO affirms that these products meet the physical and chemical criteria listed on the attached GCL property specification sheet.

NEEDLE REMOVAL AND DETECTION PROCEDURE

CETCO hereby affirms that all Bentomat® geosynthetic clay liner material manufactured for this project is continually passed under a magnet for needle removal and then screened with a metal detection device. CETCO certifies Bentomat® to be essentially free of broken needles and fragments of needles that would negatively effect the performance of the final product.

Melanie King

Melanie King
Quality Assurance Coordinator
Colloid Environmental Technologies Co. (CETCO)

Ship Date: 03/07/2008
Order Numbers: 023596914, 023596915
Prepared For: Waste Services

The GCL raw materials and GCL finished product manufactured for the above-referenced order number(s) are hereby certified to achieve the properties listed in the tables below.

GCL PROPERTY SPECIFICATIONS FOR BENTOMAT ST

Test Method	Test Method Property	Test Frequency	Certified Value
ASTM D 5891	Bentonite Fluid Loss	1 per 50 Tons	18 ml Max
ASTM D 5993	Bentonite Mass/Area	40,000 sq ft (4000 sq m)	0.75 lb /sq ft (3.6 kg/sq m) Min
ASTM D 5890	Bentonite Swell Index	1 per 50 Tons	24 ml/2g Min
ASTM D 4632	GCL Grab Strength	200,000 sq ft (20,000 sq m)	90 lbs (400 N) MARV
ASTM D 6768	GCL Grab Strength	200,000 sq ft (20,000 sq m)	30 lbs/in MARV
ASTM D 5321	GCL Hydrated Internal Shear Strength	Periodic	500 psf (24 kPa) typ @ 200 psf
ASTM D 5887	GCL Hydraulic Conductivity	Weekly	5 x 10^-9 cm/ sec Max
ASTM D 5887	GCL Index Flux	Weekly	1 x 10^-8 m^3/m^2/sec Max
ASTM D 6496	GCL Peel Strength	40,000 sq ft (4000 sq m)	3.5 lbs/in Min
ASTM D 4632	GCL Peel Strength	40,000 sq ft (4000 sq m)	15 lbs (65 N) Min

SPECIALY REQUESTED CERTIFIED PROPERTIES FOR THIS ORDER OF BENTOMAT ST

Test Method	Test Method Property	Requested Frequency	Requested Value	Requested Conditions
ASTM D 4632	GCL Grab Strength	1/45,000sf	90lbs/ft	Standard
ASTM D 4632	GCL Peel Strength	1/40,000 sf	15 lbs	Standard
ASTM D 5887	GCL Hydraulic Conductivity	1/100,000 sf	5x10-9 cm/sec	Standard
ASTM D 6496	GCL Peel Strength	1/40,000 sf	2.5lbs/inch	Standard
ASTM D 4643	GCL Moisture	1/40,000 sf	35% max	Standard
ASTM D 6768	Tensile	1/45,000sf	23lbs/inch	Standard

Bentonite property tests are performed at a bentonite processing facility before shipment to CETCO's production facility.
All tensile testing is in the machine direction.

FABRIC SUPPLIER REQUIREMENTS FOR BENTOMAT ST

Raw Material	test method	mass per area	units
Nonwoven Cover Fabric	ASTM D 5261	6.0	oz/yd2
Bentomat ST Woven Base Fabric	ASTM D 5261	3.2	oz/yd2

Fabric certifications from our raw material suppliers are on file at our production facility.

CETCO's MQA laboratory is GAI-accredited (www.geosynthetic-institute.org/gai/lab.html).

Melanie King
Quality Assurance Coordinator

CETCO Cartersville Plant

GCL ORDER PACKING LIST

GCL shipped for certification package number 023596914

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596915	CV-BENTOMAT ST	200809CV	00001706	150	15	2250	2696
023596915	CV-BENTOMAT ST	200809CV	00001707	150	15	2250	2660
023596915	CV-BENTOMAT ST	200809CV	00001708	150	15	2250	2642
023596915	CV-BENTOMAT ST	200809CV	00001714	150	15	2250	2722
023596915	CV-BENTOMAT ST	200809CV	00001715	150	15	2250	2650
023596915	CV-BENTOMAT ST	200809CV	00001716	150	15	2250	2734
023596915	CV-BENTOMAT ST	200809CV	00001717	150	15	2250	2730
023596915	CV-BENTOMAT ST	200809CV	00001718	150	15	2250	2742
023596915	CV-BENTOMAT ST	200809CV	00001719	150	15	2250	2736
023596914	CV-BENTOMAT ST	200809CV	00001724	150	15	2250	2730
023596914	CV-BENTOMAT ST	200809CV	00001725	150	15	2250	2724
023596915	CV-BENTOMAT ST	200809CV	00001726	150	15	2250	2798
023596914	CV-BENTOMAT ST	200809CV	00001733	150	15	2250	2742
023596914	CV-BENTOMAT ST	200809CV	00001734	150	15	2250	2748
023596915	CV-BENTOMAT ST	200809CV	00001739	150	15	2250	2718
023596914	CV-BENTOMAT ST	200809CV	00001742	150	15	2250	2714
023596914	CV-BENTOMAT ST	200809CV	00001743	150	15	2250	2716
023596914	CV-BENTOMAT ST	200809CV	00001745	150	15	2250	2714
023596914	CV-BENTOMAT ST	200809CV	00001746	150	15	2250	2746
023596915	CV-BENTOMAT ST	200809CV	00001755	150	15	2250	2740
023596914	CV-BENTOMAT ST	200809CV	00001756	150	15	2250	2772
023596915	CV-BENTOMAT ST	200809CV	00001757	150	15	2250	2750
023596915	CV-BENTOMAT ST	200809CV	00001758	150	15	2250	2750
023596915	CV-BENTOMAT ST	200809CV	00001759	150	15	2250	2744
023596914	CV-BENTOMAT ST	200809CV	00001762	150	15	2250	2720
023596914	CV-BENTOMAT ST	200809CV	00001763	150	15	2250	2730
023596914	CV-BENTOMAT ST	200809CV	00001765	150	15	2250	2738

Order #	Product	Lot Number	Roll Number	Length (ft)	Width (ft)	Square Ft	Weight (lbs)
023596914	CV-BENTOMAT ST	200810CV	00001829	150	15	2250	2736
023596914	CV-BENTOMAT ST	200810CV	00001835	150	15	2250	2726
023596914	CV-BENTOMAT ST	200810CV	00001841	150	15	2250	2710
023596914	CV-BENTOMAT ST	200810CV	00001842	150	15	2250	2704
023596914	CV-BENTOMAT ST	200810CV	00001844	150	15	2250	2694
023596915	CV-BENTOMAT ST	200810CV	00001847	150	15	2250	2702
023596915	CV-BENTOMAT ST	200810CV	00001848	150	15	2250	2706
			Totals:	**5100**	**510**	**76500**	**92584**
						Total Number of Rolls Certified: **34**	

GCL MQA TRACKING FORM

Listing of finished and raw materials used to produce certification package number 023596914

GCL			Geotextiles				Clay
CV-BENTOMAT ST			CV-N/W-WHITE-ST			CV-WOVEN-ST	CV-CG 50-ST
GCL Lot #	**GCL Roll #**	**Roll # Tested**	**Cap Lot #**	**Cap Roll #**	**Roll # Tested**	**Base Roll #**	**Clay Lot #**
200809CV	00001706	00001696	200809CV	00000742	00000740	2009474565	842569B
200809CV	00001707	00001696	200809CV	00000742	00000740	2009474565	842569B
200809CV	00001708	00001696	200809CV	00000742	00000740	2009474565	842569B
200809CV	00001714	00001711	200809CV	00000754	00000751	2009862091	842570A
200809CV	00001715	00001711	200809CV	00000754	00000751	2009862091	842570A
200809CV	00001716	00001711	200809CV	00000754	00000751	2009862091	842570A
200809CV	00001717	00001711	200809CV	00000754	00000751	2009862091	842570A
200809CV	00001718	00001711	200809CV	00000754	00000751	2009862091	842570A
200809CV	00001719	00001711	200809CV	00000754	00000751	2009862091	842570A
200809CV	00001724	00001711	200809CV	00000755	00000751	2009862091	842570A
200809CV	00001725	00001711	200809CV	00000755	00000751	2009862091	842570A
200809CV	00001726	00001726	200809CV	00000755	00000751	2009862091	842570A
200809CV	00001733	00001726	200809CV	00000743	00000740	2009862091	842570A
200809CV	00001734	00001726	200809CV	00000743	00000740	2009862091	842570A
200809CV	00001739	00001726	200809CV	00000741	00000740	2009862091	842570A
200809CV	00001742	00001740	200809CV	00000741	00000740	2009862091	842570A
200809CV	00001743	00001740	200809CV	00000741	00000740	2009862091	842570A
200809CV	00001745	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001746	00001740	200809CV	00000756	00000751	2009494422	842570A
200809CV	00001755	00001740	200809CV	00000757	00000751	2009494422	842570A
200809CV	00001756	00001756	200809CV	00000757	00000751	2009494422	842570A
200809CV	00001757	00001756	200809CV	00000757	00000751	2009494422	842570B
200809CV	00001758	00001756	200809CV	00000757	00000751	2009494422	842570B
200809CV	00001759	00001756	200809CV	00000757	00000751	2009494422	842570B
200809CV	00001762	00001756	200809CV	00000737	00000734	2009494422	842570B
200809CV	00001763	00001756	200809CV	00000737	00000734	2009494422	842570B
200809CV	00001765	00001756	200809CV	00000737	00000734	2009494422	842570B
200810CV	00001829	00001829	200809CV	00000763	00000762	2009764597	841520A
200810CV	00001835	00001829	200809CV	00000765	00000762	2009764597	841520A

GCL Lot #	GCL Roll #	Roll # Tested	Cap Lot #	Cap Roll #	Roll # Tested	Base Roll #	Clay Lot #
200810CV	00001841	00001829	200747CV	00004655	00004651	2009764597	841520A
200810CV	00001842	00001829	200747CV	00004655	00004651	2009764597	842520A
200810CV	00001844	00001843	200747CV	00004655	00004651	2009764597	841520B
200810CV	00001847	00001843	200747CV	00004633	00004632	2009764597	841520B
200810CV	00001848	00001843	200747CV	00004633	00004632	2009764597	841520B

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GCL MANUFACTURING QUALITY CONTROL TEST DATA

The following rolls in GCL certification package number 023596914 have been tested in our production facility lab.

Product	Lot # Tested	Roll # Tested	Mass Area	Grab Strength	Peel Strength
		Standard Test Method:	ASTM D 5993	ASTM D 6768	ASTM D 6496
		Standard Specification:	0.75 lb/sq ft MARV	30lbs/in MARV	3.5lbs/in MARV
Non-standard specifications were requested for this order as indicated on the attatched property sheet					
CV-BENTOMAT ST	200809CV	00001696	0.95	86.3	5.1
CV-BENTOMAT ST	200809CV	00001711	0.86	37.8	10.8
CV-BENTOMAT ST	200809CV	00001726	0.93	45.7	9.8
CV-BENTOMAT ST	200809CV	00001740	0.93	52.8	8.4
CV-BENTOMAT ST	200809CV	00001756	0.84	61.3	9
CV-BENTOMAT ST	200810CV	00001829	0.87	73.6	7.5
CV-BENTOMAT ST	200810CV	00001843	0.92	80.0	6.7

Product	Lot # Tested	Roll # Tested	Moisture	PEEL 4632	GRAB 4632
CV-BENTOMAT ST	200809CV	00001696	25.6	25.5	345.0
CV-BENTOMAT ST	200809CV	00001711	25.9	58.7	151.3
CV-BENTOMAT ST	200809CV	00001726	26.3	49.0	183.0
CV-BENTOMAT ST	200809CV	00001740	26.6	42.6	211.1
CV-BENTOMAT ST	200809CV	00001756	25.5	43.7	245.1
CV-BENTOMAT ST	200810CV	00001829	25.1	36.0	294.0
CV-BENTOMAT ST	200810CV	00001843	26.7	32.9	320.2

ASTM test methods and property specifications per CETCO standard unless non-standard specifications were requested.
Any non-standard property specifications requested for this order are noted on the attached GCL property specifications sheet.

BENTONITE CLAY CERTIFICATION

The Bentonite Clay used to produce package 023596914 has been tested by American Colloid Company and yeilded the following test results.

Reference	Swell	Fluid Loss
Test Method:	ASTM D 5890	ASTM D 5891
Specification:	24 Min	18 ml Max
841520A	25.0	16.8
841520B	26.0	16.0
842569B	28.0	16.0
842570A	28.0	16.0
842570B	29.0	16.2

GEOTEXTILE TEST RESULTS FOR RAW MATERIAL SUPPLIED BY A CETCO FACILITY

The GCL in certification package number 023596914 was manufactured using these geotextiles:

Material	Lot #	Roll #	Mass Area	Grab Strenth
CV-NON-WOVEN	200747CV	00004632	6.3	48.5
CV-NON-WOVEN	200747CV	00004651	6.8	52.5
CV-NON-WOVEN	200809CV	00000734	7.2	31.1
CV-NON-WOVEN	200809CV	00000740	7.1	32.2
CV-NON-WOVEN	200809CV	00000751	7.1	23.8
CV-NON-WOVEN	200809CV	00000762	6.9	44.1

GEOTEXTILE TEST RESULTS FROM MATERIAL SUPPLIERS

The GCL in certification package number 023596914 was manufactured with geotextiles which were tested with the following results.

BASE			
Material	**Roll Number**	**Mass Area oz/yd2**	**Grab Strenth lbs**
PPX 82TEX	2009474565	3.5	172.0
PPX 82TEX	2009494422	3.3	188.0
PPX 82TEX	2009764597	3.3	157.0
PPX 82TEX	2009862091	3.3	140.0

INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1475		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.17	Final Height of Clay (in)	:	0.19
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	41.80	Final Wet Weight(Clay) (g)	:	69.30
Wet Density (pcf)	:	74.47	Wet Density (pcf)	:	110.47
Moisture Content %	:	25.90	Moisture Content %	:	108.30
Dry Density (pcf)	:	59.15	Dry Density (pcf)	:	53.04

Test Parameters

Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water psi)	:	77.00	Gradient	:	290.53
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

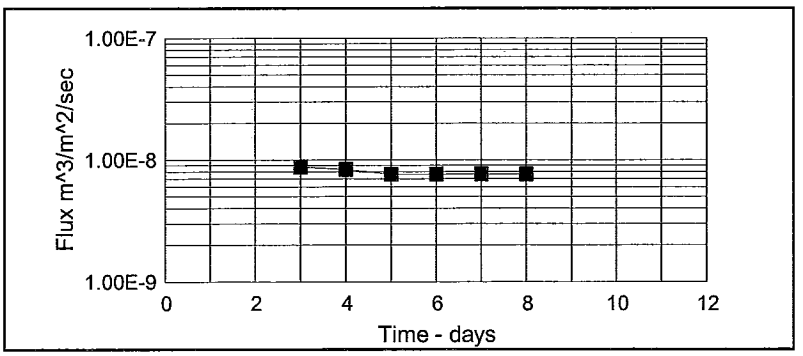
Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2

Thickness, t = 0.19 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008					
3	03/11/2008	6.20	1440	86400	8.85E-009	3.05E-009
4	03/12/2008	5.90	1442	86520	8.41E-009	2.90E-009
5	03/13/2008	5.40	1439	86340	7.72E-009	2.66E-009
6	03/14/2008	5.40	1438	86280	7.72E-009	2.66E-009
7	03/15/2008	5.40	1442	86520	7.70E-009	2.65E-009
8	03/16/2008	5.40	1440	86400	7.71E-009	2.65E-009



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1696		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.19	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	46.50	Final Wet Weight(Clay) (g)	:	73.90
Wet Density (pcf)	:	74.13	Wet Density (pcf)	:	111.92
Moisture Content %	:	28.80	Moisture Content %	:	101.90
Dry Density (pcf)	:	57.55	Dry Density (pcf)	:	55.43

Test Parameters

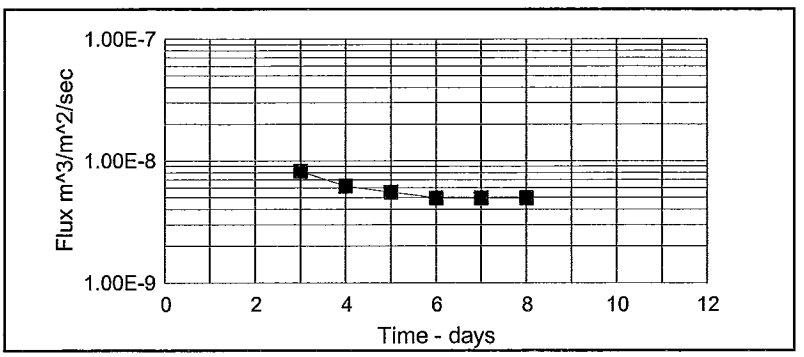
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008					
3	03/11/2008	5.80	1442	86520	8.27E-009	3.00E-009
4	03/12/2008	4.40	1441	86460	6.28E-009	2.27E-009
5	03/13/2008	3.90	1438	86280	5.58E-009	2.02E-009
6	03/14/2008	3.50	1439	86340	5.00E-009	1.81E-009
7	03/15/2008	3.50	1441	86460	4.99E-009	1.81E-009
8	03/16/2008	3.50	1441	86460	4.99E-009	1.81E-009



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1740		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.18	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	48.80	Final Wet Weight(Clay) (g)	:	81.30
Wet Density (pcf)	:	82.12	Wet Density (pcf)	:	123.12
Moisture Content %	:	24.10	Moisture Content %	:	106.70
Dry Density (pcf)	:	66.17	Dry Density (pcf)	:	59.57

Test Parameters

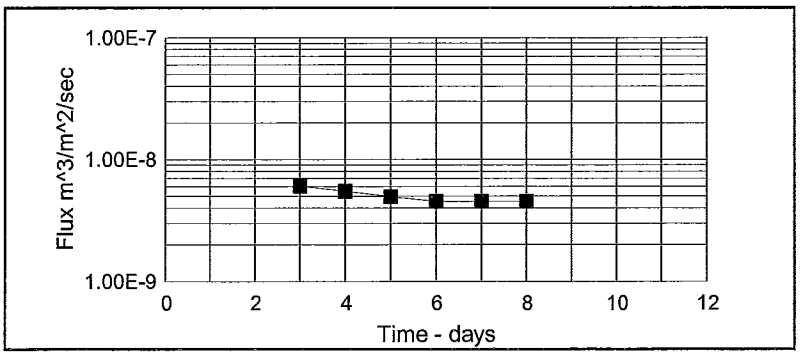
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008					
3	03/11/2008	4.30	1442	86520	6.13E-009	2.22E-009
4	03/12/2008	3.90	1441	86460	5.56E-009	2.02E-009
5	03/13/2008	3.50	1438	86280	5.00E-009	1.81E-009
6	03/14/2008	3.20	1439	86340	4.57E-009	1.66E-009
7	03/15/2008	3.20	1441	86460	4.57E-009	1.65E-009
8	03/16/2008	3.20	1441	86460	4.57E-009	1.65E-009



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1785		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.19	Final Height of Clay (in)	:	0.21
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	49.20	Final Wet Weight(Clay) (g)	:	78.90
Wet Density (pcf)	:	78.43	Wet Density (pcf)	:	113.80
Moisture Content %	:	30.50	Moisture Content %	:	109.30
Dry Density (pcf)	:	60.10	Dry Density (pcf)	:	54.37

Test Parameters

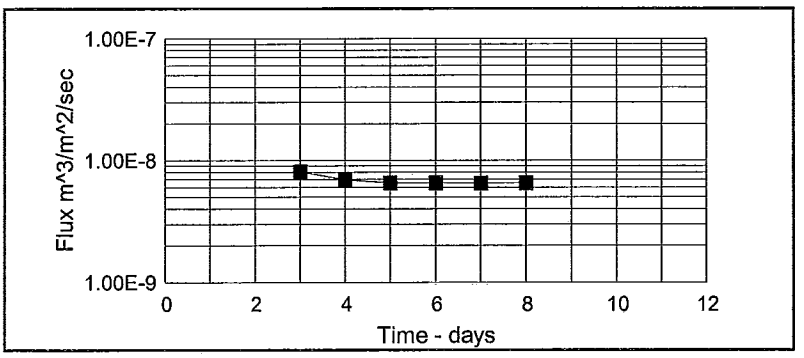
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water ›si)	:	77.00	Gradient	:	262.86
Tail Water ›si)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.21 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008					
3	03/11/2008	5.70	1440	86400	8.14E-009	3.10E-009
4	03/12/2008	4.90	1442	86520	6.99E-009	2.66E-009
5	03/13/2008	4.60	1439	86340	6.57E-009	2.50E-009
6	03/14/2008	4.60	1438	86280	6.58E-009	2.50E-009
7	03/15/2008	4.60	1442	86520	6.56E-009	2.50E-009
8	03/16/2008	4.60	1440	86400	6.57E-009	2.50E-009



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1792		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.17	Final Height of Clay (in)	:	0.19
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	41.70	Final Wet Weight(Clay) (g)	:	70.40
Wet Density (pcf)	:	74.30	Wet Density (pcf)	:	112.23
Moisture Content %	:	21.20	Moisture Content %	:	109.30
Dry Density (pcf)	:	61.30	Dry Density (pcf)	:	53.62

Test Parameters

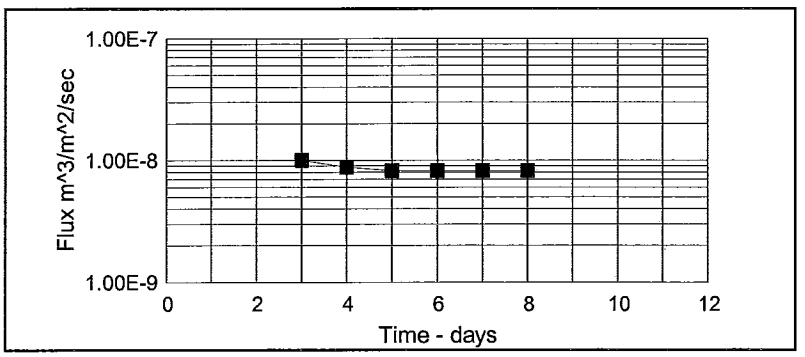
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water psi)	:	77.00	Gradient	:	290.53
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.19 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008					
3	03/11/2008	7.10	1440	86400	1.01E-008	3.49E-009
4	03/12/2008	6.20	1442	86520	8.84E-009	3.04E-009
5	03/13/2008	5.80	1439	86340	8.29E-009	2.85E-009
6	03/14/2008	5.80	1438	86280	8.29E-009	2.85E-009
7	03/15/2008	5.80	1442	86520	8.27E-009	2.85E-009
8	03/16/2008	5.80	1440	86400	8.28E-009	2.85E-009



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1843		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.17	Final Height of Clay (in)	:	0.19
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	40.60	Final Wet Weight(Clay) (g)	:	71.40
Wet Density (pcf)	:	72.34	Wet Density (pcf)	:	113.82
Moisture Content %	:	30.50	Moisture Content %	:	112.20
Dry Density (pcf)	:	55.43	Dry Density (pcf)	:	53.64

Test Parameters

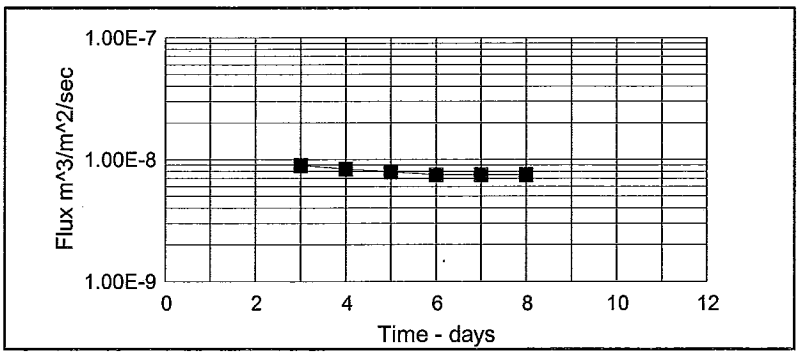
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water psi)	:	77.00	Gradient	:	290.53
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.19 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008					
3	03/11/2008	6.30	1440	86400	8.99E-009	3.10E-009
4	03/12/2008	5.90	1442	86520	8.41E-009	2.90E-009
5	03/13/2008	5.60	1439	86340	8.00E-009	2.75E-009
6	03/14/2008	5.30	1438	86280	7.58E-009	2.61E-009
7	03/15/2008	5.30	1442	86520	7.56E-009	2.60E-009
8	03/16/2008	5.30	1440	86400	7.57E-009	2.60E-009



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1887		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.18	Final Height of Clay (in)	:	0.20
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	44.00	Final Wet Weight(Clay) (g)	:	69.60
Wet Density (pcf)	:	74.04	Wet Density (pcf)	:	105.40
Moisture Content %	:	28.80	Moisture Content %	:	93.50
Dry Density (pcf)	:	57.48	Dry Density (pcf)	:	54.47

Test Parameters

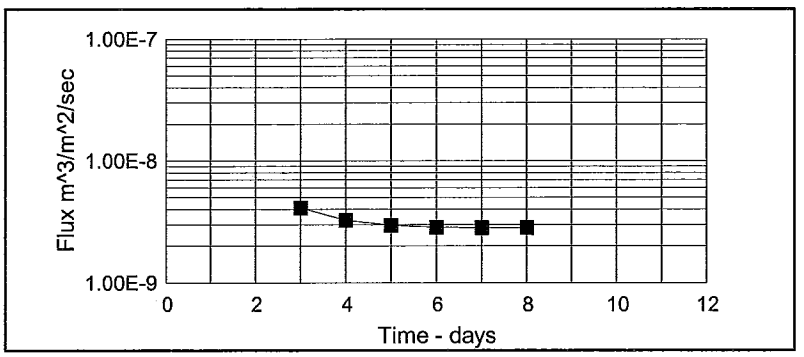
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water psi)	:	77.00	Gradient	:	276.00
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.2 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008					
3	03/11/2008	2.90	1438	86280	4.15E-009	1.50E-009
4	03/12/2008	2.30	1444	86640	3.27E-009	1.19E-009
5	03/13/2008	2.10	1442	86520	2.99E-009	1.08E-009
6	03/14/2008	2.00	1438	86280	2.86E-009	1.04E-009
7	03/15/2008	2.00	1440	86400	2.86E-009	1.03E-009
8	03/16/2008	2.00	1442	86520	2.85E-009	1.03E-009



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INDEX FLUX AND PERMEABILITY OF GCL's
TEST RESULTS
ASTM D-5887 / D-5084

JLT

Client	: CETCO		Date	:	03/17/2008
Project Location	: Oak Hammock Landfill		Job No.	:	08LG1248.01
Sample Number	: Roll 1931		Tested By	:	AG/HH
Description	: Bentomat ST		Checked By	:	JB
Permeant Fluid	: De-Aired Water				

Physical Property Data

		Total Sample			Total Sample
Initial Clay Height (in)	:	0.19	Final Height of Clay (in)	:	0.21
Initial Diameter (in)	:	4.00	Final Diameter of Clay (in)	:	4.00
Initial Wet Weight (g)	:	42.90	Final Wet Weight(Clay) (g)	:	72.50
Wet Density (pcf)	:	68.39	Wet Density (pcf)	:	104.57
Moisture Content %	:	22.90	Moisture Content %	:	107.70
Dry Density (pcf)	:	55.65	Dry Density (pcf)	:	50.35

Test Parameters

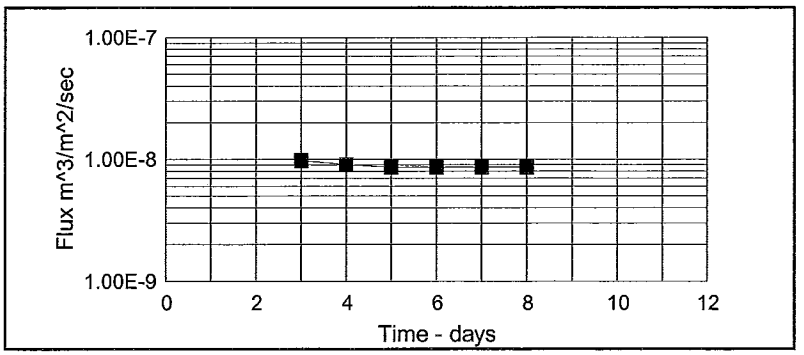
Fluid	:	De-Aired Water	**Average Effective**		
Cell Pressure psi)	:	80.00	**Confining Pressure (psi)**	:	**4**
Head Water psi)	:	77.00	Gradient	:	262.86
Tail Water psi)	:	75.00	Effective Stress at Base	:	5

Flux and Permeability Input Data

Minimum Saturation Time is 48 hours

Area, A = 0.00811 m^2
Thickness, t = 0.21 in

Days	Date	Flow	Time	Elapsed	Flux	k
		cc	min	Time (sec)	(m^3/m^2)/sec	cm/sec
1	03/09/2008	48 hours of hydration per ASTM				
2	03/10/2008	7.4				
3	03/11/2008	6.90	1440	86400	9.85E-009	3.75E-009
4	03/12/2008	6.40	1442	86520	9.12E-009	3.47E-009
5	03/13/2008	6.10	1439	86340	8.72E-009	3.32E-009
6	03/14/2008	6.10	1438	86280	8.72E-009	3.32E-009
7	03/15/2008	6.10	1442	86520	8.70E-009	3.31E-009
8	03/16/2008	6.10	1440	86400	8.71E-009	3.31E-009



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March 13, 2008

Mail To:

Kirk Wills
GeoSyntec Consultants
14055 Riveredge Drive, Suite 300
Tampa, FL 33637

email: kwills@geosyntec.com

Bill To:

<= Same (Proj. Number: FQ1450)

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6**
TRI Job Reference Number:	E2308-02-05
Material(s) Tested:	4 Bentomat ST GCL(s)
Test(s) Requested:	Index Flux (ASTM D 5887)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

John M. Allen, E.I.T
Director of Geosynthetics Interaction Laboratory
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GCL TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6

Material: Bentomat ST GCL
Index Flux (ASTM D 5887)
TRI Log #: E2308-02-05

PARAMETER	TEST REPLICATE NUMBER										MEAN	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10		
Sample Identification: 1696												
Index Flux (m^3/m^2/sec)	2.9E-09										**2.9E-09**	
Hydraulic Conductivity (cm/sec)	2.5E-09										**2.5E-09**	5.0E-9 max
Sample Identification: 1785												
Index Flux (m^3/m^2/sec)	2.7E-09										**2.7E-09**	
Hydraulic Conductivity (cm/sec)	2.6E-09										**2.6E-09**	5.0E-9 max
Sample Identification: 1792												
Index Flux (m^3/m^2/sec)	2.0E-09										**2.0E-09**	
Hydraulic Conductivity (cm/sec)	1.4E-09										**1.4E-09**	5.0E-9 max
Sample Identification: 1975												
Index Flux (m^3/m^2/sec)	2.8E-09										**2.8E-09**	
Hydraulic Conductivity (cm/sec)	2.5E-09										**2.5E-09**	5.0E-9 max

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

February 27, 2008

Mail To:

Kirk Wills
GeoSyntec Consultants
14055 Riveredge Drive, Suite 300
Tampa, FL 33637

email: kwills@geosyntec.com

Bill To:

<= Same (Proj. Number: FQ1450)

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction**
TRI Job Reference Number:	E2302-78-05
Material(s) Tested:	5 Agru 60 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density (ASTM D 1505) Carbon Content (ASTM D 1603, mod.) Carbon Dispersion (ASTM D 5596) Tensile (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

MPatel

Dr. Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 208620.08
TRI Log #: E2302-78-05

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	63	62	61	62	62	60	62	61	60	61	**61**	1	60 avg
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.945	0.945	0.945								**0.945**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.36	2.38									**2.37**	0.01	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	168	167	167	159	164						**165**	4	126 min
TD Yield Strength (ppi)	175	177	178	179	184						**179**	3	126 min
MD Break Strength (ppi)	193	177	190	204	231						**199**	20	90 min
TD Break Strength (ppi)	186	122	176	185	198						**173**	30	90 min
MD Yield Elongation (%)	21	21	21	21	21						**21**	0	12 min
TD Yield Elongation (%)	18	18	18	18	18						**18**	0	12 min
MD Break Elongation (%)	456	439	454	428	478						**451**	19	100 min
TD Break Elongation (%)	566	130	529	584	613						**484**	200	100 min

MD Machine Direction TD Transverse Direction

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GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 208630.08
TRI Log #: E2302-78-05

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	60	60	62	60	61	62	61	62	62	59	**61**	1	60 avg
											59	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.944	0.944	0.944								**0.944**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.44	2.42									**2.43**	0.01	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	162	163	163	155	166						**162**	4	126 min
TD Yield Strength (ppi)	178	169	178	169	181						**175**	6	126 min
MD Break Strength (ppi)	225	192	188	216	226						**209**	18	90 min
TD Break Strength (ppi)	206	180	185	172	179						**184**	13	90 min
MD Yield Elongation (%)	21	21	21	21	21						**21**	0	12 min
TD Yield Elongation (%)	17	19	17	17	17						**17**	1	12 min
MD Break Elongation (%)	469	518	499	453	493						**486**	26	100 min
TD Break Elongation (%)	618	516	531	539	514						**544**	43	100 min

MD Machine Direction TD Transverse Direction

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GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 208741.08
TRI Log #: E2302-78-05

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	61	61	61	61	62	60	63	63	62	62	**62**	1	60 avg
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.946	0.946	0.946								**0.946**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.30	2.22									**2.26**	0.06	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	167	165	167	167	171						**167**	2	126 min
TD Yield Strength (ppi)	167	174	176	184	187						**178**	8	126 min
MD Break Strength (ppi)	178	206	207	236	219						**209**	21	90 min
TD Break Strength (ppi)	118	186	179	180	148						**162**	29	90 min
MD Yield Elongation (%)	21	21	21	21	21						**21**	0	12 min
TD Yield Elongation (%)	21	19	19	19	19						**19**	1	12 min
MD Break Elongation (%)	471	443	461	485	483						**469**	17	100 min
TD Break Elongation (%)	249	561	523	514	426						**455**	125	100 min

MD Machine Direction TD Transverse Direction

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GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 208751.08
TRI Log #: E2302-78-05

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	62	60	60	60	61	61	60	61	61	62	**61**	1	60 avg
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.946	0.946	0.946								**0.946**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.31	2.27									**2.29**	0.03	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	169	167	158	155	165						**163**	6	126 min
TD Yield Strength (ppi)	151	149	161	168	155						**157**	8	126 min
MD Break Strength (ppi)	177	190	203	224	200						**199**	17	90 min
TD Break Strength (ppi)	200	218	192	187	183						**196**	14	90 min
MD Yield Elongation (%)	17	17	21	21	21						**19**	2	12 min
TD Yield Elongation (%)	19	19	19	19	19						**19**	0	12 min
MD Break Elongation (%)	534	596	456	494	604						**537**	64	100 min
TD Break Elongation (%)	395	463	566	553	468						**489**	71	100 min

MD Machine Direction TD Transverse Direction

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GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 209105.08
TRI Log #: E2302-78-05

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	60	61	63	62	62	62	60	61	61	62	**61**	1	60 avg
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.946	0.946	0.946								**0.946**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.40	2.33									**2.37**	0.05	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	161	158	162	158	162						**160**	2	126 min
TD Yield Strength (ppi)	170	177	173	179	180						**176**	4	126 min
MD Break Strength (ppi)	177	213	177	226	232						**205**	26	90 min
TD Break Strength (ppi)	119	162	197	168	194						**168**	31	90 min
MD Yield Elongation (%)	20	20	20	20	20						**20**	0	12 min
TD Yield Elongation (%)	19	17	17	17	17						**17**	1	12 min
MD Break Elongation (%)	450	456	429	471	496						**461**	25	100 min
TD Break Elongation (%)	119	494	624	483	600						**464**	203	100 min

MD Machine Direction TD Transverse Direction

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9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

February 27, 2008

Mail To:

Kirk Wills
GeoSyntec Consultants
14055 Riveredge Drive, Suite 300
Tampa, FL 33637

email: kwills@geosyntec.com

Bill To:

<= Same (Proj. Number: FQ1450)

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction**
TRI Job Reference Number:	E2302-79-08
Material(s) Tested:	2 Agru 60 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density (ASTM D 1505) Carbon Content (ASTM D 1603, mod.) Carbon Dispersion (ASTM D 5596) Tensile (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

MPatel

Dr. Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 209116.08
TRI Log #: E2302-79-08

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	60	62	60	60	61	61	62	60	61	60	**61**	1	60 avg
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.946	0.946	0.946								**0.946**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.47	2.46									**2.47**	0.01	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	173	164	165	175	168						**169**	5	126 min
TD Yield Strength (ppi)	175	166	177	164	158						**168**	8	126 min
MD Break Strength (ppi)	200	218	197	195	233						**209**	16	90 min
TD Break Strength (ppi)	198	174	175	203	205						**191**	15	90 min
MD Yield Elongation (%)	20	20	20	20	20						**20**	0	12 min
TD Yield Elongation (%)	17	17	17	17	17						**17**	0	12 min
MD Break Elongation (%)	496	460	456	475	458						**469**	17	100 min
TD Break Elongation (%)	595	543	540	589	615						**576**	33	100 min

MD Machine Direction TD Transverse Direction

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GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 209126.08
TRI Log #: E2302-79-08

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	61	60	59	60	60	62	62	62	63	60	**61**	1	60 avg
											59	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.945	0.945	0.945								**0.945**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.27	2.26									**2.27**	0.01	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	153	154	150	156	142						**151**	5	126 min
TD Yield Strength (ppi)	161	164	167	171	158						**164**	5	126 min
MD Break Strength (ppi)	228	190	229	199	217						**213**	17	90 min
TD Break Strength (ppi)	189	149	193	193	168						**178**	19	90 min
MD Yield Elongation (%)	23	23	23	23	23						**23**	0	12 min
TD Yield Elongation (%)	18	18	18	18	18						**18**	0	12 min
MD Break Elongation (%)	478	508	464	445	456						**470**	24	100 min
TD Break Elongation (%)	554	465	578	575	508						**536**	49	100 min

MD Machine Direction TD Transverse Direction

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GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

February 29, 2008

Mail To:

Kirk Wills
GeoSyntec Consultants
14055 Riveredge Drive, Suite 300
Tampa, FL 33637

email: kwills@geosyntec.com

Bill To:

<= Same (Proj. Number: FQ1450)

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction**
TRI Job Reference Number:	E2302-82-03
Material(s) Tested:	2 Agru 60 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density (ASTM D 1505) Carbon Content (ASTM D 1603, mod.) Carbon Dispersion (ASTM D 5596) Tensile (ASTM D 6693)

If you have any questions or require any additional information, please call us at
1-800-880-8378.

