

NCTCOG Blue-Green-Grey Hightower Rain Garden Project for Watauga

Final Report
September 20, 2022



North Central Texas
Council of Governments



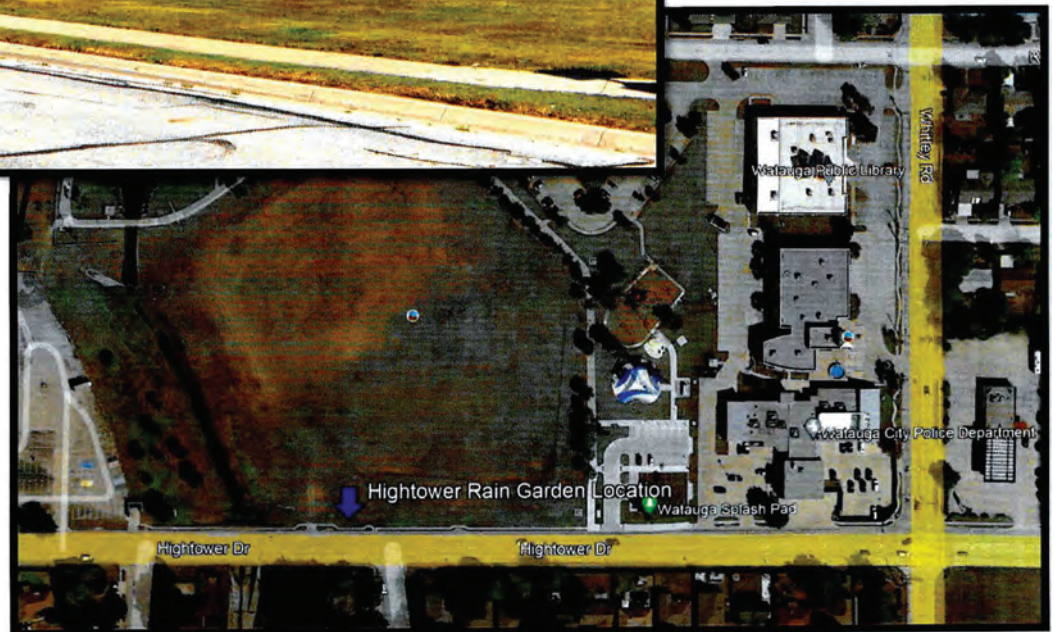
1. Project Summary

The City of Watauga is 4.2 square miles, surrounded by the cities of Keller to the north, Fort Worth to the west, Haltom City to the southwest and North Richland Hills to the south and east. The large proportion of impervious surfaces and subsequent storm water runoff results in large concentrations of trash and dissolved pollutants in the storm water system. The City's "One Watauga" Comprehensive Land Use Plan outlines the need for future development to connect urban areas to nature.

The awarded Blue-Green-Grey grant from North Central Texas Council of Governments afforded the City of Watauga to develop a scalable retrofit rain garden to the storm drain inlet on Hightower Drive. The rain garden was designed by Burgess & Niple with input from Watauga and constructed by JR West Texas Concrete. A curb cutout upstream of the existing curb inlet was added to redirect urban storm water runoff to the engineered rain garden, filtering first flush pollutants. This feature introduces filtered runoff from Hightower Dr to the earthen channel.



Before Construction



NCTCOG Blue-Green-Grey
Hightower Rain Garden
Final Report

The location of the rain garden is at the south end of Capp Smith Park, that is home to many of the City's amenities including Watauga's Splash Pad, playgrounds, City Hall, Police Department and Public Library. The addition of the 10-foot shared use path around the rain garden will benefit pedestrians and bike riders for convenient access to park amenities. The three elements of the Blue-Green-Grey initiative are met with the filtering of the storm runoff for the environment and meeting a transportation need for pedestrians and bicyclists.



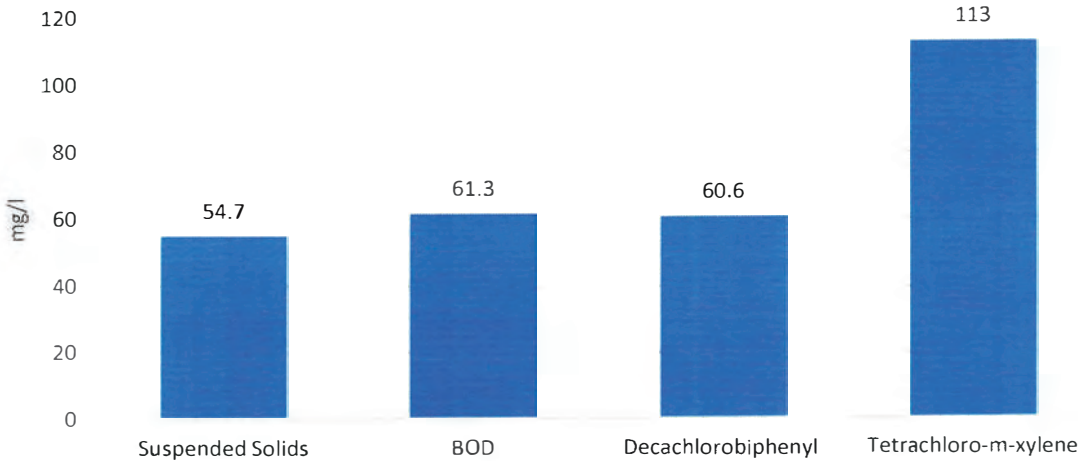
2. Results

The rain garden’s primary function is designed to intercept runoff from Hightower Dr, and the elevation is three feet lower than the hillside of Capp Smith Park, becoming an effective intercept to contain fertilizer and pesticide laden runoff from the turf areas. Additionally, the rain garden is irrigated, during times of drought to keep the plants thriving.

City of Watauga Stormwater Staff collected water samples before construction and submitted them to Pace Analytical, the results are included in the table below. Due to schedule constraints of the final report and no significant precipitation events a postconstruction sample is pending.

HIGHTOWER RAIN GARDEN		SAMPLE RESULTS - 01				
Collected date/time: 03/21/22 10:23		L1473704				
Gravimetric Analysis by Method 2540D						
Analyte	Result	Qualifier	RDL	Dilution	Analysis date - time	Batch
Suspended Solids	54.7		16.7	1	03/20/2022 12:55	WG1039460
Wet Chemistry by Method SM5210B						
Analyte	Result	Qualifier	RDL	Dilution	Analysis date - time	Batch
BOD	61.3		7.50	1	03/20/2022 09:55	WG1036269
Polychlorinated Biphenyls (GC) by Method 8082						
Analyte	Result	Qualifier	RDL	Dilution	Analysis date - time	Batch
PCE 10'6	ND		0.000500	1	03/24/2022 13:41	WG1037096
PCB 12'1	ND		0.000500	1	03/24/2022 13:41	WG1037096
PCE 12'32	ND		0.000500	1	03/24/2022 13:41	WG1037096
PCE 12'42	ND		0.000500	1	03/24/2022 13:41	WG1037096
PCE 12'43	ND		0.000500	1	03/24/2022 13:41	WG1037096
PCB 12'54	ND		0.000500	1	03/24/2022 13:41	WG1037096
PCB 12'60	ND		0.000500	1	03/24/2022 13:41	WG1037096
(5) Decachlorobiphenyl	60.6		10.0-120		03/24/2022 13:41	WG1037096
(5) Tetrachloro-m-xylene	113		10.0-127		03/24/2022 13:41	WG1037096

**Hightower Rain Garden Water Sample Results
Pre Construction**



City of Watauga Stormwater staff will monitor and collect a post construction sample, the report will be updated with the new figures for comparison.

3. Lessons Learned

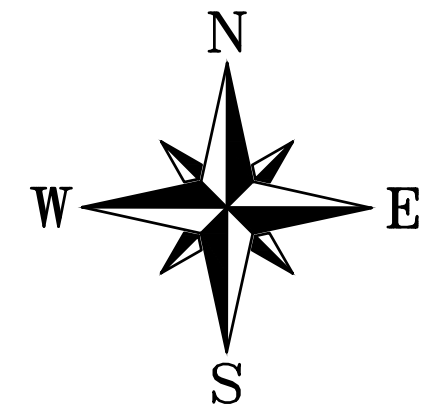
Burgess & Niple drafted the design for the rain garden with input from Watauga Staff. The focus was adaptability to surroundings, allowing for a raingarden that can filter the first flush contaminants while having a small enough footprint to be utilized anywhere. The curb cut allows for retrofits for various storm drain inlets, with an overflow to allow for bypass when the rain garden becomes saturated. The benefit to being located near the storm drain inlet, when a heavy rain event does occur, the runoff will bypass the curb cut while still allowing flow for the plantings.



4.Future Application

The scalability of the Hightower Raingarden was the focus of the project and will adapt to most areas with an expanded right of way to intercept the urban runoff to filter the pollutants instead of introducing the unfiltered runoff directly to the storm drain inlet. The curb cut out is simple to retrofit upstream of the inlets and can be extended at any distance if the correct slope is maintained for the underdrain system to tie into the storm inlet box. The bypass capabilities allow for heavy runoff to go straight to the storm drain inlet while the overflow in the raingarden will bypass the oversaturated soils.

OWNER:
THE CITY OF WATAUGA
INS. NO. D196212371,
O.P.R.T.C.T.

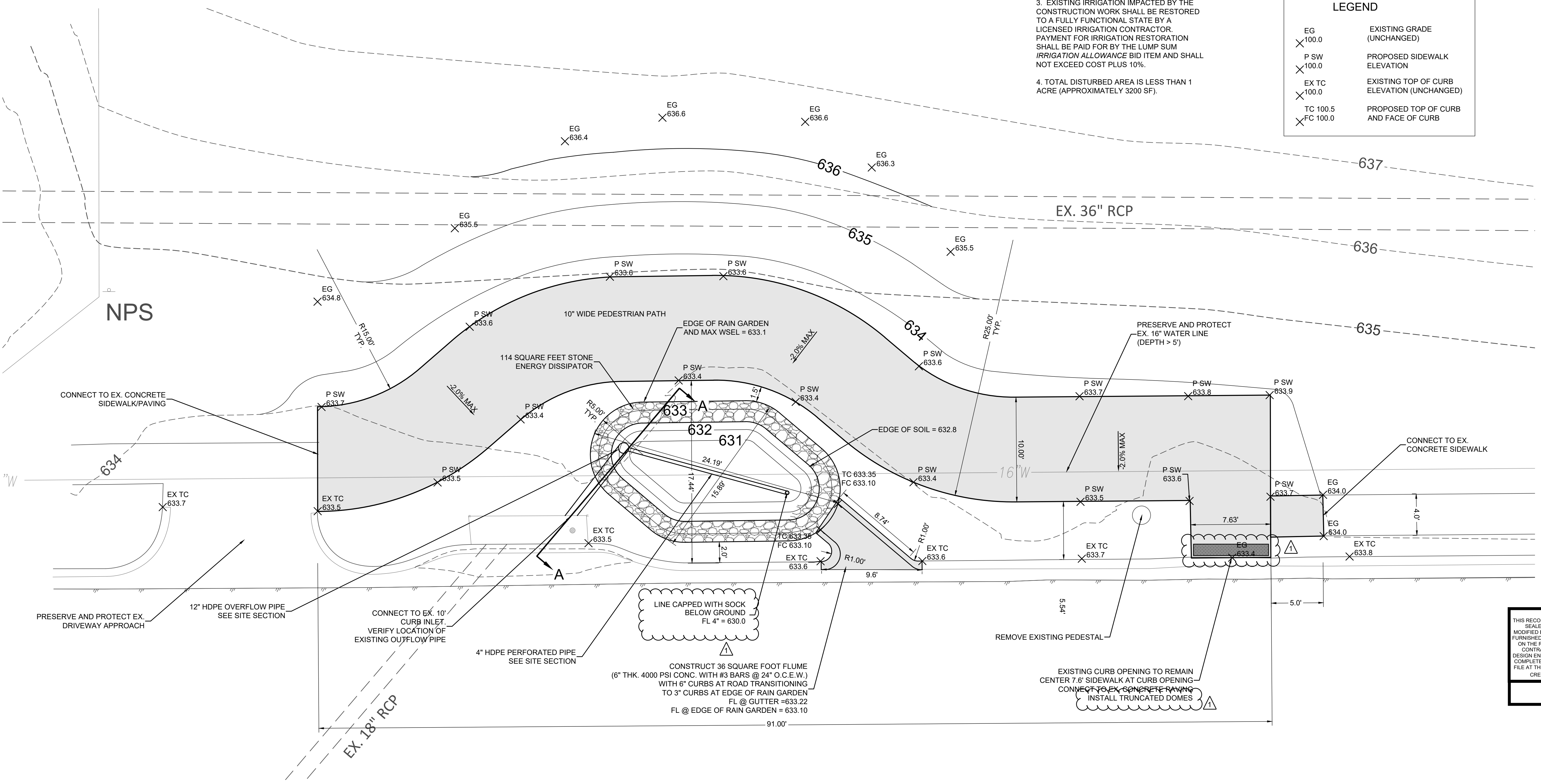


NOTES:

- ELEVATIONS ARE SHOWN TO LIMITS OF EXCAVATION AT THE BOTTOM OF RAIN GARDEN. RAIN GARDEN TO BE FILLED TO 632.8 AS SHOWN IN SITE SECTION.
- ALL INSIDE SIDEWALK CURVE RADII ARE 15'. ALL OUTSIDE SIDEWALK CURVE RADII ARE 25'.
- EXISTING IRRIGATION IMPACTED BY THE CONSTRUCTION WORK SHALL BE RESTORED TO A FULLY FUNCTIONAL STATE BY A LICENSED IRRIGATION CONTRACTOR. PAYMENT FOR IRRIGATION RESTORATION SHALL BE PAID FOR BY THE LUMP SUM IRRIGATION ALLOWANCE BID ITEM AND SHALL NOT EXCEED COST PLUS 10%.
- TOTAL DISTURBED AREA IS LESS THAN 1 ACRE (APPROXIMATELY 3200 SF).

LEGEND

EG	EXISTING GRADE (UNCHANGED)
X 100.0	
P SW	PROPOSED SIDEWALK ELEVATION
X 100.0	
EX TC	EXISTING TOP OF CURB ELEVATION (UNCHANGED)
X 100.0	
TC 100.5	PROPOSED TOP OF CURB AND FACE OF CURB
XC 100.0	



