

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #1

PROJECT NAME: US17 + SC179 6in + 4in Dist Growth Feeder

DATE WORK WAS PERFORMED: 3-16-2020

LOCATION/DESCR. OF BORE: Across From Heather Glen.

HDD SUBCONTRACTOR: WYNACO

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: CLASSIC CITY UTILITY

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Pae

MAX ANTICIPATED PRESSURE:

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☐ 4"	☐ 11	☐ .188"
	☒ 6"	☐ 11.5	☐ .203"
☐ STEEL	☐ 8"	☒ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 20x22</u>
	☐ OTHER

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>F5</u>
☐ OTHER

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
☐ OTHER

RODS

LENGTH OF RODS (ft)
☒ 10 ☐ 15 ☐ 20 ☐ OTHER
OF RODS <u>5</u>

DRILL BIT

☒ DUCK BILL	☐ OTHER
☐ RAILHEAD	

BREAK AWAY CONNECTOR

TYPE USED	
☐ SMALLER DIA PIPE	
DIAMETER _____	SDR _____
☒ MECHANICAL	
SETTING (LBS) <u>9,500</u>	
☐ N/A	(INCLUDE EXPLANATION IF N/A)
DID IT BREAK DURING PULLBACK?	
☐ YES	☒ NO

HORIZONTAL DISTANCE OF BORE 50 (ft)

PIPE STRING DISTANCE OF BORE 80 (ft)

MAKE UP WATER

INITIAL pH <u>8.0</u>	INITIAL HARDNESS (ppm) <u>120</u>
TASTE SALT? ☐ Y ☒ N	
SMELL CHLORINE? ☒ Y ☐ N	
AMOUNT OF SODA ASH PER 100 GAL ADDED <u>N/A</u> (LBS)	
FINAL pH <u>8.0</u>	FINAL HARDNESS (ppm) <u>120</u>

SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam
☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam
☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi SWACO

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		10"		
REAMER TYPE (barrel, fluted, open, etc)		Barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25	.25		
ADDITIVE #2: <u>Max Bone</u> (# / 100 gal)	20-30lbs	20-30lbs		
ADDITIVE #3: <u>Quiktid</u> (# / 100 gal)	.25	.25		
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	.90	90		
INITIAL FLUID DENSITY (# / gal)	9.5	9.5		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200		
EST. VOL. OF FLUID USED THIS PASS (gal)	45	125		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2 min.	2.5-3.5		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved sited.

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 3-16-2020 Work Order/Account # and Job Name: 244838/US17+SC179 6in & 4in Dist Growth Feeder
 Contractor: Wyneco Street/Intersection Location: US17 / Heather Glen Dr.
 Operator: MS. Erin Evans Begin Station/Set-up Location: S. Side of Dead End (ScDot Drive)
 Locator: Hector End Station: N. Side of Dead End
 Rig/Rod Size: 20x22 / 2" Pipe/Type: 6" Performance Driscoplex
 Rod Length: 10' SCE&G Inspector: Danny Moore

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-13	3'6"				31					
2	-7	4'				32					
3	-1	5'				33					
4	-0	4'				34					
5	-1	3'6"				35					
6						36					
7						37					
8						38					
9						39					
10						40					
11						41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments: Elevation change due to Dead end Drive higher than Dirt shoulder.

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #2

PROJECT NAME: US 17 + SC 179 6in + 4in Dist Growth Feeder DATE WORK WAS PERFORMED: 3-16-2020

LOCATION/DESCR. OF BORE: @ Live oak Dr.

HDD SUBCONTRACTOR: Wyneco
(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic City Utility

HDD FLUID REPRESENTATIVE: _____
(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael pro

MAX ANTICIPATED PRESSURE: _____
(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☐ 4"	☐ 11	☐ .188"
	☒ 6"	☐ 11.5	☐ .203"
☐ STEEL	☐ 8"	☒ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 20x22</u>
	OTHER _____

TRACKING SYSTEM

☐ VERMEER DIGITRACK

☐ DITCH WITCH SUB SITE

☒ FS

OTHER _____

MUD MIXING SYSTEM

☒ VERMEER 125

☐ DITCHWITCH MM9

OTHER _____

RODS

LENGTH OF RODS (ft)

☒ 10 ☐ 15 ☐ 20 ☐ OTHER _____

OF RODS 11

DRILL BIT

☒ DUCK BILL ☐ OTHER _____

☐ RAILHEAD

BREAK AWAY CONNECTOR

TYPE USED

☐ SMALLER DIA PIPE

DIAMETER _____ SDR _____

☒ MECHANICAL

SETTING (LBS) 9,500

☐ N/A (INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK? ☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 110' (ft)

PIPE STRING DISTANCE OF BORE 160 (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120

TASTE SALT? ☐ Y ☒ N

SMELL CHLORINE? ☒ Y ☐ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☐ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		10"	10"	
REAMER TYPE (barrel, fluted, open, etc)		Barrel	Barrel	
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	1.25 cup	1.25 cup	1.25	
ADDITIVE #2: <u>Max Bore</u> (# / 100 gal)	20-30 lbs	20-30 lbs	20-30 lbs	
ADDITIVE #3: <u>Quicfil</u> (# / 100 gal)	1.25 cup	1.25 cup	1.25	
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90	90	
INITIAL FLUID DENSITY (# / gal)	9.5	9.5	9.5	
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—	—	
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—	—	
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200	1200	
EST. VOL. OF FLUID USED THIS PASS (gal)	100	275	275	
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25	20-25	
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5	2.5-3.5	
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 3-16-2020 Work Order/Account # and Job Name: 244888/US17+SC179 6in&4in Growth Feeder
 Contractor: WYNACO Street/Intersection Location: Live oak Dr/US17
 Operator: Martin Evans Begin Station/Set-up Location: S. Side of Live oak Dr.
 Locator: Hector End Station: N. Side of Live oak Dr.
 Rig/Rod Size: 20x22/2" Pipe/Type: 6" Performance Driscopex
 Rod Length: 10' SCE&G Inspector: Danny Moore

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-14	3'10"				31					
2	-16	4'3"				32					
3	-16	6'3"		water 6" main	3'6" TOP	33					
4	-2	8'4"				34					
5	+4	7'10"				35					
6	+6	6'8"				36					
7	+8	5'4"				37					
8	+4	4'3"				38					
9	+2	4'				39					
10	+1	4'				40					
11	+8	4'				41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #3

PROJECT NAME: US 17 & SC 179 6in & 4in Dist Growth FeederDATE WORK WAS PERFORMED: 3-18-2020LOCATION/DESCR. OF BORE: @ SC 179 splitHDD SUBCONTRACTOR: Wyneco

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: classic city utility

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Poe

MAX ANTICIPATED PRESSURE:

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☐ 4"	☐ 11	☐ .188"
	☒ 6"	☐ 11.5	☐ .203"
☐ STEEL	☐ 8"	☒ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

- ☐ VERMEER 7 x 11
☐ VERMEER 16 x 20a
☐ VERMEER 18 x 22
☐ VERMEER 24 x 40
☐ VERMEER 36 x 50
☐ DITCH WITCH 27 x 20
☒ Vermeer 20x22
☐ OTHER

TRACKING SYSTEM

- ☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ FS
☐ OTHER

MUD MIXING SYSTEM

- ☒ VERMEER 125
☐ DITCHWITCH MM9
☐ OTHER

RODS**LENGTH OF RODS (ft)**

- ☒ 10 ☐ 15 ☐ 20 ☐ OTHER
 # OF RODS 19

DRILL BIT

- ☒ DUCK BILL ☐ OTHER
☐ RAILHEAD

BREAK AWAY CONNECTOR**TYPE USED**

- ☐ SMALLER DIA PIPE
 DIAMETER _____ SDR _____
☒ MECHANICAL
 SETTING (LBS) 9,500
☐ N/A (INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK?

- ☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 220' (ft)PIPE STRING DISTANCE OF BORE 190' (ft)**MAKE UP WATER**

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120
 TASTE SALT? ☐ Y ☒ N
 SMELL CHLORINE? ☒ Y ☐ N
 AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)
 FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam
☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam
☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		10"	10"	
REAMER TYPE (barrel, fluted, open, etc)		Barrel	Barrel	
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25 cup	.25	.25	
ADDITIVE #2: <u>max Bone</u> (# / 100 gal)	20-30 lbs	20-30 lbs	20-30 lbs	
ADDITIVE #3: <u>Quic-tid</u> (# / 100 gal)	.25 cup	.25	.25	
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90	90	
INITIAL FLUID DENSITY (# / gal)	9.5	9.5	9.5	
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—	—	
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—	—	
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200	1200	
EST. VOL. OF FLUID USED THIS PASS (gal)	175	475	475	
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25	20-25	
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5	2.5-3.5	
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT?

Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 3-18-2020 Work Order/Account # and Job Name: 244838/US17 + SC179 6in & 4in Dist Growth Feeder

Contractor: Wynco Street/Intersection Location: SC179 split / US17

Operator: Mawin Evans Begin Station/Set-up Location: S. Side SC179 split

Locator: Hector End Station: N. Side SC179 split

Rig/Rod Size: 20x22/2" Pipe/Type: 6" Performance Driscopex

Rod Length: 10' SCE&G Inspector: Danny Moore

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-16	3'				31					
2	-17	5'9"				32					
3	-5	7'6"		water main	40" TOP	33					
4	-1	8'3"		utility	4'	34					
5	+3	7'8"				35					
6	+2	7'2"				36					
7	+3	7'1"				37					
8	+3	6'4"				38					
9	+1	5'11"				39					
10	+0	5'11"				40					
11	+0	5'11"				41					
12	+0	5'5"				42					
13	+0	5'8"				43					
14	+0	5'7"				44					
15	-1	5'6"				45					
16	+2	5'3"				46					
17	+5	4'1"				47					
18	+6	3'11"				48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #4

PROJECT NAME: US17+SC179 6in+4in Growth Feeder

DATE WORK WAS PERFORMED: 3-18-2020

LOCATION/DESCR. OF BORE: @ Medical office on us17

HDD SUBCONTRACTOR: Wynne

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic city utility

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Pae

MAX ANTICIPATED PRESSURE:

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☐ 4"	☐ 11	☐ .188"
	☒ 6"	☐ 11.5	☐ .203"
☐ STEEL	☐ 8"	☒ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 20x22</u>
	☐ OTHER

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>F5</u>
☐ OTHER

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
☐ OTHER

RODS

LENGTH OF RODS (ft)

☒ 10 ☐ 15 ☐ 20 ☐ OTHER

OF RODS 12

DRILL BIT

☒ DUCK BILL	☐ OTHER
☐ RAILHEAD	

BREAK AWAY CONNECTOR

TYPE USED

☐ SMALLER DIA PIPE

DIAMETER _____ SDR _____

☒ MECHANICAL

SETTING (LBS) 9,500

☐ N/A (INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK?

☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 120' (ft)

PIPE STRING DISTANCE OF BORE 160' (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120

TASTE SALT? ☐ Y ☒ N

SMELL CHLORINE? ☒ Y ☐ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE:

☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		10"		
REAMER TYPE (barrel, fluted, open, etc)		Barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Uize</u> (# / 100 gal)	.25	.25		
ADDITIVE #2: <u>max Bone</u> (# / 100 gal)	20-30lbs	20-30lbs		
ADDITIVE #3: <u>Quicrid</u> (# / 100 gal)	.25	.25	.	
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9.5	9.5		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200		
EST. VOL. OF FLUID USED THIS PASS (gal)	110	300		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 3-18-2020 Work Order/Account # and Job Name: 244838/US17+SC179 6in+4in Dist Growth Feeder

Contractor: Wyneco Street/Intersection Location: US17/SC179

Operator: Marvin Evans Begin Station/Set-up Location: S. Side of Entry → medical office

Locator: Hector End Station: N. Side of Entry

Rig/Rod Size: 20x22/2" Pipe/Type: 6" Performance Driscopex

Rod Length: 10' SCE&G Inspector: Danny Moore

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-10	3'9"				31					
2	-1	4'1"				32					
3	±0	6'				33					
4	+1	6'				34					
5	+1	5'11"				35					
6	+1	5'11"				36					
7	+2	5'10"				37					
8	±0	5'8"				38					
9	-1	4'2"				39					
10	±0	4'				40					
11	±0	4'				41					
12	±0	3'10"				42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #5

PROJECT NAME: US 17 & SC 179 6in & 4in Dist Growth FeederDATE WORK WAS PERFORMED: 3-20-2020LOCATION/DESCR. OF BORE: SC 179 / Doctors careHDD SUBCONTRACTOR: Wyneco
(COMPANY NAME & OPERATOR NAME)CONTRACTOR COMPANY NAME: Classic city utilityHDD FLUID REPRESENTATIVE: _____
(ONLY IF ON-SITE)FOREMAN RESPONSIBLE FOR PROJECT: Michael PoeMAX ANTICIPATED PRESSURE: _____
(TO BE ENTERED BY SCE&G ENGINEER)**CARRIER PIPE**

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☐ 4"	☐ 11	☐ .188"
	☒ 6"	☐ 11.5	☐ .203"
☐ STEEL	☐ 8"	☒ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 20x22</u>
	OTHER

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>FS</u>
OTHER

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
OTHER

RODS

LENGTH OF RODS (ft)
☒ 10 ☐ 15 ☐ 20 ☐ OTHER
OF RODS <u>26</u>

DRILL BIT

☒ DUCK BILL	☐ OTHER
☐ RAILHEAD	

BREAK AWAY CONNECTOR

TYPE USED

☐ SMALLER DIA PIPE
DIAMETER _____ SDR _____

☒ MECHANICAL
SETTING (LBS) 9,500

☐ N/A _____
(INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK? ☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 260' (ft)PIPE STRING DISTANCE OF BORE 300' (ft)**MAKE UP WATER**

INITIAL pH 8.00 INITIAL HARDNESS (ppm) 120

TASTE SALT? ☐ Y ☒ N

SMELL CHLORINE? ☐ Y ☒ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		10"	10"	
REAMER TYPE (barrel, fluted, open, etc)		Barrel	Barrel	
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25	.25	.25	
ADDITIVE #2: <u>Max Bore</u> (# / 100 gal)	20-30 LBS	20-30 LBS	20-30 LBS	
ADDITIVE #3: <u>Quicid</u> (# / 100 gal)	.25	.25	.25	
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90	90	
INITIAL FLUID DENSITY (# / gal)	9.5	9.5	9.5	
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—	—	
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—	—	
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200	1200	
EST. VOL. OF FLUID USED THIS PASS (gal)	235	650	650	
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25	20-25	
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5	2.5-3.5	
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT?

Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 3-20-2020 Work Order/Account # and Job Name: 244838/US 17 + SC 179 6in & 4in Dist Growth Feeder
 Contractor: Wynnco Street/Intersection Location: US 17 / SC 179
 Operator: Marvin Evans Begin Station/Set-up Location: S. side of SC 179
 Locator: Hector End Station: N. side of Doctor's Care
 Rig/Rod Size: 26x22/2" Pipe/Type: 6" Performance Driscoplex
 Rod Length: 10' SCE&G Inspector: Danny Moore

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-13	2'8"				31					
2	-12	5'8"				32					
3	-8	7'3"				33					
4	±0	8'6"				34					
5	±0	8'7"				35					
6	+3	8'3"		> water main	4'	36					
7	+5	7'7"				37					
8	+3	5'9"				38					
9	-3	5'4"				39					
10	-3	5'4"				40					
11	±6	5'2"				41					
12	±0	4'9"		> utilities	32"-3'2"	42					
13	±0	4'8"				43					
14	-3	4'11"				44					
15	-2	4'8"		water service	3'	45					
16	±0	4'9"				46					
17	+4	4'2"				47					
18	+2	4'				48					
19	+2	4'8"		> Doctor's Care Entry		49					
20	+2	4'7"				50					
21	+1	4'10"				51					
22	±0	5'4"				52					
23	±0	4'11"				53					
24	±0	5'2"				54					
25	+1	3'9"				55					
26	±0	3'10"				56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #6

PROJECT NAME: US 17 + SC 179 6in & 4in Dist Growth Feeder

DATE WORK WAS PERFORMED: 3-20-2020

LOCATION/DESCR. OF BORE: Scot dead End (Between Pavilion Dr/SC 179)

HDD SUBCONTRACTOR: Wynco
(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic City Utility

HDD FLUID REPRESENTATIVE: _____
(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Poe

MAX ANTICIPATED PRESSURE: _____
(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☐ 4"	☐ 11	☐ .188"
	☒ 6"	☐ 11.5	☐ .203"
☐ STEEL	☐ 8"	☒ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ FS
 OTHER _____

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
 OTHER _____

HDD MACHINE USED

☐ VERMEER 7 x 11
☐ VERMEER 16 x 20a
☐ VERMEER 18 x 22
☐ VERMEER 24 x 40
☐ VERMEER 36 x 50
☐ DITCH WITCH 27 x 50
☒ Vermeer 20x22
 OTHER _____

RODS

LENGTH OF RODS (ft)
☒ 10 ☐ 15 ☐ 20 ☐ OTHER
 # OF RODS 10

DRILL BIT

☒ DUCK BILL ☐ OTHER
☐ RAILHEAD

BREAK AWAY CONNECTOR

TYPE USED
☐ SMALLER DIA PIPE
 DIAMETER _____ SDR _____
☒ MECHANICAL
 SETTING (LBS) 9,500
☐ N/A
 DID IT BREAK DURING PULLBACK?
☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 160 (ft)
 PIPE STRING DISTANCE OF BORE 160 (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120
 TASTE SALT? ☐ Y ☒ N
 SMELL CHLORINE? ☒ Y ☐ N
 AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)
 FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam
☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam
☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Sinaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		10"	10"	
REAMER TYPE (barrel, fluted, open, etc)		Barrel	Barrel	
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25 cup	.25	.25	
ADDITIVE #2: <u>Max Bore</u> (# / 100 gal)	20-30 lbs	20-30 lbs	20-30 lbs	
ADDITIVE #3: <u>Quicid</u> (# / 100 gal)	.25 cup	.25	.25	
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90	90	
INITIAL FLUID DENSITY (# / gal)	9.5	9.5	9.5	
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—	—	
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—	—	
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200	1200	
EST. VOL. OF FLUID USED THIS PASS (gal)	100	250	250	
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25	20-25	
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5	2.5-3.5	
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT?

Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 3-20-2020 Work Order/Account # and Job Name: 244838/US17+SC179 6in to 4in Dist Growth Feeder
 Contractor: Wymco Street/Intersection Location: US17/Pavilion Dr.
 Operator: Marvin Evans Begin Station/Set-up Location: So. Side of Scdot Drive
 Locator: Hector End Station: N. Side of Scdot Drive
 Rig/Rod Size: 20x22/2" Pipe/Type: 6" Performance Driscoplex
 Rod Length: 10' SCE&G Inspector: Danny Moore

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-17	3'				31					
2	-15	4'11"				32					
3	-5	6'5"				33					
4	-3	6'11"				34					
5	-1	7'2"				35					
6	-3	5'7"				36					
7	-3	5'2"				37					
8	-1	5'7"				38					
9	-5	4'3"				39					
10	-3	4'				40					
11						41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments: Had to go deeper due to rocks

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #7

PROJECT NAME: US17 + SC179 6in + 4in Dist Growth Feeder

DATE WORK WAS PERFORMED: 3-23-2020

LOCATION/DESCR. OF BORE: Pavilion Dr. Crossing

HDD SUBCONTRACTOR: WYNNECO

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: classic city utility

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Pae

MAX ANTICIPATED PRESSURE:

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☐ 4"	☐ 11	☐ .188"
	☒ 6"	☐ 11.5	☐ .203"
☐ STEEL	☐ 8"	☒ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

- | | |
|---|--|
| ☐ VERMEER 7 x 11 | ☐ VERMEER 24 x 40 |
| ☐ VERMEER 16 x 20a | ☐ VERMEER 36 x 50 |
| ☐ VERMEER 18 x 22 | ☐ DITCH WITCH 27 x 20 |
| | ☒ <u>Vermeer 20x22</u> |
| | OTHER |

TRACKING SYSTEM

- ☐ VERMEER DIGITRACK
- ☐ DITCH WITCH SUB SITE
- ☒ FS
- OTHER

MUD MIXING SYSTEM

- ☒ VERMEER 125
- ☐ DITCHWITCH MM9
- ☐ OTHER

RODS

LENGTH OF RODS (ft)

- ☒ 10 ☐ 15 ☐ 20 ☐ OTHER

OF RODS 10

DRILL BIT

- ☒ DUCK BILL ☐ OTHER
- ☐ RAILHEAD

BREAK AWAY CONNECTOR

TYPE USED

- ☐ SMALLER DIA PIPE
- DIAMETER _____ SDR _____
- ☒ MECHANICAL
- SETTING (LBS) 9,500
- ☐ N/A (INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK?

- ☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 100' (ft)

PIPE STRING DISTANCE OF BORE 160' (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120

TASTE SALT? ☐ Y ☒ N

SMELL CHLORINE? ☒ Y ☐ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		10"	10"	
REAMER TYPE (barrel, fluted, open, etc)		Barrel	Barrel	
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25	.25	.25	
ADDITIVE #2: <u>Max Bore</u> (# / 100 gal)	20-30 lbs	20-30 lbs	20-30 lbs	
ADDITIVE #3: <u>Quic tid</u> (# / 100 gal)	.25	.25	.25	
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90	90	
INITIAL FLUID DENSITY (# / gal)	9.5	9.5	9.5	
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—	—	
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—	—	
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200	1200	
EST. VOL. OF FLUID USED THIS PASS (gal)	100	250	250	
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25	20-25	
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5	2.5-3.5	
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT?

Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

SCE&G Directional Drill Report

Date: 3-23-2020 Work Order/Account # and Job Name: 244838/US17 + SC179 6in + 4in Dist Growth Feeder

Contractor: Wymco Street/Intersection Location: US17 / Pavilion Dr.

Operator: Marvin Evans Begin Station/Set-up Location: N. Side Pavilion Dr. > Crossing of Pavilion Dr.

Locator: Shane End Station: S. Side Pavilion Dr.

Rig/Rod Size: 20x22/2" Pipe/Type: 6" Performance Driscopex

Rod Length: 10" SCE&G Inspector: David Malone

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-9	3'				31					
2	-4	3'5"				32					
3	±0	3'3"				33					
4	+3	3'3"				34					
5	-3	3'3"				35					
6	-1	3'3"				36					
7	±0	3'4"				37					
8	-2	3'1"		water main	5'6"	38					
9	-1	3'1"		6"	top	39					
10	±0	3'2"				40					
11						41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #8

PROJECT NAME: US17 & SC179 6in & 4in Dist Growth Feeder

DATE WORK WAS PERFORMED: 3-23-2020

LOCATION/DESCR. OF BORE: under Drains on Pavilion Dr.

HDD SUBCONTRACTOR: Wynco
(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic City Utility

HDD FLUID REPRESENTATIVE: _____
(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Poe

MAX ANTICIPATED PRESSURE: _____
(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

TRACKING SYSTEM

- ☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ FS
 OTHER _____

MUD MIXING SYSTEM

- ☒ VERMEER 125
☐ DITCHWITCH MM9
☐ OTHER _____

HDD MACHINE USED

- ☐ VERMEER 7 x 11
☐ VERMEER 16 x 20a
☐ VERMEER 18 x 22
☐ VERMEER 24 x 40
☐ VERMEER 36 x 50
☐ DITCH WITCH 27 x 20
☒ Vermeer 20x22
 OTHER _____

RODS

LENGTH OF RODS (ft)
☒ 10 ☐ 15 ☐ 20 ☐ OTHER _____
 # OF RODS 9

DRILL BIT

- ☒ DUCK BILL ☐ OTHER _____
☐ RAILHEAD

BREAK AWAY CONNECTOR

TYPE USED

- ☐ SMALLER DIA PIPE
 DIAMETER _____ SDR _____
☒ MECHANICAL
 SETTING (LBS) 9,500
☐ N/A (INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK?

- ☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 90' (ft)

PIPE STRING DISTANCE OF BORE 120' (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120
 TASTE SALT? ☐ Y ☐ N
 SMELL CHLORINE? ☒ Y ☐ N
 AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)
 FINAL pH 8.2 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam
☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam
☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORM

NAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"		
REAMER TYPE (barrel, fluted, open, etc)				
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25	.25		
ADDITIVE #2: <u>Max Bore</u> (# / 100 gal)	20-30 lbs	20-30 lbs		
ADDITIVE #3: <u>Quictid</u> (# / 100 gal)	.25	.25		
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9.5	9.5		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200		
EST. VOL. OF FLUID USED THIS PASS (gal)	80	225		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2-3		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 3-23-2020 Work Order/Account # and Job Name: 244838/US17 & SC179 6in & 4in Dist Growth Feeder

Contractor: Wyneco Street/Intersection Location: US17 / Pavilion Dr.

Operator: Marvin Evans Begin Station/Set-up Location: E. side of Drains

Locator: Shane End Station: W. side of Drains → Pavilion Dr. In Front of Lowes Food gas station.

Rig/Rod Size: 2x22 1/2" Pipe/Type: 4" Performance Driscopex

Rod Length: 10' SCE&G Inspector: David malone

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-16	3'2"				31					
2	-12	4'3"				32					
3	-7	5'7"				33					
4	-3	6'2"				34					
5	±0	6'1"				35					
6	+2	6'				36					
7	+2	6'2"				37					
8	+6	5'2"				38					
9	+6	4'3"				39					
10						40					
11						41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #9

PROJECT NAME: US17 + SC1796in + 4in Dist Growth Feeder

DATE WORK WAS PERFORMED: 4-17-2020

LOCATION/DESCR. OF BORE: @ First Entry of Lowe's Food
From US17 on left

HDD SUBCONTRACTOR: Wynaco

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic City Utility

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Arc

MAX ANTICIPATED PRESSURE :

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 20x22</u>
	☐ OTHER

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>FS</u>
☐ OTHER

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
☐ OTHER

RODS

LENGTH OF RODS (ft)			
☒ 10	☐ 15	☐ 20	☐ OTHER
# OF RODS <u>11</u>			

DRILL BIT

☒ DUCK BILL	☐ OTHER
☐ RAILHEAD	

BREAK AWAY CONNECTOR

TYPE USED	
☐ SMALLER DIA PIPE	
DIAMETER _____	SDR _____
☒ MECHANICAL	
SETTING (LBS) <u>5,250</u>	
☐ N/A	(INCLUDE EXPLANATION IF N/A)
DID IT BREAK DURING PULLBACK ?	
☐ YES	☐ NO

HORIZONTAL DISTANCE OF BORE <u>110'</u>	(ft)
PIPE STRING DISTANCE OF BORE <u>160'</u>	(ft)

MAKE UP WATER

INITIAL pH <u>8.0</u>	INITIAL HARDNESS (ppm) <u>120</u>
TASTE SALT ? ☐ Y ☒ N	
SMELL CHLORINE ? ☒ Y ☐ N	
AMOUNT OF SODA ASH PER 100 GAL ADDED <u>N/A</u>	(LBS)
FINAL pH <u>8.0</u>	FINAL HARDNESS (ppm) <u>120</u>

