Textron, Inc.

Former Gorham Manufacturing Facility, Providence, RI
Remedial Action Completion Report: Phase II Area – Mashapaug Inner Cove,
Phase III Area – Northeast Upland And Parcel C
Project No.: 3652160001
February 12, 2016



### **APPENDIX G**

### **COMPACTION TEST RESULTS**



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

EARTHWORK FIELD REPORT						
Project:	Textron	Providence	Service Date:	September 14 <sup>th</sup> , 2015		
Project No.	CTS 74-	15-0087	Technician:	Jin Tian Zhu		
Report ID:		9-14-15 Earthwork Daily Report				
Services Requested By:		Charter Environmental Inc.				
Site Contact:		Mike Gentile – Charter Environmental Inc.				
Site Contractor:		Charter Environmental Inc.				
Location:		333 Adelaide, Providence, RI 02903				
Scope of Work:		Perform earthwork observations, lift this	ckness observatio	n and density testing.		

**Reference Drawings:** Proposed Site Plan C-102, 6/24/2015.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S & S.

Material Classification: Light brown Poorly-graded Sand with Silt (SP-SM)

Material Type: Common Borrow.

**Earthwork Location:** Backfill proposed Parcel C area with Sandy Fill material.

**Subgrade Review:** Subgrade consisted of in-situ material overlain with geo-fabric.

**Groundwater:** No groundwater was encountered during today's earthwork activities.

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Lift Thickness: Material was placed in approximate 6-inch compacted lifts.

Method of Compaction: Material was compacted using a BOMAG 10-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

**Proctor Method:** Modified Proctor. (ASTM D1557)

Laboratory Sample No.: T.E.I. 15-MC-668.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

## **EARTHWORK FIELD REPORT Cont.**

Test Results: Five (5) compaction tests were performed. Test results were above 90% of the proctor value, and in

general accordance with project specifications.

**Comments:** Mike Gentile of Charter Environmental Inc. was notified of test results prior to departure.

**Report ID:** 9-14-15 Earthwork Daily Report.

Attachments: 9-14-15 Earthwork QC Report and 9-14-15 Field Sketch.

Observed By:

Jin Tian Zhu Field Engineer

Reviewed By:

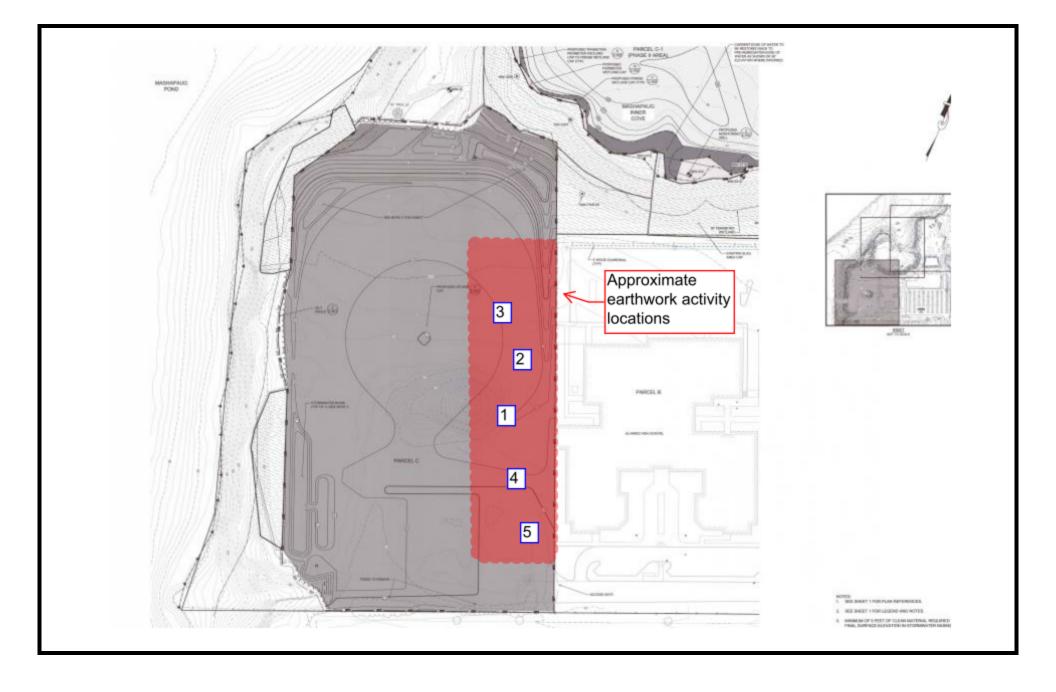
Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

Project:	Textron	Textron Providence				CTS 74-15-0087	
Project Addı	ress: 333 Adelai	333 Adelaide, Providence, RI 02903				9/14/2015	
		Density Gauge Info	ormation				
Make:	Troxler	Date o	of Calibration:		1/16/201	15	
Model No.:	3440	Source	e of Calibration	n:	QC Resour	ces	
Serial No.:	18207	Standa	ard Counts:	D:	2247 M	593	
Duration of	Test: 15 Seconds	S Moist	ure Offset (%):		N/A		
		Material Inform					
Description:	Light Brown Poorly-graded	Sand with Silt (SP-S	M) TEI Lab	oratory Samp	le Number:	15-MC-668	
Source:	Material	S & S		ted Max Dry L		102.3	
Location:	Proposed Par	cel C Area	Correc	ted Opt Wate	r Content (%):	13.1	
Datum:	Top Soil su	bgrade	Req. M	linimum Comp	paction (%):	90.0	
	Density and Moist	ture of In-Place Soil	via Nuclear M	ethod (D6938	)		
			Probe Depth	Water	Dry Density	Dry Density	
Test #	Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1	See Field Sketch	FG	4	10.3	97.2	95.0%	
2	See Field Sketch	FG	4	11.6	94.3	92.2%	
3	See Field Sketch	FG	4	8.9	96.6	94.4%	
4	See Field Sketch	FG	4	9.3	95.3	93.2%	
5	See Field Sketch	FG	4	11.0	95.2	93.1%	
ļ.	Results Within Specification Lir	nits: 🔽 Re:	sults Outside S	pecification Li	imits: $\square$	<u>,                                    </u>	
	·			-			
Comments	S:						
Tested By:	Jin Tian Zhu	Reviev	ved By: Ma	tthew Colmar	n, EIT		
Title:	Field Engineer Date:	9/17/2015 Title:		ff Engineer	Date:	9/22/2015	
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THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-102
	Cranston, Rhode Island 02910	Charter Environmental	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 9-14-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Jin Tian Zhu
	http://www.Thielsch.com	pleofanti@charter.us	Date: September 14 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT** September 17<sup>th</sup>, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Kyle Hogan Project No. 9-17-15 Earthwork Daily Report Report ID: Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed Site Plan C-102, 6/24/2015.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S & S.

Material Classification: Light brown Poorly-graded Sand with Silt (SP-SM)

Material Type: Common Borrow.

**Earthwork Location:** Backfill proposed Parcel C area with Sandy Fill material.

**Subgrade Review:** Subgrade consisted of in-situ material overlain with geo-fabric.

**Groundwater:** No groundwater was encountered during today's earthwork activities.

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Lift Thickness: Material was placed in approximate 6-inch compacted lifts.

**Method of Compaction:** Material was compacted using a BOMAG 10-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-SC-668.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

## **EARTHWORK FIELD REPORT Cont.**

Test Results: Fifteen (15) compaction tests were performed. Test results were above 90% of the proctor value, and

in general accordance with project specifications.

**Comments:** Mike Gentile of Charter Environmental Inc. was notified of test results prior to departure.

**Report ID:** 9-17-15 Earthwork Daily Report.

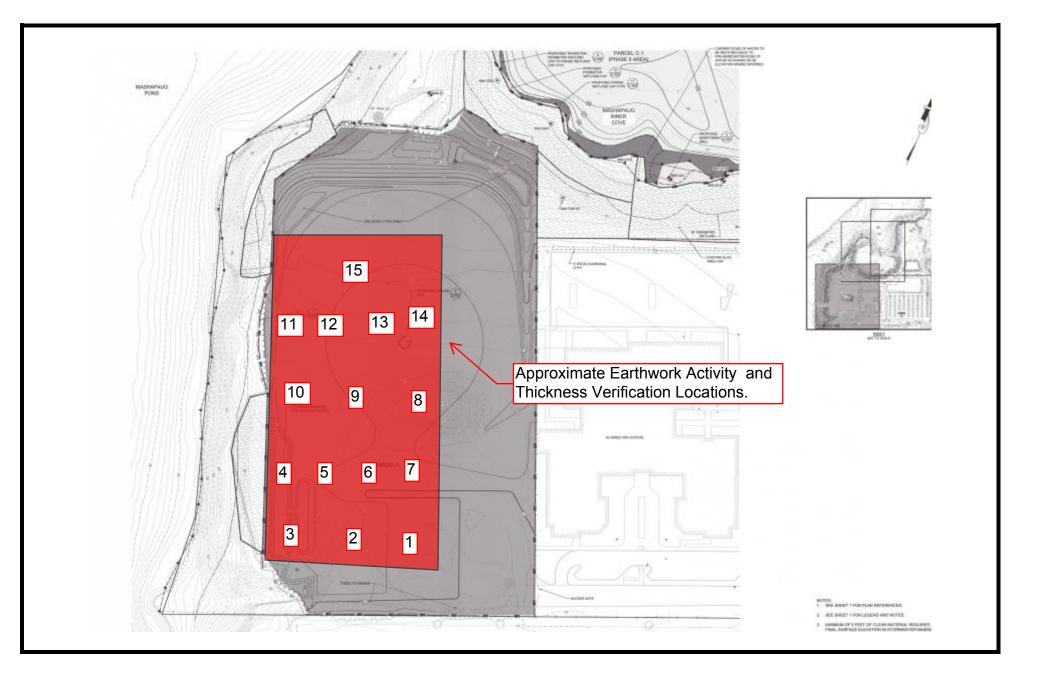
**Attachments:** 9-17-15 Earthwork QC Report and 9-17-15 Field Sketch.

Observed By: Kyle Hogan Reviewed By: Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