PAVING AND GRADING PLAN
HIGHTOWER DRIVE RAIN GARDEN
 DRAINAGE IMPROVEMENTS
 CITY OF WATAUGA, TEXAS

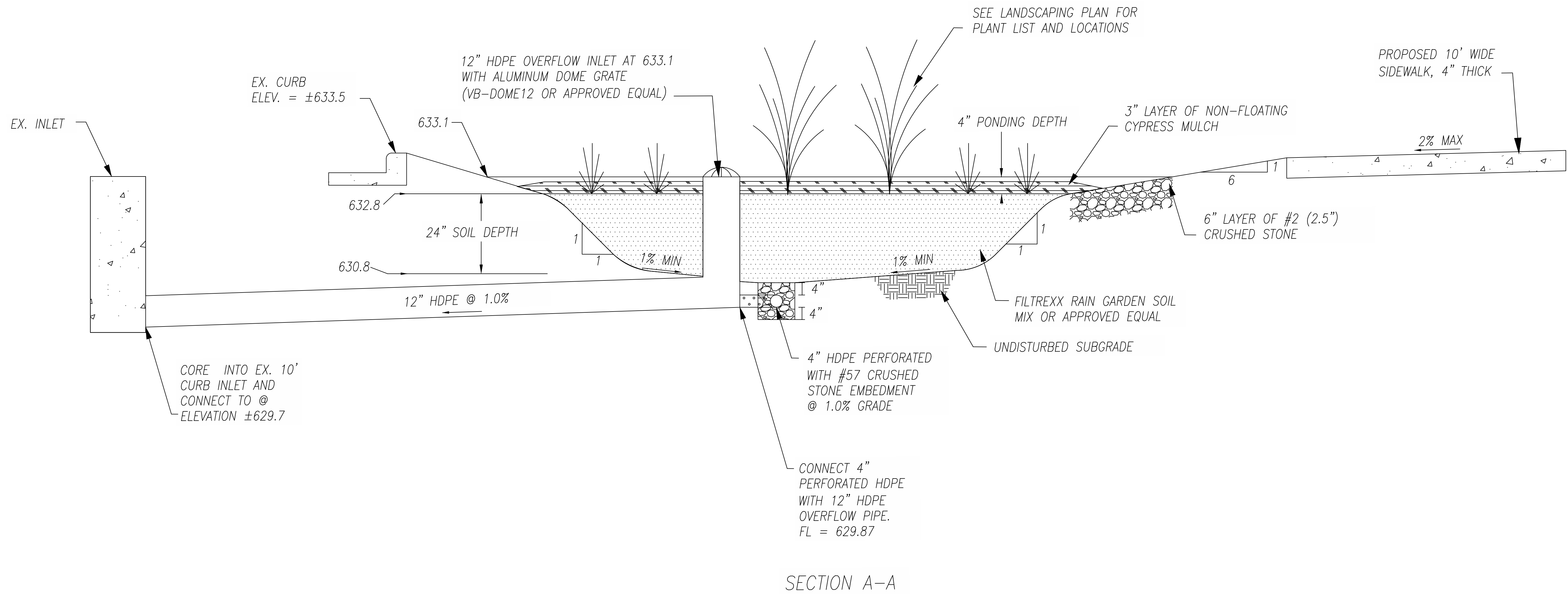
BURGESS & NIPLÉ INC.
 3950 FOSSIL CREEK BLVD., SUITE 210
 FORT WORTH, TEXAS 76137
 PHONE: (817) 306-1444
 PELS FIRM REGISTRATION NO. 10834

NO.	REVISIONS	DATE	BY	CHK.
1	RECORD DRAWINGS	9/22/22	JMM	JMM

RECORD DRAWING
 THIS RECORD DRAWING IS A COMPILATION OF A COPY OF THE SEALED ENGINEERING DRAWING FOR THIS PROJECT MODIFIED BY APPENDIX, CHANGE ORDERS AND INFORMATION FURNISHED BY THE CONTRACTOR. THE INFORMATION SHOWN ON THE RECORD DRAWINGS THAT WAS PROVIDED BY THE CONTRACTOR OR OTHERS NOT ASSOCIATED WITH THE DESIGN ENGINEER CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS. THE ORIGINAL SEALED DRAWINGS ARE ON FILE AT THE OFFICES OF BURGESS & NIPLÉ, INC., 3950 FOSSIL CREEK BLVD., SUITE 210, FORT WORTH, TX 76137

JAMES M. MULLINS, P.E.
 09/22/2022

JOB NUMBER:	59593
DESIGNED BY:	JMM
DRAWN BY:	JMM
APPROVED BY:	WDW
CHECKED BY:	SDS
DATE:	4/5/2022
SCALE:	1"=5'
SHEET NUMBER:	4
OF	7