Sincerely,

MPatel

Dr. Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 209368.08
TRI Log #: E2302-82-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	62	62	61	62	63	60	60	60	61	62	**61**	1	60 avg
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.945	0.945	0.945								**0.945**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.29	2.30									**2.30**	0.01	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	158	162	158	166	160						**161**	3	126 min
TD Yield Strength (ppi)	175	172	161	173	179						**172**	7	126 min
MD Break Strength (ppi)	200	173	228	169	207						**195**	25	90 min
TD Break Strength (ppi)	148	187	175	163	115						**158**	28	90 min
MD Yield Elongation (%)	19	19	19	19	19						**19**	0	12 min
TD Yield Elongation (%)	17	19	22	19	19						**19**	2	12 min
MD Break Elongation (%)	408	428	489	486	465						**455**	36	100 min
TD Break Elongation (%)	441	575	465	453	265						**440**	111	100 min

MD Machine Direction TD Transverse Direction

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GEOMEMBRANE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: Agru 60 mil Microspike HDPE Geomembrane
Sample Identification: 209479.08
TRI Log #: E2302-82-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	61	61	60	63	61	62	61	62	60	62	**61**	1	60 avg
											60	<< min	54 min
Density (ASTM D 1505)													
Density (g/cm3)	0.945	0.945	0.945								**0.945**	0.000	0.94 min
Carbon Black Content (ASTM D 1603, mod.)													
% Carbon Black	2.26	2.24									**2.25**	0.01	2 - 3%
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1, 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	158	151	158	155	153						**155**	3	126 min
TD Yield Strength (ppi)	171	169	176	170	169						**171**	3	126 min
MD Break Strength (ppi)	217	230	192	228	214						**216**	15	90 min
TD Break Strength (ppi)	158	138	187	162	184						**166**	20	90 min
MD Yield Elongation (%)	20	20	20	20	20						**20**	0	12 min
TD Yield Elongation (%)	19	19	19	19	19						**19**	0	12 min
MD Break Elongation (%)	475	496	491	480	449						**478**	19	100 min
TD Break Elongation (%)	463	413	580	465	571						**498**	74	100 min

MD Machine Direction TD Transverse Direction

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microspike liner
HDPE
60 mil

Waste Services JED LF (Oak Hammock) doc 10065
St Cloud, FL

PO# JED82863

130 rolls 60 HD microspike | 130 | left

90 spools 5mm HD CHEVRON WELD ROD

CONFORMANCE SAMPLES OK

roll #	width	length	area						
(K)208620 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	1	3188	3ft/stage	7180132
(K)208622 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	2	3182		7180132
(K)208623 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	3	3180		7180132
(K)208624 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	4	3180		7180132
(K)208625 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	5	3180		7180132
(K)208626 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	6	3094		7180132
(K)208627 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	7	3100		7180132
(K)208628 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	8	3100		7180132
(K)208629 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	9	3098		7180132
OK (K)208630 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	10	3096	Stage	7180132 /10 rolls
(K)208731 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	11	3098		7180132
(K)208732 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	12	3094		7180132
(K)208733 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	13	3094		7180132
(K)208734 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	14	3090		7180132
(K)208735 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	15	3098		7180132
(K)208736 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	16	3084		7180132
(K)208737 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	17	3082		7180132
(K)208738 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	18	3088		7180132
(K)208739 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	19	3084		7180132
OK (K)208740 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	20	3084		7180132 /20
OK (K)208741 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	21	3090	Stage	7180132
(K)208742 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	22	3088		7180132
(K)208743 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	23	3094		7180132
(K)208744 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	24	3088		7180132
(K)208745 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	25	3088		7180132
(K)208746 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	26	3102		7180132
(K)208747 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	27	3084		7180132
(K)208748 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	28	3090		7180132
(K)208749 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	29	3082		7180132
OK (K)208750 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	30	3114		7180132 /30
OK (K)208751 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	31	3108	Stage	7180132
(K)208752 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	32	3098		7180132
(K)208753 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	33	3108		7180132
(K)208754 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	34	3108		7180132
(K)208755 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	35	3100		7180132
(K)208756 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	36	3114		7180132
(K)208757 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	37	3102		7180132
(K)209101 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	38	3108		7180132
(K)209102 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	39	3096		7180132
(K)209103 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	40	3098		7180132 /40
OK (K)209104 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	41	3110		7180132
OK (K)209105 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	42	3108	Stage	7180132
(K)209106 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	43	3108		7180132
(K)209107 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	44	3104		7180132
(K)209108 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	45	3112		7180132
(K)209109 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	46	3096		7180132
(K)209110 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	47	3098		7180132
(K)209111 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	48	3106		7180132
(K)209112 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	49	3096		7180132
(K)209113 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	50	3102		7180132 /50
(K)209114 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	51	3082		7180132

microspike liner
HDPE
60 mil

Waste Services JED LF (Oak Hammock) doc 10065
St Cloud, FL
130 rolls 60 HD microspike 130 left
90 spools 5mm HD CHEVRON WELD ROD

PO# JED82863

roll #	METRIC DIMENSIONS width	length	area						
(K)209115 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	52	3082		7180132
(K)209116 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	53	3062	Stage	7180132
(K)209117 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	54	3072		7180132
(K)209118 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	55	3072		7180132
(K)209119 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	56	3066		7180132 / 56 rolls
(K)209120 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	57	3066		7180145
(K)209121 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	58	3070		7180145
(K)209122 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	59	3068		7180145
(K)209123 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	60	3072		7180145
(K)209124 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	61	3066		7180145
(K)209125 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	62	3076		7180145
(K)209126 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	63	3072	Stage	7180145
(K)209227 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	64	3082		7180145
(K)209228 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	65	3084		7180145
(K)209229 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	66	3078		7180145 / 10
(K)209230 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	67	3074		7180145
(K)209231 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	68	3074		7180145
(K)209232 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	69	3064		7180145
(K)209233 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	70	3076		7180145
(K)209234 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	71	3078		7180145
(K)209235 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	72	3088		7180145
(K)209236 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	73	3076		7180145
(K)209237 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	74	3062	Stage	7180145
(K)209238 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	75	3072		7180145
(K)209239 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	76	3078		7180145 / 20
(K)209240 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	77	3076		7180145
(K)209241 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	78	3078		7180145
(K)209242 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	79	3074		7180145
(K)209243 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	80	3076		7180145
(K)209244 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	81	3078		7180145
(K)209245 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	82	3074		7180145
(K)209246 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	83	3080		7180145
(K)209247 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	84	3074	Stage	7180145
(K)209248 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	85	3078		7180145
(K)209249 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	86	3074		7180145 / 30
(K)209250 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	87	3066		7180145
(K)209251 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	88	3070		7180145

OK ✓ OK ✓ OK ✓

32 rolls

microspike liner
HDPE
60 mil

Waste Services JED LF (Oak Hammock) doc 10065
St Cloud, FL

PO#	JED82863

130 rolls 60 HD microspike	130	left
90 spools 5mm HD CHEVRON WELD ROD		

		METRIC DIMENSIONS									
	roll #	width	length	area							
	(K)209352	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	89	3066		7180145
	(K)209353	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	90	3084		7180145
	(K)209354	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	91	3072		7180145
	(K)209355	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	92	3074		7180145
	(K)209356	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	93	3086		7180145
OK	(K)209357	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	94	3090		7180145
⊙	(K)209358	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	95	3080	Stage	7180145
	(K)209359	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	96	3076		7180145
	(K)209360	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	97	3072		7180145
	(K)209361	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	98	3074		7180145 /10
	(K)209362	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	99	3076		7180145
	(K)209363	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	100	3074		7180145
	(K)209364	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	101	3078		7180145
	(K)209365	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	102	3080		7180145
	(K)209366	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	103	3086		7180145
OK	(K)209367	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	104	3080		7180145
⊙	(K)209368	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	105	3074		7180145
	(K)209369	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	106	3076	Stage	7180145
	(K)209370	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	107	3084		7180145
	(K)209371	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	108	3080		7180145 /10
	(K)209372	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	109	3070		7180145
	(K)209373	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	110	3090		7180145
	(K)209374	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	111	3090		7180145
	(K)209375	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	112	3094		7180145
	(K)209376	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	113	3088		7180145
	(K)209377	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	114	3078		7180145
OK	(K)209478	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	115	3080		7180145
⊙	(K)209479	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	116	3088	Stage	7180145
	(K)209480	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	117	3088		7180145
	(K)209481	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	118	3086		7180145 /10
	(K)209482	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	119	3098		7180145
	(K)209483	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	120	3096		7180145
	(K)209484	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	121	3090		7180145
	(K)209485	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	122	3080		7180145 24 rolls
	(K)209486	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	123	3064		7180147
	(K)209487	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	124	3068		7180147
	(K)209488	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	125	3064		7180147
	(K)209489	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	126	3066		7180147
	(K)209490	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	127	3076	Stage	7180147
	(K)209491	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	128	3072		7180147
	(K)209492	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	129	3070		7180147
	(K)209493	.08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	130	3064		7180147

8 rolls

microspike liner				Waste Services JED LF (Oak Hammock) doc 10065				PO#	JED82863
HDPE				St Cloud, FL					
60 mil				130 rolls 60 HD microspike		130			left
	METRIC DIMENSIONS								
roll #	width	length	area	90 spools 5mm HD CHEVRON WELD ROD					
(K)208620 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	1	3188	3ft/stage	7180132
(K)208622 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	2	3182		7180132
(K)208623 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	3	3180		7180132
(K)208624 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	4	3180		7180132
(K)208625 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	5	3180		7180132
(K)208626 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	6	3094		7180132
(K)208627 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	7	3100		7180132
(K)208628 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	8	3100		7180132
(K)208629 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	9	3098		7180132
(K)208630 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	10	3096	Stage	7180132
(K)208731 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	11	3098		7180132
(K)208732 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	12	3094		7180132
(K)208733 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	13	3094		7180132
(K)208734 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	14	3090		7180132
(K)208735 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	15	3098		7180132
(K)208736 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	16	3084		7180132
(K)208737 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	17	3082		7180132
(K)208738 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	18	3088		7180132
(K)208739 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	19	3084		7180132
(K)208740 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	20	3084		7180132
(K)208741 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	21	3090	Stage	7180132
(K)208742 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	22	3088		7180132
(K)208743 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	23	3094		7180132
(K)208744 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	24	3088		7180132
(K)208745 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	25	3088		7180132
(K)208746 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	26	3102		7180132
(K)208747 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	27	3084		7180132
(K)208748 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	28	3090		7180132
(K)208749 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	29	3082		7180132
(K)208750 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	30	3114		7180132
(K)208751 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	31	3108	Stage	7180132
(K)208752 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	32	3098		7180132
(K)208753 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	33	3108		7180132
(K)208754 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	34	3108		7180132
(K)208755 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	35	3100		7180132
(K)208756 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	36	3114		7180132
(K)208757 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	37	3102		7180132
(K)209101 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	38	3108		7180132
(K)209102 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	39	3096		7180132
(K)209103 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	40	3098		7180132
(K)209104 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	41	3110		7180132
(K)209105 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	42	3108	Stage	7180132
(K)209106 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	43	3108		7180132
(K)209107 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	44	3104		7180132
(K)209108 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	45	3112		7180132
(K)209109 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	46	3096		7180132
(K)209110 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	47	3098		7180132
(K)209111 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	48	3106		7180132
(K)209112 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	49	3096		7180132
(K)209113 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	50	3102		7180132
(K)209114 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	51	3082		7180132

microspike liner				Waste Services JED LF (Oak Hammock) doc 10065				PO#	JED82863
HDPE				St Cloud, FL					
60 mil				130 rolls 60 HD microspike		130			left
	METRIC DIMENSIONS								
roll #	width	length	area	90 spools 5mm HD CHEVRON WELD ROD					
(K)209115 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	52	3082		7180132
(K)209116 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	53	3062	Stage	7180132
(K)209117 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	54	3072		7180132
(K)209118 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	55	3072		7180132
(K)209119 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	56	3066		7180132
(K)209120 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	57	3066		7180145
(K)209121 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	58	3070		7180145
(K)209122 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	59	3068		7180145
(K)209123 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	60	3072		7180145
(K)209124 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	61	3066		7180145
(K)209125 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	62	3076		7180145
(K)209126 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	63	3072	Stage	7180145
(K)209227 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	64	3082		7180145
(K)209228 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	65	3084		7180145
(K)209229 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	66	3078		7180145
(K)209230 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	67	3074		7180145
(K)209231 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	68	3074		7180145
(K)209232 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	69	3064		7180145
(K)209233 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	70	3076		7180145
(K)209234 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	71	3078		7180145
(K)209235 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	72	3088		7180145
(K)209236 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	73	3076		7180145
(K)209237 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	74	3062	Stage	7180145
(K)209238 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	75	3072		7180145
(K)209239 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	76	3078		7180145
(K)209240 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	77	3076		7180145
(K)209241 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	78	3078		7180145
(K)209242 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	79	3074		7180145
(K)209243 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	80	3076		7180145
(K)209244 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	81	3078		7180145
(K)209245 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	82	3074		7180145
(K)209246 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	83	3080		7180145
(K)209247 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	84	3074	Stage	7180145
(K)209248 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	85	3078		7180145
(K)209249 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	86	3074		7180145
(K)209250 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	87	3066		7180145
(K)209251 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	88	3070		7180145

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ROLL # **208620-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.57**	mm	**62**	mil
	MAX:	**1.70**	mm	**67**	mil
Asperity GRI GM12: **30** mil	AVE:	**1.61**	mm	**63**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.36**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28** N/mm	**159** ppi		**2,512**	psi
	Average Strength @ Break	**34** N/mm	**197** ppi		**3,105**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.43**	
Lo = 2.0" Break	Average Elongation @ Break	%			**507.9**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**224.6** N			**50.502**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**402.6** N			**90.511**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**624.8** N			**140.46**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208622-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.56	mm	61	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.66	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 36 mil	AVE:	1.59	mm	63	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	148	ppi	2,362	psi
	Average Strength @ Break	33	N/mm	188	ppi	3,007	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				18.08	
Lo = 2.0" Break	Average Elongation @ Break	%				511.8	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	224.6	N			50.502	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	402.6	N			90.511	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	624.8	N			140.46	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208623-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.56	mm	61	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.60	mm	63	mil			
ODD # : TOP EVEN #: BOTTOM						OIT(Standard) ASTM D3895	minutes 186	

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.22	
Carbon Black Content ASTM D4218	Range		%			2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149	ppi	2,362	psi
	Average Strength @ Break	33	N/mm	189	ppi	3,007	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			18.08	
Lo = 2.0" Break	Average Elongation @ Break		%			511.8	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	224.6	N			50.502	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	402.6	N			90.511	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	624.8	N			140.46	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208624-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.57**	mm	**62**	mil
	MAX:	**1.67**	mm	**66**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.61**	mm	**63**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60** mil
Length.....	**125.455**	m	**411.6** feet
Width.....	**7.00**	m;	**23.0** feet
OIT(Standard) ASTM D3895	minutes	**186**	

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.42**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**150**	ppi	**2,362**	psi
	Average Strength @ Break	**33**	N/mm	**191**	ppi	**3,007**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**18.08**	
Lo = 2.0" Break	Average Elongation @ Break	%				**511.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**224.6**	N			**50.502**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**402.6**	N			**90.511**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**624.8**	N			**140.46**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208625-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.55**	mm	**61**	mil
	MAX:	**1.69**	mm	**67**	mil
Asperity GRI GM12: **25** mil	AVE:	**1.60**	mm	**63**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.42**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**149**	ppi	**2,362**	psi
	Average Strength @ Break	**33**	N/mm	**189**	ppi	**3,007**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**18.08**	
Lo = 2.0" Break	Average Elongation @ Break	%				**511.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**224.6**	N			**50.502**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**402.6**	N			**90.511**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**624.8**	N			**140.46**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208626-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.62	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.54	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.40	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149	ppi	2,458	psi
	Average Strength @ Break	33	N/mm	188	ppi	3,094	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.67	
Lo = 2.0" Break	Average Elongation @ Break	%				515.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	222.4	N			50.008	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	412.4	N			92.726	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	562.8	N			126.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208627-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.60	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 30 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

							TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g			g/10 min			.22	
Carbon Black Content ASTM D4218	Range			%			2.40	
Carbon Black Dispersion ASTM D5596	Category						10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151	ppi		2,458	psi
	Average Strength @ Break	33	N/mm	190	ppi		3,094	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield			%			17.67	
Lo = 2.0" Break	Average Elongation @ Break			%			515.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%			-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	222.4	N				50.008	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	412.4	N				92.726	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	562.8	N				126.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs					CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs					ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208628-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 33 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.40	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151	ppi	2,458	psi
	Average Strength @ Break	33	N/mm	190	ppi	3,094	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.67	
Lo = 2.0" Break	Average Elongation @ Break	%				515.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	222.4	N			50.008	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	412.4	N			92.726	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	562.8	N			126.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208629-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.58	mm	62	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 26 mil	AVE:	1.54	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.22	
Carbon Black Content ASTM D4218	Range		%			2.40	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	149	ppi	2,458	psi
	Average Strength @ Break	33	N/mm	188	ppi	3,094	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.67	
Lo = 2.0" Break	Average Elongation @ Break		%			515.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	222.4	N			50.008	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	412.4	N			92.726	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	562.8	N			126.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208630-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.62**	mm	**64**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.40**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**152**	ppi	**2,458**	psi
	Average Strength @ Break	**33**	N/mm	**191**	ppi	**3,094**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.67**	
Lo = 2.0" Break	Average Elongation @ Break	%				**515.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.4**	N			**50.008**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**412.4**	N			**92.726**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**562.8**	N			**126.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208731-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.51**	mm	**59**	mil
	MAX:	**1.63**	mm	**64**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.45**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26** N/mm	**151** ppi		**2,477**	psi
	Average Strength @ Break	**32** N/mm	**182** ppi		**2,986**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.84**	
Lo = 2.0" Break	Average Elongation @ Break	%			**506.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.4** N			**50.008**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**412.4** N			**92.726**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**562.8** N			**126.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208732-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.22	
Carbon Black Content ASTM D4218	Range		%			2.45	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151	ppi	2,477	psi
	Average Strength @ Break	32	N/mm	182	ppi	2,986	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.84	
Lo = 2.0" Break	Average Elongation @ Break		%			506.8	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	222.4	N			50.008	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	412.4	N			92.726	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	562.8	N			126.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208733-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.60**	mm	**63**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.45**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**151**	ppi	**2,477**	psi
	Average Strength @ Break	**32**	N/mm	**182**	ppi	**2,986**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.84**	
Lo = 2.0" Break	Average Elongation @ Break	%				**506.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.4**	N			**50.008**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**412.4**	N			**92.726**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**562.8**	N			**126.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208734-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.49**	mm	**59**	mil
	MAX:	**1.60**	mm	**63**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.45**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**151**	ppi	**2,477**	psi
	Average Strength @ Break	**32**	N/mm	**182**	ppi	**2,986**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.84**	
Lo = 2.0" Break	Average Elongation @ Break	%				**506.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.4**	N			**50.008**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**412.4**	N			**92.726**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**562.8**	N			**126.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208735-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.49**	mm	**59**	mil
	MAX:	**1.59**	mm	**63**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.45**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**151**	ppi	**2,477**	psi
	Average Strength @ Break	**32**	N/mm	**182**	ppi	**2,986**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.84**	
Lo = 2.0" Break	Average Elongation @ Break	%				**506.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.4**	N			**50.008**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**412.4**	N			**92.726**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**562.8**	N			**126.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208736-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.53**	mm	**60**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **34** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.49**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**156**	ppi	**2,537**	psi
	Average Strength @ Break	**33**	N/mm	**187**	ppi	**3,041**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.37**	
Lo = 2.0" Break	Average Elongation @ Break	%				**497.0**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**227.5**	N			**51.155**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.1**	N			**94.449**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**569.3**	N			**127.99**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208737-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.58**	mm	**62**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.49**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**154**	ppi	**2,537**	psi
	Average Strength @ Break	**32**	N/mm	**184**	ppi	**3,041**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.37**	
Lo = 2.0" Break	Average Elongation @ Break	%				**497.0**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**227.5**	N			**51.155**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.1**	N			**94.449**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**569.3**	N			**127.99**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208738-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.59	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.54	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.22	
Carbon Black Content ASTM D4218	Range		%			2.49	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	154	ppi	2,537	psi
	Average Strength @ Break	32	N/mm	184	ppi	3,041	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.37	
Lo = 2.0" Break	Average Elongation @ Break		%			497.0	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	227.5	N			51.155	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.1	N			94.449	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	569.3	N			127.99	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208739-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.45	mm	57	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.62	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.54	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.22	
Carbon Black Content ASTM D4218	Range		%			2.49	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	154	ppi	2,537	psi
	Average Strength @ Break	32	N/mm	184	ppi	3,041	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.37	
Lo = 2.0" Break	Average Elongation @ Break		%			497.0	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	227.5	N			51.155	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.1	N			94.449	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	569.3	N			127.99	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208740-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.59**	mm	**63**	mil
Asperity GRI GM12: **32** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**	**60 mil**	
Length.....	**125.455** m	**411.6**	feet
Width.....	**7.00** m;	**23.0**	feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.49**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**156**	ppi	**2,537**	psi
	Average Strength @ Break	**33**	N/mm	**187**	ppi	**3,041**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.37**	
Lo = 2.0" Break	Average Elongation @ Break	%				**497.0**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**227.5**	N			**51.155**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.1**	N			**94.449**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**569.3**	N			**127.99**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208741-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.63**	mm	**64**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.40**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**155**	ppi	**2,537**	psi
	Average Strength @ Break	**31**	N/mm	**177**	ppi	**2,907**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.27**	
Lo = 2.0" Break	Average Elongation @ Break	%				**484.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**227.5**	N			**51.155**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.1**	N			**94.449**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**569.3**	N			**127.99**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208742-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.54**	mm	**61**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.40**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**157**	ppi	**2,537**	psi
	Average Strength @ Break	**31**	N/mm	**180**	ppi	**2,907**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.27**	
Lo = 2.0" Break	Average Elongation @ Break	%				**484.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**227.5**	N			**51.155**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.1**	N			**94.449**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**569.3**	N			**127.99**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208743-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.49**	mm	**59**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.42**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**156**	ppi	**2,537**	psi
	Average Strength @ Break	**31**	N/mm	**179**	ppi	**2,907**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.27**	
Lo = 2.0" Break	Average Elongation @ Break	%				**484.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**227.5**	N			**51.155**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**420.1**	N			**94.449**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**569.3**	N			**127.99**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208744-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.68	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 30 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,537	psi
	Average Strength @ Break	32	N/mm	181	ppi	2,907	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.27	
Lo = 2.0" Break	Average Elongation @ Break	%				484.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	227.5	N			51.155	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.1	N			94.449	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	569.3	N			127.99	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208745-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.55	mm	61	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.65	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 32 mil	AVE:	1.59	mm	63	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	159	ppi	2,537	psi
	Average Strength @ Break	32	N/mm	182	ppi	2,907	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.27	
Lo = 2.0" Break	Average Elongation @ Break	%				484.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	227.5	N			51.155	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	420.1	N			94.449	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	569.3	N			127.99	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208746-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.62	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 31 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,498	psi
	Average Strength @ Break	33	N/mm	188	ppi	3,029	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.70	
Lo = 2.0" Break	Average Elongation @ Break	%				509.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	220.7	N			49.614	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	416.7	N			93.684	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.5	N			132.97	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208747-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.63**	mm	**64**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.58**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.42**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**155**	ppi	**2,498**	psi
	Average Strength @ Break	**33**	N/mm	**188**	ppi	**3,029**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.70**	
Lo = 2.0" Break	Average Elongation @ Break	%				**509.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**220.7**	N			**49.614**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**416.7**	N			**93.684**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.5**	N			**132.97**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **208748-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.73	mm	68	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 32 mil	AVE:	1.59	mm	63	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	156	ppi	2,498	psi
	Average Strength @ Break	33	N/mm	190	ppi	3,029	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.70	
Lo = 2.0" Break	Average Elongation @ Break	%				509.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	220.7	N			49.614	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	416.7	N			93.684	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.5	N			132.97	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208749-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.69	mm	67	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 36 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,498	psi
	Average Strength @ Break	33	N/mm	188	ppi	3,029	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.70	
Lo = 2.0" Break	Average Elongation @ Break	%				509.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	220.7	N			49.614	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	416.7	N			93.684	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.5	N			132.97	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208750-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.53	mm	60	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.42	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	154	ppi	2,498	psi
	Average Strength @ Break	33	N/mm	187	ppi	3,029	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.70	
Lo = 2.0" Break	Average Elongation @ Break	%				509.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	220.7	N			49.614	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	416.7	N			93.684	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.5	N			132.97	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **208751-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.66**	mm	**65**	mil
Asperity GRI GM12: **26** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.31**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**156**	ppi	**2,534**	psi
	Average Strength @ Break	**33**	N/mm	**190**	ppi	**3,092**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.28**	
Lo = 2.0" Break	Average Elongation @ Break	%				**525.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**220.7**	N			**49.614**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**416.7**	N			**93.684**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.5**	N			**132.97**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208752-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.59**	mm	**63**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.31**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**154**	ppi	**2,534**	psi
	Average Strength @ Break	**33**	N/mm	**187**	ppi	**3,092**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.28**	
Lo = 2.0" Break	Average Elongation @ Break	%				**525.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**220.7**	N			**49.614**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**416.7**	N			**93.684**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.5**	N			**132.97**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208753-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.53	mm	60	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 30 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.31	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,534	psi
	Average Strength @ Break	34	N/mm	192	ppi	3,092	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.28	
Lo = 2.0" Break	Average Elongation @ Break	%				525.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	220.7	N			49.614	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	416.7	N			93.684	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.5	N			132.97	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208754-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc		.946
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min		.22
Carbon Black Content ASTM D4218	Range	%		2.31
Carbon Black Dispersion ASTM D5596	Category			10 in Cat. 1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27 N/mm	155 ppi	2,534 psi
	Average Strength @ Break	33 N/mm	189 ppi	3,092 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		17.28
Lo = 2.0" Break	Average Elongation @ Break	%		525.1
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-0.32
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	220.7 N		49.614 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	416.7 N		93.684 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.5 N		132.97 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208755-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.65**	mm	**65**	mil
Asperity GRI GM12: **28** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.31**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**156**	ppi	**2,534**	psi
	Average Strength @ Break	**33**	N/mm	**190**	ppi	**3,092**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.28**	
Lo = 2.0" Break	Average Elongation @ Break	%				**525.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**220.7**	N			**49.614**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**416.7**	N			**93.684**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.5**	N			**132.97**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208756-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.59**	mm	**63**	mil
	AVE:	**1.54**	mm	**61**	mil

Asperity GRI GM12: **34** mil
ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60 mil**
Length.....	**125.455**	m	**411.6** feet
Width.....	**7.00**	m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **186**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.33**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**148** ppi	**2,449**	psi
	Average Strength @ Break	**32**	N/mm	**185** ppi	**3,045**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	%			**17.54**	
	Average Elongation @ Break	%			**508.9**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7**	N		**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0**	N		**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8**	N		**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **208757-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.63**	mm	**64**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.33**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26** N/mm	**150** ppi		**2,449**	psi
	Average Strength @ Break	**33** N/mm	**187** ppi		**3,045**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.54**	
Lo = 2.0" Break	Average Elongation @ Break	%			**508.9**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7** N			**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0** N			**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8** N			**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209101-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.62**	mm	**64**	mil
	AVE:	**1.55**	mm	**61**	mil

Asperity GRI GM12: **27** mil
ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60 mil**
Length.....	**125.455**	m	**411.6** feet
Width.....	**7.00**	m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **186**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.33**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**149**	ppi	**2,449**	psi
	Average Strength @ Break	**33**	N/mm	**186**	ppi	**3,045**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.54**	
Lo = 2.0" Break	Average Elongation @ Break	%				**508.9**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7**	N			**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0**	N			**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8**	N			**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209102-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.44**	mm	**57**	mil
	MAX:	**1.63**	mm	**64**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.33**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**148**	ppi	**2,449**	psi
	Average Strength @ Break	**32**	N/mm	**185**	ppi	**3,045**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.54**	
Lo = 2.0" Break	Average Elongation @ Break	%				**508.9**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7**	N			**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0**	N			**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8**	N			**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209103-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.49**	mm	**59**	mil
	MAX:	**1.62**	mm	**64**	mil
Asperity GRI GM12: **26** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.33**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**148**	ppi	**2,449**	psi
	Average Strength @ Break	**32**	N/mm	**185**	ppi	**3,045**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.54**	
Lo = 2.0" Break	Average Elongation @ Break	%				**508.9**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7**	N			**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0**	N			**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8**	N			**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209104-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min			.22	
Carbon Black Content ASTM D4218	Range		%			2.35	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	157	ppi	2,570	psi
	Average Strength @ Break	33	N/mm	189	ppi	3,104	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			16.84	
Lo = 2.0" Break	Average Elongation @ Break		%			508.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	222.7	N			50.058	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	461.0	N			103.64	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	592.8	N			133.27	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209105-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.62**	mm	**64**	mil
Asperity GRI GM12: **28** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet

OIT(Standard) ASTM D3895 minutes **186**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.35**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**158**	ppi	**2,570**	psi
	Average Strength @ Break	**33**	N/mm	**191**	ppi	**3,104**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**16.84**	
Lo = 2.0" Break	Average Elongation @ Break	%				**508.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7**	N			**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0**	N			**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8**	N			**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209106-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.65**	mm	**65**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

							TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g			g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range			%			**2.35**	
Carbon Black Dispersion ASTM D5596	Category						**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**157**	ppi		**2,570**	psi
	Average Strength @ Break	**33**	N/mm	**189**	ppi		**3,104**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield			%			**16.84**	
Lo = 2.0" Break	Average Elongation @ Break			%			**508.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7**	N				**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0**	N				**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8**	N				**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209107-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.60**	mm	**63**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

							TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g			g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range			%			**2.35**	
Carbon Black Dispersion ASTM D5596	Category						**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**157**	ppi		**2,570**	psi
	Average Strength @ Break	**33**	N/mm	**189**	ppi		**3,104**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield			%			**16.84**	
Lo = 2.0" Break	Average Elongation @ Break			%			**508.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7**	N				**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0**	N				**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8**	N				**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs					**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs					**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209108-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.58**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.35**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28** N/mm	**160** ppi		**2,570**	psi
	Average Strength @ Break	**34** N/mm	**193** ppi		**3,104**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	%			**16.84**	
	Average Elongation @ Break	%			**508.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**222.7** N			**50.058**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**461.0** N			**103.64**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**592.8** N			**133.27**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209109-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.51**	mm	**59**	mil
	MAX:	**1.63**	mm	**64**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.37**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**161**	ppi	**2,613**	psi
	Average Strength @ Break	**34**	N/mm	**197**	ppi	**3,185**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.60**	
Lo = 2.0" Break	Average Elongation @ Break	%				**518.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3**	N			**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0**	N			**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8**	N			**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209110-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.55**	mm	**61**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **34** mil	AVE:	**1.58**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.37**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**163**	ppi	**2,613**	psi
	Average Strength @ Break	**35**	N/mm	**198**	ppi	**3,185**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.60**	
Lo = 2.0" Break	Average Elongation @ Break	%				**518.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3**	N			**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0**	N			**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8**	N			**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209111-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.46**	mm	**57**	mil
	MAX:	**1.62**	mm	**64**	mil
Asperity GRI GM12: **26** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.37**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**160** ppi	**2,613**	psi
	Average Strength @ Break	**34**	N/mm	**196** ppi	**3,185**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.60**	
Lo = 2.0" Break	Average Elongation @ Break	%			**518.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3**	N		**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0**	N		**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8**	N		**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs		**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs		**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209112-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.53**	mm	**60**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **32** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.37**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28** N/mm	**161** ppi		**2,613**	psi
	Average Strength @ Break	**34** N/mm	**197** ppi		**3,185**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.60**	
Lo = 2.0" Break	Average Elongation @ Break	%			**518.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3** N			**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0** N			**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8** N			**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209113-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.22	
Carbon Black Content ASTM D4218	Range	%				2.37	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	163	ppi	2,613	psi
	Average Strength @ Break	35	N/mm	198	ppi	3,185	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.60	
Lo = 2.0" Break	Average Elongation @ Break	%				518.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-0.32	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.3	N			51.336	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	414.0	N			93.083	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.8	N			131.92	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209114-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.55	mm	61	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 30 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	186	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc		.946
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min		.22
Carbon Black Content ASTM D4218	Range	%		2.40
Carbon Black Dispersion ASTM D5596	Category			10 in Cat. 1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27 N/mm	153 ppi	2,463 psi
	Average Strength @ Break	33 N/mm	188 ppi	3,017 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		17.56
Lo = 2.0" Break	Average Elongation @ Break	%		513.7
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-0.32
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.3 N		51.336 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	414.0 N		93.083 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.8 N		131.92 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209115-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.51**	mm	**59**	mil
	MAX:	**1.62**	mm	**64**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.40**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**151**	ppi	**2,463**	psi
	Average Strength @ Break	**32**	N/mm	**185**	ppi	**3,017**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	%				**17.56**	
	Average Elongation @ Break	%				**513.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3**	N			**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0**	N			**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8**	N			**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209116-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.57**	mm	**62**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.22**	
Carbon Black Content ASTM D4218	Range	%			**2.40**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27** N/mm	**152** ppi		**2,463**	psi
	Average Strength @ Break	**33** N/mm	**186** ppi		**3,017**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.56**	
Lo = 2.0" Break	Average Elongation @ Break	%			**513.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3** N			**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0** N			**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8** N			**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209117-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.49**	mm	**59**	mil
	MAX:	**1.65**	mm	**65**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.58**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.40**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**153**	ppi	**2,463**	psi
	Average Strength @ Break	**33**	N/mm	**188**	ppi	**3,017**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.56**	
Lo = 2.0" Break	Average Elongation @ Break	%				**513.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3**	N			**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0**	N			**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8**	N			**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209118-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.51**	mm	**59**	mil
	MAX:	**1.65**	mm	**65**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.40**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**151**	ppi	**2,463**	psi
	Average Strength @ Break	**32**	N/mm	**185**	ppi	**3,017**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.56**	
Lo = 2.0" Break	Average Elongation @ Break	%				**513.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.3**	N			**51.336**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**414.0**	N			**93.083**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.8**	N			**131.92**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209119-08** Lot #: **7180132** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.70**	mm	**67**	mil
Asperity GRI GM12: **28** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**186**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.22**	
Carbon Black Content ASTM D4218	Range	%				**2.45**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**154**	ppi	**2,512**	psi
	Average Strength @ Break	**33**	N/mm	**188**	ppi	**3,055**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.24**	
Lo = 2.0" Break	Average Elongation @ Break	%				**510.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-0.32**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**217.9**	N			**48.983**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**394.4**	N			**88.660**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**577.0**	N			**129.71**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209120-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.56	mm	61	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 31 mil	AVE:	1.52	mm	60	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			.24	
Carbon Black Content ASTM D4218	Range	%			2.45	
Carbon Black Dispersion ASTM D5596	Category				10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	150 ppi		2,512	psi
	Average Strength @ Break	32 N/mm	183 ppi		3,055	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			17.24	
Lo = 2.0" Break	Average Elongation @ Break	%			510.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	217.9 N			48.983	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	394.4 N			88.660	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	577.0 N			129.71	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209121-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**	**60 mil**	
Length.....	**125.455** m	**411.6**	feet
Width.....	**7.00** m;	**23.0**	feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range		%			**2.45**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**153**	ppi	**2,512**	psi
	Average Strength @ Break	**33**	N/mm	**186**	ppi	**3,055**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			**17.24**	
Lo = 2.0" Break	Average Elongation @ Break		%			**510.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**217.9**	N			**48.983**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**394.4**	N			**88.660**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**577.0**	N			**129.71**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209122-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.68**	mm	**66**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.45**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**155**	ppi	**2,512**	psi
	Average Strength @ Break	**33**	N/mm	**189**	ppi	**3,055**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.24**	
Lo = 2.0" Break	Average Elongation @ Break	%				**510.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**217.9**	N			**48.983**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**394.4**	N			**88.660**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**577.0**	N			**129.71**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209123-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.45**	mm	**57**	mil
	MAX:	**1.69**	mm	**67**	mil
Asperity GRI GM12: **32** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60** mil
Length.....	**125.455**	m	**411.6** feet
Width.....	**7.00**	m;	**23.0** feet
OIT(Standard) ASTM D3895	minutes	**181**	

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.45**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**152**	ppi	**2,512**	psi
	Average Strength @ Break	**32**	N/mm	**185**	ppi	**3,055**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.24**	
Lo = 2.0" Break	Average Elongation @ Break	%				**510.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**217.9**	N			**48.983**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**394.4**	N			**88.660**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**577.0**	N			**129.71**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209124-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.23**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**160**	ppi	**2,594**	psi
	Average Strength @ Break	**35**	N/mm	**197**	ppi	**3,193**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.59**	
Lo = 2.0" Break	Average Elongation @ Break	%				**515.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**217.9**	N			**48.983**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**394.4**	N			**88.660**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**577.0**	N			**129.71**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209125-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.59**	mm	**63**	mil
	AVE:	**1.54**	mm	**61**	mil

Asperity GRI GM12: **27** mil
ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet

OIT(Standard) ASTM D3895 minutes **181**

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.23**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**157**	ppi	**2,594**	psi
	Average Strength @ Break	**34**	N/mm	**194**	ppi	**3,193**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.59**	
Lo = 2.0" Break	Average Elongation @ Break	%				**515.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**217.9**	N			**48.983**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**394.4**	N			**88.660**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**577.0**	N			**129.71**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209126-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.67**	mm	**66**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.58**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

							TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g			g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range			%			**2.23**	
Carbon Black Dispersion ASTM D5596	Category						**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**161**	ppi		**2,594**	psi
	Average Strength @ Break	**35**	N/mm	**199**	ppi		**3,193**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield			%			**17.59**	
Lo = 2.0" Break	Average Elongation @ Break			%			**515.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**217.9**	N				**48.983**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**394.4**	N				**88.660**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**577.0**	N				**129.71**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209227-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.68	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 28 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,594	psi
	Average Strength @ Break	34	N/mm	195	ppi	3,193	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.59	
Lo = 2.0" Break	Average Elongation @ Break		%			515.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	217.9	N			48.983	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	394.4	N			88.660	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	577.0	N			129.71	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209228-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.58	mm	62	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 36 mil	AVE:	1.52	mm	60	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,594	psi
	Average Strength @ Break	33	N/mm	191	ppi	3,193	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.59	
Lo = 2.0" Break	Average Elongation @ Break	%				515.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	217.9	N			48.983	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	394.4	N			88.660	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	577.0	N			129.71	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209229-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.62**	mm	**64**	mil
	AVE:	**1.54**	mm	**61**	mil

Asperity GRI GM12: **27** mil
ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet

OIT(Standard) ASTM D3895 minutes **181**

Specific Gravity ASTM D792	Density	g/cc			**.946**	**TEST RESULTS**
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range	%			**2.22**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**32** N/mm	**183** ppi		**3,011**	psi
	Average Strength @ Break	**31** N/mm	**176** ppi		**2,907**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**16.83**	
Lo = 2.0" Break	Average Elongation @ Break	%			**490.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.3** N			**52.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**466.1** N			**104.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**606.8** N			**136.42**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209230-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.49**	mm	**59**	mil
	MAX:	**1.60**	mm	**63**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range		%			**2.22**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**32**	N/mm	**183**	ppi	**3,011**	psi
	Average Strength @ Break	**31**	N/mm	**176**	ppi	**2,907**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			**16.83**	
Lo = 2.0" Break	Average Elongation @ Break		%			**490.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.3**	N			**52.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**466.1**	N			**104.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**606.8**	N			**136.42**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209231-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.60	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 26 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.22	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	32	N/mm	184	ppi	3,011	psi
	Average Strength @ Break	31	N/mm	177	ppi	2,907	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				16.83	
Lo = 2.0" Break	Average Elongation @ Break	%				490.8	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.3	N			52.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	466.1	N			104.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	606.8	N			136.42	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209232-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.66**	mm	**65**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

							TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range		%				**2.22**	
Carbon Black Dispersion ASTM D5596	Category						**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**32**	N/mm	**183**	ppi		**3,011**	psi
	Average Strength @ Break	**31**	N/mm	**176**	ppi		**2,907**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield		%				**16.83**	
	Average Elongation @ Break		%				**490.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.3**	N				**52.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**466.1**	N				**104.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**606.8**	N				**136.42**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209233-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.60**	mm	**63**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.22**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**32**	N/mm	**183**	ppi	**3,011**	psi
	Average Strength @ Break	**31**	N/mm	**176**	ppi	**2,907**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**16.83**	
Lo = 2.0" Break	Average Elongation @ Break	%				**490.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.3**	N			**52.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**466.1**	N			**104.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**606.8**	N			**136.42**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209234-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.45	mm	57	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 36 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	140	ppi	2,283	psi
	Average Strength @ Break	30	N/mm	169	ppi	2,750	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.75	
Lo = 2.0" Break	Average Elongation @ Break	%				502.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.3	N			52.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	466.1	N			104.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	606.8	N			136.42	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209235-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.15**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25**	N/mm	**140**	ppi	**2,283**	psi
	Average Strength @ Break	**30**	N/mm	**169**	ppi	**2,750**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.75**	
Lo = 2.0" Break	Average Elongation @ Break	%				**502.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.3**	N			**52.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**466.1**	N			**104.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**606.8**	N			**136.42**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209236-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc		.946
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min		.24
Carbon Black Content ASTM D4218	Range	%		2.15
Carbon Black Dispersion ASTM D5596	Category			10 in Cat. 1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25 N/mm	140 ppi	2,283 psi
	Average Strength @ Break	30 N/mm	169 ppi	2,750 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		17.75
Lo = 2.0" Break	Average Elongation @ Break	%		502.7
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-.43
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	233.3 N		52.446 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	466.1 N		104.78 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	606.8 N		136.42 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209237-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.51**	mm	**59**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.15**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25**	N/mm	**141**	ppi	**2,283**	psi
	Average Strength @ Break	**30**	N/mm	**170**	ppi	**2,750**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.75**	
Lo = 2.0" Break	Average Elongation @ Break	%				**502.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.3**	N			**52.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**466.1**	N			**104.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**606.8**	N			**136.42**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209238-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.58**	mm	**62**	mil
Asperity GRI GM12: **32** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.15**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**24**	N/mm	**139**	ppi	**2,283**	psi
	Average Strength @ Break	**29**	N/mm	**168**	ppi	**2,750**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.75**	
Lo = 2.0" Break	Average Elongation @ Break	%				**502.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**233.3**	N			**52.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**466.1**	N			**104.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**606.8**	N			**136.42**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209239-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.65**	mm	**65**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.08**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**153**	ppi	**2,488**	psi
	Average Strength @ Break	**34**	N/mm	**196**	ppi	**3,188**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.28**	
Lo = 2.0" Break	Average Elongation @ Break	%				**531.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**216.9**	N			**48.770**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**352.3**	N			**79.212**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.1**	N			**131.75**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209240-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.41**	mm	**56**	mil
	MAX:	**1.65**	mm	**65**	mil
Asperity GRI GM12: **32** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**	**60 mil**	
Length.....	**125.455** m	**411.6**	feet
Width.....	**7.00** m;	**23.0**	feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.08**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**151**	ppi	**2,488**	psi
	Average Strength @ Break	**34**	N/mm	**193**	ppi	**3,188**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.28**	
Lo = 2.0" Break	Average Elongation @ Break	%				**531.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**216.9**	N			**48.770**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**352.3**	N			**79.212**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.1**	N			**131.75**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209241-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.66**	mm	**65**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet

OIT(Standard) ASTM D3895 minutes **181**

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range	%			**2.08**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**154** ppi	**2,488**	psi
	Average Strength @ Break	**35**	N/mm	**197** ppi	**3,188**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.28**	
Lo = 2.0" Break	Average Elongation @ Break	%			**531.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**216.9**	N		**48.770**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**352.3**	N		**79.212**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.1**	N		**131.75**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs		**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs		**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209242-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.49**	mm	**59**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.08**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**152**	ppi	**2,488**	psi
	Average Strength @ Break	**34**	N/mm	**195**	ppi	**3,188**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.28**	
Lo = 2.0" Break	Average Elongation @ Break	%				**531.3**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**216.9**	N			**48.770**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**352.3**	N			**79.212**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**586.1**	N			**131.75**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209243-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.53	mm	60	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.08	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	153	ppi	2,488	psi
	Average Strength @ Break	34	N/mm	196	ppi	3,188	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.28	
Lo = 2.0" Break	Average Elongation @ Break		%			531.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	216.9	N			48.770	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	352.3	N			79.212	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.1	N			131.75	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209244-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.59	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 36 mil	AVE:	1.53	mm	60	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	153	ppi	2,546	psi
	Average Strength @ Break	34	N/mm	192	ppi	3,194	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.81	
Lo = 2.0" Break	Average Elongation @ Break	%				510.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	216.9	N			48.770	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	352.3	N			79.212	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.1	N			131.75	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209245-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,546	psi
	Average Strength @ Break	34	N/mm	195	ppi	3,194	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.81	
Lo = 2.0" Break	Average Elongation @ Break		%			510.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	216.9	N			48.770	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	352.3	N			79.212	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.1	N			131.75	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209246-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.44	mm	57	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.54	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	154	ppi	2,546	psi
	Average Strength @ Break	34	N/mm	194	ppi	3,194	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.81	
Lo = 2.0" Break	Average Elongation @ Break		%			510.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	216.9	N			48.770	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	352.3	N			79.212	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.1	N			131.75	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

Quality Control Department

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quality certificate

ROLL # **209247-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.61	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 28 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	156	ppi	2,546	psi
	Average Strength @ Break	34	N/mm	196	ppi	3,194	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.81	
Lo = 2.0" Break	Average Elongation @ Break	%				510.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	216.9	N			48.770	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	352.3	N			79.212	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.1	N			131.75	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

Quality Control Department

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quality certificate

ROLL # **209248-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.58	mm	62	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.53	mm	60	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	153	ppi	2,546	psi
	Average Strength @ Break	34	N/mm	192	ppi	3,194	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.81	
Lo = 2.0" Break	Average Elongation @ Break		%			510.3	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	216.9	N			48.770	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	352.3	N			79.212	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	586.1	N			131.75	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209249-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.60**	mm	**63**	mil
Asperity GRI GM12: **27** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.19**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**146**	ppi	**2,416**	psi
	Average Strength @ Break	**32**	N/mm	**185**	ppi	**3,052**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.86**	
Lo = 2.0" Break	Average Elongation @ Break	%				**519.5**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**223.8**	N			**50.306**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**459.6**	N			**103.32**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.7**	N			**133.03**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209250-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.59**	mm	**63**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.19**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**146**	ppi	**2,416**	psi
	Average Strength @ Break	**32**	N/mm	**185**	ppi	**3,052**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.86**	
Lo = 2.0" Break	Average Elongation @ Break	%				**519.5**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**223.8**	N			**50.306**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**459.6**	N			**103.32**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.7**	N			**133.03**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

Quality Control Department

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quality certificate

ROLL # **209251-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.46**	mm	**57**	mil
	MAX:	**1.57**	mm	**62**	mil
Asperity GRI GM12: **28** mil	AVE:	**1.53**	mm	**60**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.19**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**25**	N/mm	**146**	ppi	**2,416**	psi
	Average Strength @ Break	**32**	N/mm	**184**	ppi	**3,052**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.86**	
Lo = 2.0" Break	Average Elongation @ Break	%				**519.5**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**223.8**	N			**50.306**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**459.6**	N			**103.32**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.7**	N			**133.03**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

Quality Control Department

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12/23/05

CoA Date: 01/28/2008

Certificate of Analysis

Shipped To: AGRU AMERICA INC
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

CPC Delivery #: 87579598
PO #: 004725
Weight: 187800 LB
Ship Date: 01/28/2008
Package: BULK
Mode: Hopper Car
Car #: CHVX891109
Seal No: 250345

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 7180132

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.220	g/10mi
HLMI Flow Rate	ASTM D1238	20.00	g/10mi
Density	ASTM D1505	0.9380	g/cm3
Pellet Count	P02.08.03	33.000	pel/g
Production Date		01/25/2008	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.

