

Impaired Waters Monitoring and Implementation Plan: 2021 Annual Evaluation

Impaired Waters

The following water have been identified as impaired by the latest 305(b)/303(d) list of waters and are the subject of this plan. In each case, the pollutant of concern is fecal coliform.

- Barber Creek
- Calls Creek
- McNutt Creek
- Middle Oconee River

Monitoring

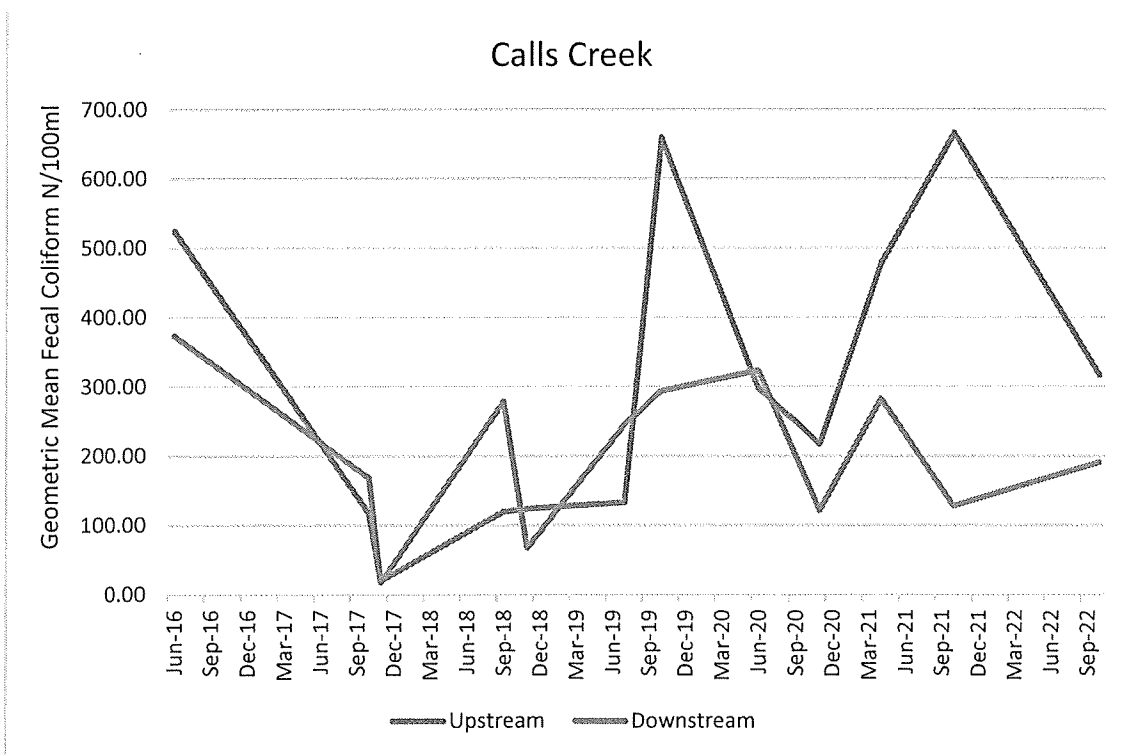
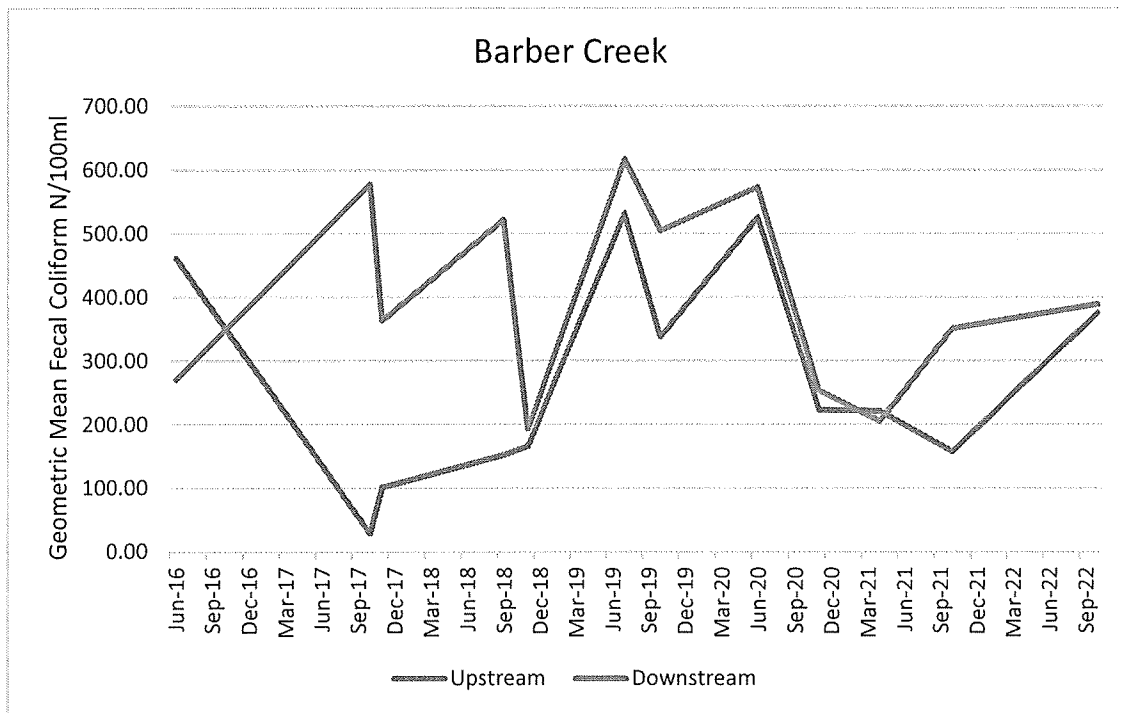
Oconee County Water Resources staff performed monitoring according to the approved plan:

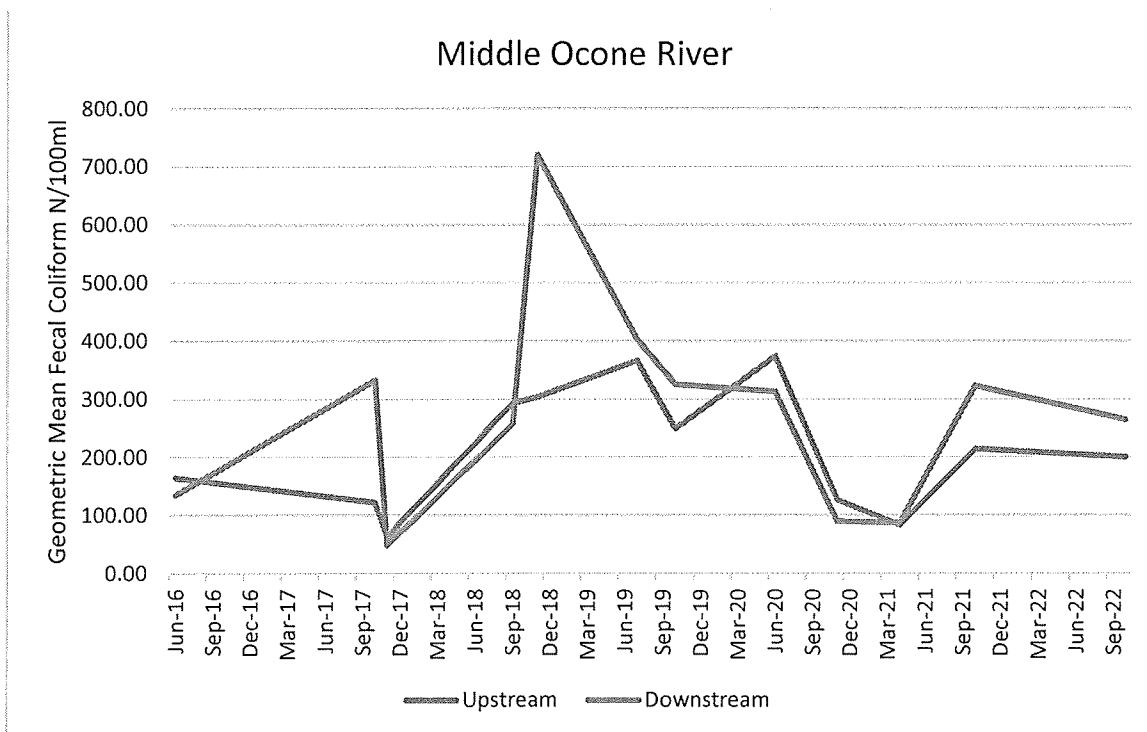
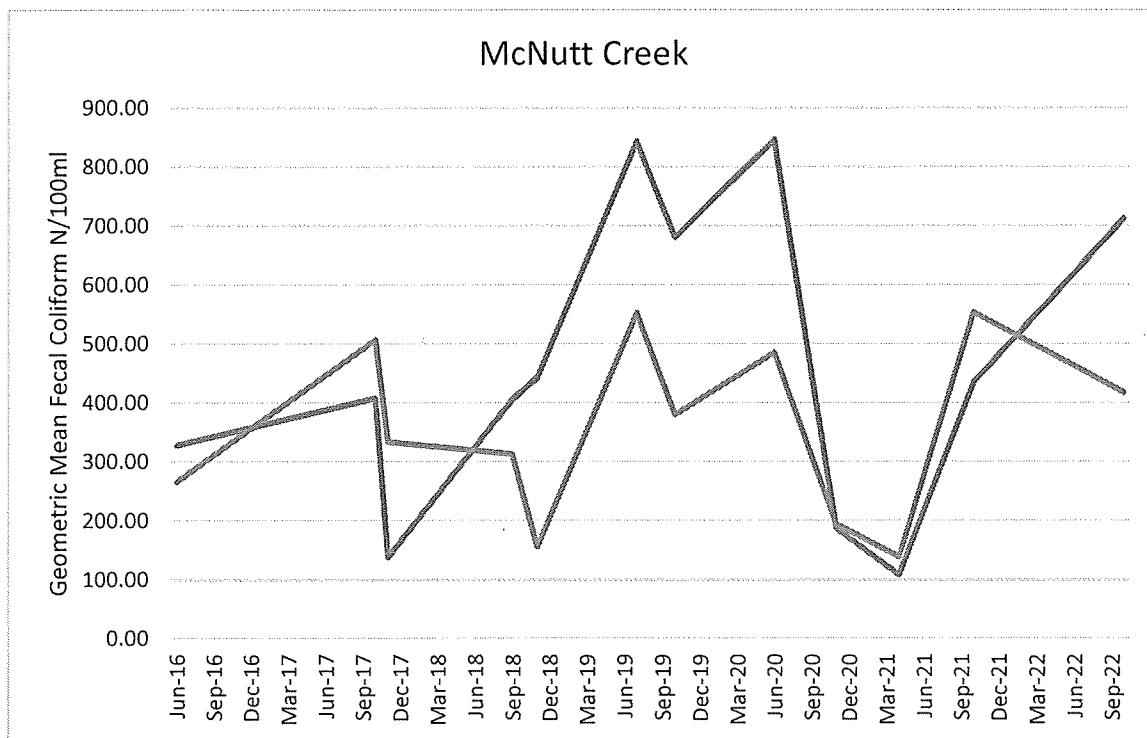
- Upstream and downstream samples were collected from each of the impaired waters in order to calculate two geometric means for the year.
 - A minimum of four samples were collected (one week apart) from each sampling site during the months of April and October 2021.
 - Laboratory analysis for fecal coliform was conducted and the geometric mean for each site was calculated. The results are shown in the table below:

	April - Upstream	April - Downstream	October - Upstream	October - Downstream
Barber Creek	221.29	205.20	157.60	351.21
Calls Creek	478.80	283.17	666.57	127.94
McNutt Creek	108.29	138.96	434.80	554.03
Middle Oconee River	83.71	87.47	214.34	322.77

Trend in Water Quality

The following graphs compare data results over time for each of the four impaired waters:





Evaluation

BMP's included from the County's SWMP

1. Public Education and Outreach BMP 2: Website
2. Public Education and Outreach BMP 3: Social Media Program
3. Public Education and Outreach BMP 4: Distribution of educational material at events attended by Keep Oconee Beautiful
4. Public Involvement/Participation BMP 2: River cleanup event by Keep Oconee Beautiful
5. Illicit Discharge Detection and Elimination BMP 1: Ordinance to prohibit illicit discharges to the storm drain system
6. Illicit Discharge Detection and Elimination BMP 3: Dry weather screenings

Additional BMP's

7. Pet waste stations at public parks
8. Inspection priority of areas upstream of impaired waters

Some of the waters addressed in this plan enter into Oconee County already impaired, but the downstream sampling does not indicate a higher level of the pollutant in some cases. Public education has been targeted more specifically to address the source of impairment (fecal coliform) in order to try to further reduce the pollutant. It is possible that failing septic tanks could be a contributor. Oconee County continues to partner with OconeeWaters, a local environmental group which is part of the Upper Oconee Watershed Network (UOWN OconeeWaters) to continue previously developed educational programs. The partnership has developed "Storm Water Journey" a geocache trail hosted on the County's Storm Water Management web page and "Protect our Water", an educational outreach program originally developed in 2019 to target 2nd grade students and their families through the school system. This program is also available digitally on the Oconee County Storm Water Management web page.

Tracking

The data collected by Water Resources during sampling is attached to this evaluation report.

Fecal Coliform-Membrane Filter
Stormwater Testing
Standard Methods

19th Edition Method 9222D, P.9-60

Sample Date	Collected By	Sample Location/Time	Sample Identity	Sample Dilution %	Time Placed in Bath	Analysis Date & Time	Incubation Time	Colony Count	Fecal Coliform N/100 mL	Temp of Incubator *C	Analyst Initials
4/6/21	TL	Lab/Blank 8:00 am	Blank 100 mL	100%	11:04 am	4/7/21 11:04 am	24 hr	0	0	44.5°	TL
	CW/DD	Barber/ 9:50 am	BC-1Up 1 mL	100%				1	100	130	
		Barber/ "	BC-1Up 5 mL	100%				8	160		
		Barber/ 9:00 am	BC-1Dn 1 mL	100%				0		100	
		Barber/ "	BC-1Dn 5 mL	100%				5	100		
		Calls/ 10:17 am	CC-2Up 1mL	100%				4	400	460	
		Calls/ "	CC-2Up 5mL	100%	11:30 am	4/7/21 11:30 am	24 hr	26	520	44.6°	
		Calls/ 8:19 am	CC-2Dn 1mL	100%				5	500	7420	
		Calls/ "	CC-2Dn 5mL	100%				17	340		
		McNutt/ 9:36 am	MC-3Up 1mL	100%				1	100	44.6°	
		McNutt/ "	MC-3Up 5mL	100%				6	120		
		McNutt/ 8:52 am	MC-3Dn 1mL	100%				0		110	
		McNutt/ "	MC-3Dn 5mL	100%	11:50 am	4/7/21 11:50 am	24 hr	10	200		
		Middle/ 8:25 am	MO-4Up 1mL	100%				1	100		
		Middle/ "	MO-4Up 5mL	100%				2	40	70	
		Middle/ 8:00 am	MO-4Dn 1mL	100%				0			
		Middle/ "	MO-4Dn 5mL	100%				2	40	20	
	TL	Lab/POS	INF 0.1mL	100%				TNTC			

* ALL FECAL CALCULATIONS ARE GEOMETRIC MEANS. DO NOT CALCULATE BLANK IN AVERAGE.

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4/13/21	TF	Lab/Blank	Blank 100 mL	100%	11:08 am	4/14/21 11:08 am	24 hr	0	0	44.5	TF
	CW/DD	Barber/ 9:22 am	BC-1Up 1 mL	100%				3	300	230	
		Barber/ "	BC-1Up 5 mL	100%				8	160		
		Barber/ 8:35 am	BC-1Dn 1 mL	100%				8	800	590	
		Barber/ "	BC-1Dn 5 mL	100%				19	380		
		Calls/ 9:38 am	CC-2Up 1mL	100%				13	1,300	1070	
		Calls/ "	CC-2Up 5mL	100%	11:34 am	11:34 am		42	840	44.6	
		Calls/ 7:59 am	CC-2Dn 1mL	100%				2	200	150	
		Calls/ "	CC-2Dn 5mL	100%				5	100		
		McNutt/ 9:04 am	MC-3Up 1mL	100%				2	200	170	
		McNutt/ "	MC-3Up 5mL	100%				7	140		
		McNutt/ 8:27 am	MC-3Dn 1mL	100%				1	100	140	
		McNutt/ "	MC-3Dn 5mL	100%	11:57 am	11:57 am		9	180	44.6	
		Middle/ 8:08 am	MO-4Up 1mL	100%				1	100	100	
		Middle/ "	MO-4Up 5mL	100%				5	100		
		Middle/ 7:38 am	MO-4Dn 1mL	100%				2	200	200	
		Middle/ 7:38	MO-4Dn 5mL	100%				10	200		
	TF	Lab/POS	INF 0.1mL	100%				TNTC			

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4/20/21	DT	Lab/Blank	Blank 100 mL	100%	10:41 am	4/21/21	24 hr	0	0	44.6	DT
	DD/CW	Barber/ 9:52 am	BC-1Up 1 mL	100%		10:41 am		4	400	320	
		Barber/ " "	BC-1Up 5 mL	100%				12	240		
		Barber/ 8:57 am	BC-1Dn 1 mL	100%				1	100	140	
		Barber/ " "	BC-1Dn 5 mL	100%				9	180		
		Calls/ 10:10 am	CC-2Up 1 mL	100%				5	500	440	
		Calls/ " "	CC-2Up 5 mL	100%	11:01 am	4/21/21		19	380	44.6	
		Calls/ 8:17 am	CC-2Dn 1 mL	100%		11:01 am		12	1200	1210	
		Calls/ " "	CC-2Dn 5 mL	100%				61	1220		
		McNutt/ 9:37 am	MC-3Up 1 mL	100%				0	0	40	
		McNutt/ " "	MC-3Up 5 mL	100%				4	80		
		McNutt/ 8:47 am	MC-3Dn 1 mL	100%				0	0	30	
		McNutt/ " "	MC-3Dn 5 mL	100%	11:20 am	4/21/21		5	100	44.6	
						11:20 am					
		Middle/ 8:25 am	MO-4Up 1 mL	100%				0	0	20	
		Middle/ " "	MO-4Up 5 mL	100%				2	40		
		Middle/ 7:55 am	MO-4Dn 1 mL	100%				0	0	40	
		Middle/ " "	MO-4Dn 5 mL	100%				4	80		
	DT	Lab/POS 7:40 am	INF 0.1 mL	100%				TNTC	TNTC		

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4/27/21	FF	Lab/Blank 8:00 am	Blank 100 mL	100%	10:35 am	4/28/21 10:35 am	24 hr	0	0	44.6	FF
	EC/DD	Barber/ 9:48 am	BC-1Up 1 mL	100%				3	300	(280)	
		Barber/ " "	BC-1Up 5 mL	100%				13	260		
		Barber/ 9:09 am	BC-1Dn 1 mL	100%				2	200	(170)	
		Barber/ " "	BC-1Dn 5 mL	100%				7	140		
		Calls/ 10:05 am	CC-2Up 1mL	100%				4	400	(280)	
		Calls/ " "	CC-2Up 5mL	100%	10:55 am	4/28/21 10:55 am	24 hr	8	160	44.6	
		Calls/ 8:32 am	CC-2Dn 1mL	100%				0	0	(80)	
		Calls/ " "	CC-2Dn 5mL	100%				8	160		
		McNutt/ 9:32 am	MC-3Up 1mL	100%				0	0	(30)	
		McNutt/ " "	MC-3Up 5mL	100%				3	60		
		McNutt/ 9:00 am	MC-3Dn 1mL	100%	11:10 am			1	100	(150)	
		McNutt/ " "	MC-3Dn 5mL	100%				10	200	44.6	
		Middle/ 8:42 am	MO-4Up 1mL	100%				1	100	(140)	
		Middle/ " "	MO-4Up 5mL	100%				9	180		
		Middle/ 8:13 am	MO-4Dn 1mL	100%				0	0	(20)	
		Middle/ " "	MO-4Dn 5mL	100%				2	40		
	FF	Lab/POS 7:50 am	INF 0.1mL	100%				TNTc	TNTc		

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10-7-21	DD/CW	Lab/Blank 8:00 am	Blank 100 mL	100%	11:02 am	10-8-21	24 hr			44.4°	PL
		Barber/ 10:03 am	BC-1Up 1 mL	100%		11:02 am		85	8500	4780	
		Barber/ " "	BC-1Up 5 mL	100%				27	1060	4780	
		Barber/ 9:30 am	BC-1Dn 1 mL	100%				53	5300		
		Barber/ " "	BC-1Dn 5 mL	100%				280	1400	3,350	
		Calls/ 10:16 am	CC-2Up 1mL	100%				173	17300		
		Calls/ " "	CC-2Up 5mL	100%	11:30 am	11:30 am	24 hr	TNTC	20,000	44.4°	
		Calls/ 8:37 am	CC-2Dn 1mL	100%				88	8,800		
		Calls/ " "	CC-2Dn 5mL	100%				192	4,800	6800	
		McNutt/ 9:45 am	MC-3Up 1mL	100%				21	2100		
		McNutt/ " "	MC-3Up 5mL	100%				108	2700	2400	
		McNutt/ 9:08 am	MC-3Dn 1mL	100%				56	5600		
		McNutt/ " "	MC-3Dn 5mL	100%	11:53 am	11:53 am	24 hr	258	6450	6025	
		Middle/ 8:48 am	MO-4Up 1mL	100%				67	6700	44.5°	
		Middle/ " "	MO-4Up 5mL	100%				277	6,925	6813	
		Middle/ 8:15 am	MO-4Dn 1mL	100%				84	8400		
		Middle/ " "	MO-4Dn 5mL	100%				313	7825	8113	
	PL	Lab/POS 8:00 am	INF 0.1mL	100%				TNTC	TNTC		

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BC UP: 4780 MC UP: 2400
BC DN: 3,350 MC DN: 6025
CC UP: 18,650 MO UP: 6813
CC DN: 6,800 MO DN: 8113

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10-14-21	RY	Lab/Blank 8:00 am	Blank 100 mL	100%	10:40 am	10-15-21 10:40 am	24 hr	0		44.5	RY
	PD/CN	Barber/ 9:47 am	BC-1Up 1 mL	100%				4	400		
		Barber/ " "	BC-1Up 5 mL	100%				11	220		
		Barber/ 9:05 am	BC-1Dn 1 mL	100%				1	100		
		Barber/ " "	BC-1Dn 5 mL	100%				10	200		
		Calls/ 10:07 am	CC-2Up 1 mL	100%				1	100		
		Calls/ " "	CC-2Up 5 mL	100%	11:03 am			20	400		
		Calls/ 8:20 am	CC-2Dn 1 mL	100%		11:03 am		5	500		
		Calls/ " "	CC-2Dn 5 mL	100%				17	340		
		McNutt/ 9:24 am	MC-3Up 1 mL	100%				2	200		
		McNutt/ " "	MC-3Up 5 mL	100%				20	400		
		McNutt/ 8:57 am	MC-3Dn 1 mL	100%				2	200		
		McNutt/ " "	MC-3Dn 5 mL	100%	11:21 am	11:21 am		16	320	44.4	
		Middle/ 8:33 am	MO-4Up 1 mL	100%				4	400		
		Middle/ " "	MO-4Up 5 mL	100%				5	100		
		Middle/ 8:00 am	MO-4Dn 1 mL	100%				1	100		
		Middle/ " "	MO-4Dn 5 mL	100%				8	160		
		Lab/POS 7:40 am	INF 0.1 mL	100%				TNTC	TNTC		

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BC UP: 310	MC UP: 300
BC DN: 150	MC DN: 260
CC UP: 250	MO UP: 250
CC DN: 420	MO DN: 130

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10/2/21	JS	Lab/Blank/8:30	Blank 100 mL	100%	10:59am	10-22-21 10:59am	24 hr	0	0	44.4°C	JS
	EW/OD	Barber/10:05am	BC-1Up 1 mL	100%	10:59am			0	1		
		Barber/ " "	BC-1Up 5 mL	100%				6	120		
		Barber/ 9:15am	BC-1Dn 1 mL	100%				3	300		
		Barber/ " "	BC-1Dn 5 mL	100%				13	200		
		Calls/ 10:23am	CC-2Up 1mL	100%	10:59am			2	200		
		Calls/ " "	CC-2Up 5mL	100%	11:32am	11:32am		8	160		
		Calls/ 8:43am	CC-2Dn 1mL	100%				0	1		
		Calls/ " "	CC-2Dn 5mL	100%				5	100		
		McNutt/ 9:42am	MC-3Up 1mL	100%				2	200		
		McNutt/ " "	MC-3Up 5mL	100%				6	120		
		McNutt/ 9:23am	MC-3Dn 1mL	100%				1	100		
		McNutt/ " "	MC-3Dn 5mL	100%	12:06pm	12:06pm		15	300	44.7°C	
		Middle/ 8:52am	MO-4Up 1mL	100%	12:06pm			0	1		
		Middle/ " "	MO-4Up 5mL	100%				5	100		
		Middle/ 8:22am	MO-4Dn 1mL	100%				1	100		
		Middle/ " "	MO-4Dn 5mL	100%				4	80		
	BC	Lab/POS 8:30am	INF 0.1mL	100%				TNTC	TNTC		

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BC UP: 61 MC UP: 160
 BC DN: 280 MC DN: 200
 CC UP: 180 MO UP: 51
 CC DN: 51 MO DN: 90

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10-28-21	TF	Lab/Blank 8:00	Blank 100 mL	100%	11:00 am	10-29-21 11:00 am	24 hr	0	0	44.5	TF
	DP/CW	Barber/ 9:53 am	BC-1Up 1 mL	100%							
		Barber/ 9:59 am	BC-1Up 5 mL	100%				2	40		
		Barber/ 9:59 am	BC-1Dn 1 mL	100%				1	100		
		Barber/ 1	BC-1Dn 5 mL	100%				10	200		
		Calls/ 10:12 am	CC-2Up 1 mL	100%				2	200		
		Calls/ 1	CC-2Up 5 mL	100%	11:25 am	11:25		22	440	44.5	
		Calls/ 8:22 am	CC-2Dn 1 mL	100%				0	1		
		Calls/ 1	CC-2Dn 5 mL	100%				5	100		
		McNutt/ 9:36 am	MC-3Up 1 mL	100%				2	200		
		McNutt/ 1	MC-3Up 5 mL	100%				8	160		
		McNutt/ 9:06 am	MC-3Dn 1 mL	100%				4	400		
		McNutt/ 1	MC-3Dn 5 mL	100%	11:47 am			16	320	44.6	
		Middle/ 8:35 am	MO-4Up 1 mL	100%				1	100		
		Middle/ 1	MO-4Up 5 mL	100%				12	240		
		Middle/ 8:05 am	MO-4Dn 1 mL	100%				1	100		
		Middle/ 1	MO-4Dn 5 mL	100%				7	140		
	TF	Lab/POS 8:00	INF 0.1 mL	100%				TNTC	TNTC		

BC UP: 70
BC DN: 150
CC UP: 320
CC DN: 51
MC UP: 180
MC DN: 360
MO UP: 170
MO DN: 120

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