Description   Sevent   Seve	Project	t:	Textron Pr	ron Providence			t No.: CTS	CTS 74-15-0087	
Make:         Troxler         Date of Calibration:         1/16/2015           Model No.:         3440         Source of Calibration:         QC Resources           Serial No.:         18207         Standard Counts:         D: 2247 M 593           Duration of Test:         15 Seconds         Moisture Offset (%):         N/A           Material Information           Description:         Light Brown Poorly-graded Sand with Silt (SP-SM)         TEL Laboratory Sample Number:         15-SC-Gource:           Material Is & S         Corrected Max Dry Unit Wt. (pcf):         102.           Location:         Proposed Parcel C Area         Corrected Opt Water Content (%):         13.1           Datum:         Top Soil subgrade         Req. Minimum Compaction (%):         90.0           Density and Moisture of In-Place Soil via Nuclear Method (D6938)           Density and Moisture of In-Place Soil via Nuclear Method (D6938)           Test Location         Lift/Elevation         (in)         Content (%)         (pcf)         (% con           1         See Field Sketch         FG         4         3.7         99.6         97.4*           2         FG         4         3.7         99.6         97.4*           3         FG	Project	t Address:	333 Adelaide	, Providence, RI 02	2903	Date of Se	ervice: 9/	′17/2015	
Make:         Troxler         Date of Calibration:         1/16/2015           Model No.:         3440         Source of Calibration:         QC Resources           Serial No.:         18207         Standard Counts:         D: 2247 M 593           Duration of Test:         15 Seconds         Moisture Offset (%):         N/A           Material Information           Description:         Light Brown Poorly-graded Sand with Silt (SP-SM)         TEL Laboratory Sample Number:         15-SC-Gource:           Material Is & S         Corrected Max Dry Unit Wt. (pcf):         102.           Location:         Proposed Parcel C Area         Corrected Opt Water Content (%):         13.1           Datum:         Top Soil subgrade         Req. Minimum Compaction (%):         90.0           Density and Moisture of In-Place Soil via Nuclear Method (D6938)           Density and Moisture of In-Place Soil via Nuclear Method (D6938)           Test Location         Lift/Elevation         (in)         Content (%)         (pcf)         (% con           1         See Field Sketch         FG         4         3.7         99.6         97.4*           2         FG         4         3.7         99.6         97.4*           3         FG									
Model No.:   18207   Standard Counts:   D: 247   M   593				Density Gauge Info	ormation				
Description:   18207   Standard Counts:   D: 2247   M   593	Make:		Troxler	Date o		1/16/201	15		
Duration of Test:   15 Seconds   Moisture Offset (%):   N/A	Model No.:		3440	Source	of Calibration	1:	QC Resour	ces	
Material Information	Serial No.:		18207	Standa	ard Counts:	D:	2247 M	593	
Description:   Light Brown Poorly-graded Sand with Silt (SP-SM)   TEI Laboratory Sample Number:   15-SC-Corrected Max Dry Unit Wt. (pcf):   102.	Duratio	on of Test	: 15 Seconds	Moist	ure Offset (%):		N/A		
Description:   Light Brown Poorly-graded Sand with Silt (SP-SM)   TEI Laboratory Sample Number:   15-SC-Corrected Max Dry Unit Wt. (pcf):   102.									
Material S & S				Material Inform	nation				
Density and Moisture of In-Place Soil via Nuclear Method (D6938)   Test #   Test Location   Lift/Elevation   (in)   Content (%)   Test #   FG   4   3.7   99.6   97.4	Descrip	otion:	Light Brown Poorly-graded Sa	and with Silt (SP-S	M) TEI Lab	oratory Samp	le Number:	15-SC-668	
Density and Moisture of In-Place Soil via Nuclear Method (D6938)   Test #   Test Location   Lift/Elevation (in)   Probe Depth   Water   Content (%)   (pcf)   (% content (%)   Content (%)   (pcf)   (% content (%)   Content (%)   (pcf)   (% content (%)   (% content (%)   (pcf)   (pcf)   (% content (%)   (pcf)   (pcf)	Source	:	Material S &	& S	Correc	ted Max Dry L	Jnit Wt. (pcf):	102.3	
Density and Moisture of In-Place Soil via Nuclear Method (D6938)   Test #   Test Location	Locatio	n:	Proposed Parcel	I C Area	Correc	ted Opt Water	r Content (%):	13.1	
Test # Test Location	Datum	:	Top Soil subg	rade	Req. M	inimum Comp	paction (%):	90.0	
Test # Test Location									
Test #         Test Location         Lift/Elevation         (in)         Content (%)         (pcf)         (% content (%)           1         See Field Sketch         FG         4         3.7         99.6         97.49           2         FG         4         2.5         93.8         91.79           3         FG         4         3.1         96.4         94.29           4         FG         4         3.1         96.4         94.29           4         3.1         96.8         94.69           5         FG         4         3.1         96.8         94.69           6         FG         4         3.7         92.2         90.19           7         FG         4         3.3         92.8         90.79           8         FG         4         3.0         94.1         92.09           9         FG         4         3.0         94.1         92.09           10         FG         4         4.1         97.0         94.89           11         FG         4         2.4         96.2         94.09           12         FG         4         2.7         94.0			Density and Moistur	e of In-Place Soil	via Nuclear M	ethod (D6938	)		
1         See Field Sketch         FG         4         3.7         99.6         97.45           2         FG         4         2.5         93.8         91.75           3         FG         4         3.1         96.4         94.25           4         FG         4         3.1         96.4         94.25           5         FG         4         3.1         96.8         94.65           6         FG         4         3.7         92.2         90.15           7         FG         4         3.7         92.2         90.15           8         FG         4         3.3         92.8         90.75           8         FG         4         3.0         94.1         92.05           9         FG         4         3.6         96.7         94.55           10         FG         4         4.1         97.0         94.85           11         FG         4         2.4         96.2         94.05           12         FG         4         2.8         98.4         96.25           13         FG         4         5.0         98.6         96.4					Probe Depth	Water	Dry Density	Dry Density	
2       FG       4       2.5       93.8       91.75         3       FG       4       3.1       96.4       94.25         4       FG       4       4.2       97.0       94.85         5       FG       4       3.1       96.8       94.65         6       FG       4       3.7       92.2       90.15         7       FG       4       3.3       92.8       90.75         8       FG       4       3.0       94.1       92.05         9       FG       4       3.6       96.7       94.55         10       FG       4       3.6       96.7       94.55         11       FG       4       4.1       97.0       94.85         12       FG       4       2.4       96.2       94.05         13       FG       4       2.8       98.4       96.25         13       FG       4       5.0       98.6       96.45         Results Within Specification Limits:       FG       4       5.0       98.6       96.45         Results Within Specification Limits:       F       Results Outside Specification Limits:       C       S	Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
FG	1		See Field Sketch	FG	4	3.7	99.6	97.4%	
4       FG       4       4.2       97.0       94.85         5       FG       4       3.1       96.8       94.65         6       FG       4       3.7       92.2       90.19         7       FG       4       3.3       92.8       90.79         8       FG       4       3.0       94.1       92.0         9       FG       4       3.6       96.7       94.5         10       FG       4       4.1       97.0       94.8         11       FG       4       2.4       96.2       94.0         12       FG       4       2.8       98.4       96.2         13       FG       4       2.7       94.0       91.9         14       FG       4       6.1       99.4       97.2         15       FG       4       5.0       98.6       96.4         15       FG       4 <t< td=""><td>2</td><td></td><td></td><td>FG</td><td>4</td><td>2.5</td><td>93.8</td><td>91.7%</td></t<>	2			FG	4	2.5	93.8	91.7%	
5       FG       4       3.1       96.8       94.65         6       FG       4       3.7       92.2       90.15         7       FG       4       3.3       92.8       90.75         8       FG       4       3.0       94.1       92.05         9       FG       4       3.6       96.7       94.55         10       FG       4       4.1       97.0       94.85         11       FG       4       2.4       96.2       94.05         12       FG       4       2.8       98.4       96.25         13       FG       4       2.7       94.0       91.95         14       FG       4       6.1       99.4       97.25         15       FG       4       5.0       98.6       96.45         Results Within Specification Limits: □         Reviewed By: Matthew Colman, EIT         Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20	3			FG	4	3.1	96.4	94.2%	
6       FG       4       3.7       92.2       90.19         7       FG       4       3.3       92.8       90.75         8       FG       4       3.0       94.1       92.05         9       FG       4       3.6       96.7       94.55         10       FG       4       4.1       97.0       94.85         11       FG       4       2.4       96.2       94.05         12       FG       4       2.8       98.4       96.2         13       FG       4       2.7       94.0       91.95         14       FG       4       6.1       99.4       97.25         15       FG       4       5.0       98.6       96.45         Results Within Specification Limits:	4			FG	4	4.2	97.0	94.8%	
7       FG       4       3.3       92.8       90.75         8       FG       4       3.0       94.1       92.05         9       FG       4       3.6       96.7       94.55         10       FG       4       4.1       97.0       94.85         11       FG       4       2.4       96.2       94.05         12       FG       4       2.8       98.4       96.25         13       FG       4       2.7       94.0       91.95         14       FG       4       6.1       99.4       97.25         15       FG       4       5.0       98.6       96.45         Results Within Specification Limits: □       Results Outside Specification Limits: □         Comments:         Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20	5			FG	4	3.1	96.8	94.6%	
8         FG         4         3.0         94.1         92.09           9         FG         4         3.6         96.7         94.59           10         FG         4         4.1         97.0         94.89           11         FG         4         2.4         96.2         94.09           12         FG         4         2.8         98.4         96.29           13         FG         4         2.7         94.0         91.99           14         FG         4         6.1         99.4         97.29           15         FG         4         5.0         98.6         96.49           Results Within Specification Limits:  Results Outside Specification Limits:  Resu	6			FG	4	3.7	92.2	90.1%	
FG	7			FG	4	3.3	92.8	90.7%	
FG	8			FG	4	3.0	94.1	92.0%	
FG	9			FG	4	3.6	96.7	94.5%	
12       FG       4       2.8       98.4       96.25         13       FG       4       2.7       94.0       91.95         14       FG       4       6.1       99.4       97.25         15       FG       4       5.0       98.6       96.45         Results Within Specification Limits: □         Comments:         Tested By: Kyle Hogan       Reviewed By: Matthew Colman, EIT         Title: Field technician       Date: 9/17/2015       Title: Staff Engineer       Date: 10/5/20	10			FG	4	4.1	97.0	94.8%	
FG 4 2.7 94.0 91.99  14 FG 4 6.1 99.4 97.29  15 Results Within Specification Limits: Results Outside Specification Limits: Results Outside Specification Limits: Results Outside Specification Limits: Results Outside Specification Limits: Tested By: Kyle Hogan Reviewed By: Matthew Colman, EIT  Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20	11			FG	4	2.4	96.2	94.0%	
FG 4 6.1 99.4 97.29  15 FG 4 5.0 98.6 96.49  Results Within Specification Limits:   Results Outside Specification Limits:   Comments:  Tested By: Kyle Hogan  Reviewed By: Matthew Colman, EIT  Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20	12			FG	4	2.8	98.4	96.2%	
Tested By: Kyle Hogan Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20	13			FG	4	2.7	94.0	91.9%	
Results Within Specification Limits: Results Outside Specification Limits: Comments:  Tested By: Kyle Hogan Reviewed By: Matthew Colman, EIT  Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/2015	14			FG	4	6.1	99.4	97.2%	
Comments:  Tested By: Kyle Hogan Reviewed By: Matthew Colman, EIT Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20	15			FG	4	5.0	98.6	96.4%	
Tested By: Kyle Hogan Reviewed By: Matthew Colman, EIT Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20		Re	sults Within Specification Limit	s: 🔽 Re	sults Outside S	pecification Li	imits:		
Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20	Comi	ments:							
Title: Field technician Date: 9/17/2015 Title: Staff Engineer Date: 10/5/20									
	Tested	Ву: Ку	le Hogan	Review	ved By: Ma	tthew Colman	ı, EIT		
hyle hogan Matth of when	Title:	Fie	eld technician Date: 9	/17/2015 Title:	Sta	ff Engineer	Date:	10/5/2015	
			hyle hogan		Mr.	the flow			



THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-102
l	Cranston, Rhode Island 02910	Charter Environmental	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 9-17-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Kyle Hogan
	http://www.Thielsch.com	pleofanti@charter.us	Date: September 17 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT** September 21st, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Jin Tian Zhu Project No. 9-21-15 Earthwork Daily Report Report ID: Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing

**Reference Drawings:** Proposed Site Plan C-102, 6/24/2015.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S & S.

Material Classification: Light brown poorly-graded Sand with Silt (SP-SM)

Material Type: Sandy Fill.

**Earthwork Location:** Backfill proposed Parcel C area with Sandy fill material.

**Subgrade Review:** Subgrade consisted of existing material.

**Groundwater:** No groundwater was encountered during today's earthwork activities.

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Lift Thickness: Material was placed in approximate 6-inch compacted lifts.

**Method of Compaction:** Material was compacted using a BOMAG 10-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-SC-668.



**Client Information**Charter Environmental Inc.

Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

Test Results: Three (3) compaction tests were performed. Test results were above 90% of the proctor value, and

in general accordance with project specifications.

Comments: Lift thickness for topsoil and common borrow material was observed to be 6-inches compacted prior

to testing of each lift. Mike Gentile of Charter Environmental Inc. was notified of test results prior to

departure.

**Report ID:** 9-21-15 Earthwork Daily Report.

**Attachments:** 9-21-15 Earthwork QC Report and 9-21-15 Field Sketch.

Observed By:

Jin Tian Zhu
Field Engineer

Reviewed By:

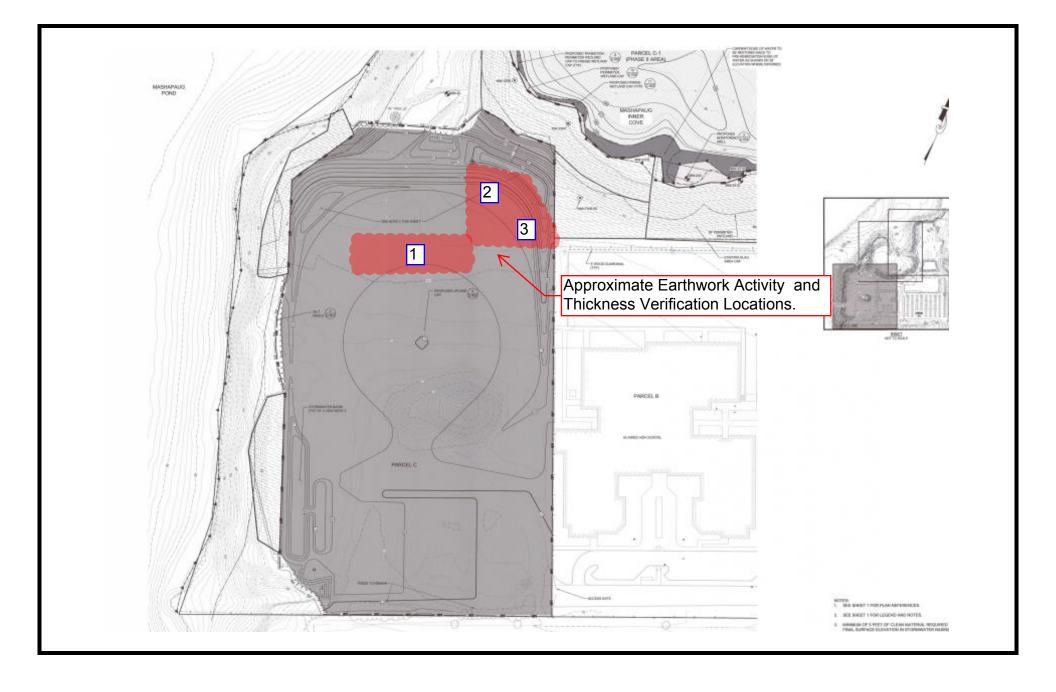
Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

Project			Textron Providence				CTS 74-15-0087	
Project	t Addre	ss: 333 Adelaide	e, Providence, RI 02	Date of Se	ervice: 9/	9/21/2015		
			Density Gauge Info					
Make:		Troxler		of Calibration:		1/16/20		
Model		3440		e of Calibration		QC Resour		
Serial N		18207		ard Counts:	D:	2246 M	595	
Duration	on of Te	est: 15 Seconds	Moist	ure Offset (%):		N/A		
<u> </u>			Material Inform				45.00.770	
Descrip	_	Light brown Poorl-graded Sa			oratory Samp		15-SC-668	
Source	_	Material S			ted Max Dry L	., .	102.3	
Locatio	_	Proposed Parce			ted Opt Water			
Datum	l:	Top soil subo	grade	Req. IVI	inimum Comp	paction (%):	90.0	
		Density and Moistu	ro of In Diago Soil	via Nucloar M	othod (D6038	١		
1		Density and Moistu		Probe Depth	Water	Dry Density	Dry Density	
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1		See Field Sketch	FG	4	8.0	97.5	95.3%	
2		See Field Sketch	FG	4	9.0	96.0	93.8%	
3			FG	4	9.7	95.5	93.4%	
				·	7.7	70.0	70.170	
		Results Within Specification Limi	ts: 🗸 Re	sults Outside S	pecification Li	imits:		
Comi	ments:							
	. D	!! T! 7h	In :	ID	H	FIT		
Tested		Jin Tian Zhu			tthew Colman		10/5/2015	
Title:		Field Engineer Date: 0	9/22/2015 Title:	Professional Control of Control o	ff Engineer	Date:	10/5/2015	
	في			Mr.	the flow	~		



THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-102
l	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 9-21-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Jin Tian Zhu
	http://www.Thielsch.com	pleofanti@charter.us	Date: September 21 <sup>st</sup> , 2015



http://www.Thielsch.com

#### **Client Information**

Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

EARTHWORK FIELD REPORT						
Project:	Textron	Providence	Service Date:	September 25 <sup>th</sup> , 2015		
Project No. CTS 74-1		15-0087	Technician:	Jin Tian Zhu		
Report ID:		9-25-15 Earthwork Daily Report				
Services Requested By:		Charter Environmental Inc.				
Site Contact:		Mike Gentile – Charter Environmental Inc.				
Site Contractor:		Charter Environmental Inc.				
Location:		333 Adelaide, Providence, RI 02903				
Scope of Work:		Perform earthwork observations, lift thickness observation and density testing.				