SOIL TYPE:	☐ Clay	☐ Silt	☒ Sand	☐ Silty Clay	☐ Sandy Clay	☐ Sandy Clay Loam
	☐ Silty Clay Loam	☐ Clay Loam	☐ Silt Loam	☐ Sandy Loam	☐ Loamy Sand	☐ Shale
	☐ Marl	☐ Granite	☐ Other: _____			

DIRECTIONAL DRILLING AS-BUILT FORM

NAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"		
REAMER TYPE (barrel, fluted, open, etc)		Barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25 cup	.25		
ADDITIVE #2: <u>Max Bore</u> (# / 100 gal)	20-30 lbs	20-30 lbs		
ADDITIVE #3: <u>Quigtid</u> (# / 100 gal)	.25 cup	.25		
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9.5	9.5		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200		
EST. VOL. OF FLUID USED THIS PASS (gal)	100	275		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

SCE&G Directional Drill Report

Date: 4-17-2020 Work Order/Account # and Job Name: 244838 / US17 + SC179 6in + 4in Dist Growth Feeder

Contractor: Wynnco Street/Intersection Location: Pavilion Dr. / US17

Operator: Marvin Evans Begin Station/Set-up Location: West Side of Entry

Locator: Hector End Station: East Side of Entry > Lowe's Food Entry, 1st on Left from US17

Rig/Rod Size: 20x22 / 2" Pipe Size/Type: 4" Performance Driscopex

Rod Length: 10' SCE&G Inspector: David Malone

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-14	2'11"				31					
2	-2	4'1"				32					
3	±0	4'3"				33					
4	+4	3'8"				34					
5	+4	3'3"		Utilities	3'11"	35					
6	±0	3'1"				36					
7	-3	3'4"				37					
8	+2	3'8"				38					
9	±0	3'8"				39					
10	+2	3'11"				40					
11	+2	3'6"				41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #10

PROJECT NAME: US17 + SC179 6in + 4in Dist Growth Feeder

DATE WORK WAS PERFORMED: 4-14-2020

LOCATION/DESCR. OF BORE: 2nd Entry nearest SC179 on Pavilion Dr.

HDD SUBCONTRACTOR: Wynaco

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: classic city utility

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Pen

MAX ANTICIPATED PRESSURE:

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ Vermeer 20x22
	OTHER

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ F5
OTHER

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
☐ OTHER

RODS

LENGTH OF RODS (ft)

☒ 10 ☐ 15 ☐ 20 ☐ OTHER

OF RODS 13

DRILL BIT

☒ DUCK BILL	☐ OTHER
☐ RAILHEAD	

BREAK AWAY CONNECTOR

TYPE USED

☐ SMALLER DIA PIPE

DIAMETER _____ SDR _____

☒ MECHANICAL

SETTING (LBS) 5,250

☐ N/A (INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK? ☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 130' (ft)

PIPE STRING DISTANCE OF BORE 160' (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120

TASTE SALT? ☐ Y ☒ N

SMELL CHLORINE? ☒ Y ☐ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"		
REAMER TYPE (barrel, fluted, open, etc)		Barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25	.25		
ADDITIVE #2: <u>max Bone</u> (# / 100 gal)	20-30 lbs	20-30 lbs		
ADDITIVE #3: <u>Quicid</u> (# / 100 gal)	.25	.25		
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9.5	9.5		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200		
EST. VOL. OF FLUID USED THIS PASS (gal)	130	325		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2-3		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT?

Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

SCE&G Directional Drill Report

Date: 4-14-2020 Work Order/Account # and Job Name: 244838/US17+SC179 6in 4in Dist Growth Feeder

Contractor: Wyenco Street/Intersection Location: Pavilion Dr. / SC179

Operator: Marvin Evans Begin Station/Set-up Location: E. Side of Entry ^{2nd Entry}

Locator: Hector End Station: W. Side of Entry

Rig/Rod Size: 20x22 / 2" Pipe/Type: 4" Performance Driscoplex

Rod Length: 10' SCE&G Inspector: David Malone

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-15	2'6"				31					
2	-3	3'				32					
3	+2	3'				33					
4	+2	3'1"		water main	5' Top	34					
5	+2	3'				35					
6	±0	3'				36					
7	±0	3'				37					
8	±0	3'				38					
9	±0	3'				39					
10	+1	3'6"				40					
11	+2	3'4"				41					
12	±0	3'				42					
13	±0	3'				43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #11

PROJECT NAME: US17 + SC179 6in + 4in Dist Growth FeederDATE WORK WAS PERFORMED: 4-14-2020LOCATION/DESCR. OF BORE: 3rd Drive nearest to SC179HDD SUBCONTRACTOR: WYNNECO
(COMPANY NAME & OPERATOR NAME)CONTRACTOR COMPANY NAME: Classic city utilityHDD FLUID REPRESENTATIVE: _____
(ONLY IF ON-SITE)FOREMAN RESPONSIBLE FOR PROJECT: Michael poeMAX ANTICIPATED PRESSURE: _____
(TO BE ENTERED BY SCE&G ENGINEER)**CARRIER PIPE**

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

TRACKING SYSTEM
☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ FS
 OTHER _____
MUD MIXING SYSTEM
☒ VERMEER 125
☐ DITCHWITCH MM9
 OTHER _____
HDD MACHINE USED
☐ VERMEER 7 x 11
☐ VERMEER 16 x 20a
☐ VERMEER 18 x 22
☐ VERMEER 24 x 40
☐ VERMEER 36 x 50
☐ DITCH WITCH 27 x 20
☒ Vermeer 20x22
 OTHER _____
RODS
 LENGTH OF RODS (ft)
☒ 10 ☐ 15 ☐ 20 ☐ OTHER _____
 # OF RODS 11
DRILL BIT
☒ DUCK BILL ☐ OTHER _____
☐ RAILHEAD
BREAK AWAY CONNECTOR
 TYPE USED
☐ SMALLER DIA PIPE
 DIAMETER _____ SDR _____
☒ MECHANICAL
 SETTING (LBS) 5250
☐ N/A (INCLUDE EXPLANATION IF N/A)
 DID IT BREAK DURING PULLBACK?
☐ YES ☒ NO
HORIZONTAL DISTANCE OF BORE 160' (ft)PIPE STRING DISTANCE OF BORE 160' (ft)**MAKE UP WATER**
 INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120
 TASTE SALT? ☐ Y ☒ N
 SMELL CHLORINE? ☒ Y ☐ N
 AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)
 FINAL pH 8.0 FINAL HARDNESS (ppm) 120

 SOIL TYPE: ☐ Clay ☐ Silt ☒ Sand ☐ Silty Clay ☐ Sandy Clay ☐ Sandy Clay Loam
☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam
☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORMNAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"		
REAMER TYPE (barrel, fluted, open, etc)		Barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25	.25		
ADDITIVE #2: <u>Max Bar</u> (# / 100 gal)	20-30 lbs	20-30 lbs		
ADDITIVE #3: <u>Quicid</u> (# / 100 gal)	.25	.25		
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9.5	9.5		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	-	-		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	-	-		
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200		
EST. VOL. OF FLUID USED THIS PASS (gal)	110	250		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2-3		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT?