Paul S. Newbold
Quality Systems Coordinator

For CoA questions contact Tom Scheirman at 832-813-4637

CoA Date: 01/29/2008

Certificate of Analysis

Shipped To: AGRU AMERICA INC
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

CPC Delivery #: 87580828
PO #: 004725
Weight: 186800 LB
Ship Date: 01/29/2008
Package: BULK
Mode: Hopper Car
Car #: GOCX058080
Seal No: 250383

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 7180145

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.240	g/10mi
HLMI Flow Rate	ASTM D1238	22.00	g/10mi
Density	ASTM D1505	0.9370	g/cm3
Pellet Count	P02.08.03	27.000	pel/g
Production Date		01/27/2008	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.

Paul S. Newbold
Quality Systems Coordinator

For CoA questions contact Tom Scheirman at 832-813-4637

Chevron Phillips Chemical Company LP

Rex L. Bobsein, Ph.D., Polyethylene Materials and Applications Development
Room 109 PTC ■ Bartlesville, OK 74004■
918-661-0089 ■ bobserl@cpchem.com ■ Fax: 918-662-2550 ■ www.cpchem.com

January 16, 2006

Grant Palmer
Agru America
500 Garrison Road
Georgetown, SC 29440

Dear Grant:

This letter is to re-report the results of oven aging and UV aging testing (according to GRI-GM13 and GRI-GM17) on Agru America sheet samples that you provided to us in 2004. A graphical summary of the results was sent to you on 4/1/2005. The testing was performed by CPChem's Evaluation Laboratory in Bartlesville, OK. Oven-aging tests were completed 12/17/2004. UV-aging tests were completed on 12/13/2004.

GRI-GM13 (HDPE) and GRI-GM17 (LLDPE) durability testing was done according to the following procedures.

Test	Exposure	Method
Std. OIT	200°C, atmospheric pressure oxygen	D3895
HP-OIT	150°C, 500 psi oxygen	D5885
Oven Aging	90 days, 85°C	D5721
UV Aging	1600 UV hrs (Conditions were 20 hours UVA-340 at 75°C followed by 4 hrs dark with condensation at 60°C. Irradiance was 0.72 W/m^2 at 340nm.)	GRI-GM11

Oven Aging Results

Sample	Initial HP-OIT (min.)	HP-OIT Value after Oven Aging (min.)	% HP-OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 312588 from Marlex® 7104 Lot # CPN811170	514	396	77	60
60 mil HDPE Roll # 315103-04 from Marlex® K307 Lot # 71-3-1465	1461	1547	106	80

Sample	Initial Std. OIT (min.)	Std. OIT Value after Oven Aging (min.)	% Std. OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 312588 from Marlex® 7104 Lot # CPN811170	151	58	38	35
60 mil HDPE Roll # 315103-04 from Marlex® K307 Lot # 71-3-1465	201	127	63	55

UV Aging Results

Sample	Initial HP-OIT (min.)	HP-OIT Value after UV Aging (min.)	% HP-OIT Retained	GRI-GM13 or GRI-GM17 % Retained Requirement
40 mil LLDPE Roll # 312588 from Marlex® 7104 Lot # CPN811170	514	460	89	35
60 mil HDPE Roll # 315103-04 from Marlex® K307 Lot # 71-3-1465	1461	1513	104	50

According to these test results, the durability requirements are met.

If you have any questions, please call me at 918-661-0089.

Sincerely,

Rex L. Bobsein

Rex L. Bobsein, Ph.D.
Polyethylene Materials and Applications Development

microspike liner				Waste Services JED LF (Oak Hammock) doc 10065				PO#	JED82863
HDPE				St Cloud, FL					
60 mil				130 rolls 60 HD microspike		130			left
	METRIC DIMENSIONS								
roll #	width	length	area	90 spools 5mm HD CHEVRON WELD ROD					
(K)209352 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	89	3066		7180145
(K)209353 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	90	3084		7180145
(K)209354 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	91	3072		7180145
(K)209355 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	92	3074		7180145
(K)209356 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	93	3086		7180145
(K)209357 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	94	3090		7180145
(K)209358 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	95	3080	Stage	7180145
(K)209359 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	96	3076		7180145
(K)209360 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	97	3072		7180145
(K)209361 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	98	3074		7180145
(K)209362 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	99	3076		7180145
(K)209363 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	100	3074		7180145
(K)209364 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	101	3078		7180145
(K)209365 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	102	3080		7180145
(K)209366 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	103	3086		7180145
(K)209367 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	104	3080		7180145
(K)209368 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	105	3074		7180145
(K)209369 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	106	3076	Stage	7180145
(K)209370 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	107	3084		7180145
(K)209371 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	108	3080		7180145
(K)209372 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	109	3070		7180145
(K)209373 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	110	3090		7180145
(K)209374 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	111	3090		7180145
(K)209375 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	112	3094		7180145
(K)209376 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	113	3088		7180145
(K)209377 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	114	3078		7180145
(K)209478 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	115	3080		7180145
(K)209479 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	116	3088	Stage	7180145
(K)209480 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	117	3088		7180145
(K)209481 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	118	3086		7180145
(K)209482 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	119	3098		7180145
(K)209483 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	120	3096		7180145
(K)209484 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	121	3090		7180145
(K)209485 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	122	3080		7180145
(K)209486 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	123	3064		7180147
(K)209487 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	124	3068		7180147
(K)209488 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	125	3064		7180147
(K)209489 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	126	3066		7180147
(K)209490 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	127	3076	Stage	7180147
(K)209491 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	128	3072		7180147
(K)209492 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	129	3070		7180147
(K)209493 .08	7	125.455	878.19	Waste Svcs Oak Hammock JED LF	130tot	130	3064		7180147

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quality certificate

ROLL # **209352-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.60	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.54	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.19	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	146	ppi	2,416	psi
	Average Strength @ Break	32	N/mm	185	ppi	3,052	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.86	
Lo = 2.0" Break	Average Elongation @ Break	%				519.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	223.8	N			50.306	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	459.6	N			103.32	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.7	N			133.03	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

Signature.....

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ROLL # **209353-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.61	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 28 mil	AVE:	1.53	mm	60	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.19	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	25	N/mm	146	ppi	2,416	psi
	Average Strength @ Break	32	N/mm	184	ppi	3,052	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.86	
Lo = 2.0" Break	Average Elongation @ Break	%				519.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	223.8	N			50.306	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	459.6	N			103.32	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.7	N			133.03	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209354-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.57	mm	62	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.53	mm	60	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS
Specific Gravity ASTM D792	Density	g/cc		.946
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min		.24
Carbon Black Content ASTM D4218	Range	%		2.15
Carbon Black Dispersion ASTM D5596	Category			10 in Cat. 1
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26 N/mm	149 ppi	2,474 psi
	Average Strength @ Break	31 N/mm	179 ppi	2,972 psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		17.06
Lo = 2.0" Break	Average Elongation @ Break	%		500.5
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-.43
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	223.8 N		50.306 lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	459.6 N		103.32 lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.7 N		133.03 lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209355-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.61	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 28 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151	ppi	2,474	psi
	Average Strength @ Break	32	N/mm	181	ppi	2,972	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.06	
Lo = 2.0" Break	Average Elongation @ Break		%			500.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	223.8	N			50.306	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	459.6	N			103.32	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.7	N			133.03	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209356-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	151	ppi	2,474	psi
	Average Strength @ Break	32	N/mm	181	ppi	2,972	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.06	
Lo = 2.0" Break	Average Elongation @ Break		%			500.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	223.8	N			50.306	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	459.6	N			103.32	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.7	N			133.03	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209357-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.60**	mm	**63**	mil
	AVE:	**1.55**	mm	**61**	mil

Asperity GRI GM12: **28** mil
ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60 mil**
Length.....	**125.455**	m	**411.6** feet
Width.....	**7.00**	m;	**23.0** feet

OIT(Standard) ASTM D3895 minutes **181**

Specific Gravity ASTM D792	Density	g/cc			**.946**	**TEST RESULTS**
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range	%			**2.15**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26** N/mm	**151** ppi		**2,474**	psi
	Average Strength @ Break	**32** N/mm	**181** ppi		**2,972**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**17.06**	
Lo = 2.0" Break	Average Elongation @ Break	%			**500.5**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**223.8** N			**50.306**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**459.6** N			**103.32**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**591.7** N			**133.03**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209358-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.65	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	152	ppi	2,474	psi
	Average Strength @ Break	32	N/mm	183	ppi	2,972	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.06	
Lo = 2.0" Break	Average Elongation @ Break	%				500.5	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	223.8	N			50.306	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	459.6	N			103.32	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	591.7	N			133.03	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209359-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 29 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	154	ppi	2,517	psi
	Average Strength @ Break	33	N/mm	191	ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.26	
Lo = 2.0" Break	Average Elongation @ Break	%				506.6	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.9	N			51.903	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	470.5	N			105.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.3	N			136.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209360-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.66	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	157	ppi	2,517	psi
	Average Strength @ Break	34	N/mm	195	ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.26	
Lo = 2.0" Break	Average Elongation @ Break	%				506.6	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.9	N			51.903	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	470.5	N			105.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.3	N			136.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209361-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.51**	mm	**59**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **33** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.23**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**156**	ppi	**2,517**	psi
	Average Strength @ Break	**34**	N/mm	**194**	ppi	**3,135**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.26**	
Lo = 2.0" Break	Average Elongation @ Break	%				**506.6**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.9**	N			**51.903**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**470.5**	N			**105.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**607.3**	N			**136.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-27-08**

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ROLL # **209362-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.52	mm	60	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.62	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	156	ppi	2,517	psi
	Average Strength @ Break	34	N/mm	194	ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.26	
Lo = 2.0" Break	Average Elongation @ Break		%			506.6	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.9	N			51.903	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	470.5	N			105.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.3	N			136.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209363-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.66	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 31 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.23	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,517	psi
	Average Strength @ Break	34	N/mm	193	ppi	3,135	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.26	
Lo = 2.0" Break	Average Elongation @ Break	%				506.6	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.9	N			51.903	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	470.5	N			105.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.3	N			136.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209364-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.53**	mm	**60**	mil
	MAX:	**1.61**	mm	**63**	mil
Asperity GRI GM12: **34** mil	AVE:	**1.58**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range	%			**2.13**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**162** ppi	**2,601**	psi
	Average Strength @ Break	**32**	N/mm	**182** ppi	**2,925**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%			**15.91**	
Lo = 2.0" Break	Average Elongation @ Break	%			**506.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.9**	N		**51.903**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**470.5**	N		**105.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**607.3**	N		**136.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209365-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.62	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 28 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.13	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	160	ppi	2,601	psi
	Average Strength @ Break	31	N/mm	180	ppi	2,925	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				15.91	
Lo = 2.0" Break	Average Elongation @ Break	%				506.8	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.9	N			51.903	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	470.5	N			105.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.3	N			136.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209366-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 33 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min		.24	
Carbon Black Content ASTM D4218	Range	%		2.13	
Carbon Black Dispersion ASTM D5596	Category			10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	160 ppi	2,601	psi
	Average Strength @ Break	31 N/mm	180 ppi	2,925	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		15.91	
Lo = 2.0" Break	Average Elongation @ Break	%		506.8	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.9 N		51.903	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	470.5 N		105.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.3 N		136.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209367-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.13	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	159	ppi	2,601	psi
	Average Strength @ Break	31	N/mm	178	ppi	2,925	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				15.91	
Lo = 2.0" Break	Average Elongation @ Break	%				506.8	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.9	N			51.903	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	470.5	N			105.78	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.3	N			136.52	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209368-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.45**	mm	**57**	mil
	MAX:	**1.60**	mm	**63**	mil
Asperity GRI GM12: **35** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.13**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**158**	ppi	**2,601**	psi
	Average Strength @ Break	**31**	N/mm	**177**	ppi	**2,925**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**15.91**	
Lo = 2.0" Break	Average Elongation @ Break	%				**506.8**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.9**	N			**51.903**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**470.5**	N			**105.78**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**607.3**	N			**136.52**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209369-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.68	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.58	mm	62	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	156	ppi	2,504	psi
	Average Strength @ Break	44	N/mm	252	ppi	4,050	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.03	
Lo = 2.0" Break	Average Elongation @ Break		%			510.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8	N			51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5	N			90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0	N			136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209370-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.48	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.65	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 33 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

							TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g			g/10 min			.24	
Carbon Black Content ASTM D4218	Range			%			2.15	
Carbon Black Dispersion ASTM D5596	Category						10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi		2,504	psi
	Average Strength @ Break	44	N/mm	250	ppi		4,050	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield			%			17.03	
Lo = 2.0" Break	Average Elongation @ Break			%			510.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8	N				51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5	N				90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0	N				136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs					CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs					ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209371-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.54	mm	61	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.65	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 38 mil	AVE:	1.60	mm	63	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	158	ppi	2,504	psi
	Average Strength @ Break	45	N/mm	255	ppi	4,050	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.03	
Lo = 2.0" Break	Average Elongation @ Break	%				510.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8	N			51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5	N			90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0	N			136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209372-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.54	mm	61	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.73	mm	68	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 32 mil	AVE:	1.62	mm	64	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	160	ppi	2,504	psi
	Average Strength @ Break	45	N/mm	258	ppi	4,050	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.03	
Lo = 2.0" Break	Average Elongation @ Break		%			510.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8	N			51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5	N			90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0	N			136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209373-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.52	mm	60	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.68	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 30 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.15	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	155	ppi	2,504	psi
	Average Strength @ Break	44	N/mm	250	ppi	4,050	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.03	
Lo = 2.0" Break	Average Elongation @ Break	%				510.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8	N			51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5	N			90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0	N			136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209374-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.78	mm	70	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 29 mil	AVE:	1.59	mm	63	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.11	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	29	N/mm	163	ppi	2,608	psi
	Average Strength @ Break	34	N/mm	192	ppi	3,066	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				16.36	
Lo = 2.0" Break	Average Elongation @ Break	%				492.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8	N			51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5	N			90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0	N			136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

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ROLL # **209375-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.67**	mm	**66**	mil
Asperity GRI GM12: **26** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.11**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**161**	ppi	**2,608**	psi
	Average Strength @ Break	**33**	N/mm	**189**	ppi	**3,066**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**16.36**	
Lo = 2.0" Break	Average Elongation @ Break	%				**492.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.8**	N			**51.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**401.5**	N			**90.276**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**607.0**	N			**136.47**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209376-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.42	mm	56	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.70	mm	67	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 33 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g		g/10 min			.24	
Carbon Black Content ASTM D4218	Range		%			2.11	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	161	ppi	2,608	psi
	Average Strength @ Break	33	N/mm	189	ppi	3,066	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			16.36	
Lo = 2.0" Break	Average Elongation @ Break		%			492.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8	N			51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5	N			90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0	N			136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209377-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.51	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 27 mil	AVE:	1.55	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

				TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc		.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min		.24	
Carbon Black Content ASTM D4218	Range	%		2.11	
Carbon Black Dispersion ASTM D5596	Category			10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28 N/mm	159 ppi	2,608	psi
	Average Strength @ Break	33 N/mm	187 ppi	3,066	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%		16.36	
Lo = 2.0" Break	Average Elongation @ Break	%		492.7	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%		-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	228.8 N		51.446	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	401.5 N		90.276	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	607.0 N		136.47	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs		CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs		ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209478-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.68**	mm	**66**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.11**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**161**	ppi	**2,608**	psi
	Average Strength @ Break	**33**	N/mm	**189**	ppi	**3,066**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**16.36**	
Lo = 2.0" Break	Average Elongation @ Break	%				**492.7**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**228.8**	N			**51.446**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**401.5**	N			**90.276**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**607.0**	N			**136.47**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209479-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.66**	mm	**65**	mil
Asperity GRI GM12: **31** mil	AVE:	**1.53**	mm	**60**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range		%			**2.20**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**158**	ppi	**2,616**	psi
	Average Strength @ Break	**30**	N/mm	**169**	ppi	**2,805**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield		%			**15.84**	
	Average Elongation @ Break		%			**461.4**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.3**	N			**51.781**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**480.5**	N			**108.01**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**623.7**	N			**140.21**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

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ROLL # **209480-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.60	mm	63	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.67	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 32 mil	AVE:	1.63	mm	64	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.20	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	29	N/mm	168	ppi	2,616	psi
	Average Strength @ Break	32	N/mm	180	ppi	2,805	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				15.84	
Lo = 2.0" Break	Average Elongation @ Break	%				461.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.3	N			51.781	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	480.5	N			108.01	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	623.7	N			140.21	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209481-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.68	mm	66	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 31 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.20	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	161	ppi	2,616	psi
	Average Strength @ Break	30	N/mm	172	ppi	2,805	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	%				15.84	
	Average Elongation @ Break	%				461.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.3	N			51.781	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	480.5	N			108.01	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	623.7	N			140.21	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209482-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.45**	mm	**57**	mil
	MAX:	**1.67**	mm	**66**	mil
Asperity GRI GM12: **30** mil	AVE:	**1.56**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.20**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**161**	ppi	**2,616**	psi
	Average Strength @ Break	**30**	N/mm	**172**	ppi	**2,805**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**15.84**	
Lo = 2.0" Break	Average Elongation @ Break	%				**461.4**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.3**	N			**51.781**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**480.5**	N			**108.01**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**623.7**	N			**140.21**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209483-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 31 mil	AVE:	1.52	mm	60	mil	OIT(Standard) ASTM D3895 minutes	181	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g	g/10 min				.24	
Carbon Black Content ASTM D4218	Range	%				2.20	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	157	ppi	2,616	psi
	Average Strength @ Break	29	N/mm	168	ppi	2,805	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				15.84	
Lo = 2.0" Break	Average Elongation @ Break	%				461.4	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.43	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.3	N			51.781	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	480.5	N			108.01	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	623.7	N			140.21	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

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ROLL # **209484-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.50**	mm	**59**	mil
	MAX:	**1.67**	mm	**66**	mil
Asperity GRI GM12: **29** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5 mm**		**60 mil**
Length.....	**125.455** m		**411.6** feet
Width.....	**7.00** m;		**23.0** feet
OIT(Standard) ASTM D3895 minutes	**181**		

					TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min			**.24**	
Carbon Black Content ASTM D4218	Range	%			**2.11**	
Carbon Black Dispersion ASTM D5596	Category				**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28** N/mm	**160** ppi		**2,620**	psi
	Average Strength @ Break	**33** N/mm	**189** ppi		**3,103**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield	%			**15.83**	
	Average Elongation @ Break	%			**512.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%			**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.3** N			**51.781**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**480.5** N			**108.01**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**623.7** N			**140.21**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs			**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs			**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

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ROLL # **209485-08** Lot #: **7180145** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.48**	mm	**58**	mil
	MAX:	**1.63**	mm	**64**	mil
Asperity GRI GM12: **30** mil	AVE:	**1.54**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	mm	**60**	mil
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**181**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.24**	
Carbon Black Content ASTM D4218	Range	%				**2.11**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**159**	ppi	**2,620**	psi
	Average Strength @ Break	**33**	N/mm	**188**	ppi	**3,103**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**15.83**	
Lo = 2.0" Break	Average Elongation @ Break	%				**512.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.43**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.3**	N			**51.781**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**480.5**	N			**108.01**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**623.7**	N			**140.21**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

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ROLL # **209486-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	**1.5 mm**	**60 mil**
	MIN:	**1.46**	mm	**57**	mil	Length.....	**125.455** m	**411.6** feet
	MAX:	**1.64**	mm	**65**	mil	Width.....	**7.00** m;	**23.0** feet
Asperity GRI GM12: **34** mil	AVE:	**1.54**	mm	**61**	mil	OIT(Standard) ASTM D3895 minutes **174**		

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.945**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.27**	
Carbon Black Content ASTM D4218	Range	%				**2.11**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**28**	N/mm	**159**	ppi	**2,620**	psi
	Average Strength @ Break	**33**	N/mm	**188**	ppi	**3,103**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**15.83**	
Lo = 2.0" Break	Average Elongation @ Break	%				**512.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.40**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**230.3**	N			**51.781**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**480.5**	N			**108.01**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**623.7**	N			**140.21**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

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quality certificate

ROLL # **209487-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.52	mm	60	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.66	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	174	

ODD # : TOP EVEN #: BOTTOM

							TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc			.945	
MFI ASTM D1238 COND. E GRADE: K307	Melt Flow Index 190ºC /2160 g			g/10 min			.27	
Carbon Black Content ASTM D4218	Range			%			2.11	
Carbon Black Dispersion ASTM D5596	Category						10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	162	ppi		2,620	psi
	Average Strength @ Break	34	N/mm	192	ppi		3,103	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield Lo = 2.0" Break	Average Elongation @ Yield			%			15.83	
	Average Elongation @ Break			%			512.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%			-.40	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.3	N				51.781	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	480.5	N				108.01	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	623.7	N				140.21	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs					CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs					ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

Quality Control Department

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ROLL # **209488-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.49	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.63	mm	64	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	174	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.945	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.27	
Carbon Black Content ASTM D4218	Range		%			2.11	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	28	N/mm	161	ppi	2,620	psi
	Average Strength @ Break	33	N/mm	191	ppi	3,103	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			15.83	
Lo = 2.0" Break	Average Elongation @ Break		%			512.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.40	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	230.3	N			51.781	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	480.5	N			108.01	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	623.7	N			140.21	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

Quality Control Department

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ROLL # **209489-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.52	mm	60	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.61	mm	63	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 34 mil	AVE:	1.56	mm	61	mil	OIT(Standard) ASTM D3895 minutes	174	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.27	
Carbon Black Content ASTM D4218	Range		%			2.11	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	152	ppi	2,472	psi
	Average Strength @ Break	31	N/mm	175	ppi	2,848	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.18	
Lo = 2.0" Break	Average Elongation @ Break		%			479.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.40	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	221.6	N			49.817	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	463.4	N			104.18	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	633.2	N			142.35	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

Quality Control Department

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ROLL # **209490-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.47	mm	58	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 33 mil	AVE:	1.54	mm	61	mil	OIT(Standard) ASTM D3895 minutes	174	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density		g/cc			.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g		g/10 min			.27	
Carbon Black Content ASTM D4218	Range		%			2.11	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	26	N/mm	150	ppi	2,472	psi
	Average Strength @ Break	30	N/mm	173	ppi	2,848	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield		%			17.18	
Lo = 2.0" Break	Average Elongation @ Break		%			479.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change		%			-.40	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	221.6	N			49.817	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	463.4	N			104.18	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	633.2	N			142.35	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

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ROLL # **209491-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH		Thickness.....	1.5 mm	60 mil
	MIN:	1.50	mm	59	mil	Length.....	125.455 m	411.6 feet
	MAX:	1.64	mm	65	mil	Width.....	7.00 m;	23.0 feet
Asperity GRI GM12: 35 mil	AVE:	1.57	mm	62	mil	OIT(Standard) ASTM D3895 minutes	174	

ODD # : TOP EVEN #: BOTTOM

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				.946	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				.27	
Carbon Black Content ASTM D4218	Range	%				2.11	
Carbon Black Dispersion ASTM D5596	Category					10 in Cat. 1	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	27	N/mm	153	ppi	2,472	psi
	Average Strength @ Break	31	N/mm	176	ppi	2,848	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				17.18	
Lo = 2.0" Break	Average Elongation @ Break	%				479.1	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				-.40	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	221.6	N			49.817	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	463.4	N			104.18	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	633.2	N			142.35	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				CERTIFIED	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				ONGOING	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

Quality Control Department

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ROLL # **209492-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.47**	mm	**58**	mil
	MAX:	**1.64**	mm	**65**	mil
Asperity GRI GM12: **34** mil	AVE:	**1.55**	mm	**61**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet
OIT(Standard) ASTM D3895	minutes	**174**		

						TEST RESULTS	
Specific Gravity ASTM D792	Density	g/cc				**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g	g/10 min				**.27**	
Carbon Black Content ASTM D4218	Range	%				**2.11**	
Carbon Black Dispersion ASTM D5596	Category					**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**26**	N/mm	**151**	ppi	**2,472**	psi
	Average Strength @ Break	**30**	N/mm	**174**	ppi	**2,848**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield	%				**17.18**	
Lo = 2.0" Break	Average Elongation @ Break	%				**479.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change	%				**-.40**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**221.6**	N			**49.817**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**463.4**	N			**104.18**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**633.2**	N			**142.35**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500 hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300 hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

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ROLL # **209493-08** Lot #: **7180147** **Liner Type: MICROSPIKE™ HDPE**

Measurement ASTM D5994 (Modified)		METRIC		ENGLISH	
	MIN:	**1.52**	mm	**60**	mil
	MAX:	**1.65**	mm	**65**	mil
Asperity GRI GM12: **28** mil	AVE:	**1.57**	mm	**62**	mil

ODD # : TOP EVEN #: BOTTOM

Thickness.....	**1.5**	**mm**	**60**	**mil**
Length.....	**125.455**	m	**411.6**	feet
Width.....	**7.00**	m;	**23.0**	feet

OIT(Standard) ASTM D3895 minutes **174**

							TEST RESULTS	
Specific Gravity ASTM D792	Density			g/cc			**.946**	
MFI ASTM D1238 COND. E GRADE: **K307**	Melt Flow Index 190ºC /2160 g			g/10 min			**.27**	
Carbon Black Content ASTM D4218	Range			%			**2.11**	
Carbon Black Dispersion ASTM D5596	Category						**10 in Cat. 1**	
Tensile Strength ASTM D6693 ASTM D638 (Modified) (2 inches / minute)	Average Strength @ Yield	**27**	N/mm	**153**	ppi		**2,472**	psi
	Average Strength @ Break	**31**	N/mm	**176**	ppi		**2,848**	psi
Elongation ASTM D6693 ASTM D638 (Modified) (2 inches / minute) Lo = 1.3" Yield	Average Elongation @ Yield			%			**17.18**	
Lo = 2.0" Break	Average Elongation @ Break			%			**479.1**	
Dimensional Stability ASTM D1204 (Modified)	Average Dimensional change			%			**-.40**	
Tear Resistance ASTM D-1004 (Modified)	Average Tear Resistance	**221.6**	N				**49.817**	lbs
Puncture Resistance FTMS 101 Method 2065 (Modified)	Load	**463.4**	N				**104.18**	lbs
Puncture Resistance ASTM D4833 (Modified)	Load	**633.2**	N				**142.35**	lbs
ESCR ASTM D1693	Minimum Hrs w/o Failures	1500	hrs				**CERTIFIED**	
Notched Constant Tensile Load ASTM D5397	pass / fail @ 30%	300	hrs				**ONGOING**	

Customer: **Waste Services, Inc.**
PO: **JED82863 Oak Hammock JED LF**
Destination **St. Cloud, FL**

Date:..... **2-28-08**

Signature.....

Quality Control Department

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12/23/05

CoA Date: 01/29/2008

Certificate of Analysis

Shipped To: AGRU AMERICA INC
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

CPC Delivery #: 87580828
PO #: 004725
Weight: 186800 LB
Ship Date: 01/29/2008
Package: BULK
Mode: Hopper Car
Car #: GOCX058080
Seal No: 250383

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 7180145

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.240	g/10mi
HLMI Flow Rate	ASTM D1238	22.00	g/10mi
Density	ASTM D1505	0.9370	g/cm3
Pellet Count	P02.08.03	27.000	pel/g
Production Date		01/27/2008	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.

Paul S. Newbold
Quality Systems Coordinator

For CoA questions contact Tom Scheirman at 832-813-4637

CoA Date: 01/29/2008

Certificate of Analysis

Shipped To: AGRU AMERICA INC
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: PALMER
Fax:

CPC Delivery #: 87580830
PO #: 004725
Weight: 187000 LB
Ship Date: 01/29/2008
Package: BULK
Mode: Hopper Car
Car #: CHVX889438
Seal No: 250381

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 7180147

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.270	g/10mi
HLMI Flow Rate	ASTM D1238	22.00	g/10mi
Density	ASTM D1505	0.9370	g/cm3
Pellet Count	P02.08.03	28.000	pel/g
Production Date		01/27/2008	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.

Paul S. Newbold
Quality Systems Coordinator

For CoA questions contact Tom Scheirman at 832-813-4637

CERTIFICATE OF ACCEPTANCE
SUBGRADE SURFACE

Geosyntec consultants

WSI Waste Services, Inc.

INSTALLER	PROJECT
NAME: COMANCO	NAME: OAK HAMMOCK DISPOSAL FACILITY (JED CELL 6)
ADDRESS: 4301 STERLING COMMERCE DR. PLANT CITY, FL. 33566	LOCATION: 1501 OMNI WAY ST. CLOUD, FL. 34773
INSTALLER AUTHORIZED REPRESENTATIVE: LUIS ESTINAL	OWNER: WSI

I, The undersigned, duly authorized representative of COMANCO do hereby accept the surface on which the geosynthetics will be installed and shall be responsible for maintaining the suitability of this surface, in accordance with the project specifications. (i.e., The contractor shall not install the geosynthetics until the subgrade surface is acceptable. Installation of the geosynthetics will be considered acceptance of the subgrade.)

PRIMARY: [ ] SECONDARY: [✓] OTHER: _____

DATE	PANEL NOS.	SIGNATURE
3-18-08	S-1 – S-32	Luis Espi
3-19-08	S-33 – S-41	Luis Espi
3-20-08	S-42 – S-53	Luis Espi
3-21-08	S-53 – S-73	Luis Espi
3-22-08	S-74 – S-77	Luis Espi
3-24-08	S-78 – 90	Luis Espi
3-25-08	S-91 – 110	Luis Espi
3-26-08	S-111 – 155	Luis Espi
3-27-08	S-156 – S-183	Luis Espi
3-28-08	S-184 – S-197	Luis Espi
4-9-08	S-198 – 210	Luis Espi
4-23-08	S-211 – 215	Luis Espi

April 10, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-27-08
Material(s) Tested:	8 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-27-08

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-P-1**	**Panel:**						
Weld:	**Heat Fusion**	**SM P-2/3**						
							Peel A	
Side A	Peel Strength (ppi)	139	149	144	145	151	146	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	161	126	153	150	118	142	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	193	190	192	193	192	192	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-P-2**	**Panel:**						
Weld:	**Heat Fusion**	**SM P-4/5**						
							Peel A	
Side A	Peel Strength (ppi)	146	130	124	139	134	135	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	123	129	125	120	133	126	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	188	190	189	190	186	189	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-27-08

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-3**	**Panel:**						
Weld:		**Heat Fusion**	**SM P-6/7**						
Side A	Peel Strength (ppi)		145	142	145	141	139	Peel A 142	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		148	148	136	133	142	Peel B 141	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		183	190	189	189	187	Shear 188	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-4**	**Panel:**						
Weld:		**Heat Fusion**	**SM P-8/9**						
Side A	Peel Strength (ppi)		125	128	125	128	121	Peel A 125	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		123	119	123	125	123	Peel B 123	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		195	196	197	193	190	Shear 194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-27-08

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-P-5**	**Panel:**						
Weld:	**Heat Fusion**	**SM P-10/11**						
Side A	Peel Strength (ppi)	131	125	130	120	125	Peel A 126	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)	129	130	127	123	123	Peel B 126	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)	195	198	194	193	197	Shear 195	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-P-6**	**Panel:**						
Weld:	**Heat Fusion**	**SM P-12/13**						
Side A	Peel Strength (ppi)	130	153	150	121	148	Peel A 140	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)	128	125	138	127	129	Peel B 129	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)	200	202	198	201	196	Shear 199	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-27-08

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-7**	**Panel:**						
Weld:		**Heat Fusion**	**SM P-19/35**						
								Peel A	
Side A	Peel Strength (ppi)		135	132	130	124	123	129	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		146	129	142	150	141	142	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		164	161	163	159	158	161	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-8**	**Panel:**						
Weld:		**Heat Fusion**	**SM P-20/21**						
								Peel A	
Side A	Peel Strength (ppi)		141	143	140	140	136	140	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		143	138	143	137	143	141	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		213	210	210	211	206	210	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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April 25, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner**
TRI Job Reference Number:	E2310-48-05
Material(s) Tested:	11 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-48-05

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-P-9**	**Panel:**						
Weld:	**Heat Fusion**	**P-1/40**						
							Peel A	
Side A	Peel Strength (ppi)	156	154	155	155	153	155	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	150	147	151	149	156	151	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	188	187	188	187	189	188	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-P-10**	**Panel:**						
Weld:	**Heat Fusion**	**P-41/43**						
							Peel A	
Side A	Peel Strength (ppi)	144	159	140	163	161	153	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	125	115	145	149	123	131	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	178	178	178	179	178	178	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-48-05

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-11**	**Panel:**						
Weld:		**Heat Fusion**	**P-44/46**						
								Peel A	
Side A	Peel Strength (ppi)		157	147	160	144	138	149	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		155	162	144	153	132	149	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		189	189	191	188	192	190	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-12**	**Panel:**						
Weld:		**Heat Fusion**	**P-47/49**						
								Peel A	
Side A	Peel Strength (ppi)		152	148	147	144	146	147	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		125	120	140	124	128	127	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		183	185	184	186	185	185	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-48-05

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-P-13**	**Panel:**						
	Weld:	**Heat Fusion**	**P-50/52**						
								Peel A	
Side A	Peel Strength (ppi)		144	135	139	140	142	140	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		143	132	147	143	155	144	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		186	187	186	188	188	187	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-P-14**	**Panel:**						
	Weld:	**Heat Fusion**	**P-54/55**						
								Peel A	
Side A	Peel Strength (ppi)		149	143	148	144	143	145	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		147	128	149	128	131	137	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		179	179	179	180	183	180	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-48-05

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-15**	**Panel:**						
Weld:		**Heat Fusion**	**P-56/58**						
								Peel A	
Side A	Peel Strength (ppi)		156	155	152	160	154	155	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		157	140	152	151	147	149	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		187	186	184	186	187	186	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-16**	**Panel:**						
Weld:		**Heat Fusion**	**P-60/61**						
								Peel A	
Side A	Peel Strength (ppi)		140	149	136	155	133	143	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		142	124	141	126	147	136	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		185	185	186	189	187	186	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-48-05

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-17**	**Panel:**						
Weld:		**Heat Fusion**	**P-63/65**						
								Peel A	
Side A	Peel Strength (ppi)		143	143	143	142	149	144	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		127	130	126	130	128	128	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		185	182	180	182	182	182	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-18**	**Panel:**						
Weld:		**Heat Fusion**	**P-64/70**						
								Peel A	
Side A	Peel Strength (ppi)		134	119	151	155	146	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		151	144	135	152	156	148	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		162	163	162	161	163	162	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-48-05

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-P-19**	**Panel:**						
	Weld:	**Heat Fusion**	**P-73/75**						
								Peel A	
Side A	Peel Strength (ppi)		138	142	139	134	131	137	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		145	143	138	142	131	140	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		159	160	161	161	165	161	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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April 30, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner**
TRI Job Reference Number:	E2310-53-07
Material(s) Tested:	13 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-53-07

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-20**	**Panel:**						
Weld:		**Heat Fusion**	**P-83/84**						
								Peel A	
Side A	Peel Strength (ppi)		141	154	153	153	151	150	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		116	117	121	116	115	117	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		191	191	189	190	192	191	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-29**	**Panel:**						
Weld:		**Heat Fusion**	**P-148/149**						
								Peel A	
Side A	Peel Strength (ppi)		141	149	126	132	135	137	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		146	151	145	141	136	144	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		197	198	197	197	200	198	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-53-07

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-30**	**Panel:**						
Weld:		**Heat Fusion**	**P-147/148**						
Side A	Peel Strength (ppi)		131	133	122	130	128	Peel A 129	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		139	130	136	139	133	Peel B 135	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		199	199	196	195	200	Shear 198	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-31**	**Panel:**						
Weld:		**Heat Fusion**	**P-146/147**						
Side A	Peel Strength (ppi)		142	145	133	134	132	Peel A 137	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		140	143	143	141	141	Peel B 142	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		201	198	199	197	204	Shear 200	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-53-07

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-P-32**	**Panel:**						
	Weld:	**Heat Fusion**	**P-145/146**						
								Peel A	
Side A	Peel Strength (ppi)		125	123	126	125	127	125	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		134	146	138	134	140	138	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		189	189	187	189	190	189	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-P-33**	**Panel:**						
	Weld:	**Heat Fusion**	**P-144/145**						
								Peel A	
Side A	Peel Strength (ppi)		123	118	149	143	143	135	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		146	149	152	150	148	149	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		194	194	191	194	194	193	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-53-07

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-34**	**Panel:**						
Weld:		**Heat Fusion**	**P-143/144**						
								Peel A	
Side A	Peel Strength (ppi)		124	123	120	122	124	123	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		137	133	139	133	140	136	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		192	194	191	190	191	192	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-35**	**Panel:**						
Weld:		**Heat Fusion**	**P-142/143**						
								Peel A	
Side A	Peel Strength (ppi)		130	129	128	145	132	133	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		154	145	135	147	134	143	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		194	194	197	193	195	195	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-53-07

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-36**	**Panel:**						
Weld:		**Heat Fusion**	**P-140/142**						
								Peel A	
Side A	Peel Strength (ppi)		118	112	122	119	150	124	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		129	140	146	136	120	134	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		195	193	197	195	192	194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-37**	**Panel:**						
Weld:		**Heat Fusion**	**P-139/140**						
								Peel A	
Side A	Peel Strength (ppi)		132	130	128	130	131	130	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		163	161	156	136	157	155	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		199	191	193	195	193	194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-53-07

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-38**	**Panel:**						
Weld:		**Heat Fusion**	**P-138/139**						
								Peel A	
Side A	Peel Strength (ppi)		152	150	149	146	151	150	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		143	147	142	142	140	143	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		197	201	196	196	198	198	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-39**	**Panel:**						
Weld:		**Heat Fusion**	**P-136/138**						
								Peel A	
Side A	Peel Strength (ppi)		132	127	127	130	132	130	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		151	147	150	145	152	149	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		196	194	198	195	192	195	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-53-07

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-P-40**	**Panel:**						
	Weld:	**Heat Fusion**	**P-133/135**						
								Peel A	
Side A	Peel Strength (ppi)		142	139	142	139	142	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		140	136	138	136	135	137	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		210	208	206	208	206	208	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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April 29, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

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cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner**
TRI Job Reference Number:	E2310-51-04
Material(s) Tested:	8 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-51-04

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-P-21**	**Panel:**						
	Weld:	**Heat Fusion**	**P-99/100**						
Side A	Peel Strength (ppi)		146	150	136	147	147	Peel A: 145	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		131	119	134	128	120	Peel B: 126	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		176	174	176	179	178	Shear: 177	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-P-22**	**Panel:**						
	Weld:	**Heat Fusion**	**P-82/106**						
Side A	Peel Strength (ppi)		118	72	128	125	136	Peel A: 116	91 min
Side A	Peel Incursion (%)		<10	75	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	AD-BRK	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		130	123	136	144	124	Peel B: 131	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		167	164	164	163	163	Shear: 164	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-51-04

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-23**	**Panel:**						
Weld:		**Heat Fusion**	**P-106/107**						
								Peel A	
Side A	Peel Strength (ppi)		143	141	136	142	145	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		144	132	139	142	148	141	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		187	183	184	185	183	184	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-24**	**Panel:**						
Weld:		**Heat Fusion**	**P-107/108**						
								Peel A	
Side A	Peel Strength (ppi)		131	133	128	131	128	130	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		146	139	157	144	148	147	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		188	185	186	186	185	186	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-51-04

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-25**	**Panel:**						
Weld:		**Heat Fusion**	**P-108/109**						
Side A	Peel Strength (ppi)		126	127	126	124	126	Peel A 126	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		151	121	132	120	137	Peel B 132	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		183	182	180	180	180	Shear 181	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-26**	**Panel:**						
Weld:		**Heat Fusion**	**P-109/110**						
Side A	Peel Strength (ppi)		132	131	125	131	138	Peel A 131	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		135	121	121	145	120	Peel B 128	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		183	180	177	179	177	Shear 179	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-51-04

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-27**	**Panel:**						
Weld:		**Heat Fusion**	**P-110/111**						
Side A	Peel Strength (ppi)		127	128	127	127	127	Peel A 127	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		146	133	147	146	145	Peel B 143	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		191	191	189	190	188	Shear 190	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-28**	**Panel:**						
Weld:		**Heat Fusion**	**P-111/112**						
Side A	Peel Strength (ppi)		130	118	126	126	129	Peel A 126	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		129	124	124	127	122	Peel B 125	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		185	183	182	183	185	Shear 184	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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May 1, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner**
TRI Job Reference Number:	E2310-55-06
Material(s) Tested:	14 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-55-06

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-P-41**	**Panel:**						
Weld:	**Heat Fusion**	**P-129/130**						
							Peel A	
Side A	Peel Strength (ppi)	147	151	144	139	139	144	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	144	160	158	155	141	152	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	197	196	194	197	193	195	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-P-42**	**Panel:**						
Weld:	**Heat Fusion**	**P-126/128**						
							Peel A	
Side A	Peel Strength (ppi)	138	138	137	141	139	139	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	144	134	135	131	133	135	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	210	209	207	208	201	207	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-55-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-43**	**Panel:**						
Weld:		**Heat Fusion**	**P-149/150**						
								Peel A	
Side A	Peel Strength (ppi)		122	123	120	125	120	122	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		136	131	134	134	136	134	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	189	190	190	192	191	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-44**	**Panel:**						
Weld:		**Heat Fusion**	**P-150/151**						
								Peel A	
Side A	Peel Strength (ppi)		138	133	132	134	137	135	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		130	129	130	126	124	128	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	191	189	191	191	191	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-55-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-45**	**Panel:**						
Weld:		**Heat Fusion**	**P-151/152**						
								Peel A	
Side A	Peel Strength (ppi)		140	139	137	140	139	139	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		140	134	147	156	126	141	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		186	183	185	183	182	184	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-46**	**Panel:**						
Weld:		**Heat Fusion**	**P-152/153**						
								Peel A	
Side A	Peel Strength (ppi)		130	146	142	147	142	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		135	120	129	131	126	128	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		195	193	193	196	191	194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-55-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-47**	**Panel:**						
Weld:		**Heat Fusion**	**P-154/155**						
								Peel A	
Side A	Peel Strength (ppi)		140	142	144	119	139	137	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		145	141	145	141	137	142	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		182	181	177	183	182	181	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-48**	**Panel:**						
Weld:		**Heat Fusion**	**P-155/156**						
								Peel A	
Side A	Peel Strength (ppi)		153	146	149	150	146	149	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		137	139	136	144	135	138	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		178	187	184	183	184	183	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-55-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-P-49**	**Panel:**						
	Weld:	**Heat Fusion**	**P-88/Cell 3**						
								Peel A	
Side A	Peel Strength (ppi)		143	144	121	133	122	133	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		139	142	148	139	144	142	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		162	162	158	158	157	159	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-P-50**	**Panel:**						
	Weld:	**Heat Fusion**	**P-161/164**						
								Peel A	
Side A	Peel Strength (ppi)		116	133	120	113	113	119	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		139	137	135	141	141	139	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	192	184	189	189	189	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-55-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-51**	**Panel:**						
Weld:		**Heat Fusion**	**P-160/161**						
								Peel A	
Side A	Peel Strength (ppi)		139	140	147	141	141	142	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		116	115	123	124	125	121	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		207	206	208	206	205	206	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-52**	**Panel:**						
Weld:		**Heat Fusion**	**P-158/159**						
								Peel A	
Side A	Peel Strength (ppi)		126	126	126	126	126	126	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		137	133	138	125	123	131	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		192	191	188	190	191	190	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-55-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-53**	**Panel:**						
Weld:		**Heat Fusion**	**P-159/160**						
								Peel A	
Side A	Peel Strength (ppi)		149	151	153	147	148	150	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		139	139	141	139	137	139	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		182	195	192	194	187	190	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-54**	**Panel:**						
Weld:		**Heat Fusion**	**P-49/137**						
								Peel A	
Side A	Peel Strength (ppi)		136	136	138	138	136	137	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		112	106	112	111	116	111	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		157	155	156	154	157	156	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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TRI / Environmental, Inc.
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May 2, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner**
TRI Job Reference Number:	E2310-57-02
Material(s) Tested:	2 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

TRI / Environmental, Inc.
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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants
Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Textured/Microspike HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-57-02

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-P-55**	**Panel:**						
Weld:	**Heat Fusion**	**P-138/Cell 5**						
							Peel A	
Side A Peel Strength (ppi)		154	144	150	146	152	149	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		149	139	133	130	147	140	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		166	168	163	167	167	166	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:	**D/S-P-56**	**Panel:**						
Weld:	**Heat Fusion**	**P-166/Cell 5**						
							Peel A	
Side A Peel Strength (ppi)		139	140	138	136	142	139	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		139	132	116	139	142	134	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		166	165	163	166	164	165	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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TRI / Environmental, Inc.
A Texas Research International Company

May 9, 2008

Mail To:

Mr. Kirk Wills
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Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner**
TRI Job Reference Number:	E2310-66-08
Material(s) Tested:	3 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Textured/Microspike HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-66-08

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-P-57**	**Panel:**						
Weld:		**Heat Fusion**	**SMP-112/188**						
								Peel A	
Side A	Peel Strength (ppi)		117	117	119	124	124	120	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		119	140	128	123	153	133	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		181	175	175	176	170	175	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-P-58**	**Panel:**						
Weld:		**Heat Fusion**	**SMP-149/187**						
								Peel A	
Side A	Peel Strength (ppi)		138	141	142	137	139	139	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		156	157	159	157	151	156	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		166	160	161	160	165	162	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Primary Liner

Material: Textured/Microspike HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-66-08

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-P-59**	**Panel:**						
	Weld:	**Heat Fusion**	**SMP-181/184**						
								Peel A	
Side A	Peel Strength (ppi)		125	126	125	123	121	124	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		145	137	137	144	160	145	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		195	195	193	194	192	194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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March 24, 2008

Mail To:

Mr. Kirk Wills
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Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), CELL 6, Secondary Liner**
TRI Job Reference Number:	E2310-05-02
Material(s) Tested:	8 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-05-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-1**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	141	147	142	142	139	142	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	139	141	140	142	135	139	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	191	191	190	192	184	190	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S2**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	138	155	155	152	152	150	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	155	156	147	141	138	147	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	169	168	167	169	166	168	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-05-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S3**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	136	134	134	133	131	134	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	148	142	150	151	144	147	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	189	186	185	188	178	185	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S-4**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	144	131	132	125	135	133	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	134	126	126	139	130	131	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	184	181	182	183	176	181	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-05-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S5**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	118	119	124	116	122	120	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	130	127	127	127	132	129	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	180	175	176	177	175	177	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S6**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	127	126	125	124	122	125	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	119	121	119	120	117	119	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	185	184	185	184	185	185	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-05-02

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S7**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	128	130	132	132	134	131	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	160	158	149	156	157	156	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	183	181	182	181	178	181	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S8**							
Weld:	**Heat Fusion**							
							Peel A	
Side A	Peel Strength (ppi)	121	126	117	130	124	124	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	160	159	151	159	160	158	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	185	182	182	184	181	183	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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TRI / Environmental, Inc.
A Texas Research International Company

March 25, 2008

Mail To:

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Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), CELL 6, Secondary Liner**
TRI Job Reference Number:	E2310-07-01
Material(s) Tested:	10 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at
1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-07-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S9**	**Panel:**						
Weld:	**Heat Fusion**	**S-42/43**						
							Peel A	
Side A	Peel Strength (ppi)	157	146	152	149	144	150	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	140	143	143	120	144	138	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	186	189	189	188	189	188	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S10**	**Panel:**						
Weld:	**Heat Fusion**	**S-44/45**						
							Peel A	
Side A	Peel Strength (ppi)	138	141	138	151	145	143	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	120	125	119	132	139	127	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	196	188	193	194	197	194	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-07-01

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-11**	**Panel:**						
Weld:		**Heat Fusion**	**S-47/48**						
								Peel A	
Side A	Peel Strength (ppi)		137	138	151	141	137	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		129	128	130	132	129	130	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		187	193	192	189	195	191	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S12**	**Panel:**						
Weld:		**Heat Fusion**	**S-50/51**						
								Peel A	
Side A	Peel Strength (ppi)		140	139	138	141	140	140	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		130	127	125	148	150	136	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		187	188	191	190	188	189	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-07-01

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-13**	**Panel:**						
Weld:		**Heat Fusion**	**S-52/53**						
								Peel A	
Side A	Peel Strength (ppi)		136	133	135	134	132	134	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		138	138	125	148	126	135	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		187	194	194	194	195	193	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S15**	**Panel:**						
Weld:		**Heat Fusion**	**S-54/55**						
								Peel A	
Side A	Peel Strength (ppi)		135	143	143	141	142	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		134	118	119	120	120	122	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		182	188	183	185	187	185	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-07-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-16**	**Panel:**						
Weld:	**Heat Fusion**	**S-57/58**						
							Peel A	
Side A	Peel Strength (ppi)	144	141	153	142	144	145	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	124	136	137	144	119	132	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	177	179	177	182	180	179	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S17**	**Panel:**						
Weld:	**Heat Fusion**	**S-59/60**						
							Peel A	
Side A	Peel Strength (ppi)	133	131	132	132	133	132	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	137	140	137	140	134	138	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	191	185	185	185	187	187	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-07-01

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-18**	**Panel:**						
Weld:	**Heat Fusion**	**S-64/65**						
							Peel A	
Side A	Peel Strength (ppi)	137	133	134	131	135	134	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	148	148	155	164	164	156	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	184	183	184	183	182	183	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S20**	**Panel:**						
Weld:	**Heat Fusion**	**S-67/68**						
							Peel A	
Side A	Peel Strength (ppi)	136	133	132	135	143	136	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	119	132	127	128	130	127	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	181	181	179	184	182	181	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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March 26, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), CELL 6, Secondary Liner**
TRI Job Reference Number:	E2310-08-05
Material(s) Tested:	6 Heat Fusion Weld Seam(s) 1 Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-08-05

			TEST REPLICATE NUMBER						PROJ.
PARAMETER			**1**	**2**	**3**	**4**	**5**	**MEAN**	**SPEC.**
Sample ID:	**D/S-S14**	**Panel:**							
Weld:	**Heat Fusion**	**S-29/41**							
								Peel A	
Side A	Peel Strength (ppi)		141	115	136	131	131	131	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		151	132	149	135	131	140	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		170	170	169	169	170	170	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:	**D/S-S19**	**Panel:**							
Weld:	**Heat Fusion**	**S-65/66**							
								Peel A	
Side A	Peel Strength (ppi)		144	141	140	142	143	142	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		128	137	138	135	134	134	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		161	160	158	130	162	154	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-08-05

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S21**	**Panel:**						
Weld:	**Heat Fusion**	**S-72/73**						
							Peel A	
Side A	Peel Strength (ppi)	144	137	143	145	143	142	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	142	137	143	139	126	137	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	189	191	191	191	189	190	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S22**	**Panel:**						
Weld:	**Heat Fusion**	**S-62/74**						
							Peel A	
Side A	Peel Strength (ppi)	159	137	153	148	149	149	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	131	133	131	127	129	130	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	170	172	172	173	170	171	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-08-05

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S23**	**Panel:**						
	Weld:	**Heat Fusion**	**S-35/Cell 3**						
								Peel A	
Side A	Peel Strength (ppi)		143	142	150	124	148	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	75	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	AD-BRK	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		144	114	153	122	116	130	91 min
Side B	Peel Incursion (%)		<10	75	<10	50	25		10 max
Side B	Peel Locus of Failure Code		SE	AD-BRK	SE	AD-BRK	AD-BRK		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		180	174	171	173	168	173	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-S24**	**Panel:**						
	Weld:	**Single Extrusion**	**S-4/Cell 3**						
								Peel	
	Peel Strength (ppi)		169	167	160	169	164	166	78 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		174	172	171	172	173	172	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-08-05

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S25**	**Panel:**						
	Weld:	**Heat Fusion**	**S-84/85**						
								Peel A	
Side A	Peel Strength (ppi)		143	139	138	139	138	139	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		140	136	137	154	123	138	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		195	193	192	191	194	193	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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April 2, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-15-10
Material(s) Tested:	5 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-15-10

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-23A**	**Panel:**						
Weld:	**Heat Fusion**	**SM-S-34/CELL 5**						
							Peel A	
Side A	Peel Strength (ppi)	103	112	151	134	139	128	91 min
Side A	Peel Incursion (%)	25	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	AD-BRK	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	141	138	136	137	133	137	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	166	164	168	167	166	166	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID:	**D/S-S-23B**	**Panel:**						
Weld:	**Heat Fusion**	**SM-S-36/CELL 5**						
							Peel A	
Side A	Peel Strength (ppi)	130	126	130	117	127	126	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	151	137	149	152	140	146	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	174	175	172	175	173	174	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-15-10

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-41**	**Panel:**						
Weld:		**Heat Fusion**	**SMS-132/134**						
								Peel A	
Side A	Peel Strength (ppi)		128	133	128	130	129	130	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		153	122	123	127	125	130	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		194	194	192	191	193	193	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-42**	**Panel:**						
Weld:		**Heat Fusion**	**SMS-147-154**						
								Peel A	
Side A	Peel Strength (ppi)		128	125	127	124	126	126	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		123	141	120	166	128	136	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	191	192	190	188	191	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-15-10

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S-43**	**Panel:**						
	Weld:	**Heat Fusion**	**SMS-S140/144**						
								Peel A	
Side A	Peel Strength (ppi)		124	126	123	128	122	125	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		157	155	162	156	143	155	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		195	194	191	191	193	193	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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March 27, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-09-10
Material(s) Tested:	9 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-09-10

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S-26**	**Panel:**						
	Weld:	**Heat Fusion**	**S-88/89**						
								Peel A	
Side A	Peel Strength (ppi)		128	132	131	134	129	131	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		117	157	156	116	116	132	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		185	186	186	187	185	186	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-S-27**	**Panel:**						
	Weld:	**Heat Fusion**	**S-93/94**						
								Peel A	
Side A	Peel Strength (ppi)		123	118	124	123	121	122	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		162	152	149	158	158	156	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		184	189	183	185	184	185	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-09-10

			TEST REPLICATE NUMBER						
PARAMETER			**1**	**2**	**3**	**4**	**5**	**MEAN**	**PROJ. SPEC.**
Sample ID:		**D/S-S-28**	**Panel:**						
Weld:		**Heat Fusion**	**S-92/93**						
								Peel A	
Side A	Peel Strength (ppi)		143	144	140	145	140	142	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		123	134	145	134	131	133	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	194	193	195	194	194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-29**	**Panel:**						
Weld:		**Heat Fusion**	**S-91/92**						
								Peel A	
Side A	Peel Strength (ppi)		138	134	134	136	129	134	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		131	125	149	126	125	131	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	193	194	194	195	194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-09-10

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-30**	**Panel:**						
Weld:		**Heat Fusion**	**S-90/91**						
								Peel A	
Side A	Peel Strength (ppi)		130	128	128	129	129	129	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		137	137	135	138	154	140	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		188	189	186	185	188	187	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-31**	**Panel:**						
Weld:		**Heat Fusion**	**S-89/90**						
								Peel A	
Side A	Peel Strength (ppi)		130	131	130	130	126	129	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		149	127	143	154	154	145	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	194	194	195	194	194	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-09-10

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-32**	**Panel:**						
Weld:	**Heat Fusion**	**S-94/95**						
							Peel A	
Side A Peel Strength (ppi)		128	126	130	122	127	127	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		128	120	121	125	121	123	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		192	190	180	192	189	189	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:	**D/S-S-33**	**Panel:**						
Weld:	**Heat Fusion**	**S-95/97**						
							Peel A	
Side A Peel Strength (ppi)		155	157	151	153	150	153	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		156	136	133	127	123	135	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		188	188	189	188	190	189	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-09-10

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-34**	**Panel:**						
Weld:	**Heat Fusion**	**S-97/100**						
							Peel A	
Side A Peel Strength (ppi)		144	141	138	142	139	141	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		134	139	135	137	136	136	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		189	188	186	187	190	188	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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March 28, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-11-06
Material(s) Tested:	6 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-11-06

	PARAMETER	TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID: D/S-S-35	**Panel:**							
Weld: Heat Fusion	**S-102/103**							
							Peel A	
Side A	Peel Strength (ppi)	141	126	131	122	127	129	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	120	123	123	125	126	123	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	188	186	187	188	187	187	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		
Sample ID: D/S-S-36	**Panel:**							
Weld: Heat Fusion	**S-103/106**							
							Peel A	
Side A	Peel Strength (ppi)	133	138	129	131	131	132	91 min
Side A	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B	Peel Strength (ppi)	143	138	146	146	136	142	91 min
Side B	Peel Incursion (%)	<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code	SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear	
	Shear Strength (ppi)	192	189	192	189	189	190	120 min
	Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

GeosyntheticTesting.com
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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-11-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S-37**	**Panel:**						
	Weld:	**Heat Fusion**	**S-107/109**						
								Peel A	
Side A	Peel Strength (ppi)		144	141	134	137	137	139	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		140	158	137	158	139	146	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	190	187	191	191	190	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-S-38**	**Panel:**						
	Weld:	**Heat Fusion**	**S-111/113**						
								Peel A	
Side A	Peel Strength (ppi)		143	140	136	138	145	140	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		162	132	144	132	160	146	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		191	189	190	189	187	189	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-11-06

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-39**	**Panel:**						
Weld:		**Heat Fusion**	**S-116/117**						
								Peel A	
Side A	Peel Strength (ppi)		141	162	138	158	163	152	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		123	120	123	118	120	121	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		183	186	184	185	186	185	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-40**	**Panel:**						
Weld:		**Heat Fusion**	**S-123/124**						
								Peel A	
Side A	Peel Strength (ppi)		149	148	141	145	143	145	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		131	127	129	127	128	128	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		193	191	192	190	191	191	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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April 3, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-18-03
Material(s) Tested:	9 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-18-03

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-44**	**Panel:**						
Weld:		**Heat Fusion**	**S-86/156**						
								Peel A	
Side A	Peel Strength (ppi)		131	134	131	133	126	131	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		136	140	135	138	133	136	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		215	209	209	212	208	211	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-45**	**Panel:**						
Weld:		**Heat Fusion**	**S-85/159**						
								Peel A	
Side A	Peel Strength (ppi)		147	152	146	148	142	147	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		143	140	143	144	139	142	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		175	173	172	173	170	173	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-18-03

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-46**	**Panel:**						
Weld:		**Heat Fusion**	**S-160/161**						
								Peel A	
Side A	Peel Strength (ppi)		128	128	129	133	123	128	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		149	124	150	123	153	140	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		198	199	199	197	199	198	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-47**	**Panel:**						
Weld:		**Heat Fusion**	**S-162/S163**						
								Peel A	
Side A	Peel Strength (ppi)		144	146	148	144	141	145	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		152	149	150	154	147	150	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		167	160	161	166	165	164	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-18-03

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S-49**	**Panel:**						
	Weld:	**Heat Fusion**	**S-165/168**						
								Peel A	
Side A	Peel Strength (ppi)		131	145	131	156	132	139	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		140	136	162	173	129	148	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		201	201	200	204	201	201	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-S-50**	**Panel:**						
	Weld:	**Heat Fusion**	**S-169/170**						
								Peel A	
Side A	Peel Strength (ppi)		140	151	137	137	137	140	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		138	147	129	138	143	139	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		199	196	197	199	197	198	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-18-03

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-51**	**Panel:**						
Weld:		**Heat Fusion**	**S-172/173**						
								Peel A	
Side A	Peel Strength (ppi)		158	155	143	157	155	154	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		140	139	139	139	140	139	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		176	179	175	180	177	177	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-53**	**Panel:**						
Weld:		**Heat Fusion**	**S-194/196**						
								Peel A	
Side A	Peel Strength (ppi)		131	128	129	126	126	128	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		137	130	131	139	130	133	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		203	206	203	197	205	203	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-18-03

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-54**	**Panel:**						
Weld:	**Heat Fusion**	**S-190/193**						
							Peel A	
Side A Peel Strength (ppi)		133	131	126	133	124	129	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		126	121	122	124	121	123	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		197	198	197	198	197	197	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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April 4, 2008

Mail To:

Mr. Kirk Wills
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14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

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cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-19-08
Material(s) Tested:	4 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-19-08

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S-48**	**Panel:**						
	Weld:	**Heat Fusion**	**SMS-164/165**						
								Peel A	
Side A	Peel Strength (ppi)		142	143	139	139	140	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		154	146	156	140	143	148	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		198	193	192	191	185	192	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-S-52**	**Panel:**						
	Weld:	**Heat Fusion**	**SMS-176/183**						
								Peel A	
Side A	Peel Strength (ppi)		142	140	140	140	144	141	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		141	141	144	142	141	142	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		170	170	171	172	171	171	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)
TRI Log #: E2310-19-08

PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:	**D/S-S-55**	**Panel:**						
Weld:	**Heat Fusion**	**SMS-186/188**						
							Peel A	
Side A Peel Strength (ppi)		136	134	135	142	145	138	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		137	136	136	135	135	136	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		194	192	189	193	191	192	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:	**D/S-S-56**	**Panel:**						
Weld:	**Heat Fusion**	**SMS-173/177**						
							Peel A	
Side A Peel Strength (ppi)		126	121	121	133	124	125	91 min
Side A Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Peel B	
Side B Peel Strength (ppi)		156	153	156	153	140	152	91 min
Side B Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
							Shear	
Shear Strength (ppi)		188	188	189	188	187	188	120 min
Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

TRI / Environmental, Inc.
A Texas Research International Company

April 11, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-28-10
Material(s) Tested:	4 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at
1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-28-10

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-57**	**Panel:**						
Weld:		**Heat Fusion**	**SM S-103/Cell 5**						
								Peel A	
Side A	Peel Strength (ppi)		140	136	125	143	135	136	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		142	136	138	139	132	137	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		153	154	150	155	156	154	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-58**	**Panel:**						
Weld:		**Heat Fusion**	**SM S-202/207**						
								Peel A	
Side A	Peel Strength (ppi)		149	145	147	150	142	147	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		144	147	143	142	144	144	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		158	155	158	157	162	158	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-28-10

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
Sample ID:		**D/S-S-59**	**Panel:**						
Weld:		**Heat Fusion**	**SM S-196/199**						
Side A	Peel Strength (ppi)		135	134	140	134	138	Peel A 136	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		134	133	139	137	141	Peel B 137	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		155	156	154	157	158	Shear 156	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
Sample ID:		**D/S-S-60**	**Panel:**						
Weld:		**Heat Fusion**	**SM S-73/198**						
Side A	Peel Strength (ppi)		150	134	139	140	129	Peel A 138	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
Side B	Peel Strength (ppi)		119	121	119	123	114	Peel B 119	91 min
	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
	Shear Strength (ppi)		170	169	168	173	171	Shear 170	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

TRI / Environmental, Inc.
A Texas Research International Company

April 24, 2008

Mail To:

Mr. Kirk Wills
Geosyntec Consultants
14055 Riveredge Dr., Ste. 300
Tampa, FL 33637

e-mail: kwills@geosyntec.com
cc email: dhamilton@geosyntec.com
Fax: 813-558-9726 - Attn: Kirk Wills
Site Fax: 407-891-3730

Bill To:

<= Same

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner**
TRI Job Reference Number:	E2310-44-08
Material(s) Tested:	2 Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

Codes	
AD	Adhesion failure (100% Peel)
BRK	Break in sheeting away from Seam edge
SE	Break in sheeting at edge of seam
AD-BRK	Break in sheeting after some adhesion failure - partial peel
SIP	Separation in the plane of the sheet (leaving the bond intact)
FTB	Film tearing bond (all non "AD" failures)
NON-FTB	100% peel

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer T. Tenney

Jennifer Tenney
Project Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geosyntec Consultants

Project: JED Solid Waste Landfill (Oak Hammock), Cell 6, Secondary Liner

Material: Smooth HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54)

TRI Log #: E2310-44-08

	PARAMETER		TEST REPLICATE NUMBER 1	2	3	4	5	MEAN	PROJ. SPEC.
	Sample ID:	**D/S-S-61**	**Panel:**						
	Weld:	**Heat Fusion**	**SM S-214/215**						
								Peel A	
Side A	Peel Strength (ppi)		154	147	146	141	155	149	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		123	133	130	128	121	127	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		180	179	178	177	178	178	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		
	Sample ID:	**D/S-S-62**	**Panel:**						
	Weld:	**Heat Fusion**	**SM S-211/212**						
								Peel A	
Side A	Peel Strength (ppi)		133	142	135	136	134	136	91 min
Side A	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side A	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side A	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Peel B	
Side B	Peel Strength (ppi)		125	120	123	123	142	127	91 min
Side B	Peel Incursion (%)		<10	<10	<10	<10	<10		10 max
Side B	Peel Locus of Failure Code		SE	SE	SE	SE	SE		FTB
Side B	Peel NSF Failure Code		FTB	FTB	FTB	FTB	FTB		
								Shear	
	Shear Strength (ppi)		180	181	178	183	179	180	120 min
	Shear Elongation @ Break (%)		>50	>50	>50	>50	>50		

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

SKAPS Industries (Nonwoven Division)
335, Athena Drive
Athens, GA 30601 (U.S.A.)
Phone (706) 354-3700 Fax (706) 354-3737
E-mail: info@skaps.com

Sales Office:
Engineered Synthetic Product Inc.
Phone: (770)564-1857
Fax: (770)564-1818

February 11, 2008
Waste Services Inc.
7025 East Greenway Parkway,
Suite 100
Scottsdale, AZ 85524
Ref : Oak Hammock-JED Landfill # 6, FL
PO : JED Landfill # 6

Dear Sir/Madam:

This is to certify that SKAPS GE180 is a high quality needle-punched nonwoven geotextile made of 100% polypropylene staple fibers, randomly networked to form a high strength dimensionally stable fabric.SKAPS GE180 resists ultraviolet deterioration, rotting, biological degradation. The fabric is inert to commonly encountered soil chemicals. Polypropylene is stable within a pH range of 2 to 13. SKAPS GE180 conforms to the property values listed below:

PROPERTY	TEST METHOD	UNITS	M.A.R.V. Minimum Average Roll Value
Weight	ASTM D 5261	oz/sy (g/m^2)	8.00 (271)
Grab Tensile	ASTM D 4632	lbs (kN)	200 (0.89)
Trapezoidal Tear	ASTM D 4533	lbs (kN)	75 (0.33)
CBR Puncture	ASTM D 6241	psi (kN)	500 (2.22)
Puncture Resistance	ASTM D 4833	lbs (kN)	90 (0.40)
Permittivity*	ASTM D 4491	sec^{-1}	0.50
UV Resistance	ASTM D 4355	%/hrs	70/500

Notes:
* At the time of manufacturing. Handling may change these properties.

ANURAG SHAH
QUALITY CONTROL MANAGER

Product : GE180-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 8.00	MD TENSILE D4632 lbs. 200	XMD TENSILE D4632 lbs 200	MD TRAP D4533 lbs. 75	XMD TRAP D4533 lbs 75	CBR PUNCTURE D6241 psi 500	PUNCTURE D4833 lbs. 90	PERMITTIVITY D4491 sec^{-1} 0.50
2648.001	8.59	229	232	96	109	694	133	1.35
2648.002	8.59	229	232	96	109	694	133	1.35
2648.003	8.59	229	232	96	109	694	133	1.35
2648.004	8.59	229	232	96	109	694	133	1.35
2648.005	8.11	231	239	96	109	694	133	1.35
2648.006	8.11	231	239	96	109	694	133	1.35
2648.007	8.11	231	239	96	109	694	133	1.35
2648.008	8.11	231	239	96	109	694	133	1.35
2648.009	8.11	231	239	96	109	694	133	1.35
2648.010	8.27	226	241	102	113	707	140	1.35
2648.011	8.27	226	241	102	113	707	140	1.35
2648.012	8.27	226	241	102	113	707	140	1.35
2648.013	8.27	226	241	102	113	707	140	1.35
2648.014	8.27	226	241	102	113	707	140	1.35
2648.015	8.19	234	236	102	113	707	140	1.35
2648.016	8.19	234	236	102	113	707	140	1.35
2648.017	8.19	234	236	102	113	707	140	1.35
2648.018	8.19	234	236	102	113	707	140	1.35
2648.019	8.19	234	236	102	113	707	140	1.35
2648.020	8.34	228	230	99	106	688	136	1.35
2648.021	8.34	228	230	99	106	688	136	1.35
2648.022	8.34	228	230	99	106	688	136	1.35
2648.023	8.34	228	230	99	106	688	136	1.35
2648.024	8.34	228	230	99	106	688	136	1.35
2648.025	8.15	232	245	99	106	688	136	1.35
2648.026	8.15	232	245	99	106	688	136	1.35
2648.027	8.15	232	245	99	106	688	136	1.35

*All Values are MARV.

Product : GE180-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 8.00	MD TENSILE D4632 lbs. 200	XMD TENSILE D4632 lbs 200	MD TRAP D4533 lbs. 75	XMD TRAP D4533 lbs 75	CBR PUNCTURE D6241 psi 500	PUNCTURE D4833 lbs. 90	PERMITTIVITY D4491 sec^{-1} 0.50
2648.028	8.15	232	245	99	106	688	136	1.35
2648.029	8.15	232	245	99	106	688	136	1.35
2648.030	8.48	225	238	105	119	702	132	1.35
2648.031	8.48	225	238	105	119	702	132	1.35
2648.032	8.48	225	238	105	119	702	132	1.35
2648.033	8.48	225	238	105	119	702	132	1.35
2648.034	8.48	225	238	105	119	702	132	1.35
2648.035	8.53	235	240	105	119	702	132	1.35
2648.036	8.53	235	240	105	119	702	132	1.35
2648.037	8.53	235	240	105	119	702	132	1.35
2648.038	8.53	235	240	105	119	702	132	1.35
2648.039	8.53	235	240	105	119	702	132	1.35
2648.040	8.12	227	242	97	102	691	139	1.35
2648.041	8.12	227	242	97	102	691	139	1.35
2648.042	8.12	227	242	97	102	691	139	1.35
2648.043	8.12	227	242	97	102	691	139	1.35
2648.044	8.12	227	242	97	102	691	139	1.35
2648.045	8.25	233	235	97	102	691	139	1.35
2648.046	8.25	233	235	97	102	691	139	1.35
2648.047	8.25	233	235	97	102	691	139	1.35
2648.048	8.25	233	235	97	102	691	139	1.35
2648.049	8.25	233	235	97	102	691	139	1.35
2648.050	8.37	230	231	103	111	700	135	1.39
2648.051	8.37	230	231	103	111	700	135	1.39
2648.052	8.37	230	231	103	111	700	135	1.39
2648.053	8.37	230	231	103	111	700	135	1.39
2648.054	8.37	230	231	103	111	700	135	1.39

*All Values are MARV.

Product : GE180-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 8.00	MD TENSILE D4632 lbs. 200	XMD TENSILE D4632 lbs 200	MD TRAP D4533 lbs. 75	XMD TRAP D4533 lbs 75	CBR PUNCTURE D6241 psi 500	PUNCTURE D4833 lbs. 90	PERMITTIVITY D4491 sec^{-1} 0.50
2648.055	8.20	226	244	103	111	700	135	1.39
2648.056	8.20	226	244	103	111	700	135	1.39
2648.057	8.20	226	244	103	111	700	135	1.39
2648.058	8.20	226	244	103	111	700	135	1.39
2648.059	8.20	226	244	103	111	700	135	1.39
2648.060	8.56	232	233	95	108	686	130	1.39
2648.061	8.56	232	233	95	108	686	130	1.39
2648.062	8.56	232	233	95	108	686	130	1.39
2648.063	8.56	232	233	95	108	686	130	1.39
2648.064	8.56	232	233	95	108	686	130	1.39
2648.065	8.42	235	237	95	108	686	130	1.39
2648.066	8.42	235	237	95	108	686	130	1.39
2648.067	8.42	235	237	95	108	686	130	1.39
2648.068	8.42	235	237	95	108	686	130	1.39
2648.069	8.42	235	237	95	108	686	130	1.39
2648.070	8.14	228	241	101	117	718	137	1.39
2648.071	8.14	228	241	101	117	718	137	1.39
2648.072	8.14	228	241	101	117	718	137	1.39
2648.073	8.14	228	241	101	117	718	137	1.39
2648.074	8.14	228	241	101	117	718	137	1.39
2648.075	8.38	231	232	101	117	718	137	1.39
2648.076	8.38	231	232	101	117	718	137	1.39
2648.077	8.38	231	232	101	117	718	137	1.39
2648.078	8.38	231	232	101	117	718	137	1.39
2648.079	8.38	231	232	101	117	718	137	1.39
2648.080	8.23	225	240	98	105	699	134	1.39
2648.081	8.23	225	240	98	105	699	134	1.39

*All Values are MARV.

Product : GE180-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 8.00	MD TENSILE D4632 lbs. 200	XMD TENSILE D4632 lbs 200	MD TRAP D4533 lbs. 75	XMD TRAP D4533 lbs 75	CBR PUNCTURE D6241 psi 500	PUNCTURE D4833 lbs. 90	PERMITTIVITY D4491 sec^{-1} 0.50
2648.082	8.23	225	240	98	105	699	134	1.39
2648.083	8.23	225	240	98	105	699	134	1.39
2648.084	8.23	225	240	98	105	699	134	1.39
2648.085	8.50	234	243	98	105	699	134	1.39
2648.086	8.50	234	243	98	105	699	134	1.39
2648.087	8.50	234	243	98	105	699	134	1.39
2648.088	8.50	234	243	98	105	699	134	1.39
2648.089	8.50	234	243	98	105	699	134	1.39
2648.090	8.52	227	236	104	120	712	130	1.39
2648.091	8.52	227	236	104	120	712	130	1.39
2648.092	8.52	227	236	104	120	712	130	1.39
2648.093	8.52	227	236	104	120	712	130	1.39
2648.094	8.52	227	236	104	120	712	130	1.39
2648.095	8.31	232	233	104	120	712	130	1.39
2648.096	8.31	232	233	104	120	712	130	1.39
2648.097	8.31	232	233	104	120	712	130	1.39
2648.098	8.31	232	233	104	120	712	130	1.39
2648.099	8.31	232	233	104	120	712	130	1.39
2648.100	8.14	229	245	96	103	683	136	1.32
2648.101	8.14	229	245	96	103	683	136	1.32
2648.102	8.14	229	245	96	103	683	136	1.32
2648.103	8.14	229	245	96	103	683	136	1.32
2648.104	8.14	229	245	96	103	683	136	1.32
2648.105	8.60	235	238	96	103	683	136	1.32
2648.106	8.60	235	238	96	103	683	136	1.32
2648.107	8.60	235	238	96	103	683	136	1.32
2648.108	8.60	235	238	96	103	683	136	1.32

*All Values are MARV.

Product : GE180-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 8.00	MD TENSILE D4632 lbs. 200	XMD TENSILE D4632 lbs 200	MD TRAP D4533 lbs. 75	XMD TRAP D4533 lbs 75	CBR PUNCTURE D6241 psi 500	PUNCTURE D4833 lbs. 90	PERMITTIVITY D4491 sec^{-1} 0.50
2648.109	8.60	235	238	96	103	683	136	1.32
2648.110	8.45	225	230	102	115	709	133	1.32
2648.111	8.45	225	230	102	115	709	133	1.32
2648.112	8.45	225	230	102	115	709	133	1.32
2648.113	8.45	225	230	102	115	709	133	1.32
2648.114	8.45	225	230	102	115	709	133	1.32
2648.115	8.23	233	242	102	115	709	133	1.32
2648.116	8.23	233	242	102	115	709	133	1.32
2648.117	8.23	233	242	102	115	709	133	1.32
2648.118	8.23	233	242	102	115	709	133	1.32
2648.119	8.23	233	242	102	115	709	133	1.32
2648.120	8.17	228	235	99	106	695	131	1.32
2648.121	8.17	228	235	99	106	695	131	1.32
2648.122	8.17	228	235	99	106	695	131	1.32
2648.123	8.17	228	235	99	106	695	131	1.32
2648.124	8.17	228	235	99	106	695	131	1.32
2648.125	8.10	230	239	99	106	695	131	1.32
2648.126	8.10	230	239	99	106	695	131	1.32
2648.127	8.10	230	239	99	106	695	131	1.32
2648.128	8.10	230	239	99	106	695	131	1.32
2648.129	8.10	230	239	99	106	695	131	1.32
2648.130	8.41	232	244	105	112	713	138	1.32
2648.131	8.41	232	244	105	112	713	138	1.32
2648.132	8.41	232	244	105	112	713	138	1.32
2648.133	8.41	232	244	105	112	713	138	1.32
2648.134	8.41	232	244	105	112	713	138	1.32
2648.135	8.56	235	237	105	112	713	138	1.32

*All Values are MARV.

Product : GE180-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 8.00	MD TENSILE D4632 lbs. 200	XMD TENSILE D4632 lbs 200	MD TRAP D4533 lbs. 75	XMD TRAP D4533 lbs 75	CBR PUNCTURE D6241 psi 500	PUNCTURE D4833 lbs. 90	PERMITTIVITY D4491 sec^{-1} 0.50
2648.136	8.56	235	237	105	112	713	138	1.32
2648.137	8.56	235	237	105	112	713	138	1.32
2648.138	8.56	235	237	105	112	713	138	1.32
2648.139	8.56	235	237	105	112	713	138	1.32
2648.140	8.22	226	231	97	110	682	135	1.32
2648.141	8.22	226	231	97	110	682	135	1.32
2648.142	8.22	226	231	97	110	682	135	1.32
2648.143	8.22	226	231	97	110	682	135	1.32
2648.144	8.22	226	231	97	110	682	135	1.32
2648.145	8.18	231	241	97	110	682	135	1.32
2648.146	8.18	231	241	97	110	682	135	1.32
2648.147	8.18	231	241	97	110	682	135	1.32
2648.148	8.18	231	241	97	110	682	135	1.32
2648.149	8.18	231	241	97	110	682	135	1.32
2648.150	8.34	229	234	103	118	717	140	1.37
2648.151	8.34	229	234	103	118	717	140	1.37
2648.152	8.34	229	234	103	118	717	140	1.37
2648.153	8.34	229	234	103	118	717	140	1.37
2648.154	8.34	229	234	103	118	717	140	1.37
2648.155	8.46	234	238	103	118	717	140	1.37
2648.156	8.46	234	238	103	118	717	140	1.37
2648.157	8.46	234	238	103	118	717	140	1.37
2648.158	8.46	234	238	103	118	717	140	1.37
2648.159	8.46	234	238	103	118	717	140	1.37
2648.160	8.21	227	243	95	108	690	132	1.37
2648.161	8.21	227	243	95	108	690	132	1.37
2648.162	8.21	227	243	95	108	690	132	1.37

*All Values are MARV.

Product : GE180-15

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 8.00	MD TENSILE D4632 lbs. 200	XMD TENSILE D4632 lbs 200	MD TRAP D4533 lbs. 75	XMD TRAP D4533 lbs 75	CBR PUNCTURE D6241 psi 500	PUNCTURE D4833 lbs. 90	PERMITTIVITY D4491 sec^{-1} 0.50
2648.163	8.21	227	243	95	108	690	132	1.37
2648.164	8.21	227	243	95	108	690	132	1.37

*All Values are MARV.

SKAPS Industries

Engineered Synthetic Products, Inc.

February 11, 2008
Waste Services, Inc.
7025 East Greenway Parkway,
Suite 100
Scottsdale, AZ 85524

Ref. : Oak Hammock - JED Landfill #6, FL
Customer P.O. # JED Landfill #6
Transnet 330-2-8

We certify that the Transnet 330-2-8 drainage composite, meets the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Required Value	Qualifier
Geonet[4]				
Mass per Unit Area	ASTM D 5261	lbs/ft^2	0.162	Minimum
Thickness	ASTM D 5199	mil	200	Minimum
Carbon Black	ASTM D 4218	%	2 - 3	Range
Tensile Strength	ASTM D 5035	lbs/in	45	Minimum
Melt Flow	ASTM D 1238[3]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.94	Minimum
Composite				
Ply Adhesion	GRI GC7	lb/in	1.0	MARV[6]
Transmissivity[1]	ASTM D 4716	m^2/sec	1.5 x 10^{-3}	MARV
Transmissivity[2]	ASTM D 4716	m^2/sec	1.0 x 10^{-3}	MARV
Geotextile[4 & 5]				
Fabric Weight	ASTM D 5261	oz/yd^2	8.0	MARV
Grab Strength	ASTM D 4632	lbs	200	MARV
Tear Strength	ASTM D 4533	lbs	75	MARV
CBR Puncture	ASTM D 6241	psi	500	MARV
Puncture Resistance	ASTM D 4833	lbs	90	MARV
Permittivity	ASTM D 4491	sec^{-1}	0.5	MARV

Notes:

1 Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.02 and a confining pressure of 500 psf between soil & textured liner after 24 hours.

2 Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.02 and a confining pressure of 15000 psf between soil & textured liner after 100 hours.

3 Condition 190/2.16

4 Geotextile and Geonet properties are prior to lamination.

5 Geotextile data is provided by the supplier.

6 MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

Sincerely,
Nilay Patel
Nilay Patel
QA Manager

571 Industrial Parkway, Commerce, GA 30529 **Phone**: 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820001	264820001 - N	2648.099	2648.087	1.58	2.42	
2	264820002	264820002 - N	2648.099	2648.087			
3	264820003	264820003 - N	2648.099	2648.087			
4	264820004	264820004 - N	2648.099	2648.087			
5	264820005	264820005 - N	2648.099	2648.087			
6	264820006	264820006 - N	2648.099	2648.087			
7	264820007	264820007 - N	2648.085	2648.108			
8	264820008	264820008 - N	2648.085	2648.108			
9	264820009	264820009 - N	2648.085	2648.108			
10	264820010	264820010 - N	2648.085	2648.108	1.32	2.11	
11	264820011	264820011 - N	2648.085	2648.108			
12	264820012	264820012 - N	2648.085	2648.108			
13	264820013	264820013 - N	2648.103	2648.083			
14	264820014	264820014 - N	2648.103	2648.083			
15	264820015	264820015 - N	2648.103	2648.083			
16	264820016	264820016 - N	2648.103	2648.083			
17	264820017	264820017 - N	2648.103	2648.083			
18	264820018	264820018 - N	2648.103	2648.083			
19	264820019	264820019 - N	2648.089	2648.097			
20	264820020	264820020 - N	2648.089	2648.097	1.49	2.32	
21	264820021	264820021 - N	2648.089	2648.097			
22	264820022	264820022 - N	2648.089	2648.097			
23	264820023	264820023 - N	2648.089	2648.097			
24	264820024	264820024 - N	2648.089	2648.097			
25	264820025	264820025 - N	2648.106	2648.086			
26	264820026	264820026 - N	2648.106	2648.086			
27	264820027	264820027 - N	2648.106	2648.086			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820001 - N	UTCX59648	0.9534	0.370	317	2.62	110	
264820002 - N	UTCX59648	0.9534					
264820003 - N	UTCX59648	0.9534					
264820004 - N	UTCX59648	0.9534					
264820005 - N	UTCX59648	0.9534					
264820006 - N	UTCX59648	0.9534					
264820007 - N	UTCX59648	0.9534					
264820008 - N	UTCX59648	0.9534					
264820009 - N	UTCX59648	0.9534					
264820010 - N	UTCX59648	0.9534	0.366	313	2.43	107	
264820011 - N	UTCX59648	0.9534					
264820012 - N	UTCX59648	0.9534					
264820013 - N	UTCX59648	0.9534					
264820014 - N	UTCX59648	0.9534					
264820015 - N	UTCX59648	0.9534					
264820016 - N	UTCX59648	0.9534					
264820017 - N	UTCX59648	0.9534					
264820018 - N	UTCX59648	0.9534					
264820019 - N	UTCX59648	0.9534					
264820020 - N	UTCX59648	0.9534	0.373	319	2.71	112	
264820021 - N	UTCX59648	0.9534					
264820022 - N	UTCX59648	0.9534					
264820023 - N	UTCX59648	0.9534					
264820024 - N	UTCX59648	0.9534					
264820025 - N	UTCX59648	0.9534					
264820026 - N	UTCX59648	0.9534					
264820027 - N	UTCX59648	0.9534					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820028	264820028 - N	2648.106	2648.086			
2	264820029	264820029 - N	2648.106	2648.086			
3	264820030	264820030 - N	2648.106	2648.086	1.21	1.89	
4	264820031	264820031 - N	2648.091	2648.100			
5	264820032	264820032 - N	2648.091	2648.100			
6	264820033	264820033 - N	2648.091	2648.100			
7	264820034	264820034 - N	2648.091	2648.100			
8	264820035	264820035 - N	2648.091	2648.100			
9	264820036	264820036 - N	2648.091	2648.100			
10	264820037	264820037 - N	2648.102	2648.088			
11	264820038	264820038 - N	2648.102	2648.088			
12	264820039	264820039 - N	2648.102	2648.088			
13	264820040	264820040 - N	2648.102	2648.088	1.52	2.48	
14	264820041	264820041 - N	2648.102	2648.088			
15	264820042	264820042 - N	2648.102	2648.088			
16	264820043	264820043 - N	2648.084	2648.104			
17	264820044	264820044 - N	2648.084	2648.104			
18	264820045	264820045 - N	2648.084	2648.104			
19	264820046	264820046 - N	2648.084	2648.104			
20	264820047	264820047 - N	2648.084	2648.104			
21	264820048	264820048 - N	2648.084	2648.104			
22	264820049	264820049 - N	2648.096	2648.092			
23	264820050	264820050 - N	2648.096	2648.092	1.36	2.19	
24	264820051	264820051 - N	2648.096	2648.092			
25	264820052	264820052 - N	2648.096	2648.092			
26	264820053	264820053 - N	2648.096	2648.092			
27	264820054	264820054 - N	2648.096	2648.092			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820028 - N	UTCX59648	0.9534					
264820029 - N	UTCX59648	0.9534					
264820030 - N	UTCX59648	0.9534	0.364	310	2.52	108	
264820031 - N	UTCX59648	0.9534					
264820032 - N	UTCX59648	0.9534					
264820033 - N	UTCX59648	0.9534					
264820034 - N	UTCX59648	0.9534					
264820035 - N	UTCX59648	0.9534					
264820036 - N	UTCX59648	0.9534					
264820037 - N	UTCX59648	0.9534					
264820038 - N	UTCX59648	0.9534					
264820039 - N	UTCX59648	0.9534					
264820040 - N	UTCX59648	0.9534	0.369	321	2.68	111	
264820041 - N	UTCX59648	0.9534					
264820042 - N	UTCX59648	0.9534					
264820043 - N	UTCX59648	0.9534					
264820044 - N	UTCX59648	0.9534					
264820045 - N	UTCX59648	0.9534					
264820046 - N	UTCX59648	0.9534					
264820047 - N	UTCX59648	0.9534					
264820048 - N	UTCX59648	0.9534					
264820049 - N	UTCX59648	0.9534					
264820050 - N	UTCX59648	0.9534	0.361	315	2.41	109	
264820051 - N	UTCX59648	0.9534					
264820052 - N	UTCX59648	0.9534					
264820053 - N	UTCX59648	0.9534					
264820054 - N	UTCX59648	0.9534					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820055	264820055 - N	2648.090	2648.098			
2	264820056	264820056 - N	2648.090	2648.098			
3	264820057	264820057 - N	2648.090	2648.098			
4	264820058	264820058 - N	2648.090	2648.098			
5	264820059	264820059 - N	2648.090	2648.098			
6	264820060	264820060 - N	2648.090	2648.098	1.43	2.30	
7	264820061	264820061 - N	2648.101	2648.094			
8	264820062	264820062 - N	2648.101	2648.094			
9	264820063	264820063 - N	2648.101	2648.094			
10	264820064	264820064 - N	2648.101	2648.094			
11	264820065	264820065 - N	2648.101	2648.094			
12	264820066	264820066 - N	2648.101	2648.094			
13	264820067	264820067 - N	2648.093	2648.107			
14	264820068	264820068 - N	2648.093	2648.107			
15	264820069	264820069 - N	2648.093	2648.107			
16	264820070	264820070 - N	2648.093	2648.107	1.29	1.87	
17	264820071	264820071 - N	2648.093	2648.107			
18	264820072	264820072 - N	2648.093	2648.107			
19	264820073	264820073 - N	2648.105	2648.095			
20	264820074	264820074 - N	2648.105	2648.095			
21	264820075	264820075 - N	2648.105	2648.095			
22	264820076	264820076 - N	2648.105	2648.095			
23	264820077	264820077 - N	2648.105	2648.095			
24	264820078	264820078 - N	2648.105	2648.095			
25	264820079	264820079 - N	2648.111	2648.124			
26	264820080	264820080 - N	2648.111	2648.124	1.56	2.44	
27	264820081	264820081 - N	2648.111	2648.124			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820055 - N	UTCX59648	0.9534					
264820056 - N	UTCX59648	0.9534					
264820057 - N	UTCX59648	0.9534					
264820058 - N	UTCX59648	0.9534					
264820059 - N	UTCX59648	0.9534					
264820060 - N	UTCX59648	0.9534	0.367	323	2.79	112	
264820061 - N	UTCX59648	0.9534					
264820062 - N	UTCX59648	0.9534					
264820063 - N	UTCX59648	0.9534					
264820064 - N	UTCX59648	0.9534					
264820065 - N	UTCX59648	0.9534					
264820066 - N	UTCX59648	0.9534					
264820067 - N	UTCX59648	0.9534					
264820068 - N	UTCX59648	0.9534					
264820069 - N	UTCX59648	0.9534					
264820070 - N	UTCX59648	0.9534	0.363	312	2.50	107	
264820071 - N	UTCX59648	0.9534					
264820072 - N	UTCX59648	0.9534					
264820073 - N	UTCX59648	0.9534					
264820074 - N	UTCX59648	0.9534					
264820075 - N	UTCX59648	0.9534					
264820076 - N	UTCX59648	0.9534					
264820077 - N	UTCX59648	0.9534					
264820078 - N	UTCX59648	0.9534					
264820079 - N	UTCX59648	0.9534					
264820080 - N	UTCX59648	0.9534	0.371	318	2.66	110	
264820081 - N	UTCX59648	0.9534					

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Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820082	264820082 - N	2648.111	2648.124			
2	264820083	264820083 - N	2648.111	2648.124			
3	264820084	264820084 - N	2648.111	2648.124			
4	264820085	264820085 - N	2648.128	2648.115			
5	264820086	264820086 - N	2648.128	2648.115			
6	264820087	264820087 - N	2648.128	2648.115			
7	264820088	264820088 - N	2648.128	2648.115			
8	264820089	264820089 - N	2648.128	2648.115			
9	264820090	264820090 - N	2648.128	2648.115	1.38	2.13	
10	264820091	264820091 - N	2648.109	2648.130			
11	264820092	264820092 - N	2648.109	2648.130			
12	264820093	264820093 - N	2648.109	2648.130			
13	264820094	264820094 - N	2648.109	2648.130			
14	264820095	264820095 - N	2648.109	2648.130			
15	264820096	264820096 - N	2648.109	2648.130			
16	264820097	264820097 - N	2648.122	2648.117			
17	264820098	264820098 - N	2648.122	2648.117			
18	264820099	264820099 - N	2648.122	2648.117			
19	264820100	264820100 - N	2648.122	2648.117	1.47	2.38	
20	264820101	264820101 - N	2648.122	2648.117			
21	264820102	264820102 - N	2648.122	2648.117			
22	264820103	264820103 - N	2648.114	2648.133			
23	264820104	264820104 - N	2648.114	2648.133			
24	264820105	264820105 - N	2648.114	2648.133			
25	264820106	264820106 - N	2648.114	2648.133			
26	264820107	264820107 - N	2648.114	2648.133			
27	264820108	264820108 - N	2648.114	2648.133			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820082 - N	UTCX59648	0.9534					
264820083 - N	UTCX59648	0.9534					
264820084 - N	UTCX59648	0.9534					
264820085 - N	UTCX59648	0.9534					
264820086 - N	UTCX59648	0.9534					
264820087 - N	UTCX59648	0.9534					
264820088 - N	UTCX59648	0.9534					
264820089 - N	UTCX59648	0.9534					
264820090 - N	UTCX59648	0.9534	0.365	314	2.49	108	
264820091 - N	UTCX59648	0.9534					
264820092 - N	UTCX59648	0.9534					
264820093 - N	UTCX59648	0.9534					
264820094 - N	UTCX59648	0.9534					
264820095 - N	UTCX59648	0.9534					
264820096 - N	UTCX59648	0.9534					
264820097 - N	UTCX59648	0.9534					
264820098 - N	UTCX59648	0.9534					
264820099 - N	UTCX59648	0.9534					
264820100 - N	UTCX59648	0.9534	0.368	322	2.77	111	
264820101 - N	UTCX59648	0.9534					
264820102 - N	UTCX59648	0.9534					
264820103 - N	UTCX59648	0.9534					
264820104 - N	UTCX59648	0.9534					
264820105 - N	UTCX59648	0.9534					
264820106 - N	UTCX59648	0.9534					
264820107 - N	UTCX59648	0.9534					
264820108 - N	UTCX59648	0.9534					

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 Fax: 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820109	264820109 - N	2648.126	2648.110			
2	264820110	264820110 - N	2648.126	2648.110	1.23	1.83	
3	264820111	264820111 - N	2648.126	2648.110			
4	264820112	264820112 - N	2648.126	2648.110			
5	264820113	264820113 - N	2648.126	2648.110			
6	264820114	264820114 - N	2648.126	2648.110			
7	264820115	264820115 - N	2648.116	2648.135			
8	264820116	264820116 - N	2648.116	2648.135			
9	264820117	264820117 - N	2648.116	2648.135			
10	264820118	264820118 - N	2648.116	2648.135			
11	264820119	264820119 - N	2648.116	2648.135			
12	264820120	264820120 - N	2648.116	2648.135	1.50	2.40	
13	264820121	264820121 - N	2648.131	2648.119			
14	264820122	264820122 - N	2648.131	2648.119			
15	264820123	264820123 - N	2648.131	2648.119			
16	264820124	264820124 - N	2648.131	2648.119			
17	264820125	264820125 - N	2648.131	2648.119			
18	264820126	264820126 - N	2648.131	2648.119			
19	264820127	264820127 - N	2648.118	2648.127			
20	264820128	264820128 - N	2648.118	2648.127			
21	264820129	264820129 - N	2648.118	2648.127			
22	264820130	264820130 - N	2648.118	2648.127	1.34	2.17	
23	264820131	264820131 - N	2648.118	2648.127			
24	264820132	264820132 - N	2648.118	2648.127			
25	264820133	264820133 - N	2648.129	2648.113			
26	264820134	264820134 - N	2648.129	2648.113			
27	264820135	264820135 - N	2648.129	2648.113			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820109 - N	UTCX59648	0.9534					
264820110 - N	UTCX59648	0.9534	0.362	311	2.39	109	
264820111 - N	UTCX59648	0.9534					
264820112 - N	UTCX59648	0.9534					
264820113 - N	UTCX59648	0.9534					
264820114 - N	UTCX59648	0.9534					
264820115 - N	UTCX59648	0.9534					
264820116 - N	UTCX59648	0.9534					
264820117 - N	UTCX59648	0.9534					
264820118 - N	UTCX59648	0.9534					
264820119 - N	UTCX59648	0.9534					
264820120 - N	UTCX59648	0.9534	0.372	320	2.64	112	
264820121 - N	UTCX59648	0.9534					
264820122 - N	UTCX59648	0.9534					
264820123 - N	UTCX59648	0.9534					
264820124 - N	UTCX59648	0.9534					
264820125 - N	UTCX59648	0.9534					
264820126 - N	UTCX59648	0.9534					
264820127 - N	UTCX59648	0.9534					
264820128 - N	UTCX59648	0.9534					
264820129 - N	UTCX59648	0.9534					
264820130 - N	UTCX59648	0.9534	0.370	316	2.45	107	
264820131 - N	UTCX59648	0.9534					
264820132 - N	UTCX59648	0.9534					
264820133 - N	UTCX59648	0.9534					
264820134 - N	UTCX59648	0.9534					
264820135 - N	UTCX59648	0.9534					

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 Fax: 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820136	264820136 - N	2648.129	2648.113			
2	264820137	264820137 - N	2648.129	2648.113			
3	264820138	264820138 - N	2648.129	2648.113			
4	264820139	264820139 - N	2648.120	2648.125			
5	264820140	264820140 - N	2648.120	2648.125	1.57	2.36	
6	264820141	264820141 - N	2648.120	2648.125			
7	264820142	264820142 - N	2648.120	2648.125			
8	264820143	264820143 - N	2648.120	2648.125			
9	264820144	264820144 - N	2648.120	2648.125			
10	264820145	264820145 - N	2648.132	2648.112			
11	264820146	264820146 - N	2648.132	2648.112			
12	264820147	264820147 - N	2648.132	2648.112			
13	264820148	264820148 - N	2648.132	2648.112			
14	264820149	264820149 - N	2648.132	2648.112			
15	264820150	264820150 - N	2648.132	2648.112	1.25	1.81	
16	264820151	264820151 - N	2648.123	2648.134			
17	264820152	264820152 - N	2648.123	2648.134			
18	264820153	264820153 - N	2648.123	2648.134			
19	264820154	264820154 - N	2648.123	2648.134			
20	264820155	264820155 - N	2648.123	2648.134			
21	264820156	264820156 - N	2648.123	2648.134			
22	264820157	264820157 - N	2648.148	2648.121			
23	264820158	264820158 - N	2648.148	2648.121			
24	264820159	264820159 - N	2648.148	2648.121			
25	264820160	264820160 - N	2648.148	2648.121	1.54	2.46	
26	264820161	264820161 - N	2648.148	2648.121			
27	264820162	264820162 - N	2648.148	2648.121			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820136 - N	UTCX59648	0.9534					
264820137 - N	UTCX59648	0.9534					
264820138 - N	UTCX59648	0.9534					
264820139 - N	UTCX59648	0.9534					
264820140 - N	UTCX59648	0.9534	0.364	321	2.75	110	
264820141 - N	UTCX59648	0.9534					
264820142 - N	UTCX59648	0.9534					
264820143 - N	UTCX59648	0.9534					
264820144 - N	UTCX59648	0.9534					
264820145 - N	UTCX59648	0.9534					
264820146 - N	UTCX59648	0.9534					
264820147 - N	UTCX59648	0.9534					
264820148 - N	UTCX59648	0.9534					
264820149 - N	UTCX59648	0.9534					
264820150 - N	UTCX59648	0.9534	0.373	313	2.37	108	
264820151 - N	UTCX59648	0.9534					
264820152 - N	UTCX59648	0.9534					
264820153 - N	UTCX59648	0.9534					
264820154 - N	UTCX59648	0.9534					
264820155 - N	UTCX59648	0.9534					
264820156 - N	UTCX59648	0.9534					
264820157 - N	UTCX59648	0.9534					
264820158 - N	UTCX59648	0.9534					
264820159 - N	UTCX59648	0.9534					
264820160 - N	UTCX59648	0.9534	0.366	317	2.60	111	
264820161 - N	UTCX59648	0.9534					
264820162 - N	UTCX59648	0.9534					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820163	264820163 - N	2648.136	2648.158			
2	264820164	264820164 - N	2648.136	2648.158			
3	264820165	264820165 - N	2648.136	2648.158			
4	264820166	264820166 - N	2648.136	2648.158			
5	264820167	264820167 - N	2648.136	2648.158			
6	264820168	264820168 - N	2648.136	2648.158			
7	264820169	264820169 - N	2648.153	2648.141			
8	264820170	264820170 - N	2648.153	2648.141	1.30	2.15	
9	264820171	264820171 - N	2648.153	2648.141			
10	264820172	264820172 - N	2648.153	2648.141			
11	264820173	264820173 - N	2648.153	2648.141			
12	264820174	264820174 - N	2648.153	2648.141			
13	264820175	264820175 - N	2648.139	2648.150			
14	264820176	264820176 - N	2648.139	2648.150			
15	264820177	264820177 - N	2648.139	2648.150			
16	264820178	264820178 - N	2648.139	2648.150			
17	264820179	264820179 - N	2648.139	2648.150			
18	264820180	264820180 - N	2648.139	2648.150	1.45	2.34	
19	264820181	264820181 - N	2648.156	2648.137			
20	264820182	264820182 - N	2648.156	2648.137			
21	264820183	264820183 - N	2648.156	2648.137			
22	264820184	264820184 - N	2648.156	2648.137			
23	264820185	264820185 - N	2648.156	2648.137			
24	264820186	264820186 - N	2648.156	2648.137			
25	264820187	264820187 - N	2648.142	2648.154			
26	264820188	264820188 - N	2648.142	2648.154			
27	264820189	264820189 - N	2648.142	2648.154			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820163 - N	UTCX59648	0.9534					
264820164 - N	UTCX59648	0.9534					
264820165 - N	UTCX59648	0.9534					
264820166 - N	UTCX59648	0.9534					
264820167 - N	UTCX59648	0.9534					
264820168 - N	UTCX59648	0.9534					
264820169 - N	UTCX59648	0.9534					
264820170 - N	DOWX68907	0.9532	0.369	310	2.47	109	
264820171 - N	DOWX68907	0.9532					
264820172 - N	DOWX68907	0.9532					
264820173 - N	DOWX68907	0.9532					
264820174 - N	DOWX68907	0.9532					
264820175 - N	DOWX68907	0.9532					
264820176 - N	DOWX68907	0.9532					
264820177 - N	DOWX68907	0.9532					
264820178 - N	DOWX68907	0.9532					
264820179 - N	DOWX68907	0.9532					
264820180 - N	DOWX68907	0.9532	0.363	319	2.73	112	
264820181 - N	DOWX68907	0.9532					
264820182 - N	DOWX68907	0.9532					
264820183 - N	DOWX68907	0.9532					
264820184 - N	DOWX68907	0.9532					
264820185 - N	DOWX68907	0.9532					
264820186 - N	DOWX68907	0.9532					
264820187 - N	DOWX68907	0.9532					
264820188 - N	DOWX68907	0.9532					
264820189 - N	DOWX68907	0.9532					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820190	264820190 - N	2648.142	2648.154	1.27	1.85	
2	264820191	264820191 - N	2648.142	2648.154			
3	264820192	264820192 - N	2648.142	2648.154			
4	264820193	264820193 - N	2648.159	2648.138			
5	264820194	264820194 - N	2648.159	2648.138			
6	264820195	264820195 - N	2648.159	2648.138			
7	264820196	264820196 - N	2648.159	2648.138			
8	264820197	264820197 - N	2648.159	2648.138			
9	264820198	264820198 - N	2648.159	2648.138			
10	264820199	264820199 - N	2648.144	2648.157			
11	264820200	264820200 - N	2648.144	2648.157	1.61	2.51	
12	264820201	264820201 - N	2648.144	2648.157			
13	264820202	264820202 - N	2648.144	2648.157			
14	264820203	264820203 - N	2648.144	2648.157			
15	264820204	264820204 - N	2648.144	2648.157			
16	264820205	264820205 - N	2648.161	2648.140			
17	264820206	264820206 - N	2648.161	2648.140			
18	264820207	264820207 - N	2648.161	2648.140			
19	264820208	264820208 - N	2648.161	2648.140			
20	264820209	264820209 - N	2648.161	2648.140			
21	264820210	264820210 - N	2648.161	2648.140	1.40	1.98	
22	264820211	264820211 - N	2648.146	2648.155			
23	264820212	264820212 - N	2648.146	2648.155			
24	264820213	264820213 - N	2648.146	2648.155			
25	264820214	264820214 - N	2648.146	2648.155			
26	264820215	264820215 - N	2648.146	2648.155			
27	264820216	264820216 - N	2648.146	2648.155			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820190 - N	DOWX68907	0.9532	0.367	315	2.54	107	
264820191 - N	DOWX68907	0.9532					
264820192 - N	DOWX68907	0.9532					
264820193 - N	DOWX68907	0.9532					
264820194 - N	DOWX68907	0.9532					
264820195 - N	DOWX68907	0.9532					
264820196 - N	DOWX68907	0.9532					
264820197 - N	DOWX68907	0.9532					
264820198 - N	DOWX68907	0.9532					
264820199 - N	DOWX68907	0.9532					
264820200 - N	DOWX68907	0.9532	0.361	318	2.67	110	
264820201 - N	DOWX68907	0.9532					
264820202 - N	DOWX68907	0.9532					
264820203 - N	DOWX68907	0.9532					
264820204 - N	DOWX68907	0.9532					
264820205 - N	DOWX68907	0.9532					
264820206 - N	DOWX68907	0.9532					
264820207 - N	DOWX68907	0.9532					
264820208 - N	DOWX68907	0.9532					
264820209 - N	DOWX68907	0.9532					
264820210 - N	DOWX68907	0.9532	0.371	312	2.40	108	
264820211 - N	DOWX68907	0.9532					
264820212 - N	DOWX68907	0.9532					
264820213 - N	DOWX68907	0.9532					
264820214 - N	DOWX68907	0.9532					
264820215 - N	DOWX68907	0.9532					
264820216 - N	DOWX68907	0.9532					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820217	264820217 - N	2648.152	2648.145			
2	264820218	264820218 - N	2648.152	2648.145			
3	264820219	264820219 - N	2648.152	2648.145			
4	264820220	264820220 - N	2648.152	2648.145	1.59	2.62	
5	264820221	264820221 - N	2648.152	2648.145			
6	264820222	264820222 - N	2648.152	2648.145			
7	264820223	264820223 - N	2648.143	2648.160			
8	264820224	264820224 - N	2648.143	2648.160			
9	264820225	264820225 - N	2648.143	2648.160			
10	264820226	264820226 - N	2648.143	2648.160			
11	264820227	264820227 - N	2648.143	2648.160			
12	264820228	264820228 - N	2648.143	2648.160			
13	264820229	264820229 - N	2648.162	2648.149			
14	264820230	264820230 - N	2648.162	2648.149	1.33	1.92	
15	264820231	264820231 - N	2648.162	2648.149			
16	264820232	264820232 - N	2648.162	2648.149			
17	264820233	264820233 - N	2648.162	2648.149			
18	264820234	264820234 - N	2648.162	2648.149			
19	264820235	264820235 - N	2648.147	2648.163			
20	264820236	264820236 - N	2648.147	2648.163			
21	264820237	264820237 - N	2648.147	2648.163			
22	264820238	264820238 - N	2648.147	2648.163			
23	264820239	264820239 - N	2648.147	2648.163			
24	264820240	264820240 - N	2648.147	2648.163	1.50	2.55	
25	264820241	264820241 - N	2648.164	2648.151			
26	264820242	264820242 - N	2648.164	2648.151			
27	264820243	264820243 - N	2648.164	2648.151			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264820217 - N	DOWX68907	0.9532					
264820218 - N	DOWX68907	0.9532					
264820219 - N	DOWX68907	0.9532					
264820220 - N	DOWX68907	0.9532	0.362	323	2.72	111	
264820221 - N	DOWX68907	0.9532					
264820222 - N	DOWX68907	0.9532					
264820223 - N	DOWX68907	0.9532					
264820224 - N	DOWX68907	0.9532					
264820225 - N	DOWX68907	0.9532					
264820226 - N	DOWX68907	0.9532					
264820227 - N	DOWX68907	0.9532					
264820228 - N	DOWX68907	0.9532					
264820229 - N	DOWX68907	0.9532					
264820230 - N	DOWX68907	0.9532	0.368	314	2.38	109	
264820231 - N	DOWX68907	0.9532					
264820232 - N	DOWX68907	0.9532					
264820233 - N	DOWX68907	0.9532					
264820234 - N	DOWX68907	0.9532					
264820235 - N	DOWX68907	0.9532					
264820236 - N	DOWX68907	0.9532					
264820237 - N	DOWX68907	0.9532					
264820238 - N	DOWX68907	0.9532					
264820239 - N	DOWX68907	0.9532					
264820240 - N	DOWX68907	0.9532	0.364	322	2.61	112	
264820241 - N	DOWX68907	0.9532					
264820242 - N	DOWX68907	0.9532					
264820243 - N	DOWX68907	0.9532					

APPROVED 5 QA

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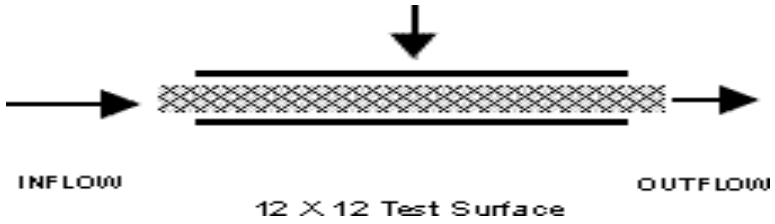
SKAPS Industries

ASTM D 4716

Client:	Waste Services, Inc.	**Job #**	2648
Project:	Oak Hammock - JED Landfill #6, FL		
Product:	TN330-2-8		

Test Configuration:



Test Information:

Boundary Conditions:	Soil Geocomposite Textured Liner	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	500 psf 0.02 ft 24 hours MD

Test Results:

Roll No.	Pressure (psf)	Gradient, ft	Transmissivity, m^2/sec
			24 hours
264820001	500	0.02	1.79×10^{-3}
264820035			1.73×10^{-3}
264820070			1.82×10^{-3}
264820105			1.75×10^{-3}
264820140			1.80×10^{-3}
264820175			1.71×10^{-3}
264820210			1.77×10^{-3}

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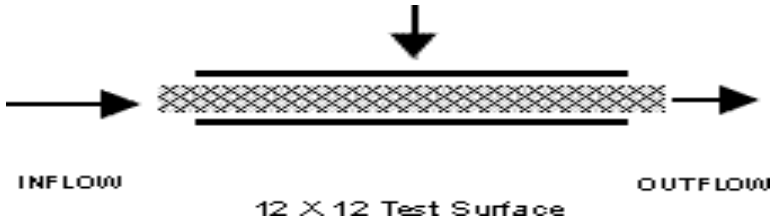
SKAPS Industries

ASTM D 4716

Client:	Waste Services, Inc.	**Job #**	2648
Project:	Oak Hammock - JED Landfill #6, FL		
Product:	TN330-2-8		

Test Configuration:



Test Information:

Boundary Conditions:	Soil Geocomposite Textured Liner	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	15000 psf 0.02 ft 100 hours MD

Test Results:

Roll No.	Pressure (psf)	Gradient, ft	Transmissivity, m^2/sec
			100 hours
264820001	15000	0.02	1.21×10^{-3}
264820035			1.18×10^{-3}
264820070			1.22×10^{-3}
264820105			1.16×10^{-3}
264820140			1.24×10^{-3}
264820175			1.19×10^{-3}
264820210			1.23×10^{-3}

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SKAPS Industries

POLYETHYLENE RESIN CERTIFICATION

Customer Name : Waste Services, Inc.
Project Name : Oak Hammock - JED Landfill #6, FL
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN330-2-8

We, the Geonet Manufacturer, hereby certify the following for the material delivered to the above referenced project:

Resin Supplier	Resin Production Plant	Resin Brand Name	Resin Lot Number	Property	Test Method	Units	Resin Supplier Value	Tested Value*
Trademark Plastics Corporation	Chevron, TX	HDPE	UTCX59648	Density	ASTM D 1505	gm/cc	0.948	0.948
				Melt Flow Index	ASTM D 1238[(a)]	gm/10 min	0.08	0.10
			DOWX68907	Density	ASTM D 1505	gm/cc	0.947	0.947
				Melt Flow Index	ASTM D 1238[(a)]	gm/10 min	0.08	0.10

(a) Condition 190/2.16
* Data from SKAPS Quality Control

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8 PRIMARY
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820001	264820001 - N	2648.099	2648.087	1.58 ✓	2.42	
2	264820002	264820002 - N	2648.099	2648.087			
3	264820003	264820003 - N	2648.099	2648.087			
4	264820004	264820004 - N	2648.099	2648.087			
5	264820005	264820005 - N	2648.099	2648.087			
6	264820006	264820006 - N	2648.099	2648.087			
7	264820007	264820007 - N	2648.085	2648.108			
8	264820008	264820008 - N	2648.085	2648.108			
9	264820009	264820009 - N	2648.085	2648.108			
10	264820010	264820010 - N	2648.085	2648.108	1.32 ✓	2.11	
11	264820011	264820011 - N	2648.085	2648.108			
12	264820012	264820012 - N	2648.085	2648.108			
13	264820013	264820013 - N	2648.103	2648.083			
14	264820014	264820014 - N	2648.103	2648.083			
15	264820015	264820015 - N	2648.103	2648.083			
16	264820016	264820016 - N	2648.103	2648.083			
17	264820017	264820017 - N	2648.103	2648.083			
18	264820018	264820018 - N	2648.103	2648.083			
19	264820019	264820019 - N	2648.089	2648.097			
20	264820020	264820020 - N	2648.089	2648.097	1.49 ✓	2.32	
21	264820021	264820021 - N	2648.089	2648.097			
22	264820022	264820022 - N	2648.089	2648.097			
23	264820023	264820023 - N	2648.089	2648.097			
24	264820024	264820024 - N	2648.089	2648.097			
25	264820025	264820025 - N	2648.106	2648.086			
26	264820026	264820026 - N	2648.106	2648.086			
27	264820027	264820027 - N	2648.106	2648.086			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN330-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820028	264820028 - N	2648.106	2648.086			
2	264820029	264820029 - N	2648.106	2648.086			
3	264820030	264820030 - N	2648.106	2648.086	1.21 ✓	1.89	
4	264820031	264820031 - N	2648.091	2648.100			
5	264820032	264820032 - N	2648.091	2648.100			
6	264820033	264820033 - N	2648.091	2648.100			
7	264820034	264820034 - N	2648.091	2648.100			
8	264820035	264820035 - N	2648.091	2648.100			
9	264820036	264820036 - N	2648.091	2648.100			
10	264820037	264820037 - N	2648.102	2648.088			
11	264820038	264820038 - N	2648.102	2648.088			
12	264820039	264820039 - N	2648.102	2648.088			
13	264820040	264820040 - N	2648.102	2648.088	1.52 ✓	2.48	
14	264820041	264820041 - N	2648.102	2648.088			
15	264820042	264820042 - N	2648.102	2648.088			
16	264820043	264820043 - N	2648.084	2648.104			
17	264820044	264820044 - N	2648.084	2648.104			
18	264820045	264820045 - N	2648.084	2648.104			
19	264820046	264820046 - N	2648.084	2648.104			
20	264820047	264820047 - N	2648.084	2648.104			
21	264820048	264820048 - N	2648.084	2648.104			
22	264820049	264820049 - N	2648.096	2648.092			
23	264820050	264820050 - N	2648.096	2648.092	1.36 ✓	2.19	
24	264820051	264820051 - N	2648.096	2648.092			
25	264820052	264820052 - N	2648.096	2648.092			
26	264820053	264820053 - N	2648.096	2648.092			
27	264820054	264820054 - N	2648.096	2648.092			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820055	264820055 - N	2648.090	2648.098			
2	264820056	264820056 - N	2648.090	2648.098			
3	264820057	264820057 - N	2648.090	2648.098			
4	264820058	264820058 - N	2648.090	2648.098			
5	264820059	264820059 - N	2648.090	2648.098			
6	264820060	264820060 - N	2648.090	2648.098	1.43 ✓	2.30	
7	264820061	264820061 - N	2648.101	2648.094			
8	264820062	264820062 - N	2648.101	2648.094			
9	264820063	264820063 - N	2648.101	2648.094			
10	264820064	264820064 - N	2648.101	2648.094			
11	264820065	264820065 - N	2648.101	2648.094			
12	264820066	264820066 - N	2648.101	2648.094			
13	264820067	264820067 - N	2648.093	2648.107			
14	264820068	264820068 - N	2648.093	2648.107			
15	264820069	264820069 - N	2648.093	2648.107			
16	264820070	264820070 - N	2648.093	2648.107	1.29 ✓	1.87	
17	264820071	264820071 - N	2648.093	2648.107			
18	264820072	264820072 - N	2648.093	2648.107			
19	264820073	264820073 - N	2648.105	2648.095			
20	264820074	264820074 - N	2648.105	2648.095			
21	264820075	264820075 - N	2648.105	2648.095			
22	264820076	264820076 - N	2648.105	2648.095			
23	264820077	264820077 - N	2648.105	2648.095			
24	264820078	264820078 - N	2648.105	2648.095			
25	264820079	264820079 - N	2648.111	2648.124			
26	264820080	264820080 - N	2648.111	2648.124	1.56 ✓	2.44	
27	264820081	264820081 - N	2648.111	2648.124			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820082	264820082 - N	2648.111	2648.124			
2	264820083	264820083 - N	2648.111	2648.124			
3	264820084	264820084 - N	2648.111	2648.124			
4	264820085	264820085 - N	2648.128	2648.115			
5	264820086	264820086 - N	2648.128	2648.115			
6	264820087	264820087 - N	2648.128	2648.115			
7	264820088	264820088 - N	2648.128	2648.115			
8	264820089	264820089 - N	2648.128	2648.115			
9	264820090	264820090 - N	2648.128	2648.115	1.38 ✓	2.13	
10	264820091	264820091 - N	2648.109	2648.130			
11	264820092	264820092 - N	2648.109	2648.130			
12	264820093	264820093 - N	2648.109	2648.130			
13	264820094	264820094 - N	2648.109	2648.130			
14	264820095	264820095 - N	2648.109	2648.130			
15	264820096	264820096 - N	2648.109	2648.130			
16	264820097	264820097 - N	2648.122	2648.117			
17	264820098	264820098 - N	2648.122	2648.117			
18	264820099	264820099 - N	2648.122	2648.117			
19	264820100	264820100 - N	2648.122	2648.117	1.47 ✓	2.38	
20	264820101	264820101 - N	2648.122	2648.117			
21	264820102	264820102 - N	2648.122	2648.117			
22	264820103	264820103 - N	2648.114	2648.133			
23	264820104	264820104 - N	2648.114	2648.133			
24	264820105	264820105 - N	2648.114	2648.133			
25	264820106	264820106 - N	2648.114	2648.133			
26	264820107	264820107 - N	2648.114	2648.133			
27	264820108	264820108 - N	2648.114	2648.133			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820109	264820109 - N	2648.126	2648.110			
2	264820110	264820110 - N	2648.126	2648.110	1.23	1.83	
3	264820111	264820111 - N	2648.126	2648.110			
4	264820112	264820112 - N	2648.126	2648.110			
5	264820113	264820113 - N	2648.126	2648.110			
6	264820114	264820114 - N	2648.126	2648.110			
7	264820115	264820115 - N	2648.116	2648.135			
8	264820116	264820116 - N	2648.116	2648.135			
9	264820117	264820117 - N	2648.116	2648.135			
10	264820118	264820118 - N	2648.116	2648.135			
11	264820119	264820119 - N	2648.116	2648.135			
12	264820120	264820120 - N	2648.116	2648.135	1.50	2.40	
13	264820121	264820121 - N	2648.131	2648.119			
14	264820122	264820122 - N	2648.131	2648.119			
15	264820123	264820123 - N	2648.131	2648.119			
16	264820124	264820124 - N	2648.131	2648.119			
17	264820125	264820125 - N	2648.131	2648.119			
18	264820126	264820126 - N	2648.131	2648.119			
19	264820127	264820127 - N	2648.118	2648.127			
20	264820128	264820128 - N	2648.118	2648.127			
21	264820129	264820129 - N	2648.118	2648.127			
22	264820130	264820130 - N	2648.118	2648.127	1.34	2.17	
23	264820131	264820131 - N	2648.118	2648.127			
24	264820132	264820132 - N	2648.118	2648.127			
25	264820133	264820133 - N	2648.129	2648.113			
26	264820134	264820134 - N	2648.129	2648.113			
27	264820135	264820135 - N	2648.129	2648.113			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820136	264820136 - N	2648.129	2648.113			
2	264820137	264820137 - N	2648.129	2648.113			
3	264820138	264820138 - N	2648.129	2648.113			
4	264820139	264820139 - N	2648.120	2648.125			
5	264820140	264820140 - N	2648.120	2648.125	1.57 ✓	2.36	
6	264820141	264820141 - N	2648.120	2648.125			
7	264820142	264820142 - N	2648.120	2648.125			
8	264820143	264820143 - N	2648.120	2648.125			
9	264820144	264820144 - N	2648.120	2648.125			
10	264820145	264820145 - N	2648.132	2648.112			
11	264820146	264820146 - N	2648.132	2648.112			
12	264820147	264820147 - N	2648.132	2648.112			
13	264820148	264820148 - N	2648.132	2648.112			
14	264820149	264820149 - N	2648.132	2648.112			
15	264820150	264820150 - N	2648.132	2648.112	1.25 ✓	1.81	
16	264820151	264820151 - N	2648.123	2648.134			
17	264820152	264820152 - N	2648.123	2648.134			
18	264820153	264820153 - N	2648.123	2648.134			
19	264820154	264820154 - N	2648.123	2648.134			
20	264820155	264820155 - N	2648.123	2648.134			
21	264820156	264820156 - N	2648.123	2648.134			
22	264820157	264820157 - N	2648.148	2648.121			
23	264820158	264820158 - N	2648.148	2648.121			
24	264820159	264820159 - N	2648.148	2648.121			
25	264820160	264820160 - N	2648.148	2648.121	1.54 ✓	2.46	
26	264820161	264820161 - N	2648.148	2648.121			
27	264820162	264820162 - N	2648.148	2648.121			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820163	264820163 - N	2648.136	2648.158			
2	264820164	264820164 - N	2648.136	2648.158			
3	264820165	264820165 - N	2648.136	2648.158			
4	264820166	264820166 - N	2648.136	2648.158			
5	264820167	264820167 - N	2648.136	2648.158			
6	264820168	264820168 - N	2648.136	2648.158			
7	264820169	264820169 - N	2648.153	2648.141			
8	264820170	264820170 - N	2648.153	2648.141	1.30	2.15	
9	264820171	264820171 - N	2648.153	2648.141			
10	264820172	264820172 - N	2648.153	2648.141			
11	264820173	264820173 - N	2648.153	2648.141			
12	264820174	264820174 - N	2648.153	2648.141			
13	264820175	264820175 - N	2648.139	2648.150			
14	264820176	264820176 - N	2648.139	2648.150			
15	264820177	264820177 - N	2648.139	2648.150			
16	264820178	264820178 - N	2648.139	2648.150			
17	264820179	264820179 - N	2648.139	2648.150			
18	264820180	264820180 - N	2648.139	2648.150	1.45	2.34	
19	264820181	264820181 - N	2648.156	2648.137			
20	264820182	264820182 - N	2648.156	2648.137			
21	264820183	264820183 - N	2648.156	2648.137			
22	264820184	264820184 - N	2648.156	2648.137			
23	264820185	264820185 - N	2648.156	2648.137			
24	264820186	264820186 - N	2648.156	2648.137			
25	264820187	264820187 - N	2648.142	2648.154			
26	264820188	264820188 - N	2648.142	2648.154			
27	264820189	264820189 - N	2648.142	2648.154			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820190	264820190 - N	2648.142	2648.154	1.27	1.85	
2	264820191	264820191 - N	2648.142	2648.154			
3	264820192	264820192 - N	2648.142	2648.154			
4	264820193	264820193 - N	2648.159	2648.138			
5	264820194	264820194 - N	2648.159	2648.138			
6	264820195	264820195 - N	2648.159	2648.138			
7	264820196	264820196 - N	2648.159	2648.138			
8	264820197	264820197 - N	2648.159	2648.138			
9	264820198	264820198 - N	2648.159	2648.138			
10	264820199	264820199 - N	2648.144	2648.157			
11	264820200	264820200 - N	2648.144	2648.157	1.61	2.51	
12	264820201	264820201 - N	2648.144	2648.157			
13	264820202	264820202 - N	2648.144	2648.157			
14	264820203	264820203 - N	2648.144	2648.157			
15	264820204	264820204 - N	2648.144	2648.157			
16	264820205	264820205 - N	2648.161	2648.140			
17	264820206	264820206 - N	2648.161	2648.140			
18	264820207	264820207 - N	2648.161	2648.140			
19	264820208	264820208 - N	2648.161	2648.140			
20	264820209	264820209 - N	2648.161	2648.140			
21	264820210	264820210 - N	2648.161	2648.140	1.40	1.98	
22	264820211	264820211 - N	2648.146	2648.155			
23	264820212	264820212 - N	2648.146	2648.155			
24	264820213	264820213 - N	2648.146	2648.155			
25	264820214	264820214 - N	2648.146	2648.155			
26	264820215	264820215 - N	2648.146	2648.155			
27	264820216	264820216 - N	2648.146	2648.155			

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN330-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264820217	264820217 - N	2648.152	2648.145			
2	264820218	264820218 - N	2648.152	2648.145			
3	264820219	264820219 - N	2648.152	2648.145			
4	264820220	264820220 - N	2648.152	2648.145	1.59	2.62	
5	264820221	264820221 - N	2648.152	2648.145			
6	264820222	264820222 - N	2648.152	2648.145			
7	264820223	264820223 - N	2648.143	2648.160			
8	264820224	264820224 - N	2648.143	2648.160			
9	264820225	264820225 - N	2648.143	2648.160			
10	264820226	264820226 - N	2648.143	2648.160			
11	264820227	264820227 - N	2648.143	2648.160			
12	264820228	264820228 - N	2648.143	2648.160			
13	264820229	264820229 - N	2648.162	2648.149			
14	264820230	264820230 - N	2648.162	2648.149	1.33	1.92	
15	264820231	264820231 - N	2648.162	2648.149			
16	264820232	264820232 - N	2648.162	2648.149			
17	264820233	264820233 - N	2648.162	2648.149			
18	264820234	264820234 - N	2648.162	2648.149			
19	264820235	264820235 - N	2648.147	2648.163			
20	264820236	264820236 - N	2648.147	2648.163			
21	264820237	264820237 - N	2648.147	2648.163			
22	264820238	264820238 - N	2648.147	2648.163			
23	264820239	264820239 - N	2648.147	2648.163			
24	264820240	264820240 - N	2648.147	2648.163	1.50	2.55	
25	264820241	264820241 - N	2648.164	2648.151			
26	264820242	264820242 - N	2648.164	2648.151			
27	264820243	264820243 - N	2648.164	2648.151			

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

February 29, 2008

Mail To:

Kirk Wills
GeoSyntec Consultants
14055 Riveredge Drive, Suite 300
Tampa, FL 33637

email: kwills@geosyntec.com

Bill To:

<= Same (Proj. Number: FQ1450)

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction**
TRI Job Reference Number:	E2302-66-07
Material(s) Tested:	4 SKAPS TN330-2-8 Double Sided Geocomposite(s)
Test(s) Requested:	Transmissivity (ASTM D 4716) Peel Strength (ASTM D 7005)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

MPatel

Dr. Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager

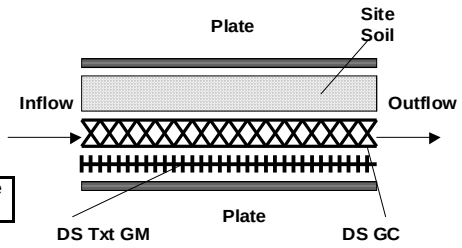
GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN330-2-8 Double Sided Geocomposite
Sample Identification: 264820003
TRI Log #: E2302-66-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Hydraulic Gradient: 0.02													
Test Length (in) 12													
Test Width (in) 12													
Plate / Site Soil / Sample / 60 mil Textured HDPE Geomembrane / Plate													
Seat Time (hours)													
Normal Load (psf) 500													
Specimen			1										
Volume (cc)		645	645	649									
Time (s)		20.07	19.95	20.12									
24 Flow Rate (GPM/ft width)		0.51	0.51	0.51							**0.51**	0.00	
24 Transmissivity (m^2/s)		5.27E-03	5.30E-03	5.29E-03							**5.29E-03**	1.60E-05	6.1E-4 min
Test Temp (C)			20.0										
Temp. Corr. Factor			1.000										
Normal Load (psf) 15,000													
Volume (cc)		580	580	578									
Time (s)		45.10	45.12	45.01									
100 Flow Rate (GPM/ft width)		0.20	0.20	0.20							**0.20**	0.00	
100 Transmissivity (m^2/s)		2.11E-03	2.11E-03	2.11E-03							**2.11E-03**	1.57E-06	1.0E-4 min
Test Temp (C)			20.0										
Temp. Corr. Factor			1.000										
Peel Strength (ASTM D 7005)													
A - MD Average Peel Strength (ppi)	5.2	7.9	9.5	7.0	5.1						**6.9**	1.9	1 min
A - MD Average Peel Strength (g/in)	2361	3587	4313	3178	2315						**3151**	846	
B - MD Average Peel Strength (ppi)	5.7	6.4	6.5	7.0	4.1						**5.9**	1.1	1 min
B - MD Average Peel Strength (g/in)	2588	2906	2951	3178	1861						**2697**	512	



Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

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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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN330-2-8 Double Sided Geocomposite
Sample Identification: 264820077
TRI Log #: E2302-66-07

Hydraulic Transmissivity (ASTM D 4716)

Direction Tested: Machine Direction
Hydraulic Gradient: 0.02
Test Length (in) 12
Test Width (in) 12

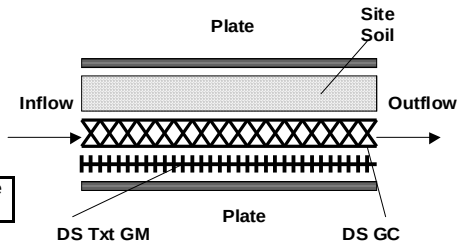

Plate / Site Soil / Sample / 60 mil Textured HDPE Geomembrane / Plate

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Seat Time (hours)													
Normal Load (psf) 500													
Specimen			1										
Volume (cc)		575	576	575									
Time (s)		20.13	20.24	20.16									
24 Flow Rate (GPM/ft width)		0.45	0.45	0.45							**0.45**	0.00	
Transmissivity (m^2/s)		4.69E-03	4.67E-03	4.68E-03							**4.68E-03**	8.74E-06	6.1E-4 min
Test Temp (C)			20.0										
Temp. Corr. Factor			1.000										
Normal Load (psf) 15,000													
Volume (cc)		756	739	738									
Time (s)		45.24	44.93	44.99									
100 Flow Rate (GPM/ft width)		0.26	0.26	0.26							**0.26**	0.00	
Transmissivity (m^2/s)		2.74E-03	2.70E-03	2.69E-03							**2.71E-03**	2.72E-05	1.0E-4 min
Test Temp (C)			20.0										
Temp. Corr. Factor			1.000										

Peel Strength (ASTM D 7005)

A - MD Average Peel Strength (ppi)	9.3	6.6	9.0	11.1	8.4	**8.9**	1.6	1 min
A - MD Average Peel Strength (g/in)	4222	2996	4086	5039	3814	**4032**	737	
B - MD Average Peel Strength (ppi)	7.8	6.6	8.9	8.1	4.0	**7.1**	1.9	1 min
B - MD Average Peel Strength (g/in)	3541	2996	4041	3677	1816	**3214**	867	

Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

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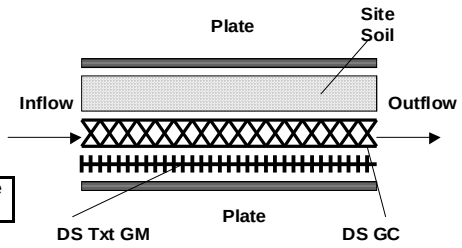
GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN330-2-8 Double Sided Geocomposite
Sample Identification: 264820158
TRI Log #: E2302-66-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Hydraulic Gradient: 0.02													
Test Length (in) 12													
Test Width (in) 12													
Plate / Site Soil / Sample / 60 mil Textured HDPE Geomembrane / Plate													
Seat Time (hours)													
Normal Load (psf) 500													
Specimen			1										
Volume (cc)		638	641	641									
Time (s)		20.09	20.15	20.12									
24 Flow Rate (GPM/ft width)		0.50	0.50	0.51							**0.50**	0.00	
24 Transmissivity (m^2/s)		5.21E-03	5.22E-03	5.23E-03							**5.22E-03**	8.35E-06	6.1E-4 min
Test Temp (C)			20.0										
Temp. Corr. Factor			1.000										
Normal Load (psf) 15,000													
Volume (cc)		538	536	539									
Time (s)		56.20	56.04	56.26									
100 Flow Rate (GPM/ft width)		0.15	0.15	0.15							**0.15**	0.00	
100 Transmissivity (m^2/s)		1.57E-03	1.57E-03	1.57E-03							**1.57E-03**	1.31E-06	1.0E-4 min
Test Temp (C)			20.0										
Temp. Corr. Factor			1.000										
Peel Strength (ASTM D 7005)													
A - MD Average Peel Strength (ppi)	4.5	7.7	2.9	5.9	4.9						**5.2**	1.8	1 min
A - MD Average Peel Strength (g/in)	2043	3496	1317	2679	2225						**2352**	806	
B - MD Average Peel Strength (ppi)	5.7	8.6	3.9	5.7	4.3						**5.6**	1.8	1 min
B - MD Average Peel Strength (g/in)	2588	3904	1771	2588	1952						**2561**	837	



Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

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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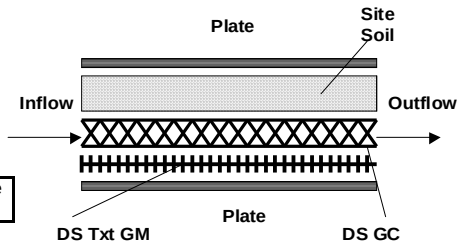
GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN330-2-8 Double Sided Geocomposite
Sample Identification: 264820216
TRI Log #: E2302-66-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Hydraulic Gradient: 0.02													
Test Length (in) 12													
Test Width (in) 12													
Plate / Site Soil / Sample / 60 mil Textured HDPE Geomembrane / Plate													
Seat Time (hours)													
Normal Load (psf) 500													
Specimen			1										
Volume (cc)			600	602	603								
Time (s)			19.96	20.00	20.09								
24 Flow Rate (GPM/ft width)			0.48	0.48	0.48						**0.48**	0.00	
24 Transmissivity (m^2/s)			4.93E-03	4.94E-03	4.92E-03						**4.93E-03**	6.98E-06	6.1E-4 min
Test Temp (C)				20.0									
Temp. Corr. Factor				1.000									
Normal Load (psf) 15,000													
Volume (cc)			613	610	607								
Time (s)			45.15	45.13	45.04								
100 Flow Rate (GPM/ft width)			0.22	0.21	0.21						**0.21**	0.00	
100 Transmissivity (m^2/s)			2.23E-03	2.22E-03	2.21E-03						**2.22E-03**	8.27E-06	1.0E-4 min
Test Temp (C)				20.0									
Temp. Corr. Factor				1.000									
Peel Strength (ASTM D 7005)													
A - MD Average Peel Strength (ppi)	7.0	4.7	6.9	9.3	8.6						**7.3**	1.8	1 min
A - MD Average Peel Strength (g/in)	3178	2134	3133	4222	3904						**3314**	809	
B - MD Average Peel Strength (ppi)	6.1	5.1	7.4	7.7	6.7						**6.6**	1.0	1 min
B - MD Average Peel Strength (g/in)	2769	2315	3360	3496	3042						**2996**	474	



Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

February 25, 2008

Mail To:

Kirk Wills
GeoSyntec Consultants
14055 Riveredge Drive, Suite 300
Tampa, FL 33637

email: kwills@geosyntec.com

Bill To:

<= Same (Proj. Number: FQ1450)

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction**
TRI Job Reference Number:	E2302-66-07
Material(s) Tested:	4 SKAPS TN270-2-8 Double Sided Geocomposite(s)
Test(s) Requested:	Transmissivity (ASTM D 4716) Peel Strength (ASTM D 7005)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

MPatel

Dr. Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN270-2-8 Double Sided Geocomposite
Sample Identification: 264810004
TRI Log #: E2302-66-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Hydraulic Gradient: 0.02													
Test Length (in) 12													
Test Width (in) 12													

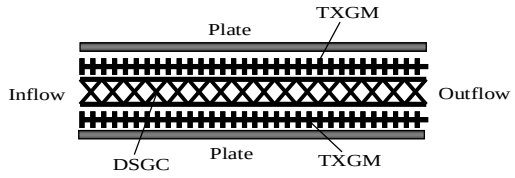


Plate / 60 mil Textured HDPE Geomembrane / Sample / 60 mil Textured HDPE Geomembrane / Plate

Seat Time (hours)

	Normal Load (psf) 500							
	Specimen		1					
	Volume (cc)		549	696	556			
	Time (s)		35.50	45.41	35.60			
24	Flow Rate (GPM/ft width)		0.25	0.24	0.25	**0.25**	0.00	
	Transmissivity (m^2/s)		2.54E-03	2.51E-03	2.56E-03	**2.54E-03**	2.39E-05	6.1E-4 min
	Test Temp (C)			20.0				
	Temp. Corr. Factor			1.000				
	Normal Load (psf) 15,000							
	Volume (cc)		773	760	658			
	Time (s)		70.61	70.04	60.12			
100	Flow Rate (GPM/ft width)		0.17	0.17	0.17	**0.17**	0.00	
	Transmissivity (m^2/s)		1.80E-03	1.78E-03	1.80E-03	**1.79E-03**	9.02E-06	1.0E-4 min
	Test Temp (C)			20.0				
	Temp. Corr. Factor			1.000				

Peel Strength (ASTM D 7005)								
A - MD Average Peel Strength (ppi)	9.2	4.0	5.0	4.0	3.3	**5.1**	2.4	1 min
A - MD Average Peel Strength (g/in)	4177	1816	2270	1816	1498	**2315**	1076	
B - MD Average Peel Strength (ppi)	6.2	2.7	6.5	4.9	6.5	**5.4**	1.6	1 min
B - MD Average Peel Strength (g/in)	2815	1226	2951	2225	2951	**2433**	739	

Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

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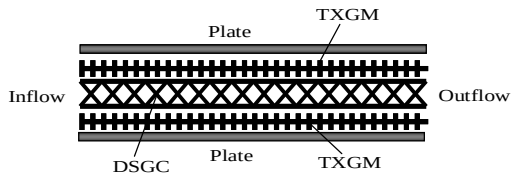
GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN270-2-8 Double Sided Geocomposite
Sample Identification: 264810076
TRI Log #: E2302-66-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Hydraulic Gradient: 0.02													
Test Length (in) 12													
Test Width (in) 12													
Plate / 60 mil Textured HDPE Geomembrane / Sample / 60 mil Textured HDPE Geomembrane / Plate													
Seat Time (hours)													
Normal Load (psf) 500													
Specimen			1										
Volume (cc)			704	706	705								
Time (s)			30.33	30.32	30.23								
24 Flow Rate (GPM/ft width)			0.37	0.37	0.37						**0.37**	0.00	
Transmissivity (m^2/s)			3.81E-03	3.82E-03	3.83E-03						**3.82E-03**	9.18E-06	6.1E-4 min
Test Temp (C)				20.0									
Temp. Corr. Factor				1.000									
Normal Load (psf) 15,000													
Volume (cc)			684	688	684								
Time (s)			60.18	60.41	60.04								
100 Flow Rate (GPM/ft width)			0.18	0.18	0.18						**0.18**	0.00	
Transmissivity (m^2/s)			1.86E-03	1.87E-03	1.87E-03						**1.87E-03**	2.36E-06	1.0E-4 min
Test Temp (C)				20.0									
Temp. Corr. Factor				1.000									
Peel Strength (ASTM D 7005)													
A - MD Average Peel Strength (ppi)	5.8	8.7	6.2	7.3	8.3						**7.3**	1.3	1 min
A - MD Average Peel Strength (g/in)	2633	3950	2815	3314	3768						**3296**	575	
B - MD Average Peel Strength (ppi)	3.9	7.2	5.0	4.4	5.7						**5.2**	1.3	1 min
B - MD Average Peel Strength (g/in)	1771	3269	2270	1998	2588						**2379**	584	



Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

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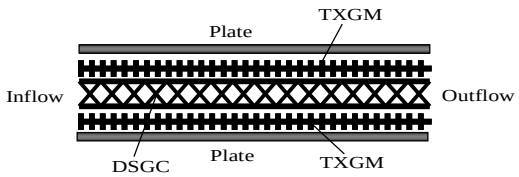
GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN270-2-8 Double Sided Geocomposite
Sample Identification: 264810152
TRI Log #: E2302-66-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Hydraulic Gradient: 0.02													
Test Length (in) 12													
Test Width (in) 12													
Plate / 60 mil Textured HDPE Geomembrane / Sample / 60 mil Textured HDPE Geomembrane / Plate													
Seat Time (hours)													
Normal Load (psf) 500													
Specimen			1										
Volume (cc)			522	517	519								
Time (s)			30.38	30.18	30.26								
24 Flow Rate (GPM/ft width)			0.27	0.27	0.27						**0.27**	0.00	
Transmissivity (m^2/s)			2.82E-03	2.81E-03	2.81E-03						**2.81E-03**	4.28E-06	6.1E-4 min
Test Temp (C)				20.0									
Temp. Corr. Factor				1.000									
Normal Load (psf) 15,000													
Volume (cc)			621	620	619								
Time (s)			60.11	60.12	60.04								
100 Flow Rate (GPM/ft width)			0.16	0.16	0.16						**0.16**	0.00	
Transmissivity (m^2/s)			1.69E-03	1.69E-03	1.69E-03						**1.69E-03**	1.89E-06	1.0E-4 min
Test Temp (C)				20.0									
Temp. Corr. Factor				1.000									
Peel Strength (ASTM D 7005)													
A - MD Average Peel Strength (ppi)	7.0	4.7	10.2	8.2	5.9						**7.2**	2.1	1 min
A - MD Average Peel Strength (g/in)	3178	2134	4631	3723	2679						**3269**	963	
B - MD Average Peel Strength (ppi)	6.7	3.4	5.8	9.0	7.1						**6.4**	2.0	1 min
B - MD Average Peel Strength (g/in)	3042	1544	2633	4086	3223						**2906**	928	



Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

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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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants
Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS TN270-2-8 Double Sided Geocomposite
Sample Identification: 264810218
TRI Log #: E2302-66-07

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Hydraulic Transmissivity (ASTM D 4716)													
Direction Tested: Machine Direction													
Hydraulic Gradient: 0.02													
Test Length (in) 12													
Test Width (in) 12													

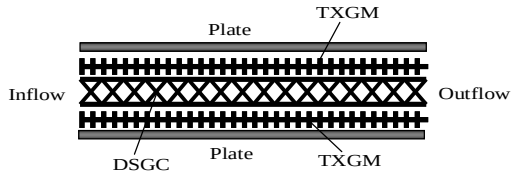

Plate / 60 mil Textured HDPE Geomembrane / Sample / 60 mil Textured HDPE Geomembrane / Plate

Seat Time (hours)

	Normal Load (psf) 500						
	Specimen		1				
	Volume (cc)		694	695	693		
	Time (s)		30.20	30.32	30.20		
24	Flow Rate (GPM/ft width)		0.36	0.36	0.36	**0.36**	0.00
	Transmissivity (m^2/s)		3.77E-03	3.76E-03	3.76E-03	**3.76E-03**	4.77E-06 6.1E-4 min
	Test Temp (C)			20.0			
	Temp. Corr. Factor			1.000			
	Normal Load (psf) 15,000						
	Volume (cc)		630	630	629		
	Time (s)		60.27	60.21	60.12		
100	Flow Rate (GPM/ft width)		0.17	0.17	0.17	**0.17**	0.00
	Transmissivity (m^2/s)		1.71E-03	1.72E-03	1.72E-03	**1.72E-03**	9.44E-07 1.0E-4 min
	Test Temp (C)			20.0			
	Temp. Corr. Factor			1.000			

Peel Strength (ASTM D 7005)								
A - MD Average Peel Strength (ppi)	6.7	4.2	5.9	4.5	6.8	**5.6**	1.2	1 min
A - MD Average Peel Strength (g/in)	3042	1907	2679	2043	3087	**2551**	552	
B - MD Average Peel Strength (ppi)	3.5	5.0	5.4	5.9	5.0	**5.0**	0.9	1 min
B - MD Average Peel Strength (g/in)	1589	2270	2452	2679	2270	**2252**	407	

Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction TD Transverse Direction

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SKAPS Industries

Engineered Synthetic Products, Inc.

February 11, 2008
Waste Services, Inc.
7025 East Greenway Parkway,
Suite 100
Scottsdale, AZ 85524

Ref. : Oak Hammock - JED Landfill #6, FL
Customer P.O. # JED Landfill #6
Transnet 270-2-8

We certify that the Transnet 270-2-8 drainage composite, meets the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Required Value	Qualifier
Geonet[4]				
Mass per Unit Area	ASTM D 5261	lbs/ft^2	0.162	Minimum
Thickness	ASTM D 5199	mil	200	Minimum
Carbon Black	ASTM D 4218	%	2 - 3	Range
Tensile Strength	ASTM D 5035	lbs/in	45	Minimum
Melt Flow	ASTM D 1238[3]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.94	Minimum
Composite				
Ply Adhesion	GRI GC7	lb/in	1.0	MARV[6]
Transmissivity[1]	ASTM D 4716	m^2/sec	6.1 x 10^{-4}	MARV
Transmissivity[2]	ASTM D 4716	m^2/sec	1.0 x 10^{-4}	MARV
Geotextile[4 & 5]				
Fabric Weight	ASTM D 5261	oz/yd^2	8.0	MARV
Grab Strength	ASTM D 4632	lbs	200	MARV
Tear Strength	ASTM D 4533	lbs	75	MARV
CBR Puncture	ASTM D 6241	psi	500	MARV
Puncture Resistance	ASTM D 4833	lbs	90	MARV
Permittivity	ASTM D 4491	sec^{-1}	0.5	MARV

Notes:

1 Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.02 and a confining pressure of 500 psf between textured liners after 24 hours.

2 Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.02 and a confining pressure of 15000 psf between textured liners after 100 hours.

3 Condition 190/2.16

4 Geotextile and Geonet properties are prior to lamination.

5 Geotextile data is provided by the supplier.

6 MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

Sincerely,
Nilay Patel
Nilay Patel
QA Manager

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810001	264810001 - N	2684.003	2648.013	1.43	2.29	
2	264810002	264810002 - N	2684.003	2648.013			
3	264810003	264810003 - N	2684.003	2648.013			
4	264810004	264810004 - N	2684.003	2648.013			
5	264810005	264810005 - N	2684.003	2648.013			
6	264810006	264810006 - N	2684.003	2648.013			
7	264810007	264810007 - N	2648.015	2648.005			
8	264810008	264810008 - N	2648.015	2648.005			
9	264810009	264810009 - N	2648.015	2648.005			
10	264810010	264810010 - N	2648.015	2648.005	1.34	2.12	
11	264810011	264810011 - N	2648.015	2648.005			
12	264810012	264810012 - N	2648.015	2648.005			
13	264810013	264810013 - N	2648.001	2648.017			
14	264810014	264810014 - N	2648.001	2648.017			
15	264810015	264810015 - N	2648.001	2648.017			
16	264810016	264810016 - N	2648.001	2648.017			
17	264810017	264810017 - N	2648.001	2648.017			
18	264810018	264810018 - N	2648.001	2648.017			
19	264810019	264810019 - N	2648.019	2648.002			
20	264810020	264810020 - N	2648.019	2648.002	1.41	2.32	
21	264810021	264810021 - N	2648.019	2648.002			
22	264810022	264810022 - N	2648.019	2648.002			
23	264810023	264810023 - N	2648.019	2648.002			
24	264810024	264810024 - N	2648.019	2648.002			
25	264810025	264810025 - N	2648.007	2648.022			
26	264810026	264810026 - N	2648.007	2648.022			
27	264810027	264810027 - N	2648.007	2648.022			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810001 - N	UTCX52354	0.9536	0.265	269	2.62	94	
264810002 - N	UTCX52354	0.9536					
264810003 - N	UTCX52354	0.9536					
264810004 - N	UTCX52354	0.9536					
264810005 - N	UTCX52354	0.9536					
264810006 - N	UTCX52354	0.9536					
264810007 - N	UTCX52354	0.9536					
264810008 - N	UTCX52354	0.9536					
264810009 - N	UTCX52354	0.9536					
264810010 - N	UTCX52354	0.9536	0.258	264	2.34	90	
264810011 - N	UTCX52354	0.9536					
264810012 - N	UTCX52354	0.9536					
264810013 - N	UTCX52354	0.9536					
264810014 - N	UTCX52354	0.9536					
264810015 - N	UTCX52354	0.9536					
264810016 - N	UTCX52354	0.9536					
264810017 - N	UTCX52354	0.9536					
264810018 - N	UTCX52354	0.9536					
264810019 - N	UTCX52354	0.9536					
264810020 - N	UTCX52354	0.9536	0.268	272	2.59	96	
264810021 - N	UTCX52354	0.9536					
264810022 - N	UTCX52354	0.9536					
264810023 - N	UTCX52354	0.9536					
264810024 - N	UTCX52354	0.9536					
264810025 - N	UTCX52354	0.9536					
264810026 - N	UTCX52354	0.9536					
264810027 - N	UTCX52354	0.9536					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810028	264810028 - N	2648.007	2648.022			
2	264810029	264810029 - N	2648.007	2648.022			
3	264810030	264810030 - N	2648.007	2648.022	1.38	1.99	
4	264810031	264810031 - N	2648.018	2648.004			
5	264810032	264810032 - N	2648.018	2648.004			
6	264810033	264810033 - N	2648.018	2648.004			
7	264810034	264810034 - N	2648.018	2648.004			
8	264810035	264810035 - N	2648.018	2648.004			
9	264810036	264810036 - N	2648.018	2648.004			
10	264810037	264810037 - N	2648.006	2648.025			
11	264810038	264810038 - N	2648.006	2648.025			
12	264810039	264810039 - N	2648.006	2648.025			
13	264810040	264810040 - N	2648.006	2648.025	1.49	2.21	
14	264810041	264810041 - N	2648.006	2648.025			
15	264810042	264810042 - N	2648.006	2648.025			
16	264810043	264810043 - N	2648.023	2648.011			
17	264810044	264810044 - N	2648.023	2648.011			
18	264810045	264810045 - N	2648.023	2648.011			
19	264810046	264810046 - N	2648.023	2648.011			
20	264810047	264810047 - N	2648.023	2648.011			
21	264810048	264810048 - N	2648.023	2648.011			
22	264810049	264810049 - N	2648.009	2648.027			
23	264810050	264810050 - N	2648.009	2648.027	1.32	2.10	
24	264810051	264810051 - N	2648.009	2648.027			
25	264810052	264810052 - N	2648.009	2648.027			
26	264810053	264810053 - N	2648.009	2648.027			
27	264810054	264810054 - N	2648.009	2648.027			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810028 - N	UTCX52354	0.9536					
264810029 - N	UTCX52354	0.9536					
264810030 - N	UTCX52354	0.9536	0.260	266	2.41	92	
264810031 - N	UTCX52354	0.9536					
264810032 - N	UTCX52354	0.9536					
264810033 - N	UTCX52354	0.9536					
264810034 - N	UTCX52354	0.9536					
264810035 - N	UTCX52354	0.9536					
264810036 - N	UTCX52354	0.9536					
264810037 - N	UTCX52354	0.9536					
264810038 - N	UTCX52354	0.9536					
264810039 - N	UTCX52354	0.9536					
264810040 - N	UTCX52354	0.9536	0.266	268	2.66	95	
264810041 - N	UTCX52354	0.9536					
264810042 - N	UTCX52354	0.9536					
264810043 - N	UTCX52354	0.9536					
264810044 - N	UTCX52354	0.9536					
264810045 - N	UTCX52354	0.9536					
264810046 - N	UTCX52354	0.9536					
264810047 - N	UTCX52354	0.9536					
264810048 - N	UTCX52354	0.9536					
264810049 - N	UTCX52354	0.9536					
264810050 - N	UTCX52354	0.9536	0.259	263	2.32	91	
264810051 - N	UTCX52354	0.9536					
264810052 - N	UTCX52354	0.9536					
264810053 - N	UTCX52354	0.9536					
264810054 - N	UTCX52354	0.9536					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810055	264810055 - N	2648.021	2648.010			
2	264810056	264810056 - N	2648.021	2648.010			
3	264810057	264810057 - N	2648.021	2648.010			
4	264810058	264810058 - N	2648.021	2648.010			
5	264810059	264810059 - N	2648.021	2648.010			
6	264810060	264810060 - N	2648.021	2648.010	1.47	2.36	
7	264810061	264810061 - N	2648.012	2648.016			
8	264810062	264810062 - N	2648.012	2648.016			
9	264810063	264810063 - N	2648.012	2648.016			
10	264810064	264810064 - N	2648.012	2648.016			
11	264810065	264810065 - N	2648.012	2648.016			
12	264810066	264810066 - N	2648.012	2648.016			
13	264810067	264810067 - N	2648.026	2648.008			
14	264810068	264810068 - N	2648.026	2648.008			
15	264810069	264810069 - N	2648.026	2648.008			
16	264810070	264810070 - N	2648.026	2648.008	1.30	1.91	
17	264810071	264810071 - N	2648.026	2648.008			
18	264810072	264810072 - N	2648.026	2648.008			
19	264810073	264810073 - N	2648.014	2648.020			
20	264810074	264810074 - N	2648.014	2648.020			
21	264810075	264810075 - N	2648.014	2648.020			
22	264810076	264810076 - N	2648.014	2648.020			
23	264810077	264810077 - N	2648.014	2648.020			
24	264810078	264810078 - N	2648.014	2648.020			
25	264810079	264810079 - N	2648.024	2648.035			
26	264810080	264810080 - N	2648.024	2648.035	1.45	2.27	
27	264810081	264810081 - N	2648.024	2648.035			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810055 - N	UTCX52354	0.9536					
264810056 - N	UTCX52354	0.9536					
264810057 - N	UTCX52354	0.9536					
264810058 - N	UTCX52354	0.9536					
264810059 - N	UTCX52354	0.9536					
264810060 - N	UTCX52354	0.9536	0.263	270	2.71	93	
264810061 - N	UTCX52354	0.9536					
264810062 - N	UTCX52354	0.9536					
264810063 - N	UTCX52354	0.9536					
264810064 - N	UTCX52354	0.9536					
264810065 - N	UTCX52354	0.9536					
264810066 - N	UTCX52354	0.9536					
264810067 - N	UTCX52354	0.9536					
264810068 - N	UTCX52354	0.9536					
264810069 - N	UTCX52354	0.9536					
264810070 - N	UTCX52354	0.9536	0.256	265	2.45	90	
264810071 - N	UTCX52354	0.9536					
264810072 - N	UTCX52354	0.9536					
264810073 - N	UTCX52354	0.9536					
264810074 - N	UTCX52354	0.9536					
264810075 - N	UTCX52354	0.9536					
264810076 - N	UTCX52354	0.9536					
264810077 - N	UTCX52354	0.9536					
264810078 - N	UTCX52354	0.9536					
264810079 - N	UTCX52354	0.9536					
264810080 - N	UTCX52354	0.9536	0.261	273	2.68	94	
264810081 - N	UTCX52354	0.9536					

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 Fax: 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810082	264810082 - N	2648.024	2648.035			
2	264810083	264810083 - N	2648.024	2648.035			
3	264810084	264810084 - N	2648.024	2648.035			
4	264810085	264810085 - N	2648.041	2648.028			
5	264810086	264810086 - N	2648.041	2648.028			
6	264810087	264810087 - N	2648.041	2648.028			
7	264810088	264810088 - N	2648.041	2648.028			
8	264810089	264810089 - N	2648.041	2648.028			
9	264810090	264810090 - N	2648.041	2648.028	1.27	2.14	
10	264810091	264810091 - N	2648.029	2648.047			
11	264810092	264810092 - N	2648.029	2648.047			
12	264810093	264810093 - N	2648.029	2648.047			
13	264810094	264810094 - N	2648.029	2648.047			
14	264810095	264810095 - N	2648.029	2648.047			
15	264810096	264810096 - N	2648.029	2648.047			
16	264810097	264810097 - N	2648.045	2648.033			
17	264810098	264810098 - N	2648.045	2648.033			
18	264810099	264810099 - N	2648.045	2648.033			
19	264810100	264810100 - N	2648.045	2648.033	1.56	2.38	
20	264810101	264810101 - N	2648.045	2648.033			
21	264810102	264810102 - N	2648.045	2648.033			
22	264810103	264810103 - N	2648.031	2648.049			
23	264810104	264810104 - N	2648.031	2648.049			
24	264810105	264810105 - N	2648.031	2648.049			
25	264810106	264810106 - N	2648.031	2648.049			
26	264810107	264810107 - N	2648.031	2648.049			
27	264810108	264810108 - N	2648.031	2648.049			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810082 - N	UTCX52354	0.9536					
264810083 - N	UTCX52354	0.9536					
264810084 - N	UTCX52354	0.9536					
264810085 - N	UTCX52354	0.9536					
264810086 - N	UTCX52354	0.9536					
264810087 - N	UTCX52354	0.9536					
264810088 - N	UTCX52354	0.9536					
264810089 - N	UTCX52354	0.9536					
264810090 - N	UTCX52354	0.9536	0.257	267	2.36	92	
264810091 - N	UTCX52354	0.9536					
264810092 - N	UTCX52354	0.9536					
264810093 - N	UTCX52354	0.9536					
264810094 - N	UTCX52354	0.9536					
264810095 - N	UTCX52354	0.9536					
264810096 - N	UTCX52354	0.9536					
264810097 - N	UTCX52354	0.9536					
264810098 - N	UTCX52354	0.9536					
264810099 - N	UTCX52354	0.9536					
264810100 - N	UTCX52354	0.9536	0.267	271	2.57	96	
264810101 - N	UTCX52354	0.9536					
264810102 - N	UTCX52354	0.9536					
264810103 - N	UTCX52354	0.9536					
264810104 - N	UTCX52354	0.9536					
264810105 - N	UTCX52354	0.9536					
264810106 - N	UTCX52354	0.9536					
264810107 - N	UTCX52354	0.9536					
264810108 - N	UTCX52354	0.9536					

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 Fax: 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810109	264810109 - N	2648.051	2648.034			
2	264810110	264810110 - N	2648.051	2648.034	1.21	1.93	
3	264810111	264810111 - N	2648.051	2648.034			
4	264810112	264810112 - N	2648.051	2648.034			
5	264810113	264810113 - N	2648.051	2648.034			
6	264810114	264810114 - N	2648.051	2648.034			
7	264810115	264810115 - N	2648.030	2648.052			
8	264810116	264810116 - N	2648.030	2648.052			
9	264810117	264810117 - N	2648.030	2648.052			
10	264810118	264810118 - N	2648.030	2648.052			
11	264810119	264810119 - N	2648.030	2648.052			
12	264810120	264810120 - N	2648.030	2648.052	1.50	2.25	
13	264810121	264810121 - N	2648.046	2648.038			
14	264810122	264810122 - N	2648.046	2648.038			
15	264810123	264810123 - N	2648.046	2648.038			
16	264810124	264810124 - N	2648.046	2648.038			
17	264810125	264810125 - N	2648.046	2648.038			
18	264810126	264810126 - N	2648.046	2648.038			
19	264810127	264810127 - N	2648.037	2648.054			
20	264810128	264810128 - N	2648.037	2648.054			
21	264810129	264810129 - N	2648.037	2648.054			
22	264810130	264810130 - N	2648.037	2648.054	1.29	2.18	
23	264810131	264810131 - N	2648.037	2648.054			
24	264810132	264810132 - N	2648.037	2648.054			
25	264810133	264810133 - N	2648.053	2648.032			
26	264810134	264810134 - N	2648.053	2648.032			
27	264810135	264810135 - N	2648.053	2648.032			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810109 - N	UTCX52354	0.9536					
264810110 - N	UTCX52354	0.9536	0.262	264	2.43	91	
264810111 - N	UTCX52354	0.9536					
264810112 - N	UTCX52354	0.9536					
264810113 - N	UTCX52354	0.9536					
264810114 - N	UTCX52354	0.9536					
264810115 - N	UTCX52354	0.9536					
264810116 - N	UTCX52354	0.9536					
264810117 - N	UTCX52354	0.9536					
264810118 - N	UTCX52354	0.9536					
264810119 - N	UTCX52354	0.9536					
264810120 - N	UTCX52354	0.9536	0.268	268	2.60	95	
264810121 - N	UTCX52354	0.9536					
264810122 - N	UTCX52354	0.9536					
264810123 - N	UTCX52354	0.9536					
264810124 - N	UTCX52354	0.9536					
264810125 - N	UTCX52354	0.9536					
264810126 - N	UTCX52354	0.9536					
264810127 - N	UTCX52354	0.9536					
264810128 - N	UTCX52354	0.9536					
264810129 - N	UTCX52354	0.9536					
264810130 - N	UTCX52354	0.9536	0.264	265	2.38	90	
264810131 - N	UTCX52354	0.9536					
264810132 - N	UTCX52354	0.9536					
264810133 - N	UTCX52354	0.9536					
264810134 - N	UTCX52354	0.9536					
264810135 - N	UTCX52354	0.9536					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810136	264810136 - N	2648.053	2648.032			
2	264810137	264810137 - N	2648.053	2648.032			
3	264810138	264810138 - N	2648.053	2648.032			
4	264810139	264810139 - N	2648.039	2648.043			
5	264810140	264810140 - N	2648.039	2648.043	1.52	2.30	
6	264810141	264810141 - N	2648.039	2648.043			
7	264810142	264810142 - N	2648.039	2648.043			
8	264810143	264810143 - N	2648.039	2648.043			
9	264810144	264810144 - N	2648.039	2648.043			
10	264810145	264810145 - N	2648.048	2648.040			
11	264810146	264810146 - N	2648.048	2648.040			
12	264810147	264810147 - N	2648.048	2648.040			
13	264810148	264810148 - N	2648.048	2648.040			
14	264810149	264810149 - N	2648.048	2648.040			
15	264810150	264810150 - N	2648.048	2648.040	1.23	1.95	
16	264810151	264810151 - N	2648.036	2648.050			
17	264810152	264810152 - N	2648.036	2648.050			
18	264810153	264810153 - N	2648.036	2648.050			
19	264810154	264810154 - N	2648.036	2648.050			
20	264810155	264810155 - N	2648.036	2648.050			
21	264810156	264810156 - N	2648.036	2648.050			
22	264810157	264810157 - N	2648.044	2648.042			
23	264810158	264810158 - N	2648.044	2648.042			
24	264810159	264810159 - N	2648.044	2648.042			
25	264810160	264810160 - N	2648.044	2648.042	1.54	2.23	
26	264810161	264810161 - N	2648.044	2648.042			
27	264810162	264810162 - N	2648.044	2648.042			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810136 - N	UTCX52354	0.9536					
264810137 - N	UTCX52354	0.9536					
264810138 - N	UTCX52354	0.9536					
264810139 - N	UTCX52354	0.9536					
264810140 - N	UTCX52354	0.9536	0.266	269	2.73	94	
264810141 - N	UTCX52354	0.9536					
264810142 - N	UTCX52354	0.9536					
264810143 - N	UTCX52354	0.9536					
264810144 - N	UTCX52354	0.9536					
264810145 - N	UTCX52354	0.9536					
264810146 - N	UTCX52354	0.9536					
264810147 - N	UTCX52354	0.9536					
264810148 - N	UTCX52354	0.9536					
264810149 - N	UTCX52354	0.9536					
264810150 - N	UTCX52354	0.9536	0.258	263	2.49	92	
264810151 - N	UTCX52354	0.9536					
264810152 - N	UTCX52354	0.9536					
264810153 - N	UTCX52354	0.9536					
264810154 - N	UTCX52354	0.9536					
264810155 - N	UTCX52354	0.9536					
264810156 - N	UTCX52354	0.9536					
264810157 - N	UTCX52354	0.9536					
264810158 - N	UTCX52354	0.9536					
264810159 - N	UTCX52354	0.9536					
264810160 - N	UTCX52354	0.9536	0.265	272	2.64	96	
264810161 - N	UTCX52354	0.9536					
264810162 - N	UTCX52354	0.9536					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810163	264810163 - N	2648.056	2648.074			
2	264810164	264810164 - N	2648.056	2648.074			
3	264810165	264810165 - N	2648.056	2648.074			
4	264810166	264810166 - N	2648.056	2648.074			
5	264810167	264810167 - N	2648.056	2648.074			
6	264810168	264810168 - N	2648.056	2648.074			
7	264810169	264810169 - N	2648.068	2648.060			
8	264810170	264810170 - N	2648.068	2648.060	1.25	2.16	
9	264810171	264810171 - N	2648.068	2648.060			
10	264810172	264810172 - N	2648.068	2648.060			
11	264810173	264810173 - N	2648.068	2648.060			
12	264810174	264810174 - N	2648.068	2648.060			
13	264810175	264810175 - N	2648.059	2648.077			
14	264810176	264810176 - N	2648.059	2648.077			
15	264810177	264810177 - N	2648.059	2648.077			
16	264810178	264810178 - N	2648.059	2648.077			
17	264810179	264810179 - N	2648.059	2648.077			
18	264810180	264810180 - N	2648.059	2648.077	1.46	2.34	
19	264810181	264810181 - N	2648.072	2648.055			
20	264810182	264810182 - N	2648.072	2648.055			
21	264810183	264810183 - N	2648.072	2648.055			
22	264810184	264810184 - N	2648.072	2648.055			
23	264810185	264810185 - N	2648.072	2648.055			
24	264810186	264810186 - N	2648.072	2648.055			
25	264810187	264810187 - N	2648.061	2648.070			
26	264810188	264810188 - N	2648.061	2648.070			
27	264810189	264810189 - N	2648.061	2648.070			

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810163 - N	UTCX52354	0.9536					
264810164 - N	UTCX52354	0.9536					
264810165 - N	UTCX52354	0.9536					
264810166 - N	UTCX52354	0.9536					
264810167 - N	UTCX52354	0.9536					
264810168 - N	UTCX52354	0.9536					
264810169 - N	UTCX52354	0.9536					
264810170 - N	UTCX52354	0.9536	0.260	265	2.30	91	
264810171 - N	UTCX52354	0.9536					
264810172 - N	UTCX52354	0.9536					
264810173 - N	UTCX52354	0.9536					
264810174 - N	UTCX52354	0.9536					
264810175 - N	UTCX52354	0.9536					
264810176 - N	UTCX52354	0.9536					
264810177 - N	UTCX52354	0.9536					
264810178 - N	UTCX52354	0.9536					
264810179 - N	UTCX52354	0.9536					
264810180 - N	UTCX52354	0.9536	0.263	270	2.53	95	
264810181 - N	UTCX52354	0.9536					
264810182 - N	UTCX52354	0.9536					
264810183 - N	UTCX52354	0.9536					
264810184 - N	UTCX52354	0.9536					
264810185 - N	UTCX52354	0.9536					
264810186 - N	UTCX52354	0.9536					
264810187 - N	UTCX52354	0.9536					
264810188 - N	UTCX52354	0.9536					
264810189 - N	UTCX52354	0.9536					

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810190	264810190 - N	2648.061	2648.070	1.31	1.97	
2	264810191	264810191 - N	2648.061	2648.070			
3	264810192	264810192 - N	2648.061	2648.070			
4	264810193	264810193 - N	2648.073	2648.058			
5	264810194	264810194 - N	2648.073	2648.058			
6	264810195	264810195 - N	2648.073	2648.058			
7	264810196	264810196 - N	2648.073	2648.058			
8	264810197	264810197 - N	2648.073	2648.058			
9	264810198	264810198 - N	2648.073	2648.058			
10	264810199	264810199 - N	2648.057	2648.076			
11	264810200	264810200 - N	2648.057	2648.076	1.42	2.41	
12	264810201	264810201 - N	2648.057	2648.076			
13	264810202	264810202 - N	2648.057	2648.076			
14	264810203	264810203 - N	2648.057	2648.076			
15	264810204	264810204 - N	2648.057	2648.076			
16	264810205	264810205 - N	2648.078	2648.065			
17	264810206	264810206 - N	2648.078	2648.065			
18	264810207	264810207 - N	2648.078	2648.065			
19	264810208	264810208 - N	2648.078	2648.065			
20	264810209	264810209 - N	2648.078	2648.065			
21	264810210	264810210 - N	2648.078	2648.065	1.35	2.02	
22	264810211	264810211 - N	2648.064	2648.071			
23	264810212	264810212 - N	2648.064	2648.071			
24	264810213	264810213 - N	2648.064	2648.071			
25	264810214	264810214 - N	2648.064	2648.071			
26	264810215	264810215 - N	2648.064	2648.071			
27	264810216	264810216 - N	2648.064	2648.071			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810190 - N	UTCX52354	0.9536	0.259	266	2.47	90	
264810191 - N	UTCX52354	0.9536					
264810192 - N	UTCX52354	0.9536					
264810193 - N	UTCX52354	0.9536					
264810194 - N	UTCX52354	0.9536					
264810195 - N	UTCX52354	0.9536					
264810196 - N	UTCX52354	0.9536					
264810197 - N	UTCX52354	0.9536					
264810198 - N	UTCX52354	0.9536					
264810199 - N	UTCX52354	0.9536					
264810200 - N	UTCX52354	0.9536	0.267	273	2.67	94	
264810201 - N	UTCX52354	0.9536					
264810202 - N	UTCX52354	0.9536					
264810203 - N	UTCX52354	0.9536					
264810204 - N	UTCX52354	0.9536					
264810205 - N	UTCX52354	0.9536					
264810206 - N	UTCX52354	0.9536					
264810207 - N	UTCX52354	0.9536					
264810208 - N	UTCX52354	0.9536					
264810209 - N	UTCX52354	0.9536					
264810210 - N	UTCX52354	0.9536	0.256	264	2.29	92	
264810211 - N	UTCX52354	0.9536					
264810212 - N	UTCX52354	0.9536					
264810213 - N	UTCX52354	0.9536					
264810214 - N	UTCX52354	0.9536					
264810215 - N	UTCX52354	0.9536					
264810216 - N	UTCX52354	0.9536					

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Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810217	264810217 - N	2648.080	2648.062			
2	264810218	264810218 - N	2648.080	2648.062			
3	264810219	264810219 - N	2648.080	2648.062			
4	264810220	264810220 - N	2648.080	2648.062	1.48	2.28	
5	264810221	264810221 - N	2648.080	2648.062			
6	264810222	264810222 - N	2648.080	2648.062			
7	264810223	264810223 - N	2648.066	2648.079			
8	264810224	264810224 - N	2648.066	2648.079			
9	264810225	264810225 - N	2648.066	2648.079			
10	264810226	264810226 - N	2648.066	2648.079			
11	264810227	264810227 - N	2648.066	2648.079			
12	264810228	264810228 - N	2648.066	2648.079			
13	264810229	264810229 - N	2648.075	2648.067			
14	264810230	264810230 - N	2648.075	2648.067	1.33	2.05	
15	264810231	264810231 - N	2648.075	2648.067			
16	264810232	264810232 - N	2648.075	2648.067			
17	264810233	264810233 - N	2648.075	2648.067			
18	264810234	264810234 - N	2648.075	2648.067			
19	264810235	264810235 - N	2648.063	2648.081			
20	264810236	264810236 - N	2648.063	2648.081			
21	264810237	264810237 - N	2648.063	2648.081			
22	264810238	264810238 - N	2648.063	2648.081			
23	264810239	264810239 - N	2648.063	2648.081			
24	264810240	264810240 - N	2648.063	2648.081	1.44	2.43	
25	264810241	264810241 - N	2648.082	2648.069			
26	264810242	264810242 - N	2648.082	2648.069			
27	264810243	264810243 - N	2648.082	2648.069			

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : **TN270-2-8**
Project : **Oak Hammock - JED Landfill #6, FL**

We, the Geonet Manufacturer, hereby ceritify the following for the material sent to the above referenced project :

Geonet Roll Number	Resin Lot Number	Geonet Density (gm/cc)	Mass Per Unit Area (lb/ft^2)	Thickness (mils)	Carbon Black (%)	Tensile Strength (MD) (lb/in)	Transmissivity (m^2/sec)
264810217 - N	UTCX52354	0.9536					
264810218 - N	UTCX52354	0.9536					
264810219 - N	UTCX52354	0.9536					
264810220 - N	UTCX52354	0.9536	0.261	271	2.51	96	
264810221 - N	UTCX52354	0.9536					
264810222 - N	UTCX52354	0.9536					
264810223 - N	UTCX52354	0.9536					
264810224 - N	UTCX52354	0.9536					
264810225 - N	UTCX52354	0.9536					
264810226 - N	UTCX52354	0.9536					
264810227 - N	UTCX52354	0.9536					
264810228 - N	UTCX52354	0.9536					
264810229 - N	UTCX52354	0.9536					
264810230 - N	UTCX52354	0.9536	0.257	267	2.42	91	
264810231 - N	UTCX52354	0.9536					
264810232 - N	UTCX52354	0.9536					
264810233 - N	UTCX52354	0.9536					
264810234 - N	UTCX52354	0.9536					
264810235 - N	UTCX52354	0.9536					
264810236 - N	UTCX52354	0.9536					
264810237 - N	UTCX52354	0.9536					
264810238 - N	UTCX52354	0.9536					
264810239 - N	UTCX52354	0.9536					
264810240 - N	UTCX52354	0.9536	0.268	269	2.70	93	
264810241 - N	UTCX52354	0.9536					
264810242 - N	UTCX52354	0.9536					
264810243 - N	UTCX52354	0.9536					

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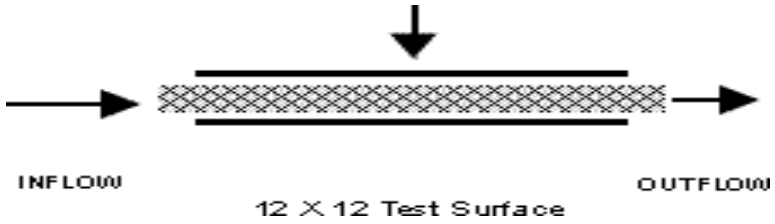
SKAPS Industries

ASTM D 4716

Client:	Waste Services, Inc.	**Job #**	2648
Project:	Oak Hammock - JED Landfill #6, FL		
Product:	TN270-2-8		

Test Configuration:



Test Information:

Boundary Conditions:	Textured Liner Geocomposite Textured Liner	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	500 psf 0.02 ft 24 hours MD

Test Results:

Roll No.	Pressure (psf)	Gradient, ft	Transmissivity, m^2/sec 24 hours
264810001	500	0.02	8.97×10^{-4}
264810035			8.92×10^{-4}
264810070			9.02×10^{-4}
264810105			8.94×10^{-4}
264810140			8.98×10^{-4}
264810175			8.95×10^{-4}
264810210			9.01×10^{-4}

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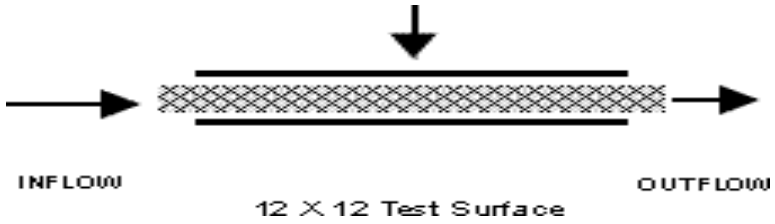
SKAPS Industries

ASTM D 4716

Client:	Waste Services, Inc.	**Job #**	2648
Project:	Oak Hammock - JED Landfill #6, FL		
Product:	TN270-2-8		

Test Configuration:



Test Information:

Boundary Conditions:	Textured Liner Geocomposite Textured Liner	**Normal Load:** **Gradient:** **Seating Time:** **Flow Direction:**	15000 psf 0.02 ft 100 hours MD

Test Results:

Roll No.	Pressure (psf)	Gradient, ft	Transmissivity, m^2/sec
			100 hours
264810001	15000	0.02	4.18×10^{-4}
264810035			4.13×10^{-4}
264810070			4.21×10^{-4}
264810105			4.15×10^{-4}
264810140			4.19×10^{-4}
264810175			4.11×10^{-4}
264810210			4.17×10^{-4}

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

POLYETHYLENE RESIN CERTIFICATION

Customer Name : Waste Services, Inc.
Project Name : Oak Hammock - JED Landfill #6, FL
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN270-2-8

We, the Geonet Manufacturer, hereby certify the following for the material delivered to the above referenced project:

Resin Supplier	Resin Production Plant	Resin Brand Name	Resin Lot Number	Property	Test Method	Units	Resin Supplier Value	Tested Value*
Trademark Plastics Corporation	Chevron, TX	HDPE	UTCX52354	Density	ASTM D 1505	gm/cc	0.948	0.948
				Melt Flow Index	ASTM D 1238[(a)]	gm/10 min	0.09	0.10

(a) Condition 190/2.16
* Data from SKAPS Quality Control

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810001	264810001 - N	2684.003	2648.013	1.43 ✓	2.29	
2	264810002	264810002 - N	2684.003	2648.013			
3	264810003	264810003 - N	2684.003	2648.013			
4	264810004	264810004 - N	2684.003	2648.013			
5	264810005	264810005 - N	2684.003	2648.013			
6	264810006	264810006 - N	2684.003	2648.013			
7	264810007	264810007 - N	2648.015	2648.005			
8	264810008	264810008 - N	2648.015	2648.005			
9	264810009	264810009 - N	2648.015	2648.005			
10	264810010	264810010 - N	2648.015	2648.005	1.34 ✓	2.12	
11	264810011	264810011 - N	2648.015	2648.005			
12	264810012	264810012 - N	2648.015	2648.005			
13	264810013	264810013 - N	2648.001	2648.017			
14	264810014	264810014 - N	2648.001	2648.017			
15	264810015	264810015 - N	2648.001	2648.017			
16	264810016	264810016 - N	2648.001	2648.017			
17	264810017	264810017 - N	2648.001	2648.017			
18	264810018	264810018 - N	2648.001	2648.017			
19	264810019	264810019 - N	2648.019	2648.002			
20	264810020	264810020 - N	2648.019	2648.002	1.41 ✓	2.32	
21	264810021	264810021 - N	2648.019	2648.002			
22	264810022	264810022 - N	2648.019	2648.002			
23	264810023	264810023 - N	2648.019	2648.002			
24	264810024	264810024 - N	2648.019	2648.002			
25	264810025	264810025 - N	2648.007	2648.022			
26	264810026	264810026 - N	2648.007	2648.022			
27	264810027	264810027 - N	2648.007	2648.022			

ROLLS 14' x 200' EACH = 2,800 SF EACH

MQC RESULTS FOR 75,600 SF → 680.400 SF TOTAL INCLUDED.