**Reference Drawings:** Proposed Site Plan C-102, 6/24/2015.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S & S.

Material Classification: Light brown poorly-graded Sand with Silt (SP-SM)

Material Type: Sandy Fill.

**Earthwork Location:** Backfill proposed Parcel C area with Sandy fill material.

**Subgrade Review:** Subgrade consisted of existing material.

**Groundwater:** No groundwater was encountered during today's earthwork activities.

.

Lift Thickness: Material was placed in approximate 6-inch compacted lifts.

Method of Compaction: Material was compacted using a BOMAG 10-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-SC-668.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R

Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Three (3) compaction tests were performed. Test results were above 90% of the proctor value, and

in general accordance with project specifications for given backfill elevations.

Comments: Lift thickness for topsoil and common borrow material was observed to be 6-inches compacted prior

to testing of each lift. Mike Gentile of Charter Environmental Inc. was notified of test results prior to

departure.

**Report ID:** 9-25-15 Earthwork Daily Report.

**Attachments:** 9-25-15 Earthwork QC Report and 9-25-15 Field Sketch.

Observed By: Jin Tian Zhu
Field Engineer

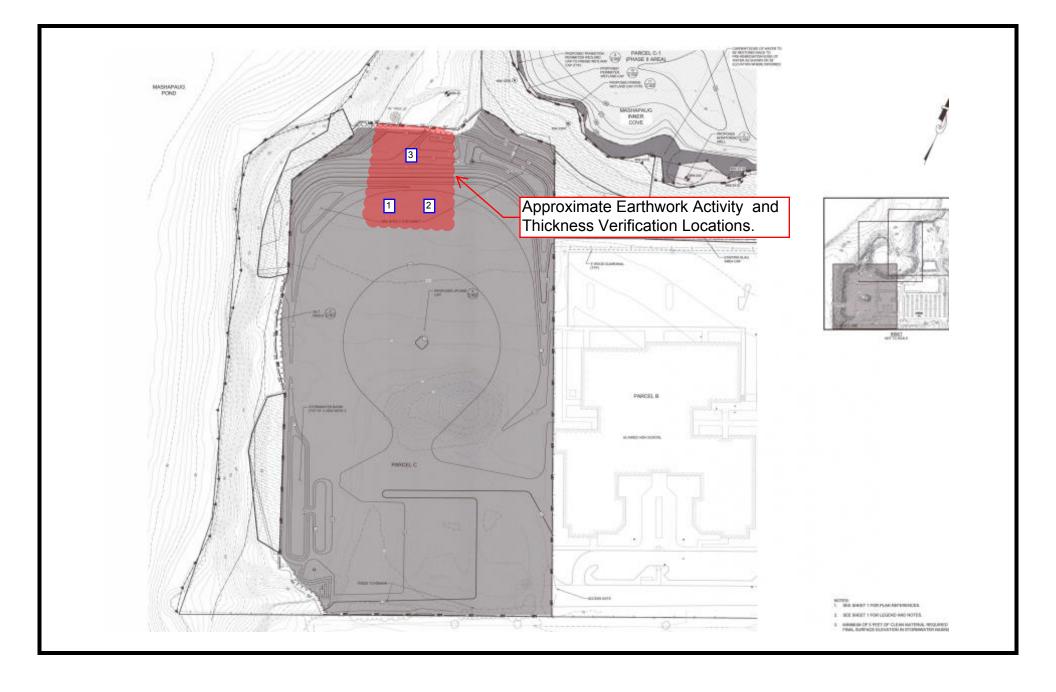
Reviewed By:

Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

Project		Textron Pro	TEI Projec	t No.: CTS	74-15-0087		
Project	t Address:	333 Adelaide,	Providence, RI 02	2903	Date of Se	ervice: 9/	/25/2015
			ensity Gauge Info				
Make:		Troxler		f Calibration:		1/16/201	
Model		3440		of Calibration		QC Resour	
Serial I		18207		ard Counts:	D:	2249 M	598
Duration	on of Test:	15 Seconds	Moistu	ure Offset (%):		N/A	
			Material Inform				15.00.770
Descrip		Light brown Poorl-graded Sar	•	<del></del>	oratory Samp		15-SC-668
Source		Material S &			ted Max Dry L	••	102.3
Location		Proposed Parcel			ted Opt Water		
Datum	1:	Top soil subgr	ade	Req. M	inimum Comp	paction (%):	90.0
		Donoity and Maistre	of In Diago Call	vio Nuclear M	athod (D/020	١	
		Density and Moisture	e or in-Place Soll v	Probe Depth	•		Dry Donaity
Toot #		Test Location	Lift/Flavetion		Water	Dry Density	Dry Density
Test #		See Field Sketch	Lift/Elevation FG	(in)	Content (%) 8.2	(pcf) 99.9	(% comp) 97.7%
		See Field Sketch	FG	4		99.9	96.3%
3			FG	4	7.4 8.6	98.5 97.8	95.6%
ა			rG	4	0.0	97.0	93.0%
	Res	sults Within Specification Limits	s: 🔽 Res	sults Outside S	pecification Li	mits:	
		Santo TTTI III Openination Elimite	, v Not		poomoution 2.		
Com	ments:						
Tested	By: Jin	Tian Zhu	Reviev	ved By: Ma	tthew Colman	ı, EIT	
Title:		ld Engineer Date: 9/	'29/2015 Title:		ff Engineer	Date:	10/5/2015
		7 -	•	41			
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ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-102
l	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 9-25-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Jin Tian Zhu
	http://www.Thielsch.com	pleofanti@charter.us	Date: September 25 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT** October 5<sup>th</sup>, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Imtiaz Ahmed Project No. Report ID: 10-05-15 Earthwork Daily Report Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed Site Plan C-102, 6/24/2015.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S&S.

Material Classification: Light brown Poorly-graded Sand with Silt (SP-SM)

Material Type: Common Borrow.

**Earthwork Location:** Backfill of Parcel C and southern entrance area.

**Subgrade Review:** Subgrade consisted of in-situ material overlain with geo-fabric.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

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Lift Thickness: Material was placed in approximate 6-inch compacted lifts.

**Method of Compaction:** Material was compacted using a BOMAG 10-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

**Proctor Method:** Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-SC-668.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Twelve (12) compaction tests were performed. Test results were above 90% of the proctor value,

and in general accordance with project specifications. Compaction tests at southern site entrance were over 100%. These results may be due to material change or exposure to heavy construction

traffic.

**Comments:** Lift thickness for common borrow material was observed to be 6-inches compacted prior to testing.

Mike Gentile of Charter Environmental was notified of test results prior to departure.

**Report ID:** 10-05-15 Earthwork Daily Report.

Attachments: 10-05-15 Earthwork QC Report and 10-05-15 Field Sketch.

Observed By:

Imtiaz Ahmed Field Engineer

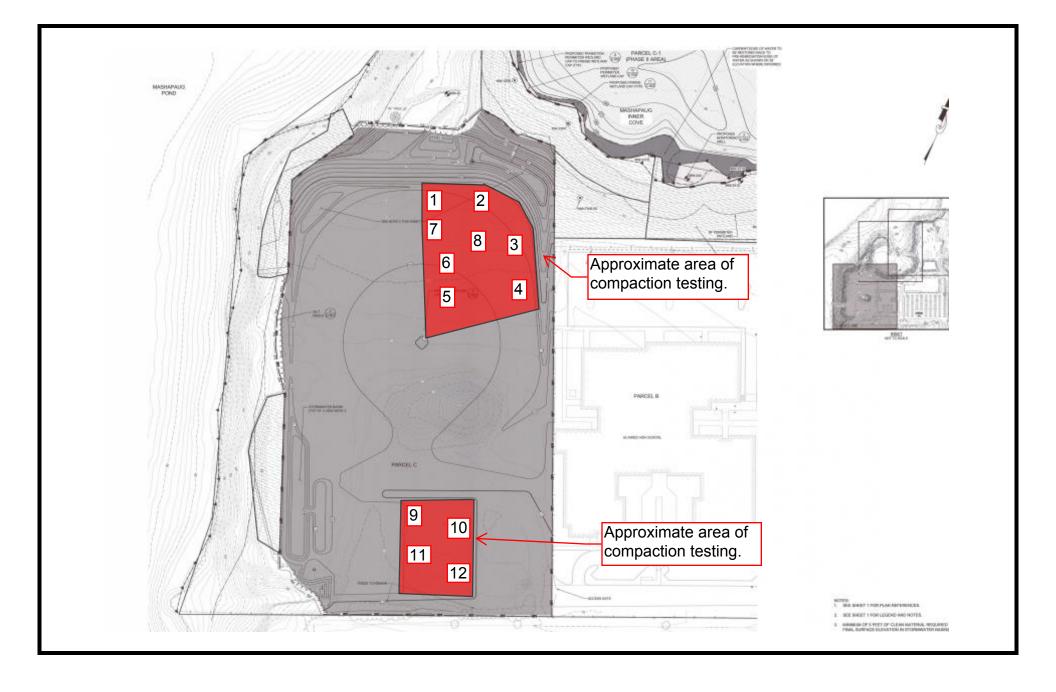
Reviewed By:

Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

Project:				TEI Projec	t No.: CTS	74-15-0087	
Project Address: 333 Adelaide, Providence, RI 0290			2903	Date of Se	ervice: 10	0/5/2015	
		D	ensity Gauge Info	ormation			
Make:		Humboldt	Date c	f Calibration:		1/16/201	15
Model	No.:	HS-5001EZ	Source	e of Calibration	n:	QC Resour	ces
Serial N	No.:	4294	Standa	ard Counts:	D:	2899.4 M	450
Duratio	on of Test:	15 Seconds	Moist	ure Offset (%):		N/A	
			Material Inform				
Descrip	otion:	Light brown Poorl-graded Sar	nd with Silt (SP-SN	Л) TEI Lab	oratory Samp	le Number:	15-SC-668
Source	:	On-Site		Correc	ted Max Dry L	Jnit Wt. (pcf):	102.3
Locatio	n:	North corner of parcel C a	nd Site Entrance		ted Opt Wate		13.1
Datum	:	Capping subgr	rade	Req. M	inimum Comp	paction (%):	90.0
		Density and Moisture	e of In-Place Soil		ethod (D6938		
				Probe Depth	Water	Dry Density	Dry Density
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)
1		See Field Sketch	1	6	17.8	94.3	92.2%
2			1	6	15.1	95.5	93.4%
3			1	6	14.9	99.6	97.4%
4			1	6	14.8	100.6	98.3%
5			1	6	17.1	92.7	90.6%
6			1	6	22.0	94.6	92.5%
7			1	6	16.9	94.0	91.9%
8			1	6	14.8	92.2	90.1%
9		Site Entrance	1	6	13.9	110.2	107.7%
10			1	6	14.2	108.5	106.1%
11			1	6	14.7	108.0	105.6%
12			1	6	16.1	107.9	105.5%
	Resi	ults Within Specification Limits	S: 🔽 Re	sults Outside S	pecification Li	mits:	
Comi	ments:						
	nonts.						
Tested		az Ahmed			tthew Colman		
Title:	Field	d Engineer Date: 10	0/5/2015 Title:	Sta	ff Engineer	Date:	10/16/2015
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ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-102
١	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
_	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 10-05-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Imtiaz Ahmed
	http://www.Thielsch.com	pleofanti@charter.us	Date: October 5 <sup>th</sup> , 2015



http://www.Thielsch.com

**Client Information** 

Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

EARTHWORK FIELD REPORT					
Project:	Textror	Providence	Service Date:	November 4 <sup>th</sup> , 2015	
Project No. CTS 74-15-0087		Technician:	Imtiaz Ahmed		
Report ID:		11-4-15 Earthwork Daily Report	•		
Services Requested By:		Charter Environmental Inc.			
Site Contact:		Mike Gentile – Charter Environmer	ntal Inc.		
Site Contractor:		Charter Environmental Inc.			
Location: 333 Adelaide, Providence			3		
Scope of Work:		Perform earthwork observations, lift thickness observation and density testing.			

**Reference Drawings:** Proposed site plan sheet 3 of 3.

Earthwork Contractor: Charter Environmental Inc.

Material Source: On-site processed.

Material Classification: Dark brown silty sand with gravel (SM).

Material Type: Cove Sediment with 6% KLD Blend.

**Earthwork Location:** Proposed upland soil cap, see field sketch for test locations.

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

Lift Thickness: Material was placed in approximate 12-inch compacted lifts.

Method of Compaction: Material was compacted using an Ingersoll Rand (Pro-Pac series 70) vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

**Laboratory Sample No.:** T.E.I. 15-S-1110.



Client Information
Charter Environmental Inc.

500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

Test Results: Four (4) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

**Comments:** Mike Gentile of Charter Environmental Inc. was notified of test strip results prior to departure.

**Report ID:** 11-4-15 Earthwork Daily Report.

Attachments: 11-4-15 Earthwork QC Report & 11-4-15 Field Sketch.