Apprated site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

Work Request - G5909 - US 17 & SC 179 6in & 4in Dist Growth Feeder

SCE&G Directional Drill Report

Date: 4-14-2020 Work Order/Account # and Job Name: 244838 / us17+sc179 6in+4in Dist Growth Feeder
 Contractor: Wynaco Street/Intersection Location: Pavilion Dr./SC179
 Operator: Marvin Evans Begin Station/Set-up Location: W. Side of Entry (3rd)
 Locator: Hector End Station: E. Side of Entry (3rd)
 Rig/Rod Size: 20x22 / 2" Pipe/Type: 4" Performance Dri3coflex
 Rod Length: 10' SCE&G Inspector: David Malone

Daily Report #						EXISTING UTILITIES/STRUCTURES						Locate Ticket #						EXISTING UTILITIES/STRUCTURES					
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-16	3'1"				31						31						31					
2	-8	3'10"				32						32						32					
3	-1	3'10"				33						33						33					
4	+2	3'8"				34						34						34					
5	+3	3'6"				35						35						35					
6	+1	3'3"				36						36						36					
7	+1	3'				37						37						37					
8	-4	3'1"				38						38						38					
9	-3	4'4"				39						39						39					
10	-1	4'4"				40						40						40					
11	±0	4'				41						41						41					
12						42						42						42					
13						43						43						43					
14						44						44						44					
15						45						45						45					
16						46						46						46					
17						47						47						47					
18						48						48						48					
19						49						49						49					
20						50						50						50					
21						51						51						51					
22						52						52						52					
23						53						53						53					
24						54						54						54					
25						55						55						55					
26						56						56						56					
27						57						57						57					
28						58						58						58					
29						59						59						59					
30						60						60						60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #12

PROJECT NAME: US17 156179 Gint Hin Dist Growth Feeder

DATE WORK WAS PERFORMED: 4-27-2020

LOCATION/DESCR. OF BORE: @ Pavilion Dr. / under shopping sign.

HDD SUBCONTRACTOR: 3D Drilling

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: classic city utility

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Poe

MAX ANTICIPATED PRESSURE :

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 10x15</u>
	OTHER _____

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>F2</u>
OTHER _____

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
OTHER _____

RODS

LENGTH OF RODS (ft)

☐ 10 ☐ 15 ☐ 20 ☒ 6'

OF RODS 7' OTHER _____

DRILL BIT

☒ DUCK BILL	☐ _____
☐ RAILHEAD	OTHER _____

BREAK AWAY CONNECTOR

TYPE USED

☐ SMALLER DIA PIPE

DIAMETER _____ SDR _____

☒ MECHANICAL

SETTING (LBS) 5,250

☐ N/A _____

(INCLUDE EXPLANATION IF N/A)

DID IT BREAK DURING PULLBACK ?

☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 42' (ft)

PIPE STRING DISTANCE OF BORE 80' (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120

TASTE SALT ? ☐ Y ☒ N

SMELL CHLORINE ? ☐ Y ☒ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE:

☐ Clay ☐ Silt ☐ Sand ☐ Silty Clay ☒ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORM

NAME OF DRILLING FLUID MANUFACTURER: Wyoben

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"		
REAMER TYPE (barrel, fluted, open, etc)		Barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Trubore</u> (# / 100 gal)	30 lbs	30 lbs		
ADDITIVE #2: _____ (# / 100 gal)				
ADDITIVE #3: _____ (# / 100 gal)				
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9	9		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	—	—		
EST. VOL. OF FLUID USED THIS PASS (gal)	70	115		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	15-18		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2-3		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

SCE&G Directional Drill Report

Date: 4-27-2020 Work Order/Account # and Job Name: 244838 /
 Contractor: 3D Drilling Street/Intersection Location: Sc-179 / Pavilion Dr.
 Operator: John Begin Station/Set-up Location: Sc-179
 Locator: Heather End Station: Pavilion Dr.
 Rig/Rod Size: 10x15 / 1 1/2" Pipe Size/Type: 4" Performance Driscoplex
 Rod Length: 6' SCE&G Inspector: David malone

→ Bone under
Sign Footer

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-38	4'6"				31					
2	-13	5'5"				32					
3	-1	5'4"				33					
4	+7	4'4"				34					
5	+3	4'11"				35					
6	+16	4'9"				36					
7	+22	3'				37					
8						38					
9						39					
10						40					
11						41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

Comments:

Bore #13

DIRECTIONAL DRILLING AS-BUILT FORMPROJECT NAME: US17 13c179 6in 14in Dist Growth FeederDATE WORK WAS PERFORMED: 4-16-2020LOCATION/DESCR. OF BORE: Along Sc.179 / From Pavilion Dr.
Bore in a North directionHDD SUBCONTRACTOR: Wyanco

(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic city utility

HDD FLUID REPRESENTATIVE:

(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael pae

MAX ANTICIPATED PRESSURE:

(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 20 x 22</u>
	OTHER

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>F5</u>
OTHER

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
OTHER

RODS

LENGTH OF RODS (ft)
☒ 10 ☐ 15 ☐ 20 ☐ OTHER
OF RODS <u>30</u>

DRILL BIT

☒ DUCK BILL	☐ OTHER
☐ RAILHEAD	

BREAK AWAY CONNECTOR

TYPE USED	
☐ SMALLER DIA PIPE	
☒ MECHANICAL	
DIAMETER _____	SDR _____
SETTING (LBS) <u>5,250</u>	
☐ N/A	(INCLUDE EXPLANATION IF N/A)
DID IT BREAK DURING PULLBACK ?	
☐ YES	☒ NO

HORIZONTAL DISTANCE OF BORE 300' (ft)PIPE STRING DISTANCE OF BORE 360' (ft)**MAKE UP WATER**

INITIAL pH <u>8.0</u>	INITIAL HARDNESS (ppm) <u>120</u>
TASTE SALT ? ☐ Y ☒ N	
SMELL CHLORINE? ☒ Y ☐ N	
AMOUNT OF SODA ASH PER 100 GAL ADDED <u>N/A</u> (LBS)	
FINAL pH <u>8.0</u>	FINAL HARDNESS (ppm) <u>120</u>

SOIL TYPE:	☐ Clay	☐ Silt	☒ Sand	☐ Silty Clay	☐ Sandy Clay	☐ Sandy Clay Loam
	☐ Silty Clay Loam	☐ Clay Loam	☐ Silt Loam	☐ Sandy Loam	☐ Loamy Sand	☐ Shale
	☐ Marl	☐ Granite	☐ Other: _____			

DIRECTIONAL DRILLING AS-BUILT FORM

NAME OF DRILLING FLUID MANUFACTURER: Mi Swaco

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"	8"	
REAMER TYPE (barrel, fluted, open, etc)		Barrel	Barrel	
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☒ NO
ADDITIVE #1: <u>Super Vize</u> (# / 100 gal)	.25	.25	.25	
ADDITIVE #2: <u>max Bore</u> (# / 100 gal)	20-30 lbs	20-30 lbs	20-30 lbs	
ADDITIVE #3: <u>QuicTid</u> (# / 100 gal)	.25 cup	.25	.25	
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90	90	
INITIAL FLUID DENSITY (# / gal)	9.5	9.5	9.5	
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—	—	
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—	—	
MAX. MUD PUMPING PRESSURE (psi, if known)	1200	1200	1200	
EST. VOL. OF FLUID USED THIS PASS (gal)	270	750	750	
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	20-25	20-25	
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2.5-3.5	2.5-3.5	
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

SCE&G Directional Drill Report

Date: 4-16-2020 Work Order/Account # and Job Name: 244838 / US17 + SC179 6" + 4" Dist Growth Feeder

Contractor: Wyneco Street/Intersection Location: SC-179 / Pavilion Dr.