SITE SECTION
HIGHTOWER DRIVE RAIN GARDEN
 DRAINAGE IMPROVEMENTS
 CITY OF WATAUGA, TEXAS

BURGESS & NIPLÉ INC.
 3950 FOSSIL CREEK BLVD., SUITE 210
 FORT WORTH, TEXAS 76137
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5	7



ANALYTICAL REPORT

March 29, 2022

- Cp
- Tr
- Ss
- Cn
- Sr
- Qc
- Gl
- Al
- Sc

City of Watauga

Sample Delivery Group: L1473704
 Samples Received: 03/21/2022
 Project Number: 32122
 Description: Hightower Rain Garden

Report To: Taylor Alvarez
 7800 Virgil R. Anthony Sr Blvd
 Fort Worth, TX 76148

Entire Report Reviewed By:

Jason Romer
Project Manager






Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page	1	
Tc: Table of Contents	2	
Ss: Sample Summary	3	
Cn: Case Narrative	4	
Sr: Sample Results	5	
HIGHTOWER RAIN GARDEN L1473704-01	5	
Qc: Quality Control Summary	6	
Gravimetric Analysis by Method 2540D	6	
Wet Chemistry by Method SM5210B	7	
Polychlorinated Biphenyls (GC) by Method 8082	8	
GI: Glossary of Terms	9	
AI: Accreditations & Locations	10	
Sc: Sample Chain of Custody	11	

SAMPLE SUMMARY

HIGHTOWER RAIN GARDEN L1473704-01 GW

Collected by: Tammy Sanders
 Collected date/time: 03/21/22 10:23
 Received date/time: 03/21/22 11:04

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540D	WG1839460	1	03/28/22 11:53	03/28/22 12:55	QOT	Allen, TX
Wet Chemistry by Method SM5210B	WG1836769	1	03/23/22 06:30	03/28/22 09:55	RRS	Allen, TX
Polychlorinated Biphenyls (GC) by Method 8082	WG1837099	1	03/24/22 04:09	03/24/22 13:41	JMB	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager

¹ Cp

² Tc

³ Ss

⁵ Sr

⁸ Qc

⁷ Gl

⁶ Al

⁹ Sc

HIGHTOWER RAIN GARDEN

Collected date/time: 03/21/22 10:23

SAMPLE RESULTS - 01

L1473704

Gravimetric Analysis by Method 2540D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Suspended Solids	54.7		16.7	1	03/28/2022 12:55	WG1839460

Wet Chemistry by Method SM5210B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
BOD	61.3	B1	7.50	1	03/28/2022 09:55	WG1836769

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
PCB 1016	ND		0.000500	1	03/24/2022 13:41	WG1837099
PCB 1221	ND		0.000500	1	03/24/2022 13:41	WG1837099
PCB 1232	ND		0.000500	1	03/24/2022 13:41	WG1837099
PCB 1242	ND		0.000500	1	03/24/2022 13:41	WG1837099
PCB 1248	ND		0.000500	1	03/24/2022 13:41	WG1837099
PCB 1254	ND		0.000500	1	03/24/2022 13:41	WG1837099
PCB 1260	ND		0.000500	1	03/24/2022 13:41	WG1837099
(S) Decochlorobiphenyl	60.6		10.0-128		03/24/2022 13:41	WG1837099
(S) Tetrachloro-m-xylene	113		10.0-127		03/24/2022 13:41	WG1837099

Cp

Te

Ss

Cn

Sr

Qc

Gl

Al

Sc

Method Blank (MB)

(MB) R3775046-1 03/28/22 12:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Suspended Solids	U		2.50	2.50

Cp

Tc

Ss

L1473614-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1473614-01 03/28/22 12:55 • (DUP) R3775046-3 03/28/22 12:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Suspended Solids	120	118	1	1.68		10

Cn

Sr

L1473719-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1473719-02 03/28/22 12:55 • (DUP) R3775046-4 03/28/22 12:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Suspended Solids	5820	5920	1	1.70		10

Qc

Gl

Al

Laboratory Control Sample (LCS)

(LCS) R3775046-2 03/28/22 12:55

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Suspended Solids	812	827	102	85.0-115	

Sc

Method Blank (MB)

(MB) R3774687-1 03/28/22 09:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
BOD	0.345	<u>B1</u>	0.200	0.200

L1473662-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1473662-01 03/28/22 09:50 • (DUP) R3774687-3 03/28/22 09:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
BOD	6.17	8.10	1	27	<u>J3 K9</u>	20

L1474095-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1474095-01 03/28/22 10:18 • (DUP) R3774687-4 03/28/22 10:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
BOD	1.93	2.01	1	4.06		20

Laboratory Control Sample (LCS)

(LCS) R3774687-2 03/28/22 09:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
BOD	198	196	98.9	85-115	



Method Blank (MB)

(MB) R3773812-1 03/24/22 13:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
PCB 1016	U		0.000270	0.000500
PCB 1221	U		0.000270	0.000500
PCB 1232	U		0.000270	0.000500
PCB 1242	U		0.000270	0.000500
PCB 1248	U		0.000173	0.000500
PCB 1254	U		0.000173	0.000500
PCB 1260	U		0.000173	0.000500
(S) Decachlorobiphenyl	73.3			10.0-128
(S) Tetrachloro-m-xylene	109			10.0-127

Laboratory Control Sample (LCS)

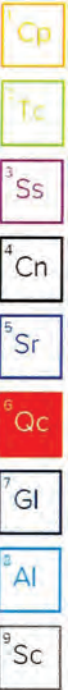
(LCS) R3773812-2 03/24/22 13:31

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
PCB 1016	0.00250	0.00285	114	36.0-135	
PCB 1260	0.00250	0.00314	126	42.0-131	
(S) Decachlorobiphenyl			92.1	10.0-128	
(S) Tetrachloro-m-xylene			102	10.0-127	

L1474478-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474478-05 03/24/22 15:16 • (MS) R3773766-5 03/24/22 15:42 • (MSD) R3773766-6 03/24/22 15:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
PCB 1016	0.00250	ND	0.00208	0.00239	83.2	95.6	1	11.0-160			13.9	38
PCB 1260	0.00250	ND	0.00187	0.00230	74.8	92.0	1	20.0-142			20.6	27
(S) Decachlorobiphenyl					49.0	66.4		10.0-128				
(S) Tetrachloro-m-xylene					71.7	76.9		10.0-127				



GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B1	The blank depletion was greater than the recommended maximum depletion of 0.2mg/L.
J3	The associated batch QC was outside the established quality control range for precision.
K9	Test replicates show more than 30% difference between high and low values.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	A130792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

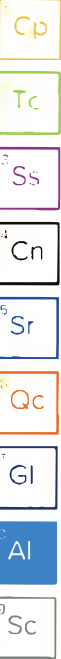
Pace Analytical Services, LLC -Dallas 400 W. Bethany Drive Suite 190 Allen, TX 75013

Arkansas	88-0647	Kansas	E10388
Florida	E871118	Texas	T104704232-20-32
Iowa	408	Oklahoma	8727
Louisiana	30686		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





CHAIN-OF-CUSTODY / Analytical Request Document

Chain-of-Custody is a "SAMPLE CUSTODY" All relevant fields must be completed accurately.


Page 1 of 1

Section A Required Client Information	Section B Required Project Information	Section C Invoice Information	
Company: <u>Watauga</u> Address: <u>2800 Vigil Anthony Blvd</u> <u>Watauga TX, 76148</u> Email To: <u>A.Kaut@CW.TX.ORG</u> Phone: <u>817-265-6586</u> Requested Due Date/TAT:	Report To: <u>Aaron Kaut</u> Copy To: Purchase Order No: <u>22-00095</u> Project Name: <u>Hightower Rain Garden</u> Project Number: <u>32122</u>	Attention: <u>Aaron Kaut</u> Company Name: <u>Watauga</u> Address: <u>2800 Vigil Anthony Blvd</u> Pace Quote Reference: Pace Project Manager: <u>Melissa McCullough</u> Pace Profile #	REGULATORY AGENCY <input type="checkbox"/> NPDES <input checked="" type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> US1 <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
		Site Location: <u>Watauga Hightower</u> STATE: <u>TX</u>	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX CODE	COLLECTED				SAMPLE TEMP AT COLLECTION	Requested Analysis Filtered (Y/N)											Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.							
			COMPOSITE START		COMPOSITE END			Preservatives	Requested Analysis Filtered (Y/N)																		
			DATE	TIME	DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test 1	Requested Analysis Filtered (Y/N)									
1	<u>Hightower Rain Garden</u>	<u>W/G</u>	<u>3/21/22</u>	<u>1104</u>			<u>4</u>	<u>X</u>																	<u>6.1</u>	<u>L1473704-01</u>	
2																											
3																											
4																											
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
							Temp in °C	Received in Cooler (Y/N)	Custom Spooled Cooler (Y/N)	Samples intact (Y/N)
<u>Ground Water</u>	<u>[Signature]</u>	<u>3/21/22</u>	<u>1104</u>	<u>[Signature]</u>	<u>3/21/22</u>	<u>1104</u>	<u>8.8</u>	<u>Y</u>	<u>N</u>	<u>Y</u>
	<u>[Signature]</u>	<u>3/22/22</u>		<u>[Signature]</u>	<u>3/22/22</u>	<u>0700</u>				

SAMPLER NAME AND SIGNATURE		Temp in °C Received in Cooler (Y/N) Custom Spooled Cooler (Y/N) Samples intact (Y/N)
PRINT Name of SAMPLER	<u>Jimmy Sanders</u>	
SIGNATURE of SAMPLER	<u>[Signature]</u>	
DATE Signed (MM/DD/YY)		
		<u>3-21-22</u>

	Document Name Sample Condition Upon Receipt	Document Rev sec 7/27/20 Page 1 of 1
	Document No F DAL-C 001-rev 14	Issuing Authority Pace Dallas Quality Office

Sample Condition Upon Receipt

Dallas
 Ft Worth
 Corpus Christi
 Austin

Client Name: Watauga Project Work order (place label):

Courier: FedEX UPS USPS Client LSO PACE Other _____

L1473704

Tracking #: _____

Custody Seal on Cooler/Box Yes No

Received on ice: Wet Blue No ice

Receiving Lab 1 Thermometer Used: FWTM18 Cooler Temp °C: 8.8 (Recorded) 0.5 (Correction Factor) 8.3 (Actual)

Receiving Lab 2 Thermometer Used: IR-18 Cooler Temp °C: 1.8 (Recorded) -0.2 (Correction Factor) 1.6 (Actual)

Temperature should be above freezing to 6°C unless collected same day as receipt in which evidence of cooling is acceptable

Triage Person AK Date 3/21/22

Chain of Custody relinquished	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Sampler name & signature on COC	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Short HT analyses (<72 hrs)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Login Person JW Date 3/22/22

Sufficient Volume received	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Correct Container used	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Container Intact	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Sample pH Acceptable pH Strips: _____	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Residual Chlorine Present Cl Strips: _____	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Sulfide Present Lead Acetate Strips: _____	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Are soil samples (volatiles, TPH) received in 5035A Kits (not applicable to TCLP VOA or PST Program TPH)	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Unpreserved 5035A soil frozen within 48 hrs	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Headspace in VOA (>6mm)	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Project sampled in USDA Regulated Area outside of Texas State Sampled: _____	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Non Conformance(s):	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Labeling Person (if different than log-in) _____ Date _____

Pace Analytical

Document Name
Sample Condition Upon Receipt
Document No
DAL C 001 rev 14

Document Revision: 3/22/00
Page 1 of 2
Issuing Authority
Pace Dallas Quality Office

Sample Condition Upon Receipt

Dallas Ft Worth Corpus Christi Austin

Client Name: Watauga Project Work order (pace label)
Course: PS-SPS Client: USO PACI: 01-01
Tracking #

L1473704

Custody Seal on Cooler/Box Yes No

Received on ice Yes No

Receiving Lab 1 Thermometer Used: FWTM-B Cooler Temp °C: 8.8 (Recorded) 0.5 (Connector Temp) 3.3

Receiving Lab 2 Thermometer Used: IR-18 Cooler Temp °C: 1.8 (Recorded) -1.2 (Connector Temp) 1.6

Receiving Lab 1 Thermometer Used: FWTM-B Cooler Temp °C: 8.8 (Recorded) 0.5 (Connector Temp) 3.3

Log-in Person: AW Date: 3/21/22

Chain of Custody relinquished Yes No

Sampler name & signature on COC Yes No

PSI test analyses (< 72 hrs) Yes No

Log-in Person: JW Date: 3/22/22

Sufficient Volume received Yes No

Proper container used Yes No

Labeling complete Yes No

Sample pH Acceptable Yes No NA

pH Strips Yes No NA

Residual Chlorine Present Yes No NA

Cl Strips Yes No NA

Sulfide Present Yes No NA

Lead Acetate Strips Yes No NA

Aluminum samples (volatiles, TPH) received in 5035A Kits (not applicable to TCEP VOA or PST Program TPH) Yes No NA

Unpreserved 5035A soil frozen within 48 hrs Yes No NA

Head space in VOA (>6mm) Yes No NA

Project sampled in USDA Regulated Area outside of State Yes No NA

State Sampled Yes No NA

QA Conformance(s) Yes No

Labeling Person (if different than log-in): BA Date: 3/23/22 0822