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571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810028	264810028 - N	2648.007	2648.022			
2	264810029	264810029 - N	2648.007	2648.022			
3	264810030	264810030 - N	2648.007	2648.022	1.38 ✓	1.99	
4	264810031	264810031 - N	2648.018	2648.004			
5	264810032	264810032 - N	2648.018	2648.004			
6	264810033	264810033 - N	2648.018	2648.004			
7	264810034	264810034 - N	2648.018	2648.004			
8	264810035	264810035 - N	2648.018	2648.004			
9	264810036	264810036 - N	2648.018	2648.004			
10	264810037	264810037 - N	2648.006	2648.025			
11	264810038	264810038 - N	2648.006	2648.025			
12	264810039	264810039 - N	2648.006	2648.025			
13	264810040	264810040 - N	2648.006	2648.025	1.49 ✓	2.21	
14	264810041	264810041 - N	2648.006	2648.025			
15	264810042	264810042 - N	2648.006	2648.025			
16	264810043	264810043 - N	2648.023	2648.011			
17	264810044	264810044 - N	2648.023	2648.011			
18	264810045	264810045 - N	2648.023	2648.011			
19	264810046	264810046 - N	2648.023	2648.011			
20	264810047	264810047 - N	2648.023	2648.011			
21	264810048	264810048 - N	2648.023	2648.011			
22	264810049	264810049 - N	2648.009	2648.027			
23	264810050	264810050 - N	2648.009	2648.027	1.32 ✓	2.10	
24	264810051	264810051 - N	2648.009	2648.027			
25	264810052	264810052 - N	2648.009	2648.027			
26	264810053	264810053 - N	2648.009	2648.027			
27	264810054	264810054 - N	2648.009	2648.027			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810055	264810055 - N	2648.021	2648.010			
2	264810056	264810056 - N	2648.021	2648.010			
3	264810057	264810057 - N	2648.021	2648.010			
4	264810058	264810058 - N	2648.021	2648.010			
5	264810059	264810059 - N	2648.021	2648.010			
6	264810060	264810060 - N	2648.021	2648.010	1.47 ✓	2.36	
7	264810061	264810061 - N	2648.012	2648.016			
8	264810062	264810062 - N	2648.012	2648.016			
9	264810063	264810063 - N	2648.012	2648.016			
10	264810064	264810064 - N	2648.012	2648.016			
11	264810065	264810065 - N	2648.012	2648.016			
12	264810066	264810066 - N	2648.012	2648.016			
13	264810067	264810067 - N	2648.026	2648.008			
14	264810068	264810068 - N	2648.026	2648.008			
15	264810069	264810069 - N	2648.026	2648.008			
16	264810070	264810070 - N	2648.026	2648.008	1.30 ✓	1.91	
17	264810071	264810071 - N	2648.026	2648.008			
18	264810072	264810072 - N	2648.026	2648.008			
19	264810073	264810073 - N	2648.014	2648.020			
20	264810074	264810074 - N	2648.014	2648.020			
21	264810075	264810075 - N	2648.014	2648.020			
22	264810076	264810076 - N	2648.014	2648.020			
23	264810077	264810077 - N	2648.014	2648.020			
24	264810078	264810078 - N	2648.014	2648.020			
25	264810079	264810079 - N	2648.024	2648.035			
26	264810080	264810080 - N	2648.024	2648.035	1.45 ✓	2.27	
27	264810081	264810081 - N	2648.024	2648.035			

APPROVED 5 QA

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810082	264810082 - N	2648.024	2648.035			
2	264810083	264810083 - N	2648.024	2648.035			
3	264810084	264810084 - N	2648.024	2648.035			
4	264810085	264810085 - N	2648.041	2648.028			
5	264810086	264810086 - N	2648.041	2648.028			
6	264810087	264810087 - N	2648.041	2648.028			
7	264810088	264810088 - N	2648.041	2648.028			
8	264810089	264810089 - N	2648.041	2648.028			
9	264810090	264810090 - N	2648.041	2648.028	1.27 ✓	2.14	
10	264810091	264810091 - N	2648.029	2648.047			
11	264810092	264810092 - N	2648.029	2648.047			
12	264810093	264810093 - N	2648.029	2648.047			
13	264810094	264810094 - N	2648.029	2648.047			
14	264810095	264810095 - N	2648.029	2648.047			
15	264810096	264810096 - N	2648.029	2648.047			
16	264810097	264810097 - N	2648.045	2648.033			
17	264810098	264810098 - N	2648.045	2648.033			
18	264810099	264810099 - N	2648.045	2648.033			
19	264810100	264810100 - N	2648.045	2648.033	1.56 ✓	2.38	
20	264810101	264810101 - N	2648.045	2648.033			
21	264810102	264810102 - N	2648.045	2648.033			
22	264810103	264810103 - N	2648.031	2648.049			
23	264810104	264810104 - N	2648.031	2648.049			
24	264810105	264810105 - N	2648.031	2648.049			
25	264810106	264810106 - N	2648.031	2648.049			
26	264810107	264810107 - N	2648.031	2648.049			
27	264810108	264810108 - N	2648.031	2648.049			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810109	264810109 - N	2648.051	2648.034			
2	264810110	264810110 - N	2648.051	2648.034	1.21 ✓	1.93	
3	264810111	264810111 - N	2648.051	2648.034			
4	264810112	264810112 - N	2648.051	2648.034			
5	264810113	264810113 - N	2648.051	2648.034			
6	264810114	264810114 - N	2648.051	2648.034			
7	264810115	264810115 - N	2648.030	2648.052			
8	264810116	264810116 - N	2648.030	2648.052			
9	264810117	264810117 - N	2648.030	2648.052			
10	264810118	264810118 - N	2648.030	2648.052			
11	264810119	264810119 - N	2648.030	2648.052			
12	264810120	264810120 - N	2648.030	2648.052	1.50 ✓	2.25	
13	264810121	264810121 - N	2648.046	2648.038			
14	264810122	264810122 - N	2648.046	2648.038			
15	264810123	264810123 - N	2648.046	2648.038			
16	264810124	264810124 - N	2648.046	2648.038			
17	264810125	264810125 - N	2648.046	2648.038			
18	264810126	264810126 - N	2648.046	2648.038			
19	264810127	264810127 - N	2648.037	2648.054			
20	264810128	264810128 - N	2648.037	2648.054			
21	264810129	264810129 - N	2648.037	2648.054			
22	264810130	264810130 - N	2648.037	2648.054	1.29 ✓	2.18	
23	264810131	264810131 - N	2648.037	2648.054			
24	264810132	264810132 - N	2648.037	2648.054			
25	264810133	264810133 - N	2648.053	2648.032			
26	264810134	264810134 - N	2648.053	2648.032			
27	264810135	264810135 - N	2648.053	2648.032			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810136	264810136 - N	2648.053	2648.032			
2	264810137	264810137 - N	2648.053	2648.032			
3	264810138	264810138 - N	2648.053	2648.032			
4	264810139	264810139 - N	2648.039	2648.043			
5	264810140	264810140 - N	2648.039	2648.043	1.52 ✓	2.30	
6	264810141	264810141 - N	2648.039	2648.043			
7	264810142	264810142 - N	2648.039	2648.043			
8	264810143	264810143 - N	2648.039	2648.043			
9	264810144	264810144 - N	2648.039	2648.043			
10	264810145	264810145 - N	2648.048	2648.040			
11	264810146	264810146 - N	2648.048	2648.040			
12	264810147	264810147 - N	2648.048	2648.040			
13	264810148	264810148 - N	2648.048	2648.040			
14	264810149	264810149 - N	2648.048	2648.040			
15	264810150	264810150 - N	2648.048	2648.040	1.23 ✓	1.95	
16	264810151	264810151 - N	2648.036	2648.050			
17	264810152	264810152 - N	2648.036	2648.050			
18	264810153	264810153 - N	2648.036	2648.050			
19	264810154	264810154 - N	2648.036	2648.050			
20	264810155	264810155 - N	2648.036	2648.050			
21	264810156	264810156 - N	2648.036	2648.050			
22	264810157	264810157 - N	2648.044	2648.042			
23	264810158	264810158 - N	2648.044	2648.042			
24	264810159	264810159 - N	2648.044	2648.042			
25	264810160	264810160 - N	2648.044	2648.042	1.54 ✓	2.23	
26	264810161	264810161 - N	2648.044	2648.042			
27	264810162	264810162 - N	2648.044	2648.042			

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SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810163	264810163 - N	2648.056	2648.074			
2	264810164	264810164 - N	2648.056	2648.074			
3	264810165	264810165 - N	2648.056	2648.074			
4	264810166	264810166 - N	2648.056	2648.074			
5	264810167	264810167 - N	2648.056	2648.074			
6	264810168	264810168 - N	2648.056	2648.074			
7	264810169	264810169 - N	2648.068	2648.060			
8	264810170	264810170 - N	2648.068	2648.060	1.25	2.16	
9	264810171	264810171 - N	2648.068	2648.060			
10	264810172	264810172 - N	2648.068	2648.060			
11	264810173	264810173 - N	2648.068	2648.060			
12	264810174	264810174 - N	2648.068	2648.060			
13	264810175	264810175 - N	2648.059	2648.077			
14	264810176	264810176 - N	2648.059	2648.077			
15	264810177	264810177 - N	2648.059	2648.077			
16	264810178	264810178 - N	2648.059	2648.077			
17	264810179	264810179 - N	2648.059	2648.077			
18	264810180	264810180 - N	2648.059	2648.077	1.46	2.34	
19	264810181	264810181 - N	2648.072	2648.055			
20	264810182	264810182 - N	2648.072	2648.055			
21	264810183	264810183 - N	2648.072	2648.055			
22	264810184	264810184 - N	2648.072	2648.055			
23	264810185	264810185 - N	2648.072	2648.055			
24	264810186	264810186 - N	2648.072	2648.055			
25	264810187	264810187 - N	2648.061	2648.070			
26	264810188	264810188 - N	2648.061	2648.070			
27	264810189	264810189 - N	2648.061	2648.070			

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810190	264810190 - N	2648.061	2648.070	1.31	1.97	
2	264810191	264810191 - N	2648.061	2648.070			
3	264810192	264810192 - N	2648.061	2648.070			
4	264810193	264810193 - N	2648.073	2648.058			
5	264810194	264810194 - N	2648.073	2648.058			
6	264810195	264810195 - N	2648.073	2648.058			
7	264810196	264810196 - N	2648.073	2648.058			
8	264810197	264810197 - N	2648.073	2648.058			
9	264810198	264810198 - N	2648.073	2648.058			
10	264810199	264810199 - N	2648.057	2648.076			
11	264810200	264810200 - N	2648.057	2648.076	1.42	2.41	
12	264810201	264810201 - N	2648.057	2648.076			
13	264810202	264810202 - N	2648.057	2648.076			
14	264810203	264810203 - N	2648.057	2648.076			
15	264810204	264810204 - N	2648.057	2648.076			
16	264810205	264810205 - N	2648.078	2648.065			
17	264810206	264810206 - N	2648.078	2648.065			
18	264810207	264810207 - N	2648.078	2648.065			
19	264810208	264810208 - N	2648.078	2648.065			
20	264810209	264810209 - N	2648.078	2648.065			
21	264810210	264810210 - N	2648.078	2648.065	1.35	2.02	
22	264810211	264810211 - N	2648.064	2648.071			
23	264810212	264810212 - N	2648.064	2648.071			
24	264810213	264810213 - N	2648.064	2648.071			
25	264810214	264810214 - N	2648.064	2648.071			
26	264810215	264810215 - N	2648.064	2648.071			
27	264810216	264810216 - N	2648.064	2648.071			

APPROVED 5 QA

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

SKAPS Industries

Engineered Synthetic Products, Inc.

Product : TN270-2-8
Project : Oak Hammock - JED Landfill #6, FL

We, the Geocomposite manufacturer, hereby certify the following for the material delievered to the above referenced project :

Roll	Geocomposite Roll Number	Geonet Roll Number	Geotextile Roll Number		Ply Adhesion (lb/in)		Geocomposite Transmissivity* (m^2/sec)
			Top	Bottom	Minimum	Average	
1	264810217	264810217 - N	2648.080	2648.062			
2	264810218	264810218 - N	2648.080	2648.062			
3	264810219	264810219 - N	2648.080	2648.062			
4	264810220	264810220 - N	2648.080	2648.062	1.48	2.28	
5	264810221	264810221 - N	2648.080	2648.062			
6	264810222	264810222 - N	2648.080	2648.062			
7	264810223	264810223 - N	2648.066	2648.079			
8	264810224	264810224 - N	2648.066	2648.079			
9	264810225	264810225 - N	2648.066	2648.079			
10	264810226	264810226 - N	2648.066	2648.079			
11	264810227	264810227 - N	2648.066	2648.079			
12	264810228	264810228 - N	2648.066	2648.079			
13	264810229	264810229 - N	2648.075	2648.067			
14	264810230	264810230 - N	2648.075	2648.067	1.33	2.05	
15	264810231	264810231 - N	2648.075	2648.067			
16	264810232	264810232 - N	2648.075	2648.067			
17	264810233	264810233 - N	2648.075	2648.067			
18	264810234	264810234 - N	2648.075	2648.067			
19	264810235	264810235 - N	2648.063	2648.081			
20	264810236	264810236 - N	2648.063	2648.081			
21	264810237	264810237 - N	2648.063	2648.081			
22	264810238	264810238 - N	2648.063	2648.081			
23	264810239	264810239 - N	2648.063	2648.081			
24	264810240	264810240 - N	2648.063	2648.081	1.44	2.43	
25	264810241	264810241 - N	2648.082	2648.069			
26	264810242	264810242 - N	2648.082	2648.069			
27	264810243	264810243 - N	2648.082	2648.069			

571 Industrial Parkway, Commerce, GA 30529 **Phone:** 706-336-7000 **Fax:** 706-336-7007 **Email:** skaps@skaps.com

April 4, 2008

Mail To:	**Bill To:**
Kirk Wills **GeoSyntec Consultants** 14055 Riveredge Drive, Suite 300 Tampa, FL 33637 email: kwills@geosyntec.com	**<= Same (Proj. Number: FQ1450)**

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility Cell 6 Construction**
TRI Job Reference Number:	E2302-16-10
Material(s) Tested:	One 8 oz Nonwoven Geotextile(s)
Test(s) Requested:	Mass/Unit Area (ASTM D 5261) Grab Tensile (ASTM D 4632) Puncture Strength (ASTM D 4833) CBR Puncture Strength (ASTM D 6241) Trapezoidal Tear (ASTM D 4533) Apparent Opening Size (ASTM D 4751) Permittivity (ASTM D 4491)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

MPatel

Dr. Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: 8 oz Nonwoven Geotextile
Sample Identification: 2009920906
TRI Log #: E2302-16-10

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.89	3.89	4.16	3.46	3.69	3.87	3.97	4.27	3.84	4.18	**3.92**	0.24	
Mass/Unit Area (oz/sq.yd)	9.05	9.05	9.68	8.05	8.58	9.00	9.23	9.93	8.93	9.72	**9.12**	0.56	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	305	353	354	300	297	315	269	402	320	278	**319**	40	200 min
TD - Tensile Strength (lbs)	385	286	282	329	315	326	381	307	312	318	**324**	35	200 min
MD - Elong. @ Max. Load (%)	68	72	63	67	63	57	65	61	71	58	**65**	5	
TD - Elong. @ Max. Load (%)	77	67	83	68	77	76	76	83	71	81	**76**	6	
Puncture Resistance (ASTM D 4833)													
Puncture Strength (lbs)	186	142	134	137	172	159	182	180	119	151	**157**	20	90 min
	152	172	170	150	152								
CBR Puncture Strength (ASTM D 6241)													
Puncture Resistance (lbs)	943	893	860	900	923	1020	1003	914	847	875	**918**	57	500 min
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	103	93	118	110	91	91	102	114	131	104	**106**	13	75 min
TD - Tear Strength (lbs)	153	133	106	112	101	129	115	114	128	120	**121**	15	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.090	0.125	0.125	0.125	0.090						**0.111**	0.019	0.21 max
Sieve No.	170	120	120	120	170						**120**		

MD Machine Direction TD Transverse Direction

The testing 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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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: 8 oz Nonwoven Geotextile
Sample Identification: 2009920906
TRI Log #: E2302-16-10

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	21												
Correction Factor:	0.976												
Trial =>:	1					2							
Thickness (mils)	94	94	94	94	94	109	109	109	109	109			
Time (s)	14	14	14	14	14	16	16	16	16	16			
Flow (L)	2.28	2.28	2.28	2.32	2.32	2.40	2.36	2.36	2.32	2.32			
Permittivity (s-1)	1.58	1.58	1.58	1.61	1.61	1.46	1.43	1.43	1.41	1.41			
Flow rate (GPM/ft2)	118	118	118	120	120	109	107	107	105	105			
Permeability (cm/s)	0.378	0.378	0.378	0.384	0.384	0.403	0.397	0.397	0.390	0.390			
Trial =>:	3					4							
Thickness (mils)	106	106	106	106	106	110	110	110	110	110			
Time (s)	14	14	14	14	14	16	16	16	16	16			
Flow (L)	2.28	2.24	2.28	2.24	2.24	2.16	2.12	2.16	2.16	2.16			
Permittivity (s-1)	1.58	1.55	1.58	1.55	1.55	1.31	1.29	1.31	1.31	1.31	1.47	0.12	
Flow rate (GPM/ft2)	118	116	118	116	116	98	96	98	98	98	110	9	
Permeability (cm/s)	0.426	0.418	0.426	0.418	0.418	0.366	0.360	0.366	0.366	0.366	0.390	0.022	
TEMPERATURE CORRECTED VALUES													
Permittivity (s-1)											1.44		0.5 min
Flow rate (GPM/ft2)											108		
Permeability (cm/s)											0.381		

MD Machine Direction TD Transverse Direction

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9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

February 29, 2008

Mail To:	**Bill To:**
Kirk Wills **GeoSyntec Consultants** 14055 Riveredge Drive, Suite 300 Tampa, FL 33637 email: kwills@geosyntec.com	**<= Same (Proj. Number: FQ1450)**

Dear Mr. Wills:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project:	**Oak Hammock (JED) Solid Waste Disposal Facility** **Cell 6 Construction**
TRI Job Reference Number:	E2302-72-04
Material(s) Tested:	13 SKAPS 8 oz Nonwoven Geotextile Componet of Geocomposite(s)
Test(s) Requested:	Mass/Unit Area (ASTM D 5261) Grab Tensile (ASTM D 4632) Trapezoidal Tear (ASTM D 4533) Apparent Opening Size (ASTM D 4751) Permittivity (ASTM D 4491)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

MPatel

Dr. Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.001
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.30	4.72	3.02	3.85	3.39	3.63	3.59	3.62	3.73	3.54	**3.64**	0.45	
Mass/Unit Area (oz/sq.yd)	7.68	10.98	7.02	8.96	7.89	8.44	8.35	8.42	8.68	8.23	**8.46**	1.04	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	235	232	215	262	236	255	271	301	232	231	**247**	25	200 min
TD - Tensile Strength (lbs)	251	304	285	299	242	264	256	261	249	274	**269**	21	200 min
MD - Elong. @ Max. Load (%)	79	75	66	76	81	70	83	67	80	74	**75**	6	
TD - Elong. @ Max. Load (%)	81	88	88	82	84	82	83	93	78	94	**85**	5	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	88	105	114	89	108	95	87	89	150	103	**103**	19	75 min
TD - Tear Strength (lbs)	133	118	147	143	120	101	125	122	148	137	**129**	15	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.180	0.150	0.090	0.180	0.106						**0.141**	0.042	0.21 max
Sieve No.	80	100	170	80	140						**100**		
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	22												
Correction Factor:	0.953												
Trial =>:	1					2							
Thickness (mils)	101	101	101	101	101	103	103	103	103	103			
Time (s)	14	14	14	14	14	12	12	12	12	12			
Flow (L)	2.68	2.68	2.72	2.68	2.68	2.60	2.60	2.56	2.56	2.56			
Permittivity (s-1)	1.86	1.86	1.89	1.86	1.86	2.10	2.10	2.07	2.07	2.07			
Flow rate (GPM/ft2)	139	139	141	139	139	157	157	155	155	155			
Permeability (cm/s)	0.477	0.477	0.484	0.477	0.477	0.551	0.551	0.542	0.542	0.542			
Trial =>:	3					4							
Thickness (mils)	111	111	111	111	111	106	106	106	106	106			
Time (s)	16	16	16	16	16	14	14	14	14	14			
Flow (L)	2.64	2.60	2.60	2.64	2.60	2.60	2.60	2.56	2.56	2.56			
Permittivity (s-1)	1.60	1.58	1.58	1.60	1.58	1.80	1.80	1.78	1.78	1.78	1.83	0.18	
Flow rate (GPM/ft2)	120	118	118	120	118	135	135	133	133	133	137	14	
Permeability (cm/s)	0.452	0.445	0.445	0.452	0.445	0.486	0.486	0.478	0.478	0.478	0.488	0.037	
TEMPERATURE CORRECTED VALUES											**Permittivity (s-1)**		0.5 min
											Flow rate (GPM/ft2)		
											Permeability (cm/s)		

		1.74	
		131	
		0.465	

MD Machine Direction TD Transverse Direction

The testing 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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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.014
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.72	4.13	3.92	3.64	4.09	3.43	3.49	5.06	3.59	4.03	**3.91**	0.48	
Mass/Unit Area (oz/sq.yd)	8.65	9.61	9.12	8.47	9.51	7.98	8.12	11.77	8.35	9.37	**9.09**	1.11	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	252	183	249	288	397	268	351	200	296	217	**270**	66	200 min
TD - Tensile Strength (lbs)	377	267	305	300	243	301	235	283	345	337	**299**	45	200 min
MD - Elong. @ Max. Load (%)	71	61	67	85	89	79	72	69	81	73	**75**	9	
TD - Elong. @ Max. Load (%)	121	78	91	85	79	81	107	77	90	87	**90**	14	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	80	106	118	143	113	97	120	85	106	100	**107**	18	75 min
TD - Tear Strength (lbs)	102	123	150	163	163	150	126	111	138	125	**135**	21	75 min

MD Machine Direction TD Transverse Direction

The testing 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.

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.026
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.60	3.97	4.78	3.72	3.54	3.77	3.38	3.93	3.95	3.61	**3.83**	0.39	
Mass/Unit Area (oz/sq.yd)	8.37	9.23	11.12	8.65	8.23	8.77	7.86	9.14	9.19	8.40	**8.90**	0.90	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	256	233	266	238	268	273	223	323	244	229	**255**	29	200 min
TD - Tensile Strength (lbs)	274	306	277	298	300	258	317	306	304	262	**290**	21	200 min
MD - Elong. @ Max. Load (%)	75	75	75	75	85	81	75	74	79	74	**77**	4	
TD - Elong. @ Max. Load (%)	77	88	84	84	93	94	83	96	85	76	**86**	7	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	112	91	115	128	88	99	147	72	106	103	**106**	21	75 min
TD - Tear Strength (lbs)	151	121	119	122	107	130	144	98	145	115	**125**	17	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.106	0.106	0.125	0.150	0.090						**0.115**	0.023	0.21 max
Sieve No.	140	140	120	100	170						**120**		
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	21												
Correction Factor:	0.976												
Trial =>:	1					2							
Thickness (mils)	115	115	115	115	115	123	123	123	123	123			
Time (s)	14	14	14	14	14	16	16	16	16	16			
Flow (L)	2.32	2.32	2.28	2.32	2.28	2.24	2.24	2.28	2.28	2.24			
Permittivity (s-1)	1.61	1.61	1.58	1.61	1.58	1.36	1.36	1.38	1.38	1.36			
Flow rate (GPM/ft2)	120	120	118	120	118	102	102	104	104	102			
Permeability (cm/s)	0.470	0.470	0.462	0.470	0.462	0.425	0.425	0.432	0.432	0.425			
Trial =>:	3					4							
Thickness (mils)	113	113	113	113	113	100	100	100	100	100			
Time (s)	14	14	14	14	14	14	14	14	14	14			
Flow (L)	2.48	2.48	2.48	2.44	2.44	2.76	2.76	2.72	2.72	2.76			
Permittivity (s-1)	1.72	1.72	1.72	1.69	1.69	1.91	1.91	1.89	1.89	1.91	1.65	0.20	
Flow rate (GPM/ft2)	129	129	129	127	127	143	143	141	141	143	123	15	
Permeability (cm/s)	0.494	0.494	0.494	0.486	0.486	0.486	0.486	0.479	0.479	0.486	0.467	0.025	
TEMPERATURE CORRECTED VALUES											**Permittivity (s-1)**	1.61	0.5 min
											Flow rate (GPM/ft2)	120	
											Permeability (cm/s)	0.456	

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.037
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.41	3.71	4.07	3.34	5.13	3.26	3.77	5.01	3.91	3.67	**3.93**	0.65	
Mass/Unit Area (oz/sq.yd)	7.93	8.63	9.47	7.77	11.93	7.58	8.77	11.65	9.09	8.54	**9.14**	1.52	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	285	298	215	363	250	254	243	393	255	246	**280**	57	200 min
TD - Tensile Strength (lbs)	285	304	258	308	285	295	269	314	271	267	**286**	19	200 min
MD - Elong. @ Max. Load (%)	82	79	75	79	78	77	89	85	88	86	**82**	5	
TD - Elong. @ Max. Load (%)	84	109	82	90	87	81	114	82	93	88	**91**	12	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	126	91	125	101	103	93	88	105	113	137	**108**	17	75 min
TD - Tear Strength (lbs)	111	121	110	119	109	148	144	155	116	138	**127**	17	75 min

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.050
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.30	3.84	3.89	4.45	3.75	4.50	3.87	3.31	3.03	3.84	**3.78**	0.47	
Mass/Unit Area (oz/sq.yd)	7.68	8.93	9.05	10.35	8.72	10.47	9.00	7.70	7.05	8.93	**8.79**	1.10	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	291	207	264	252	339	267	261	306	277	291	**276**	35	200 min
TD - Tensile Strength (lbs)	293	285	302	313	294	318	278	221	317	273	**289**	29	200 min
MD - Elong. @ Max. Load (%)	81	70	77	81	82	77	77	65	83	76	**77**	6	
TD - Elong. @ Max. Load (%)	87	83	90	88	111	83	86	87	85	94	**89**	8	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	128	90	103	102	92	97	121	137	87	94	**105**	17	75 min
TD - Tear Strength (lbs)	118	132	128	125	137	128	114	108	111	147	**125**	12	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.150	0.180	0.125	0.150	0.125						**0.146**	0.023	0.21 max
Sieve No.	100	80	120	100	120						**100**		
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	21												
Correction Factor:	0.976												
Trial =>:	1					2							
Thickness (mils)	128	128	128	128	128	108	108	108	108	108			
Time (s)	16	16	16	16	16	14	14	14	14	14			
Flow (L)	2.28	2.28	2.28	2.32	2.28	2.64	2.64	2.64	2.60	2.64			
Permittivity (s-1)	1.38	1.38	1.38	1.41	1.38	1.83	1.83	1.83	1.80	1.83			
Flow rate (GPM/ft2)	104	104	104	105	104	137	137	137	135	137			
Permeability (cm/s)	0.450	0.450	0.450	0.458	0.450	0.502	0.502	0.502	0.495	0.502			
Trial =>:	3					4							
Thickness (mils)	122	122	122	122	122	126	126	126	126	126			
Time (s)	16	16	16	16	16	16	16	16	16	16			
Flow (L)	2.32	2.28	2.28	2.24	2.28	2.56	2.52	2.56	2.56	2.56			
Permittivity (s-1)	1.41	1.38	1.38	1.36	1.38	1.55	1.53	1.55	1.55	1.55	1.54	0.18	
Flow rate (GPM/ft2)	105	104	104	102	104	116	114	116	116	116	115	14	
Permeability (cm/s)	0.436	0.429	0.429	0.421	0.429	0.497	0.490	0.497	0.497	0.497	0.469	0.031	
TEMPERATURE CORRECTED VALUES											**Permittivity (s-1)**	1.50	0.5 min
											Flow rate (GPM/ft2)	112	
											Permeability (cm/s)	0.458	

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.062
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.94	3.31	3.89	3.36	3.90	4.39	3.54	3.82	3.90	3.56	**3.76**	0.32	
Mass/Unit Area (oz/sq.yd)	9.16	7.70	9.05	7.82	9.07	10.21	8.23	8.89	9.07	8.28	**8.75**	0.75	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	231	197	212	251	382	239	224	357	237	232	**256**	62	200 min
TD - Tensile Strength (lbs)	284	281	286	280	349	301	265	226	277	302	**285**	31	200 min
MD - Elong. @ Max. Load (%)	75	65	67	71	81	79	74	73	82	70	**74**	6	
TD - Elong. @ Max. Load (%)	86	84	88	87	124	86	81	101	81	91	**91**	13	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	91	68	83	115	145	89	107	88	95	81	**96**	22	75 min
TD - Tear Strength (lbs)	123	121	130	147	142	112	124	103	150	136	**129**	15	75 min

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.074
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.66	3.52	4.25	3.70	3.40	4.09	3.93	3.28	3.32	3.88	**3.70**	0.33	
Mass/Unit Area (oz/sq.yd)	8.51	8.19	9.89	8.61	7.91	9.51	9.14	7.63	7.72	9.02	**8.61**	0.77	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	267	217	253	211	272	228	255	216	343	248	**251**	39	200 min
TD - Tensile Strength (lbs)	274	269	288	286	254	322	246	216	306	337	**280**	36	200 min
MD - Elong. @ Max. Load (%)	81	76	64	79	86	81	79	80	97	87	**81**	8	
TD - Elong. @ Max. Load (%)	91	95	83	99	86	92	96	87	93	115	**94**	9	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	87	152	90	107	105	142	70	109	94	94	**105**	25	75 min
TD - Tear Strength (lbs)	127	153	100	95	112	116	134	126	134	157	**125**	20	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.150	0.180	0.125	0.180	0.125						**0.152**	0.028	0.21 max
Sieve No.	100	80	120	80	120						**80**		
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	21												
Correction Factor:	0.976												
Trial =>:	1					2							
Thickness (mils)	111	111	111	111	111	102	102	102	102	102			
Time (s)	14	14	14	14	14	13	13	13	13	13			
Flow (L)	2.36	2.36	2.36	2.36	2.36	2.64	2.68	2.64	2.68	2.64			
Permittivity (s-1)	1.64	1.64	1.64	1.64	1.64	1.97	2.00	1.97	2.00	1.97			
Flow rate (GPM/ft2)	122	122	122	122	122	148	150	148	150	148			
Permeability (cm/s)	0.462	0.462	0.462	0.462	0.462	0.511	0.519	0.511	0.519	0.511			
Trial =>:	3					4							
Thickness (mils)	105	105	105	105	105	102	102	102	102	102			
Time (s)	13	13	13	13	13	13	13	13	13	13			
Flow (L)	2.12	2.08	2.08	2.08	2.08	2.44	2.44	2.48	2.44	2.48			
Permittivity (s-1)	1.58	1.55	1.55	1.55	1.55	1.82	1.82	1.85	1.82	1.85	1.75	0.17	
Flow rate (GPM/ft2)	118	116	116	116	116	136	136	139	136	139	131	13	
Permeability (cm/s)	0.422	0.414	0.414	0.414	0.414	0.472	0.472	0.480	0.472	0.480	0.467	0.036	
TEMPERATURE CORRECTED VALUES											**Permittivity (s-1)**	1.71	0.5 min
											Flow rate (GPM/ft2)	128	
											Permeability (cm/s)	0.456	

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.086
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.68	3.92	4.03	3.59	3.89	4.46	3.34	3.65	3.18	4.13	**3.79**	0.38	
Mass/Unit Area (oz/sq.yd)	8.56	9.12	9.37	8.35	9.05	10.37	7.77	8.49	7.40	9.61	**8.81**	0.88	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	219	233	271	316	280	262	226	405	259	254	**273**	54	200 min
TD - Tensile Strength (lbs)	256	318	301	287	267	345	300	224	304	272	**287**	34	200 min
MD - Elong. @ Max. Load (%)	77	69	95	76	89	77	71	76	81	75	**79**	8	
TD - Elong. @ Max. Load (%)	83	88	121	89	82	95	83	95	81	95	**91**	12	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	148	113	80	114	81	86	78	164	81	100	**105**	30	75 min
TD - Tear Strength (lbs)	102	116	118	123	134	152	100	110	113	162	**123**	21	75 min

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.097
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.69	4.07	3.27	4.55	3.34	3.38	3.63	4.69	3.78	3.45	**3.79**	0.50	
Mass/Unit Area (oz/sq.yd)	8.58	9.47	7.61	10.58	7.77	7.86	8.44	10.91	8.79	8.02	**8.80**	1.17	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	277	242	249	209	233	233	274	279	250	268	**251**	23	200 min
TD - Tensile Strength (lbs)	249	329	339	271	243	325	350	293	224	219	**284**	50	200 min
MD - Elong. @ Max. Load (%)	69	79	69	72	83	85	86	84	81	73	**78**	7	
TD - Elong. @ Max. Load (%)	80	87	93	84	94	85	119	79	81	80	**88**	12	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	87	107	98	87	86	112	99	127	112	95	**101**	13	75 min
TD - Tear Strength (lbs)	115	105	140	124	105	138	131	143	120	139	**126**	14	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.125	0.150	0.125	0.125	0.125						**0.130**	0.011	0.21 max
Sieve No.	120	100	120	120	120						**100**		
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	21												
Correction Factor:	0.976												
Trial =>:	1					2							
Thickness (mils)	97	97	97	97	97	110	110	110	110	110			
Time (s)	13	13	13	13	13	14	14	14	14	14			
Flow (L)	2.76	2.76	2.72	2.72	2.76	2.12	2.16	2.16	2.12	2.12			
Permittivity (s-1)	2.06	2.06	2.03	2.03	2.06	1.47	1.50	1.50	1.47	1.47			
Flow rate (GPM/ft2)	154	154	152	152	154	110	112	112	110	110			
Permeability (cm/s)	0.508	0.508	0.501	0.501	0.508	0.411	0.419	0.419	0.411	0.411			
Trial =>:	3					4							
Thickness (mils)	101	101	101	101	101	111	111	111	111	111			
Time (s)	13	13	13	13	13	14	14	14	14	14			
Flow (L)	2.72	2.68	2.72	2.72	2.68	2.48	2.48	2.52	2.48	2.48			
Permittivity (s-1)	2.03	2.00	2.03	2.03	2.00	1.72	1.72	1.75	1.72	1.72	1.82	0.24	
Flow rate (GPM/ft2)	152	150	152	152	150	129	129	131	129	129	136	18	
Permeability (cm/s)	0.521	0.514	0.521	0.521	0.514	0.485	0.485	0.493	0.485	0.485	0.481	0.041	
TEMPERATURE CORRECTED VALUES											**Permittivity (s-1)**		0.5 min
											Flow rate (GPM/ft2)		
											Permeability (cm/s)		
											1.78		
											133		
											0.469		

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.105
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.77	3.59	4.32	3.75	3.57	4.51	3.70	3.06	3.43	4.01	**3.77**	0.42	
Mass/Unit Area (oz/sq.yd)	8.77	8.35	10.05	8.72	8.30	10.49	8.61	7.12	7.98	9.33	**8.77**	0.98	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	230	225	273	204	311	273	260	313	259	289	**264**	36	200 min
TD - Tensile Strength (lbs)	325	269	244	330	315	298	310	250	266	302	**291**	31	200 min
MD - Elong. @ Max. Load (%)	71	68	74	76	77	77	78	66	80	80	**75**	5	
TD - Elong. @ Max. Load (%)	84	85	85	89	103	91	85	105	83	93	**90**	8	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	97	96	106	89	141	105	123	115	123	109	**110**	16	75 min
TD - Tear Strength (lbs)	119	107	105	164	135	160	119	115	151	147	**132**	22	75 min

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.116
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.56	3.87	4.65	3.66	3.41	3.92	3.87	3.27	3.40	3.69	**3.73**	0.39	
Mass/Unit Area (oz/sq.yd)	8.28	9.00	10.82	8.51	7.93	9.12	9.00	7.61	7.91	8.58	**8.68**	0.91	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	248	257	267	236	286	274	276	363	287	297	**279**	35	200 min
TD - Tensile Strength (lbs)	292	263	303	325	297	337	260	280	349	335	**304**	31	200 min
MD - Elong. @ Max. Load (%)	79	73	73	75	77	84	81	80	73	87	**78**	5	
TD - Elong. @ Max. Load (%)	86	77	87	93	93	89	87	90	87	96	**89**	5	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	108	77	108	105	100	95	101	117	92	102	**101**	11	75 min
TD - Tear Strength (lbs)	133	119	109	125	132	134	116	102	114	140	**122**	12	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.125	0.180	0.106	0.125	0.125						**0.132**	0.028	0.21 max
Sieve No.	120	80	140	120	120						**100**		
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	22												
Correction Factor:	0.953												
Trial =>:	1					2							
Thickness (mils)	106	106	106	106	106	103	103	103	103	103			
Time (s)	12	12	12	12	12	12	12	12	12	12			
Flow (L)	2.24	2.20	2.24	2.24	2.24	2.28	2.32	2.32	2.32	2.32			
Permittivity (s-1)	1.81	1.78	1.81	1.81	1.81	1.85	1.88	1.88	1.88	1.88			
Flow rate (GPM/ft2)	136	133	136	136	136	138	140	140	140	140			
Permeability (cm/s)	0.488	0.479	0.488	0.488	0.488	0.483	0.491	0.491	0.491	0.491			
Trial =>:	3					4							
Thickness (mils)	116	116	116	116	116	105	105	105	105	105			
Time (s)	16	16	16	16	16	12	12	12	12	12			
Flow (L)	2.36	2.36	2.32	2.32	2.32	2.23	2.36	2.32	2.32	2.36			
Permittivity (s-1)	1.43	1.43	1.41	1.41	1.41	1.80	1.91	1.88	1.88	1.91	1.74	0.20	
Flow rate (GPM/ft2)	107	107	105	105	105	135	143	140	140	143	130	15	
Permeability (cm/s)	0.422	0.422	0.415	0.415	0.415	0.481	0.509	0.501	0.501	0.509	0.474	0.034	
TEMPERATURE CORRECTED VALUES											**Permittivity (s-1)**		
											Flow rate (GPM/ft2)		
											Permeability (cm/s)		
											1.66		0.5 min
											124		
											0.451		

MD Machine Direction TD Transverse Direction

The testing 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.

GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.127
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	3.66	3.82	4.31	3.65	3.77	3.82	3.63	3.85	3.62	3.85	**3.80**	0.20	
Mass/Unit Area (oz/sq.yd)	8.51	8.89	10.03	8.49	8.77	8.89	8.44	8.96	8.42	8.96	**8.83**	0.47	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	270	225	221	321	251	230	369	240	211	198	**254**	53	200 min
TD - Tensile Strength (lbs)	319	222	281	280	332	351	279	261	267	292	**288**	37	200 min
MD - Elong. @ Max. Load (%)	78	73	65	80	79	75	73	76	70	77	**75**	5	
TD - Elong. @ Max. Load (%)	85	77	91	86	102	92	83	120	80	82	**90**	13	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	114	98	85	90	92	104	93	75	145	94	**99**	19	75 min
TD - Tear Strength (lbs)	120	96	126	126	117	105	125	125	117	140	**120**	12	75 min

MD Machine Direction TD Transverse Direction

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GEOCOMPOSITE TEST RESULTS

TRI Client: GeoSyntec Consultants

Project: Oak Hammock (JED) Solid Waste Disposal Facility - Cell 6 Construction

Material: SKAPS 8 oz Nonwoven Geotextile-Geocomposite Component
Sample Identification: 2648.137
TRI Log #: E2302-72-04

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Mass/Unit Area (ASTM D 5261)													
5" diameter circle (grams)	4.30	3.50	4.19	3.28	3.71	3.92	3.24	3.41	3.08	3.11	**3.57**	0.44	
Mass/Unit Area (oz/sq.yd)	10.00	8.14	9.75	7.63	8.63	9.12	7.54	7.93	7.16	7.23	**8.31**	1.02	8 min
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	236	228	358	291	210	271	238	244	285	220	**258**	44	200 min
TD - Tensile Strength (lbs)	313	254	207	320	326	245	274	285	314	258	**280**	39	200 min
MD - Elong. @ Max. Load (%)	74	85	85	93	78	81	80	73	90	84	**82**	6	
TD - Elong. @ Max. Load (%)	87	90	85	90	96	82	91	78	89	89	**88**	5	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	72	95	103	87	83	78	86	74	89	136	**90**	19	75 min
TD - Tear Strength (lbs)	128	135	114	106	108	92	107	113	123	138	**116**	14	75 min
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.125	0.150	0.125	0.125	0.150						**0.135**	0.014	0.21 max
Sieve No.	120	100	120	120	100						**100**		
Constant Head Permittivity (ASTM D 4491, 2 in Constant Head)													
Water Temp. (C):	19												
Correction Factor:	1.025												
Trial =>:	1					2							
Thickness (mils)	109	109	109	109	109	112	112	112	112	112			
Time (s)	14	14	14	14	14	16	16	16	16	16			
Flow (L)	2.32	2.32	2.28	2.28	2.24	2.68	2.64	2.68	2.68	2.64			
Permittivity (s-1)	1.61	1.61	1.58	1.58	1.55	1.63	1.60	1.63	1.63	1.60			
Flow rate (GPM/ft2)	120	120	118	118	116	122	120	122	122	120			
Permeability (cm/s)	0.446	0.446	0.438	0.438	0.430	0.463	0.456	0.463	0.463	0.456			
Trial =>:	3					4							
Thickness (mils)	105	105	105	105	105	113	113	113	113	113			
Time (s)	14	14	14	14	14	14	14	14	14	14			
Flow (L)	2.60	2.56	2.60	2.60	2.56	2.36	2.32	2.36	2.32	2.32			
Permittivity (s-1)	1.80	1.78	1.80	1.80	1.78	1.64	1.61	1.64	1.61	1.61	1.65	0.08	
Flow rate (GPM/ft2)	135	133	135	135	133	122	120	122	120	120	124	6	
Permeability (cm/s)	0.481	0.474	0.481	0.481	0.474	0.470	0.462	0.470	0.462	0.462	0.461	0.015	
TEMPERATURE CORRECTED VALUES											**Permittivity (s-1)**	1.70	0.5 min
											Flow rate (GPM/ft2)	127	
											Permeability (cm/s)	0.472	

MD Machine Direction TD Transverse Direction

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GeosyntheticTesting.com
9063 Bee Caves Road / Austin, TX 78733 / 512 263 2101 / fax: 512 263 2558

SGI TESTING SERVICES
A Georgia Limited Liability Company

7 April 2008

Mr. Kirk Wills
GeoSyntec Consultants, Inc.
14055 Riveredge Drive, Suite 300
Tampa, Florida 33637

Subject: Laboratory Test Results Transmittal
Direct Shear Testing
Oak Hammock Landfill

Dear Mr. Wills:

SGI Testing Services, LLC (SGI) is pleased to present the attached test results for the above-mentioned testing program. The note section below addresses sample preparation, sample disposal and a disclosure statement.

SGI appreciates the opportunity to provide laboratory testing services to Geosyntec Consultants. Should you have any questions regarding the attached document, or if you require additional information, please do not hesitate to contact the undersigned.

Sincerely,

Zehong Yuan, Ph.D., P.E.
Laboratory Manager

Attachments

Notes:
(1) Unless otherwise noted in the test results the sample(s)/specimen(s) were prepared in accordance with the applicable test standards or generally accepted sampling procedures.
(2) Contaminated/chemical samples and all related laboratory generated waste (i.e., test liquids, PPE, absorbents, etc.) will be returned to the client or designated representative(s), at the client's cost, within 60 days following the completion of the testing program, unless special arrangements for proper disposal are made with SGI_{sm}.
(3) Materials that are not contaminated will be discarded after test specimens and archived specimens are obtained. Archived specimens will be discarded 60 days after the samples are received at the laboratory, unless long-term storage arrangements are specifically made with the laboratory.
(4) The reported results apply only to the materials and test conditions used in the laboratory testing program. The results do not necessarily apply to other materials or test conditions. The test results should not be used in engineering analysis unless the test conditions model the anticipated field conditions. The testing was performed in accordance with general engineering testing standards and requirements. The reported results are submitted for the exclusive use of the client to whom they are addressed.

SGI8005-3.30.28.2008

Mail To: SGI Testing Services, LLC
P.O. Box 2427
Lilburn, Georgia 30048-2427

Web Site: www.interactionspecialists.com

Facility Location
4405 International Boulevard
Suite B-117
Norcross, Georgia 30093

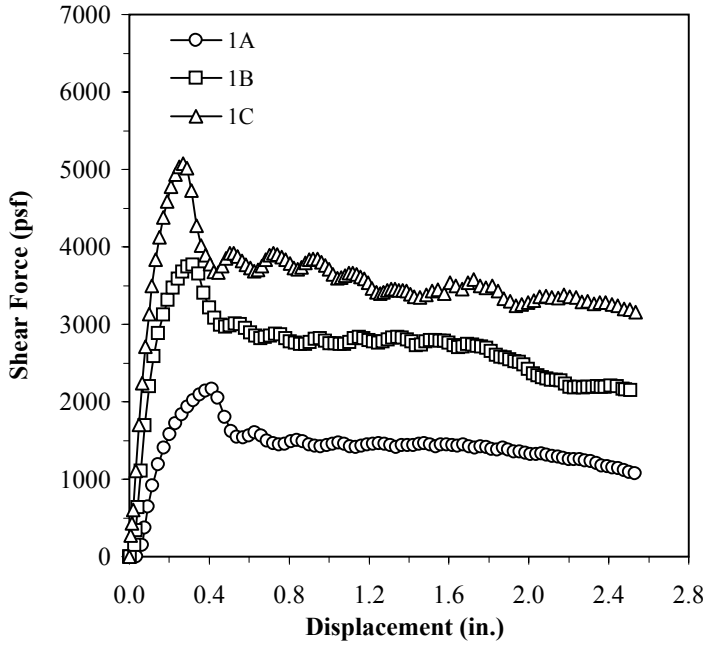
Phone: 770.931.8222 Fax: 770.931.8240

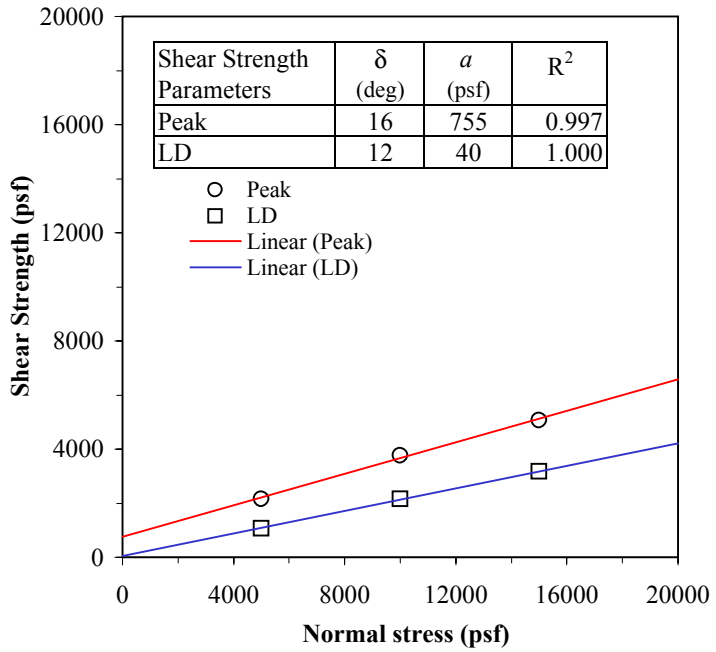
ATTACHMENT 1

DIRECT SHEAR
TEST RESULTS

GEOSYNTEC CONSULTANTS - OAK HAMMOCK LANDFILL
INTERFACE DIRECT SHEAR TESTING (ASTM D 5321)

Upper Shear Box: Liner protective soil
Primary geocomposite: Skaps TN330-2-8 geocomposite # 26482001
Primary geomembrane: Agru 60-mil Microspike HDPE geomembrane with shinny side down
Secondary geocomposite: Skaps TN270-2-8 geocomposite # 26481001
Lower Shear Box: Rigid substrate





Test No.	Shear Box Size (in. x in.)	Normal Stress (psf)	Shear Rate (in./min)	GCL Soaking		Consolidation		Soil in Upper Box			Soil in Lower Box			GCL		Shear Stress		Failure Mode
				Stress (psf)	Time (hour)	Stress (psf)	Time (hour)	γ_d (pcf)	ω_i (%)	ω_f (%)	γ_d (pcf)	ω_i (%)	ω_f (%)	ω_i (%)	ω_f (%)	τ_P (psf)	τ_{LD} (psf)	
1A	12 x 12	5000	0.040	-	-	-	-	-	-	-	-	-	-	-	-	2161	1074	(1)
1B	12 x 12	10000	0.040	-	-	-	-	-	-	-	-	-	-	-	-	3765	2150	(1)
1C	12 x 12	15000	0.040	-	-	-	-	-	-	-	-	-	-	-	-	5073	3160	(1)

NOTES:
(1) Sliding (i.e., shear failure) occurred at the interface between the shinny side of primary geomembrane and secondary geocomposite in each test.
(2) The reported total-stress parameters of friction angle and adhesion were determined from a best-fit line drawn through the test data. Caution should be exercised in using these strength parameters for applications involving normal stresses outside the range of the stresses covered by the test series. The large-displacement (LD) shear strength was calculated using the shear force measured at the end of the test.

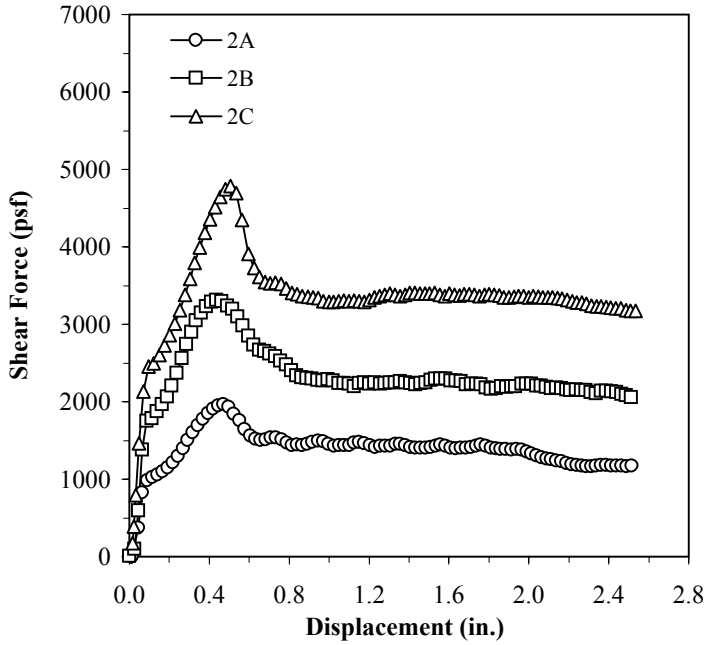
DATE OF REPORT: 3/15/2008

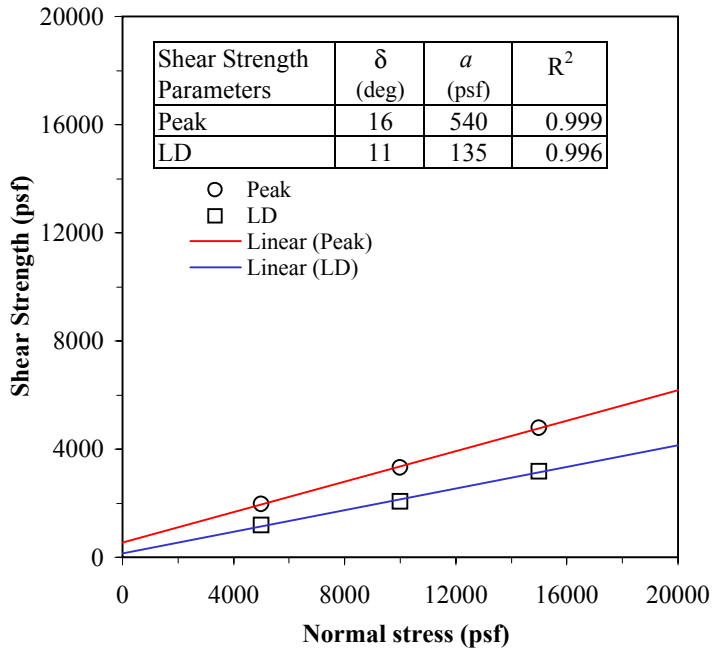
SGI TESTING SERVICES, LLC

FIGURE NO.	C-1
PROJECT NO.	SGI8005.1
DOCUMENT NO.	
FILE NO.	

GEOSYNTEC CONSULTANTS - OAK HAMMOCK LANDFILL
INTERFACE DIRECT SHEAR TESTING (ASTM D 5321)

Upper Shear Box: Rigid substrate
Primary geomembrane: Agru 60-mil Microspike HDPE geomembrane with shinny side down
Secondary geocomposite: Skaps TN270-2-8 geocomposite # 26481001
Secondary geomembrane: Agru 60-mil Microspike HDPE geomembrane with shinny side down
Hydrated Bentomat ST GCL lot # 200809CV/Roll #1696 with white nonwoven geotextile side down to subabse soil
Lower Shear Box: Subbase soil compacted to approximately dry unit weight of 105.1 pcf at moisture content 15.0%





Test No.	Shear Box Size (in. x in.)	Normal Stress (psf)	Shear Rate (in./min)	GCL Soaking Stress (psf)	GCL Soaking Time (hour)	Consolidation Stress (psf)	Consolidation Time (hour)	Soil in Upper Box γ_d (pcf)	Soil in Upper Box ω_i (%)	Soil in Upper Box ω_f (%)	Soil in Lower Box γ_d (pcf)	Soil in Lower Box ω_i (%)	Soil in Lower Box ω_f (%)	GCL ω_i (%)	GCL ω_f (%)	Shear Stress τ_P (psf)	Shear Stress τ_{LD} (psf)	Failure Mode
2A	12 x 12	5000	0.040	432	24	5000	24	-	-	-	105.1	15.0	17.8	-	69.3	1968	1174	(1)
2B	12 x 12	10000	0.040	432	24	10000	24	-	-	-	104.9	15.2	17.6	-	56.6	3313	2060	(1)
2C	12 x 12	15000	0.040	432	24	15000	24	-	-	-	105.4	14.7	16.9	-	45.7	4786	3176	(1)

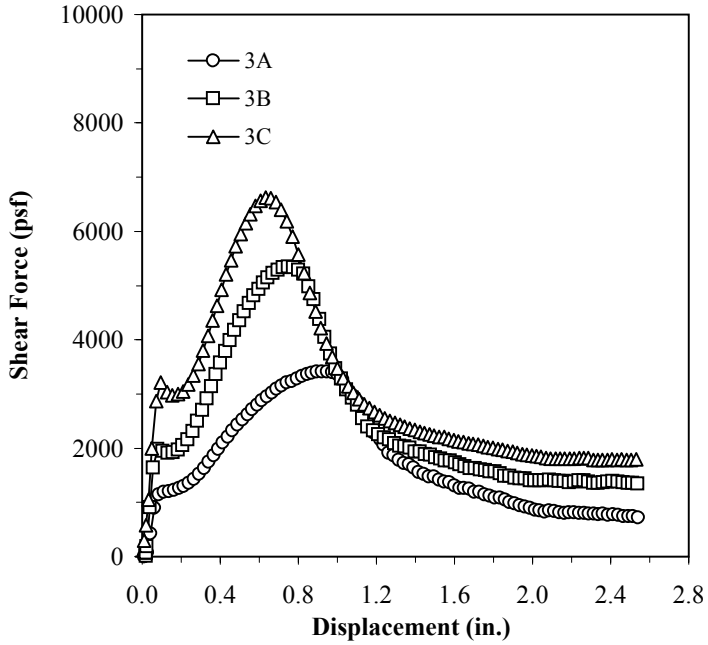
NOTES:
(1) Sliding (i.e., shear failure) occurred atthe interface between the shinny side of primary geomembrane and secondary geocomposite in each test.
(2) The reported total-stress parameters of friction angle and adhesion were determined from a best-fit line drawn through the test data. Caution should be exercised in using these strength parameters for applications involving normal stresses outside the range of the stresses covered by the test series. The large-displacement (LD) shear strength was calculated using the shear force measured at the end of the test.

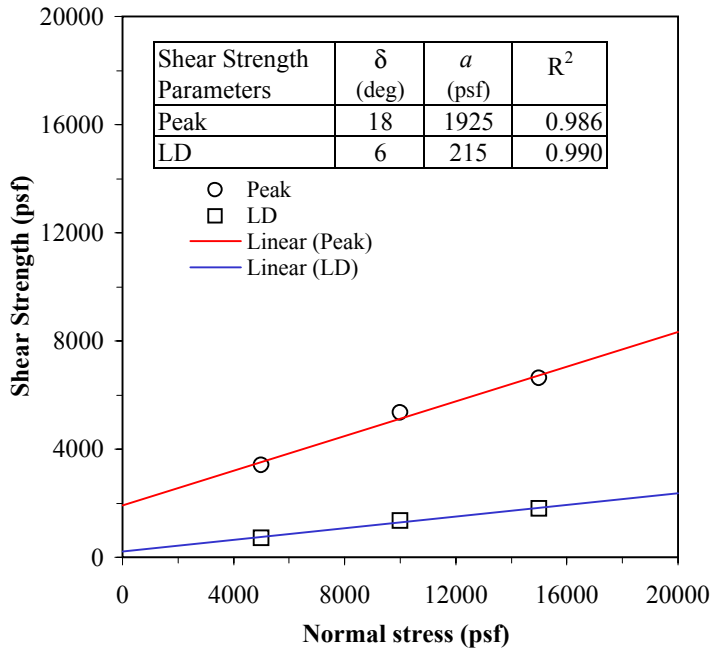
DATE OF REPORT:	3/15/2008
FIGURE NO.	C-2
PROJECT NO.	SGI8005.1
DOCUMENT NO.	
FILE NO.	

SGI TESTING SERVICES, LLC

GEOSYNTEC CONSULTANTS - OAK HAMMOCK LANDFILL
INTERFACE DIRECT SHEAR TESTING (ASTM D 5321)

Upper Shear Box: Steel grip
Hydrated Bentomat ST GCL lot # 200809CV/Roll #1696
Lower Shear Box: Steel grip





Test No.	Shear Box Size (in. x in.)	Normal Stress (psf)	Shear Rate (in./min)	GCL Soaking Stress (psf)	GCL Soaking Time (hour)	Consolidation Stress (psf)	Consolidation Time (hour)	Soil in Upper Box γ_d (pcf)	Soil in Upper Box ω_i (%)	Soil in Upper Box ω_f (%)	Soil in Lower Box γ_d (pcf)	Soil in Lower Box ω_i (%)	Soil in Lower Box ω_f (%)	GCL ω_i (%)	GCL ω_f (%)	Shear Stress τ_P (psf)	Shear Stress τ_{LD} (psf)	Failure Mode
3A	12 x 12	5000	0.040	432	24	5000	24	-	-	-	-	-	-	-		3416	721	(1)
3B	12 x 12	10000	0.040	432	24	10000	24	-	-	-	-	-	-	-	57.3	5346	1349	(1)
3C	12 x 12	15000	0.040	432	24	15000	24	-	-	-	-	-	-	-	51.1	6621	1793	(1)

NOTES:
(1) Sliding (i.e., shear failure) occurred beween the woven geotextile and bentonite layer in each test.
(2) The reported total-stress parameters of friction angle and adhesion were determined from a best-fit line drawn through the test data. Caution should be exercised in using these strength parameters for applications involving normal stresses outside the range of the stresses covered by the test series. The large-displacement (LD) shear strength was calculated using the shear force measured at the end of the test.

SGI TESTING SERVICES, LLC

DATE OF REPORT:	3/15/2008
FIGURE NO.	C-3
PROJECT NO.	SGI8005.1
DOCUMENT NO.	
FILE NO.	

FLORIDA JETCLEAN

HIGH PRESSURE WATER JETTING
VIDEO PIPELINE INSPECTION
NO DIG POINT REPAIRS
WWW.FLORIDAJETCLEAN.COM

19019 FERN MEADOW LOOP
LUTZ, FL 33558
TEL: 800-226-8013 FAX: 813-926-4616
FLORIDAJETCLEAN@TAMPABAY.RR.COM

DATE : 6/17/2008
TO : Michael Kaiser – Waste Services
FROM : Ralph Calistri (floridajetclean@tampabay.rr.com)
SUBJECT : Oak Hammock Landfill Cells 4 & 6

Florida Jetclean completed the high-pressure water-jetting of the Cell 4 existing leachate collection piping and the Cell 6 new leachate collection piping on 6/4/2008.

Existing Cell #4:

All leachate collection piping in this existing cell was accessed via high-pressure water-jetting nozzle and is clean and blockage free. This leachate collection system appears to flow and drain properly, and appears to be in a sound condition to deliver leachate.

New Cell #6:

All leachate collection piping in this new cell was accessed via high-pressure water-jetting nozzle and is clean and blockage free. This leachate collection system appears to flow and drain properly, and appears to be in a sound condition to deliver leachate.

Please call us with questions or concerns.

Regards,
Ralph Calistri
Ralph Calistri - Florida Jetclean

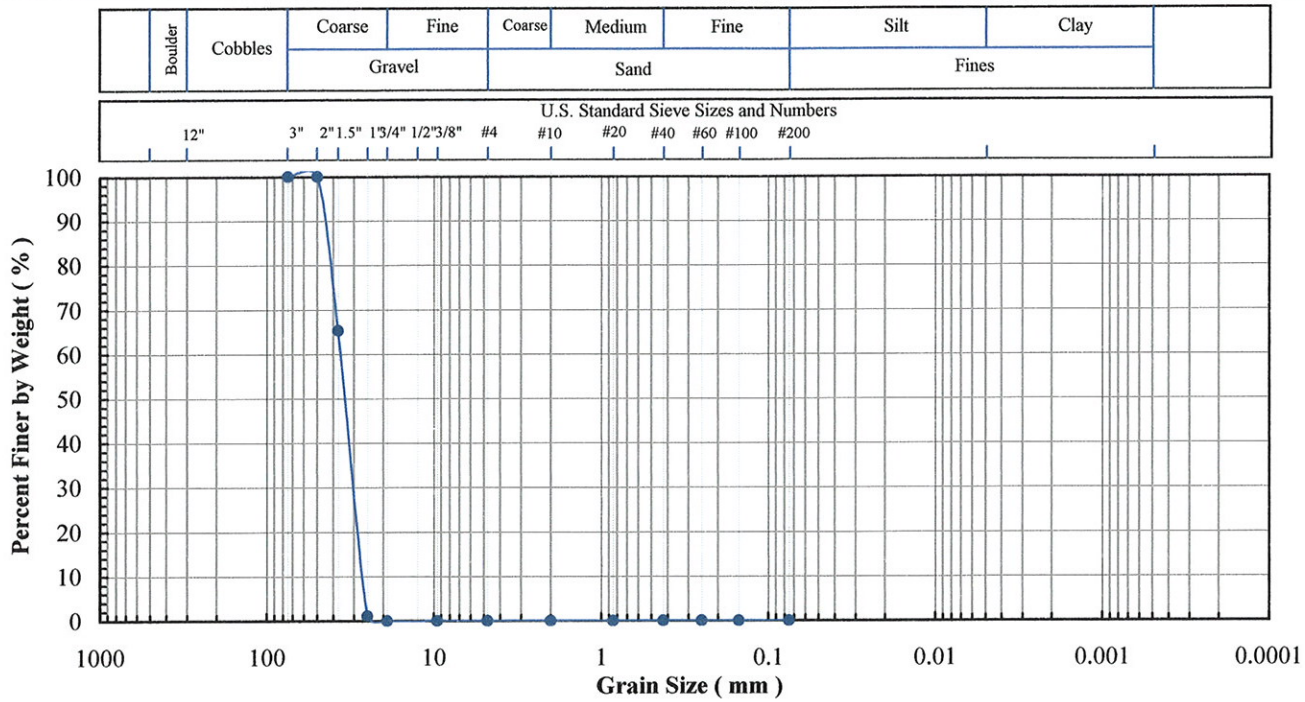
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	DA-4-1
Lab Sample No:	D036

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



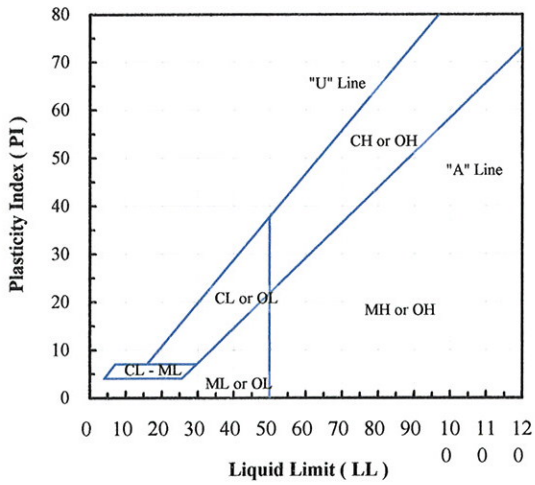
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	65.3
1"	25	1.1
3/4"	19	
3/8"	9.5	
#4	4.75	
#10	2.00	
#20	0.850	
#40	0.425	
#60	0.250	
#100	0.150	
#200	0.075	

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	100.0
Sand (%):	
Fines (%):	
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
DA-4-1	D036						

Note(s):

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

RIGID WALL PERMEABILITY TEST (1)

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	DA-4-1
Lab Sample Number:	D036
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	4/07/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid (4)	Gradient Range	Hydraulic Conductivity
	Spec. Prep. (2) (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content (3) (%)		(-)	(cm/s)
1	R	30.7	23.0	103.4	0.0	TW	0.002 - 0.01	3.3E+1

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 5 layers, each approximately 6.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.

Test specimen final conditions are not presented.

The entire sample was used (i.e., particles larger than 3/4 in. Seive were not removed).

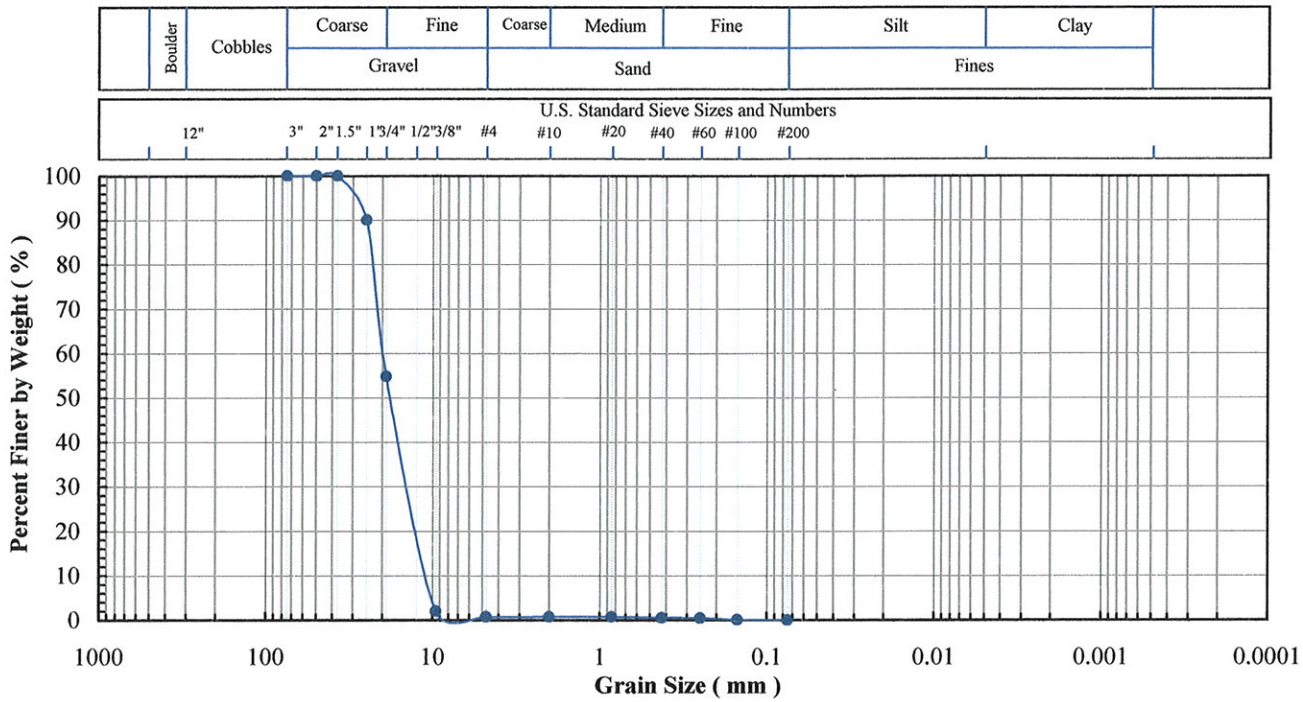
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID:	DA-57-1
Lab Sample No:	D037

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



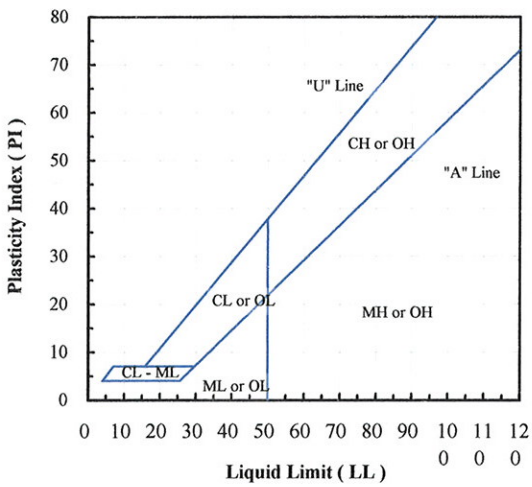
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	90.0
3/4"	19	54.8
3/8"	9.5	2.0
#4	4.75	0.7
#10	2.00	0.7
#20	0.850	0.7
#40	0.425	0.5
#60	0.250	0.4
#100	0.150	0.1
#200	0.075	

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	99.3
Sand (%):	0.7
Fines (%):	
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
DA-57-1	D037						

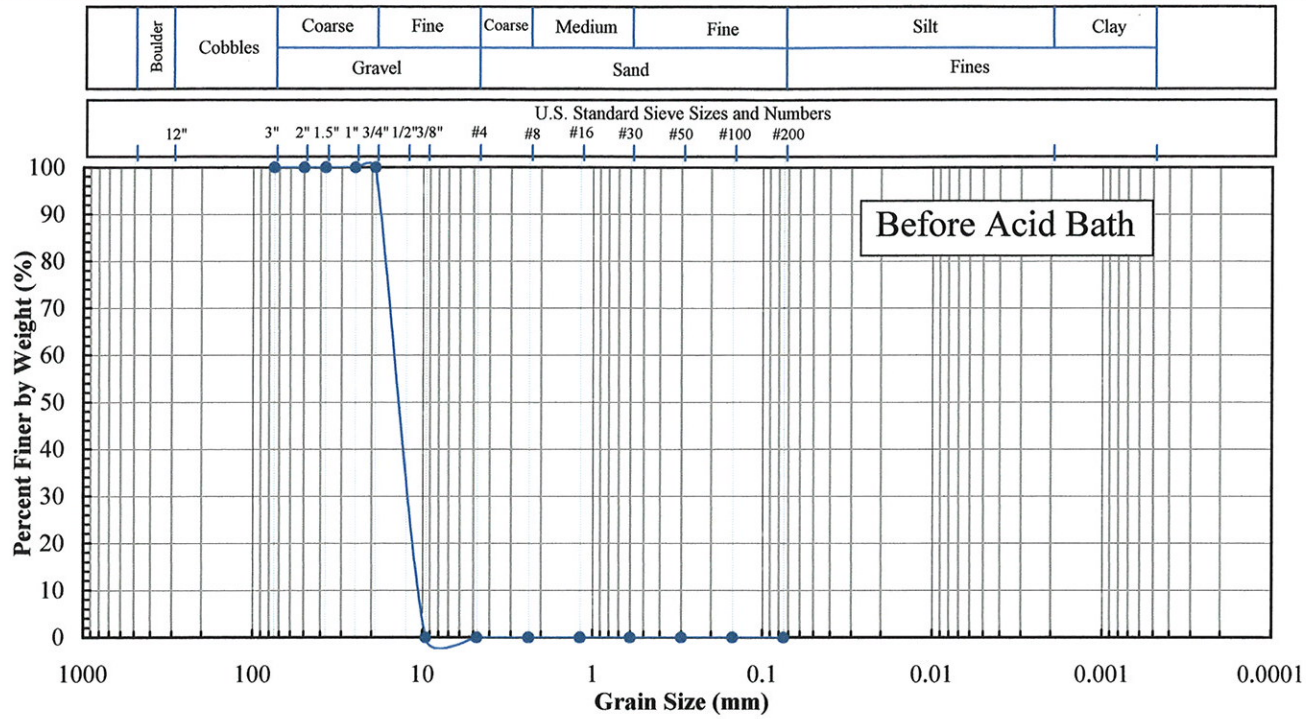
Note(s):

Excel Geotechnical Testing, Inc.
"Excellence in Testing"
941 Forrest Street, Roswell, Georgia 30075
Tel: (770) 650 1666 Fax: (770) 650 5786

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project No:	299
Client Sample ID	DA-57-1
Lab Sample No:	D037

ASTM D 3042

INSOLUBLE RESIDUE IN CARBONATE AGGREGATES

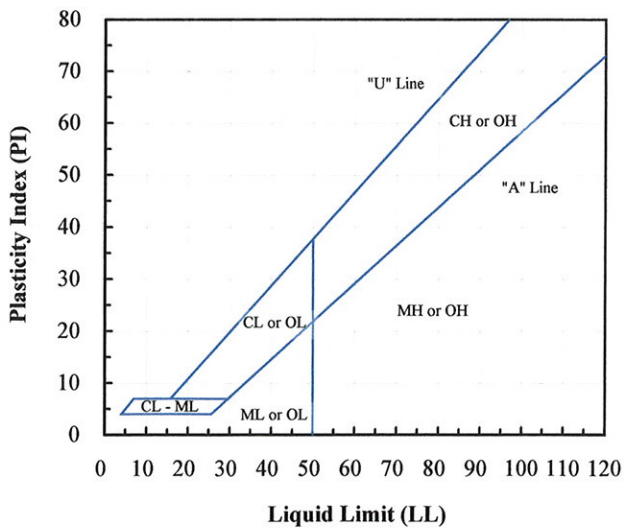


Sieve No.	Size (mm)	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
3/8"	9.50	
#4	4.75	
#8	2.00	
#16	0.850	
#30	0.425	
#50	0.250	
#100	0.150	
#200	0.075	

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	100.0
Sand (%):	
Fines (%):	
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
DA-57-1	D037						

Note(s):

Only particles passed through 3/4 in. Sieve and washed over 3/8 in. Sieve were used.

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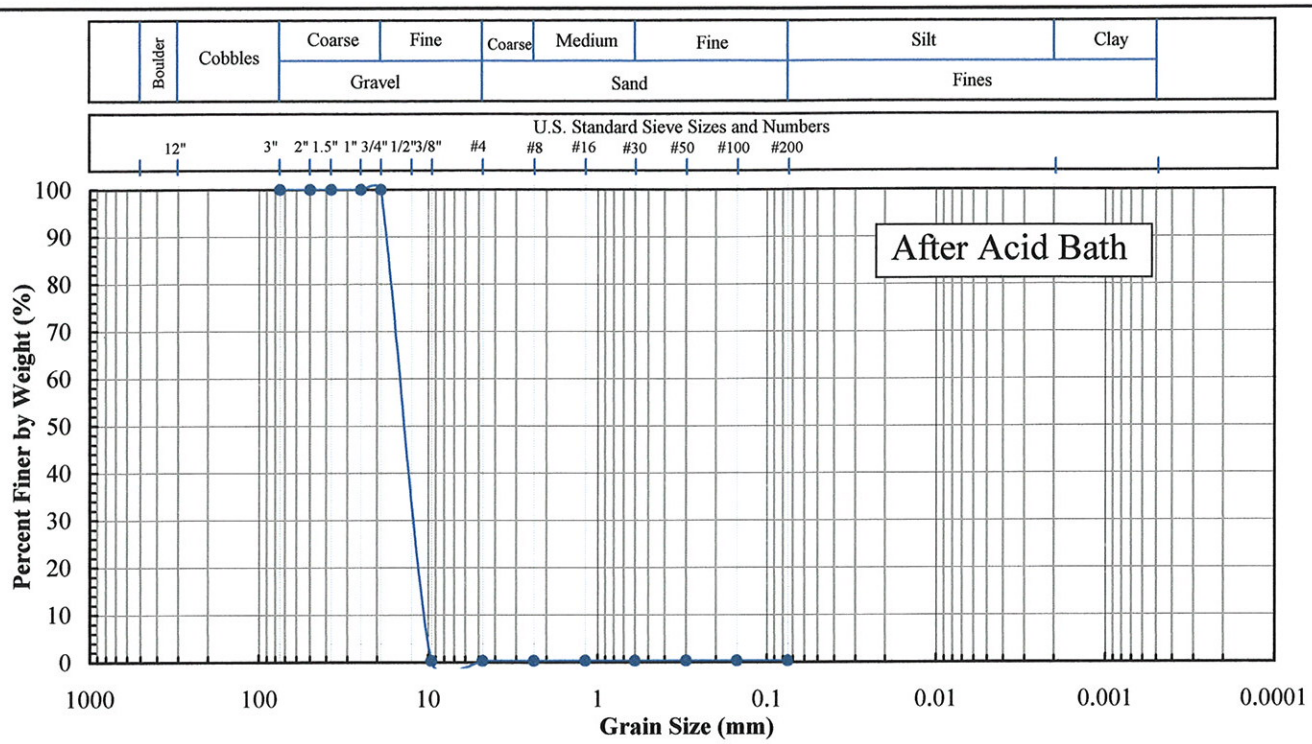
Project Name:	Oak Hammock Disp. Facility - Cell 5
Project No:	299
Client Sample ID	DA-57-1
Lab Sample No:	D037

ASTM D 3042

INSOLUBLE RESIDUE IN CARBONATE AGGREGATES

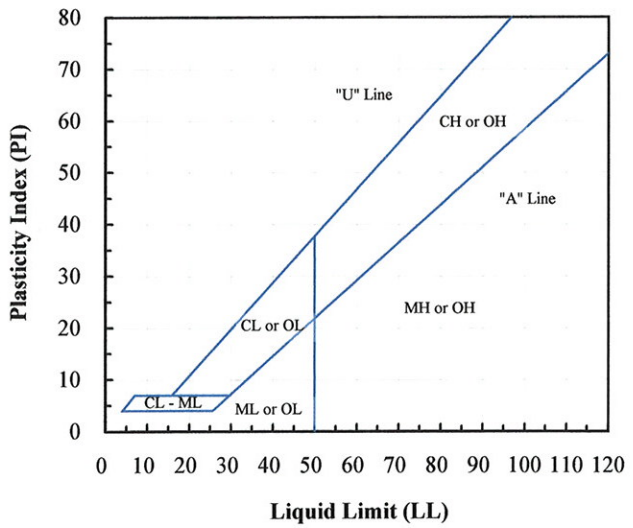


Sieve No.	Size (mm)	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.0	100.0
3/8"	9.50	0.3
#4	4.75	0.3
#8	2.00	0.3
#16	0.850	0.3
#30	0.425	0.3
#50	0.250	0.3
#100	0.150	0.3
#200	0.075	0.3

Hydrometer Particle Diameter (mm)	% Finer
0.050	
0.020	
0.005	
0.002	
0.001	

Gravel (%):	99.7
Sand (%):	
Fines (%):	0.3
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	**Total Insoluble Residue** (%)
DA-57-1	D037		0.3				99.7

Note(s):

Only particles passed through 3/4 in. Sieve and washed over 3/8 in. Sieve were used.

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RIGID WALL PERMEABILITY TEST [1]

ASTM D2434 *

Project Name:	Oak Hammock Disp. Facility - Cell 6
Project Number:	299
Client Name:	Geosyntec Consultants
Site Sample ID:	DA-57-1
Lab Sample Number:	D037
Material Type:	NA
Specified Value (cm/sec):	NA
Date Tested:	4/07/2008

Specimen Number	Specimen Initial Conditions					Permeant Liquid [4]	Gradient Range	Hydraulic Conductivity
	Spec. Prep. [2] (-)	Spec. Length (cm)	Spec. Diameter (cm)	Dry Unit Weight (pcf)	Moisture Content [3] (%)		(-)	(cm/s)
1	R	30.7	23.0	97.0	0.0	TW	0.002 - 0.01	1.5E+1

Notes:

1. Constant head test procedures were followed during the testing.
2. Remolded specimen was formed by tamping the soil in 5 layers, each approximately 6.0 cm, utilizing moderate compaction energy.
3. A moisture content of 0.0% indicates that the sample was air/oven dried before being tested.
4. Type of permeant liquid: TW = Tap Water, DTW = Deaired Tap Water, DDI = Deaired Deionized Water

* Deviations:

Laboratory temperature at 22±3 °C.
Test specimen final conditions are not presented.
The entire sample was used (i.e., particles larger than 3/4 in. Seive were not removed).