Operator: Marvin Evans Begin Station/Set-up Location: APP. 75' North of Pavilion Dr.

Locator: Hector End Station: APP. 400' North of Pavilion Dr.

Rlg/Rod Size: 20x22/2" Pipe Size/Type: 4" Performance Drisco plex

Rod Length: 10' SCE&G Inspector: David Malone

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-13	2'10"				31					
2	-4	4'6"				32					
3	±0	5'1"				33					
4	+3	4'11"		Utilities	3'2"	34					
5	±0	5'				35					
6	±0	5'				36					
7	+2	4'8"				37					
8	+4	4'2"				38					
9	+4	3'8"		Utility	4'	39					
10	+4	3'4"		Fiber		40					
11	±0	3'5"				41					
12	±0	3'5"				42					
13	-2	4'				43					
14	+3	4'3"				44					
15	+3	4'2"				45					
16	+1	4'2"				46					
17	+1	4'3"				47					
18	±0	4'3"				48					
19	+2	4'1"				49					
20	+2	4'1"				50					
21	+1	4'1"				51					
22	+3	4'				52					
23	+3	3'7"		11		53					
24	-2	3'10"		Lowes Food Entry "		54					
25	-1	4'2"				55					
26	+3	4'1"		11		56					
27	+2	4'				57					
28	+1	4'				58					
29	+1	4'				59					
30	±0	3'11"				60					

Comments:

DIRECTIONAL DRILLING AS-BUILT FORM

Bore # 14

PROJECT NAME: US 17 + SC 179 6in + 4in Dist Growth Feeder DATE WORK WAS PERFORMED: 4-27-2020

LOCATION/DESCR. OF BORE: Along SC-179 @ Retirement Home HDD SUBCONTRACTOR: 3D Drilling
(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic City Utility HDD FLUID REPRESENTATIVE: _____
(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Fox MAX ANTICIPATED PRESSURE: _____
(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER _____

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 10x15</u>
	OTHER _____

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>F2</u>
OTHER _____

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
OTHER _____

RODS

LENGTH OF RODS (ft) ☐ 10 ☐ 15 ☐ 20 ☒ 6'

OF RODS 36 OTHER _____

DRILL BIT

☒ DUCK BILL	☐ _____
☐ RAILHEAD	OTHER _____

BREAK AWAY CONNECTOR

TYPE USED

☐ SMALLER DIA PIPE

☒ MECHANICAL

DIAMETER _____ SDR _____

SETTING (LBS) 5,250

☐ N/A (INCLUDE EXPLANATION IF N/A) _____

DID IT BREAK DURING PULLBACK ?

☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 216' (ft)

PIPE STRING DISTANCE OF BORE 240' (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120

TASTE SALT ? ☐ Y ☒ N

SMELL CHLORINE ? ☐ Y ☒ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☐ Sand ☐ Silty Clay ☒ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORM

NAME OF DRILLING FLUID MANUFACTURER: Wyden

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"		
REAMER TYPE (barrel, fluted, open, etc)		Barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Trubore</u> (# / 100 gal)	30 LBS	30 LBS		
ADDITIVE #2: _____ (# / 100 gal)				
ADDITIVE #3: _____ (# / 100 gal)				
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9	9		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	—	—		
EST. VOL. OF FLUID USED THIS PASS (gal)	360	576		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	15-18		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2-3		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

SCE&G Directional Drill Report

Date: 4-27-2020

Work Order/Account # and Job Name:

244838 / US17+56-179 6in+4in Dist Growth Feeder

Contractor: 3D Drilling

Street/Intersection Location:

SC-179 / Pavilion Dr.

Operator: John

Begin Station/Set-up Location:

left side Property line of Retirement complex off SC-179

Locator: Heather

End Station:

Middle of Property @ Retirement complex off sc-179

Rlg/Rod Size: 10x15 / 1 1/2"

Pipe Size/Type:

4" Performance Driscoplex

Rod Length: 6'

SCE&G Inspector:

David malone

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locato Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-7	4'2"				31	+1	4'5"		11	
2	-1	4'7"				32	+4	4'3"		11	
3	+4	4'11"				33	+3	4'4"		11	
4	+6	4'7"				34	+7	3'11"			
5	+4	4'6"				35	+2	3'9"			
6	+1	4'6"				36	+3	3'11"			
7	±0	4'6"				37					
8	+1	5'				38					
9	+1	5'				39					
10	+1	5'				40					
11	±0	5'2"				41					
12	±0	5'				42					
13	±0	5'2"				43					
14	+3	5'				44					
15	+6	5'4"				45					
16	+9	5'5"				46					
17	+9	5'5"				47					
18	+9	4'2"				48					
19	+2	4'6"				49					
20	-2	5'1"				50					
21	-3	4'11"				51					
22	±0	4'11"				52					
23	+2	4'5"				53					
24	±0	4'10"		@ Drain		54					
25	+7	3'9"		Bore Parcel		55					
26	+6	3'11"		to Drain.		56					
27	+7	4'				57					
28	+1	4'1"				58					
29	+2	3'11"				59					
30	-2	4'2"		Asphalt Dr.		60					

Comments: Elevation changed Through entire shot. Bore Along Back side of Ditch

DIRECTIONAL DRILLING AS-BUILT FORM

Bore #15

PROJECT NAME: US17 + SC179 6in + 4in Dist Growth Feeder DATE WORK WAS PERFORMED: 4-23-2020

LOCATION/DESCR. OF BORE: Along SC-179 HDD SUBCONTRACTOR: 3D Drilling
(COMPANY NAME & OPERATOR NAME)

CONTRACTOR COMPANY NAME: Classic City Utility HDD FLUID REPRESENTATIVE: _____
(ONLY IF ON-SITE)

FOREMAN RESPONSIBLE FOR PROJECT: Michael Fox MAX ANTICIPATED PRESSURE: _____
(TO BE ENTERED BY SCE&G ENGINEER)