Observed By:

Imtiaz Ahmed Field Engineer

Reviewed By:

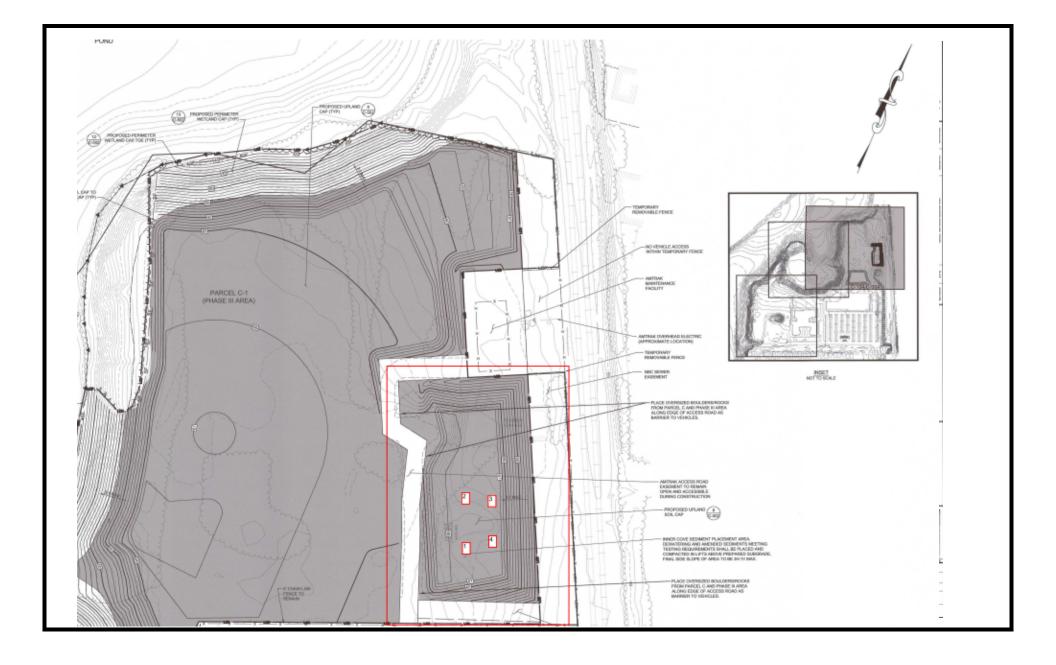
Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Field Density Report

Project: Textron Pro			ovidence		TEI Projec	t No.: CTS	74-15-0087
Project Address: 333 Adelaide,			Providence, RI 02	2903	Date of Se	ervice: 11	1/4/2015
			ensity Gauge Info	ormation			
Make:		Humboldt		f Calibration:		4/1/201	
Model	No.:	5001EZ	Source	e of Calibration	n:	QC Resour	ces
Serial N	No.:	4295	Standa	ard Counts:	D:	2527.3 M	448.1
Duratio	on of T	est: 15 Seconds	Moistu	ıre Offset (%):		N/A	
			Material Inform				
Descrip		Dark Brown Silty Sand w			oratory Samp		15-S-1110
Source		On-Site Cove Sediment w			ted Max Dry L	., .	92.6
Locatio		Proposed Upland	•		ted Opt Water		22.9
Datum	:	Bottom of C	ap	Req. M	inimum Comp	paction (%):	90.0
				<del> </del>			1
1		Density and Moistur	e of In-Place Soil		·		
				Probe Depth	Water	Dry Density	Dry Density
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)
1		Main Cap Area (See Field Sketch)	1	8	26.9	84.5	91.3%
2		Main Cap Area (See Field Sketch)	1	8	23.6	91.1	98.4%
3		Main Cap Area (See Field Sketch)	1	8	25.5	85.4	92.2%
4	N	Main Cap Area (See Field Sketch)	1	8	24.9	86.4	93.3%
		Deculte Mithin Constitution 1		oute Outet de O		malta. $\Box$	
		Results Within Specification Limit	s: 🗸 Res	sults Outside S	pecification Li	mits:	
Comi	ments:	6% KLD Blend - 15-SC-1110 92.6p	cf @ 22.9% moist	ure.			
Tested	Ву:	Imtiaz Ahmed	Reviev	ved By: Ma	tthew Colman	, EIT	
Title:		Field Engineer Date: 1	1/4/2015 Title:	Stat	ff Engineer	Date:	11/16/2015
		King.		7/h	the folm	~	



THIELSCH
ENGINEERING

-	195 Frances Avenue	Client Information	Proposed Site Plan 3 of 3
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-04-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Imtiaz Ahmed
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 4 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT** November 5<sup>th</sup>, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Imtiaz Ahmed Project No. Report ID: 11-5-15 Earthwork Daily Report Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed site plan sheet 3 of 3.

Earthwork Contractor: Charter Environmental Inc.

Material Source: On-site processed.

Material Classification: Dark brown silty sand with gravel (SM).

Material Type: Cove sediment with 6% KLD blend.

Earthwork Location: Upland soil cap 20-foot buffer around perimeter slope. (see field sketch)

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

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Lift Thickness: Material was placed in approximate 12-inch compacted lifts.

Method of Compaction: Material was compacted using an Ingersoll Rand (Pro-Pac series 70) vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

**Proctor Method:** Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-1110.



**Client Information** Charter Environmental Inc. 500 Harrison Ave Suite 4R

Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Three (3) compaction tests were performed. Test results were above 93% of the proctor value and in

general accordance with project specifications.

Comments: Mike Gentile of Charter Environmental Inc. was notified of test results for the cap area prior to

departure.

Report ID: 11-5-15 Earthwork Daily Report.

Attachments: 11-5-15 Earthwork QC Report & 11-5-15 Field Sketch.

**Imtiaz Ahmed** Observed By: Field Engineer

Matthew Colman, EIT Reviewed By:

Staff Engineer

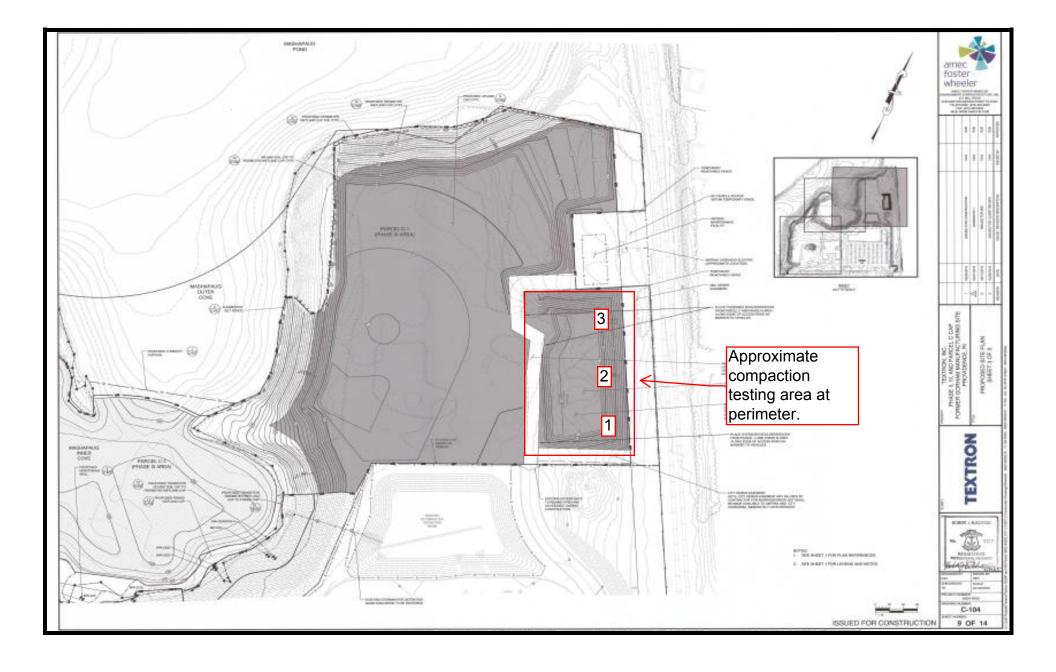


Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Field Density Report

Project:			extron Providence			t No.: CTS	CTS 74-15-0087	
Project	t Address	s: 333 Adelaide,	delaide, Providence, RI 02903 D			ervice: 11	1/5/2015	
			ensity Gauge Info					
Make:		Humboldt		f Calibration:		4/1/201		
Model	No.:	5001EZ	Source	of Calibration		QC Resour	ces	
Serial N		4295		ard Counts:	D:	2533.1 M	442.6	
Duration	on of Tes	t: 15 Seconds	Moistu	ure Offset (%):		N/A		
			Material Inform				15.0.1110	
Descrip		Dark Brown Silty Sand w			oratory Samp		15-S-1110	
Source	_	On-Site Cove Sediment wi			ted Max Dry L		92.6	
Locatio		Proposed Upland	•		ted Opt Water			
Datum	:	Bottom of C	ap	Req. M	inimum Comp	paction (%):	93.0	
		Danatha and Mail I	a of the Diagram C ''	da Nivalaan A	-th - d /D/000	\		
1		Density and Moisture	e of In-Place Soll'		•		D D	
T//		Test Leastion	Lift/Flouration	Probe Depth	Water	Dry Density	Dry Density	
Test #	<b>/</b> D	Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1	•	erimeter) See field sketch	1	8	28.6	86.3	93.2%	
2	•	erimeter) See field sketch	1	8	26.4	90.1	97.3%	
3	(P	erimeter) See field sketch	1	8	26.2	87.1	94.1%	
J	D.	esults Within Specification Limits	Do	sults Outside S	nocification Li	mits:		
	K	Esuns Willim Specification Littlic	s: 🔽 Res	ouris Ourside S	pecincation Li	111Its		
Com	ments:							
Tested	Bv: In	ntiaz Ahmed	Review	ved By: Ma	tthew Colman	ı. FIT		
Title:			1/5/2015 Title:		ff Engineer	Date:	11/16/2015	
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ENGINEERING

1	195 Frances Avenue	Client Information	Proposed Site Plan 3 of 3
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-05-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Imtiaz Ahmed
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 5 <sup>th</sup> , 2015



Fax: 401-467-2398 http://www.Thielsch.com **Client Information** 

Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

		EARTHWOR	K FIELD REPOR	RT
Project:	Textror	Providence	Service Date:	November 10 <sup>th</sup> , 2015
Project No.	CTS 74	l-15-0087	Technician:	Imtiaz Ahmed
Report ID:		11-10-15 Earthwork Daily Rep	port	
Services Reque	sted By:	Charter Environmental Inc.		
Site Contact:		Mike Gentile – Charter Enviror	nmental Inc.	
Site Contractor:		Charter Environmental Inc.		
Location:		333 Adelaide, Providence, RI	02903	
Scope of Work:		Perform earthwork observation	ns, lift thickness observation	n and density testing.

**Reference Drawings:** Proposed site plan sheet 3 of 3.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S&S.

**Material Classification:** Light brown poorly graded sand with silt (SP-SM).

Material Type: Common borrow.

**Earthwork Location:** Upland area (see field sketch).

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

Lift Thickness: Material was placed in approximate 12-inch compacted lifts.

Method of Compaction: Material was compacted using an HYPAC C-840D 11-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-668.



**Client Information**Charter Environmental Inc.

500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

## **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Seven (7) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

**Comments:** Mike Gentile of Charter Environmental Inc. was notified of results prior to departure.

**Report ID:** 11-10-15 Earthwork Daily Report.

Attachments: 11-10-15 Earthwork QC Report & 11-10-15 Field Sketch.

Observed By:

Imtiaz Ahmed Field Engineer

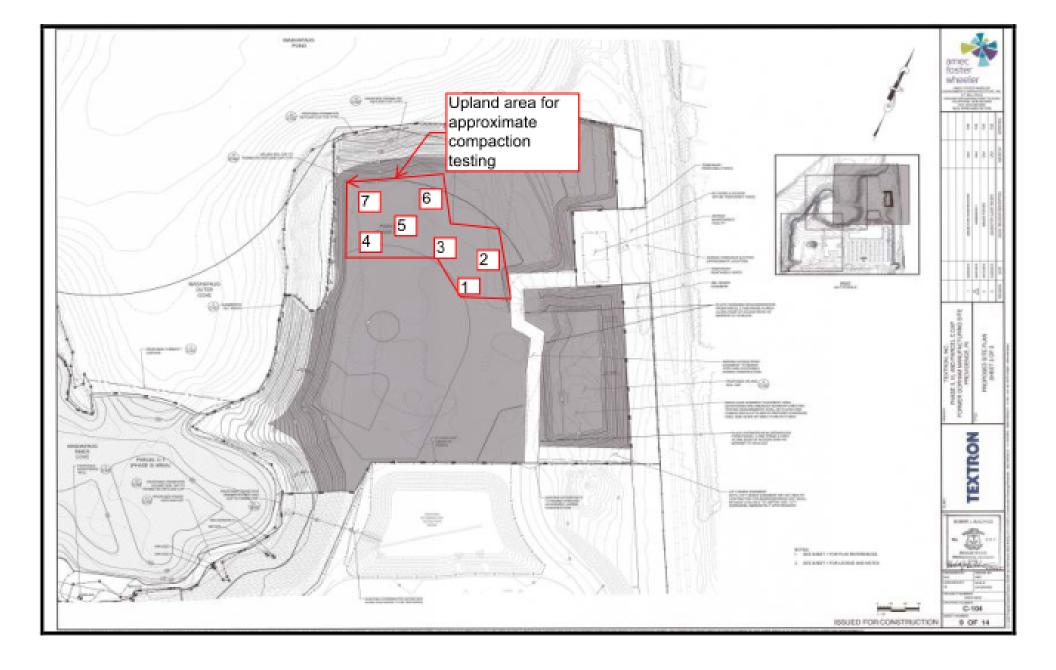
Reviewed By:

Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

Project:						t No.: CTS	CTS 74-15-0087	
Project Address:					Date of Se	ervice: 11	11/10/2015	
			ensity Gauge Info					
Make:		Troxler	of Calibration:		1/6/201	5		
Model No.:		3440 Sou		e of Calibration	n:	QC Resources		
Serial No.:		18207	Standard Counts:		D:	2248 M	660	
Duratio	n of Test:	15 Seconds N		ure Offset (%):		N/A		
			Material Inform					
Descrip		Brown Silty Sand with	TEI Laboratory Sample Number:			15-S-668		
Source:		Material S&	Corrected Max Dry Unit Wt. (pcf): 102.3					
Locatio	-	Upland Are	Corrected Opt Water Content (%): 13.1					
Datum:	•	Finished Grade		Req. Minimum Compaction (%):		90.0		
		D '1		.!- NI. I P.1	- 111 /D ( 000	\	1	
Г		Density and Moisture	e of In-Place Soil '		•		D D	
To -1 "		Toot Loopting	1 :64 /51	Probe Depth	Water	Dry Density	Dry Density	
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1		See Field Sketch	65	8	6.8	103.7	101.4%	
2		See Field Sketch	65	8	7.7	99.5	97.3%	
3		See Field Sketch	65	8	7.3	101.9	99.6%	
4		See Field Sketch	65	8	6.5	103.1	100.8%	
5		See Field Sketch	65	8	7.8	103.8	101.5%	
6		See Field Sketch	65	8	7.5	105.4	103.0%	
7		See Field Sketch	65	8	6.1	102.0	99.7%	
+								
	Docul	ts Within Specification Limits	. D.	sults Outside S	nocification	mits: □		
	KESUI	ts within specification cilling	s: 🗸 Re:	Suits Outside 3	pecincation Li	111It2. <u> </u>		
Comr	Comments:							
Tested	Rv. Imtia	z Ahmed	Paviou	ved By: Ma	tthew Colman	FIT		
Title:			/10/2015 Title:		ff Engineer	Date:	11/16/2015	
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THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Proposed site plan sheet 3 of 3
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-10-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Imtiaz Ahmed
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 10 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT A** November 12<sup>th</sup>, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Jason Rapose Project No. Report ID: 11-12-15 Earthwork Daily Report Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed site plan sheet 3 of 3.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: On-site 6% KLD processed.

Material Classification: Dark brown silty sand with gravel (SM).

Material Type: Cove Sediment with 6% KLD blend.

**Earthwork Location:** Main body area shown in field sketch.

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

Lift Thickness: Material was placed in approximate 12-inch compacted lifts.

Method of Compaction: Material was compacted using an Ingersoll Rand (Pro-Pac series 70) vibratory sheepsfoot roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-1110.



Client Information
Charter Environmental Inc.
500 Harrison Ave Suite 4R
Boston, MA 02118
pleofanti@charter.us

## **EARTHWORK FIELD REPORT Cont.**

Test Results: Four (4) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

**Comments:** Area tested was the second lift (2<sup>nd</sup>) placed for this area. Mike Gentile of Charter Environmental Inc.

was notified of test results prior to departure

**Report ID:** 11-12-15 Earthwork Daily Report A.

Attachments: 11-12-15 Earthwork QC Report A & 11-12-15 Field Sketch.

Observed By:

Jason Rapose
Field Technician

Reviewed By:

d By: Matthew Colman, EIT Staff Engineer



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

		EARTHWORK FIE	LD REPOR	ТВ
Project:	Textron	Providence	Service Date:	November 12 <sup>th</sup> , 2015
Project No.	CTS 74	-15-0087	Technician:	Jason Rapose
Report ID:		11-12-15 Earthwork Daily Report		
Services Request	ed By:	Charter Environmental Inc.		
Site Contact:	tact: Mike Gentile – Charter Environmental Inc.			
Site Contractor:		Charter Environmental Inc.		
Location: 333 Adelaide, Providence, RI 02903				
Scope of Work:	cope of Work: Perform earthwork observations, lift thickness observation and density testing.			

**Reference Drawings:** Proposed Site Plan C-104.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S&S.

**Material Classification:** Light brown Poorly – graded Sand with Silt (SP-SM).

Material Type: Sandy Fill (Common Borrow).

**Earthwork Location:** Parcel C-1 in field sketch.

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

Lift Thickness: Material was placed in approximate 6-inch compacted lifts.

**Method of Compaction:** Material was compacted using an HYPAC C840D 11-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-668.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R

Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Six (6) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

Comments: At the request of Mike Gentile of Charter Environmental, two test pits were dug in the phase III area

tested to verify at least six inches (6") of coverage over the placed poly membrane. Mike Gentile of Charter Environmental Inc. was notified of test results and depth verification prior to departure

Report ID: 11-12-15 Earthwork Daily Report B.

Attachments: 11-12-15 Earthwork QC Report B & 11-12-15 Field Sketch.

Observed By:

Jason Rapose
Field Technician

Reviewed By:

Matthew Colman, EIT
Staff Engineer



Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Field Density Report A

Project:					TEI Projec	t No.: CTS	CTS 74-15-0087	
Project Address:		333 Adelaide, Providence, RI 02903			Date of Se	ervice: 11	/12/2015	
		[	Density Gauge Info	ormation				
Make:		Troxler	Date o	of Calibration:		1/6/201	5	
Model	No.:	3440	Source	e of Calibration	n:	QC Resour	ces	
Serial N	No.:	22318	Standa	ard Counts:	D:	2210 M	663	
Duration	on of Test:	15 Seconds	Moist	ure Offset (%):		N/A		
			Material Inform					
Descrip		Dark Brown Silty Sand v			oratory Samp		15-S-1110	
Source		On-Site Cove Sediment w	vith 6% KLD Blend		ted Max Dry L		92.6	
Locatio		Main Body <i>F</i>			•	r Content (%):	22.9	
Datum	:	Bottom of (	Cap	Req. M	inimum Comp	paction (%):	90.0	
		Density and Moistur	re of In-Place Soil		•			
				Probe Depth	Water	Dry Density	Dry Density	
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1		Body, See Field Sketch	2 / 59.0	12	33.4	84.7	91.5%	
2		Body, See Field Sketch	2 / 59.0	12	34.1	83.4	90.1%	
3		Body, See Field Sketch	2 / 59.0	12	31.2	86.3	93.2%	
4	Main	Body, See Field Sketch	2 / 59.0	12	28.1	89.5	96.7%	
	Resu	Its Within Specification Limit	ts: 🔽 Re	sults Outside S	pecification Li	imits:		
Comi	ments: 6% K	LD Blend - 15-SC-1110 92.6	ncf @ 22 9% maist	ure Flevation	is approximat	e		
		25 51011G 10 00 1110 72.0		a. o. Liovation		<b>.</b> .		
Tested		Rapose			tthew Colmar			
Title:	Field	Technician Date: 1	1/12/2015 Title:	Stat	ff Engineer	Date:	11/17/2015	
	8	Jan C. Com		Min.	Athy lohn	~		

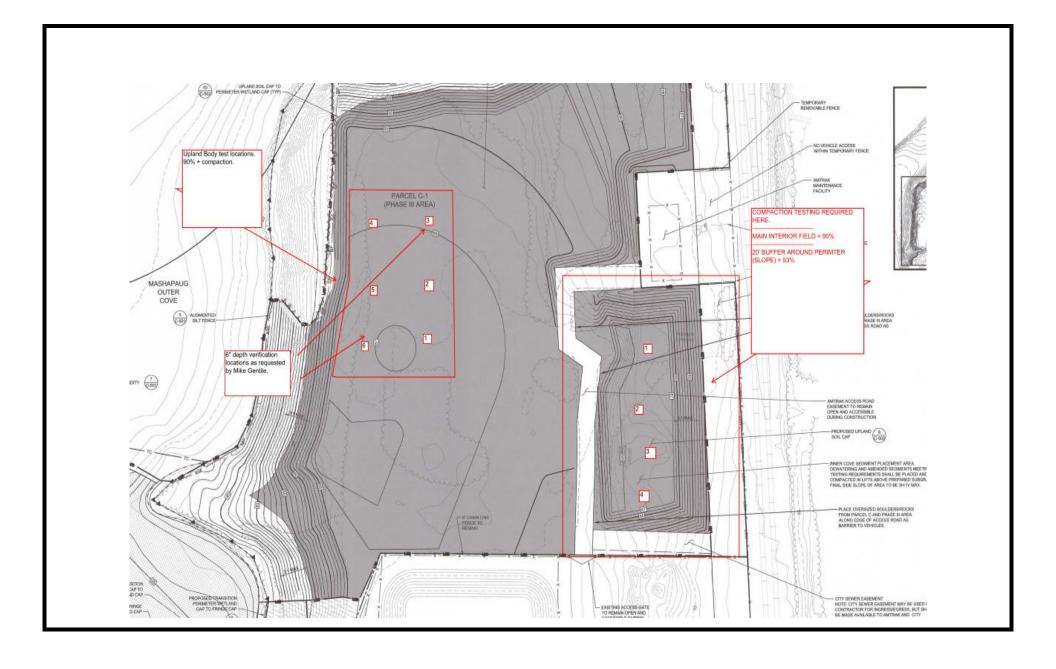


Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Field Density Report B

Project: Textro			ovidence	TEI Projec	t No.: CTS	74-15-0087	
Project	t Addre	ess: 333 Adelaide,	Providence, RI 02	2903	Date of Se	ervice: 11	/12/2015
			ensity Gauge Info				
Make:		Troxler		f Calibration:		1/6/201	5
Model	No.:	3440	Source	e of Calibration	n:	QC Resour	ces
Serial N	No.:	22318	Standa	ard Counts:	<u>D:</u>	2210 M	663
Duration	on of T	est: 15 Seconds	Moist	ıre Offset (%):		N/A	
			Material Inform				-
Descrip		Light brown Poorly-graded Sa			oratory Samp		15-S-668
Source		Material S&			ted Max Dry L		102.3
Locatio		Parcel C-1 Phase			ted Opt Water		
Datum	:	Finished Gra	de	Req. M	inimum Comp	paction (%):	90.0
				<del> </del>			
1		Density and Moisture	e of In-Place Soil		•		
			116:75	Probe Depth	Water	Dry Density	Dry Density
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)
1		Upland area, See Field Sketch	65.0	6	5.1	99.9	97.7%
2		Upland area, See Field Sketch	65.0	6	6.1	98.0	95.8%
3		Upland area, See Field Sketch	65.0	6	8.4	99.2	97.0%
4		Upland area, See Field Sketch	65.0	6	9.5	97.7	95.5%
5		Upland area, See Field Sketch	65.0	6	7.3	98.6	96.4%
6		Upland area, See Field Sketch	65.0	6	8.3	99.3	97.1%
		Describe With the Co. 151 P. 11				!	
		Results Within Specification Limits	S: 🗸 Re:	sults Outside S	pecification Li	mits: $\square$	
Comi	ments:	Elevation is approximate.					
Tested	By:	Jason Rapose	Review	ved By: Ma	tthew Colman	ı, EIT	
Title:		•	/12/2015 Title:		ff Engineer	Date:	11/17/2015
		1	•	All	1111 1 20		
		Jan C. Com		11	they lob.	~	
					<u> </u>		



THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-104
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-12-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Jason Rapose
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 12 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT A** November 13<sup>th</sup>, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Imtiaz Ahmed Project No. Report ID: 11-13-15 Earthwork Daily Report Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed site plan sheet 3 of 3.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S&S.

Material Classification: Light brown poorly graded sand with silt (SP-SM)

Material Type: Common borrow.

Earthwork Location: Parcel C-1 in field sketch.

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's observed earthwork.

Lift Thickness: Material was placed in approximate 12-inch compacted lifts.

**Method of Compaction:** Material was compacted using an HYPAC C-840D 11 ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-668.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

Test Results: Five (5) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

Comments: Mike Gentile of Charter Environmental Inc. was notified of results prior to departure

**Report ID:** 11-13-15 Earthwork Daily Report.

Attachments: 11-13-15 Earthwork QC Report & 11-13-15 Field Sketch.

Observed By:

Imtiaz Ahmed Field Engineer

Reviewed By:

Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report A

Project: Textron Providence				TEI Project No.: CTS 74-		74-15-0087	
Project	: Address:	333 Adelaide,	Providence, RI 02	2903	Date of Se	rvice: 11	/13/2015
		D	ensity Gauge Info				
Make:		Troxler	Date c	of Calibration:		1/6/201	
Model	No.:	3440	Source	e of Calibration	ı:	QC Resour	ces
Serial N		16826		ard Counts:	D:	975 M	650
Duration of Test: 15 Seconds Moist		ure Offset (%):		N/A			
			Material Inform				
Descrip		Brown Silty Sand with			oratory Samp		15-S-668
Source		Material S&			ted Max Dry L		
Locatio		Parcel C-1 Phase			ted Opt Water		
Datum	:	Finished Gra	de	Req. M	inimum Comp	paction (%):	90.0
Г		Density and Moisture	e of In-Place Soil		•		,
				Probe Depth	Water	Dry Density	Dry Density
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)
1		See Field Sketch	65	8	9.2	110.3	107.8%
2		See Field Sketch	65	8	9.5	105.2	102.8%
3		See Field Sketch	65	8	9.8	104.4	102.1%
4		See Field Sketch	65	8	9.8	100.9	98.6%
5		See Field Sketch	65	8	9.1	104.3	102.0%
	Dage	Ita Mithin Chasification Lively		aulta Outalda C	no olflosticis I !	maito. $\Box$	<u> </u>
	Resu	Its Within Specification Limits	S: 🔽 Res	sults Outside S	pecification Li	mits:	
Comr	ments:						
Tested	Rv: Imtia	az Ahmed	Raviav	ved By: Ma	tthew Colman	FIT	
Title:			/13/2015 Title:		f Engineer	Date:	11/17/2015
THIC.	1	Live Date. 11	, 13, 2013   Hue.		they low		11/11/2013



http://www.Thielsch.com

#### **Client Information**

Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

EARTHWORK FIELD REPORT B					
Project:	Textror	Providence	Service Date:	November 13 <sup>th</sup> , 2015	
Project No.	CTS 74	-15-0087	Technician:	Imtiaz Ahmed	
Report ID:		11-13-15 Earthwork Daily Report			
Services Requested By:		Charter Environmental Inc.			
Site Contact:		Mike Gentile – Charter Environmental Inc.			
Site Contractor:		Charter Environmental Inc.			
Location:		333 Adelaide, Providence, RI 02903			
Scope of Work:		Perform earthwork observations, lift thickness observation and density testing.			

**Reference Drawings:** Proposed site plan sheet 3 of 3.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: On-site 6% KLD processed.

Material Classification: Dark brown silty sand with gravel (SM).

Material Type: Cove sediment with 6% KLD blend.

Earthwork Location: Upland soil cap 20-foot buffer around perimeter slope. (see in the field sketch)

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

**Lift Thickness:** Material was placed in approximate 12-inch compacted lifts (2<sup>nd</sup> lift).

Method of Compaction: Material was compacted using an Ingersoll Rand (Pro-Pac series 70) vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

**Laboratory Sample No.:** T.E.I. 15-S-1110.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R

Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Three (3) compaction tests were performed. Test results were above 93% of the proctor value and in

general accordance with project specifications.

Comments: Mike Gentile of Charter Environmental Inc. was notified of test results of the cove sediment area prior

to departure.

**Report ID:** 11-13-15 Earthwork Daily Report B.

Attachments: 11-13-15 Earthwork QC Report B & 11-13-15 Field Sketch.

Observed By: Imtiaz Ahmed Reviewed By: Matthew Colman, EIT Staff Engineer

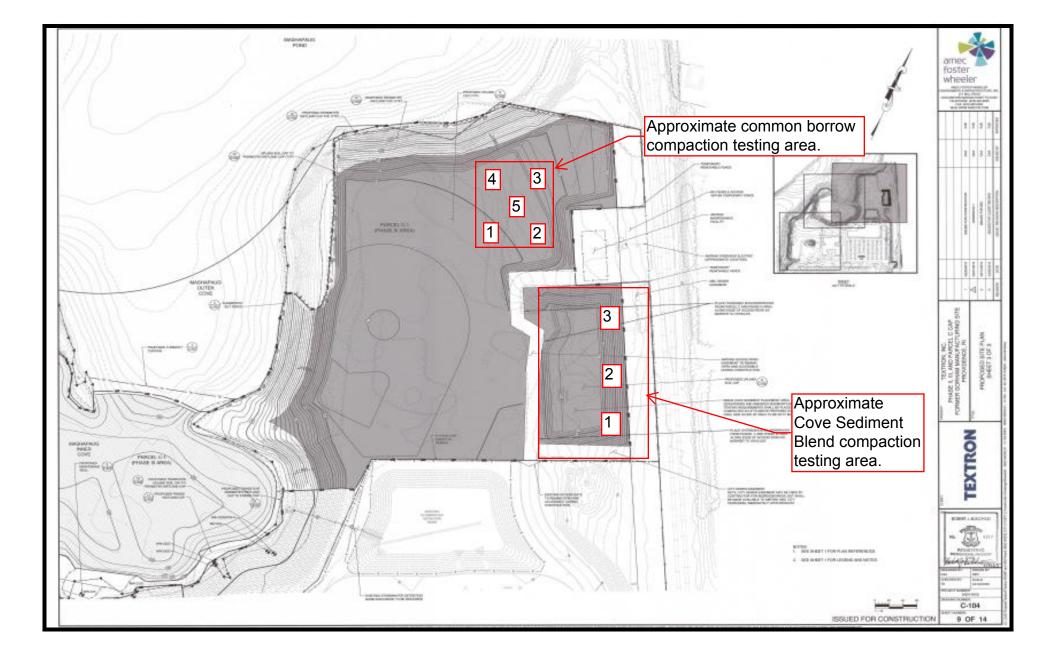


Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report B

Project:		Textron F				TEI Project No.: CTS	
Project	t Addres	ss: 333 Adelaid	laide, Providence, RI 02903			Date of Service: 1	
			Density Gauge Info				
Make:		Troxler	Date o	of Calibration:		1/6/201	5
Model	No.:	3440	Source	e of Calibration	n:	QC Resour	ces
Serial N		16826		ard Counts:	D:	975 M	650
Duration	on of Te	est: 15 Seconds	Moist	ure Offset (%):		N/A	
			Material Inforn				-
Descrip	_	Dark Brown Silty Sand			oratory Samp		15-S-1110
Source		On-Site Cove Sediment v			ted Max Dry L		92.6
Locatio	_	Main Body			ted Opt Water		
Datum	ı:	Bottom of	Cap	Req. M	linimum Comp	paction (%):	93.0
		D 11 1841.	(1 5: 2 ::	' NI '	11 1/5/000	<u> </u>	<del></del>
J		Density and Moistu	re of in-Place Soil				D D
<b>-</b> . ,,		Tasklasskiss	1.0.751	Probe Depth		Dry Density	Dry Density
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)
1		Cap Slope (See field sketch)	2	8	30.6	87.3	94.3%
2		Cap Slope (See field sketch)	2	8	31.6	87.2	94.2%
3		Cap Slope (See field sketch)	2	8	26.3	87.7	94.7%
ļ	Г	Results Within Specification Lim	ite: Do	sults Outside S	nocification Li	mits:	
		Results Within Specification Lim	its: 🗸 Re	Suits Outside 3	pecification Li	111ItS	
Com	ments: 6	6% KLD Blend - 15-SC-1110 92.6	pcf @ 22.9% moist	ure.			
Tested	l Rv∙ I	mtiaz Ahmed	Davio	ved By: Ma	tthew Colman	FIT	
Title:			11/13/2015 Title:		ff Engineer	Date:	11/17/2015
TILIC.	I	Total Engineer Date.	11/13/2013   Hile.	4.			11/11/2013
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THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-104
l	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-13-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Imtiaz Ahmed
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 13 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT** November 14<sup>th</sup>, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Jin Tian Zhu Project No. Report ID: 11-14-15 Earthwork Daily Report Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed site plan sheet 3 of 3 C-104.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: On-site KLD processed blend.

Material Classification: Dark brown silty sand with gravel (SM).

Material Type: Cove sediment with 6% KLD blend.

**Earthwork Location:** Main interior and 20 feet buffer around perimeter slope.

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork inspection time.

**Lift Thickness:** Material was placed in approximate 12-inch compacted lift (3<sup>rd</sup> lift).

Method of Compaction: Material was compacted using an Ingersoll Rand (Pro-Pac series 70) vibratory sheepsfoot roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-1110.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R

Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

Test Results: Five (5) compaction tests were performed. Test results were above 93% of the proctor value and in

general accordance with project specifications.

Comments: Mike Gentile of Charter Environmental Inc. was notified of test results of the cove sediment area prior

to departure.

**Report ID:** 11-14-15 Earthwork Daily Report.

Attachments: 11-14-15 Earthwork QC Report & 11-14-15 Field Sketch.

Observed By: Jin Tian Zhu Field Engineer

Reviewed By:

Matthew Colman, EIT Staff Engineer

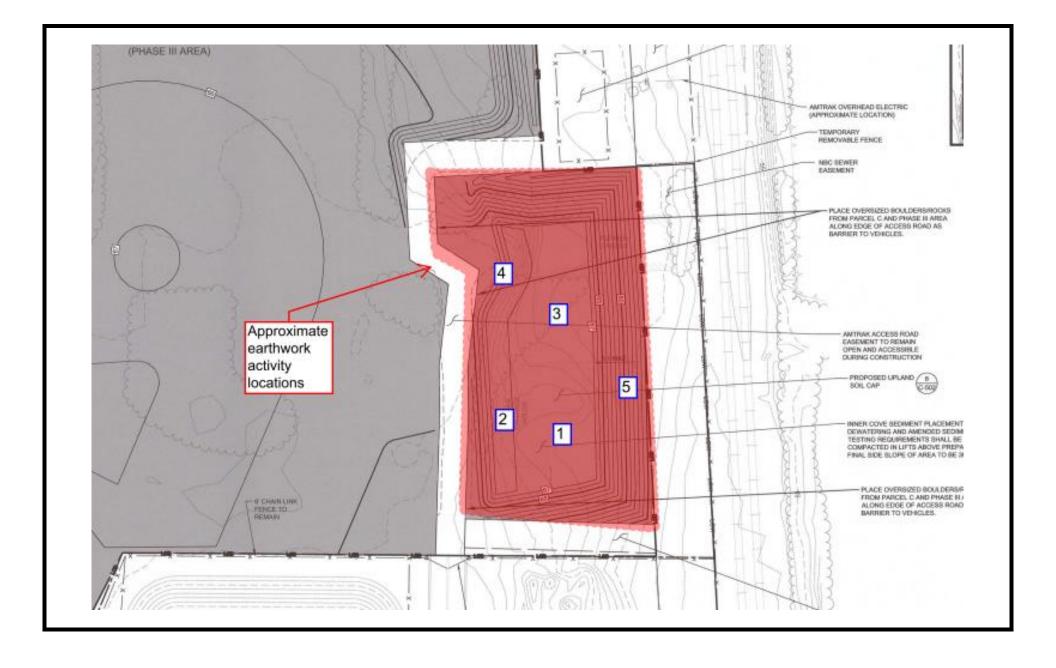


Fax: 401-467-2398 http://www.Thielsch.com

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report

Project						TEI Project No.: CTS 74-15-	
Project	t Address:	333 Adelaide	, Providence, RI 02	2903	Date of Se	ervice: 11	/14/2015
			ensity Gauge Info				
Make:		Troxler		of Calibration:		1/6/201	
Model	No.:	3440	Source	e of Calibration	ı:	QC Resour	ces
Serial N		18207		ard Counts:	D:	2251 M	601
Duration	on of Test:	15 Seconds	Moist	ure Offset (%):		N/A	
			Material Inform				
Descrip		Dark Brown Silty Sand w			oratory Samp		15-S-1110
Source		On-Site Cove Sediment w			ted Max Dry L	., .	92.6
Locatio	-	Main Interior Field and			ted Opt Water		
Datum	:	Bottom of C	Cap	Req. M	inimum Comp	paction (%):	93.0
		D !! ! !!!			11 1/5/000	<u>,                                      </u>	
		Density and Moistur	e of in-Place Soil		•		D D
<b>-</b> . ,,		Tasklasskan	1.0.751	Probe Depth	Water	Dry Density	Dry Density
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)
1		See field sketch	3rd	10	23.1	89.5	96.7%
2			3rd	10	25.5	90.2	97.4%
3			3rd	10	28.0	88.4	95.5%
4			3rd	10	22.2	89.0	96.1%
5			3rd	10	25.5	87.1	94.1%
			<u> </u>				
J	Doc	ults Within Specification Limit	S. D.	sults Outside S	nocification Li	mits:	
	res	uns ventium specification tillit	s: 🗸 Res	ouits Outside s	pecincation Li	ts	
Comi	ments: 6%	KLD Blend - 15-SC-1110 92.6p	ocf @ 22.9% moist	ure.			
Tested	Ry: lin∃	 Fian Zhu	Review	ved By: Ma	tthew Colman	FIT	
Title:			1/13/2015 Title:		f Engineer	Date:	11/17/2015
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	6				0		



THIELSCH
ENGINEERING

_	195 Frances Avenue	Client Information	Site Plan: Proposed site plan C-104
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-14-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Jin Tian Zhu
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 14 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT** November 16<sup>th</sup>, 2015 Project: **Textron Providence** Service Date: CTS 74-15-0087 Technician: Jin Tian Zhu Project No. Report ID: 11-16-15 Earthwork Daily Report Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed site plan sheet 3 of 3 C-104.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: On-site KLD processed blend.

Material Classification: Dark brown silty sand with gravel (SM).

Material Type: Cove sediment with 6% KLD blend.

**Earthwork Location:** Main interior and 20 feet buffer around perimeter slope.

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork observations.

**Lift Thickness:** Material was placed in approximate 12-inch compacted lifts (4<sup>th</sup> lift).

Method of Compaction: Material was compacted using an Ingersoll Rand (Pro-Pac series 70) vibratory sheepsfoot roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

**Proctor Method:** Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-1110.



Client Information
Charter Environmental Inc.
500 Harrison Ave Suite 4R

Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Five (5) compaction tests were performed. Test results were above 93% of the proctor value and in

general accordance with project specifications.

Comments: Mike Gentile of Charter Environmental Inc. was notified of test results of the cove sediment area prior

to departure.

**Report ID:** 11-16-15 Earthwork Daily Report.

Attachments: 11-16-15 Earthwork QC Report & 11-16-15 Field Sketch.

Observed By:

Jin Tian Zhu
Field Engineer

Reviewed By:

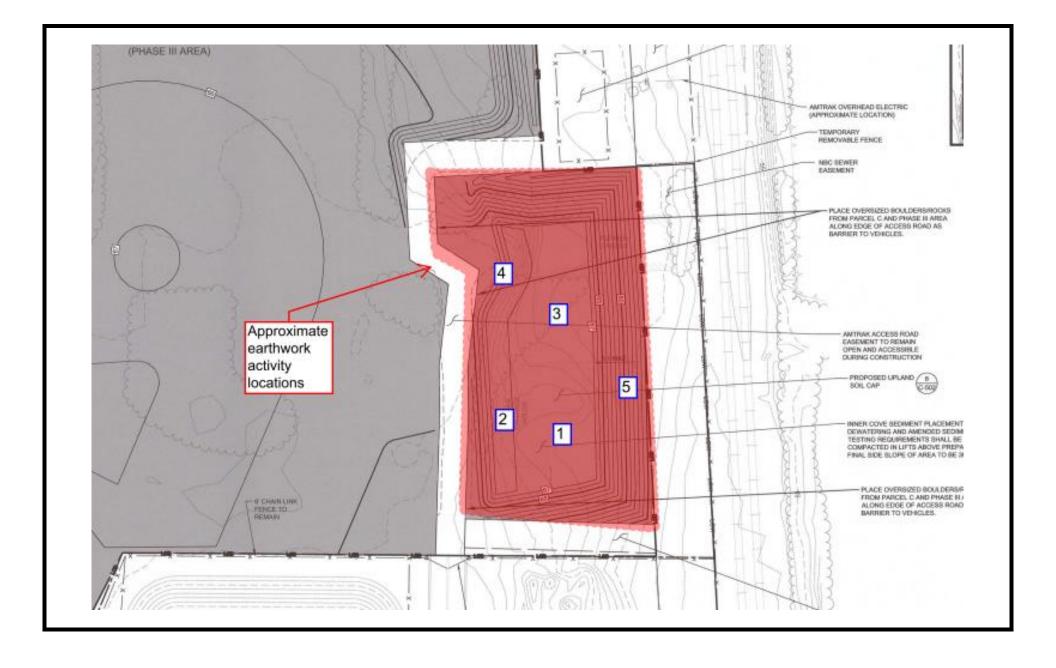
Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report

Project:		Textron Providence			TEI Projec	t No.: CTS	74-15-0087
Project	t Address:	333 Adelaide,	Providence, RI 02	2903	Date of Se	ervice: 11	/16/2015
		D	ensity Gauge Info	ormation			
Make:		Date of Calibration:				1/6/201	5
Model	No.:	3440			n:	QC Resour	ces
Serial No.:		18207	Standa	ard Counts:	D:	2255 M	598
Duration	on of Test:	15 Seconds	Moistu	ure Offset (%):	-	N/A	
			Material Inform				
Descrip	otion:	Dark Brown Silty Sand w			oratory Samp		15-S-1110
Source		On-Site Cove Sediment wi			ted Max Dry L		92.6
Locatio	on:	Main Interior Field and	d Buffer Area		ted Opt Wate		22.9
Datum	:	Bottom of C	ар	Req. M	inimum Comp	paction (%):	93.0
1		Density and Moisture	e of In-Place Soil		•		
				Probe Depth	Water	Dry Density	Dry Density
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)
1		See field sketch	4th	10	22.7	87.3	94.3%
2			4th	10	24.5	86.6	93.5%
3			4th	10	20.2	89.0	96.1%
4			4th	10	21.8	89.0	96.1%
5			4th	10	23.3	87.0	94.0%
	Res	ults Within Specification Limits	s: 🔽 Res	sults Outside S	pecification Li	imits:	
Comi	ments: 6%	KLD Blend - 15-SC-1110 92.6p	cf @ 22 9% maist	ure			
001111	11101113.070	10 30 1110 72.0p	CI C 22.770 IIIOIST	arc.			
			•				
Tested		Γian Zhu			tthew Colman		
Title:	Field	d Engineer Date: 11	/16/2015 Title:	Sta	ff Engineer	Date:	11/17/2015
		7		AL	14 1 10		
	6			11	they look	~	
					2000 2000		



THIELSCH	-
ENGINEERING	

_	195 Frances Avenue	Client Information	Site Plan: Proposed site plan C-104
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-16-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Jin Tian Zhu
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 16 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

EARTHWORK FIELD REPORT					
Project:	Textron	Providence	Service Date:	November 17 <sup>th</sup> , 2015	
Project No.	CTS 74-	15-0087	Technician:	Kyle Hogan	
Report ID:		11-17-15 Earthwork Daily Report			
Services Requeste	ed By:	Charter Environmental Inc.			
Site Contact:		Mike Gentile – Charter Environmental Inc.			
Site Contractor:		Charter Environmental Inc.			
Location:		333 Adelaide, Providence, RI 02903			
Scope of Work: Perform earthwork observations, lift thickness of			ickness observatio	n and density testing.	

**Reference Drawings:** Proposed site plan sheet 3 of 3 C-104.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: On-site 6% KLD processed blend and Material S&S import.

Material Classification: Dark brown silty sand with gravel (SM) and Light brown Poorly-graded Sand with Silt (SP-SM).

Material Type: Cove sediment with 6% KLD blend and Sandy Fill (Common Borrow).

**Earthwork Location:** Main interior field/buffer area and proposed Parcel C area.

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's earthwork observations.

**Lift Thickness:** Material was placed in approximate 12-inch/6-inch compacted lifts (5<sup>th</sup> lift for cap area).

Method of Compaction: Material was compacted using an Ingersoll Rand (Pro-Pac series 70) vibratory sheepsfoot roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

**Laboratory Sample No.:** T.E.I. 15-S-1110 and 15-S-668.



Client Information
Charter Environmental Inc.

500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

Test Results: Nine (9) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

Comments: Mike Gentile of Charter Environmental Inc. was notified of test results of the cove sediment and

Parcel C areas prior to departure.

**Report ID:** 11-17-15 Earthwork Daily Report.

Attachments: 11-17-15 Earthwork QC Report A & B, and 11-17-15 Field Sketch.

Observed By: Kyle Hogan
Field Engineer

Kyle Hogan
Reviewed By: Matthew Colman, EIT
Staff Engineer



Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report A

Project:		Textror	Textron Providence			t No.: CTS	CTS 74-15-0087	
Project	t Addre	ess: 333 Adela	333 Adelaide, Providence, RI 02903			ervice: 11	11/17/2015	
			Density Gauge Inf					
Make:		Troxler				1/6/2015		
Model		3440		e of Calibratior	n:	QC Resour		
Serial I		18207		ard Counts:	D:	2255 M	598	
Duration	on of T	est: 15 Second	s Moist	ure Offset (%):		N/A		
			Matarial Inform					
Descri	ntion	Dark Brown Silty San	Material Inform		oratory Samp	do Numbor:	15-S-1110	
Source	-	On-Site Cove Sedimen			ted Max Dry L			
Location		Main Interior Field			ted Max Dry C ted Opt Water			
Datum		Bottom			linimum Comp		90.0	
Datuili	ı. 	DULLUIII	от Сар	Keq. iv	iii iii iii iii ii Comp	Jaction (70).	90.0	
		Density and Mois	ture of In-Place Soil	via Nuclear M	ethod (D6938	)		
				Probe Depth	Water	Dry Density	Dry Density	
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1		See field sketch (92.6 proctor)	5th	10	14.8	90.7	97.9%	
2		See field sketch (92.6 proctor)	5th	10	16.8	92.0	99.4%	
3		See field sketch (92.6 proctor)	5th	10	17.1	90.4	97.6%	
4		See field sketch (92.6 proctor)	5th	10	13.4	89.7	96.9%	
		·						
		Results Within Specification Li	mits: 🗸 Re	sults Outside S	pecification Li	imits:		
Com	mants	6% KLD Blend - 15-SC-1110 92	2 Anct @ 22 0% major	tura		(O) (O)		
	monts.	. 070 KLD DIGHU - 10-30-1110 92	υριί & 22.7/0 IIIUIS	iui C.				
<u> </u>			T	15	6 :			
Tested	ГВу:	Kyle Hogan			tthew Colman		44/00/05:5	
Title:		Field Engineer Date:	11/17/2015 Title:	Sta	ff Engineer	Date:	11/23/2015	
		hyle hogan		M.	Athrif Colm	~		
					4000			

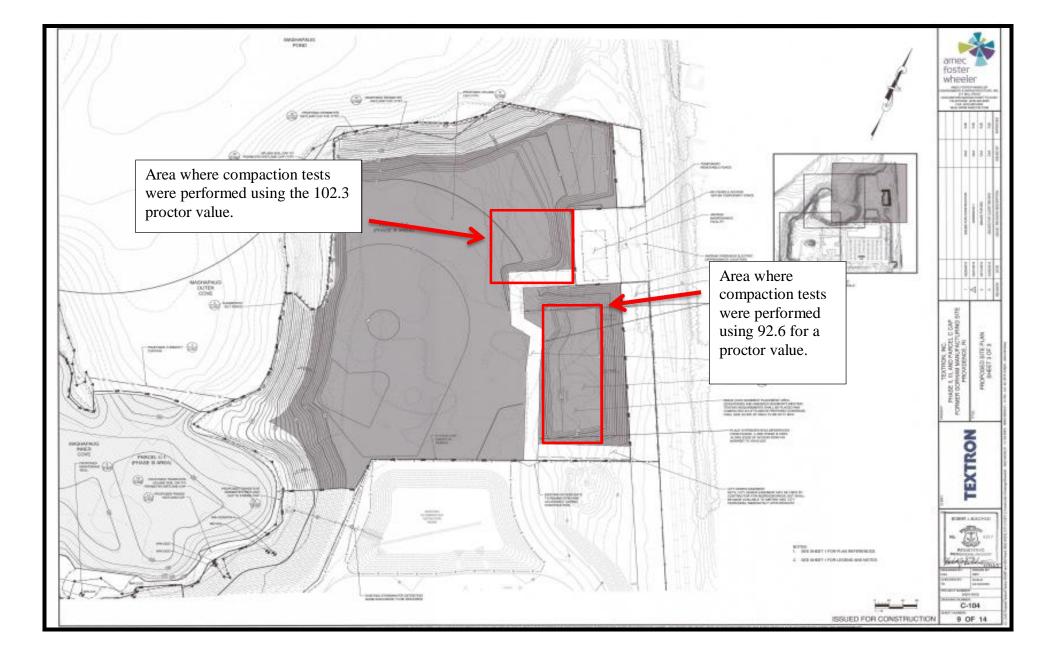


Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report B

Project	Address:	333 Adelaide,	Describiones DLO		Date of Se			
			Providence, Ri Uz	e, Providence, RI 02903			11/17/2015	
			ensity Gauge Info					
Make:		Troxler	Date of Calibration:		-	1/16/201		
Model No.:		3440	Source	e of Calibration	ı:	QC Resour	ces	
Serial No.:		18207		ard Counts:	<u>D:</u>	2247 M	593	
Duratio	on of Test:	15 Seconds	Moist	ure Offset (%):		N/A		
							1	
			Material Inform					
Descrip		ght Brown Poorly-graded Sa			oratory Samp		15-MC-668	
Source:		Material S 8			ted Max Dry L		102.3	
Locatio		Proposed Parcel			ted Opt Water			
Datum	:	Top Soil subgi	rade	Req. M	inimum Comp	paction (%):	90.0	
		D 11 1841.	(1 D) 0 "	' NI ' "."	11 1/5/000			
1		Density and Moistur	e of in-Place Soil '		•	<u></u>	D D	
<b>-</b> . ,,		T	1.0.751	Probe Depth	Water	Dry Density	Dry Density	
Test #	C E!-I-	Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1		Sketch (102.3 Proctor)	FG	4	9.4	100.5	98.2%	
2	See Field Sketch (102.3 Proctor)		FG	4	7.2	101.8	99.5%	
3		Sketch (102.3 Proctor)	FG	4	9.9	99.9	97.7%	
4		d Sketch (102.3 Proctor)	FG	4	7.7	99.5	97.3%	
5	266 FIGIC	d Sketch (102.3 Proctor)	FG	4	7.8	99.7	97.5%	
	Pacult	ts Within Specification Limit	l S·     Do	sults Outside S	necification Li	mits. $\square$		
	Nesuli	within specification citiff.	s: 🔽 Re		Podition Li	шиз		
Comr	ments:							
Tested	By: Kyle F		Roviou	ved By: Ma	tthew Colman	FIT		
Title:		V	/17/2015 Title:		f Engineer	Date:	11/23/2015	
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THIELSCH
ENGINEERING

-	195 Frances Avenue	Client Information	Proposed Site Plan Sheet 3 of 3
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-17-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Kyle Hogan
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 17 <sup>th</sup> , 2015



http://www.Thielsch.com

#### **Client Information**

Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

EARTHWORK FIELD REPORT					
Project:	Textron	Providence	Service Date:	November 18 <sup>th</sup> , 2015	
Project No.	CTS 74	-15-0087	Technician:	Imtiaz Ahmed	
Report ID:		11-18-15 Earthwork Daily Report	,		
Services Request	ed By:	Charter Environmental Inc.			
Site Contact:		Mike Gentile – Charter Environmental Inc.			
Site Contractor:		Charter Environmental Inc.			
Location:		333 Adelaide, Providence, RI 02903			
Scope of Work:		Perform earthwork observations, lift thickness observation and density testing.			

**Reference Drawings:** Proposed site plan sheet 3 of 3.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S&S.

Material Classification: Light brown poorly graded sand with silt (SP-SM)

Material Type: Common borrow.

**Earthwork Location:** Proposed Parcel C Area (See field sketch).

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's observed earthwork.

Lift Thickness: Material was placed in approximate 12-inch compacted lifts.

Method of Compaction: Material was compacted using an HYPAC C-840D 11-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-668.



Client Information
Charter Environmental Inc.

500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Five (5) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

Comments: Mike Gentile of Charter Environmental Inc. was notified of results prior to departure

**Report ID:** 11-18-15 Earthwork Daily Report.

Attachments: 11-18-15 Earthwork QC Report & 11-18-15 Field Sketch.

Observed By:

Imtiaz Ahmed Field Engineer

Reviewed By:

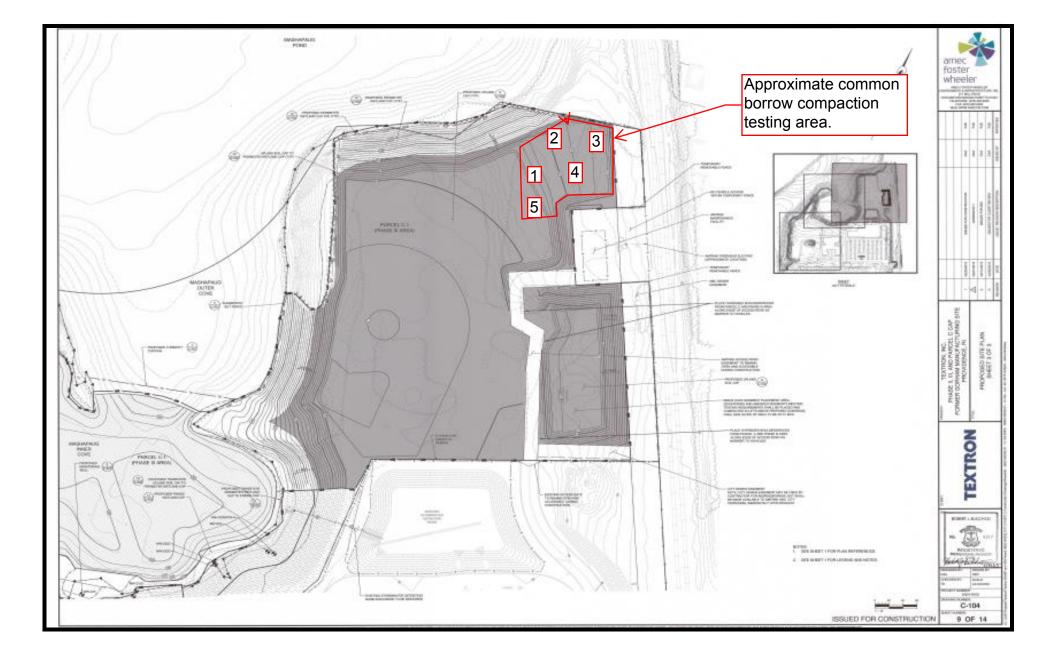
Matthew Colman, EIT Staff Engineer



Fax: 401-467-2398 http://www.Thielsch.com Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report

Project:		Textron Providence			TEI Projec	t No.: CTS	CTS 74-15-0087	
	Address:	333 Adelaide,	Providence, RI 02	2903	Date of Se	ervice: 11	/18/2015	
							_	
		D	ensity Gauge Info	ormation				
Make:		Troxler	f Calibration:		1/16/201	15		
Model No.:		3440	Source	of Calibration	n:	QC Resour	ces	
Serial No.:		18207	Standa	ard Counts:	D:	2543 M	443	
Duration of Test: 15 Seconds Moisture Offset (%)		-	N/A					
			Material Inform	nation				
Descrip	otion:	Brown Silty Sand with	Gravel (SM)	TEI Lab	oratory Samp	le Number:	15-S-668	
Source	:	Material S&	ıS		ted Max Dry L		102.3	
Locatio	n:	Proposed Parcel	C Area	Correct	ted Opt Watei	r Content (%):	13.1	
Datum	:	Top soil subgr	ade	Req. M	inimum Comp	paction (%):	90.0	
		Density and Moisture	e of In-Place Soil		ethod (D6938)	)		
				Probe Depth	Water	Dry Density	Dry Density	
Test #		Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1		See Field Sketch	59	8	6.5	103.5	101.2%	
2		See Field Sketch	59	8	8.0	103.6	101.3%	
3		See Field Sketch	64	8	10.2	98.9	96.7%	
4		See Field Sketch	64	8	7.8	96.8	94.6%	
5		See Field Sketch	59	8	8.2	97.5	95.3%	
	Resu	Its Within Specification Limits	s: 🔽 Res	sults Outside S	pecification Li	mits:	_	
Comi	ments:					, , , , , , , , , , , , , , , , , , ,		
COIII	HCHIS.							
Tested		nz Ahmed		ved By: Ma	tthew Colman	, EIT		
Title:	Field	Engineer Date: 11	/18/2015 Title:	Stat	ff Engineer	Date:	11/23/2015	
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					- 35			



THIELSCH
ENGINEERING

7	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-104
	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-18-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Imtiaz Ahmed
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 18 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R

Boston, MA 02118 pleofanti@charter.us

EARTHWORK FIELD REPORT				
Project:	Textron Providence	Service Date:	November 19 <sup>th</sup> , 2015	
Project No.	CTS 74-15-0087	Technician:	Jin Tian Zhu	
Report ID:	11-19-15 Earthwoi	rk Daily Report		
Services Requested By: Charter Environmental Inc.				
Site Contact:	Mike Gentile – Ch	Mike Gentile – Charter Environmental Inc.		
Site Contractor:	Charter Environme	Charter Environmental Inc.		
Location:	333 Adelaide, Prov	333 Adelaide, Providence, RI 02903		
Scope of Work:	Perform earthwork	Perform earthwork observations, lift thickness observation and density testing.		

**Reference Drawings:** Proposed Site Plan C-104, 6/24/2015.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S & S.

Material Classification: Light brown poorly-graded Sand with Silt (SP-SM).

Material Type: Sandy Fill (Common Borrow).

Earthwork Location: Backfill proposed Parcel C1 area (Phase III) with Sandy fill material.

**Subgrade Review:** Subgrade consisted of in-situ material overlain with geo-fabric.

**Groundwater:** No groundwater was encountered during today's earthwork activities.

.

Lift Thickness: Material was placed in approximate 6-inch compacted lifts.

**Method of Compaction:** Material was compacted using a BOMAG 10-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

**Proctor Method:** Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-SC-668.



**Client Information** Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Five (5) compaction tests were performed. Test results were above 90% of the proctor value, and in

general accordance with project specifications.

Comments: Lift thickness for topsoil and common borrow material was observed to be 6-inches compacted prior

to testing of each lift. Mike Gentile of Charter Environmental Inc. was notified of test results prior to

departure.

Report ID: 11-19-15 Earthwork Daily Report.

Attachments: 11-19-15 Earthwork QC Report and 11-19-15 Field Sketch.

Jin Tian Zhu Observed By: Reviewed By: Field Engineer

Matthew Colman, EIT Staff Engineer

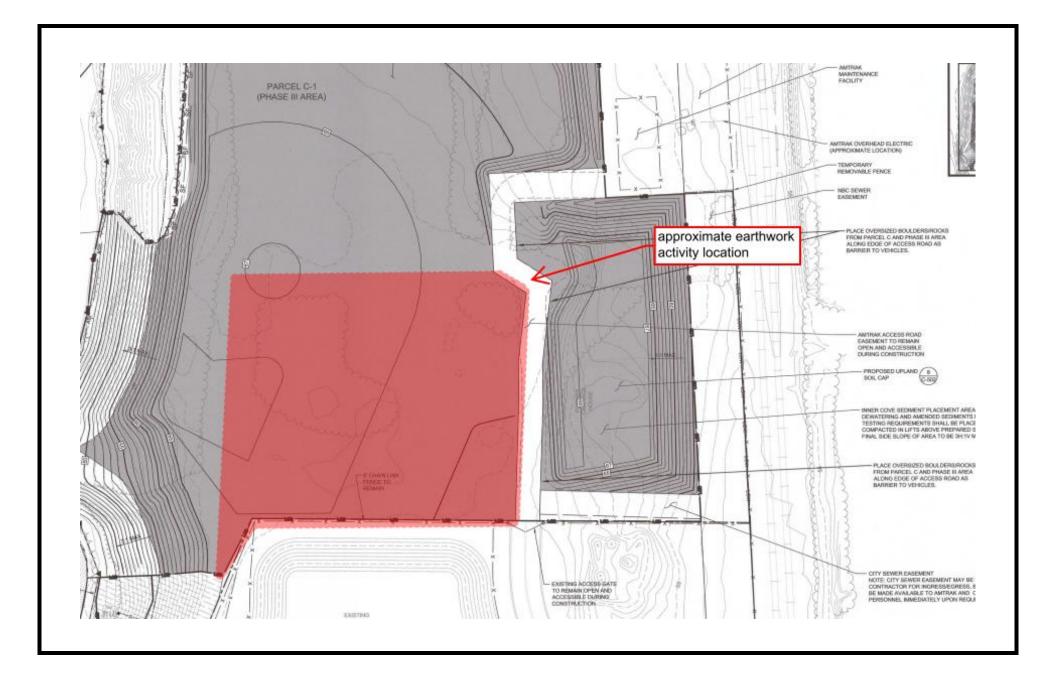


Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report

Project Address: 333 Ac	lelaide, Providence, RI 0	2903	Date of Se			
	t Address: 333 Adelaide, Providence, RI 02903			ervice: 11	11/19/2015	
	Density Gauge Inf					
Make: Trox		of Calibration:		1/16/2015		
Model No.: 344	0 Source	e of Calibratior	n:	QC Resources		
Serial No.: 1820		Standard Counts:		2240 M	599	
Duration of Test: 15 Sec	onds Moist	ure Offset (%):		N/A		
	Material Inforr					
·	ded Sand with Silt (SP-S		oratory Samp		15-SC-668	
	erial S & S		ted Max Dry L	., .	102.3	
	el C1 (Phase III) area		Corrected Opt Water Content (%): 13.1			
Datum: Top so	il subgrade	Req. M	inimum Comp	paction (%):	90.0	
D !! 11	4		11 1/0/000	`		
Density and N	Noisture of In-Place Soil		•	<u> </u>	D D. ''	
	110.751	Probe Depth	Water	Dry Density	Dry Density	
Test # Test Location	Lift/Elevation	(in)	Content (%)	(pcf)	(% comp)	
1 See Field Sketch	FG	4	7.7	97.1	94.9%	
2	FG	4	8.7	96.3	94.1%	
3	FG	4	7.9	99.0	96.8%	
4	FG	4	7.7	101.2	98.9%	
5	FG	4	10.0	97.4	95.2%	
Posults Within Specification		sults Outsido S	necification Li	mits. $\square$	<u> </u>	
Results Within Specification Limits: Results Outside Specification Limits:						
Comments:						
L Tested By: Jin Tian Zhu	Douto	wed By: Ma	tthew Colman	LIT		
3	te: 11/19/2015 Title:		ff Engineer	Date:	11/19/2015	
	ite. 11/19/2010   HILE:				11/17/2013	
		/h	Athy lob.	~		



THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-104
Ш	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
╽	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 11-19-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Jin Tian Zhu
	http://www.Thielsch.com	pleofanti@charter.us	Date: November 19 <sup>th</sup> , 2015



http://www.Thielsch.com

Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

#### **EARTHWORK FIELD REPORT** December 1<sup>st</sup>, 2015 **Textron Providence** Service Date: Project: CTS 74-15-0087 Technician: Imtiaz Ahmed Project No. Report ID: 12-01-15 Earthwork Daily Report Services Requested By: Charter Environmental Inc. Mike Gentile - Charter Environmental Inc. Site Contact: Site Contractor: Charter Environmental Inc. Location: 333 Adelaide, Providence, RI 02903 Scope of Work: Perform earthwork observations, lift thickness observation and density testing.

**Reference Drawings:** Proposed site plan C-104, 6/24/2015.

**Earthwork Contractor:** Charter Environmental Inc.

Material Source: Material S & S.

Material Classification: Light brown poorly graded sand with silt (SP-SM)

Material Type: Sandy Fill (Common borrow).

**Earthwork Location:** Interior field of the proposed cap area (See field sketch).

**Subgrade Review:** Material was placed prior to TEI's arrival.

**Groundwater:** No groundwater was encountered during today's observed earthwork.

Lift Thickness: Material was placed in an approximate 12-inch compacted lift.

**Method of Compaction:** Material was compacted using an HYPAC C-840D 11-ton vibratory roller.

Method of Density Testing: In-place test method using nuclear gauge. (ASTM D6938)

Proctor Method: Standard Proctor. (ASTM D698)

Laboratory Sample No.: T.E.I. 15-S-668.



Client Information Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

### **EARTHWORK FIELD REPORT Cont.**

**Test Results:** Five (5) compaction tests were performed. Test results were above 90% of the proctor value and in

general accordance with project specifications.

**Comments:** Mike Gentile of Charter Environmental Inc. was notified of results prior to departure.

**Report ID:** 12-01-15 Earthwork Daily Report.

Attachments: 12-01-15 Earthwork QC Report & 12-01-15 Field Sketch.

Observed By:

Imtiaz Ahmed Field Engineer

Reviewed By:

Matthew Colman, EIT Staff Engineer

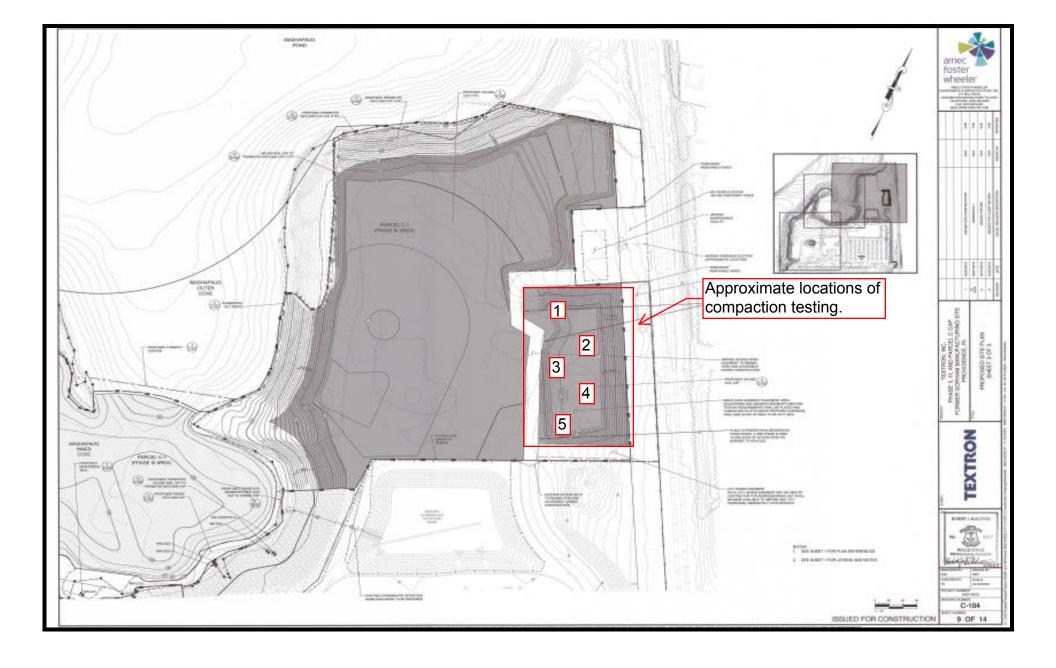


Fax: 401-467-2398 <a href="http://www.Thielsch.com">http://www.Thielsch.com</a>

Client Information: Charter Environmental Inc. 500 Harrison Ave Suite 4R Boston, MA 02118 pleofanti@charter.us

# Earthwork Field Density Report

Project		Textron Providence			TEI Projec	t No.: CTS	74-15-0087
Project	Address:	333 Adelaide, Providence, RI 02903			Date of Se	Date of Service: 12/1	
			ensity Gauge Info				
Make:		HUMBOLDT		of Calibration:		4/1/201	5
Model	No.:	HS5001EZ	Source	Source of Calibration:		QC Resources	
Serial N		4295	Standard Counts:		D:	2591.6 M	458.6
Duratio	on of Test:	15 Seconds	Moistu	ure Offset (%):		N/A	
			Material Inform				
Descrip		Brown Silty Sand with		TEI Laboratory Sample Number: 15-S-668			
Source		Material S&			ted Max Dry L		102.3
Locatio		Interior Field of the Prop	•		•	Opt Water Content (%): 13.1	
Datum	:	Cap finished g	rade.	Req. M	inimum Comp	paction (%):	90.0
		Danish and Malakan			- +ll /D/020	\	
Г		Density and Moistur	e of in-Place Soll'		·		Des Domolts
Toot #		Test Location	Lift/Floursties	Probe Depth	Water	Dry Density	Dry Density
Test #			Lift/Elevation	(in)	Content (%)	(pcf) 105.8	(% comp)
1		See Field Sketch	64	8	7.0		103.4%
2			64	8	7.0	101.5	99.2%
3 4			64	8 8	6.6 7.1	102.4	100.1%
5			64	8	9.2	101.3 103.5	99.0% 101.2%
5			04	ŏ	9.2	103.5	101.2%
	Results Within Specification Limits: Results Outside Specification Limits:					<u> </u>	
Comments:							
Tested By: Imtiaz Ahmed Reviewed By: Matthew Colman, EIT							
Title:			2/1/2015 Title:		ff Engineer	Date:	12/9/2015
	King Colm						
		Second Francisco			0		



THIELSCH
ENGINEERING

1	195 Frances Avenue	Client Information	Site Plan: Proposed Site Plan C-104
l	Cranston, Rhode Island 02910	Charter Environmental, Inc.	Project No.: CTS 74-15-0087
	Phone: 401-467-6454	500 Harrison Ave Suite 4R	Report No. 12-01-15 FS
	Fax: 401-467-2398	Boston, MA 02118	Technician: Imtiaz Ahmed
	http://www.Thielsch.com	pleofanti@charter.us	Date: December 1 <sup>st</sup> , 2015