CARRIER PIPE

MATERIAL	NOMIAL DIA	PLASTIC SDR	STEEL WALL THICKNESS
☒ PLASTIC	☐ 2"	☐ 7	☐ .154"
	☒ 4"	☐ 11	☐ .188"
	☐ 6"	☒ 11.5	☐ .203"
☐ STEEL	☐ 8"	☐ 13.5	☐ .219"
	☐ 10"		☐ .237"
			☐ OTHER

CASING PIPE

MATERIAL	NOMINAL DIA
☐ PLASTIC	☐ 4"
	☐ 6"
☐ STEEL	☐ 8"
	☐ 10"
☒ N/A	☐ 12"

HDD MACHINE USED

☐ VERMEER 7 x 11	☐ VERMEER 24 x 40
☐ VERMEER 16 x 20a	☐ VERMEER 36 x 50
☐ VERMEER 18 x 22	☐ DITCH WITCH 27 x 20
	☒ <u>Vermeer 10x15</u>
	OTHER _____

TRACKING SYSTEM

☐ VERMEER DIGITRACK
☐ DITCH WITCH SUB SITE
☒ <u>F2</u>
OTHER _____

MUD MIXING SYSTEM

☒ VERMEER 125
☐ DITCHWITCH MM9
OTHER _____

RODS

LENGTH OF RODS (ft) ☐ 10 ☐ 15 ☐ 20 ☒ 6' OTHER _____

OF RODS 40

DRILL BIT

☒ DUCK BILL	☐ OTHER _____
☐ RAILHEAD	

BREAK AWAY CONNECTOR

TYPE USED

☐ SMALLER DIA PIPE

☒ MECHANICAL

DIAMETER _____ SDR _____

SETTING (LBS) 5,250

☐ N/A (INCLUDE EXPLANATION IF N/A) _____

DID IT BREAK DURING PULLBACK? ☐ YES ☒ NO

HORIZONTAL DISTANCE OF BORE 240' (ft)

PIPE STRING DISTANCE OF BORE 320' (ft)

MAKE UP WATER

INITIAL pH 8.0 INITIAL HARDNESS (ppm) 120

TASTE SALT? ☐ Y ☒ N

SMELL CHLORINE? ☐ Y ☒ N

AMOUNT OF SODA ASH PER 100 GAL ADDED N/A (LBS)

FINAL pH 8.0 FINAL HARDNESS (ppm) 120

SOIL TYPE: ☐ Clay ☐ Silt ☐ Sand ☐ Silty Clay ☒ Sandy Clay ☐ Sandy Clay Loam

☐ Silty Clay Loam ☐ Clay Loam ☐ Silt Loam ☐ Sandy Loam ☐ Loamy Sand ☐ Shale ☐ Loam

☐ Marl ☐ Granite ☐ Other: _____

DIRECTIONAL DRILLING AS-BUILT FORM

NAME OF DRILLING FLUID MANUFACTURER: _____

wyoben

	PILOT BORE	REAM 1	REAM 2	REAM 3
PILOT HOLE SIZE	6"			
REAMER SIZE		8"		
REAMER TYPE (barrel, fluted, open, etc)		barrel		
WAS PIPE PULLED BACK ON THIS PASS? (Y/N)	☐ YES ☒ NO	☒ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO
ADDITIVE #1: <u>Trubore</u> (# / 100 gal)	30 LBS	30 LBS		
ADDITIVE #2: _____ (# / 100 gal)				
ADDITIVE #3: _____ (# / 100 gal)				
ADDITIVE #4: _____ (# / 100 gal)				
ADDITIVE #5: _____ (# / 100 gal)				
ADDITIVE #6: _____ (# / 100 gal)				
INITIAL FLUID VISCOSITY (sec / qt)	90	90		
INITIAL FLUID DENSITY (# / gal)	9	9		
DENSITY OF RETURN FLUID @ BORE MIDPT (#/gal)	—	—		
DENSITY OF RETURN FLUID @ END OF BORE (#/gal)	—	—		
MAX. MUD PUMPING PRESSURE (psi, if known)	—	—		
EST. VOL. OF FLUID USED THIS PASS (gal)	400	640		
AVG. FLUID PUMPING RATE THIS PASS (gal/rod)	8-10	15-18		
AVG. THRUST/PULL SPEED THIS PASS (min / rod)	1-2	2-3		
INADVERTENT RETURNS (FRAC-OUTS)?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO
EXPERIENCE ANY LOSS OF RETURNS?	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☐ NO	☐ YES ☐ NO

WHERE WERE SPENT FLUIDS DISPOSED AT? _____

Approved site

ADDITIONAL NOTES & COMMENTS:

GENERAL NOTES: ACTUAL PATH ALIGNMENT AND DEPTH OF COVER FOR CASING/CARRIER PIPE TO BE INDICATED ON AS-BUILT DRAWINGS AND TABLES. CARRIER PIPE PRESSURE TEST REPORTS TO BE INDICATED ON ATTACHED TEST REPORTS.

SCE&G Directional Drill Report

Date: 4-23-2020

Work Order/Account # and Job Name:

244838 / US17 + SC179 6int 2in Dist
SC-179 / Pavilion Dr. Growth
@ Nc state Univ Freeder

Contractor: 3D Drilling

Street/Intersection Location:

Sc-179/Pan/100 Dr.

Operator: John

Begin Station/Set-up Location:

@ Nc state line

Locator: Heather

End Station:

S. of NC state line

Rlg/Rod Size: 10x15 / 1 1/2"

Pipe Size/Type:

4" Performance

Rod Length: 6'

SCE&G Inspector:

David malone

Daily Report #				EXISTING UTILITIES/STRUCTURES		Locate Ticket #				EXISTING UTILITIES/STRUCTURES	
ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH	ROD #	PITCH +/-	DEPTH	DISTANCE FROM EOP	TYPE	DEPTH
1	-18	3'0"		Road/Entry		31	±0	5'11"			
2	-13	4'4"		"		32	±0	6'			
3	-6	4'9"		"		33	-3	6'3"			
4	+2	4'0"		"		34	±0	6'			
5	+1	4'10"		"		35	±0	4'8"		Elevation change	
6	+3	4'7"		"		36	±0	4'8"		Ditch / Drain	
7	+1	4'4"				37	±0	4'7"			
8	-2	4'3"				38	+3	5'3"			
9	-2	4'3"				39	+6	4'11"			
10	-5	4'6"				40	+14	4'4"			
11	-6	4'11"				41					
12	-4	5'				42					
13	-1	5'				43					
14	+1	4'11"				44					
15	+1	4'8"		Gravel Swell to Pond		45					
16	+5	4'9"				46					
17	+3	4'6"				47					
18	+3	4'4"				48					
19	+2	4'2"				49					
20	±0	4'2"				50					
21	±0	4'6"				51					
22	-1	4'5"				52					
23	±0	4'8"				53					
24	±0	4'9"				54					
25	-1	4'11"				55					
26	-6	5'6"				56					
27	-4	5'8"				57					
28	-3	5'11"				58					
29	±0	6"				59					
30	±0	5'10"				60					

Comments: