CITY OF SURREY

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WATER SYSTEM ANNUAL REPORT

2022

REPORT SUMMARY

The City of Surrey drinking water is supplied by the Greater Vancouver Water District which is operated by Metro Vancouver.

The City's water distribution mains are about 1870 km in length making it the longest distribution network in British Columbia. Within the distribution network there are 30 pressure zones and nine pump stations.

To maintain water quality throughout the distribution system, The City uses a unidirectional flushing program to flush all water mains. The flushing program's objective is to flush the City's entire water distribution on a 5 year rotation.

The City monitors water quality at 51 sampling stations. Weekly samples are collected and tested by Metro Vancouver. Tests include bacteriological analysis, chlorine residuals, pH, temperature and turbidity.

There was no presence of E-coli bacteria detected in the 2983 water samples analyzed in 2022. Six samples tested positive for total coliform bacteria, however with flushing and resampling, subsequent test results were negative.

For issues regarding water quality or infrastructure failures, such as water main breaks, the City has response procedures. These procedures incorporate steps for repairs and communication between the City, Metro Vancouver, and Fraser Health Authority (FHA).

Chlorine residuals are monitored throughout the distribution system. In 2022, 91% of the 2983 samples taken were greater than 0.2 mg/L. This is an increase of 1% as compared to 2021. Where there are increased heterotrophic plate counts (HPC), as the result of low chlorine residual and circulation issues, staff flush the affected section to replenish the water in the mains and increase the chlorine residuals. The City continues to improve these low flow areas by connecting dead end mains, known as looping, which improves water circulation to these areas. Quarterly samples are obtained for disinfection by-products (Haloacetic Acids and Trihalomethanes), and semi-annual samples for pH and metal analysis. The results of these tests meet the 2020 Guidelines for Canadian Drinking Water Quality.

There were no reported incidences of tampering or vandalism with the City's water system in 2022. System security includes lighting, locks, and alarms at pump stations as well as back flow prevention devices on service connections. The City also guards against contaminants entering the system due to faulty connections through a cross connection control program.

In 2022, the number of new testable backflow preventers registered with the City was 814. The total number of assemblies registered is 15,927, which is a 2% increase from 2021. These assemblies were installed through development, renovations or the cross-connection control survey requirement. Assemblies are required to be tested on an annual basis. The City ensures institutional, commercial and industrial (ICI) operations remain in compliance with the Surrey Waterworks Cross Connection Control By-law, 2013, No.17988.

The City of Surrey remains diligent in maintaining its water distribution system to high quality standards and in ensuring the delivery of high-quality water to the City's residents and businesses.

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2022 WATER SYSTEM ANNUAL REPORT

A. System Makeup

The City of Surrey's water is supplied by the Greater Vancouver Water District (GVWD). The source of this water originates from rain and snowmelt which is collected in three impounded reservoirs on the Capilano, Seymour and Coquitlam rivers. Metro Vancouver is responsible for the monitoring, treatment and delivery of the water to the member municipalities. The treatment methods deactivate all disease-causing micro-organisms. Secondary chlorination is added to the water prior to entering the City's distribution system to prevent any regrowth of micro-organisms. Once this is completed, there is no further treatment of the water within the City of Surrey's distribution system. Figure 1 on page 2 illustrates the water distribution system. The detailed breakdown of the water main inventory is provided in Table 1 page 3, "City of Surrey 2022 Water Main Inventory".

The City's water distribution mains are about 1870 km in length making it the longest distribution system in British Columbia. Components of the water system include pump stations, water mains, pressure reducing valves, water sampling stations, service connections, and water meters. In 2022, the number of water service connections increased 0.3% (2951) to 95,638. As of 2021, the population estimation of Surrey is 591,700[1].

To illustrate 1870 km of water main, this would be from Surrey to approximately 150 km east of Regina Saskatchewan

Through the use of pressure reducing valves, pumping stations, closed valves, check valves, and dead-end pipe runs, the distribution system is separated into 30 pressure zones. Each zone's pressure is correlated to the topographical elevations within the zone in order to provide sufficient water pressure to each resident.

The City has many dead-ends created by pressure zone boundaries, cul-de-sacs, water mains extensions into sparsely populated rural areas, and geographical constraints of ravines, creeks, foreshores, and floodplains. For any water quality issues that may arise in these areas, City crews respond by flushing affected mains.

The City has eight water fill stations for use by construction companies to meet their water needs. The fill stations minimize the use of fire hydrants for filling tanker trucks and allows the City to monitor water consumption. Where possible, water fill stations were installed on dead end mains to increase flow and improve water quality in these areas.

1 Surrey Population (2021) 591,700 Population Estimates and Projections, https://www.surrey.ca/business-economic-development/business-data/population-estimates-projections

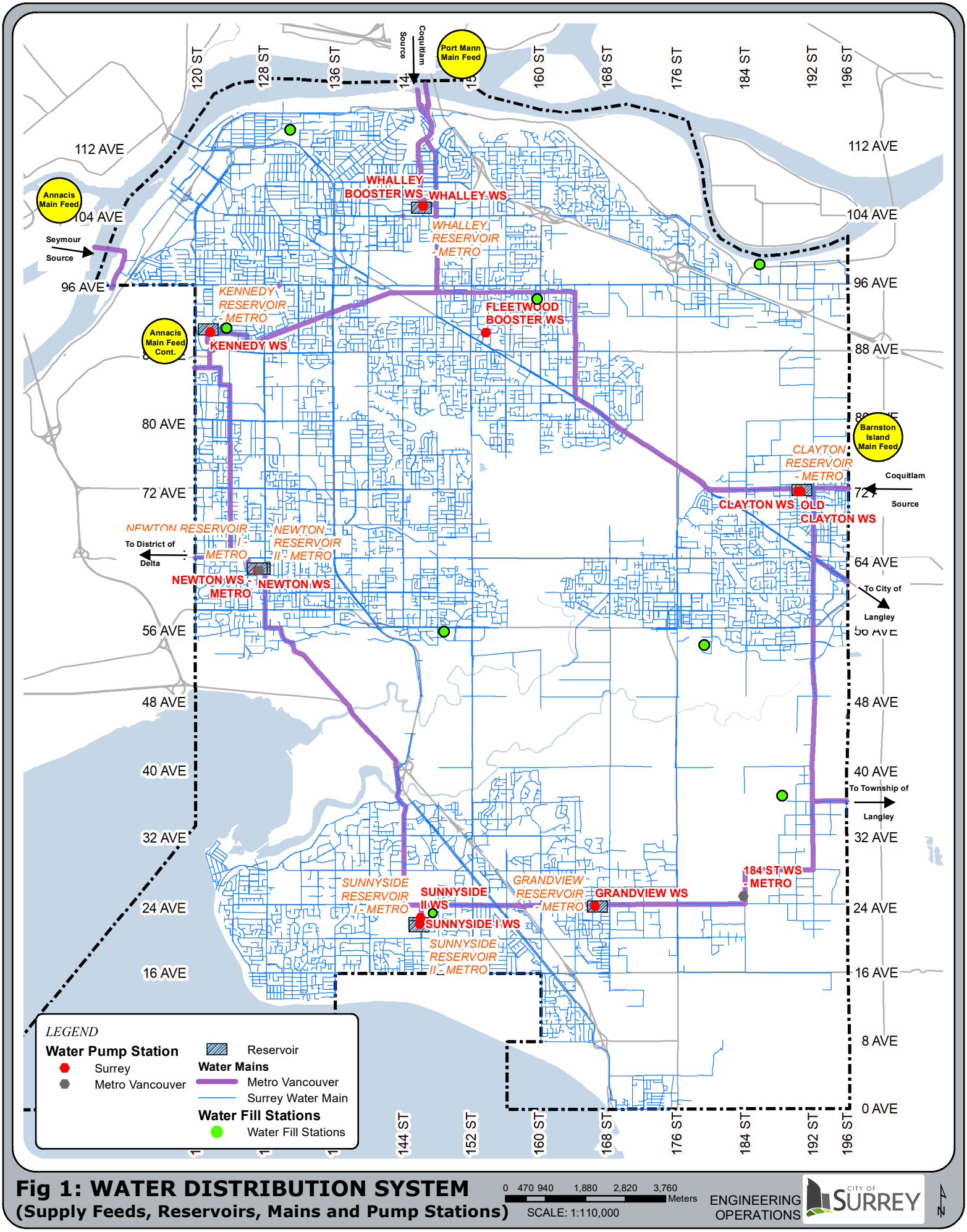


Fig 1: WATER DISTRIBUTION SYSTEM
(Supply Feeds, Reservoirs, Mains and Pump Stations)

0 470 940 1,880 2,820 3,760 Meters

SCALE: 1:110,000

ENGINEERING OPERATIONS

CITY OF SURREY

Source: C:\Users\b1h\OneDrive - City of Surrey\Engineering\GIS\maps\2022 wtrPumpStationsReservoirs.mxd

Cartographer: B1H Date: 16-Jan-2023

Table 1:
2022 Water Main Inventory (City of Surrey)

Main Size (mm)	AC	CC	CAS	CU	DI	DI-TR	GI	PE	PVC	PVCO	ST	Total by Size (m)
50				11	54		1,363	4,574	3,541			9,543
75					163				611			774
100	2,075		2,722		65,685			33,970	10,720		110	115,282
125								923				923
150	13,445		31,427		301,235	46	4	6,850	87,260		175	440,442
200	6,229		10,054		203,066	434		88	340,374	503	1,111	561,859
250	337		2,094		66,990				73,834		51	143,306
300	7,841	2	11,392		277,285			221	111,949		1,026	409,716
350					46,896				1,320		692	48,908
400					43,967				36		10	44,013
450	10	8,633			41,362				7		133	50,145
500					7,594						16	7,610
525											3,323	3,323
560											721	721
600	23	8,894			12,236				762		2,511	24,426
750		305			3,738			2			2,986	7,031
900		33			1,520						313	1,866
1050								855			62	917
1200											50	50
Total by Material (m)	29,960	17,867	57,689	11	1,071,791	480	1,367	47,483	630,414	503	13,290	1,870,855
% change from 2021	-0.7%	0.0%	-2.0%	0.0%	-1.2%	100.0%	-14.2%	2.0%	0.04%	0.0%	0.0%	-0.7%

Total Main Length (2022): 1,870,854 m (0.7% decrease from 2021)

Pipe Material Legend	
AC	Asbestos-Cement
CC	Concrete Cylinder
CI	Cast Iron
CU	Copper
DI	Ductile Iron
GI	Galvanized Iron
PE	Polyethylene
PVC	Polyvinyl Chloride
PVCO	Biaxially Oriented Polyvinyl Chloride
ST	Steel

Colour Legend	Comparison to 2020 Inventory
	Increasing Main Inventory
	Decreasing Main Inventory
	No Change in Main Inventory

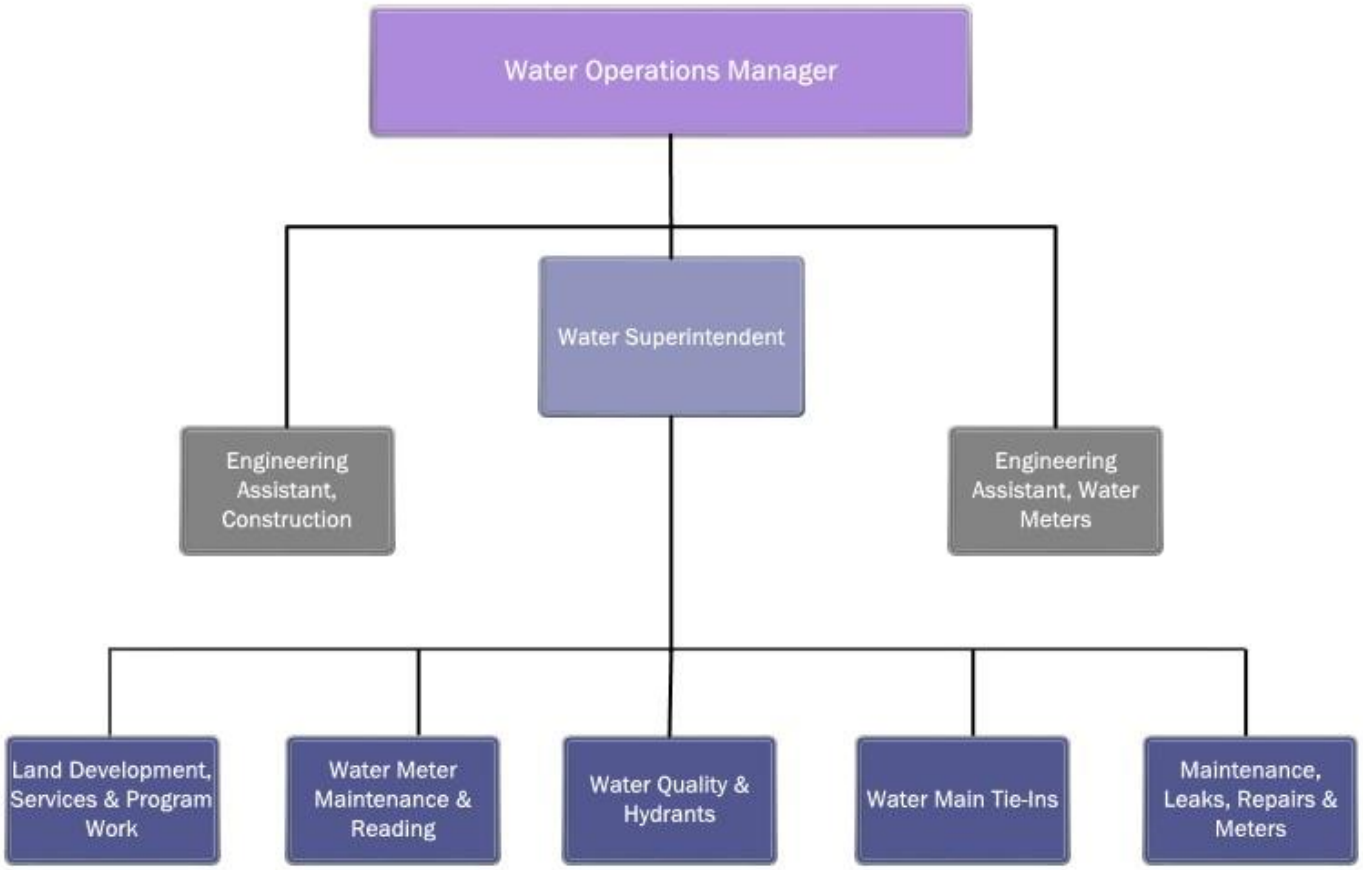
B. System Maintenance

The City of Surrey has 61 staff for the operation and maintenance of the water distribution system. 38 staff are EOCP certified as follows: 22 WD I; 14 WD II; 2 WD III

The maintenance organization structure is shown in Figure 2 (below).

Figure 2:
2022 COS Water Operations Organizational Chart

Water Operations



Water Ops Organization Chart 2022

The duties and responsibilities of the various crews and staff members are as follows:

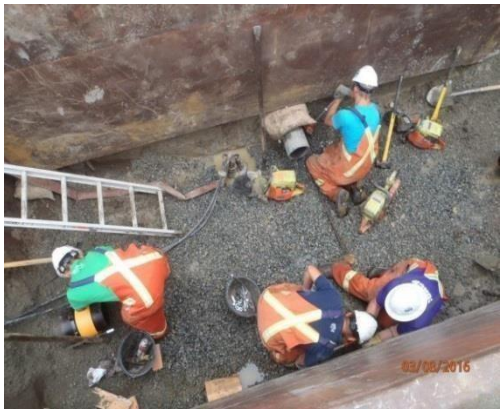
a) **Water Operations Superintendent:** Supervises and provides technical assistance to Operations Crews and provides technical assistance on maintenance and distribution system expansions and upgrades.

b) **Engineering Assistant Meters and Engineering Assistant Construction** Provide Provides technical and organizational assistance to Operations Crews and Management. Assists in data management, research and any duties as deemed from the Water Manager.

c) **Land Development Servicing**
Installs and renews domestic and fire line services throughout the City.

d) **Maintenance & Leak Repair Crew:**
Maintains water services, mains, and appurtenances. Provides emergency repairs to the water system as required. Conducts both proactive and reactive leak detection work using acoustic leak detection equipment and other detection methods. Assists in accurately locating known leaks.

e) **Water Main Tie-in Crew:**
Connects newly constructed mains to existing mains, monitors private contractor's tie-in construction, and records details of work.



Water Main Tie in at 145 St & 109 Ave

f) **Water Quality & Hydrants Crew:**
Performs routine and on-demand flushing of City mains, conducts on-demand testing for chlorine residuals and bacteriological analysis of active and newly constructed City mains, and performs hydrant maintenance.

g) **Water Meter Maintenance & Reading**
Oversees all water meter operations within Surrey which services domestic, commercial, institutional and industrial properties. The program includes investigations, repairs, testing replacement and reading of meters.

C. Flushing Maintenance

To maintain the water quality throughout the distribution system, the City has an annual unidirectional flushing program which aims to flush all mains at least once every five years. The flushing of the mains helps to remove stagnant water and sediment from within the pipes. Unscheduled or "on-demand" flushing is conducted by the City in conjunction with line repairs or water quality test results.

Typical set-up for water hydrant flushing

Figure 3 on page 7, "Unidirectional Flushing Program", shows the water service areas that were flushed. in 2022, 533 km of mains were flushed which is 28% of the total main length.

To avoid flushing during peak water usage in the summer, it is typically carried out in the fall and spring. Uni-direction flushing moves water from a service area's primary source and discharges it through a series of downstream hydrants, ensuring water from non- flushed mains does not flow into recently flushed mains. Water flushed out through the hydrants is treated with a dechlorinating agent to ensure compliance with Ministry of Environment guidelines for water entering streams.

Given the City typically does not have pipeline flow restrictions it does not use abrasive cleaning methods such as pigging and swabbing. As mains come to their end of their life cycle, they are replaced to meet current pipe material specifications and fire flow standards.

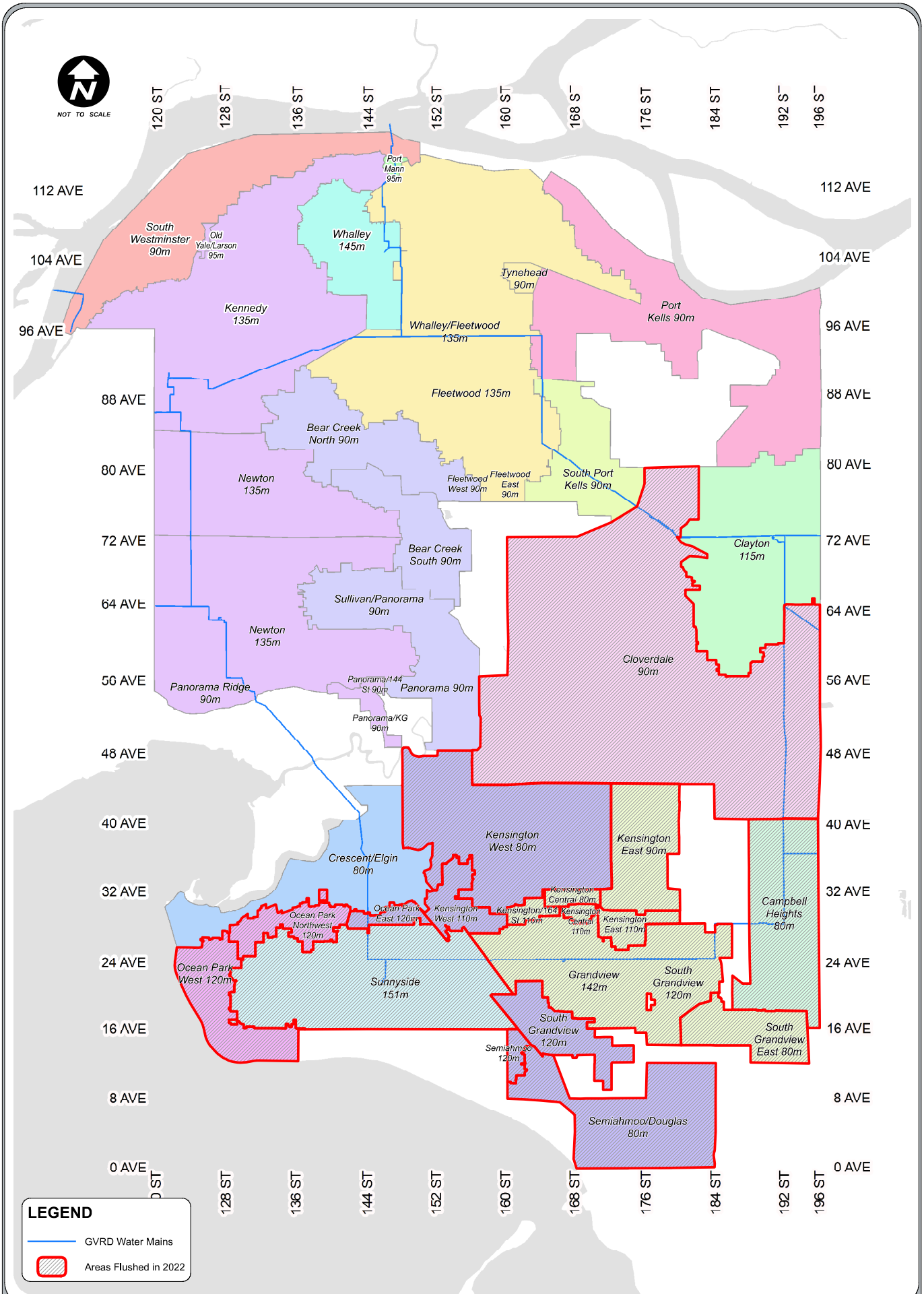


FIG 3: UNIDIRECTIONAL FLUSHING PROGRAM - 2022

D. System Budget

A summary of activities and annual budgets related to water quality preservation is shown in Table 2 (below). The 2022 budget represents 21% of the City's annual Water Utility Operations & Maintenance budget. The remaining 79% is utilized for the operation and maintenance of the City's water valves, meters, and service connections, for the provision of related operational support services, and for electrical power for the water pump stations.

Table 2:
City of Surrey Water Distribution System
2022 and 2023 Water Quality Maintenance Budgets

Description	2022 Budget	2023 Budget
Main Line Repairs	$569,805	$600,263
Line Flushing	$401,545	$422,380
Hydrant Repair/Maintenance	$746,700	$792,727
PRV Maintenance	$304,814	$254,854
Pump Stations Maintenance	$646,828	$580,806
Water Quality Monitoring	$81,800	$85,696
TOTALS*	$2,750,946	$ 2,736,999

* Total Water Distribution System Operations & Maintenance Budget is: $12,019,000 for 2022, and $12,630,000 for 2023.

E. Water Sampling & Testing Program

51 water sampling sites are utilized to monitor the City's water quality. Metro Vancouver staff collect and test samples from these sites on a weekly basis. The Metro Vancouver Laboratory is approved by the Provincial Health Officer for bacteriological analysis and is certified by the Canadian Association for Laboratory Accreditation (CALA) for the testing of general parameters which include metals, trihalomethanes (THM's), total coliforms, and E. coli. The sampling sites and their locations are displayed on page 10 in Figure 4, "Water Sampling Sites Legend" and their locations are shown on page 11, Figure 5, "Water Sampling Sites". The weekly water testing results for 2022 are included in Appendix A.

Water Sampling Station at 148 Street

As per the B.C. Drinking Water Protection Regulation, Schedule B, the minimum monthly samples required by the City is 137. Surrey surpasses this amount by collecting an average 244 samples per month. A summary of the number of samples taken at each sampling station is shown in Appendix A, "Number of Monthly Water Test Samples 2022".

There was no presence of E-coli bacteria detected in the 2983 water samples analyzed in 2022. Six samples tested positive for total coliform bacteria. Each of these samples were detected at different sampling stations, however, with follow up testing no further coliform bacteria were present.
In addition to bacteriological testing, the City's water system is analyzed for pH, disinfection bi-products *Haloacetic acids (HAA5)* and *Trihalomethanes (THM's)* and metal analysis. All results meet the Guidelines for Canadian Drinking Water Quality (GCDWQ) which is located in Appendix A.

pH was measured quarterly at three sampling stations and had an average result of 7.8 Test results are in Appendix A "2022 DBP Data". In June 2021, Metro Vancouver initiated a corrosion control program, by increasing the pH and alkalinity of the region's drinking water through the use of natural minerals. The purpose is to reduce leaks in pipes caused by copper corrosion and help preserve the lifespan of pipes and hot water tanks. For further information visit the following Metro Vancouver web link:
http://www.metrovancouver.org/services/water/engagement/projects-and-initiatives/corrosion-control-program/Pages/default.aspx

THM disinfection by-products averaged 37 parts per billion (ppb) at seven of the sampling stations Test results are in Appendix A "2022 DBP Data".

HAA5 disinfection by-products averaged 35 ppb at seven sampling stations Test results are in Appendix A "2022 DBP Data".

Metal analysis including copper, iron, lead, zinc, chromium, and manganese were analyzed in March and October from three sampling stations. Test results are in Appendix A "2022 Semi Annual Metal Analysis".

Vinyl chloride was not detected from four sampling stations in June and November. Test results are in Appendix A "2022 Vinyl Chloride Results".

Pesticides and herbicides are not tested for as the source water is in a protected watershed, free of these subs tances, and delivered by a closed piping system from Metro Vancouver to the City.

SITE NUMBER	LOCATION	SAMPLED BY
901	17988 93A ST	Metro Vancouver
902	18995 87A AVE	Metro Vancouver
903	19287 98A AVE	Metro Vancouver
904	17815 TRIGGS RD	Metro Vancouver
905	17052 102 AVE	Metro Vancouver
906	10184 161 ST	Metro Vancouver
907	10796 155A ST	Metro Vancouver
908	15985 112 AVE	Metro Vancouver
909	14617 Wellington Dr	Metro Vancouver
910	14396 115 AVE	Metro Vancouver
911	12893 114A AVE	Metro Vancouver
912	10619 TIMBERLAND RD	Metro Vancouver
913	11878 98A AVE	Metro Vancouver
914	10478 132 ST	Metro Vancouver
915	14620 105A AVE	Metro Vancouver
916	13705 97A AVE	Metro Vancouver
917	13031 LANARK PL	Metro Vancouver
918	13738 GLEN PL	Metro Vancouver
919	15091 92A AVE	Metro Vancouver
920	16222 90 AVE	Metro Vancouver
921	17079 80 AVE	Metro Vancouver
922	15508 77 Ave	Metro Vancouver
923	8241 120A ST	Metro Vancouver
924	13710 74 AVE	Metro Vancouver
925	6204 128 ST	Metro Vancouver
926	12049 56 AVE	Metro Vancouver
927	6651 148 ST	Metro Vancouver
928	15335 57 AVE	Metro Vancouver
929	14488 LOMBARD PL	Metro Vancouver
930	3031 139 ST	Metro Vancouver
931	12390 24 Ave	Metro Vancouver
932	1463 126A ST	Metro Vancouver
933	1547 133B ST	Metro Vancouver
934	1662 146 ST	Metro Vancouver
935	16391 11 AVE	Metro Vancouver
936	17195 0 AVE	Metro Vancouver
937	2158 180 ST	Metro Vancouver
938	17214 31 AVE	Metro Vancouver
939	3831 156 ST	Metro Vancouver
940	15877 Croydon Dr	Metro Vancouver
941	16602 Bell Rd	Metro Vancouver
942	5963 176 ST	Metro Vancouver
943	18425 53 AVE	Metro Vancouver
944	6008 189 ST	Metro Vancouver
945	5517 PRODUCTION BLVD	Metro Vancouver
946	6332 195B ST	Metro Vancouver
947	6803 192 ST	Metro Vancouver
948	66 AVE & 172 ST	Metro Vancouver
949	7362 182 ST	Metro Vancouver
951	19255 21 Ave	Metro Vancouver
952	19026 28 AVE	Metro Vancouver

Fig. 4: WATER SAMPLING SITES LEGEND

GIS SECTION

CITY OF SURREY

Source: G:\Mapping\GIS\Maps\Recurring\wtrMainSamplingSitesList_A.mxd
 Date Printed: July 5, 2018

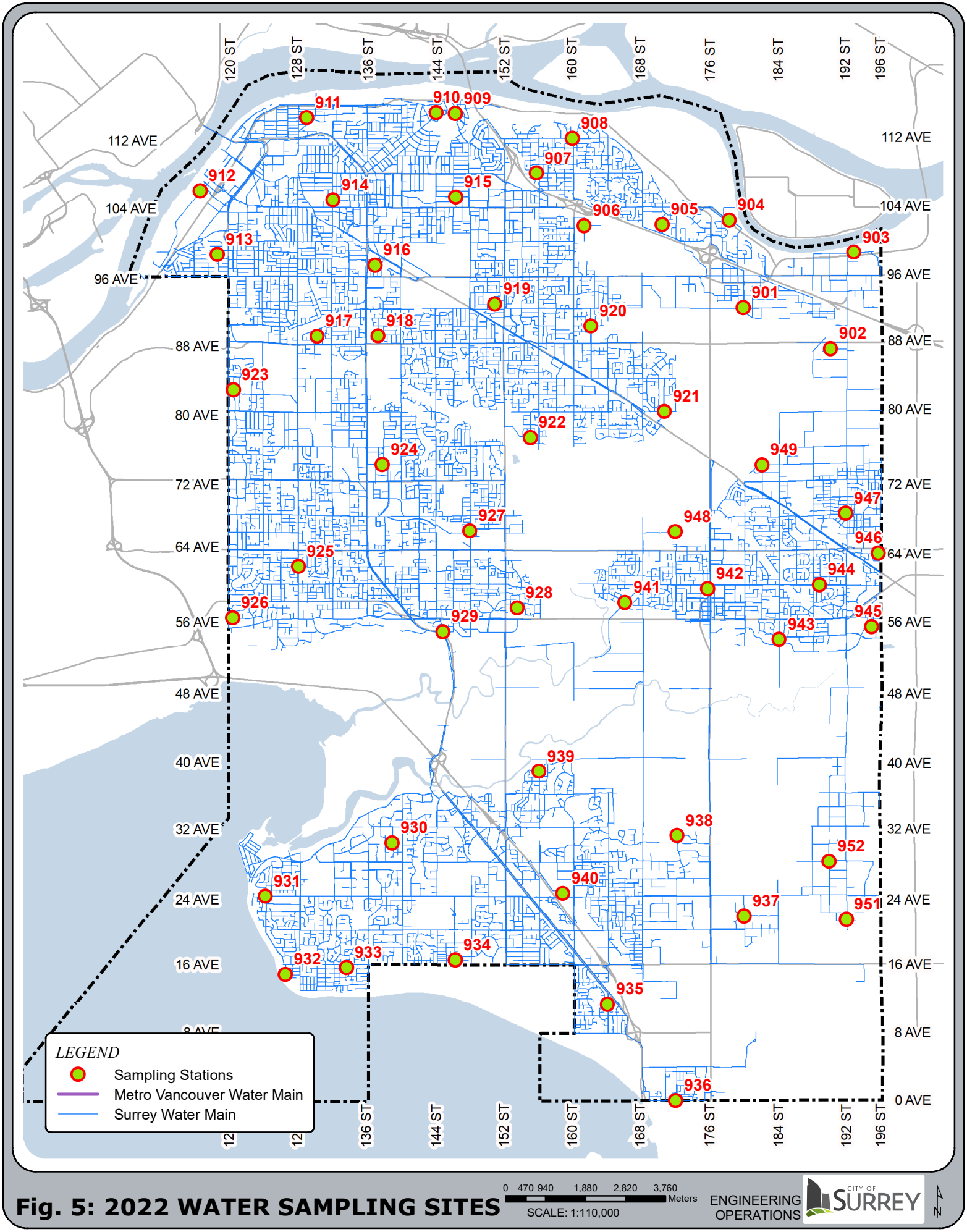


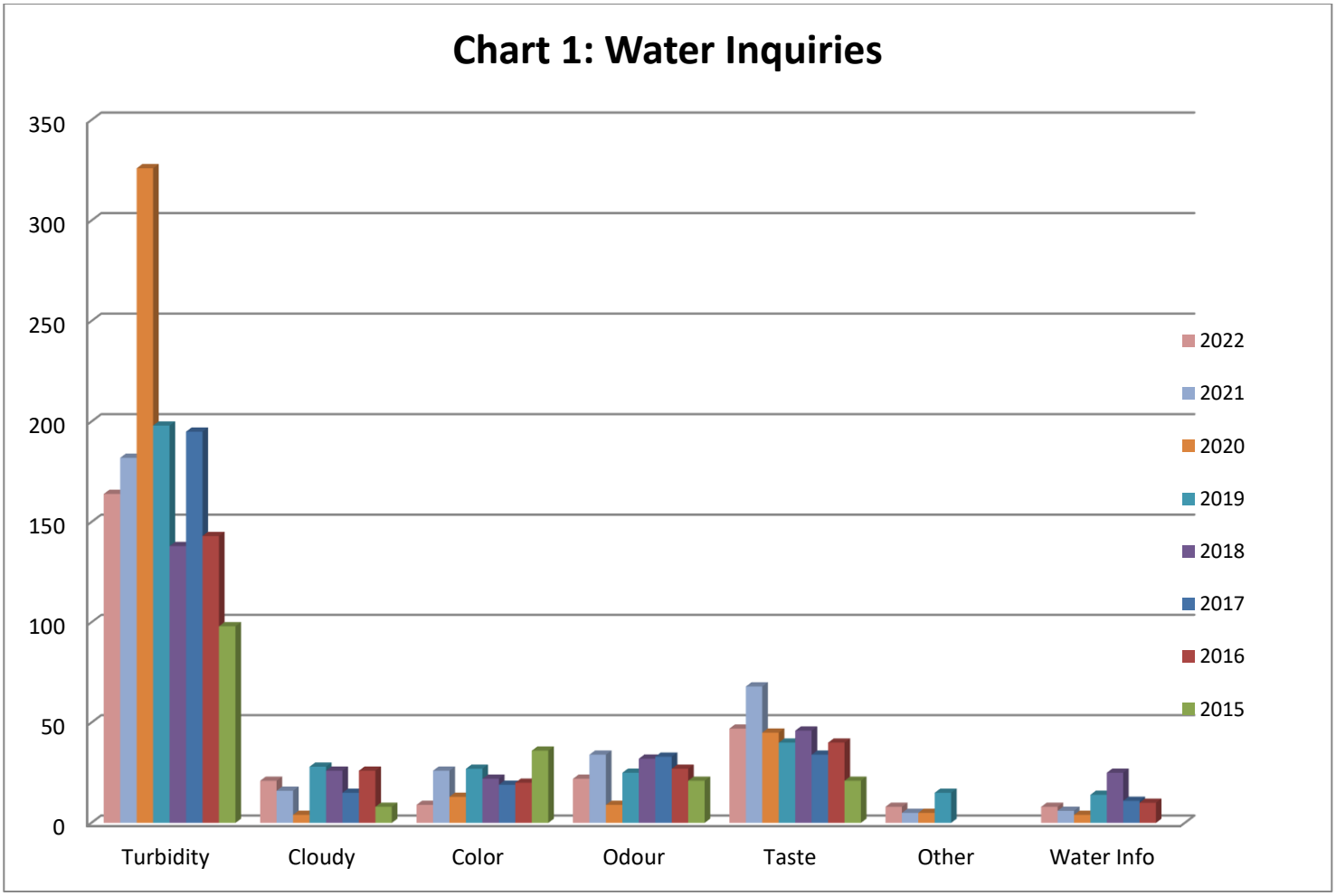
Fig. 5: 2022 WATER SAMPLING SITES

Source: C:\Users\b1h\OneDrive - City of Surrey\Engineering\GIS\maps\2022 wtrMainSamplingSites.mxd
Cartographer: B1H Date: 16-Jan-2023 © City of Surrey

F. Water Quality Inquiries

In 2022, City crews responded to 279 reported water quality issues, which is a decrease of 58 from 2021.

Chart 1: Water Inquiries, illustrates the issues raised in 2022 as well as comparisons to previous years.



Turbidity issues may result from a sudden increase or decrease of water flow in a distribution system due to valve operations, firefighting and power disruption at pumping stations. These situations are often remedied quickly through flushing.

Taste and odour may result from people with sensitivity to low levels of chlorine residual in the system. This is remedied by storing an open jug of water in the fridge or using a charcoal water filter. Other tastes and odours may result from water not being recirculated at a dead-end of a water main and is resolved by flushing.

Cloudy water is the result of increased velocity of water through parts of our system resulting in trapped air bubbles, which are harmless. A glass filled with water will clear from the bottom of the glass upwards, within a few minutes.

Other issues may include pink colour on fixtures or white particles in the hot water side which are caused by internal plumbing issues. Small pebbles and sand may have resulted from a water service or main break. Typically, this is removed by flushing.

The Water Info category refers to public inquires such as questions on Surrey's water quality, water testing, sampling and lead inquiries. The latter continues to remain in compliance with the Guidelines for Canadian Drinking Water Quality

With Surrey's estimated population of 591,700 (2021)[3], the water quality concern responses are 0.05% or approximately 5 inquiries per 10,000 customers.

3 Surrey Population (2021) 591,700 Population Estimates and Projections, https://www.surrey.ca/business-economic- development/business-data/population-estimates-projections

G. Water Quality ResponseNotification

The City, along with Metro Vancouver and its member municipalities, and FHA, have developed a notification procedure for situations affecting water quality. The City adheres to this procedure when line breaks occur or if a contamination condition is suspected. The City, through Metro Vancouver's testing laboratory, also notifies FHA if any E. coli bacteria are detected. This notification procedure is shownbelow.

Water Quality Response Procedure

Situation	Notifying Agency	Agency Notified	Time Frame for Notification
Metro Vancouver E. Coli Positive Sample	Metro Vancouver	Metro Vancouver, MHo City of Surrey	Immediate
Municipal E.Coli Positive Sample	Laboratory[2] City of Surrey[3]	MHO (or delegate)	Immediate
Chemical Contamination – Metro Vancouver	Metro Vancouver	Metro Vancouver, MHO, City of Surrey[1]	Immediate
Chemical Contamination – City of Surrey	City of Surrey	MHO (or delegate)	Immediate
Turbidity 5NTU	Metro Vancouver	Metro Vancouver, MHO, and City of Surrey[1]	Immediate
Disinfection Failure – Source Water (Primary Disinfection)	Metro Vancouver	Metro Vancouver, MHO, and City of Surrey[1]	Immediate (As per DWPA)
Disinfection Failure – Rechlorination (Secondary Disinfection)	Metro Vancouver	Metro Vancouver, MHO, and City of Surrey[1]	Immediate, in any situation in which the BCDWPR or the GCDWQ may not be met.
Loss of Pressure Due to High Demand	City of Surrey	MHO (or delegate), Metro Vancouver	Immediate
Line Break – City of Surrey[4]	City of Surrey	MHO (or delegate)	As soon as possible
Line Break – Metro Vancouver[4]	Metro Vancouver	City of Surrey	Optional
Line Break – City of Surrey[5]	City of Surrey	MHO (or delegate)	Immediate
Line Break – Metro Vancouver[5]	Metro Vancouver	Metro Vancouver, MHO, City of Surrey[1]	Immediate

[1]City of Surrey to notify Fraser Health Authority.
[2]Laboratory to immediately notify the MHO, DWO (or FHA delegates) and the water supplier as per section 12(1) of the DWPA.
[3]City of Surrey to immediately notify the MHO, DWO (or FHA delegates) as per section 12(2) of the DWPA.
[4]With no suspected contamination.
[5]With suspectedcontamination.

H. Water Quality Test Results

Although Six samples tested positive for total coliform bacteria, follow up samples after flushing and re-sampling were negative. At no time was there presence of E-coli bacteria. In addition, water quality is monitored by base indicators which consist of heterotrophic plate counts (HPC), chlorine residuals and turbidity. The increasing presence of HPC and turbidity as well as decreasing chlorine residual may promote the growth of harmful bacteria. When an HPC test result exceeds 500 heterotrophic bacteria colonies per milliliter the City will flush and re-sample. Typically, these results occur during warmer months in low flow areas or dead ends of the water distribution system.

HPC Analysis at MV Labs

In 2022, 0.3% of the samples taken showed HPCs greater than 500 colony forming units (CFU) /mL. Subsequently flushing and increasing chlorine residuals resolved this matter. Table 4 summarizes the incidents of HPCs greater than 500 CFUs from 2012 to 2022 as shown on page 18.
Further, this is illustrated in a graphical representation for the same time period on page 19.

Chlorine residuals are monitored throughout the distribution system as shown on page 16, Fig. 6: “Chlorine Residuals”. The minimum desired concentration is 0.2 mg/L. Citywide, 91% of the chlorine residuals concentrations were greater than 0.2 mg/L as shown in Table 3 on page 17. To continuously monitor chlorine residuals leaving the reservoirs chlorine analyzers are installed at the City’s water pumping stations.

Online chlorine analyzer at Whalley Pump Station

The City continues to monitor areas showing low chlorine residuals and high HPC (>500 CFU/ml) to determine if there is an effective way to improve water quality such as looping dead-end mains.

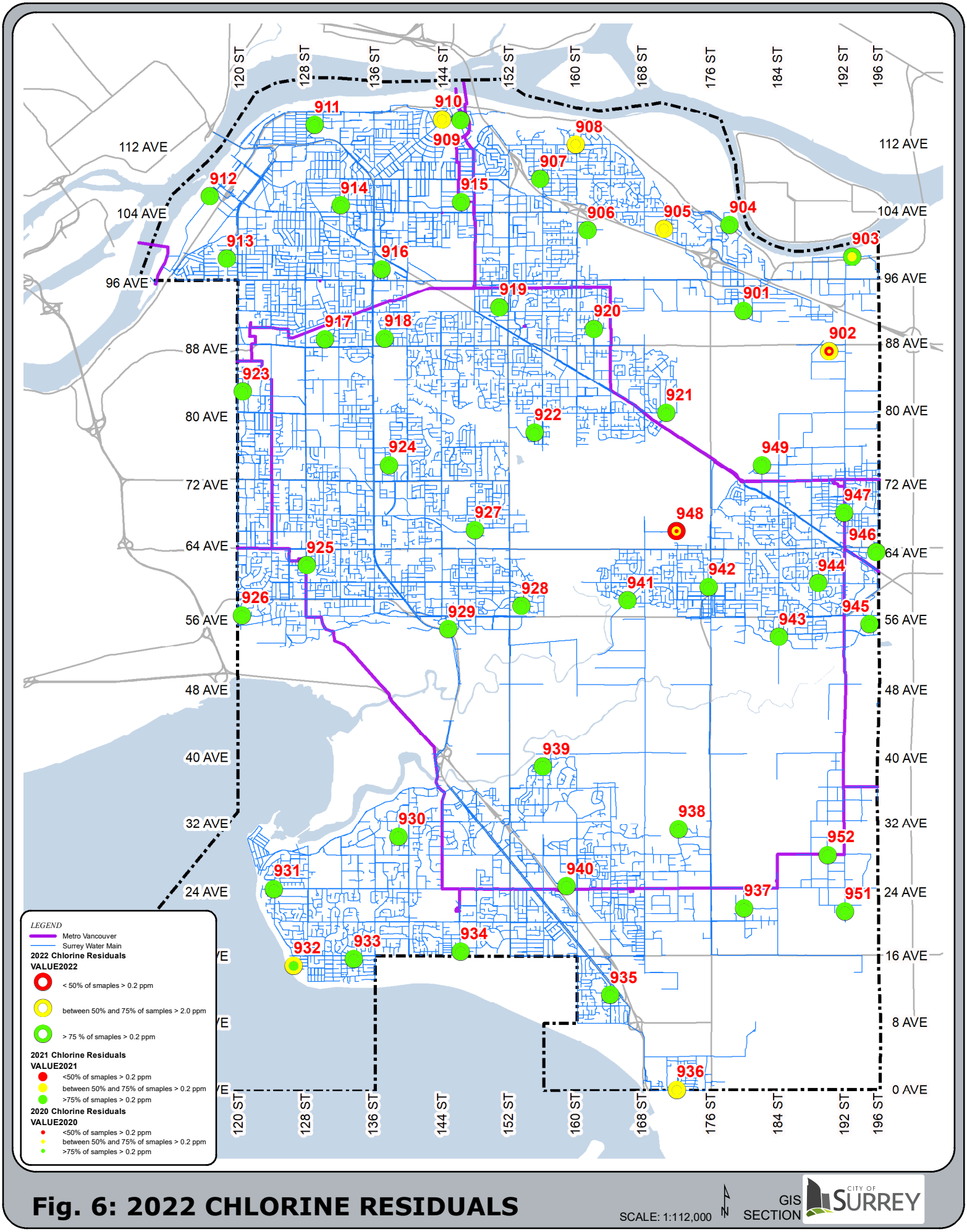


Fig. 6: 2022 CHLORINE RESIDUALS

SCALE: 1:112,000

GIS SECTION CITY OF SURREY

Source: C:\Users\b1h\OneDrive - City of Surrey\Engineering\GIS\maps\2022 Chlorine Residuals Map.mxd
Cartographer: B1H Date: 16-Jan-2023 © City of Surrey

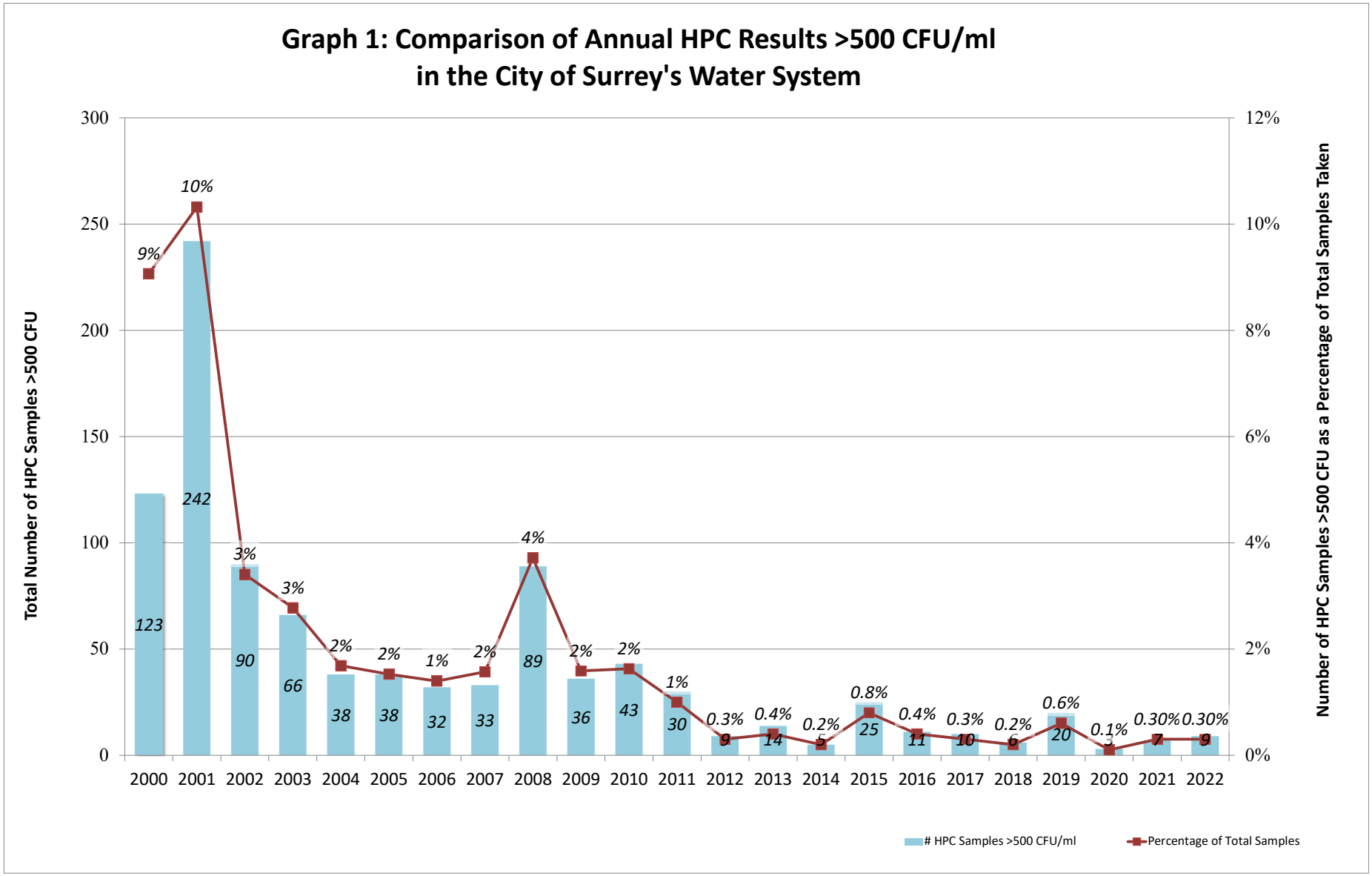
Table 3 Comparisons of Chlorine Residuals Above & Below 0.2 ppm (2020-2022)

Sampling Site	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	No. of Samples Tested	No. of Samples Tested	No. of Samples Tested	< 0.2 ppm	< 0.2 ppm	< 0.2 ppm	> 0.2 ppm	> 0.2 ppm	> 0.2 ppm	< 0.2 ppm	< 0.2 ppm	< 0.2 ppm	> 0.2 ppm	> 0.2 ppm	> 0.2 ppm
SUR 901	61	74	61	10	2	4	51	72	57	16%	3%	7%	84%	97%	93%
SUR 902	68	75	61	29	39	28	39	36	33	43%	52%	46%	57%	48%	54%
SUR 903	65	70	49	26	31	12	39	39	37	40%	44%	24%	60%	56%	76%
SUR 904	59	57	56	2	0	0	57	57	56	3%	0%	0%	97%	100%	100%
SUR 905	64	68	63	28	29	16	36	39	47	44%	43%	25%	56%	57%	75%
SUR 906	60	63	64	3	8	4	57	55	60	5%	13%	6%	95%	87%	94%
SUR 907	62	68	66	0	3	3	62	65	63	0%	4%	5%	100%	96%	95%
SUR 908	64	71	65	27	34	25	37	37	40	42%	48%	38%	58%	52%	62%
SUR 909	62	59	63	0	0	0	62	59	63	0%	0%	0%	100%	100%	100%
SUR 910	60	56	56	24	19	16	36	37	40	40%	34%	29%	60%	66%	71%
SUR 911	62	55	65	1	3	16	61	52	49	2%	5%	25%	98%	95%	75%
SUR 912	58	53	55	10	9	12	48	44	43	17%	17%	22%	83%	83%	78%
SUR 913	63	58	58	0	0	0	63	58	58	0%	0%	0%	100%	100%	100%
SUR 914	62	55	55	1	1	2	61	54	53	2%	2%	4%	98%	98%	96%
SUR 915	62	57	53	0	0	0	62	57	53	0%	0%	0%	100%	100%	100%
SUR 916	58	54	55	1	0	0	57	54	55	2%	0%	0%	98%	100%	100%
SUR 917	53	54	62	0	0	0	53	54	62	0%	0%	0%	100%	100%	100%
SUR 918	58	53	56	12	0	0	46	53	56	21%	0%	0%	79%	100%	100%
SUR 919	63	62	62	0	1	0	63	61	62	0%	2%	0%	100%	98%	100%
SUR 920	61	64	57	2	7	4	59	57	53	3%	11%	7%	97%	89%	93%
SUR 921	60	59	63	1	0	0	59	59	63	2%	0%	0%	98%	100%	100%
SUR 922	62	63	63	9	11	13	53	52	50	15%	17%	21%	85%	83%	79%
SUR 923	60	56	55	0	2	0	60	54	55	0%	4%	0%	100%	96%	100%
SUR 924	56	53	54	0	0	0	56	53	54	0%	0%	0%	100%	100%	100%
SUR 925	60	49	52	0	0	0	60	49	52	0%	0%	0%	100%	100%	100%
SUR 926	59	58	54	0	0	0	59	58	54	0%	0%	0%	100%	100%	100%
SUR 927	60	55	51	0	1	0	60	54	51	0%	2%	0%	100%	98%	100%
SUR 928	55	55	70	2	7	12	53	48	58	4%	13%	17%	96%	87%	83%
SUR 929	59	56	61	8	5	9	51	51	52	14%	9%	15%	86%	91%	85%
SUR 930	60	57	52	0	9	3	60	48	49	0%	16%	6%	100%	84%	94%
SUR 931	62	60	53	8	8	1	54	52	52	13%	13%	2%	87%	87%	98%
SUR 932	63	64	59	3	16	17	60	48	42	5%	25%	29%	95%	75%	71%
SUR 933	62	63	54	1	0	0	61	63	54	2%	0%	0%	98%	100%	100%
SUR 934	62	68	64	0	0	0	62	68	64	0%	0%	0%	100%	100%	100%
SUR 935	61	64	61	0	0	0	61	64	61	0%	0%	0%	100%	100%	100%
SUR 936	67	66	57	32	22	22	35	44	35	48%	33%	39%	52%	67%	61%
SUR 937	61	68	62	12	16	12	49	52	50	20%	24%	19%	80%	76%	81%
SUR 938	60	67	65	5	4	1	55	63	64	8%	6%	2%	92%	94%	98%
SUR 939	58	55	57	0	0	1	58	55	56	0%	0%	2%	100%	100%	98%
SUR 940	62	66	56	0	0	0	62	66	56	0%	0%	0%	100%	100%	100%
SUR 941	58	53	57	1	2	1	57	51	56	2%	4%	2%	98%	96%	98%
SUR 942	62	64	60	0	0	0	62	64	60	0%	0%	0%	100%	100%	100%
SUR 943	66	72	59	1	0	0	65	72	59	2%	0%	0%	98%	100%	100%
SUR 944	60	69	61	0	0	1	60	69	60	0%	0%	2%	100%	100%	98%
SUR 945	63	76	63	2	3	0	61	73	63	3%	4%	0%	97%	96%	100%
SUR 946	57	62	53	0	0	0	57	62	53	0%	0%	0%	100%	100%	100%
SUR 947	60	60	51	0	0	0	60	60	51	0%	0%	0%	100%	100%	100%
SUR 948	60	55	62	37	17	47	23	38	15	62%	31%	76%	38%	69%	24%
SUR 949	61	63	54	0	0	1	61	63	53	0%	0%	2%	100%	100%	98%
SUR 951	50	64	55	1	2	0	49	62	55	2%	3%	0%	98%	97%	100%
SUR 952	64	72	63	0	0	0	64	72	63	0%	0%	0%	100%	100%	100%
Total	**3095**	**3138**	**2983**	**299**	**311**	**283**	**2796**	**2827**	**270**	**10%**	**10%**	**9%**	**90%**	**90%**	**91%**

Table 4: 2012 to 2022 HPC Positive Samples Summary >500 CFU/ml

	No. of Samples Tested											No. of Samples > 500 CFU/ml											% of Samples > 500 CFU/ml									
Sampling Site	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
901	63	83	69	60	60	67	60	67	61	74	61	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
902	65	81	69	65	64	74	61	60	68	75	61	0	0	0	0	0	1	0	1	0	0	0	0%	0%	0%	0%	0%	1%	0%	2%	0%	0%
903	64	81	72	67	64	69	64	69	65	70	49	0	0	0	0	0	0	1	4	1	0	1	0%	0%	0%	0%	0%	0%	2%	6%	2%	0%
904	62	79	70	60	57	65	60	59	59	57	56	0	0	2	0	0	0	0	0	0	0	0	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%
905	56	79	70	72	58	66	55	59	64	68	63	0	0	0	13	0	0	0	0	0	0	0	0%	0%	0%	0%	18%	0%	0%	0%	0%	0%
906	71	73	74	62	55	58	64	61	60	63	64	0	1	0	0	0	0	0	0	0	0	0	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
907	62	80	69	68	55	63	57	53	62	68	66	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
908	62	79	70	68	57	63	56	57	64	71	65	0	0	0	0	0	1	0	0	0	0	0	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
909	86	77	71	64	54	59	65	68	62	59	63	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
910	88	80	69	65	54	59	65	67	60	56	56	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
911	88	81	71	72	59	62	63	72	62	55	65	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
912	85	81	68	69	56	62	61	63	58	53	55	3	3	0	0	4	0	0	0	0	0	0	4%	4%	4%	0%	0%	0%	0%	0%	0%	0%
913	87	82	72	69	54	62	61	67	63	58	58	0	0	0	0	1	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
914	88	80	67	68	54	63	65	66	62	55	55	0	0	0	0	0	0	0	1	0	0	4	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
915	84	80	71	68	54	63	71	71	62	57	53	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
916	84	79	75	62	54	60	64	70	58	54	55	0	3	1	0	0	0	0	0	0	1	0	0%	0%	4%	1%	0%	0%	0%	0%	0%	2%
917	86	80	71	61	52	60	63	64	53	54	62	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
918	85	78	73	66	53	58	63	62	58	53	56	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
919	77	70	63	57	54	57	62	65	63	62	62	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
920	74	73	66	59	57	58	38	61	61	64	57	0	0	0	3	0	0	0	0	0	0	0	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%
921	75	74	75	61	57	63	66	70	60	59	63	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
922	73	71	76	61	55	59	64	66	62	63	63	0	0	0	1	3	0	0	0	0	0	0	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
923	87	81	68	67	55	62	61	67	60	56	55	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
924	70	67	72	65	53	56	62	58	56	53	54	0	1	0	0	0	0	0	0	0	0	0	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
925	52	51	49	53	59	58	62	62	60	49	52	0	0	0	0	0	0	0	0	0	2	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%
926	51	51	48	52	55	57	66	67	59	58	54	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
927	51	51	48	52	51	59	65	66	60	55	51	0	0	0	0	0	0	0	0	1	2	0	0%	0%	0%	0%	0%	0%	0%	0%	2%	4%
928	52	51	47	52	56	59	64	62	55	55	70	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
929	51	51	47	52	57	57	67	70	59	56	61	0	0	0	3	0	0	0	0	0	0	0	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%
930	51	48	50	53	59	62	61	66	60	57	52	0	0	0	0	0	0	0	3	0	0	0	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
931	51	50	50	51	60	62	61	67	62	60	53	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
932	52	50	49	54	57	60	64	66	63	64	59	0	0	0	0	0	0	0	2	0	0	0	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%
933	53	50	49	51	61	63	64	69	62	63	54	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
934	52	50	49	51	62	63	67	68	62	68	64	0	0	0	0	0	1	0	0	0	0	0	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
935	52	50	49	51	61	59	64	71	61	64	61	0	0	0	0	1	0	0	0	0	1	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
936	52	50	50	51	56	58	63	63	67	66	57	0	1	0	1	0	0	1	6	0	0	0	0%	0%	2%	0%	2%	0%	2%	10%	0%	0%
937	52	51	49	51	60	62	63	68	61	68	62	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
938	52	51	49	51	60	59	67	66	60	67	65	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
939	53	50	49	51	58	63	65	60	58	55	57	0	1	0	0	0	0	0	0	0	0	0	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
940	53	51	49	51	60	61	65	66	62	66	56	0	1	0	0	0	0	0	0	0	0	0	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
941	51	51	48	51	60	59	66	66	58	53	57	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
942	51	51	47	52	57	55	57	59	62	64	60	0	0	0	0	0	1	0	0	1	0	0	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
943	52	51	50	51	62	63	64	69	66	72	59	0	0	0	0	1	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
944	51	51	47	52	62	60	65	66	60	69	61	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
945	51	51	47	52	60	65	64	65	63	76	63	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
946	49	51	47	53	59	54	57	52	57	62	53	0	0	1	0	0	1	0	1	0	0	0	0%	0%	0%	2%	0%	2%	0%	2%	0%	0%
947	33	49	48	52	59	59	57	61	60	60	51	0	0	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
948	51	51	47	53	61	57	63	71	60	55	62	0	0	0	0	0	5	2	2	0	1	3	0%	0%	0%	0%	0%	9%	3%	3%	0%	2%
949	98	96	81	72	69	65	61	60	61	63	54	0	0	0	1	0	0	0	0	0	0	0	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
951	52	51	49	50	62	62	40	51	50	64	55	5	3	1	2	1	0	2	0	0	0	0	10%	10%	6%	2%	4%	0%	5%	0%	0%	0%
952	52	49	49	50	62	65	63	70	64	72	63	1	0	0	1	0	0	0	0	0	0	0	2%	2%	0%	0%	2%	0%	0%	0%	0%	0%
TOTALS	3243	3277	3032	2971	2950	3114	3156	3289	3095	3138	2983	9	14	5	25	11	10	6	20	3	7	9	0.3%	0.3%	0.4%	0.2%	1%	0.3%	0.2%	0.6%	0.1%	0.3%

Graph 1: Comparison of Annual HPC Results >500 CFU/ml in the City of Surrey's Water System



I. Water System Security

A combination of measures is utilized to provide security for the distribution system. All pump stations utilize external security lighting and have locked access doors and/or ground hatches that are surrounded by security fencing. They also have intrusion alarms which are monitored by a SCADA system. There were no reported incidences of tampering or vandalism with the City's water system in 2022.

J. Backflow Prevention and Cross Connection Control

To protect the quality of the water distributed, the City minimizes the risk of backflow occurrence in the system by ensuring that adequate pressure is maintained above 40 psi during peak demand conditions and above 20 psi during emergency conditions, including fire and main breaks.

Additionally, the City administers a comprehensive Cross Connection Control (CCC) program to minimize the risk of contaminants originating from private properties entering into City's water network and private property's plumbing system. The program includes enforcement of annual testing of backflow preventers, installation of backflow preventers for all new construction (plumbing permit requirement) and existing industrial, commercial and institutional (ICI) properties by a cross connection survey requirement.

Annual testing of back flow preventers is required by the City. Owners that are found to be in non-compliance were notified to comply or face By-law enforcement as per the Surrey Waterworks Cross Connection Control By-law 2013, No. 17988.

In 2022, the number of testable backflow preventers registered with the City increased by 888 (6%) for a total of 15,574 assemblies. The number of assemblies in compliance is 94 % in 2022, which is a 3% decrease from 2021.

The City of Surrey remains diligent in maintaining its water distribution system to high quality standards and in ensuring the delivery of high-quality water to the City's residents and businesses.

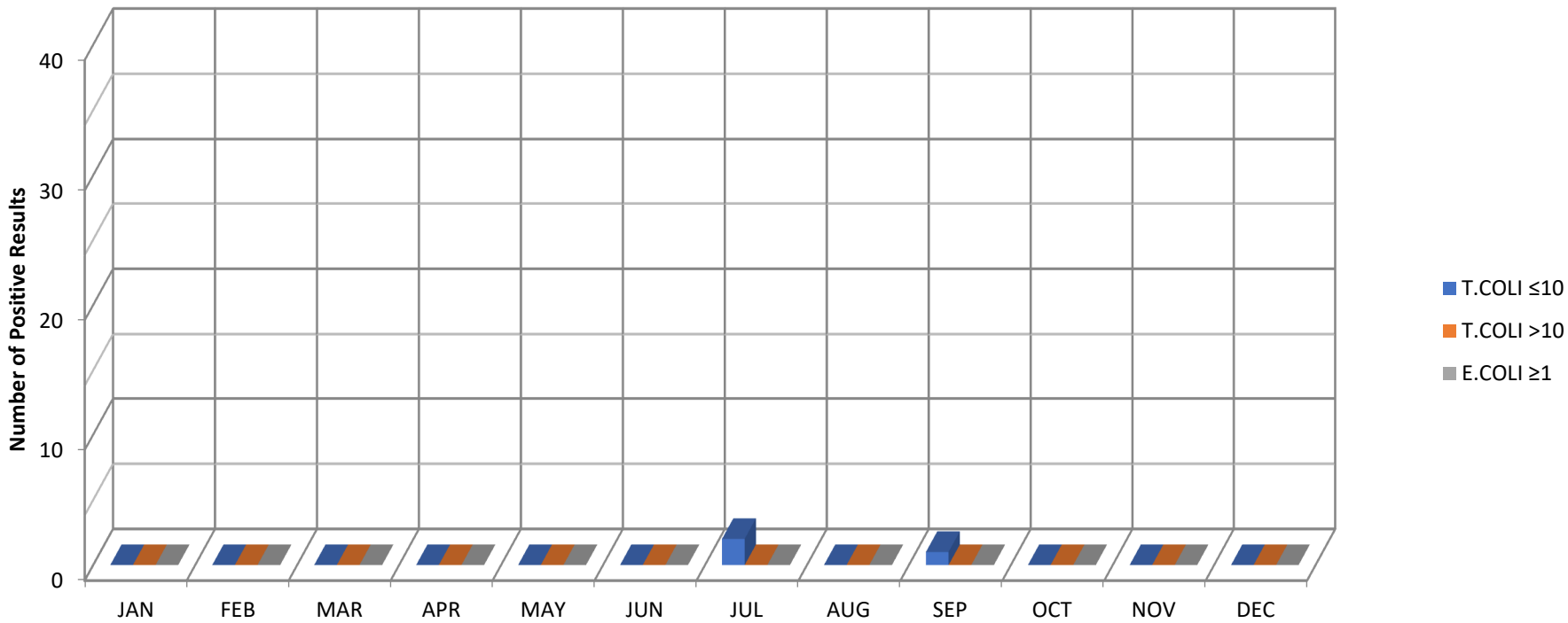
K. Water Emergency Response Plan

Water emergency response is governed by Metro Vancouver and the City of Surrey. Source water from the North shore watersheds to the City of Surrey supply mains are the responsibility of Metro Vancouver (MV). Any emergency response or incident via manmade or natural disaster will enact MV Water Continuity Plan. Likewise, any situation within the boundaries of the City will enact Surrey's Water Continuity Plan. Emergency responses may include but are not limited to loss of MV water supply, water quality degradation, and seismic hazards and flooding. Surrey's plan is continually being updated as new information and best practices are observed. Surrey works closely with Fraser Health in plan review and updates.

APPENDIX A

2022 Water Quality Laboratory Test Results

2022 T. Coliform and E.Coli Positive Test Results



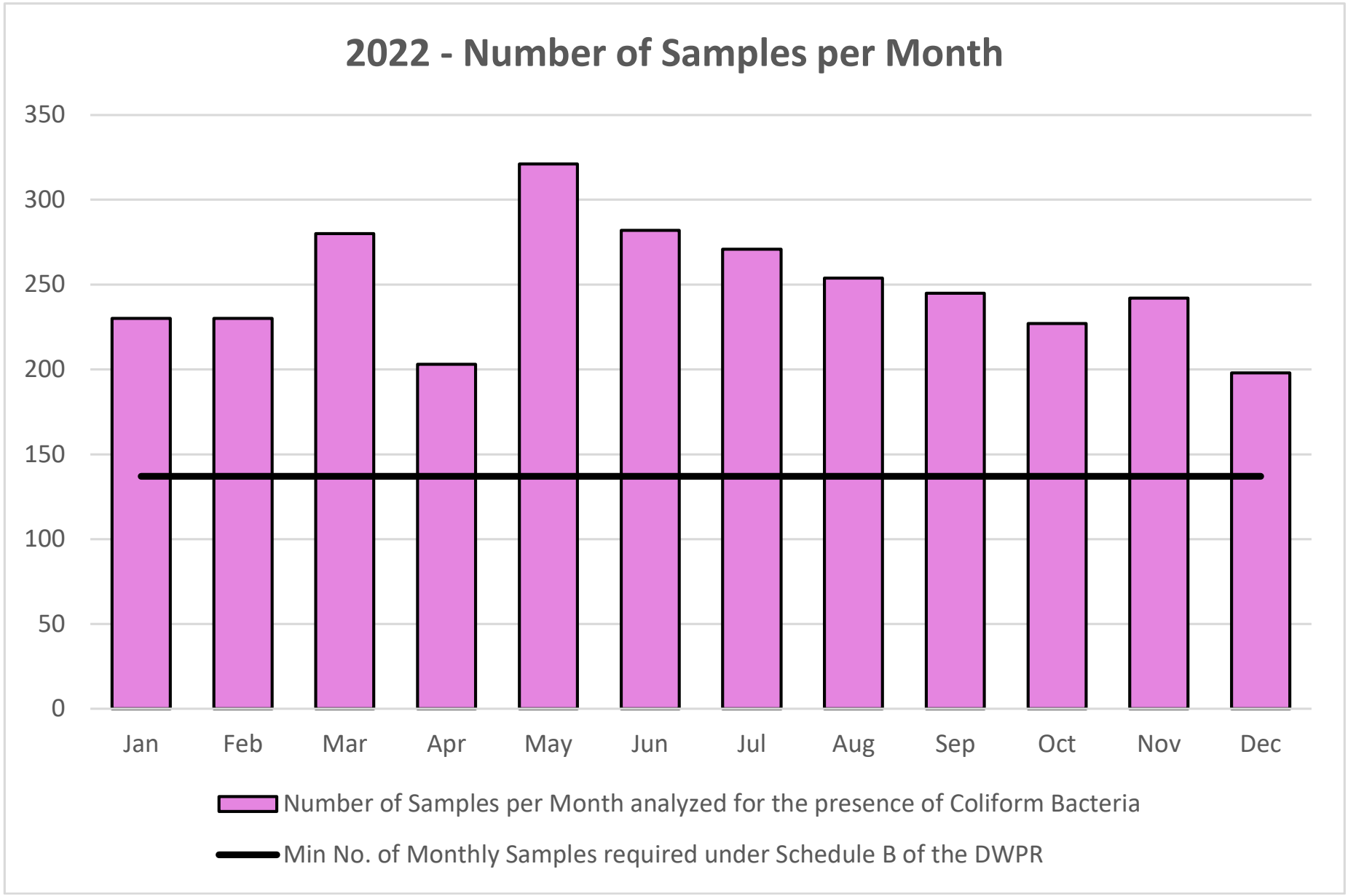
As per the BC Drinking Water Protection Regulation:
No Samples are allowed to test postive for E. coli
Only 10% of samples tested within a 30 day period can test positive for T. Coliform
No samples can test positivie for greater than 10 coliform bacteriai per 100ml

Analysis by Metro Vancouver Labratories

Number of Monthly Water Test Samples (2022)

SITE	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Station Total
901	4	5	7	4	6	5	7	5	4	6	5	3	61
902	5	4	6	4	6	5	7	5	4	7	5	3	61
903	6	4	5	2	6	5	3	5	4	5	3	1	49
904	5	5	5	4	4	6	7	5	4	4	3	4	56
905	6	5	7	5	6	5	8	5	4	4	4	4	63
906	5	7	6	5	6	5	6	5	5	6	4	4	64
907	6	6	7	5	7	7	8	5	5	4	3	3	66
908	6	6	7	5	7	7	8	5	5	4	3	2	65
909	5	6	5	4	5	6	5	5	6	4	5	7	63
910	4	6	5	3	5	6	5	5	5	4	2	6	56
911	4	7	4	4	6	9	6	5	5	6	4	5	65
912	4	6	4	4	5	6	6	5	4	5	4	2	55
913	4	6	3	4	7	6	6	5	4	5	4	4	58
914	4	7	4	4	6	8	5	4	4	5	4	0	55
915	5	4	5	4	7	4	5	4	5	4	3	3	53
916	5	3	2	2	6	6	7	5	5	4	5	5	55
917	5	6	5	2	6	8	5	5	5	5	4	6	62
918	5	5	4	2	6	8	5	4	5	4	3	5	56
919	4	6	6	4	8	6	6	4	5	6	3	4	62
920	5	5	6	4	6	6	6	4	5	6	4	0	57
921	4	5	5	4	7	6	5	5	5	6	7	4	63
922	5	5	6	4	7	6	6	4	5	6	6	3	63
923	4	6	4	5	5	6	5	4	4	4	5	3	55
924	5	6	5	2	5	5	5	5	5	4	3	4	54
925	5	3	5	3	5	5	5	5	5	4	4	3	52
926	5	4	5	3	5	5	5	5	5	4	5	3	54
927	4	4	5	2	6	4	5	4	4	4	5	4	51
928	4	5	8	5	7	4	6	5	7	4	7	8	70
929	5	5	5	3	7	4	6	5	5	4	7	5	61
930	3	3	6	4	6	4	4	6	5	3	4	4	52
931	3	3	6	4	6	5	4	6	5	3	4	4	53
932	3	4	6	4	6	6	4	6	5	4	7	4	59
933	3	3	6	4	6	6	4	5	5	3	5	4	54
934	4	4	6	4	7	7	5	5	7	5	7	3	64
935	5	4	6	4	7	6	4	6	5	5	7	2	61
936	5	4	6	4	7	6	5	6	5	5	4	0	57
937	5	3	5	5	8	6	4	6	5	4	6	5	62
938	4	3	6	5	8	6	5	6	5	4	7	6	65
939	3	4	6	4	7	5	4	6	4	4	4	6	57
940	6	4	6	4	6	4	4	5	5	4	5	3	56
941	5	5	5	4	5	4	6	3	5	4	5	6	57
942	5	3	6	5	7	5	5	5	5	4	6	4	60
943	5	4	7	5	7	5	4	5	5	4	5	3	59
944	4	3	6	5	7	5	5	6	5	4	6	5	61
945	4	3	7	5	8	5	5	6	5	4	5	6	63
946	4	3	6	5	5	6	7	5	4	3	3	2	53
947	4	3	5	4	5	5	4	5	4	3	5	4	51
948	5	5	6	3	6	4	6	4	5	7	6	5	62
949	4	3	5	5	6	4	5	5	4	4	5	4	54
951	4	3	5	5	8	4	4	4	4	4	5	5	55
952	4	4	6	5	8	5	4	6	5	4	7	5	63
Monthly Total	**230**	**230**	**280**	**203**	**321**	**282**	**271**	**254**	**245**	**227**	**242**	**198**	**2983**

Monthly Min	198
Monthly Max	321
Monthly Med	244


2022 - Number of Samples per Month
350
300
250
200
150
100
50
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Number of Samples per Month analyzed for the presence of Coliform Bacteria
Min No. of Monthly Samples required under Schedule B of the DWPR

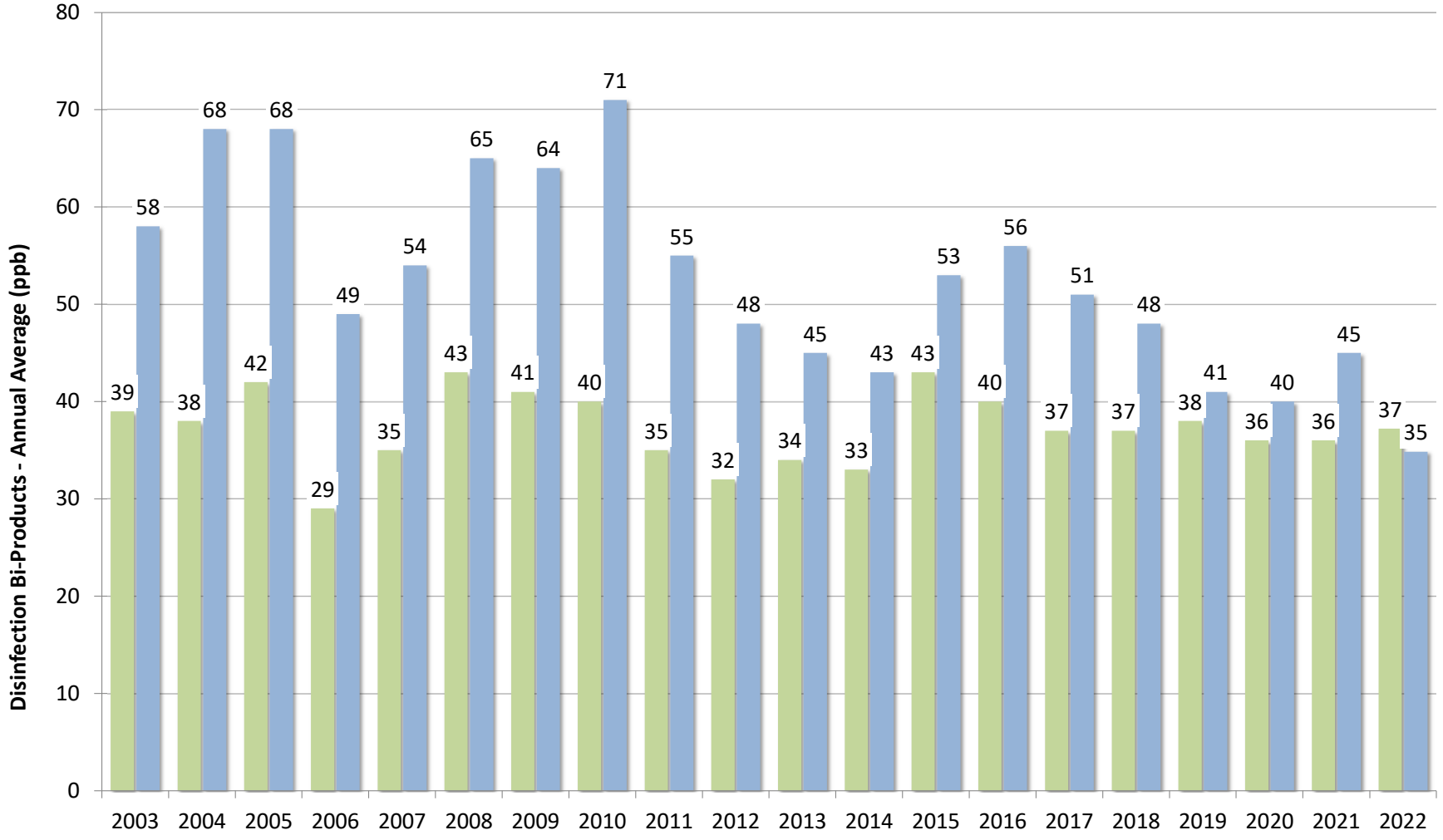
City of Surrey

2022 Disinfection By-Products (THM, HAA) & pH Monitoring Results

Sample Station ID	Sample Station Location	Date Sampled	THM (ppb)							HAA (µg/L)								pH units
			Bromodichloromethane	Bromoform	Chlorodibromomethane	Chloroform	Total Trihalomethanes	**Total THM Quarterly Average (Guileline Limit 100ppb/mL)**		Dibromoacetic Acid	Dichloroacetic Acid	Monobromoacetic Acid	Monochloroacetic Acid	Trichloroacetic Acid	Total Haloacetic Acid	**Total HAA Quarterly Average (Guileline Limit 80ppb/mL)**		
SUR-902	18995 87A Ave	15-Feb-22	<1	<1	<1	27	29	**34**		<0.5	6.1	<5.0	<5.0	9.7	16	**30**		
SUR-902		10-May-22	1	<1	<1	45	46	**37**		<0.5	16	<0.5	1.6	34	52	**32**		
SUR-902		24-Aug-22	<1	<1	<1	49	49	**39**		<0.5	5.6	<0.5	<5.0	25	31	**34**		
SUR-902		15-Nov-22	1	<1	<1	40	42	**42**		<0.5	1.4	<0.5	<5.0	27	28	**32**		
SUR-922	7768 155 St.	18-Feb-22	<1	<1	<1	20	21	**32**		<0.5	8.4	<0.5	<0.5	7.8	16	**31**		7.7
SUR-922		10-May-22	<1	<1	<1	37	38	**33**		<0.5	14	<0.5	1	27	42	**31**		7.8
SUR-922		23-Aug-22	1.1	<1	<1	49	50	**36**		<0.5	3.2	<0.5	<5.0	24	27	**30**		7.7
SUR-922		15-Nov-22	1	<1	<1	30	31	**35**		<0.5	1.6	<0.5	0.6	16	18	**26**		7.7
SUR-926	12059 56 Ave	18-Feb-22	<1	<1	<1	21	22	**30**		<0.5	9.3	<0.5	0.5	7.7	18	**25**		
SUR-926		10-May-22	<1	<1	<1	30	31	**30**		<0.5	12	<0.5	0.6	8.9	21	**21**		
SUR-926		23-Aug-22	<1	<1	<1	35	35	**30**		<0.5	6.3	<0.5	0.6	13	20	**19**		
SUR-926		15-Nov-22	1	<1	<1	26	27	**29**		<0.5	11	<0.5	0.8	8.5	20	**20**		
SUR-928	15349 57 Ave	18-Feb-22	<1	<1	<1	25	26	**36**		<0.5	7.4	<5.0	<0.5	9.7	17	**25**		
SUR-928		10-May-22	<1	<1	<1	34	36	**35**		<0.5	7.7	<0.5	0.5	11	19	**20**		
SUR-928		23-Aug-22	1	<1	<1	47	48	**38**		<0.5	2.3	<0.5	<5.0	18	20	**18**		
SUR-928		15-Nov-22	1	<1	<1	35	36	**37**		<0.5	8.6	<0.5	<5.0	8.4	18	**19**		
SUR-930	SW Entrance to Parkway, South of 303 139 St.	16-Feb-22	<1	<1	<1	41	42	**41**		<0.5	21	<0.5	1.6	31	54	**53**		7.9
SUR-930		12-May-22	1	<1	<1	45	47	**43**		<0.5	23	<0.5	1.3	38	62	**52**		7.9
SUR-930		25-Aug-22	<1	<1	<1	44	44	**43**		<0.5	18	<0.5	1.1	29	49	**51**		7.9
SUR-930		17-Nov-22	2	<1	<1	41	44	**44**		<0.5	3.4	<0.5	0.5	23	27	**48**		7.8
SUR-931	124 St. & 24 Ave	16-Feb-22	<1	<1	<1	40	42	**42**		<0.5	19	<0.5	0.6	27	47	**50**		
SUR-931		12-May-22	1	<1	<1	44	46	**43**		<0.5	19	<0.5	1.3	34	54	**49**		
SUR-931		25-Aug-22	<1	<1	<1	45	45	**44**		<0.5	11	<0.5	0.9	30	42	**46**		
SUR-931		17-Nov-22	1	<1	<1	36	39	**43**		<0.5	3	<0.5	0.5	20	23	**42**		
SUR-940	24 Ave., by South Depot	16-Feb-22	<1	<1	<1	32	34	**34**		<0.5	16	<0.5	<5.0	22	39	**46**		7.9
SUR-940		12-May-22	<1	<1	<1	36	38	**36**		<0.5	18	<0.5	1	28	46	**46**		7.9
SUR-940		25-Aug-22	<1	<1	<1	50	50	**39**		<0.5	17	<0.5	<5.0	26	45	**44**		7.9
SUR-940		17-Nov-22	2	<1	<1	37	39	**40**		<0.5	7.8	<0.5	0.6	17	25	**39**		7.9

ıalysis by Metro Vancouver Laboratory

Comparison of Annual Disinfection Bi-Product Averages in the City of Surrey's Water System (2003-2022)



Note:GCDWQ acceptable concentration for THMs is 100 ppb, and 80 ppb for HAAs

2022 Semi-annual Metals Monitoring Results

Sample Station ID	Sample Station Location	Date & Time Sampled	Aluminum Total	Antimony Total	Arsenic Total	Barium Total	Boron Total	Cadmium Total	Calcium Total	Chromium Total	Cobalt Total	Copper Total	Iron Total	Lead Total	Magnesium Total	Manganese Total	Mercury Total	Molybdenum Total	Nickel Total	Potassium Total	Selenium Total	Silver Total	Sodium Total	Zinc Total
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SUR-922	7768 - 155 St.	4-May-22	86	<0.5	<0.5	1.6	<10	<0.2	1600	0.05	<0.5	2.1	51	<0.5	91	5.1	<0.05	<0.5	<0.5	110	<0.5	<0.5	10600	<3.0
		9-Nov-22	67	<0.5	<0.5	2.8	<10	<0.3	2180	0.08	<0.5	4.4	56	<0.5	118	2.8	<0.05	<0.5	<0.5	151	<0.5	<0.5	9410	4.9
SUR-928	15349 - 57 Ave.	4-May-22	39	<0.5	<0.5	3.2	<10	<0.2	8070	0.1	<0.5	0.9	14	<0.5	173	2.6	<0.05	<0.5	<0.5	154	<0.5	<0.5	2580	<3.0
		9-Nov-22	41	<0.5	<0.5	4.4	<10	<0.2	8190	0.1	<0.5	1.0	25	<0.5	206	7.3	<0.05	<0.5	<0.5	227	<0.5	<0.5	2600	<3.0
SUR-931	124 St. & 24 Ave.	3-May-22	74	<0.5	<0.5	2.1	<10	<0.2	1820	0.06	<0.5	0.8	42	<0.5	85	2.7	<0.05	<0.5	<0.5	109	<0.5	<0.5	9910	<3.0
		8-Nov-22	79	<0.5	<0.5	2.8	<10	<0.2	1480	0.1	<0.5	1.3	63	<0.5	94	2.4	<0.05	<0.5	<0.5	142	<0.5	<0.5	10800	<3.0
[1]Canadian Guideline Limit (ppb)			200	6	10	2000	5000	7	none	50	none	2000	300	5	none	120	1	none	none	none	50	none	200K	5000

[1]Guidelines for Canadian Drinking water Quality, Health Canada, Sept 2020

Analysis by Metro Vancouver Laboratory

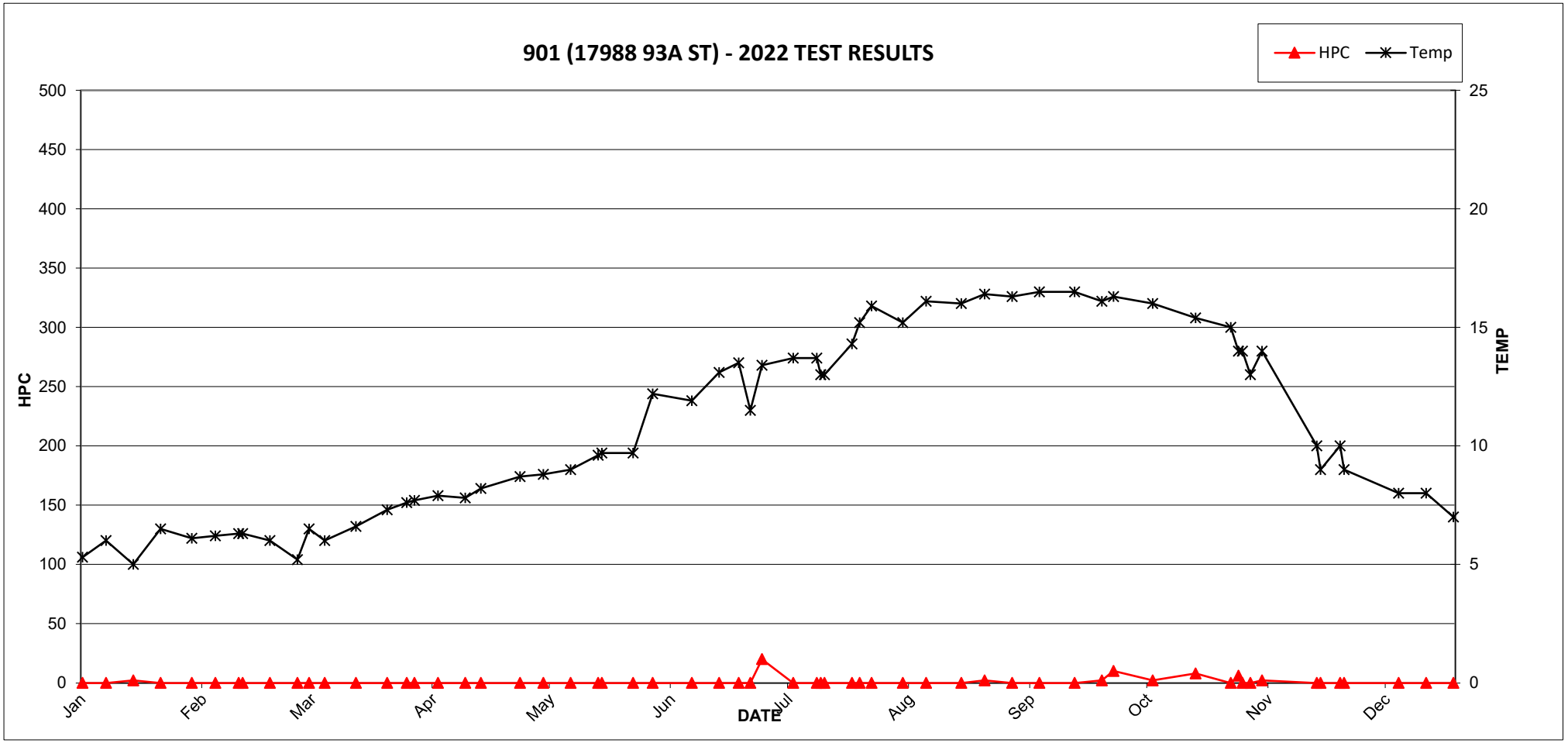
City of Surrey
2022 Vinyl Chloride Results

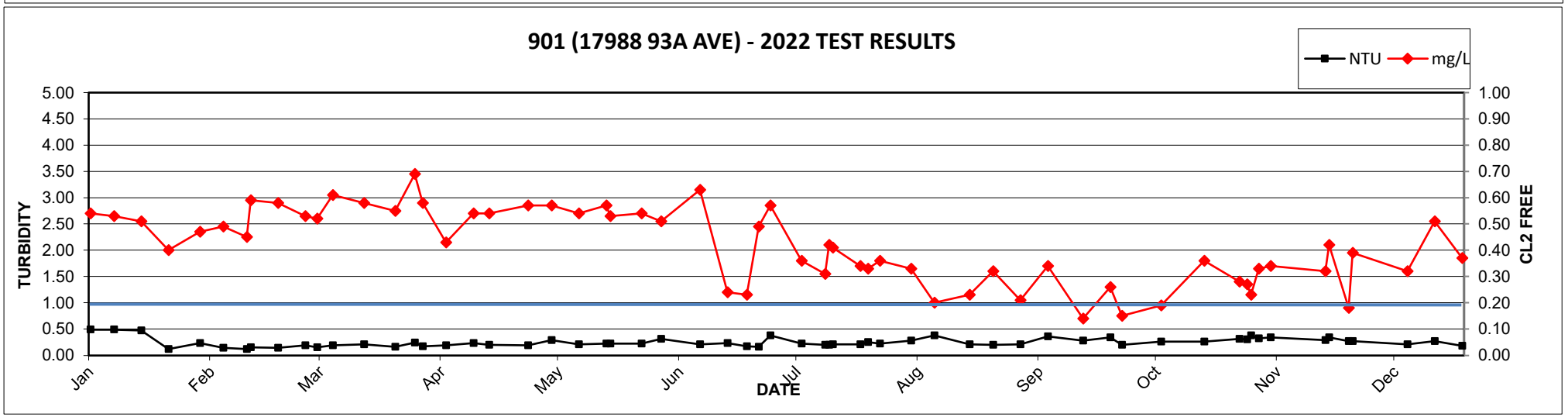
Sample Station ID	Sample Station Location	1st Half of 2022		2nd Half of 2022	
		Date Sampled	Vinyl Chloride µg/L	Date Sampled	Vinyl Chloride µg/L
SUR-901	92 Ave. & 180 St.	17-May-22	<1	8-Dec-22	<1
SUR-902	18995 - 87 A Ave.	17-May-22	<1	8-Dec-22	<1
SUR-928	15349 - 57 Ave.	17-May-22	<1	29-Nov-22	<1
SUR-930	SW Ent. to Pkwy, s. of 3031-139 St.	17-May-22	<1	5-Dec-22	<1

Analysis by Metro Vancouver Laboratory

2022 MV Laboratory Report - 901 (17988 93A ST)

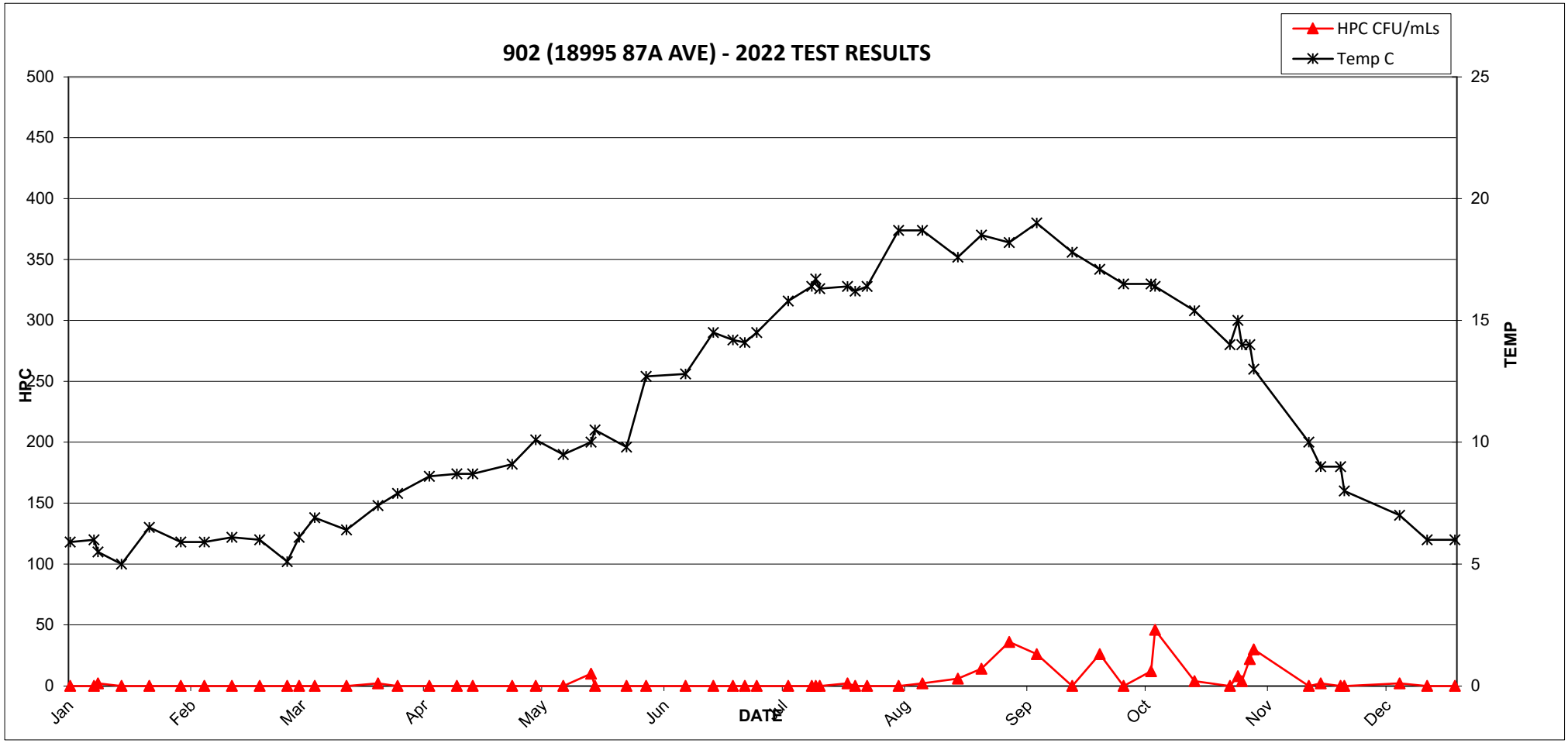
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.54	<1	<2	<1	5.3	0.49
11-Jan	0.53	<1	2	<1	6	0.49
18-Jan	0.51	<1	<2	<1	5	0.47
25-Jan	0.40	<1	<2	<1	6.5	0.12
02-Feb	0.47	<1	<2	<1	6.1	0.23
08-Feb	0.49	<1	<2	<1	6.2	0.14
14-Feb	0.45	<1	<2	<1	6.3	0.12
15-Feb	0.59	<1	<2	<1	6.3	0.15
22-Feb	0.58	<1	<2	<1	6	0.14
01-Mar	0.53	<1	<2	<1	5.2	0.19
04-Mar	0.52	<1	<2	<1	6.5	0.15
08-Mar	0.61	<1	<2	<1	6	0.19
16-Mar	0.58	<1	<2	<1	6.6	0.21
24-Mar	0.55	<1	<2	<1	7.3	0.16
29-Mar	0.69	<1	<2	<1	7.6	0.24
31-Mar	0.58	<1	<2	<1	7.7	0.17
06-Apr	0.43	<1	<2	<1	7.9	0.19
13-Apr	0.54	<1	<2	<1	7.8	0.23
17-Apr	0.54	<1	<2	<1	8.2	0.2
27-Apr	0.57	<1	<2	<1	8.7	0.19
03-May	0.57	<1	<2	<1	8.8	0.29
10-May	0.54	<1	<2	<1	9	0.21
17-May	0.57	<1	<2	<1	9.6	0.22
18-May	0.53	<1	<2	<1	9.7	0.22
26-May	0.54	<1	<2	<1	9.7	0.22
31-May	0.51	<1	<2	<1	12.2	0.31
10-Jun	0.63	<1	<2	<1	11.9	0.21
17-Jun	0.24	<1	<2	<1	13.1	0.23
22-Jun	0.23	<1	<2	<1	13.5	0.17
25-Jun	0.49	<1	20	<1	11.5	0.16
28-Jun	0.57	<1	<2	<1	13.4	0.38
06-Jul	0.36	<1	<2	<1	13.7	0.22
12-Jul	0.31	<1	<2	<1	13.7	0.20
13-Jul	0.42	<1	<2	<1	13	0.20
14-Jul	0.41	<1	<2	<1	13	0.21
21-Jul	0.34	<1	<2	<1	14.3	0.21
23-Jul	0.33	<1	<2	<1	15.2	0.25
26-Jul	0.36	<1	<2	<1	15.9	0.22
03-Aug	0.33	<1	<2	<1	15.2	0.28
09-Aug	0.20	<1	<2	<1	16.1	0.38
18-Aug	0.23	<1	2	<1	16	0.21
24-Aug	0.32	<1	<2	<1	16.4	0.20
31-Aug	0.21	<1	<2	<1	16.3	0.21
07-Sep	0.34	<1	<2	<1	16.5	0.36
16-Sep	0.14	<1	2	<1	16.5	0.28
23-Sep	0.26	<1	10	<1	16.1	0.34
26-Sep	0.15	<1	2	<1	16.3	0.20
06-Oct	0.19	<1	8	<1	16	0.26
17-Oct	0.36	<1	<2	<1	15.4	0.26
26-Oct	0.28	<1	6	<1	15	0.31
28-Oct	0.27	<1	<2	<1	14	0.30
29-Oct	0.23	<1	<2	<1	14	0.38
31-Oct	0.33	<1	2	<1	13	0.32
03-Nov	0.34	<1	<2	<1	14	0.34
17-Nov	0.32	<1	<2	<1	10	0.29
18-Nov	0.42	<1	<2	<1	9	0.34
23-Nov	0.18	<1	<2	<1	10	0.27
24-Nov	0.39	<1	<2	<1	9	0.27
08-Dec	0.32	<1	<2	<1	8	0.21

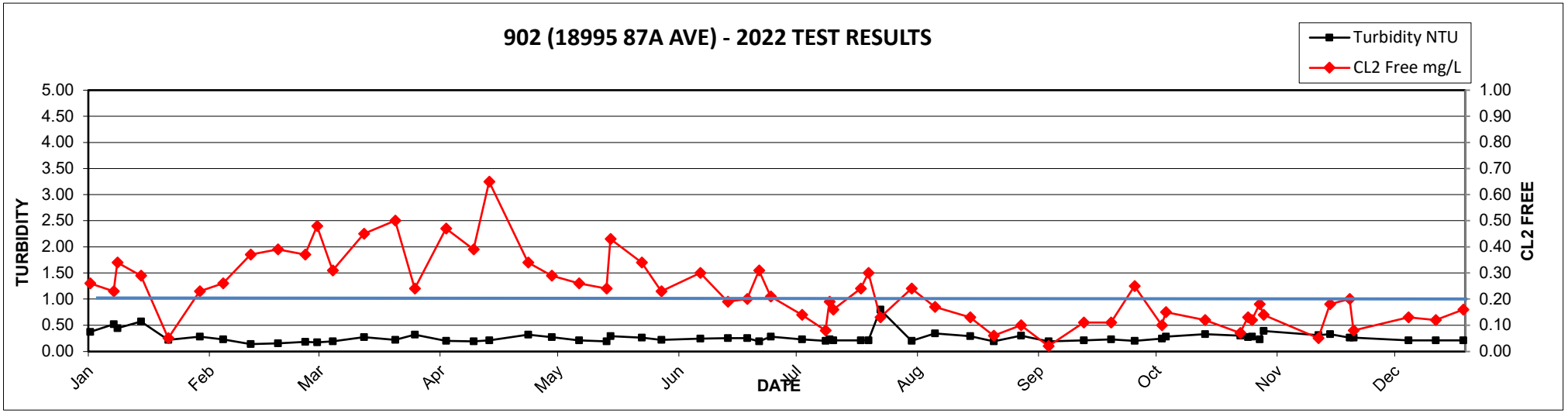

901 (17988 93A ST) - 2022 TEST RESULTS
HPC
Temp
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


901 (17988 93A AVE) - 2022 TEST RESULTS
NTU
mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 902 (18995 87A AVE)

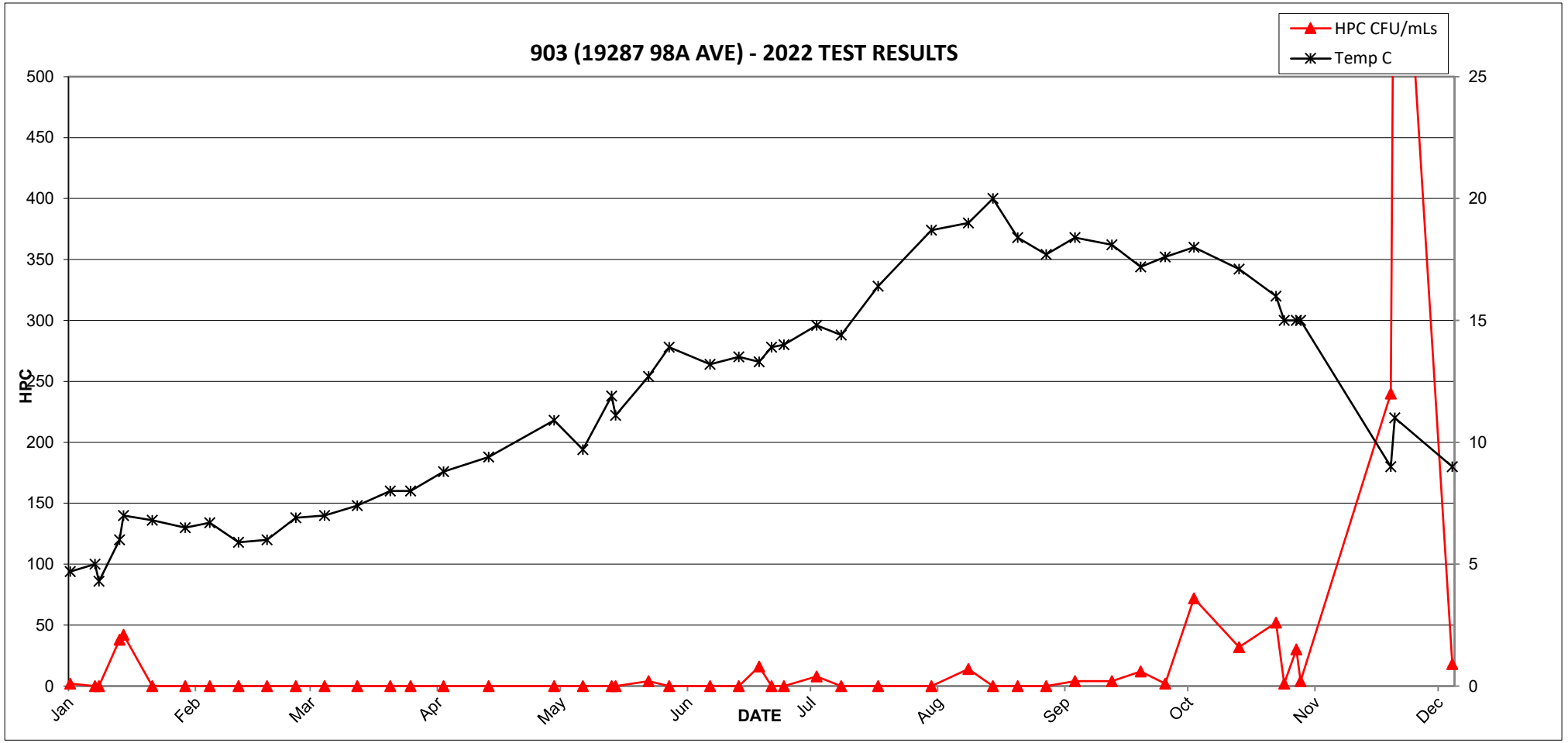
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.26	<1	<2	<1	5.9	0.37
11-Jan	0.23	<1	<2	<1	6	0.52
12-Jan	0.34	<1	2	<1	5.5	0.44
18-Jan	0.29	<1	<2	<1	5	0.57
25-Jan	0.05	<1	<2	<1	6.5	0.22
02-Feb	0.23	<1	<2	<1	5.9	0.28
08-Feb	0.26	<1	<2	<1	5.9	0.23
15-Feb	0.37	<1	<2	<1	6.1	0.14
22-Feb	0.39	<1	<2	<1	6	0.15
01-Mar	0.37	<1	<2	<1	5.1	0.18
04-Mar	0.48	<1	<2	<1	6.1	0.17
08-Mar	0.31	<1	<2	<1	6.9	0.19
16-Mar	0.45	<1	<2	<1	6.4	0.27
24-Mar	0.50	<1	2	<1	7.4	0.22
29-Mar	0.24	<1	<2	<1	7.9	0.32
06-Apr	0.47	<1	<2	<1	8.6	0.20
13-Apr	0.39	<1	<2	<1	8.7	0.19
17-Apr	0.65	<1	<2	<1	8.7	0.21
27-Apr	0.34	<1	<2	<1	9.1	0.32
03-May	0.29	<1	<2	<1	10.1	0.27
10-May	0.26	<1	<2	<1	9.5	0.21
17-May	0.24	<1	10	<1	10	0.19
18-May	0.43	<1	<2	<1	10.5	0.29
26-May	0.34	<1	<2	<1	9.8	0.26
31-May	0.23	<1	<2	<1	12.7	0.22
10-Jun	0.30	<1	<2	<1	12.8	0.24
17-Jun	0.19	<1	<2	<1	14.5	0.25
22-Jun	0.20	<1	<2	<1	14.2	0.25
25-Jun	0.31	<1	<2	<1	14.1	0.19
28-Jun	0.21	<1	<2	<1	14.5	0.28
06-Jul	0.14	<1	<2	<1	15.8	0.23
12-Jul	0.08	<1	<2	<1	16.4	0.20
13-Jul	0.19	<1	<2	<1	16.7	0.23
14-Jul	0.16	<1	<2	<1	16.3	0.21
21-Jul	0.24	<1	2	<1	16.4	0.21
23-Jul	0.30	<1	<2	<1	16.2	0.21
26-Jul	0.13	<1	<2	<1	16.4	0.80
03-Aug	0.24	<1	<2	<1	18.7	0.20
09-Aug	0.17	<1	2	<1	18.7	0.34
18-Aug	0.13	<1	6	<1	17.6	0.29
24-Aug	0.06	<1	14	<1	18.5	0.19
31-Aug	0.10	<1	36	<1	18.2	0.30
07-Sep	0.02	<1	26	<1	19	0.19
16-Sep	0.11	<1	<2	<1	17.8	0.21
23-Sep	0.11	<1	26	<1	17.1	0.23
29-Sep	0.25	<1	<2	<1	16.5	0.20
06-Oct	0.10	<1	12	<1	16.5	0.24
07-Oct	0.15	<1	46	<1	16.4	0.28
17-Oct	0.12	<1	4	<1	15.4	0.33
26-Oct	0.07	<1	<2	<1	14	0.30
28-Oct	0.13	<1	8	<1	15	0.27
29-Oct	0.12	<1	4	<1	14	0.28
31-Oct	0.18	<1	22	<1	14	0.23
01-Nov	0.14	<1	30	<1	13	0.39
15-Nov	0.05	<1	<2	<1	10	0.31
18-Nov	0.18	<1	2	<1	9	0.33
23-Nov	0.20	<1	<2	<1	9	0.26
24-Nov	0.08	<1	<2	<1	8	0.26
08-Dec	0.13	<1	2	<1	7	0.21
15-Dec	0.12	<1	<2	<1	6	0.21

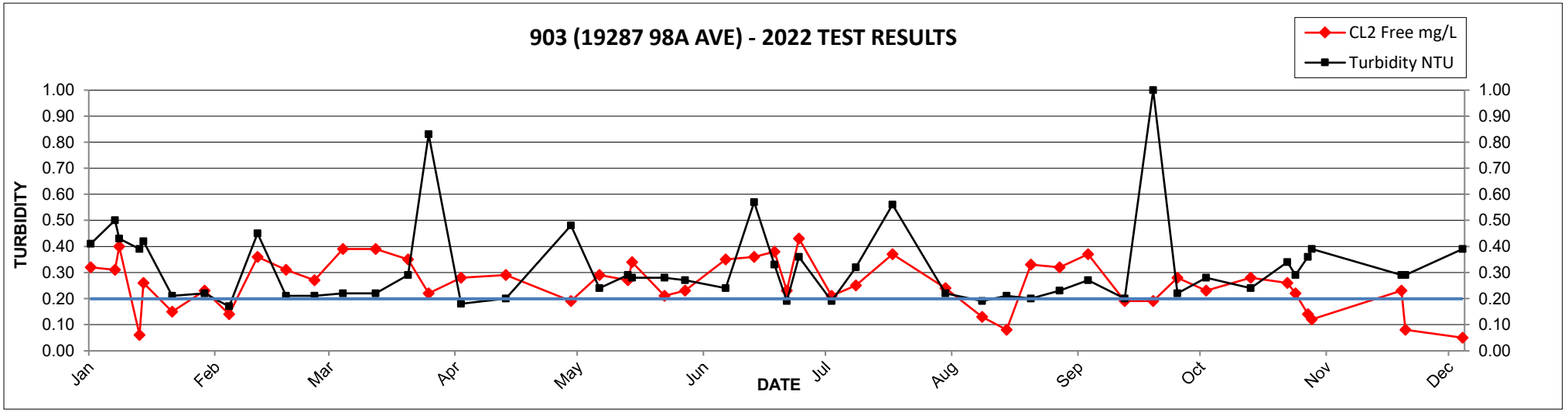

902 (18995 87A AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


902 (18995 87A AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 903 (19287 98A AVE)

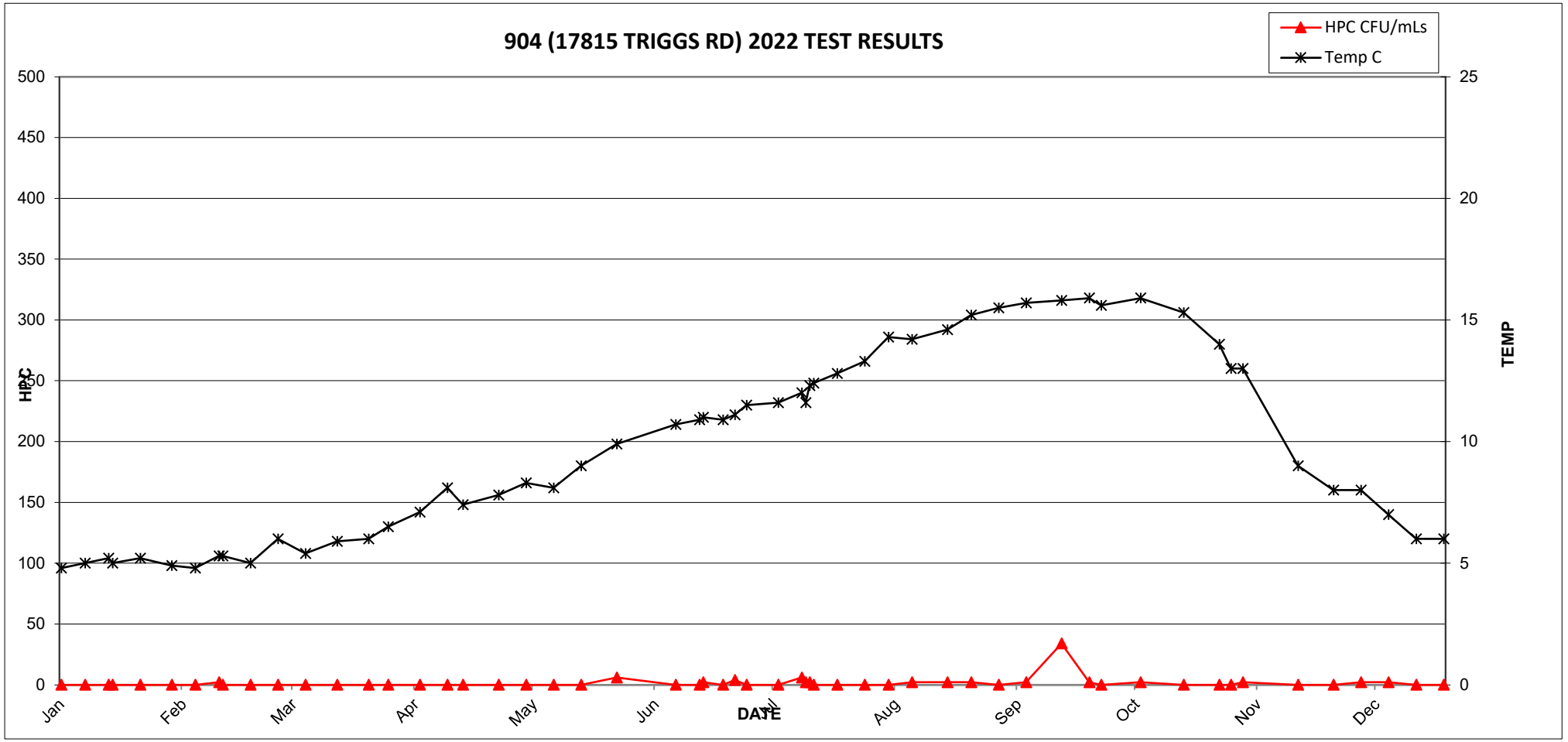
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.32	<1	2	<1	4.7	0.41
11-Jan	0.31	<1	<2	<1	5	0.50
12-Jan	0.40	<1	<2	<1	4.3	0.43
17-Jan	0.06	<1	38	<1	6	0.39
18-Jan	0.26	<1	42	<1	7	0.42
25-Jan	0.15	<1	<2	<1	6.8	0.21
02-Feb	0.23	<1	<2	<1	6.5	0.22
08-Feb	0.14	<1	<2	<1	6.7	0.17
15-Feb	0.36	<1	<2	<1	5.9	0.45
22-Feb	0.31	<1	<2	<1	6.0	0.21
01-Mar	0.27	<1	<2	<1	6.9	0.21
08-Mar	0.39	<1	<2	<1	7	0.22
16-Mar	0.39	<1	<2	<1	7.4	0.22
24-Mar	0.35	<1	<2	<1	8	0.29
29-Mar	0.22	<1	<2	<1	8	0.83
06-Apr	0.28	<1	<2	<1	8.8	0.18
17-Apr	0.29	<1	<2	<1	9.4	0.20
03-May	0.19	<1	<2	<1	10.9	0.48
10-May	0.29	<1	<2	<1	9.7	0.24
17-May	0.27	<1	<2	<1	11.9	0.29
18-May	0.34	<1	<2	<1	11.1	0.28
26-May	0.21	<1	4	<1	12.7	0.28
31-May	0.23	<1	<2	<1	13.9	0.27
10-Jun	0.35	<1	<2	<1	13.2	0.24
17-Jun	0.36	<1	<2	<1	13.5	0.57
22-Jun	0.38	<1	16	<1	13.3	0.33
25-Jun	0.23	<1	<2	<1	13.9	0.19
28-Jun	0.43	<1	<2	<1	14	0.36
06-Jul	0.21	<1	8	<1	14.8	0.19
12-Jul	0.25	<1	<2	<1	14.4	0.32
21-Jul	0.37	<1	<2	<1	16.4	0.56
03-Aug	0.24	<1	<2	<1	18.7	0.22
12-Aug	0.13	<1	14	<1	19	0.19
18-Aug	0.08	<1	<2	<1	20	0.21
24-Aug	0.33	<1	<2	<1	18.4	0.20
31-Aug	0.32	<1	<2	<1	17.7	0.23
07-Sep	0.37	<1	4	<1	18.4	0.27
16-Sep	0.19	<1	4	<1	18.1	0.20
23-Sep	0.19	<1	12	<1	17.2	1.00
29-Sep	0.28	<1	2	<1	17.6	0.22
06-Oct	0.23	<1	72	<1	18	0.28
17-Oct	0.28	<1	32	<1	17.1	0.24
26-Oct	0.26	<1	52	<1	16	0.34
28-Oct	0.22	<1	2	<1	15	0.29
31-Oct	0.14	<1	30	<1	15	0.36
01-Nov	0.12	<1	4	<1	15	0.39
23-Nov	0.23	<1	240	<1	9	0.29
24-Nov	0.08	<1	770	<1	11	0.29
08-Dec	0.05	<1	18	<1	9	0.39


903 (19287 98A AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


903 (19287 98A AVE) - 2022 TEST RESULTS
CL2 Free mg/L
Turbidity NTU
TURBIDITY
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 904 (17815 TRIGGS RD)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.73	<1	<2	<1	4.8	0.43
11-Jan	0.94	<1	<2	<1	5	0.50
17-Jan	0.85	<1	<2	<1	5.2	0.74
18-Jan	0.89	<1	<2	<1	5	0.44
25-Jan	0.65	<1	<2	<1	5.2	0.22
02-Feb	1.30	<1	<2	<1	4.9	0.32
08-Feb	0.65	<1	<2	<1	4.8	0.16
14-Feb	0.58	<1	2	<1	5.3	0.13
15-Feb	0.74	<1	<2	<1	5.3	0.12
22-Feb	0.68	<1	<2	<1	5	0.15
01-Mar	0.74	<1	<2	<1	6	0.22
08-Mar	0.78	<1	<2	<1	5.4	0.26
16-Mar	0.60	<1	<2	<1	5.9	0.12
24-Mar	0.57	<1	<2	<1	6	0.19
29-Mar	0.67	<1	<2	<1	6.5	0.29
06-Apr	0.38	<1	<2	<1	7.1	0.22
13-Apr	0.89	<1	<2	<1	8.1	0.30
17-Apr	0.59	<1	<2	<1	7.4	0.24
26-Apr	0.85	<1	<2	<1	7.8	0.32
03-May	0.73	<1	<2	<1	8.3	0.36
10-May	0.64	<1	<2	<1	8.1	0.23
17-May	0.81	<1	<2	<1	9	0.22
26-May	0.67	<1	6	<1	9.9	0.26
10-Jun	0.67	<1	<2	<1	10.7	0.28
16-Jun	0.63	<1	<2	<1	10.9	0.30
17-Jun	0.60	<1	2	<1	11	0.25
22-Jun	0.64	<1	<2	<1	10.9	0.49
25-Jun	0.67	<1	4	<1	11.1	0.20
28-Jun	0.53	<1	<2	<1	11.5	0.23
06-Jul	0.58	<1	<2	<1	11.6	0.21
12-Jul	0.30	<1	6	3	12	0.27
13-Jul	0.80	<1	2	<1	11.6	0.34
14-Jul	0.64	<1	2	<1	12.3	0.27
15-Jul	0.83	<1	<2	<1	12.4	0.23
21-Jul	0.82	<1	<2	<1	12.8	0.21
28-Jul	0.62	<1	<2	<1	13.3	0.22
03-Aug	0.58	<1	<2	<1	14.3	0.18
09-Aug	0.74	<1	2	<1	14.2	0.21
18-Aug	0.48	<1	2	<1	14.6	0.26
24-Aug	0.62	<1	2	<1	15.2	0.21
31-Aug	0.58	<1	<2	<1	15.5	0.29
07-Sep	0.62	<1	2	<1	15.7	0.27
16-Sep	0.42	<1	34	<1	15.8	0.20
23-Sep	0.45	<1	2	<1	15.9	0.24
26-Sep	0.32	<1	<2	<1	15.6	0.26
06-Oct	0.59	<1	2	<1	15.9	0.32
17-Oct	0.65	<1	<2	<1	15.3	0.23
26-Oct	0.57	<1	<2	<1	14	0.28
29-Oct	0.61	<1	<2	<1	13	0.39
01-Nov	0.63	<1	2	<1	13	0.45
15-Nov	0.40	<1	<2	<1	9	0.30
24-Nov	0.70	<1	<2	<1	8	0.35
01-Dec	0.32	<1	2	<1	8	0.31


904 (17815 TRIGGS RD) 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
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May
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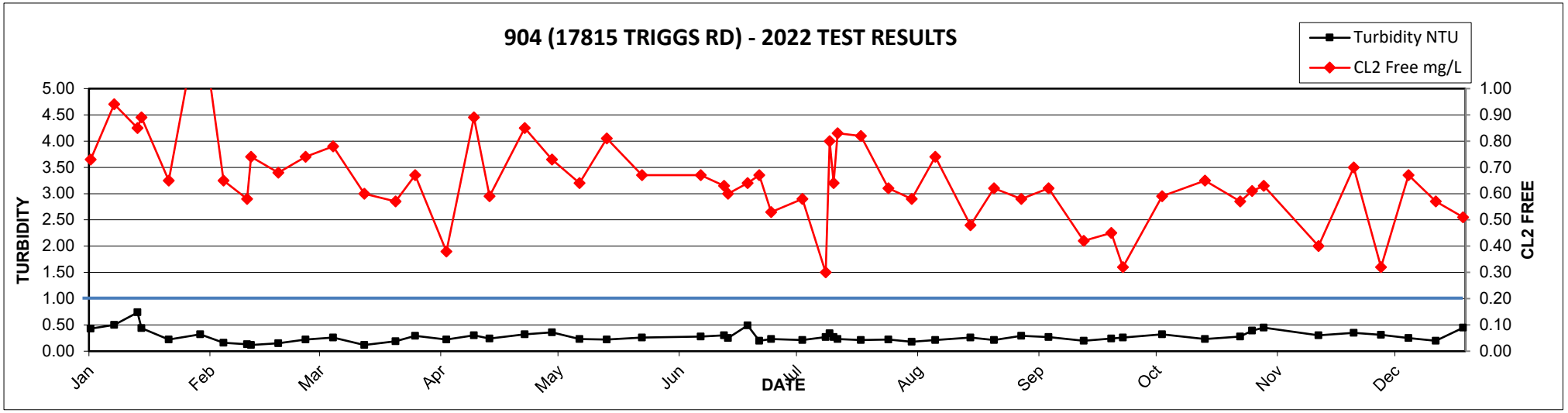
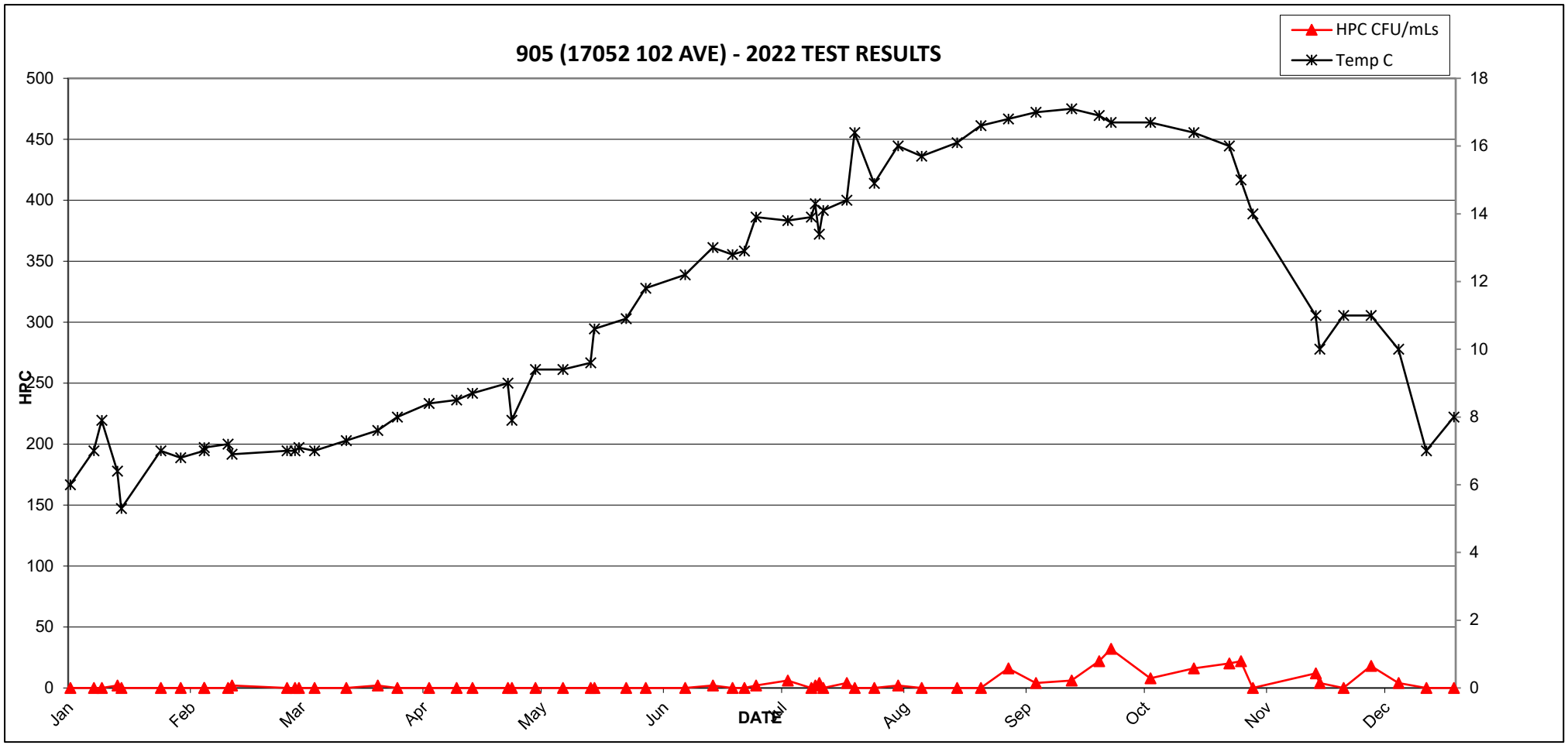
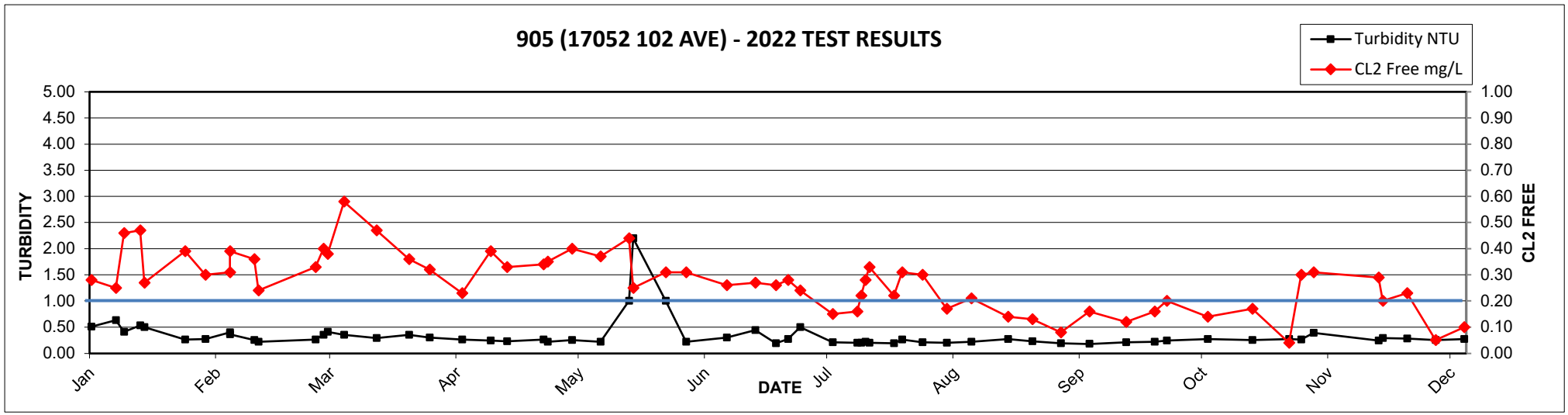
Jul
Aug
Sep
Oct
Nov
Dec


904 (17815 TRIGGS RD) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 905 (17052 102AVE)

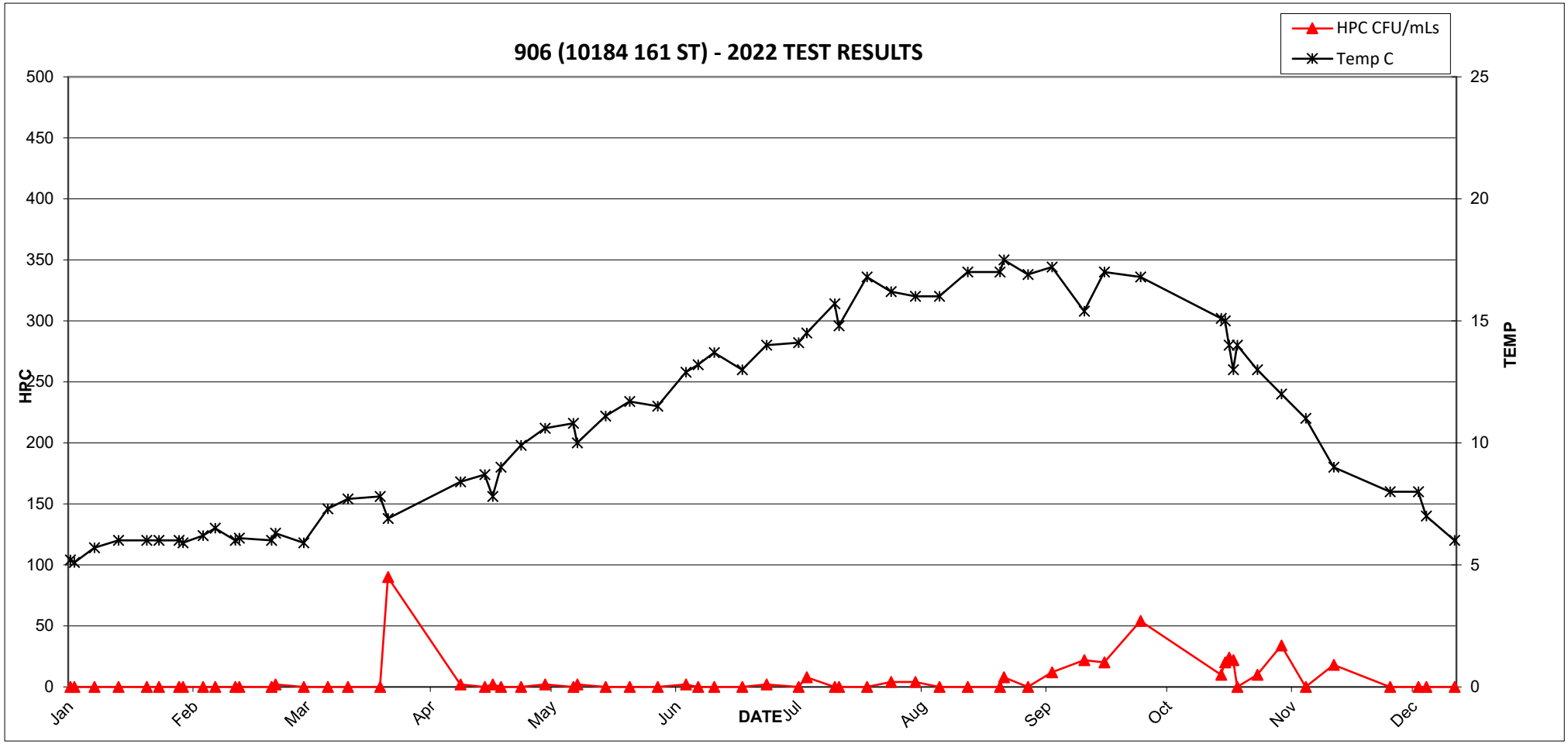
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.28	<1	<2	<1	6	0.51
11-Jan	0.25	<1	<2	<1	7	0.63
13-Jan	0.46	<1	<2	<1	7.9	0.41
17-Jan	0.47	<1	2	<1	6.4	0.53
18-Jan	0.27	<1	<2	<1	5.3	0.50
28-Jan	0.39	<1	<2	<1	7	0.26
02-Feb	0.30	<1	<2	<1	6.8	0.27
08-Feb	0.31	<1	<2	<1	7	0.40
08-Feb	0.39	<1	<2	<1	7.1	0.36
14-Feb	0.36	<1	<2	<1	7.2	0.25
15-Feb	0.24	<1	2	<1	6.9	0.22
01-Mar	0.33	<1	<2	<1	7	0.26
03-Mar	0.40	<1	<2	<1	7	0.35
04-Mar	0.38	<1	<2	<1	7.1	0.41
08-Mar	0.58	<1	<2	<1	7	0.35
16-Mar	0.47	<1	<2	<1	7.3	0.29
24-Mar	0.36	<1	2	<1	7.6	0.35
29-Mar	0.32	<1	<2	<1	8	0.30
06-Apr	0.23	<1	<2	<1	8.4	0.26
13-Apr	0.39	<1	<2	<1	8.5	0.24
17-Apr	0.33	<1	<2	<1	8.7	0.23
26-Apr	0.34	<1	<2	<1	9	0.26
27-Apr	0.35	<1	<2	<1	7.9	0.22
03-May	0.40	<1	<2	<1	9.4	0.25
10-May	0.37	<1	<2	<1	9.4	0.22
17-May	0.44	<1	<2	<1	9.6	1.00
18-May	0.25	<1	<2	<1	10.6	2.20
26-May	0.31	<1	<2	<1	10.9	1.00
31-May	0.31	<1	<2	<1	11.8	0.22
10-Jun	0.26	<1	<2	<1	12.2	0.30
17-Jun	0.27	<1	2	<1	13	0.44
22-Jun	0.26	<1	<2	<1	12.8	0.19
25-Jun	0.28	<1	<2	<1	12.9	0.27
28-Jun	0.24	<1	2	<1	13.9	0.50
06-Jul	0.15	<1	6	<1	13.8	0.21
12-Jul	0.16	<1	<2	<1	13.9	0.20
13-Jul	0.22	<1	2	<1	14.3	0.20
14-Jul	0.28	<1	4	<1	13.4	0.22
15-Jul	0.33	<1	<2	<1	14.1	0.20
21-Jul	0.22	<1	4	<1	14.4	0.19
23-Jul	0.31	<1	<2	<1	16.4	0.26
28-Jul	0.30	<1	<2	<1	14.9	0.21
03-Aug	0.17	<1	2	<1	16	0.20
09-Aug	0.21	<1	<2	<1	15.7	0.22
18-Aug	0.14	<1	<2	<1	16.1	0.27
24-Aug	0.13	<1	<2	<1	16.6	0.23
31-Aug	0.08	<1	16	<1	16.8	0.19
07-Sep	0.16	<1	4	<1	17	0.18
16-Sep	0.12	<1	6	<1	17.1	0.21
23-Sep	0.16	<1	22	<1	16.9	0.22
26-Sep	0.20	<1	32	<1	16.7	0.24
06-Oct	0.14	<1	8	<1	16.7	0.27
17-Oct	0.17	<1	16	<1	16.4	0.25


905 (17052 102 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


905 (17052 102 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 906 (10184 161ST)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
12-Jan	0.72	<1	<2	<1	5.2	0.46
13-Jan	0.69	<1	<2	<1	5.1	0.84
18-Jan	0.78	<1	<2	<1	5.7	0.59
24-Jan	0.81	<1	<2	<1	6	0.30
31-Jan	0.68	<1	<2	<1	6	0.28
03-Feb	0.63	<1	<2	<1	6	0.28
08-Feb	0.65	<1	<2	<1	6	0.30
09-Feb	0.56	<1	<2	<1	5.9	0.27
14-Feb	0.56	<1	<2	<1	6.2	0.24
17-Feb	0.63	<1	<2	<1	6.5	0.33
22-Feb	0.81	<1	<2	<1	6	0.30
23-Feb	0.58	<1	<2	<1	6.1	0.26
03-Mar	0.80	<1	<2	<1	6	0.55
04-Mar	0.84	<1	2	<1	6.3	0.46
11-Mar	0.76	<1	<2	<1	5.9	0.36
17-Mar	0.56	<1	<2	<1	7.3	0.39
22-Mar	0.78	<1	<2	<1	7.7	0.31
30-Mar	0.62	<1	<2	<1	7.8	0.26
01-Apr	0.71	<1	90	<1	6.9	0.31
19-Apr	0.53	<1	2	<1	8.4	0.23
25-Apr	0.57	<1	<2	<1	8.7	0.22
27-Apr	0.57	<1	2	<1	7.8	0.24
29-Apr	0.54	<1	<2	<1	9	0.25
04-May	0.47	<1	<2	<1	9.9	0.31
10-May	0.49	<1	2	<1	10.6	0.24
17-May	0.66	<1	<2	<1	10.8	0.25
18-May	0.48	<1	2	<1	10	0.26
25-May	0.49	<1	<2	<1	11.1	0.28
31-May	0.52	<1	<2	<1	11.7	0.21
07-Jun	0.43	<1	<2	<1	11.5	0.20
14-Jun	0.64	<1	2	<1	12.9	0.18
17-Jun	0.30	<1	<2	<1	13.2	0.22
21-Jun	0.41	<1	<2	<1	13.7	0.18
28-Jun	0.42	<1	<2	<1	13	0.33
04-Jul	0.37	<1	2	<1	14	0.19
12-Jul	0.32	<1	<2	<1	14.1	0.24
14-Jul	0.35	<1	8	<1	14.5	2.40
21-Jul	0.33	<1	<2	<1	15.7	0.24
22-Jul	0.44	<1	<2	<1	14.8	0.25
29-Jul	0.32	<1	<2	<1	16.8	0.24
04-Aug	0.25	<1	4	<1	16.2	0.32
10-Aug	0.32	<1	4	<1	16	0.20
16-Aug	0.35	<1	<2	<1	16	0.20
23-Aug	0.26	<1	<2	<1	17	0.22
31-Aug	0.29	<1	<2	<1	17	0.28
01-Sep	0.22	<1	8	<1	17.5	0.20
07-Sep	0.19	<1	<2	<1	16.9	0.24
13-Sep	0.20	<1	12	<1	17.2	0.21
21-Sep	0.28	<1	22	<1	15.4	0.24
26-Sep	0.23	<1	20	<1	17	0.23
05-Oct	0.18	<1	54	<1	16.8	0.96
25-Oct	0.10	<1	10	<1	15.1	0.23
26-Oct	0.40	<1	20	<1	15	0.28


906 (10184 161 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
Apr
May
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Aug
Sep
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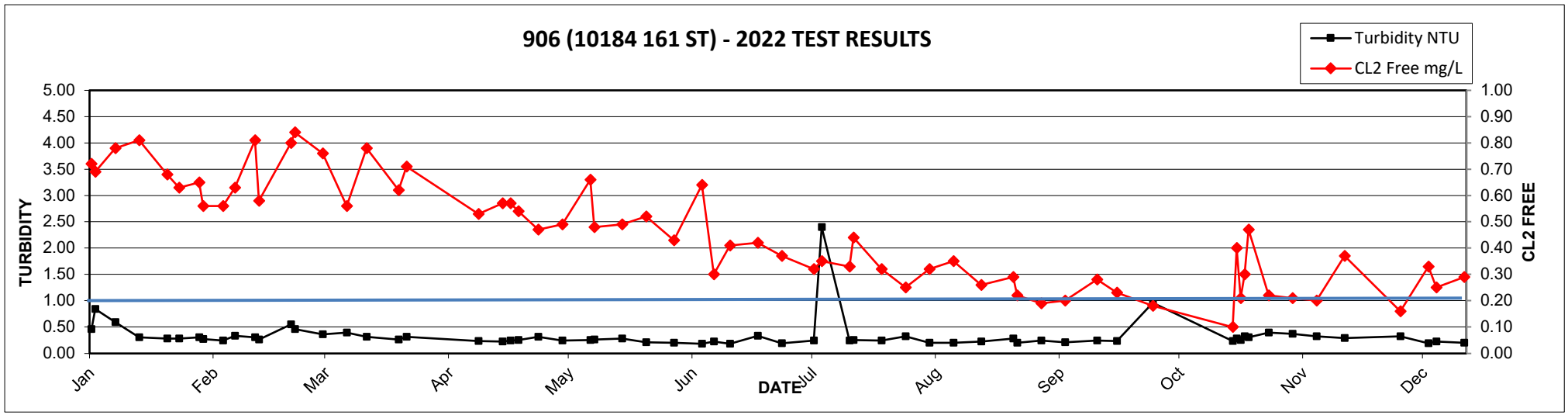
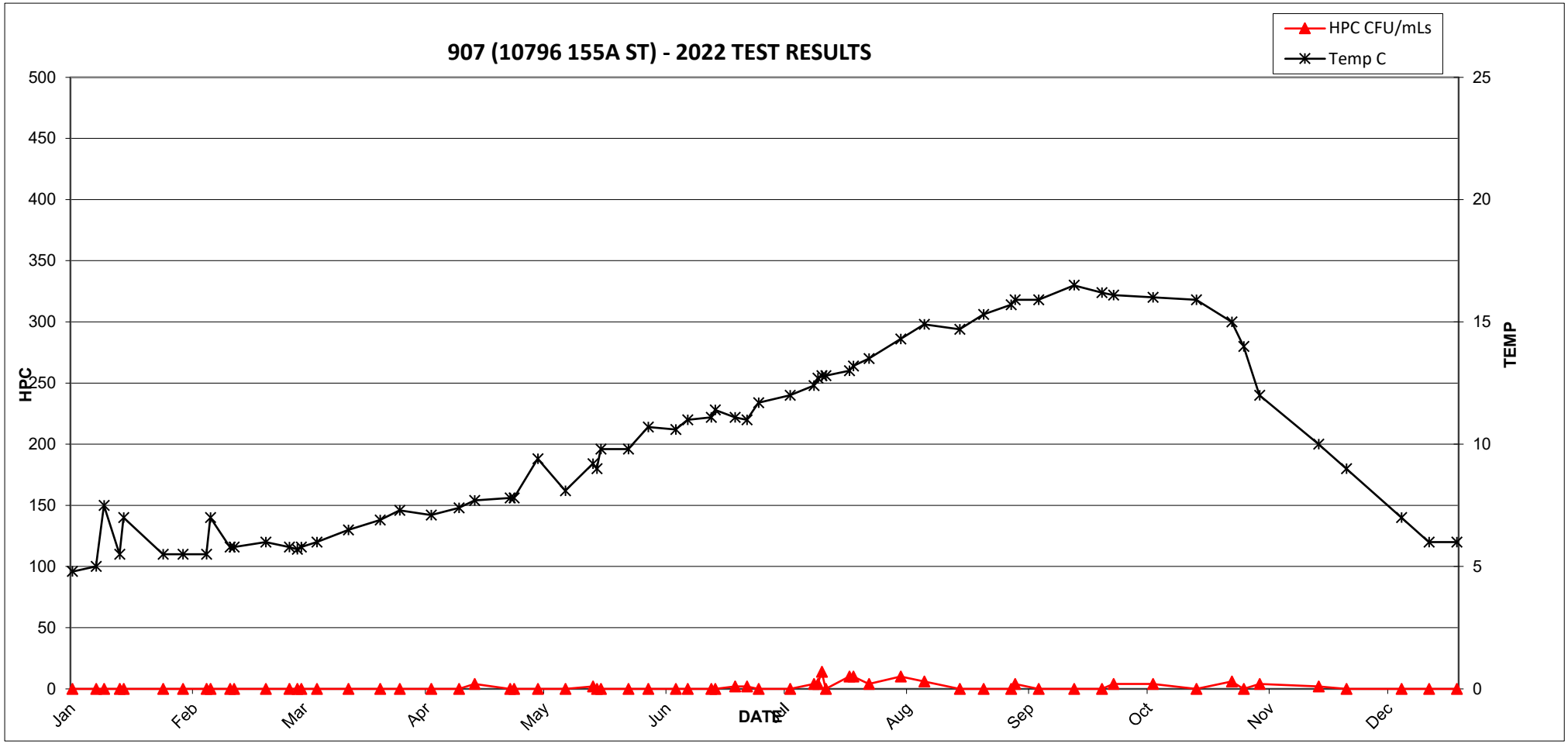
Nov
Dec


906 (10184 161 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 907 (10796 155A ST)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.90	<1	<2	<1	4.8	0.50
11-Jan	0.85	<1	<2	<1	5	0.53
13-Jan	0.96	<1	<2	<1	7.5	1.10
17-Jan	0.84	<1	<2	<1	5.5	0.60
18-Jan	0.98	<1	<2	<1	7	0.43
28-Jan	0.72	<1	<2	<1	5.5	0.35
02-Feb	0.97	<1	<2	<1	5.5	0.35
08-Feb	0.74	<1	<2	<1	5.5	0.50
09-Feb	0.69	<1	<2	<1	7	0.46
14-Feb	0.69	<1	<2	<1	5.8	0.34
15-Feb	0.84	<1	<2	<1	5.8	0.40
23-Feb	0.64	<1	<2	<1	6	0.34
01-Mar	0.74	<1	<2	<1	5.8	0.41
03-Mar	0.80	<1	<2	<1	5.7	0.47
04-Mar	0.74	<1	<2	<1	5.8	0.48
08-Mar	1.00	<1	<2	<1	6	0.60
16-Mar	0.75	<1	<2	<1	6.5	0.48
24-Mar	0.55	<1	<2	<1	6.9	0.30
29-Mar	0.93	<1	<2	<1	7.3	0.30
06-Apr	0.56	<1	<2	<1	7.1	0.37
13-Apr	1.22	<1	<2	<1	7.4	0.43
17-Apr	0.90	<1	4	<1	7.7	0.24
26-Apr	0.79	<1	<2	<1	7.8	0.72
27-Apr	0.78	<1	<2	<1	7.8	0.48
03-May	0.69	<1	<2	<1	9.4	0.59
10-May	0.63	<1	<2	<1	8.1	0.53
17-May	0.61	<1	2	<1	9.2	0.36
18-May	0.42	<1	<2	<1	9	0.24
19-May	0.65	<1	<2	<1	9.8	0.28
26-May	0.49	<1	<2	<1	9.8	0.30
31-May	0.45	<1	<2	<1	10.7	0.25
07-Jun	0.60	<1	<2	<1	10.6	0.33
10-Jun	0.65	<1	<2	<1	11	0.26
16-Jun	0.62	<1	<2	<1	11.1	0.26
17-Jun	0.58	<1	<2	<1	11.4	0.24
22-Jun	0.54	<1	2	<1	11.1	0.28
25-Jun	0.64	<1	2	<1	11	0.31
28-Jun	0.52	<1	<2	<1	11.7	0.32
06-Jul	0.50	<1	<2	<1	12	0.22
12-Jul	0.34	<1	4	<1	12.4	0.27
13-Jul	0.60	<1	4	<1	12.7	0.21
14-Jul	0.62	<1	14	<1	12.8	0.25
15-Jul	0.61	<1	<2	<1	12.8	0.26
21-Jul	0.67	<1	10	<1	13	0.26
22-Jul	0.64	<1	10	<1	13.2	0.25
26-Jul	0.71	<1	4	<1	13.5	0.37
03-Aug	0.49	<1	10	<1	14.3	0.26
09-Aug	0.27	<1	6	<1	14.9	0.22
18-Aug	0.12	<1	<2	<1	14.7	0.51
24-Aug	0.37	<1	<2	<1	15.3	0.30
31-Aug	0.40	<1	<2	<1	15.7	0.29
01-Sep	0.39	<1	4	<1	15.9	0.23
07-Sep	0.36	<1	<2	<1	15.9	0.27
16-Sep	0.17	<1	<2	<1	16.5	0.26


907 (10796 155A ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
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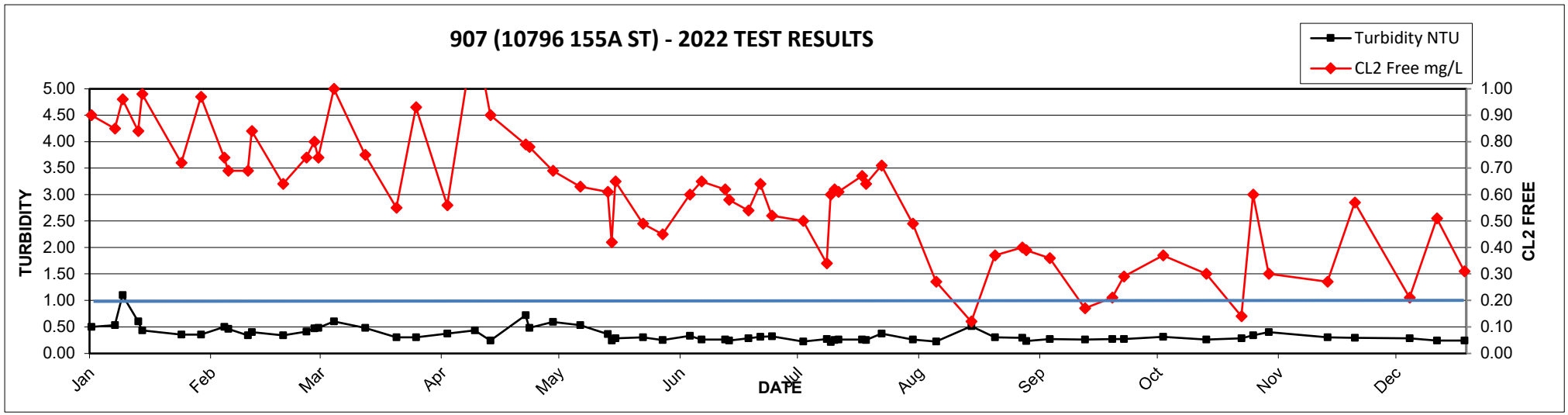
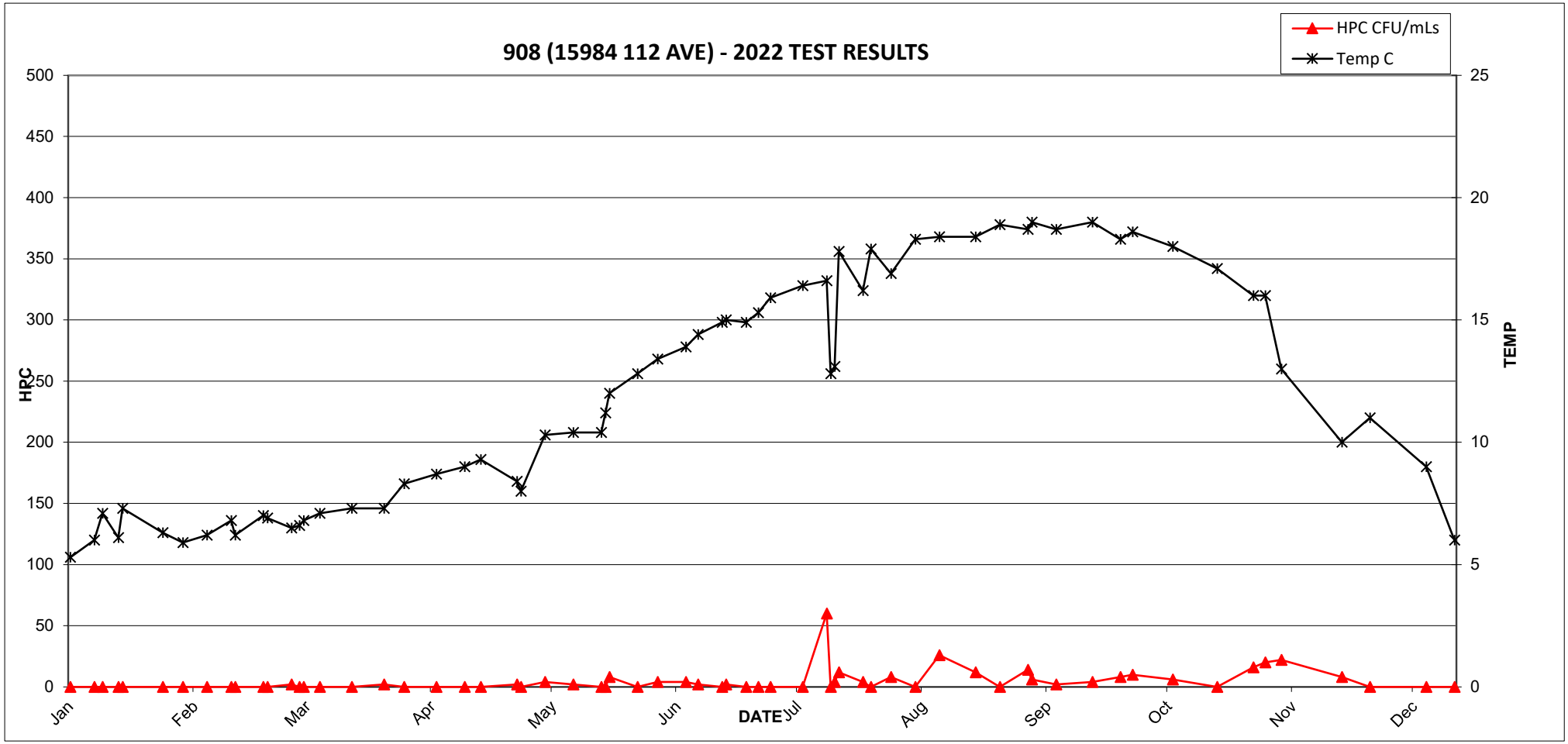
Nov
Dec


907 (10796 155A ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 908 (15985 112 AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.33	<1	<2	<1	5.3	0.36
11-Jan	0.33	<1	<2	<1	6	0.49
13-Jan	0.41	<1	<2	<1	7.1	0.40
17-Jan	0.38	<1	<2	<1	6.1	0.48
18-Jan	0.47	<1	<2	<1	7.3	0.53
28-Jan	0.53	<1	<2	<1	6.3	0.27
02-Feb	0.51	<1	<2	<1	5.9	0.31
08-Feb	0.26	<1	<2	<1	6.2	0.33
14-Feb	0.31	<1	<2	<1	6.8	0.25
15-Feb	0.41	<1	<2	<1	6.2	0.22
22-Feb	0.35	<1	<2	<1	7	0.26
23-Feb	0.41	<1	<2	<1	6.9	0.29
01-Mar	0.46	<1	2	<1	6.5	0.30
03-Mar	0.46	<1	<2	<1	6.6	0.47
04-Mar	0.41	<1	<2	<1	6.8	0.43
08-Mar	0.32	<1	<2	<1	7.1	0.32
16-Mar	0.25	<1	<2	<1	7.3	0.29
24-Mar	0.25	<1	2	<1	7.3	0.31
29-Mar	0.31	<1	<2	<1	8.3	0.27
06-Apr	0.13	<1	<2	<1	8.7	0.24
13-Apr	0.47	<1	<2	<1	9	0.59
17-Apr	0.30	<1	<2	<1	9.3	0.22
26-Apr	0.47	<1	2	<1	8.4	5.80
27-Apr	0.31	<1	<2	<1	8	0.28
03-May	0.34	<1	4	<1	10.3	0.74
10-May	0.23	<1	2	<1	10.4	0.24
17-May	0.27	<1	<2	<1	10.4	0.22
18-May	0.18	<1	<2	<1	11.2	0.28
19-May	0.23	<1	8	<1	12	0.22
26-May	0.27	<1	<2	<1	12.8	0.24
31-May	0.25	<1	4	<1	13.4	0.22
07-Jun	0.17	<1	4	<1	13.9	0.25
10-Jun	0.08	<1	2	<1	14.4	0.27
16-Jun	0.14	<1	<2	<1	14.9	0.24
17-Jun	0.22	<1	2	<1	15	0.18
22-Jun	0.09	<1	<2	<1	14.9	0.20
25-Jun	0.26	<1	<2	<1	15.3	0.20
28-Jun	0.21	<1	<2	<1	15.9	0.25
06-Jul	0.13	<1	<2	<1	16.4	0.24
12-Jul	0.03	<1	60	<1	16.6	0.75
13-Jul	0.17	<1	<2	<1	12.8	0.19
14-Jul	0.20	<1	4	<1	13.1	0.23
15-Jul	0.11	<1	12	<1	17.8	0.74
21-Jul	0.21	<1	4	<1	16.2	0.57
23-Jul	0.23	<1	<2	<1	17.9	0.26
28-Jul	0.21	<1	8	<1	16.9	0.29
03-Aug	0.18	<1	<2	<1	18.3	0.21
09-Aug	0.17	<1	26	<1	18.4	0.20
18-Aug	0.06	<1	12	<1	18.4	0.30
24-Aug	0.11	<1	<2	<1	18.9	0.21
31-Aug	0.18	<1	14	<1	18.7	0.27
01-Sep	0.10	<1	6	<1	19	0.22
07-Sep	0.06	<1	2	<1	18.7	0.22
16-Sep	0.05	<1	4	<1	19	0.24


908 (15984 112 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
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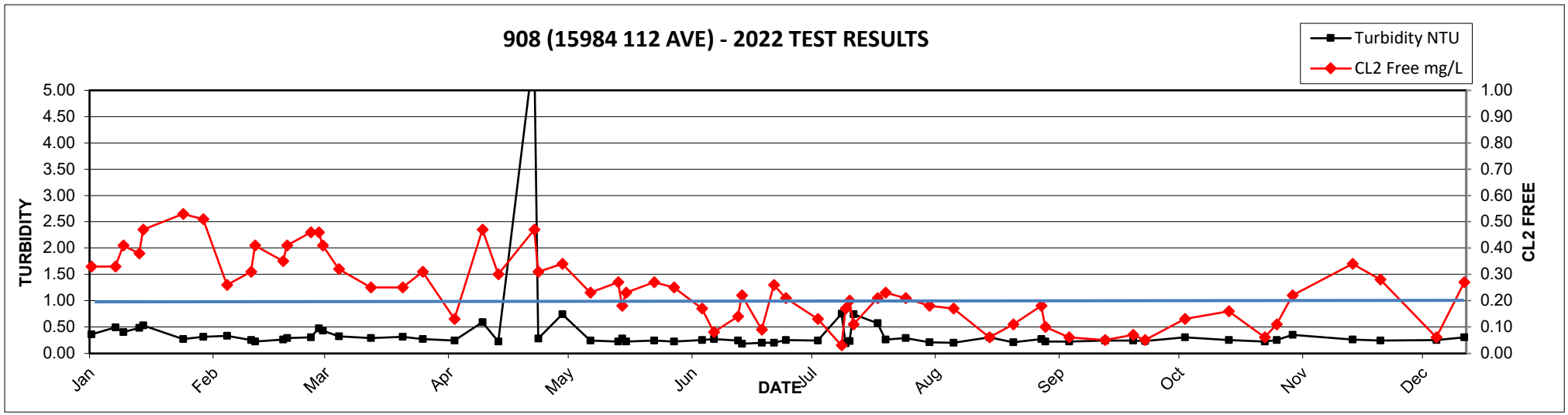
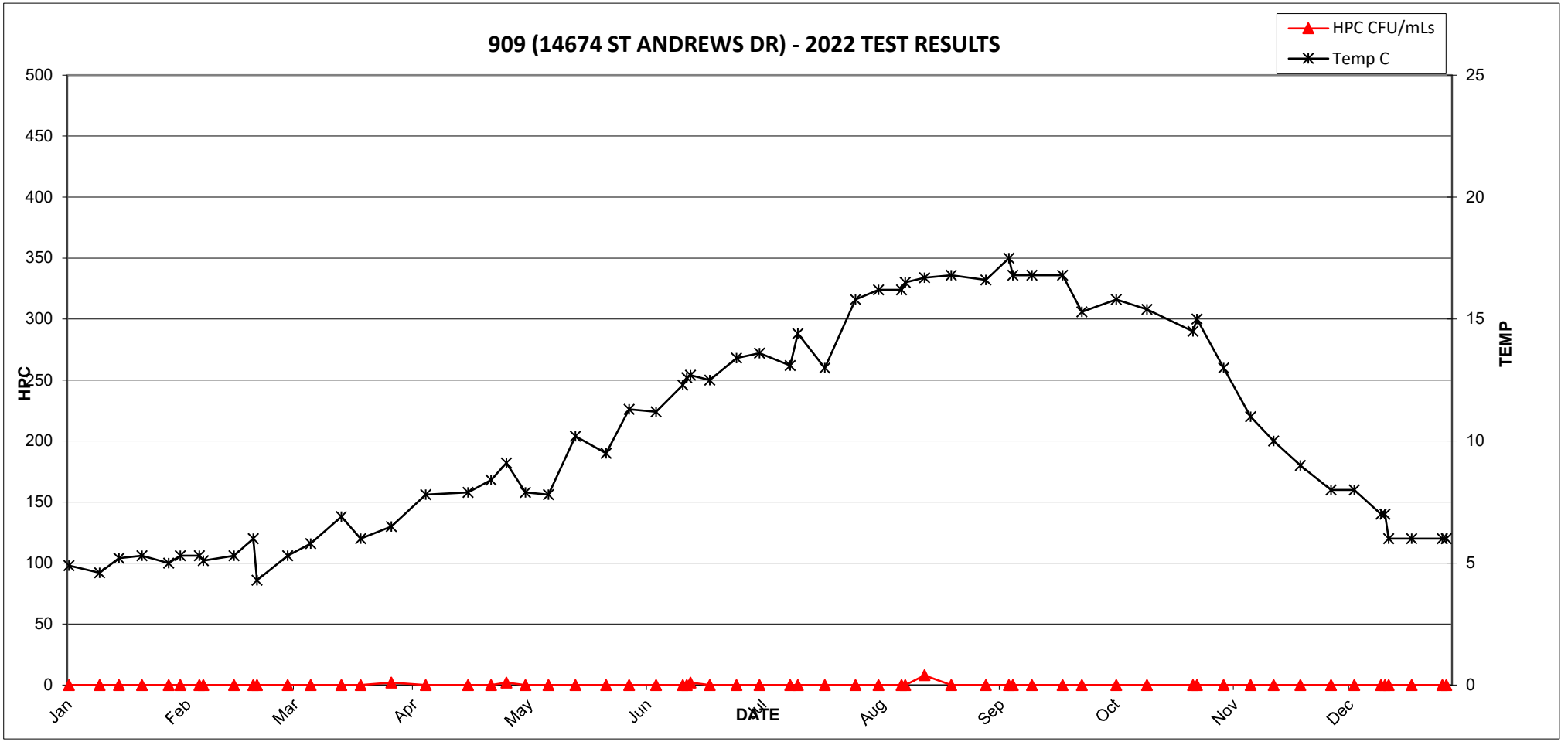
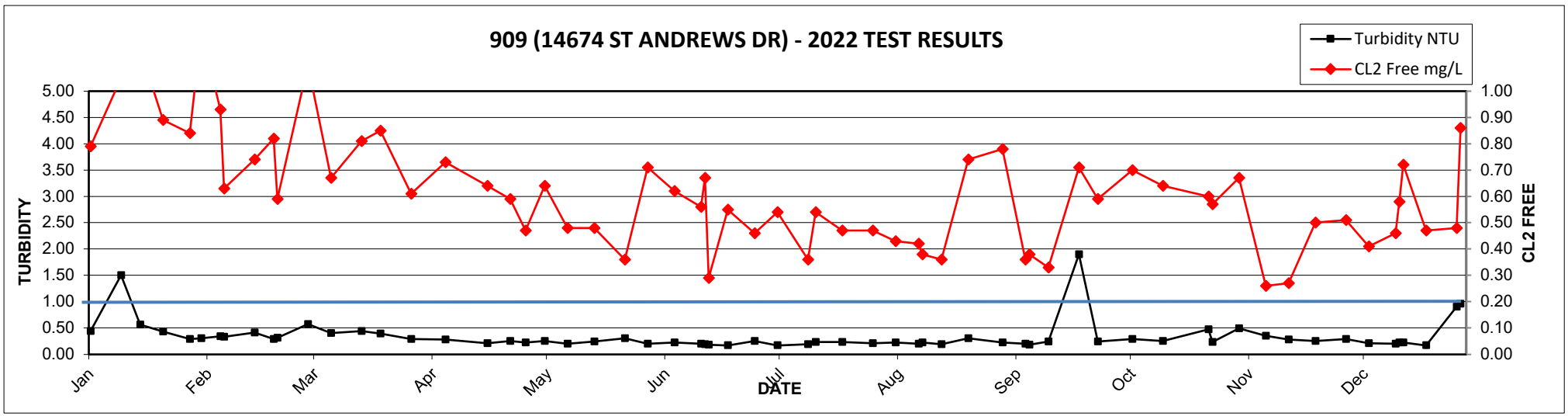
Nov
Dec


908 (15984 112 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 909 (14674 ST ANDREWS DR)

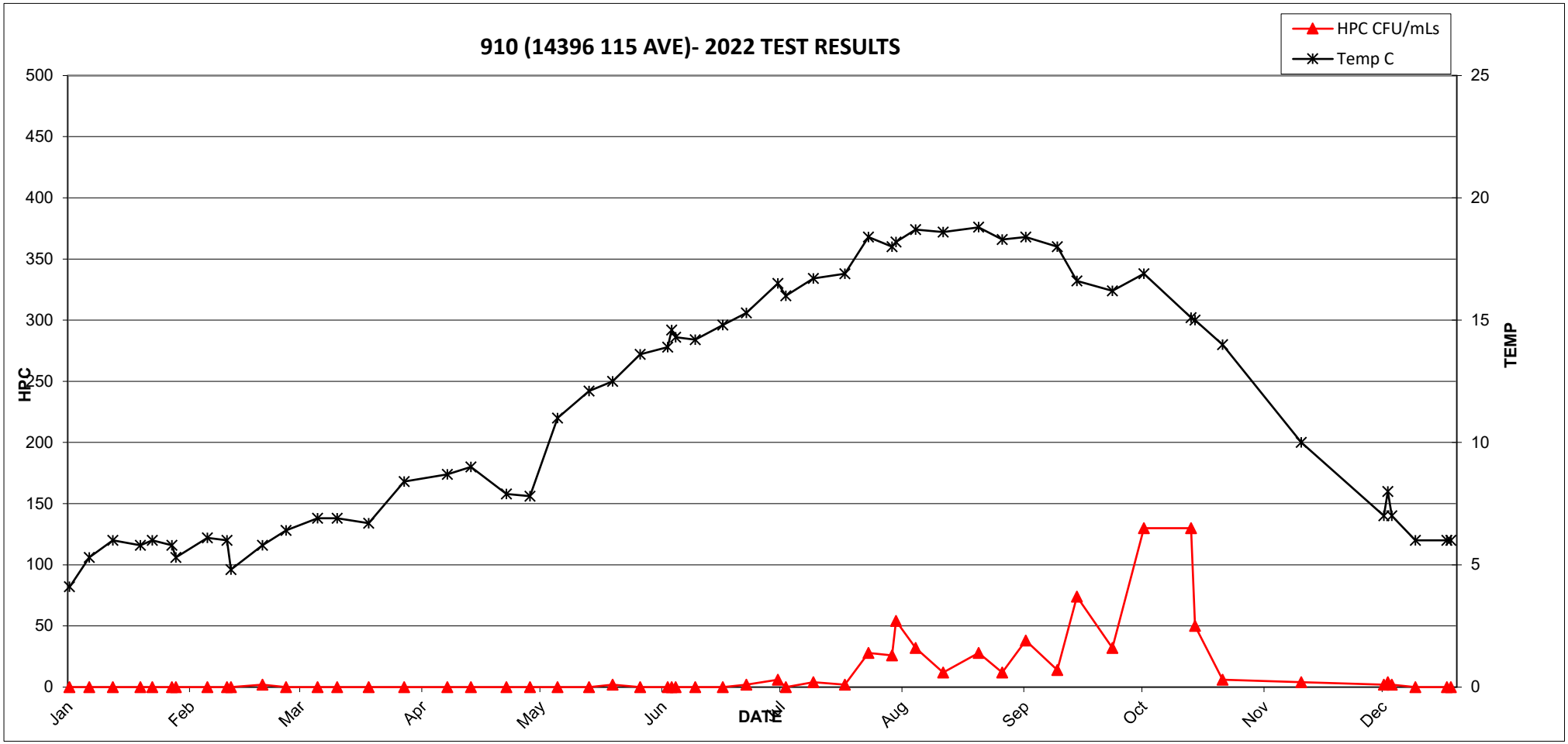
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.79	<1	<2	<1	4.9	0.44
13-Jan	1.05	<1	<2	<1	4.6	1.50
18-Jan	1.16	<1	<2	<1	5.2	0.56
24-Jan	0.89	<1	<2	<1	5.3	0.43
31-Jan	0.84	<1	<2	<1	5	0.29
03-Feb	1.23	<1	<2	<1	5.3	0.30
08-Feb	0.93	<1	<2	<1	5.3	0.34
09-Feb	0.63	<1	<2	<1	5.1	0.33
17-Feb	0.74	<1	<2	<1	5.3	0.41
22-Feb	0.82	<1	<2	<1	6	0.29
23-Feb	0.59	<1	<2	<1	4.3	0.31
03-Mar	1.10	<1	<2	<1	5.3	0.57
09-Mar	0.67	<1	<2	<1	5.8	0.40
17-Mar	0.81	<1	<2	<1	6.9	0.44
22-Mar	0.85	<1	<2	<1	6	0.39
30-Mar	0.61	<1	2	<1	6.5	0.29
08-Apr	0.73	<1	<2	<1	7.8	0.28
19-Apr	0.64	<1	<2	<1	7.9	0.21
25-Apr	0.59	<1	<2	<1	8.4	0.25
29-Apr	0.47	<1	2	<1	9.1	0.22
04-May	0.64	<1	<2	<1	7.9	0.25
10-May	0.48	<1	<2	<1	7.8	0.20
17-May	0.48	<1	<2	<1	10.2	0.24
25-May	0.36	<1	<2	<1	9.5	0.30
31-May	0.71	<1	<2	<1	11.3	0.20
07-Jun	0.62	<1	<2	<1	11.2	0.22
14-Jun	0.56	<1	<2	<1	12.3	0.20
15-Jun	0.67	<1	<2	<1	12.6	0.19
16-Jun	0.29	<1	2	<1	12.7	0.18
21-Jun	0.55	<1	<2	<1	12.5	0.17
28-Jun	0.46	<1	<2	<1	13.4	0.25
04-Jul	0.54	<1	<2	<1	13.6	0.17
12-Jul	0.36	<1	<2	<1	13.1	0.19
14-Jul	0.54	<1	<2	<1	14.4	0.23
21-Jul	0.47	<1	<2	<1	13	0.23
29-Jul	0.47	<1	<2	<1	15.8	0.21
04-Aug	0.43	<1	<2	<1	16.2	0.22
10-Aug	0.42	<1	<2	<1	16.2	0.20
11-Aug	0.38	<1	<2	<1	16.5	0.22
16-Aug	0.36	<1	8	<1	16.7	0.19
23-Aug	0.74	<1	<2	<1	16.8	0.30
01-Sep	0.78	<1	<2	<1	16.6	0.22
07-Sep	0.36	<1	<2	<1	17.5	0.20
08-Sep	0.38	<1	<2	<1	16.8	0.18
13-Sep	0.33	<1	<2	<1	16.8	0.24
21-Sep	0.71	<1	<2	<1	16.8	1.90
26-Sep	0.59	<1	<2	<1	15.3	0.24
05-Oct	0.70	<1	<2	<1	15.8	0.29
13-Oct	0.64	<1	<2	<1	15.4	0.25
25-Oct	0.60	<1	<2	<1	14.5	0.47


909 (14674 ST ANDREWS DR) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


909 (14674 ST ANDREWS DR) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 910 (14396 115 AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
13-Jan	0.40	<1	<2	<1	4.1	0.16
18-Jan	0.34	<1	<2	<1	5.3	0.12
24-Jan	0.47	<1	<2	<1	6	0.13
31-Jan	0.54	<1	<2	<1	5.8	0.11
03-Feb	0.66	<1	<2	<1	6	0.14
08-Feb	0.51	<1	<2	<1	5.8	0.11
09-Feb	0.59	<1	<2	<1	5.3	0.10
17-Feb	0.63	<1	<2	<1	6.1	0.13
22-Feb	0.61	<1	<2	<1	6	0.11
23-Feb	0.55	<1	<2	<1	4.8	0.13
03-Mar	0.53	<1	2	<1	5.8	0.15
09-Mar	0.68	<1	<2	<1	6.4	0.14
17-Mar	0.49	<1	<2	<1	6.9	0.09
22-Mar	0.45	<1	<2	<1	6.9	0.14
30-Mar	0.57	<1	<2	<1	6.7	0.11
08-Apr	0.46	<1	<2	<1	8.4	0.14
19-Apr	0.45	<1	<2	<1	8.7	0.08
25-Apr	0.42	<1	<2	<1	9	0.08
04-May	0.46	<1	<2	<1	7.9	0.10
10-May	0.53	<1	<2	<1	7.8	0.09
17-May	0.40	<1	<2	<1	11	0.09
25-May	0.38	<1	<2	<1	12.1	0.12
31-May	0.34	<1	2	<1	12.5	0.11
07-Jun	0.38	<1	<2	<1	13.6	0.14
14-Jun	0.39	<1	<2	<1	13.9	0.10
15-Jun	0.35	<1	<2	<1	14.6	0.10
16-Jun	0.43	<1	<2	<1	14.3	0.11
21-Jun	0.38	<1	<2	<1	14.2	0.08
28-Jun	0.15	<1	<2	<1	14.8	0.24
04-Jul	0.16	<1	2	<1	15.3	0.17
12-Jul	0.16	<1	6	<1	16.5	0.25
14-Jul	0.12	<1	<2	<1	16	0.24
21-Jul	0.21	<1	4	<1	16.7	0.24
29-Jul	0.05	<1	2	<1	16.9	0.35
04-Aug	0.19	<1	28	<1	18.4	0.23
10-Aug	0.03	<1	26	<1	18	0.19
11-Aug	0.15	<1	54	<1	18.2	0.20
16-Aug	0.09	<1	32	<1	18.7	0.18
23-Aug	0.04	<1	12	<1	18.6	0.29
01-Sep	0.21	<1	28	<1	18.8	0.21
07-Sep	0.21	<1	12	<1	18.3	0.19
13-Sep	0.16	<1	38	<1	18.4	0.21
21-Sep	0.21	<1	14	<1	18	0.25
26-Sep	0.19	<1	74	<1	16.6	0.28
05-Oct	0.13	<1	32	<1	16.2	0.20
13-Oct	0.15	<1	130	<1	16.9	0.23
25-Oct	0.05	<1	130	<1	15.1	0.25
26-Oct	0.95	<1	50	<1	15	0.21
02-Nov	0.23	<1	6	<1	14	0.22
22-Nov	0.17	<1	4	<1	10	0.14


910 (14396 115 AVE)- 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
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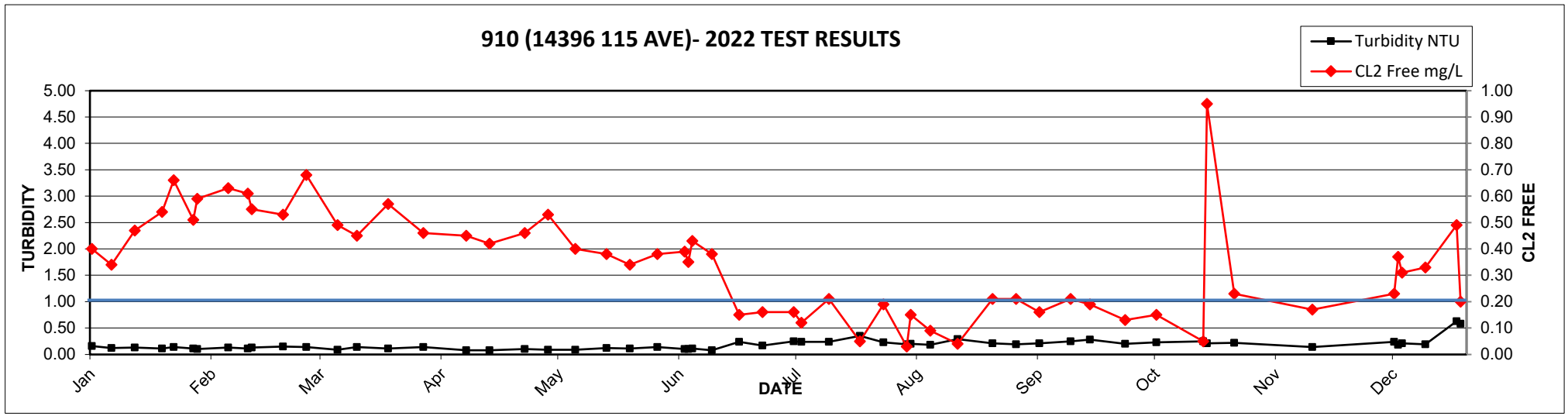
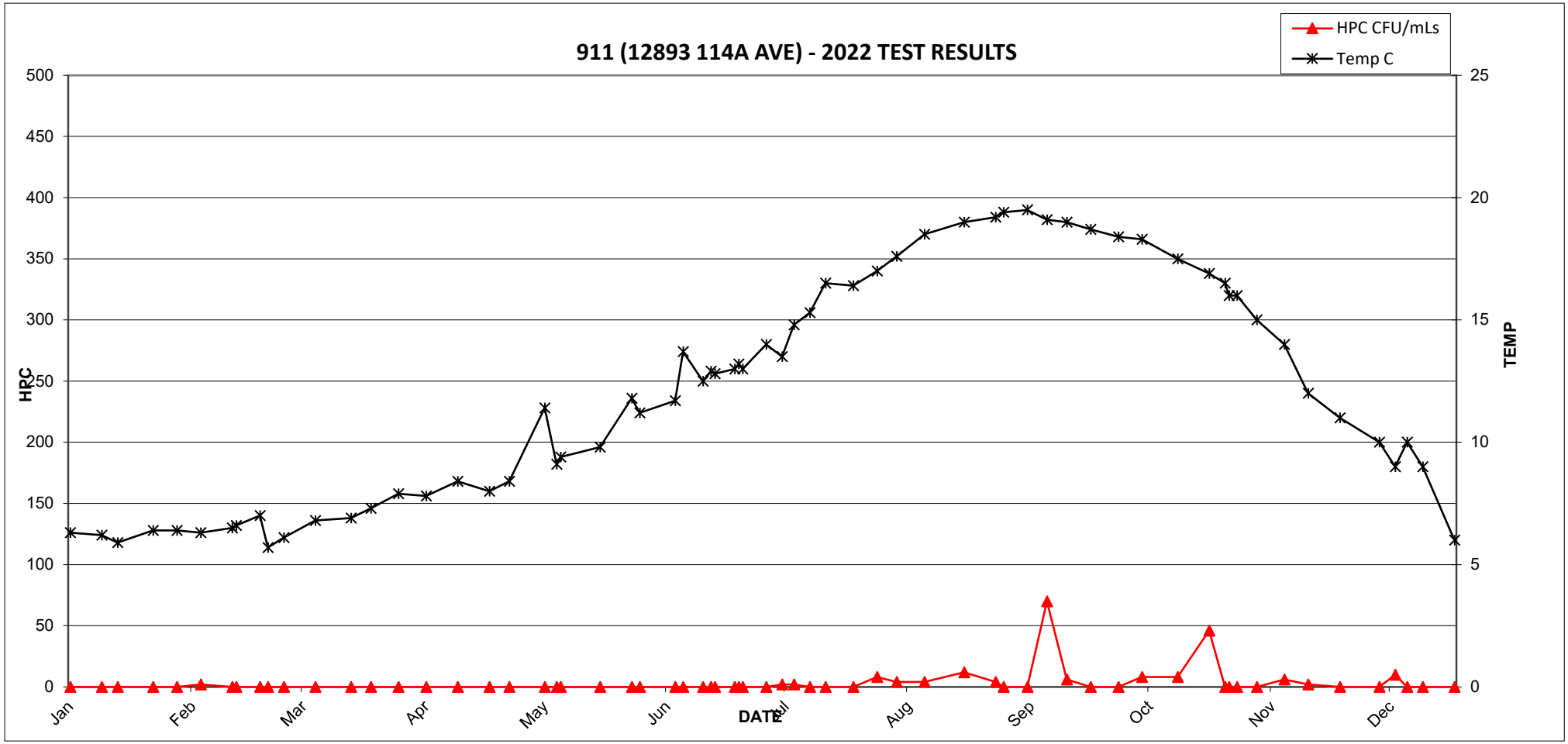
Aug
Sep
Oct
Nov
Dec


910 (14396 115 AVE)- 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 911 (12893 - 114A AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.53	<1	<2	<1	6.3	0.42
13-Jan	0.60	<1	<2	<1	6.2	0.96
17-Jan	0.66	<1	<2	<1	5.9	0.64
26-Jan	0.54	<1	<2	<1	6.4	0.50
01-Feb	0.81	<1	<2	<1	6.4	0.32
07-Feb	0.52	<1	2	<1	6.3	0.40
15-Feb	0.44	<1	<2	<1	6.5	0.25
16-Feb	0.37	<1	<2	<1	6.6	0.33
22-Feb	0.45	<1	<2	<1	7	0.30
24-Feb	0.44	<1	<2	<1	5.7	0.31
28-Feb	0.60	<1	<2	<1	6.1	0.33
08-Mar	0.65	<1	<2	<1	6.8	0.38
17-Mar	0.69	<1	<2	<1	6.9	0.47
22-Mar	0.75	<1	<2	<1	7.3	0.44
29-Mar	0.54	<1	<2	<1	7.9	0.27
05-Apr	0.59	<1	<2	<1	7.8	0.24
13-Apr	0.44	<1	<2	<1	8.4	0.25
21-Apr	0.68	<1	<2	<1	8	0.22
26-Apr	0.67	<1	<2	<1	8.4	0.21
05-May	0.70	<1	<2	<1	11.4	0.21
08-May	0.60	<1	<2	<1	9.1	0.19
09-May	0.59	<1	<2	<1	9.4	0.22
19-May	0.56	<1	<2	<1	9.8	0.26
27-May	0.29	<1	<2	<1	11.8	0.25
29-May	0.44	<1	<2	<1	11.2	0.23
07-Jun	0.50	<1	<2	<1	11.7	0.23
09-Jun	0.44	<1	<2	<1	13.7	0.21
14-Jun	0.37	<1	<2	<1	12.5	0.20
16-Jun	0.34	<1	<2	<1	12.9	0.19
17-Jun	0.41	<1	<2	<1	12.8	0.26
22-Jun	0.28	<1	<2	<1	13	0.18
23-Jun	0.39	<1	<2	<1	13.2	0.18
24-Jun	0.39	<1	<2	<1	13	0.22
30-Jun	0.36	<1	<2	<1	14	0.30
04-Jul	0.41	<1	2	<1	13.5	0.18
07-Jul	0.15	<1	2	<1	14.8	0.19
11-Jul	0.23	<1	<2	<1	15.3	0.22
15-Jul	0.11	<1	<2	<1	16.5	0.22
22-Jul	0.23	<1	<2	<1	16.4	0.29
28-Jul	0.08	<1	8	<1	17	0.17
02-Aug	0.06	<1	4	<1	17.6	0.15
09-Aug	0.14	<1	4	<1	18.5	0.22
19-Aug	0.18	<1	12	<1	19	0.22
27-Aug	0.14	<1	4	<1	19.2	0.19
29-Aug	0.13	<1	<2	<1	19.4	0.18
04-Sep	0.14	<1	<2	<1	19.5	0.16
09-Sep	0.20	<1	70	<1	19.1	0.21
14-Sep	0.13	<1	6	<1	19	0.16
20-Sep	0.19	<1	<2	<1	18.7	0.22
27-Sep	0.20	<1	<2	<1	18.4	0.27
03-Oct	0.17	<1	8	<1	18.3	0.21
12-Oct	0.16	<1	8	<1	17.5	0.23
20-Oct	0.14	<1	46	<1	16.9	0.23
24-Oct	0.26	<1	<2	<1	16.5	0.22
25-Oct	0.47	<1	<2	<1	16	0.37
27-Oct	0.29	<1	<2	<1	16	0.25


911 (12893 114A AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
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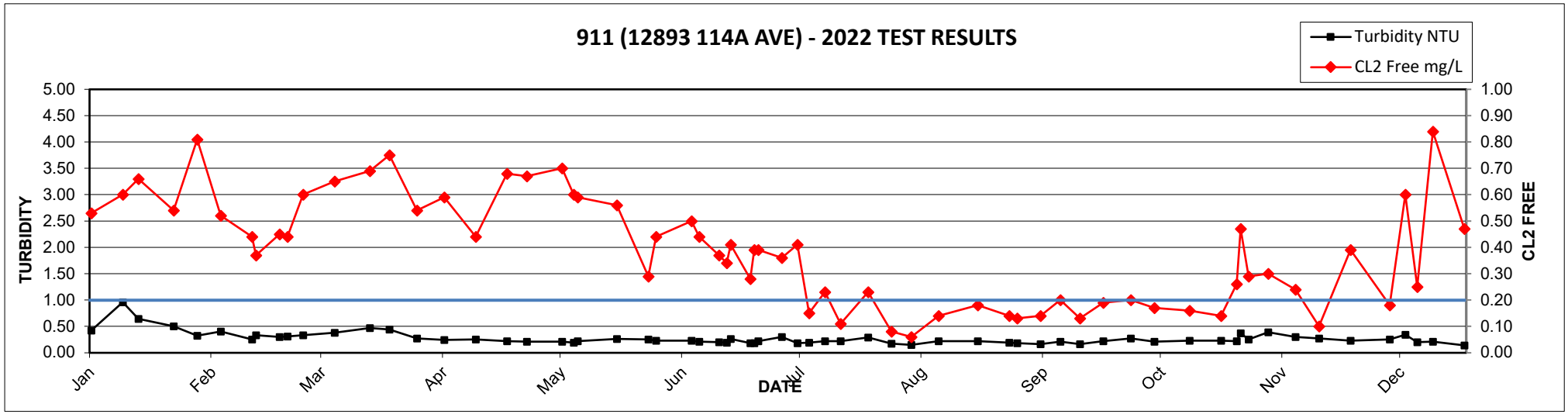
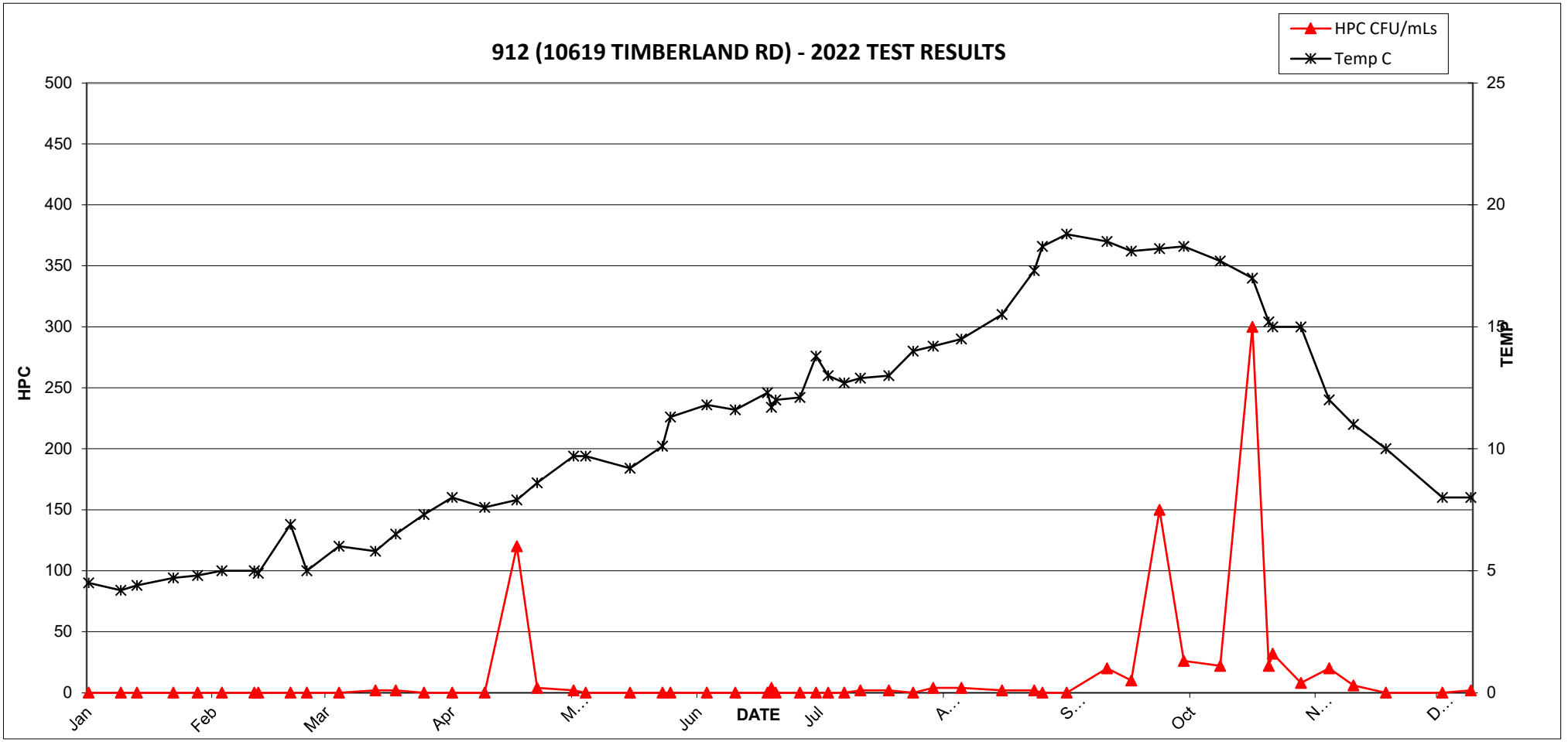
Dec


911 (12893 114A AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 912 (10619 TIMBERLAND RD)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.87	<1	<2	<1	4.5	0.44
13-Jan	0.69	<1	<2	<1	4.2	0.31
17-Jan	0.61	<1	<2	<1	4.4	0.11
26-Jan	0.72	<1	<2	<1	4.7	0.25
01-Feb	0.70	<1	<2	<1	4.8	0.13
07-Feb	0.75	<1	<2	<1	5	0.20
15-Feb	0.75	<1	<2	<1	5	0.14
16-Feb	0.71	<1	<2	<1	4.9	0.18
24-Feb	0.51	<1	<2	<1	6.9	0.13
28-Feb	0.85	<1	<2	<1	5	0.21
08-Mar	0.56	<1	<2	<1	6	0.30
17-Mar	0.62	<1	2	<1	5.8	0.15
22-Mar	0.67	<1	2	<1	6.5	0.12
29-Mar	0.56	<1	<2	<1	7.3	0.16
05-Apr	0.56	<1	<2	<1	8	0.12
13-Apr	0.58	<1	<2	<1	7.6	0.12
21-Apr	0.55	<1	120	<1	7.9	0.16
26-Apr	0.63	<1	4	<1	8.6	0.10
05-May	0.68	<1	2	<1	9.7	0.10
08-May	0.65	<1	<2	<1	9.7	0.08
19-May	0.66	<1	<2	<1	9.2	0.13
27-May	0.55	<1	<2	<1	10.1	0.16
29-May	0.58	<1	<2	<1	11.3	0.11
07-Jun	0.56	<1	<2	<1	11.8	0.10
14-Jun	0.66	<1	<2	<1	11.6	0.11
22-Jun	0.57	<1	<2	<1	12.3	0.15
23-Jun	0.62	<1	4	<1	11.7	0.18
24-Jun	0.57	<1	<2	<1	12	0.14
30-Jun	0.66	<1	<2	<1	12.1	0.65
04-Jul	0.47	<1	<2	<1	13.8	0.13
07-Jul	0.85	<1	<2	<1	13	0.20
11-Jul	0.79	<1	<2	<1	12.7	0.20
15-Jul	0.89	<1	2	<1	12.9	0.24
22-Jul	0.87	<1	2	<1	13	0.30
28-Jul	0.71	<1	<2	<1	14	0.25
02-Aug	0.99	<1	4	<1	14.2	0.25
09-Aug	0.78	<1	4	<1	14.5	0.22
19-Aug	0.54	<1	2	<1	15.5	0.23
27-Aug	0.09	<1	2	<1	17.3	0.26
29-Aug	0.19	<1	<2	<1	18.3	0.20
04-Sep	0.06	<1	<2	<1	18.8	0.21
14-Sep	0.04	<1	20	<1	18.5	0.22
20-Sep	0.11	<1	10	<1	18.1	0.23
27-Sep	0.04	<1	150	<1	18.2	0.37
03-Oct	0.12	<1	26	<1	18.3	0.24
12-Oct	0.07	<1	22	<1	17.7	0.22
20-Oct	0.03	<1	300	<1	17	0.58
24-Oct	0.11	<1	22	<1	15.2	0.20
25-Oct	0.57	<1	32	<1	15	0.26
01-Nov	0.51	<1	8	<1	15	0.50
08-Nov	0.10	<1	20	<1	12	0.30
14-Nov	0.08	<1	6	<1	11	0.28
22-Nov	0.78	<1	<2	<1	10	0.16


912 (10619 TIMBERLAND RD) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
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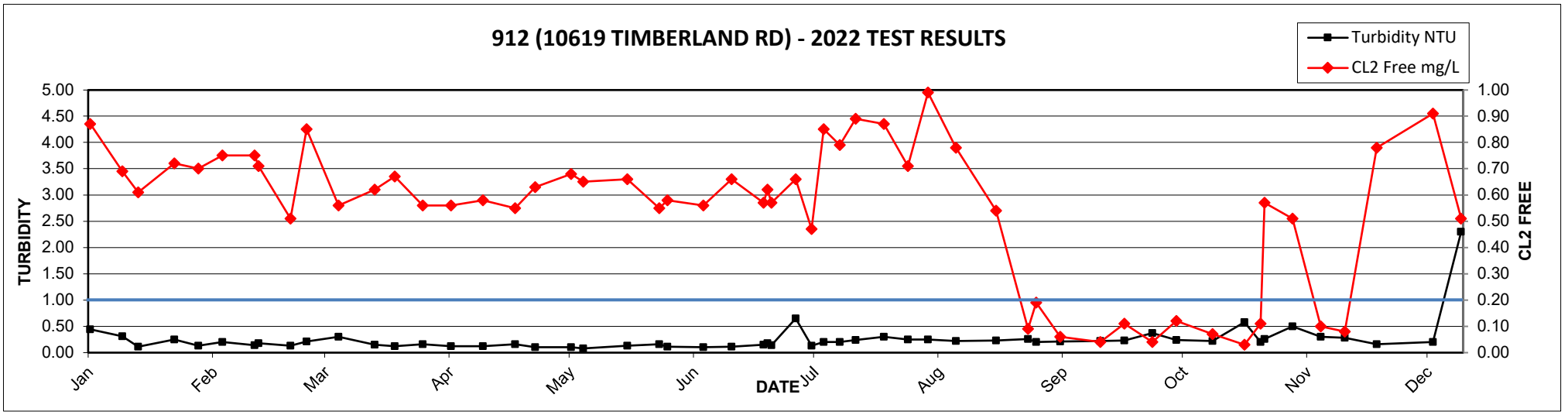
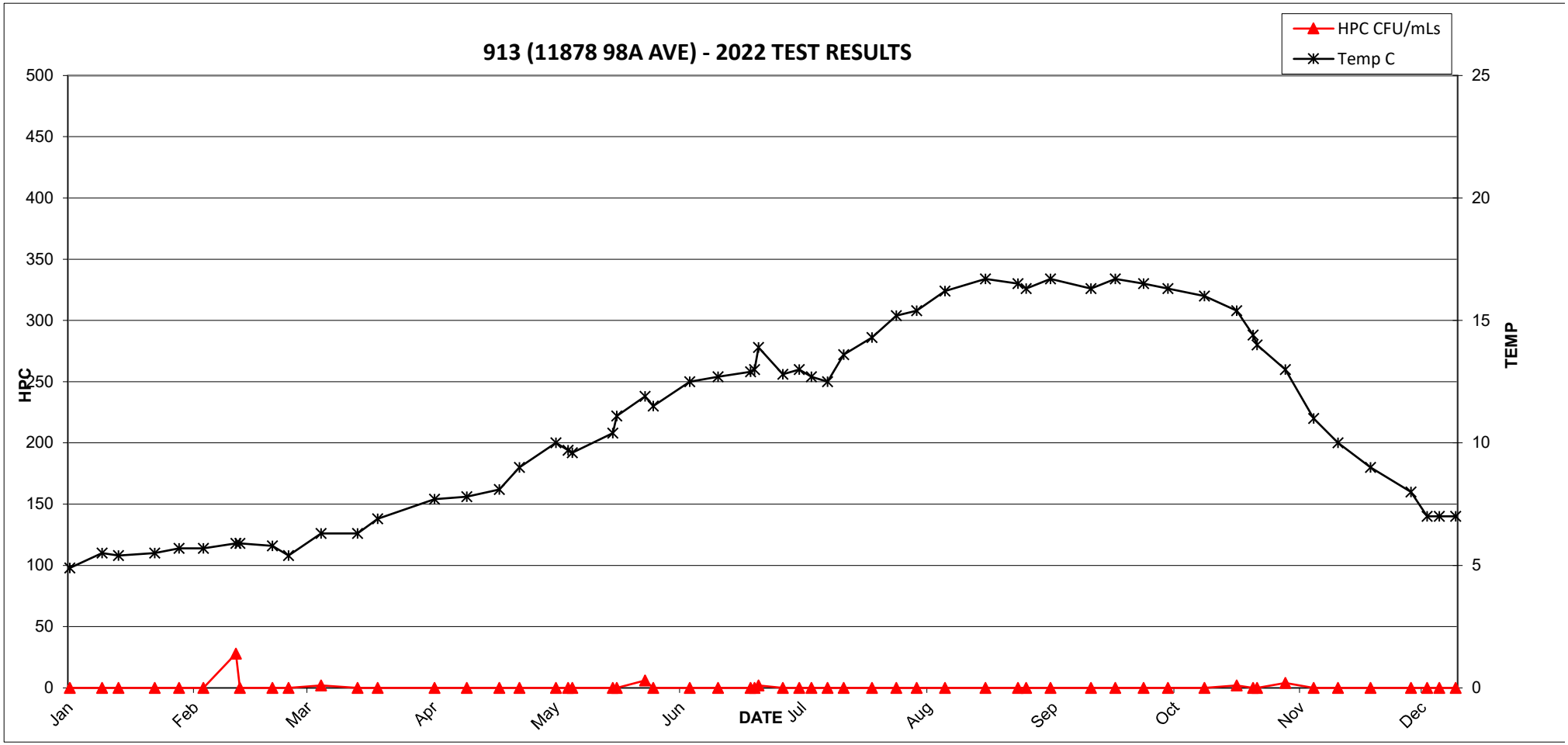
M...
Jun
Jul
A...
S...
Oct
N...
D...


912 (10619 TIMBERLAND RD) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 913 (11878 98A AVE)

Date Collected	CL2Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.74	<1	<2	<1	4.9	0.30
13-Jan	0.61	<1	<2	<1	5.5	0.20
17-Jan	0.57	<1	<2	<1	5.4	0.13
26-Jan	0.66	<1	<2	<1	5.5	0.31
01-Feb	0.73	<1	<2	<1	5.7	0.28
07-Feb	0.68	<1	<2	<1	5.7	0.11
15-Feb	0.72	<1	28	<1	5.9	0.13
16-Feb	0.70	<1	<2	<1	5.9	0.12
24-Feb	0.51	<1	<2	<1	5.8	0.17
28-Feb	0.78	<1	<2	<1	5.4	0.22
08-Mar	0.75	<1	2	<1	6.3	1.10
17-Mar	0.68	<1	<2	<1	6.3	0.11
22-Mar	0.75	<1	<2	<1	6.9	0.12
05-Apr	0.62	<1	<2	<1	7.7	0.10
13-Apr	0.68	<1	<2	<1	7.8	0.13
21-Apr	0.50	<1	<2	<1	8.1	0.09
26-Apr	0.65	<1	<2	<1	9	0.07
05-May	0.58	<1	<2	<1	10	0.10
08-May	0.65	<1	<2	<1	9.7	0.10
09-May	0.69	<1	<2	<1	9.6	0.11
19-May	0.60	<1	<2	<1	10.4	0.11
20-May	0.50	<1	<2	<1	11.1	0.10
27-May	0.48	<1	6	<1	11.9	0.13
29-May	0.63	<1	<2	<1	11.5	0.08
07-Jun	0.58	<1	<2	<1	12.5	0.11
14-Jun	0.65	<1	<2	<1	12.7	0.12
22-Jun	0.61	<1	<2	<1	12.9	0.10
23-Jun	0.63	<1	<2	<1	13	0.12
24-Jun	0.85	<1	2	<1	13.9	0.34
30-Jun	0.68	<1	<2	<1	12.8	0.24
04-Jul	0.62	<1	<2	<1	13	0.15
07-Jul	0.86	<1	<2	<1	12.7	0.23
11-Jul	0.93	<1	<2	<1	12.5	0.23
15-Jul	0.98	<1	<2	<1	13.6	0.23
22-Jul	0.76	<1	<2	<1	14.3	0.25
28-Jul	0.69	<1	<2	<1	15.2	0.21
02-Aug	0.76	<1	<2	<1	15.4	0.18
09-Aug	0.62	<1	<2	<1	16.2	0.21
19-Aug	0.48	<1	<2	<1	16.7	0.23
27-Aug	0.72	<1	<2	<1	16.5	0.19
29-Aug	0.61	<1	<2	<1	16.3	0.30
04-Sep	0.83	<1	<2	<1	16.7	0.20
14-Sep	0.71	<1	<2	<1	16.3	0.21
20-Sep	0.46	<1	<2	<1	16.7	0.25
27-Sep	0.61	<1	<2	<1	16.5	0.26
03-Oct	0.76	<1	<2	<1	16.3	0.29
12-Oct	0.59	<1	<2	<1	16	0.27
20-Oct	0.61	<1	2	<1	15.4	0.28
24-Oct	0.59	<1	<2	<1	14.4	0.30
25-Oct	0.75	<1	<2	<1	14	0.37
01-Nov	0.55	<1	4	<1	13	0.17


913 (11878 98A AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
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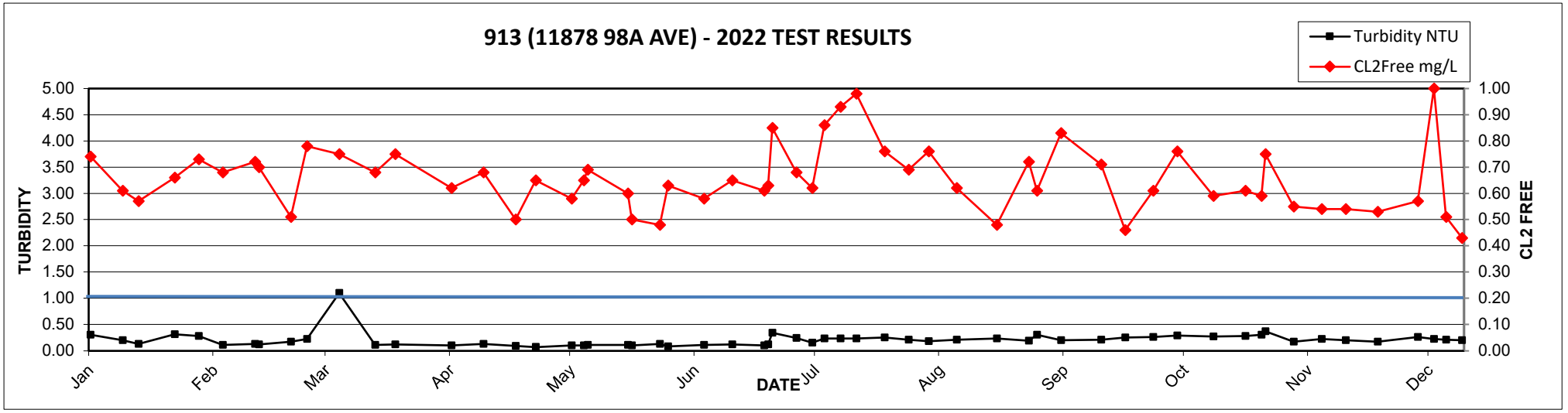
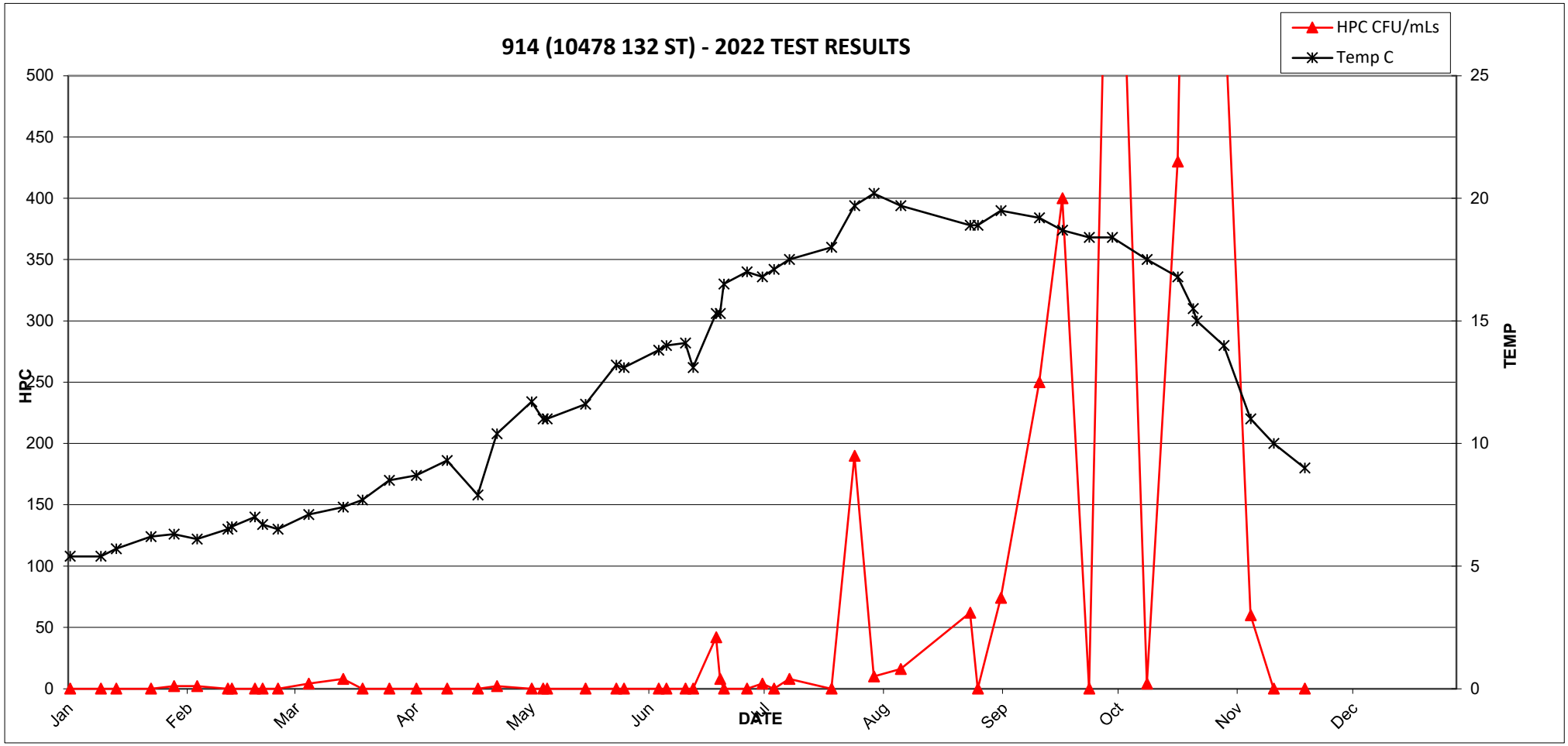
Aug
Sep
Oct
Nov
Dec


913 (11878 98A AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 914 (10478 132 ST)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.62	<1	<2	<1	5.4	0.28
13-Jan	0.55	<1	<2	<1	5.4	0.20
17-Jan	0.49	<1	<2	<1	5.7	0.12
26-Jan	0.51	<1	<2	<1	6.2	0.12
01-Feb	0.64	<1	2	<1	6.3	0.10
07-Feb	0.57	<1	2	<1	6.1	0.10
15-Feb	0.53	<1	<2	<1	6.5	0.12
16-Feb	0.60	<1	<2	<1	6.6	0.12
22-Feb	0.61	<1	<2	<1	7	0.14
24-Feb	0.55	<1	<2	<1	6.7	0.12
28-Feb	0.67	<1	<2	<1	6.5	0.13
08-Mar	0.68	<1	4	<1	7.1	0.21
17-Mar	0.60	<1	8	<1	7.4	0.12
22-Mar	0.58	<1	<2	<1	7.7	0.13
29-Mar	0.59	<1	<2	<1	8.5	0.15
05-Apr	0.54	<1	<2	<1	8.7	0.09
13-Apr	0.53	<1	<2	<1	9.3	0.11
21-Apr	0.43	<1	<2	<1	7.9	0.09
26-Apr	0.53	<1	2	<1	10.4	0.08
05-May	0.51	<1	<2	<1	11.7	0.08
08-May	0.49	<1	<2	<1	11	0.07
09-May	0.46	<1	<2	<1	11	0.10
19-May	0.55	<1	<2	<1	11.6	0.10
27-May	0.43	<1	<2	<1	13.2	0.09
29-May	0.49	<1	<2	<1	13.1	0.09
07-Jun	0.52	<1	<2	<1	13.8	0.12
09-Jun	0.51	<1	<2	<1	14	0.12
14-Jun	0.51	<1	<2	<1	14.1	0.10
16-Jun	0.50	<1	<2	<1	13.1	0.09
22-Jun	0.44	<1	42	<1	15.3	0.08
23-Jun	0.48	<1	8	<1	15.3	0.14
24-Jun	0.47	<1	<2	<1	16.5	0.19
30-Jun	0.35	<1	<2	<1	17	0.13
04-Jul	0.28	<1	4	<1	16.8	0.13
07-Jul	0.36	<1	<2	<1	17.1	0.11
11-Jul	0.50	<1	8	<1	17.5	0.19
22-Jul	0.40	<1	<2	<1	18	0.26
28-Jul	0.16	<1	190	<1	19.7	0.20
02-Aug	0.21	<1	10	<1	20.2	0.18
09-Aug	0.35	<1	16	<1	19.7	0.18
27-Aug	0.27	<1	62	<1	18.9	0.20
29-Aug	0.37	<1	<2	<1	18.9	0.16
04-Sep	0.29	<1	74	<1	19.5	0.15
14-Sep	0.25	<1	250	<1	19.2	0.18
20-Sep	0.18	<1	400	<1	18.7	0.18
27-Sep	0.24	<1	<2	<1	18.4	0.19
03-Oct	0.29	<1	860	<1	18.4	0.23
12-Oct	0.27	<1	4	<1	17.5	0.19
20-Oct	0.24	<1	430	<1	16.8	0.23
24-Oct	0.21	<1	1100	<1	15.5	0.21
25-Oct	0.77	<1	830	<1	15	0.34
01-Nov	0.66	<1	570	<1	14	0.26


914 (10478 132 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
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Aug
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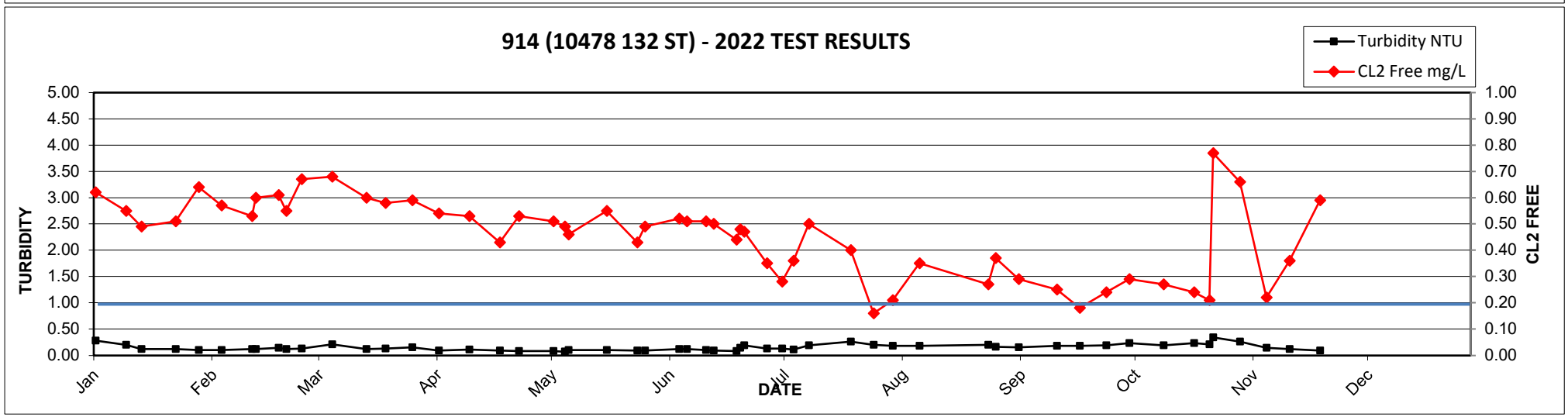
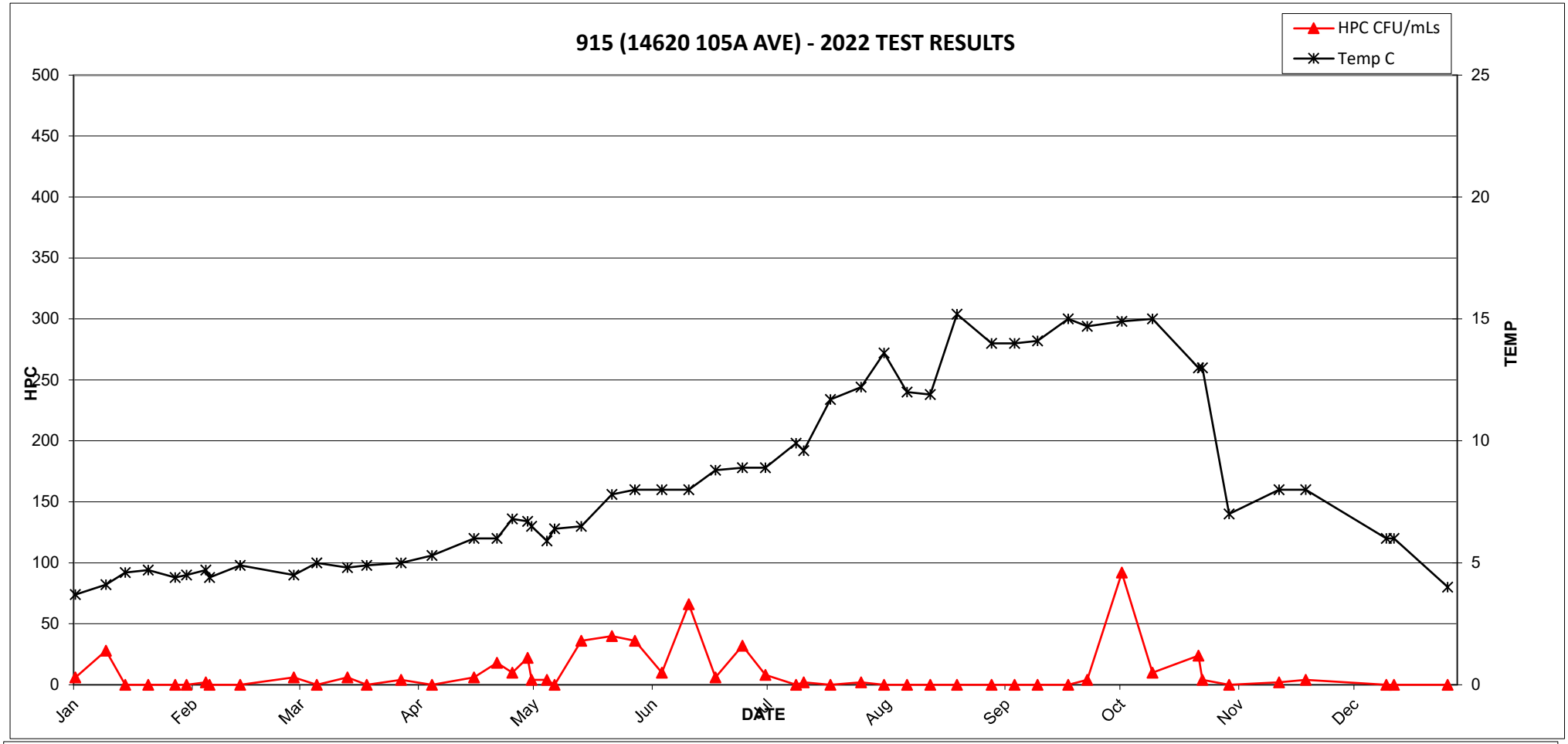
Nov
Dec


914 (10478 132 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 915 (14620 105A AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.95	<1	6	<1	3.7	1.40
13-Jan	1.24	<1	28	<1	4.1	2.80
18-Jan	1.12	<1	<2	<1	4.6	4.80
24-Jan	0.99	<1	<2	<1	4.7	2.10
31-Jan	0.87	<1	<2	<1	4.4	1.60
03-Feb	1.40	<1	<2	<1	4.5	1.10
08-Feb	1.11	<1	2	<1	4.7	1.90
09-Feb	0.97	<1	<2	<1	4.4	0.40
17-Feb	1.21	<1	<2	<1	4.9	3.70
03-Mar	1.17	<1	6	<1	4.5	1.10
09-Mar	0.73	<1	<2	<1	5	0.83
17-Mar	0.89	<1	6	<1	4.8	0.61
22-Mar	1.19	<1	<2	<1	4.9	1.10
31-Mar	0.93	<1	4	<1	5	0.38
08-Apr	1.17	<1	<2	<1	5.3	0.38
19-Apr	0.94	<1	6	<1	6	0.29
25-Apr	0.91	<1	18	<1	6	0.28
29-Apr	0.58	<1	10	<1	6.8	0.27
03-May	1.01	<1	22	<1	6.7	0.40
04-May	0.95	<1	4	<1	6.5	0.25
08-May	1.02	<1	4	<1	5.9	0.30
10-May	1.12	<1	<2	<1	6.4	0.24
17-May	0.85	<1	36	<1	6.5	0.37
25-May	0.89	<1	40	<1	7.8	0.29
31-May	0.98	<1	36	<1	8	0.34
07-Jun	1.12	<1	10	<1	8	0.28
14-Jun	0.91	<1	66	<1	8	0.48
21-Jun	1.05	<1	6	<1	8.8	0.79
28-Jun	0.93	<1	32	<1	8.9	0.31
04-Jul	0.99	<1	8	<1	8.9	0.27
12-Jul	0.87	<1	<2	<1	9.9	0.34
14-Jul	1.05	<1	2	<1	9.6	0.30
21-Jul	1.04	<1	<2	<1	11.7	0.37
29-Jul	0.85	<1	2	<1	12.2	0.26
04-Aug	0.98	<1	<2	<1	13.6	0.67
10-Aug	1.03	<1	<2	<1	12	0.39
16-Aug	0.86	<1	<2	<1	11.9	0.26
23-Aug	1.24	<1	<2	<1	15.2	0.30
01-Sep	1.18	<1	<2	<1	14	0.28
07-Sep	0.91	<1	<2	<1	14	0.23
13-Sep	0.88	<1	<2	<1	14.1	0.27
21-Sep	1.01	<1	<2	<1	15	0.23
26-Sep	0.76	<1	4	<1	14.7	0.29
05-Oct	1.12	<1	92	<1	14.9	0.62
13-Oct	0.85	<1	10	<1	15	0.50
25-Oct	0.73	<1	24	<1	13	0.40
26-Oct	0.72	<1	4	<1	13	0.42
02-Nov	0.93	<1	<2	<1	7	0.58
15-Nov	1.00	<1	2	<1	8	0.75
22-Nov	0.93	<1	4	<1	8	0.65


915 (14620 105A AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
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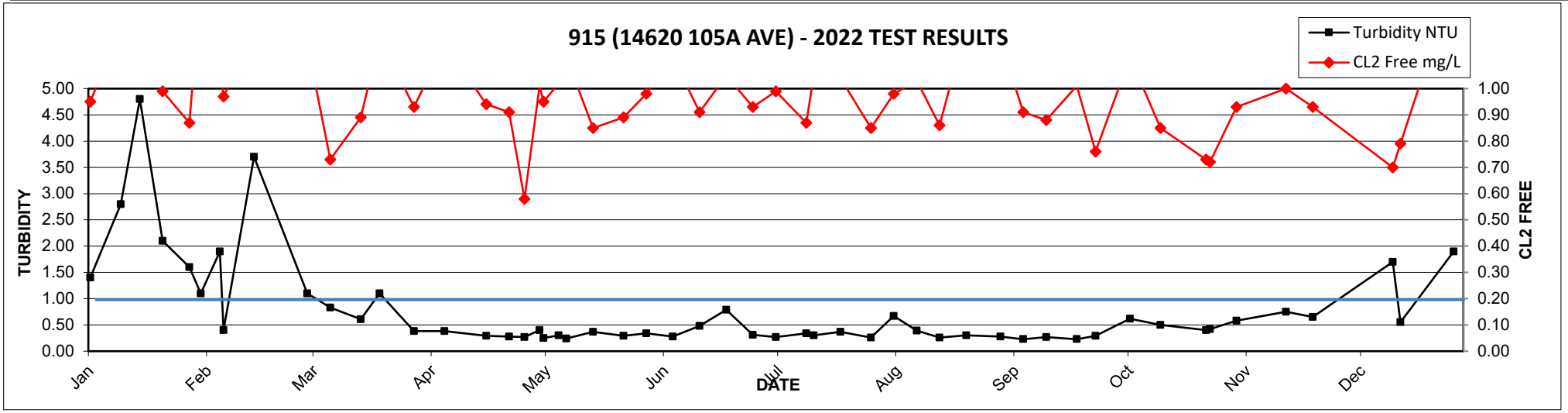
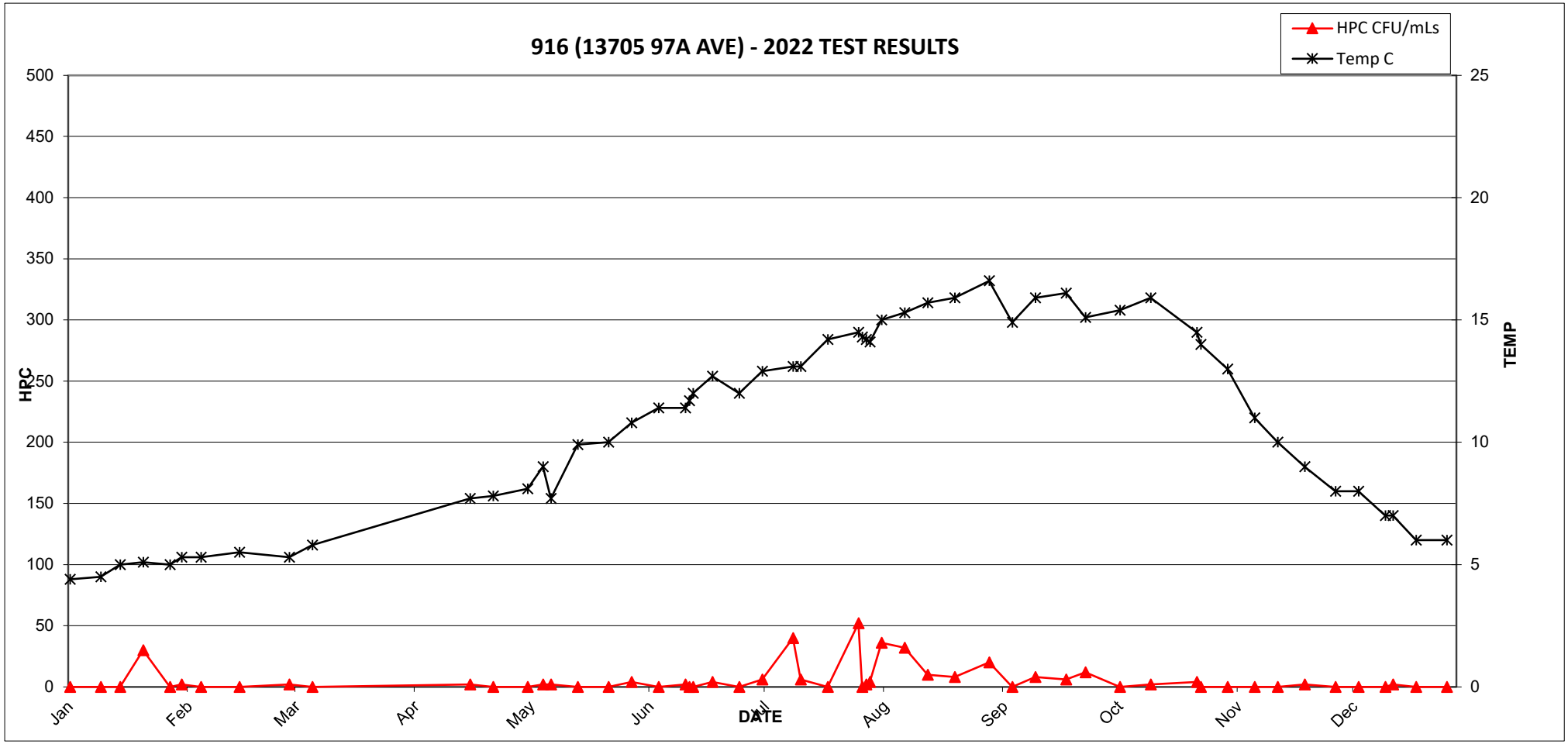
Nov
Dec


915 (14620 105A AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 916 (13705 97A AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.65	<1	<2	<1	4.4	0.31
13-Jan	0.61	<1	<2	<1	4.5	0.20
18-Jan	0.50	<1	<2	<1	5	0.17
24-Jan	0.62	<1	30	<1	5.1	0.14
31-Jan	0.65	<1	<2	<1	5	0.11
03-Feb	0.70	<1	2	<1	5.3	0.26
08-Feb	0.69	<1	<2	<1	5.3	0.11
18-Feb	0.62	<1	<2	<1	5.5	0.13
03-Mar	0.65	<1	2	<1	5.3	0.14
09-Mar	0.66	<1	<2	<1	5.8	0.24
19-Apr	0.64	<1	2	<1	7.7	0.45
25-Apr	0.55	<1	<2	<1	7.8	0.12
04-May	0.55	<1	<2	<1	8.1	0.11
08-May	0.61	<1	2	<1	9	0.10
10-May	0.65	<1	2	<1	7.7	0.11
17-May	0.45	<1	<2	<1	9.9	0.09
25-May	0.46	<1	<2	<1	10	0.21
31-May	0.40	<1	4	<1	10.8	0.12
07-Jun	0.49	<1	<2	<1	11.4	0.14
14-Jun	0.64	<1	2	<1	11.4	0.13
15-Jun	0.58	<1	<2	<1	11.7	0.11
16-Jun	0.51	<1	<2	<1	12	0.12
21-Jun	0.41	<1	4	<1	12.7	0.10
28-Jun	0.69	<1	<2	<1	12	0.24
04-Jul	0.54	<1	6	<1	12.9	0.15
12-Jul	0.53	<1	40	<1	13.1	0.16
14-Jul	0.70	<1	6	<1	13.1	0.22
21-Jul	0.69	<1	<2	<1	14.2	0.33
29-Jul	0.56	<1	52	1	14.5	0.16
30-Jul	0.81	<1	<2	<1	14.3	0.17
31-Jul	0.84	<1	2	<1	14.2	0.18
01-Aug	0.69	<1	4	<1	14.1	0.20
04-Aug	0.70	<1	36	<1	15	0.18
10-Aug	0.62	<1	32	<1	15.3	0.20
16-Aug	0.48	<1	10	<1	15.7	0.17
23-Aug	0.50	<1	8	<1	15.9	0.26
01-Sep	0.69	<1	20	<1	16.6	0.25
07-Sep	0.56	<1	<2	<1	14.9	0.17
13-Sep	0.48	<1	8	<1	15.9	0.26
21-Sep	0.54	<1	6	<1	16.1	0.19
26-Sep	0.46	<1	12	<1	15.1	0.23
05-Oct	0.43	<1	<2	<1	15.4	0.21
13-Oct	0.47	<1	2	<1	15.9	0.23
25-Oct	0.45	<1	4	<1	14.5	0.23
26-Oct	0.64	<1	<2	<1	14	0.25
02-Nov	0.65	<1	<2	<1	13	0.16
09-Nov	0.55	<1	<2	<1	11	0.11
15-Nov	0.33	<1	<2	<1	10	0.15
22-Nov	0.69	<1	2	<1	9	0.15
30-Nov	0.43	<1	<2	<1	8	0.22
06-Dec	0.65	<1	<2	<1	8	0.26
13-Dec	0.59	<1	<2	<1	7	0.18


916 (13705 97A AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
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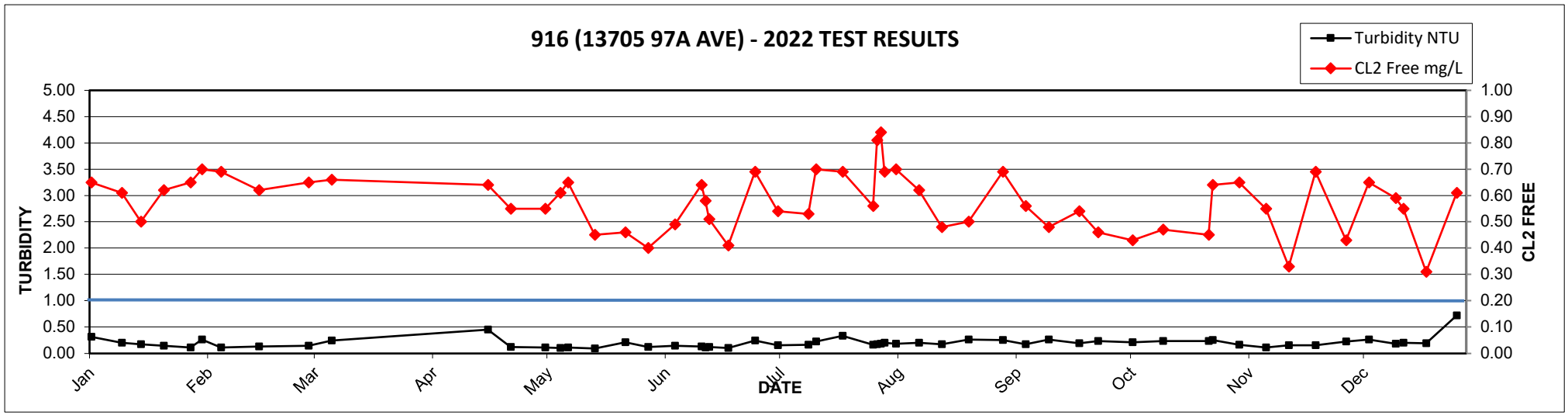
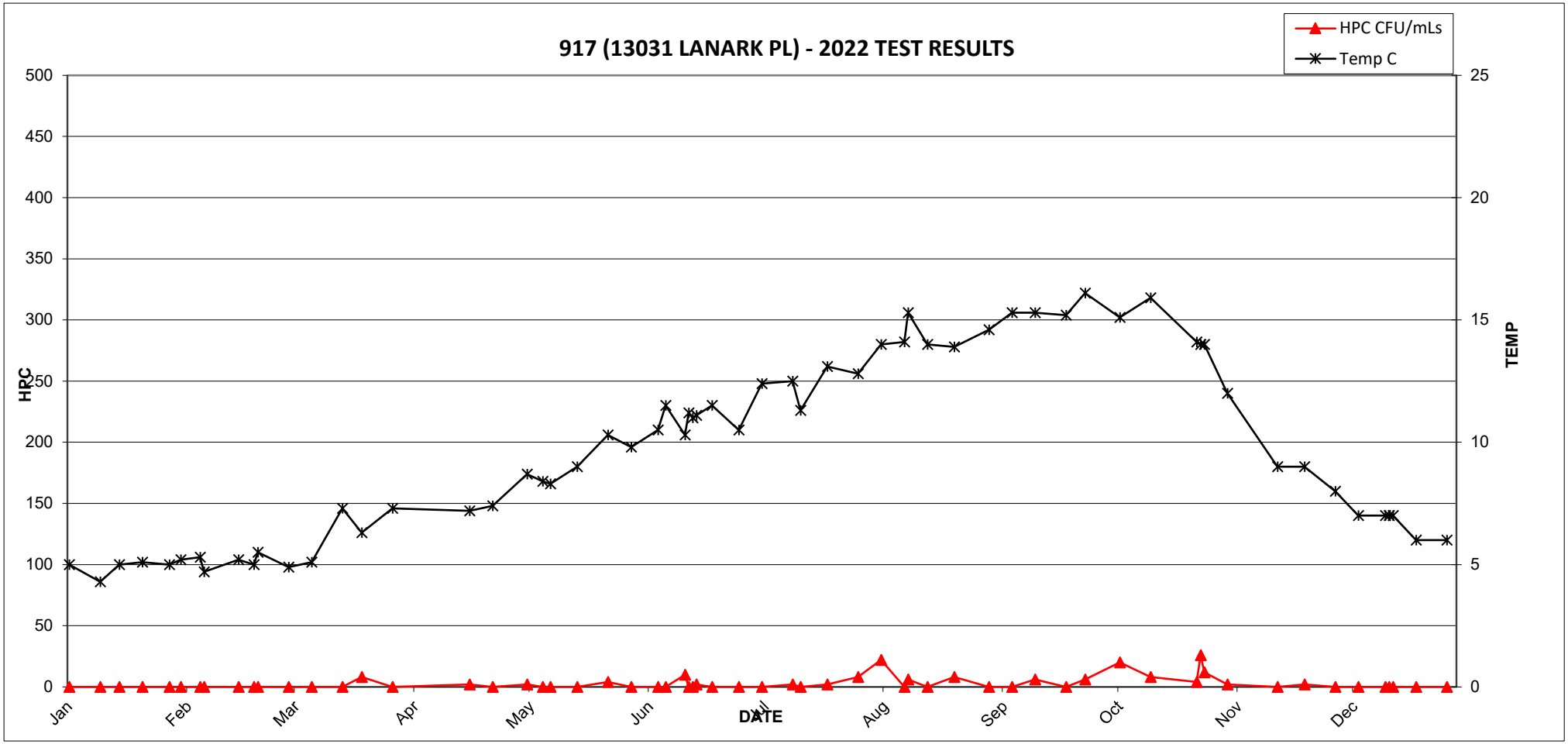
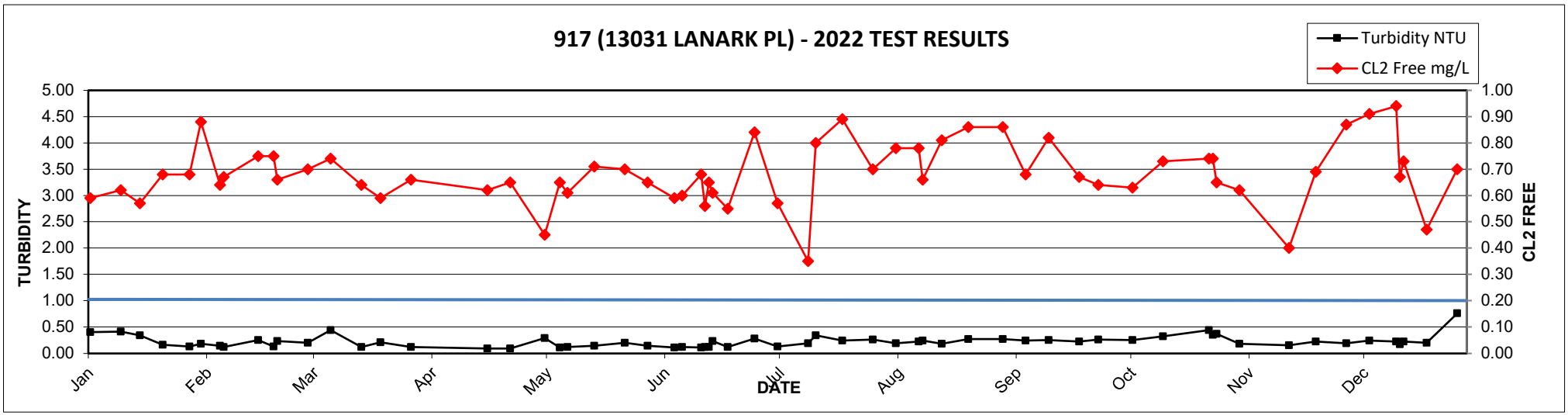
Dec


916 (13705 97A AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 917 (13031 LANARK PL)

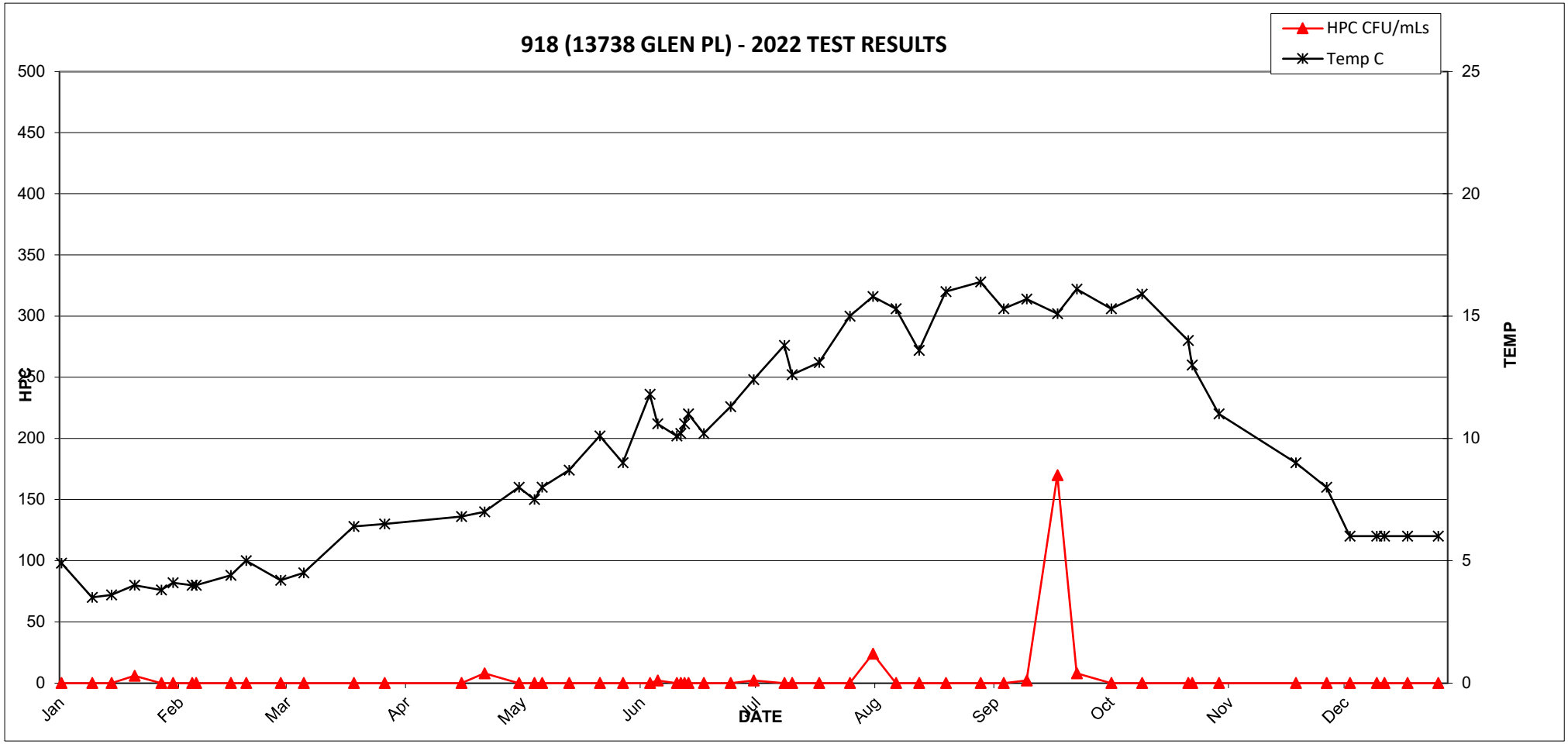
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.59	<1	<2	<1	5	0.40
13-Jan	0.62	<1	<2	<1	4.3	0.41
18-Jan	0.57	<1	<2	<1	5	0.34
24-Jan	0.68	<1	<2	<1	5.1	0.16
31-Jan	0.68	<1	<2	<1	5	0.13
03-Feb	0.88	<1	<2	<1	5.2	0.18
08-Feb	0.64	<1	<2	<1	5.3	0.14
09-Feb	0.67	<1	<2	<1	4.7	0.12
18-Feb	0.75	<1	<2	<1	5.2	0.25
22-Feb	0.75	<1	<2	<1	5	0.13
23-Feb	0.66	<1	<2	<1	5.5	0.23
03-Mar	0.70	<1	<2	<1	4.9	0.20
09-Mar	0.74	<1	<2	<1	5.1	0.44
17-Mar	0.64	<1	<2	<1	7.3	0.12
22-Mar	0.59	<1	8	<1	6.3	0.21
30-Mar	0.66	<1	<2	<1	7.3	0.12
19-Apr	0.62	<1	2	<1	7.2	0.09
25-Apr	0.65	<1	<2	<1	7.4	0.09
04-May	0.45	<1	2	<1	8.7	0.29
08-May	0.65	<1	<2	<1	8.4	0.11
10-May	0.61	<1	<2	<1	8.3	0.12
17-May	0.71	<1	<2	<1	9	0.14
25-May	0.70	<1	4	<1	10.3	0.20
31-May	0.65	<1	<2	<1	9.8	0.14
07-Jun	0.59	<1	<2	<1	10.5	0.11
09-Jun	0.60	<1	<2	<1	11.5	0.12
14-Jun	0.68	<1	10	<1	10.3	0.11
15-Jun	0.56	<1	<2	<1	11.2	0.12
16-Jun	0.65	<1	<2	<1	11	0.12
17-Jun	0.61	<1	2	<1	11.1	0.23
21-Jun	0.55	<1	<2	<1	11.5	0.12
28-Jun	0.84	<1	<2	<1	10.5	0.28
04-Jul	0.57	<1	<2	<1	12.4	0.13
12-Jul	0.35	<1	2	<1	12.5	0.19
14-Jul	0.80	<1	<2	<1	11.3	0.34
21-Jul	0.89	<1	2	<1	13.1	0.24
29-Jul	0.70	<1	8	<1	12.8	0.26
04-Aug	0.78	<1	22	<1	14	0.19
10-Aug	0.78	<1	<2	<1	14.1	0.22
11-Aug	0.66	<1	6	<1	15.3	0.24
16-Aug	0.81	<1	<2	<1	14	0.18
23-Aug	0.86	<1	8	<1	13.9	0.27
01-Sep	0.86	<1	<2	<1	14.6	0.27
07-Sep	0.68	<1	<2	<1	15.3	0.24
13-Sep	0.82	<1	6	<1	15.3	0.25
21-Sep	0.67	<1	<2	<1	15.2	0.22
26-Sep	0.64	<1	6	<1	16.1	0.26
05-Oct	0.63	<1	20	<1	15.1	0.25

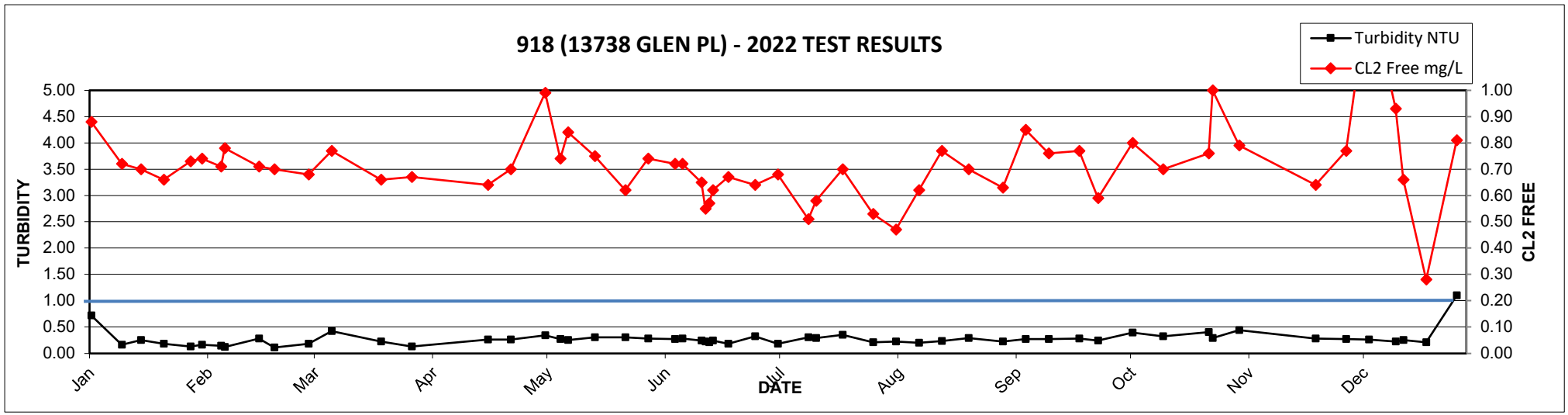

917 (13031 LANARK PL) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


917 (13031 LANARK PL) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 918 (13738 GLEN PL)

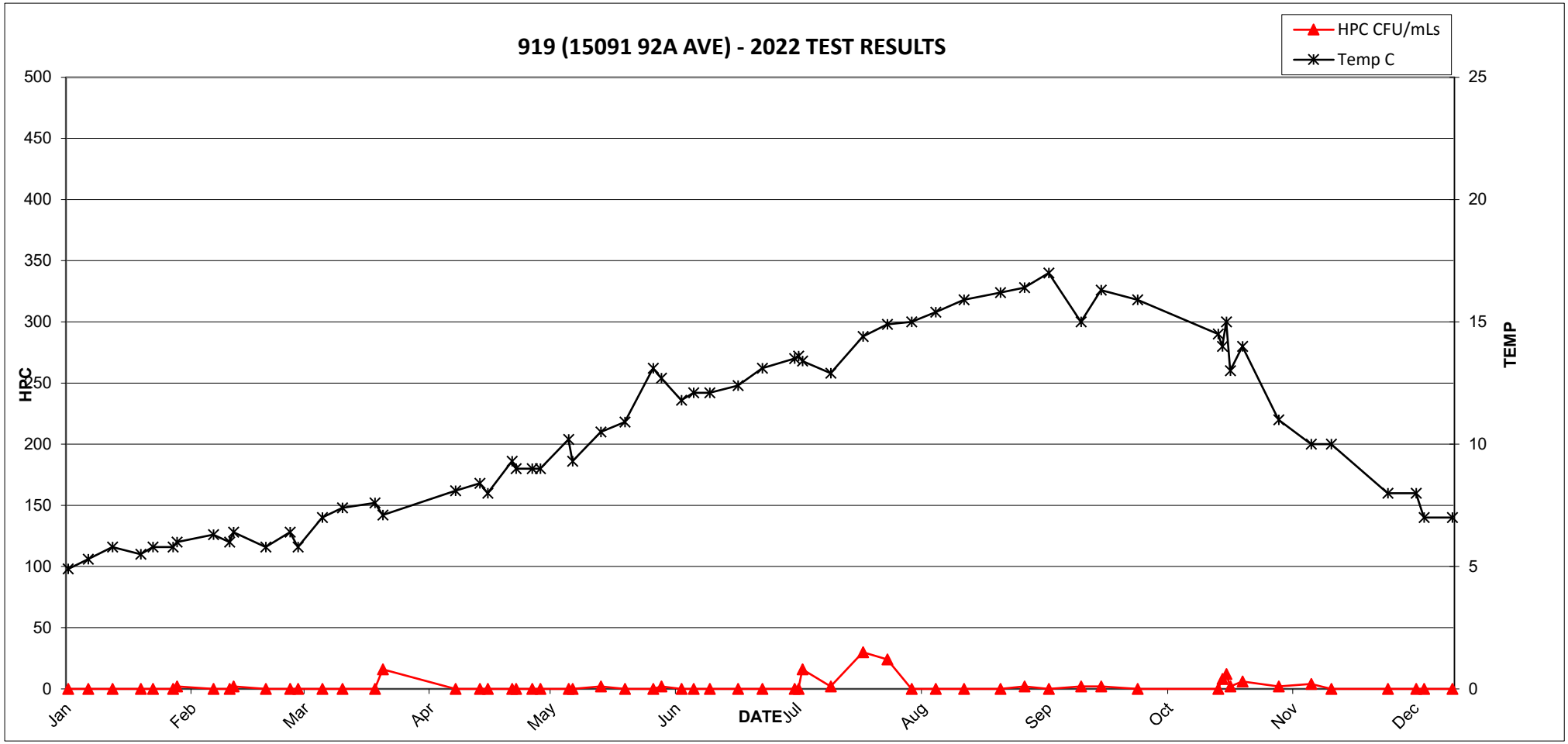
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.88	<1	<2	<1	4.9	0.72
13-Jan	0.72	<1	<2	<1	3.5	0.16
18-Jan	0.70	<1	<2	<1	3.6	0.25
24-Jan	0.66	<1	6	<1	4	0.18
31-Jan	0.73	<1	<2	<1	3.8	0.13
03-Feb	0.74	<1	<2	<1	4.1	0.16
08-Feb	0.71	<1	<2	<1	4	0.14
09-Feb	0.78	<1	<2	<1	4	0.12
18-Feb	0.71	<1	<2	<1	4.4	0.28
22-Feb	0.70	<1	<2	<1	5	0.11
03-Mar	0.68	<1	<2	<1	4.2	0.18
09-Mar	0.77	<1	<2	<1	4.5	0.42
22-Mar	0.66	<1	<2	<1	6.4	0.22
30-Mar	0.67	<1	<2	<1	6.5	0.13
19-Apr	0.64	<1	<2	<1	6.8	0.26
25-Apr	0.70	<1	8	<1	7	0.26
04-May	0.99	<1	<2	<1	8	0.34
08-May	0.74	<1	<2	<1	7.5	0.27
10-May	0.84	<1	<2	<1	8	0.25
17-May	0.75	<1	<2	<1	8.7	0.30
25-May	0.62	<1	<2	<1	10.1	0.30
31-May	0.74	<1	<2	<1	9	0.28
07-Jun	0.72	<1	<2	<1	11.8	0.27
09-Jun	0.72	<1	2	<1	10.6	0.28
14-Jun	0.65	<1	<2	<1	10.1	0.24
15-Jun	0.55	<1	<2	<1	10.2	0.22
16-Jun	0.57	<1	<2	<1	10.6	0.21
17-Jun	0.62	<1	<2	<1	11	0.24
21-Jun	0.67	<1	<2	<1	10.2	0.18
28-Jun	0.64	<1	<2	<1	11.3	0.32
04-Jul	0.68	<1	2	<1	12.4	0.18
12-Jul	0.51	<1	<2	<1	13.8	0.30
14-Jul	0.58	<1	<2	<1	12.6	0.29
21-Jul	0.70	<1	<2	<1	13.1	0.35
29-Jul	0.53	<1	<2	<1	15	0.21
04-Aug	0.47	<1	24	<1	15.8	0.22
10-Aug	0.62	<1	<2	<1	15.3	0.20
16-Aug	0.77	<1	<2	<1	13.6	0.23
23-Aug	0.70	<1	<2	<1	16	0.29
01-Sep	0.63	<1	<2	<1	16.4	0.22
07-Sep	0.85	<1	<2	<1	15.3	0.27
13-Sep	0.76	<1	2	<1	15.7	0.27
21-Sep	0.77	<1	170	<1	15.1	0.28
26-Sep	0.59	<1	8	<1	16.1	0.24
05-Oct	0.80	<1	<2	<1	15.3	0.39
13-Oct	0.70	<1	<2	<1	15.9	0.32
25-Oct	0.76	<1	<2	<1	14	0.40
26-Oct	1.00	<1	<2	<1	13	0.29
02-Nov	0.79	<1	<2	<1	11	0.44
22-Nov	0.64	<1	<2	<1	9	0.28
30-Nov	0.77	<1	<2	<1	8	0.27

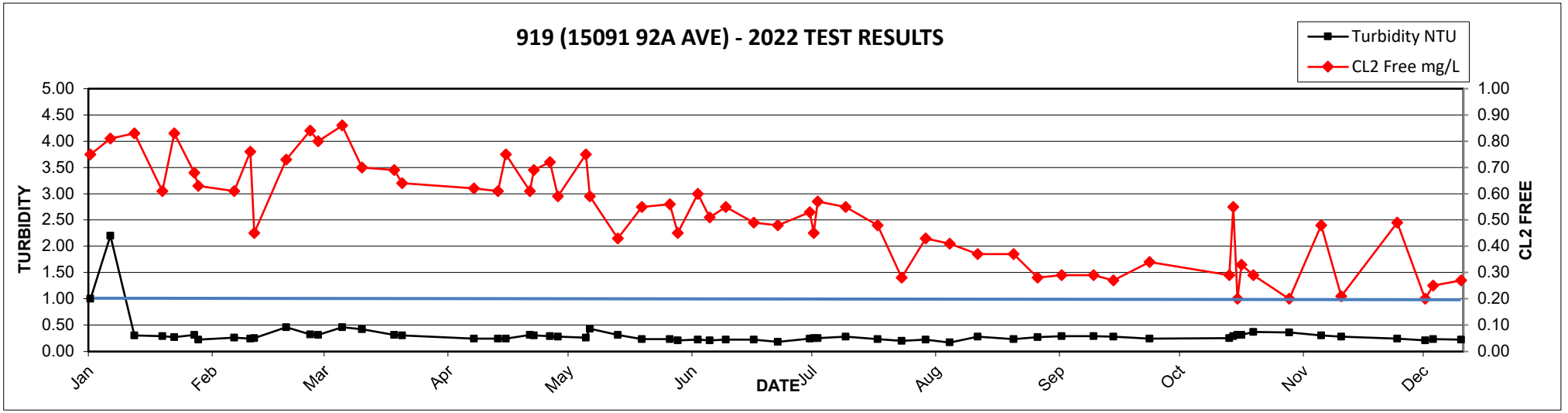

918 (13738 GLEN PL) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


918 (13738 GLEN PL) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 919 (15091 92A AVE)

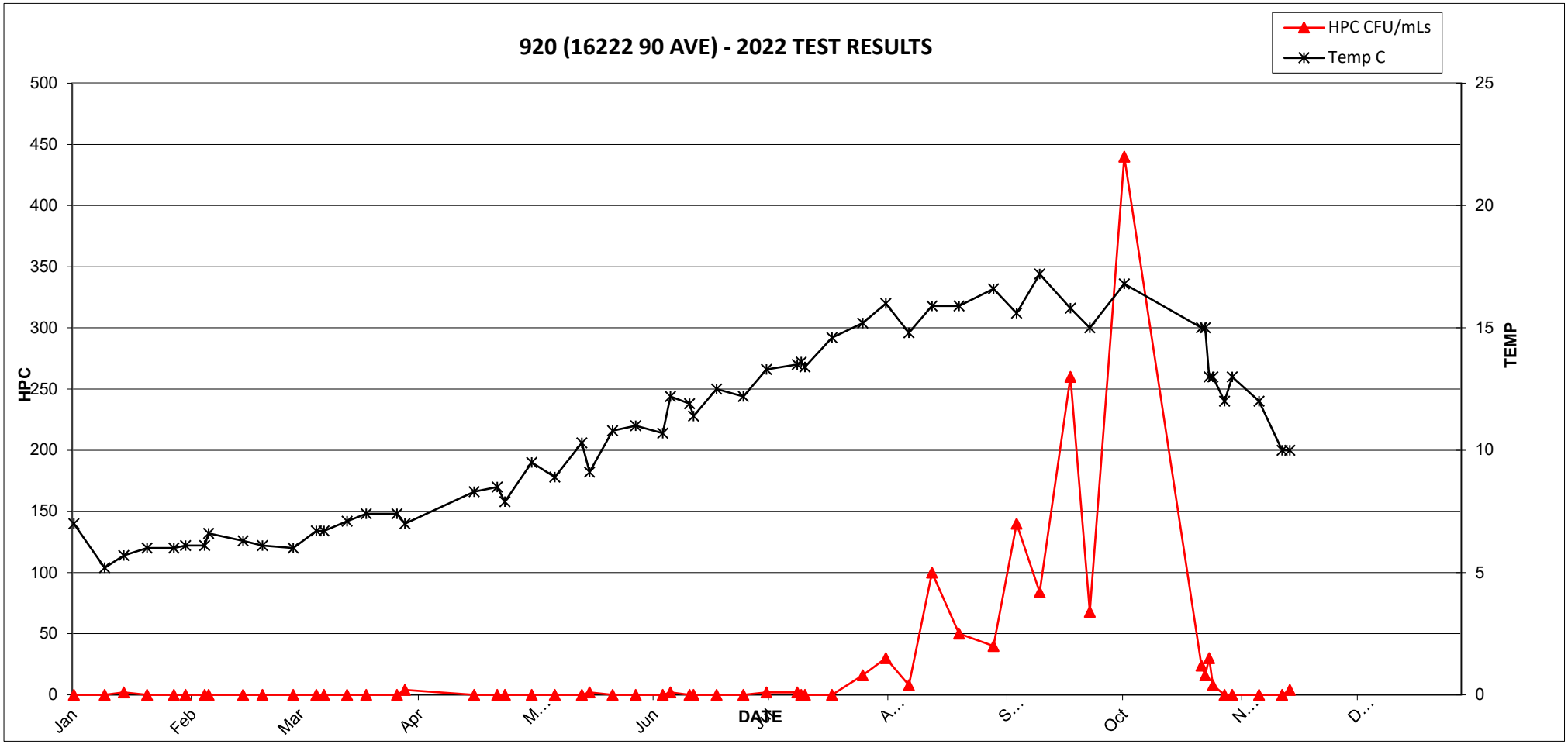
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
13-Jan	0.75	<1	<2	<1	4.9	1.00
18-Jan	0.81	<1	<2	<1	5.3	2.20
24-Jan	0.83	<1	<2	<1	5.8	0.30
31-Jan	0.61	<1	<2	<1	5.5	0.29
03-Feb	0.83	<1	<2	<1	5.8	0.27
08-Feb	0.68	<1	<2	<1	5.8	0.31
09-Feb	0.63	<1	2	<1	6	0.22
18-Feb	0.61	<1	<2	<1	6.3	0.26
22-Feb	0.76	<1	<2	<1	6	0.24
23-Feb	0.45	<1	2	<1	6.4	0.25
03-Mar	0.73	<1	<2	<1	5.8	0.46
09-Mar	0.84	<1	<2	<1	6.4	0.32
11-Mar	0.80	<1	<2	<1	5.8	0.31
17-Mar	0.86	<1	<2	<1	7	0.46
22-Mar	0.70	<1	<2	<1	7.4	0.42
30-Mar	0.69	<1	<2	<1	7.6	0.31
01-Apr	0.64	<1	16	<1	7.1	0.30
19-Apr	0.62	<1	<2	<1	8.1	0.24
25-Apr	0.61	<1	<2	<1	8.4	0.24
27-Apr	0.75	<1	<2	<1	8	0.24
03-May	0.61	<1	<2	<1	9.3	0.31
04-May	0.69	<1	<2	<1	9	0.30
08-May	0.72	<1	<2	<1	9	0.29
10-May	0.59	<1	<2	<1	9	0.28
17-May	0.75	<1	<2	<1	10.2	0.26
18-May	0.59	<1	<2	<1	9.3	0.43
25-May	0.43	<1	2	<1	10.5	0.31
31-May	0.55	<1	<2	<1	10.9	0.23
07-Jun	0.56	<1	<2	<1	13.1	0.23
09-Jun	0.45	<1	2	<1	12.7	0.21
14-Jun	0.60	<1	<2	<1	11.8	0.22
17-Jun	0.51	<1	<2	<1	12.1	0.21
21-Jun	0.55	<1	<2	<1	12.1	0.22
28-Jun	0.49	<1	<2	<1	12.4	0.22
04-Jul	0.48	<1	<2	<1	13.1	0.18
12-Jul	0.53	<1	<2	<1	13.5	0.24
13-Jul	0.45	<1	<2	<1	13.6	0.25
14-Jul	0.57	<1	16	<1	13.4	0.25
21-Jul	0.55	<1	2	<1	12.9	0.28
29-Jul	0.48	<1	30	<1	14.4	0.23
04-Aug	0.28	<1	24	<1	14.9	0.20
10-Aug	0.43	<1	<2	<1	15	0.22
16-Aug	0.41	<1	<2	<1	15.4	0.17
23-Aug	0.37	<1	<2	<1	15.9	0.28
01-Sep	0.37	<1	<2	<1	16.2	0.23
07-Sep	0.28	<1	2	<1	16.4	0.27
13-Sep	0.29	<1	<2	<1	17	0.29
21-Sep	0.29	<1	2	<1	15	0.29
26-Sep	0.27	<1	2	<1	16.3	0.28
05-Oct	0.34	<1	<2	<1	15.9	0.24

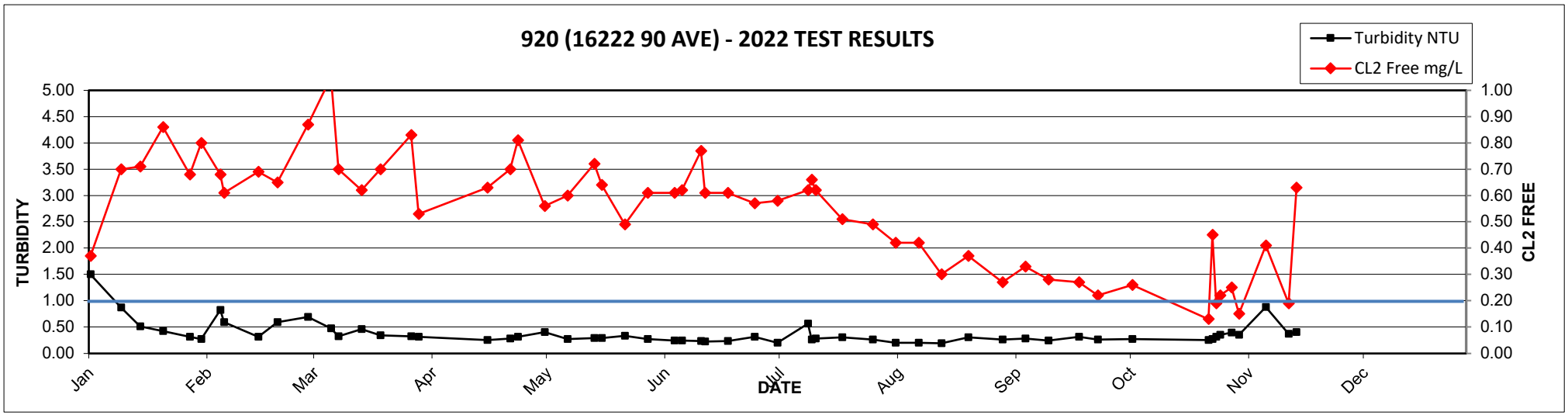

919 (15091 92A AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


919 (15091 92A AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 920 (16222 90 AVE)

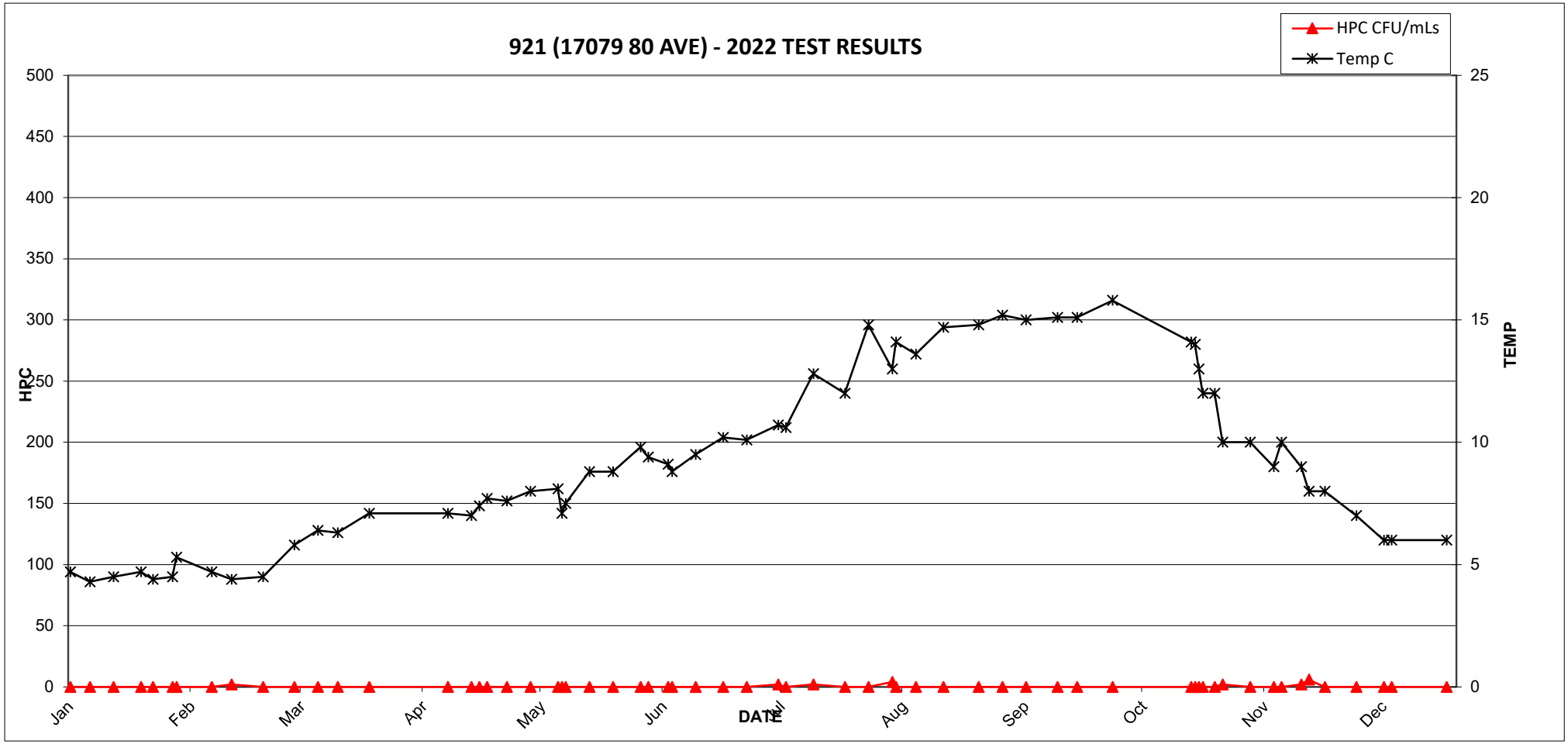
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.37	<1	<2	<1	7	1.50
13-Jan	0.70	<1	<2	<1	5.2	0.87
18-Jan	0.71	<1	2	<1	5.7	0.51
24-Jan	0.86	<1	<2	<1	6	0.42
31-Jan	0.68	<1	<2	<1	6	0.31
03-Feb	0.80	<1	<2	<1	6.1	0.27
08-Feb	0.68	<1	<2	<1	6.1	0.82
09-Feb	0.61	<1	<2	<1	6.6	0.59
18-Feb	0.69	<1	<2	<1	6.3	0.31
23-Feb	0.65	<1	<2	<1	6.1	0.59
03-Mar	0.87	<1	<2	<1	6	0.69
09-Mar	1.05	<1	<2	<1	6.7	0.47
11-Mar	0.70	<1	<2	<1	6.7	0.32
17-Mar	0.62	<1	<2	<1	7.1	0.46
22-Mar	0.70	<1	<2	<1	7.4	0.34
30-Mar	0.83	<1	<2	<1	7.4	0.32
01-Apr	0.53	<1	4	<1	7	0.31
19-Apr	0.63	<1	<2	<1	8.3	0.25
25-Apr	0.70	<1	<2	<1	8.5	0.28
27-Apr	0.81	<1	<2	<1	7.9	0.31
04-May	0.56	<1	<2	<1	9.5	0.40
10-May	0.60	<1	<2	<1	8.9	0.27
17-May	0.72	<1	<2	<1	10.3	0.29
19-May	0.64	<1	2	<1	9.1	0.29
25-May	0.49	<1	<2	<1	10.8	0.33
31-May	0.61	<1	<2	<1	11	0.27
07-Jun	0.61	<1	<2	<1	10.7	0.24
09-Jun	0.62	<1	2	<1	12.2	0.24
14-Jun	0.77	<1	<2	<1	11.9	0.23
15-Jun	0.61	<1	<2	<1	11.4	0.22
21-Jun	0.61	<1	<2	<1	12.5	0.23
28-Jun	0.57	<1	<2	<1	12.2	0.31
04-Jul	0.58	<1	2	<1	13.3	0.20
12-Jul	0.62	<1	2	<1	13.5	0.56
13-Jul	0.66	<1	<2	<1	13.6	0.26
14-Jul	0.62	<1	<2	<1	13.4	0.28
21-Jul	0.51	<1	<2	<1	14.6	0.30
29-Jul	0.49	<1	16	<1	15.2	0.26
04-Aug	0.42	<1	30	<1	16	0.20
10-Aug	0.42	<1	8	<1	14.8	0.20
16-Aug	0.30	<1	100	<1	15.9	0.19
23-Aug	0.37	<1	50	<1	15.9	0.30
01-Sep	0.27	<1	40	<1	16.6	0.26
07-Sep	0.33	<1	140	<1	15.6	0.28
13-Sep	0.28	<1	84	<1	17.2	0.24
21-Sep	0.27	<1	260	<1	15.8	0.31
26-Sep	0.22	<1	68	<1	15	0.26
05-Oct	0.26	<1	440	<1	16.8	0.27
25-Oct	0.13	<1	24	<1	15	0.25
26-Oct	0.45	<1	16	<1	15	0.27
27-Oct	0.19	<1	30	<1	13	0.31
28-Oct	0.22	<1	8	<1	13	0.35

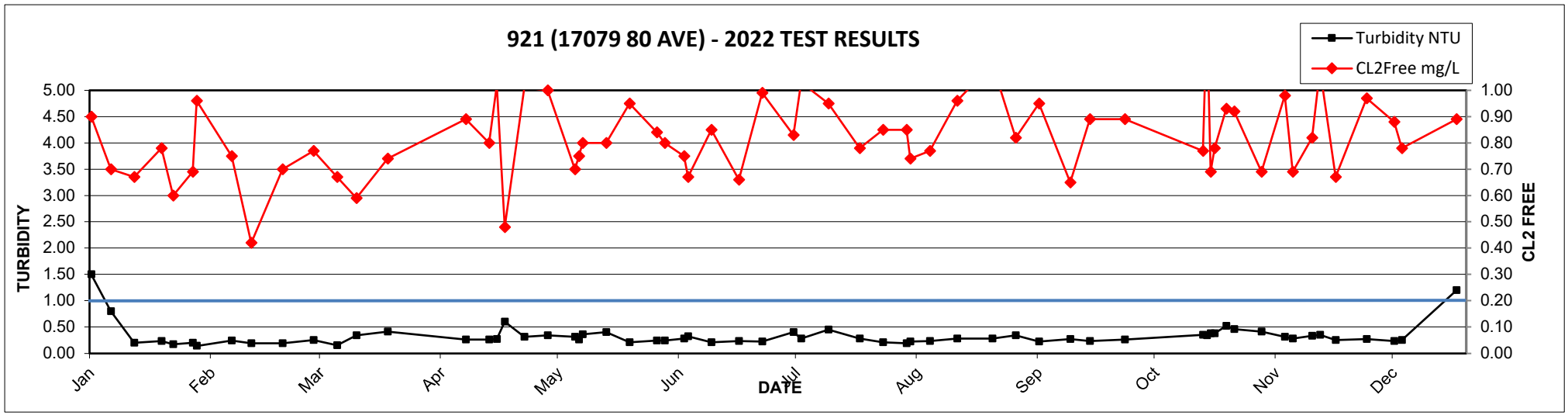

920 (16222 90 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
M...
Jun
Jul
A...
S...
Oct
N...
D...
0
50
100
150
200
250
300
350
400
450
500
0
5
10
15
20
25


920 (16222 90 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00

2022 MV Laboratory Report - 921 (17079 80 AVE)

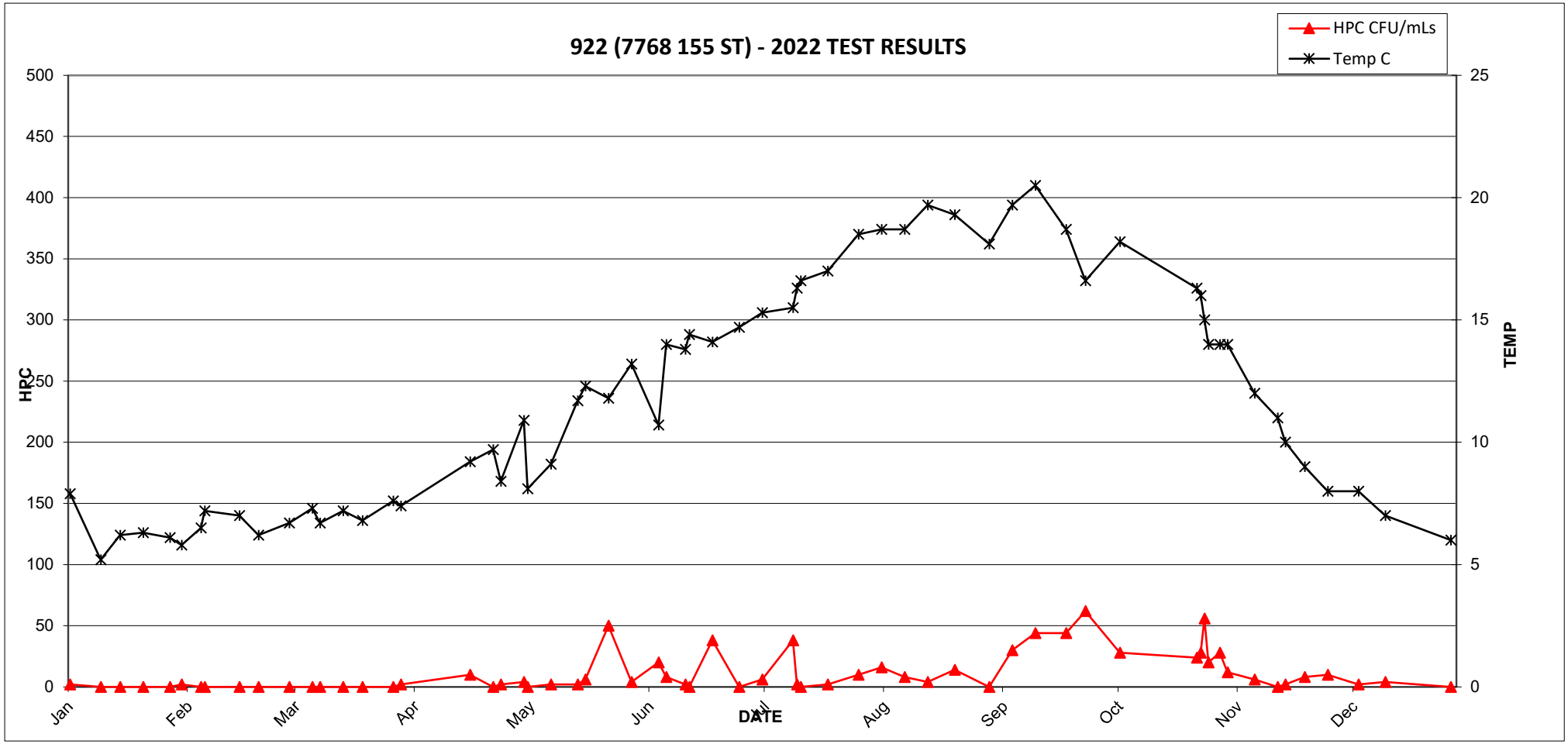
Date Collected	CL2Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
13-Jan	0.90	<1	<2	<1	4.7	1.50
18-Jan	0.70	<1	<2	<1	4.3	0.80
24-Jan	0.67	<1	<2	<1	4.5	0.20
31-Jan	0.78	<1	<2	<1	4.7	0.23
03-Feb	0.60	<1	<2	<1	4.4	0.17
08-Feb	0.69	<1	<2	<1	4.5	0.20
09-Feb	0.96	<1	<2	<1	5.3	0.14
18-Feb	0.75	<1	<2	<1	4.7	0.24
23-Feb	0.42	<1	2	<1	4.4	0.19
03-Mar	0.70	<1	<2	<1	4.5	0.19
11-Mar	0.77	<1	<2	<1	5.8	0.25
17-Mar	0.67	<1	<2	<1	6.4	0.15
22-Mar	0.59	<1	<2	<1	6.3	0.34
30-Mar	0.74	<1	<2	<1	7.1	0.41
19-Apr	0.89	<1	<2	<1	7.1	0.26
25-Apr	0.80	<1	<2	<1	7	0.26
27-Apr	1.02	<1	<2	<1	7.4	0.27
29-Apr	0.48	<1	<2	<1	7.7	0.60
04-May	1.01	<1	<2	<1	7.6	0.31
10-May	1.00	<1	<2	<1	8	0.34
17-May	0.70	<1	<2	<1	8.1	0.31
18-May	0.75	<1	<2	<1	7.1	0.26
19-May	0.80	<1	<2	<1	7.5	0.36
25-May	0.80	<1	<2	<1	8.8	0.40
31-May	0.95	<1	<2	<1	8.8	0.21
07-Jun	0.84	<1	<2	<1	9.8	0.24
09-Jun	0.80	<1	<2	<1	9.4	0.24
14-Jun	0.75	<1	<2	<1	9.1	0.28
15-Jun	0.67	<1	<2	<1	8.8	0.32
21-Jun	0.85	<1	<2	<1	9.5	0.21
28-Jun	0.66	<1	<2	<1	10.2	0.23
04-Jul	0.99	<1	<2	<1	10.1	0.22
12-Jul	0.83	<1	2	<1	10.7	0.40
14-Jul	1.03	<1	<2	<1	10.6	0.28
21-Jul	0.95	<1	2	<1	12.8	0.45
29-Jul	0.78	<1	<2	<1	12	0.28
04-Aug	0.85	<1	<2	<1	14.8	0.21
10-Aug	0.85	<1	4	<1	13	0.19
11-Aug	0.74	<1	<2	<1	14.1	0.22
16-Aug	0.77	<1	<2	<1	13.6	0.23
23-Aug	0.96	<1	<2	<1	14.7	0.28
01-Sep	1.10	<1	<2	<1	14.8	0.28
07-Sep	0.82	<1	<2	<1	15.2	0.34
13-Sep	0.95	<1	<2	<1	15	0.22
21-Sep	0.65	<1	<2	<1	15.1	0.27
26-Sep	0.89	<1	<2	<1	15.1	0.23
05-Oct	0.89	<1	<2	<1	15.8	0.26
25-Oct	0.77	<1	<2	<1	14.1	0.35
26-Oct	1.30	<1	<2	<1	14	0.34
27-Oct	0.69	<1	<2	<1	13	0.38
28-Oct	0.78	<1	<2	<1	12	0.38
31-Oct	0.93	<1	<2	<1	12	0.52
02-Nov	0.92	<1	2	<1	10	0.46
09-Nov	0.69	<1	<2	<1	10	0.41

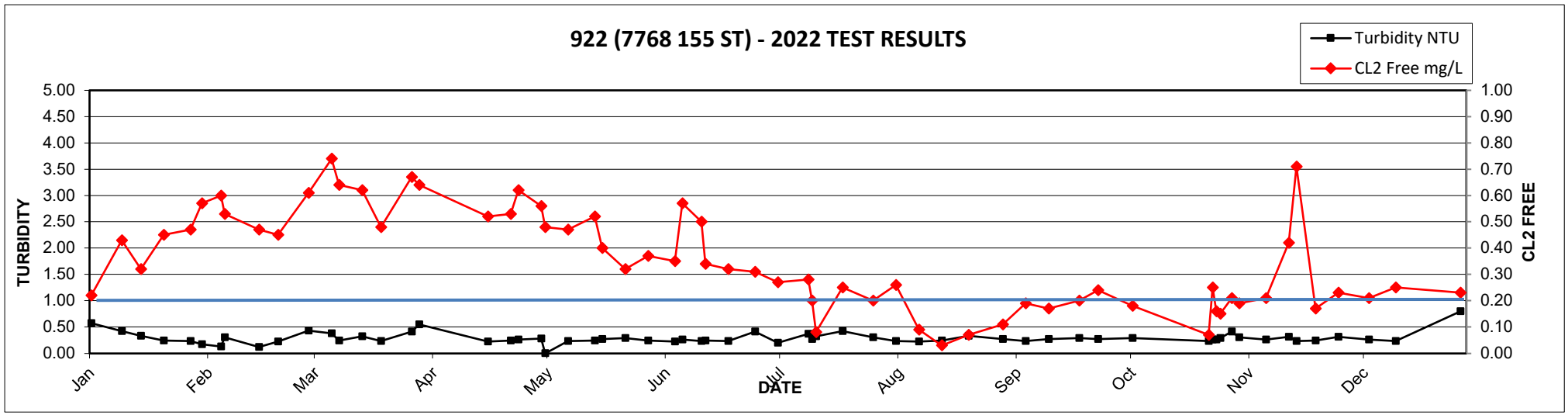

921 (17079 80 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
0
50
100
150
200
250
300
350
400
450
500
0
5
10
15
20
25
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


921 (17079 80 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2Free mg/L
TURBIDITY
CL2 FREE
DATE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 922 (7768 155 ST)

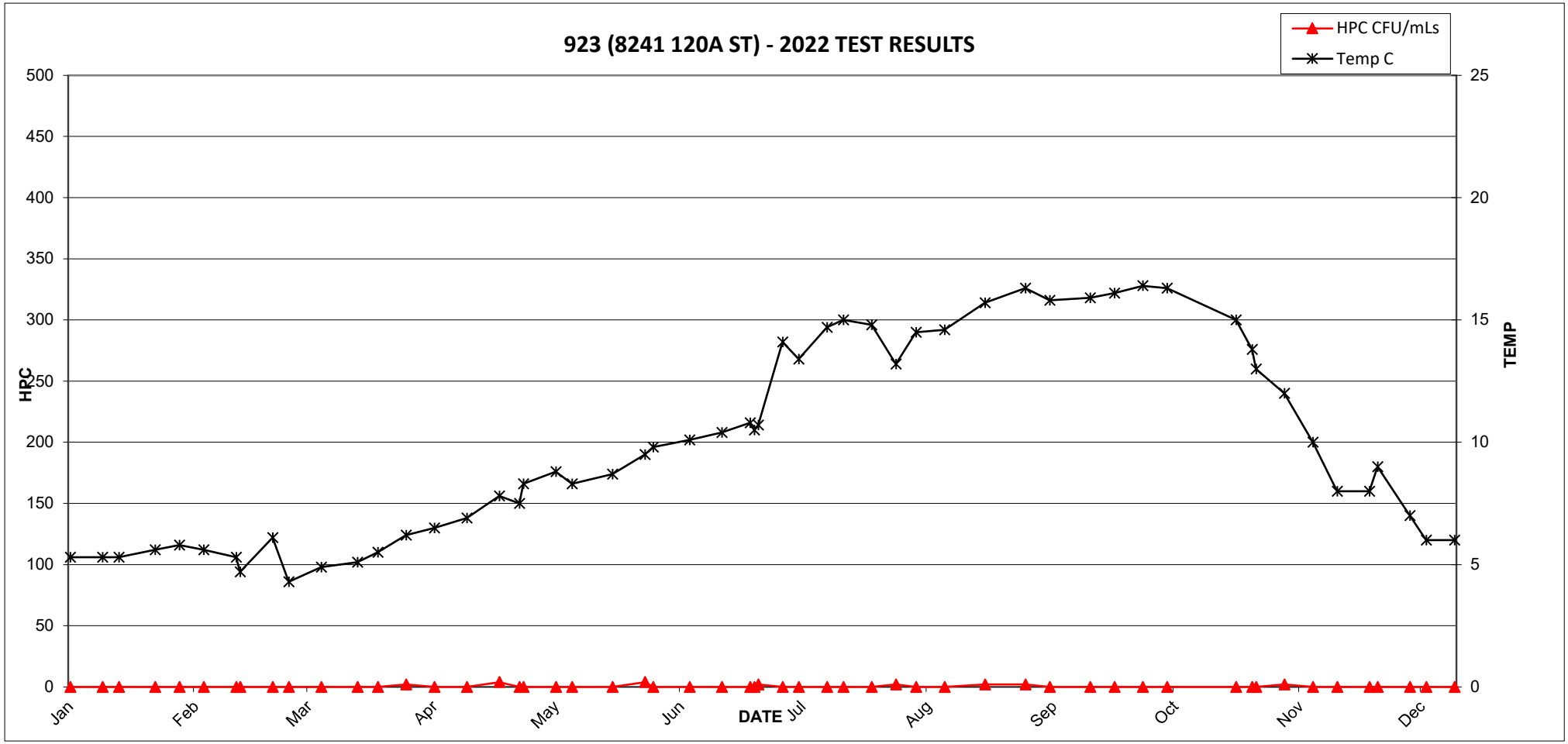
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.22	<1	2	<1	7.9	0.57
13-Jan	0.43	<1	<2	<1	5.2	0.42
18-Jan	0.32	<1	<2	<1	6.2	0.33
24-Jan	0.45	<1	<2	<1	6.3	0.24
31-Jan	0.47	<1	<2	<1	6.1	0.23
03-Feb	0.57	<1	2	<1	5.8	0.17
08-Feb	0.60	<1	<2	<1	6.5	0.13
09-Feb	0.53	<1	<2	<1	7.2	0.30
18-Feb	0.47	<1	<2	<1	7	0.12
23-Feb	0.45	<1	<2	<1	6.2	0.22
03-Mar	0.61	<1	<2	<1	6.7	0.43
09-Mar	0.74	<1	<2	<1	7.3	0.38
11-Mar	0.64	<1	<2	<1	6.7	0.24
17-Mar	0.62	<1	<2	<1	7.2	0.32
22-Mar	0.48	<1	<2	<1	6.8	0.23
30-Mar	0.67	<1	<2	<1	7.6	0.41
01-Apr	0.64	<1	2	<1	7.4	0.55
19-Apr	0.52	<1	10	<1	9.2	0.22
25-Apr	0.53	<1	<2	<1	9.7	0.24
27-Apr	0.62	<1	2	<1	8.4	0.26
03-May	0.56	<1	4	<1	10.9	0.28
04-May	0.48	<1	<2	<1	8.1	LA
10-May	0.47	<1	2	<1	9.1	0.23
17-May	0.52	<1	2	<1	11.7	0.24
19-May	0.40	<1	6	<1	12.3	0.27
25-May	0.32	<1	50	<1	11.8	0.29
31-May	0.37	<1	4	<1	13.2	0.24
07-Jun	0.35	<1	20	<1	10.7	0.22
09-Jun	0.57	<1	8	<1	14	0.26
14-Jun	0.50	<1	2	<1	13.8	0.23
15-Jun	0.34	<1	<2	<1	14.4	0.24
21-Jun	0.32	<1	38	<1	14.1	0.23
28-Jun	0.31	<1	<2	<1	14.7	0.41
04-Jul	0.27	<1	6	<1	15.3	0.20
12-Jul	0.28	<1	38	<1	15.5	0.37
13-Jul	0.20	<1	2	<1	16.3	0.27
14-Jul	0.08	<1	<2	<1	16.6	0.32
21-Jul	0.25	<1	2	<1	17	0.42
29-Jul	0.2	<1	10	<1	18.5	0.3
04-Aug	0.26	<1	16	<1	18.7	0.23
10-Aug	0.09	<1	8	<1	18.7	0.22
16-Aug	0.03	<1	4	<1	19.7	0.24
23-Aug	0.07	<1	14	<1	19.3	0.33
01-Sep	0.11	<1	<2	<1	18.1	0.27
07-Sep	0.19	<1	30	<1	19.7	0.23
13-Sep	0.17	<1	44	<1	20.5	0.27
21-Sep	0.20	<1	44	<1	18.7	0.29
26-Sep	0.24	<1	62	<1	16.6	0.27
05-Oct	0.18	<1	28	<1	18.2	0.29
25-Oct	0.07	<1	24	<1	16.3	0.23
26-Oct	0.25	<1	28	<1	16	0.26
27-Oct	0.16	<1	56	<1	15	0.26

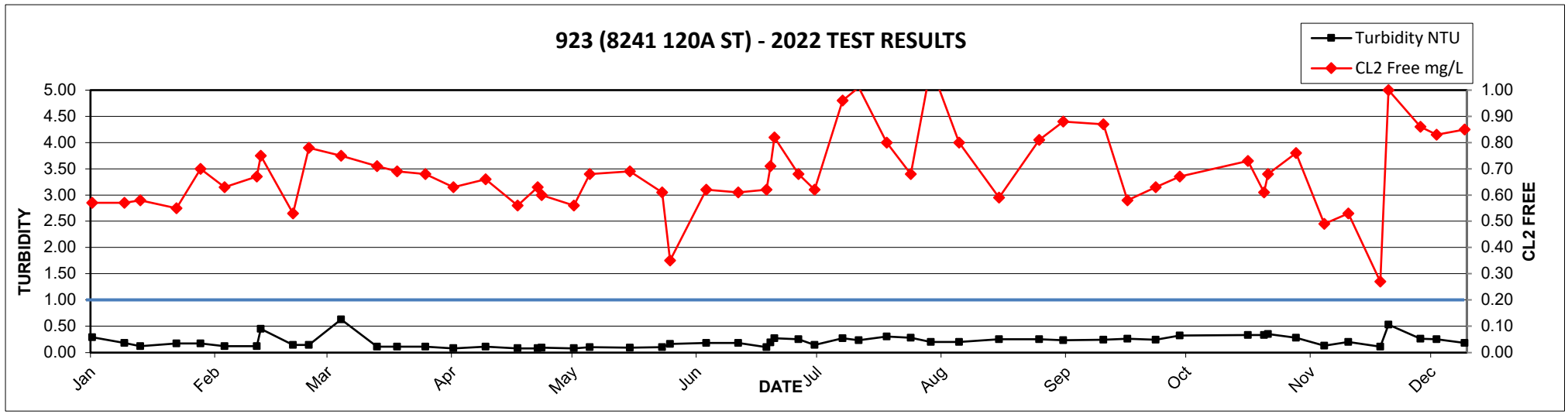

922 (7768 155 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


922 (7768 155 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 923 (8241 120A ST)

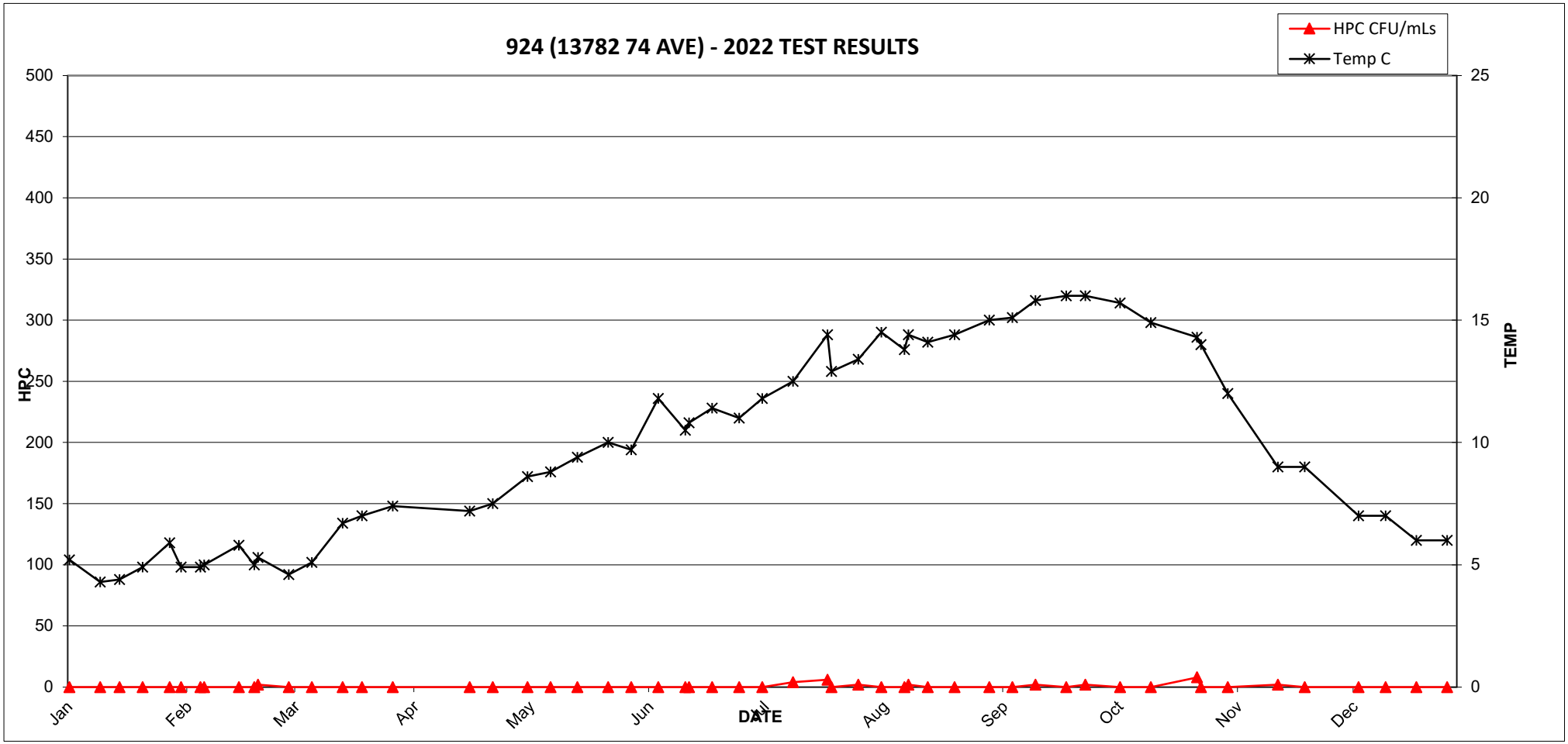
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.57	<1	<2	<1	5.3	0.29
13-Jan	0.57	<1	<2	<1	5.3	0.18
17-Jan	0.58	<1	<2	<1	5.3	0.12
26-Jan	0.55	<1	<2	<1	5.6	0.17
01-Feb	0.70	<1	<2	<1	5.8	0.17
07-Feb	0.63	<1	<2	<1	5.6	0.12
15-Feb	0.67	<1	<2	<1	5.3	0.12
16-Feb	0.75	<1	<2	<1	4.7	0.45
24-Feb	0.53	<1	<2	<1	6.1	0.14
28-Feb	0.78	<1	<2	<1	4.3	0.14
08-Mar	0.75	<1	<2	<1	4.9	0.63
17-Mar	0.71	<1	<2	<1	5.1	0.11
22-Mar	0.69	<1	<2	<1	5.5	0.11
29-Mar	0.68	<1	2	<1	6.2	0.11
05-Apr	0.63	<1	<2	<1	6.5	0.08
13-Apr	0.66	<1	<2	<1	6.9	0.11
21-Apr	0.56	<1	4	<1	7.8	0.08
26-Apr	0.63	<1	<2	<1	7.5	0.08
27-Apr	0.60	<1	<2	<1	8.3	0.09
05-May	0.56	<1	<2	<1	8.8	0.08
09-May	0.68	<1	<2	<1	8.3	0.10
19-May	0.69	<1	<2	<1	8.7	0.09
27-May	0.61	<1	4	<1	9.5	0.10
29-May	0.35	<1	<2	<1	9.8	0.16
07-Jun	0.62	<1	<2	<1	10.1	0.18
15-Jun	0.61	<1	<2	<1	10.4	0.18
22-Jun	0.62	<1	<2	<1	10.8	0.10
23-Jun	0.71	<1	<2	<1	10.5	0.19
24-Jun	0.82	<1	2	<1	10.7	0.27
30-Jun	0.68	<1	<2	<1	14.1	0.25
04-Jul	0.62	<1	<2	<1	13.4	0.14
11-Jul	0.96	<1	<2	<1	14.7	0.27
15-Jul	1.01	<1	<2	<1	15	0.23
22-Jul	0.80	<1	<2	<1	14.8	0.30
28-Jul	0.68	<1	2	<1	13.2	0.28
02-Aug	1.09	<1	<2	<1	14.5	0.20
09-Aug	0.80	<1	<2	<1	14.6	0.20
19-Aug	0.59	<1	2	<1	15.7	0.25
29-Aug	0.81	<1	2	<1	16.3	0.25
04-Sep	0.88	<1	<2	<1	15.8	0.23
14-Sep	0.87	<1	<2	<1	15.9	0.24
20-Sep	0.58	<1	<2	<1	16.1	0.26
27-Sep	0.63	<1	<2	<1	16.4	0.24
03-Oct	0.67	<1	<2	<1	16.3	0.32
20-Oct	0.73	<1	<2	<1	15	0.33
24-Oct	0.61	<1	<2	<1	13.8	0.33
25-Oct	0.68	<1	<2	<1	13	0.35
01-Nov	0.76	<1	2	<1	12	0.28
08-Nov	0.49	<1	<2	<1	10	0.13
14-Nov	0.53	<1	<2	<1	8	0.20
22-Nov	0.27	<1	<2	<1	8	0.11
24-Nov	1.00	<1	<2	<1	9	0.53
02-Dec	0.86	<1	<2	<1	7	0.26
06-Dec	0.83	<1	<2	<1	6	0.25

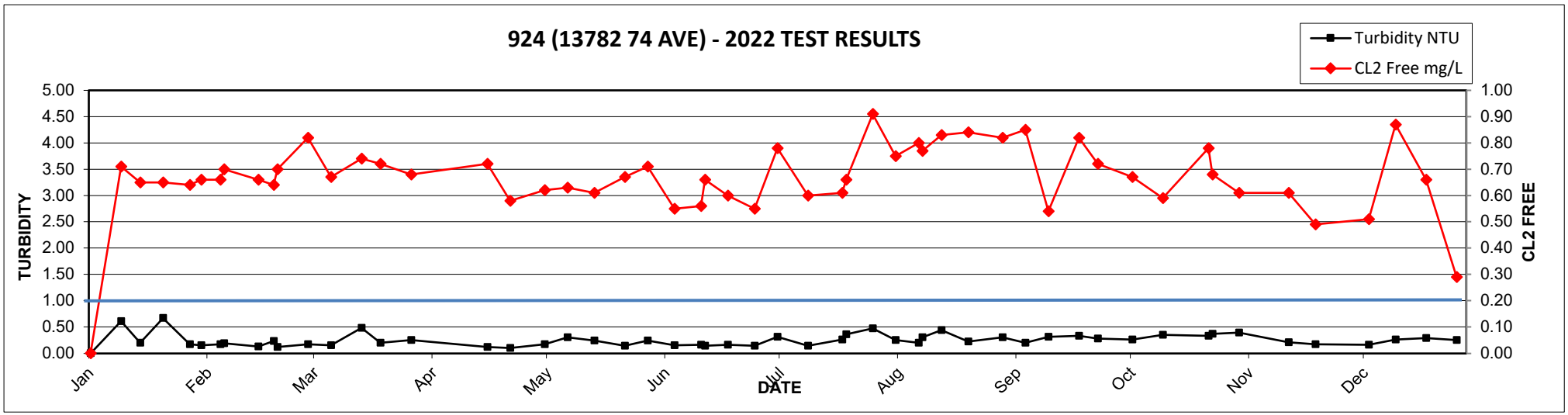

923 (8241 120A ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


923 (8241 120A ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 924 (13782 74 AVE)

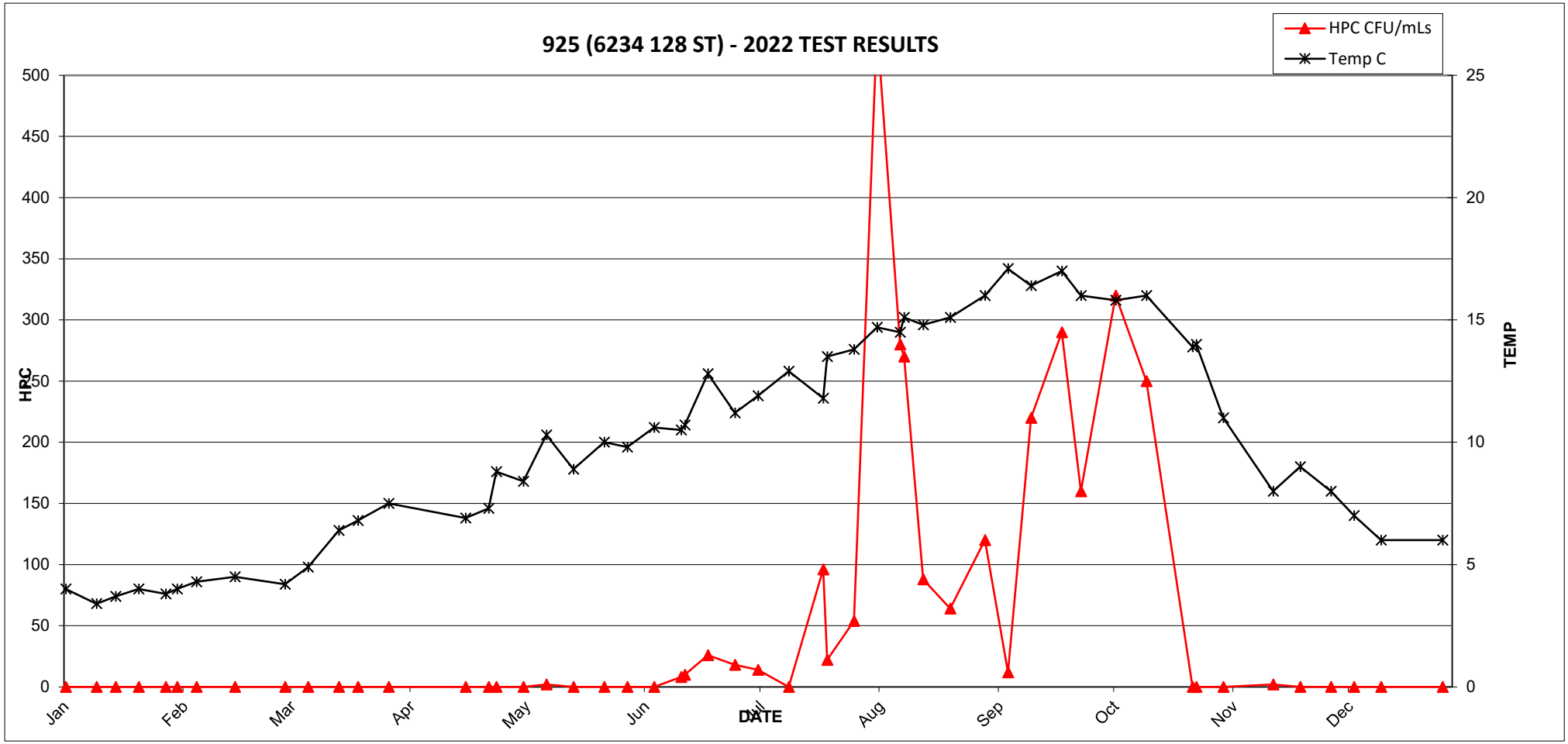
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.71	<1	<2	<1	5.2	0.61
13-Jan	0.65	<1	<2	<1	4.3	0.20
18-Jan	0.65	<1	<2	<1	4.4	0.67
24-Jan	0.64	<1	<2	<1	4.9	0.17
31-Jan	0.66	<1	<2	<1	5.9	0.15
03-Feb	0.66	<1	<2	<1	4.9	0.17
08-Feb	0.70	<1	<2	<1	4.9	0.19
09-Feb	0.66	<1	<2	<1	5	0.13
18-Feb	0.64	<1	<2	<1	5.8	0.23
22-Feb	0.70	<1	<2	<1	5	0.12
23-Feb	0.82	<1	2	<1	5.3	0.17
03-Mar	0.67	<1	<2	<1	4.6	0.15
09-Mar	0.74	<1	<2	<1	5.1	0.48
17-Mar	0.72	<1	<2	<1	6.7	0.20
22-Mar	0.68	<1	<2	<1	7	0.25
30-Mar	0.72	<1	<2	<1	7.4	0.12
19-Apr	0.58	<1	<2	<1	7.2	0.10
25-Apr	0.62	<1	<2	<1	7.5	0.17
04-May	0.63	<1	<2	<1	8.6	0.30
10-May	0.61	<1	<2	<1	8.8	0.24
17-May	0.67	<1	<2	<1	9.4	0.14
25-May	0.71	<1	<2	<1	10	0.24
31-May	0.55	<1	<2	<1	9.7	0.15
07-Jun	0.56	<1	<2	<1	11.8	0.16
14-Jun	0.66	<1	<2	<1	10.5	0.14
15-Jun	0.60	<1	<2	<1	10.8	0.16
21-Jun	0.55	<1	<2	<1	11.4	0.14
28-Jun	0.78	<1	<2	<1	11	0.31
04-Jul	0.60	<1	<2	<1	11.8	0.14
12-Jul	0.61	<1	4	<1	12.5	0.26
21-Jul	0.66	<1	6	<1	14.4	0.36
22-Jul	0.91	<1	<2	<1	12.9	0.47
29-Jul	0.75	<1	2	<1	13.4	0.25
04-Aug	0.80	<1	<2	<1	14.5	0.20
10-Aug	0.77	<1	<2	<1	13.8	0.30
11-Aug	0.83	<1	2	<1	14.4	0.44
16-Aug	0.84	<1	<2	<1	14.1	0.22
23-Aug	0.82	<1	<2	<1	14.4	0.30
01-Sep	0.85	<1	<2	<1	15	0.2
07-Sep	0.54	<1	<2	<1	15.1	0.31
13-Sep	0.82	<1	2	<1	15.8	0.33
21-Sep	0.72	<1	<2	<1	16	0.28
26-Sep	0.67	<1	2	<1	16	0.26
05-Oct	0.59	<1	<2	<1	15.7	0.35
13-Oct	0.78	<1	<2	<1	14.9	0.33
25-Oct	0.68	<1	8	<1	14.3	0.37
26-Oct	0.61	<1	<2	<1	14	0.39
02-Nov	0.61	<1	<2	<1	12	0.21
15-Nov	0.49	<1	2	<1	9	0.17

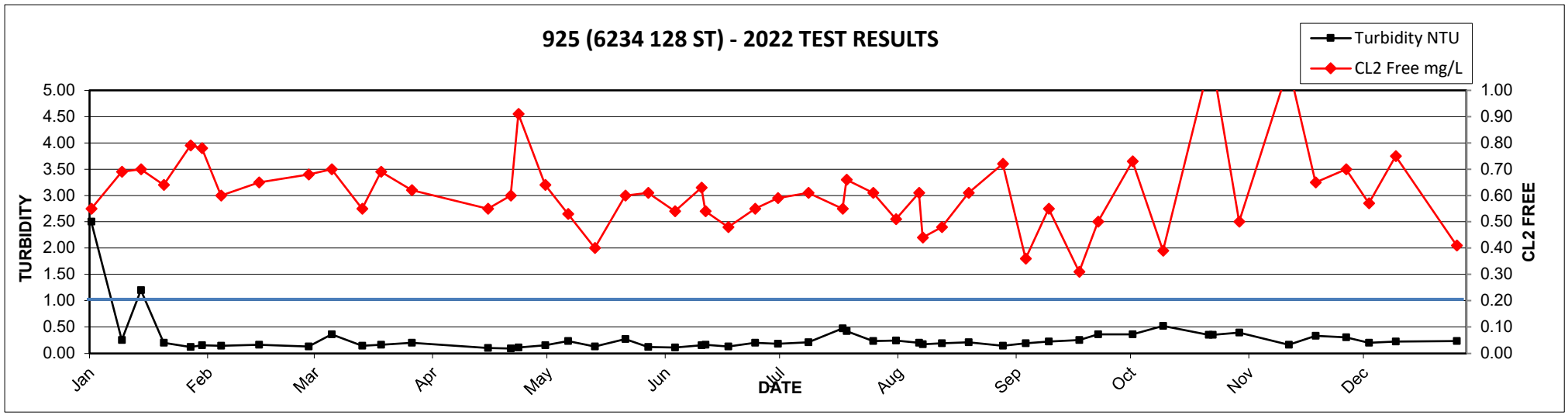

924 (13782 74 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


924 (13782 74 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 925 (6234 128 ST)

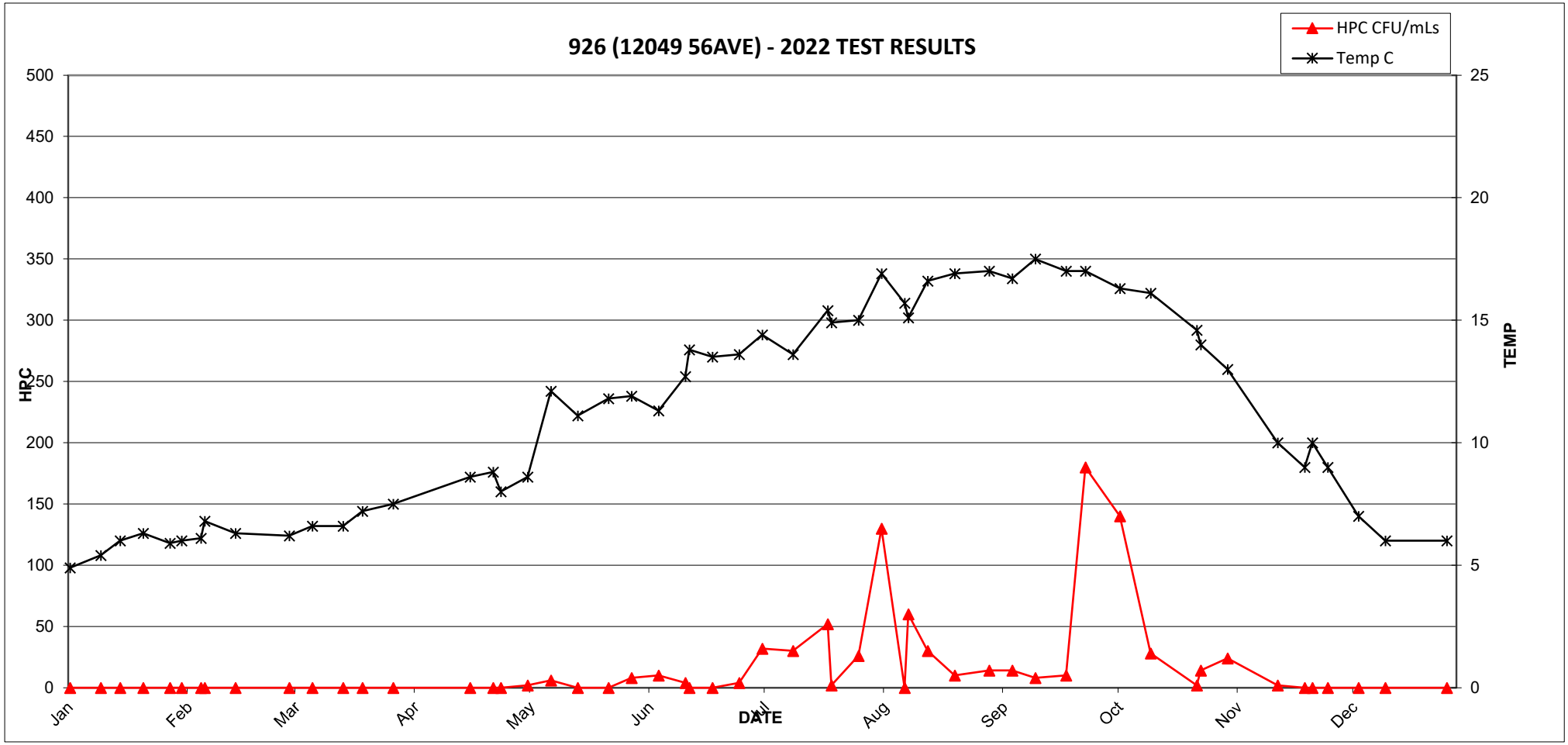
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.55	<1	<2	<1	4	2.50
13-Jan	0.69	<1	<2	<1	3.4	0.25
18-Jan	0.70	<1	<2	<1	3.7	1.20
24-Jan	0.64	<1	<2	<1	4	0.20
31-Jan	0.79	<1	<2	<1	3.8	0.12
03-Feb	0.78	<1	<2	<1	4	0.15
08-Feb	0.6	<1	<2	<1	4.3	0.14
18-Feb	0.65	<1	<2	<1	4.5	0.16
03-Mar	0.68	<1	<2	<1	4.2	0.13
09-Mar	0.70	<1	<2	<1	4.9	0.36
17-Mar	0.55	<1	<2	<1	6.4	0.14
22-Mar	0.69	<1	<2	<1	6.8	0.16
30-Mar	0.62	<1	<2	<1	7.5	0.20
19-Apr	0.55	<1	<2	<1	6.9	0.10
25-Apr	0.60	<1	<2	<1	7.3	0.09
27-Apr	0.91	<1	<2	<1	8.8	0.11
04-May	0.64	<1	<2	<1	8.4	0.15
10-May	0.53	<1	2	<1	10.3	0.23
17-May	0.40	<1	<2	<1	8.9	0.13
25-May	0.60	<1	<2	<1	10	0.27
31-May	0.61	<1	<2	<1	9.8	0.12
07-Jun	0.54	<1	<2	<1	10.6	0.11
14-Jun	0.63	<1	8	<1	10.5	0.15
15-Jun	0.54	<1	10	<1	10.7	0.16
21-Jun	0.48	<1	26	<1	12.8	0.13
28-Jun	0.55	<1	18	<1	11.2	0.20
04-Jul	0.59	<1	14	<1	11.9	0.18
12-Jul	0.61	<1	<2	<1	12.9	0.21
21-Jul	0.55	<1	96	<1	11.8	0.47
22-Jul	0.66	<1	22	<1	13.5	0.42
29-Jul	0.61	<1	54	<1	13.8	0.23
04-Aug	0.51	<1	540	<1	14.7	0.24
10-Aug	0.61	<1	280	<1	14.5	0.20
11-Aug	0.44	<1	270	<1	15.1	0.17
16-Aug	0.48	<1	88	<1	14.8	0.19
23-Aug	0.61	<1	64	<1	15.1	0.21
01-Sep	0.72	<1	120	<1	16	0.14
07-Sep	0.36	<1	12	<1	17.1	0.19
13-Sep	0.55	<1	220	<1	16.4	0.22
21-Sep	0.31	<1	290	<1	17	0.25
26-Sep	0.50	<1	160	<1	16	0.36
05-Oct	0.73	<1	320	<1	15.8	0.36
13-Oct	0.39	<1	250	<1	16	0.52
25-Oct	1.09	<1	<2	<1	13.9	0.35
26-Oct	1.10	<1	<2	<1	14	0.35
02-Nov	0.50	<1	<2	<1	11	0.39
15-Nov	1.09	<1	2	<1	8	0.16
22-Nov	0.65	<1	<2	<1	9	0.33
30-Nov	0.70	<1	<2	<1	8	0.30
06-Dec	0.57	<1	<2	<1	7	0.20
13-Dec	0.75	<1	<2	<1	6	0.22
29-Dec	0.41	<1	NA	<1	6	0.23

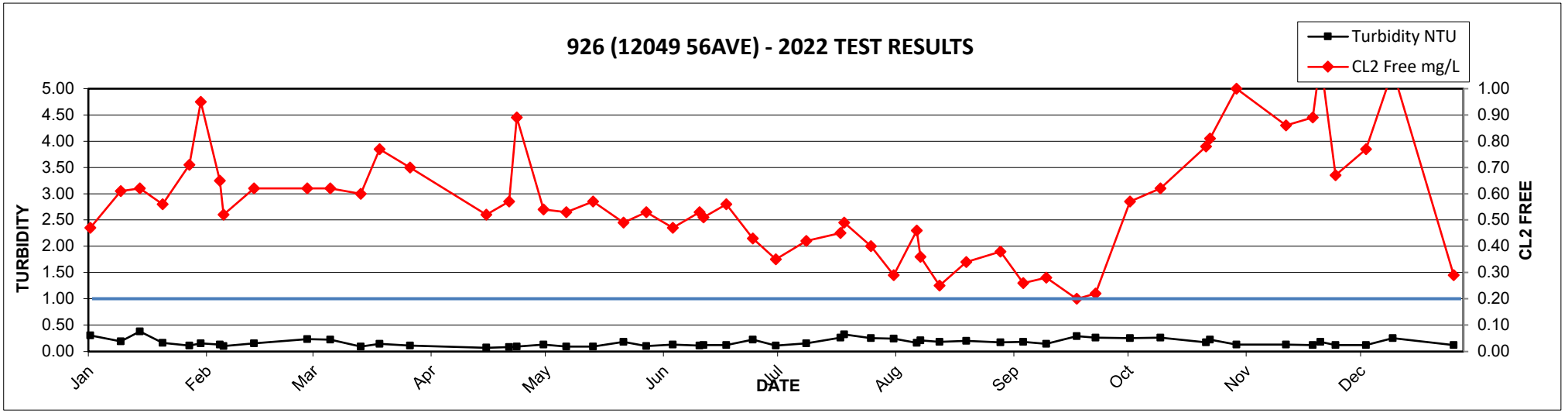

925 (6234 128 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


925 (6234 128 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 926 (12049 56AVE)

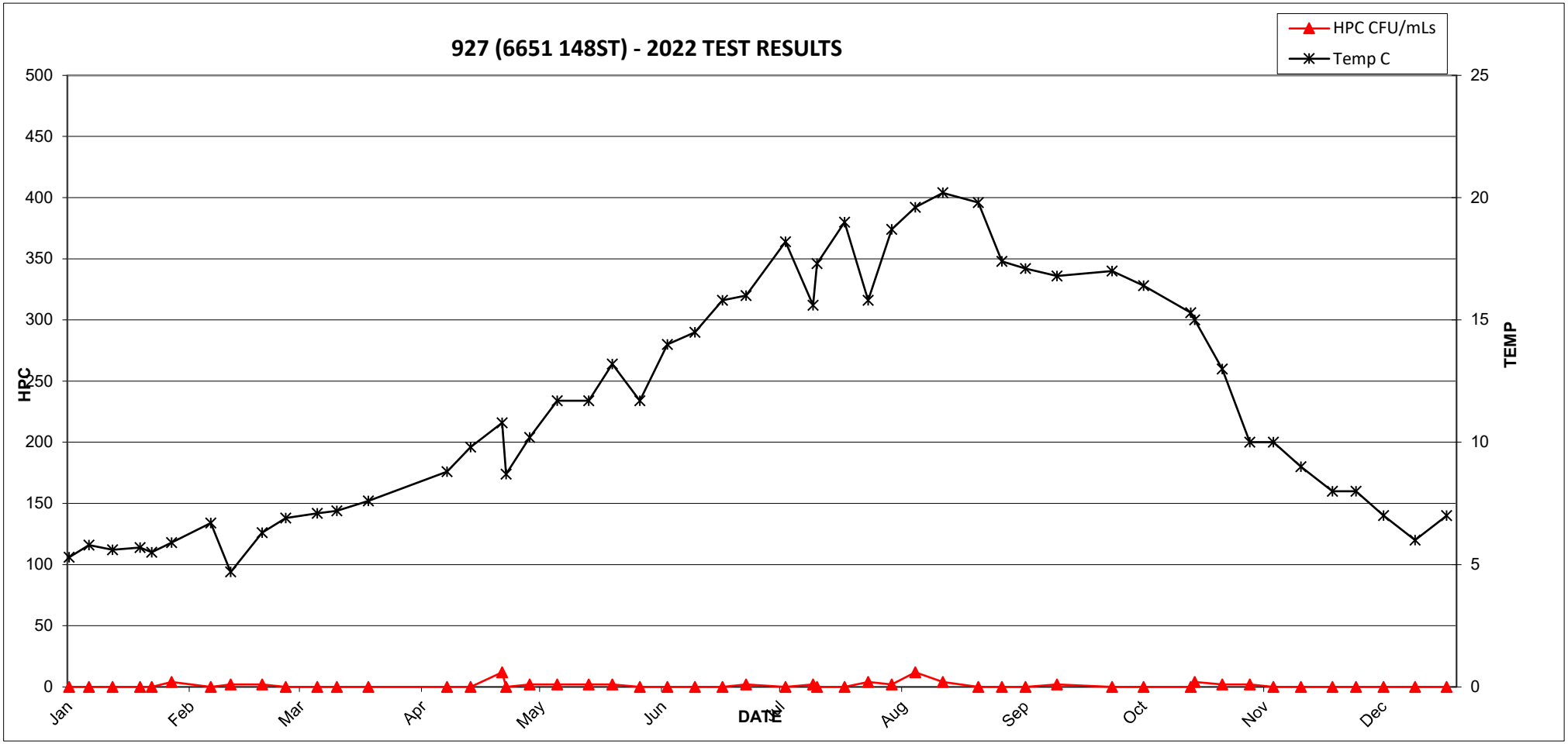
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.47	<1	<2	<1	4.9	0.30
13-Jan	0.61	<1	<2	<1	5.4	0.19
18-Jan	0.62	<1	<2	<1	6	0.38
24-Jan	0.56	<1	<2	<1	6.3	0.16
31-Jan	0.71	<1	<2	<1	5.9	0.11
03-Feb	0.95	<1	<2	<1	6	0.15
08-Feb	0.65	<1	<2	<1	6.1	0.13
09-Feb	0.52	<1	<2	<1	6.8	0.10
17-Feb	0.62	<1	<2	<1	6.3	0.15
03-Mar	0.62	<1	<2	<1	6.2	0.23
09-Mar	0.62	<1	<2	<1	6.6	0.22
17-Mar	0.60	<1	<2	<1	6.6	0.09
22-Mar	0.77	<1	<2	<1	7.2	0.14
30-Mar	0.70	<1	<2	<1	7.5	0.11
19-Apr	0.52	<1	<2	<1	8.6	0.07
25-Apr	0.57	<1	<2	<1	8.8	0.08
27-Apr	0.89	<1	<2	<1	8	0.09
04-May	0.54	<1	2	<1	8.6	0.13
10-May	0.53	<1	6	<1	12.1	0.09
17-May	0.57	<1	<2	<1	11.1	0.09
25-May	0.49	<1	<2	<1	11.8	0.18
31-May	0.53	<1	8	<1	11.9	0.10
07-Jun	0.47	<1	10	<1	11.3	0.13
14-Jun	0.53	<1	4	<1	12.7	0.11
15-Jun	0.51	<1	<2	<1	13.8	0.12
21-Jun	0.56	<1	<2	<1	13.5	0.12
28-Jun	0.43	<1	4	<1	13.6	0.22
04-Jul	0.35	<1	32	<1	14.4	0.11
12-Jul	0.42	<1	30	<1	13.6	0.15
21-Jul	0.45	<1	52	<1	15.4	0.26
22-Jul	0.49	<1	2	<1	14.9	0.32
29-Jul	0.40	<1	26	<1	15	0.25
04-Aug	0.29	<1	130	<1	16.9	0.24
10-Aug	0.46	<1	<2	<1	15.7	0.16
11-Aug	0.36	<1	60	<1	15.1	0.21
16-Aug	0.25	<1	30	<1	16.6	0.18
23-Aug	0.34	<1	10	<1	16.9	0.20
01-Sep	0.38	<1	14	<1	17	0.17
07-Sep	0.26	<1	14	<1	16.7	0.18
13-Sep	0.28	<1	8	<1	17.5	0.14
21-Sep	0.2	<1	10	<1	17	0.29
26-Sep	0.22	<1	180	<1	17	0.26
05-Oct	0.57	<1	140	<1	16.3	0.25
13-Oct	0.62	<1	28	<1	16.1	0.26
25-Oct	0.78	<1	2	<1	14.6	0.17
26-Oct	0.81	<1	14	<1	14	0.22
02-Nov	1.00	<1	24	<1	13	0.13
15-Nov	0.86	<1	2	<1	10	0.13
22-Nov	0.89	<1	<2	<1	9	0.12
24-Nov	1.11	<1	<2	<1	10	0.18
28-Nov	0.67	<1	<2	<1	9	0.12
06-Dec	0.77	<1	<2	<1	7	0.12

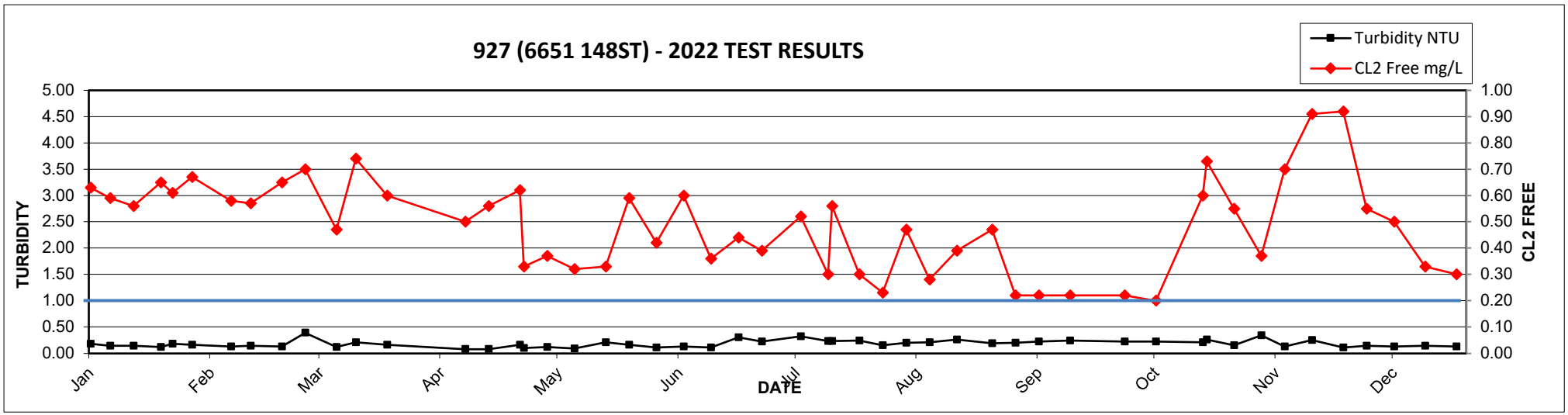

926 (12049 56AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


926 (12049 56AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 927 (6651 148 ST)

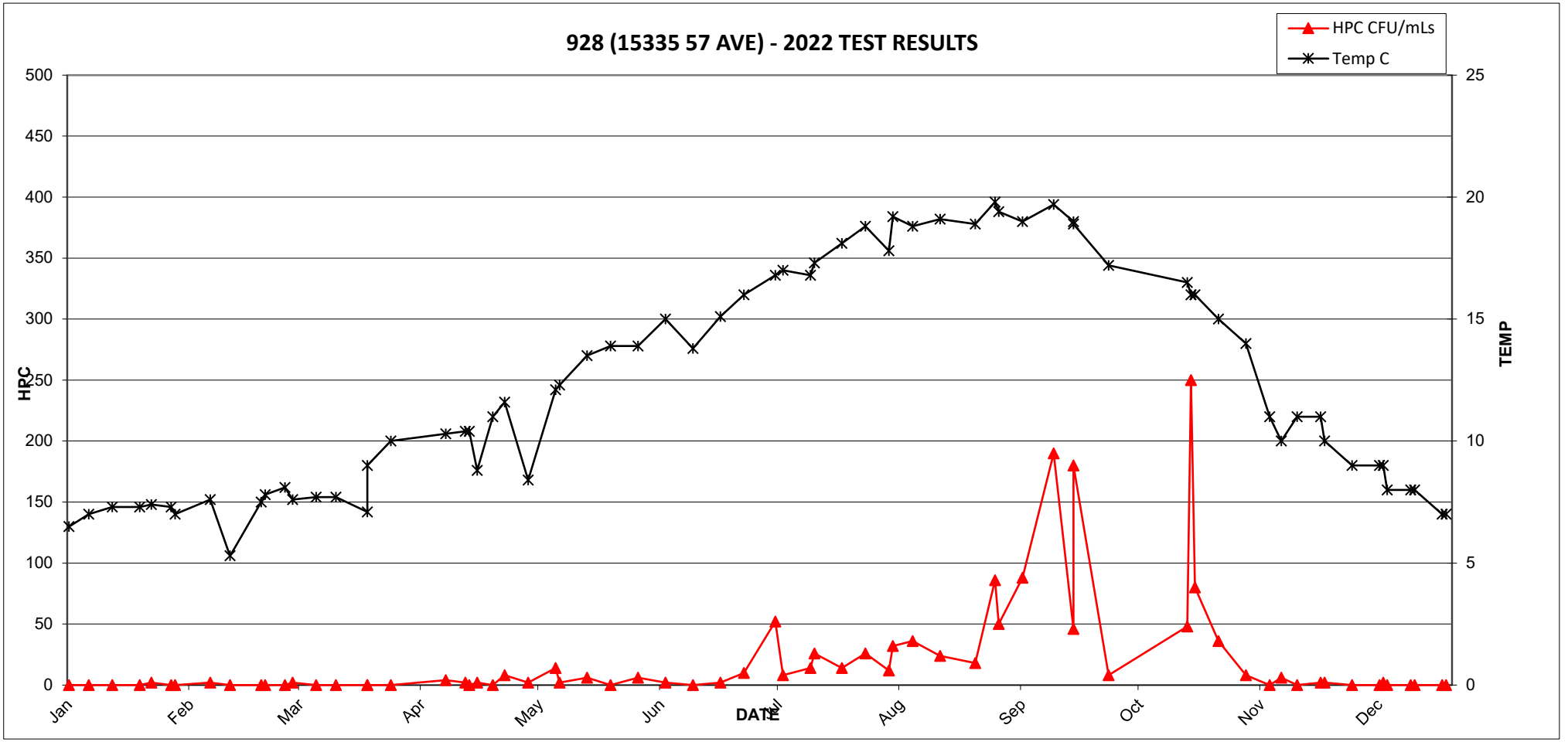
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
13-Jan	0.63	<1	<2	<1	5.3	0.18
18-Jan	0.59	<1	<2	<1	5.8	0.14
24-Jan	0.56	<1	<2	<1	5.6	0.14
31-Jan	0.65	<1	<2	<1	5.7	0.12
03-Feb	0.61	<1	<2	<1	5.5	0.18
08-Feb	0.67	<1	4	<1	5.9	0.16
18-Feb	0.58	<1	<2	<1	6.7	0.13
23-Feb	0.57	<1	2	<1	4.7	0.14
03-Mar	0.65	<1	2	<1	6.3	0.13
09-Mar	0.70	<1	<2	<1	6.9	0.39
17-Mar	0.47	<1	<2	<1	7.1	0.12
22-Mar	0.74	<1	<2	<1	7.2	0.21
30-Mar	0.60	<1	<2	<1	7.6	0.16
19-Apr	0.50	<1	<2	<1	8.8	0.08
25-Apr	0.56	<1	<2	<1	9.8	0.08
03-May	0.62	<1	12	<1	10.8	0.16
04-May	0.33	<1	<2	<1	8.7	0.10
10-May	0.37	<1	2	<1	10.2	0.12
17-May	0.32	<1	2	<1	11.7	0.09
25-May	0.33	<1	2	<1	11.7	0.21
31-May	0.59	<1	2	<1	13.2	0.16
07-Jun	0.42	<1	<2	<1	11.7	0.11
14-Jun	0.60	<1	<2	<1	14	0.13
21-Jun	0.36	<1	<2	<1	14.5	0.11
28-Jun	0.44	<1	<2	<1	15.8	0.30
04-Jul	0.39	<1	2	<1	16	0.22
14-Jul	0.52	<1	<2	<1	18.2	0.32
21-Jul	0.30	<1	2	<1	15.6	0.23
22-Jul	0.56	<1	<2	<1	17.3	0.23
29-Jul	0.30	<1	<2	<1	19	0.24
04-Aug	0.23	<1	4	<1	15.8	0.15
10-Aug	0.47	<1	2	<1	18.7	0.20
16-Aug	0.28	<1	12	<1	19.6	0.21
23-Aug	0.39	<1	4	<1	20.2	0.26
01-Sep	0.47	<1	<2	<1	19.8	0.19
07-Sep	0.22	<1	<2	<1	17.4	0.2
13-Sep	0.22	<1	<2	<1	17.1	0.22
21-Sep	0.22	<1	2	<1	16.8	0.24
05-Oct	0.22	<1	<2	<1	17	0.22
13-Oct	0.2	<1	<2	<1	16.4	0.22
25-Oct	0.60	<1	<2	<1	15.3	0.21
26-Oct	0.73	<1	4	<1	15	0.26
02-Nov	0.55	<1	2	<1	13	0.15
09-Nov	0.37	<1	2	<1	10	0.34
15-Nov	0.70	<1	<2	<1	10	0.13
22-Nov	0.91	<1	<2	<1	9	0.25
30-Nov	0.92	<1	<2	<1	8	0.11
06-Dec	0.55	<1	<2	<1	8	0.14

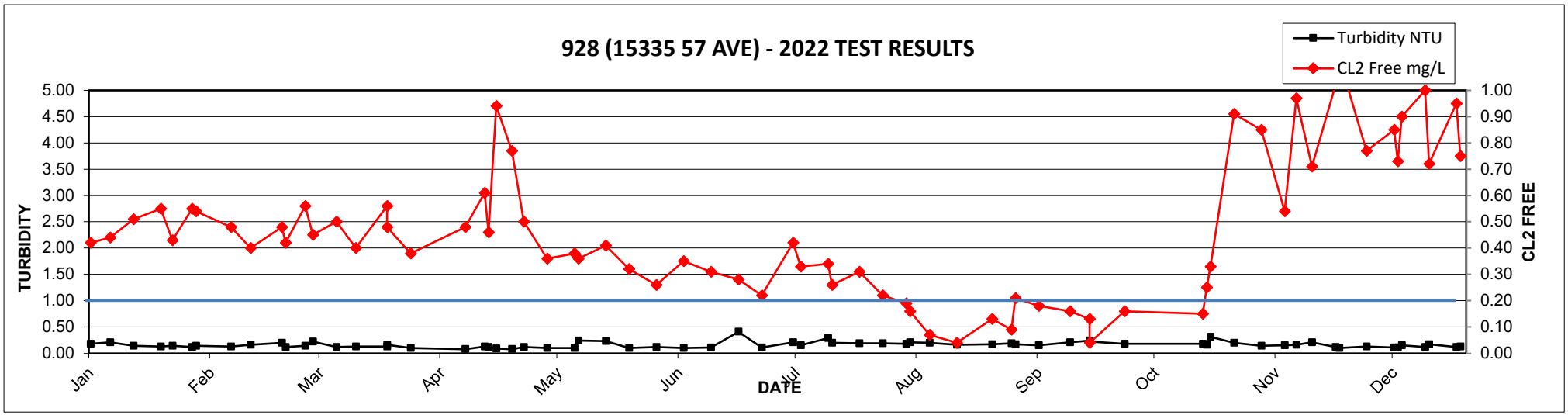

927 (6651 148ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


927 (6651 148ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 928 (15335 57 AVE)

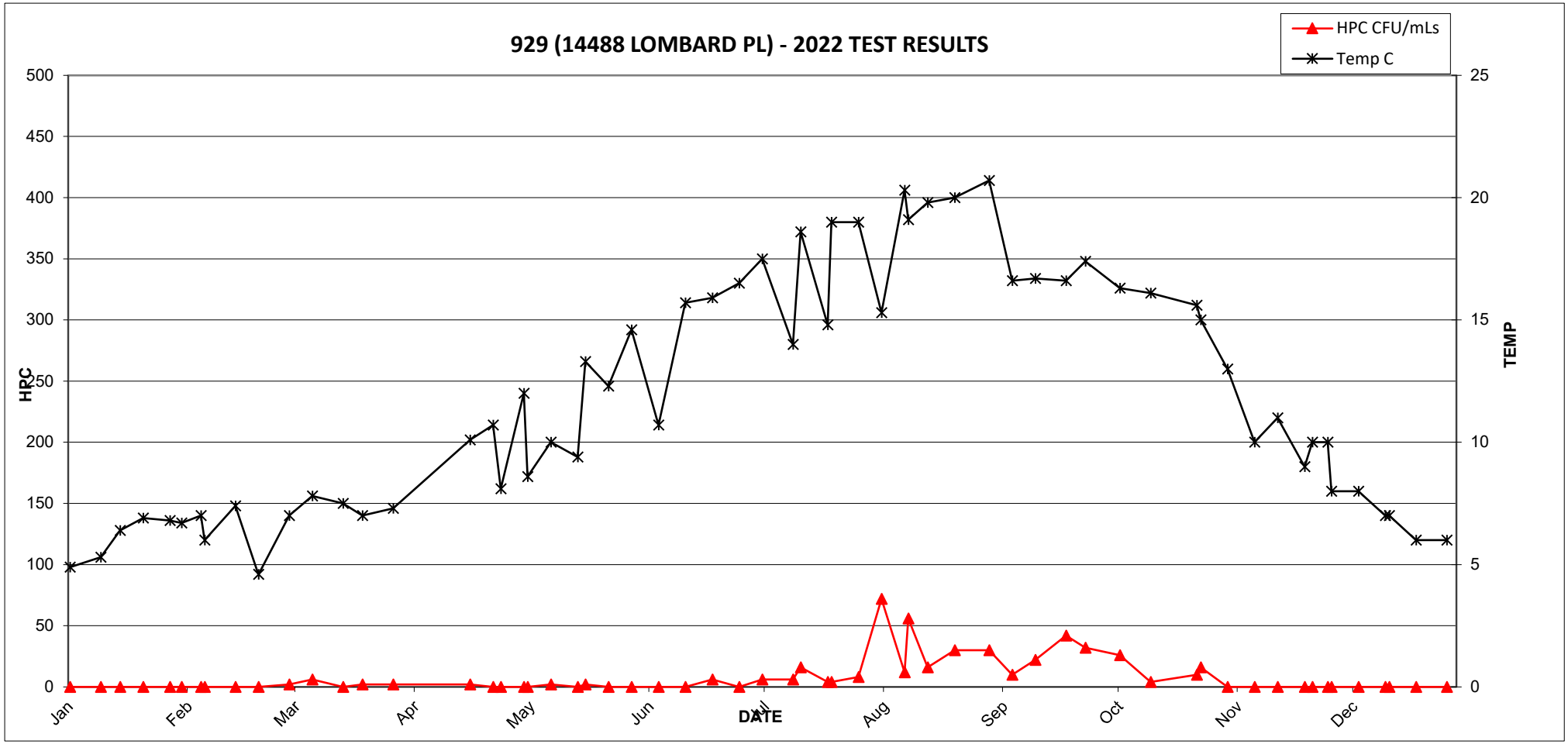
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
13-Jan	0.42	<1	<2	<1	6.5	0.18
18-Jan	0.44	<1	<2	<1	7	0.21
24-Jan	0.51	<1	<2	<1	7.3	0.14
31-Jan	0.55	<1	<2	<1	7.3	0.13
03-Feb	0.43	<1	2	<1	7.4	0.14
08-Feb	0.55	<1	<2	<1	7.3	0.12
09-Feb	0.54	<1	<2	<1	7	0.14
18-Feb	0.48	<1	2	<1	7.6	0.13
23-Feb	0.40	<1	<2	<1	5.3	0.16
03-Mar	0.48	<1	<2	<1	7.5	0.20
04-Mar	0.42	<1	<2	<1	7.8	0.12
09-Mar	0.56	<1	<2	<1	8.1	0.14
11-Mar	0.45	<1	2	<1	7.6	0.22
17-Mar	0.50	<1	<2	<1	7.7	0.12
22-Mar	0.40	<1	<2	<1	7.7	0.13
30-Mar	0.56	<1	<2	<1	7.1	0.13
30-Mar	0.48	<1	<2	<1	9	0.16
05-Apr	0.38	<1	<2	<1	10	0.10
19-Apr	0.48	<1	4	<1	10.3	0.08
24-Apr	0.61	<1	2	<1	10.4	0.13
25-Apr	0.46	<1	<2	<1	10.4	0.12
27-Apr	0.94	<1	2	<1	8.8	0.09
01-May	0.77	<1	<2	<1	11	0.08
04-May	0.50	<1	8	<1	11.6	0.12
10-May	0.36	<1	2	<1	8.4	0.10
17-May	0.38	<1	14	<1	12.1	0.10
18-May	0.36	<1	2	<1	12.3	0.24
25-May	0.41	<1	6	<1	13.5	0.23
31-May	0.32	<1	<2	<1	13.9	0.10
07-Jun	0.26	<1	6	<1	13.9	0.12
14-Jun	0.35	<1	2	<1	15	0.10
21-Jun	0.31	<1	<2	<1	13.8	0.11
28-Jun	0.28	<1	2	<1	15.1	0.41
04-Jul	0.22	<1	10	<1	16	0.11
12-Jul	0.42	<1	52	<1	16.8	0.21
14-Jul	0.33	<1	8	<1	17	0.15
21-Jul	0.34	<1	14	<1	16.8	0.29
22-Jul	0.26	<1	26	<1	17.3	0.20
29-Jul	0.31	<1	14	<1	18.1	0.19
04-Aug	0.22	<1	26	<1	18.8	0.19
10-Aug	0.19	<1	12	<1	17.8	0.18
11-Aug	0.16	<1	32	<1	19.2	0.21
16-Aug	0.07	<1	36	<1	18.8	0.20
23-Aug	0.04	<1	24	<1	19.1	0.16
01-Sep	0.13	<1	18	<1	18.9	0.17
06-Sep	0.09	<1	86	<1	19.8	0.19
07-Sep	0.21	<1	50	<1	19.4	0.17
13-Sep	0.18	<1	88	<1	19	0.15
21-Sep	0.16	<1	190	<1	19.7	0.21
26-Sep	0.13	<1	46	<1	19	0.24
26-Sep	0.04	<1	180	<1	18.9	0.22
05-Oct	0.16	<1	8	<1	17.2	0.18

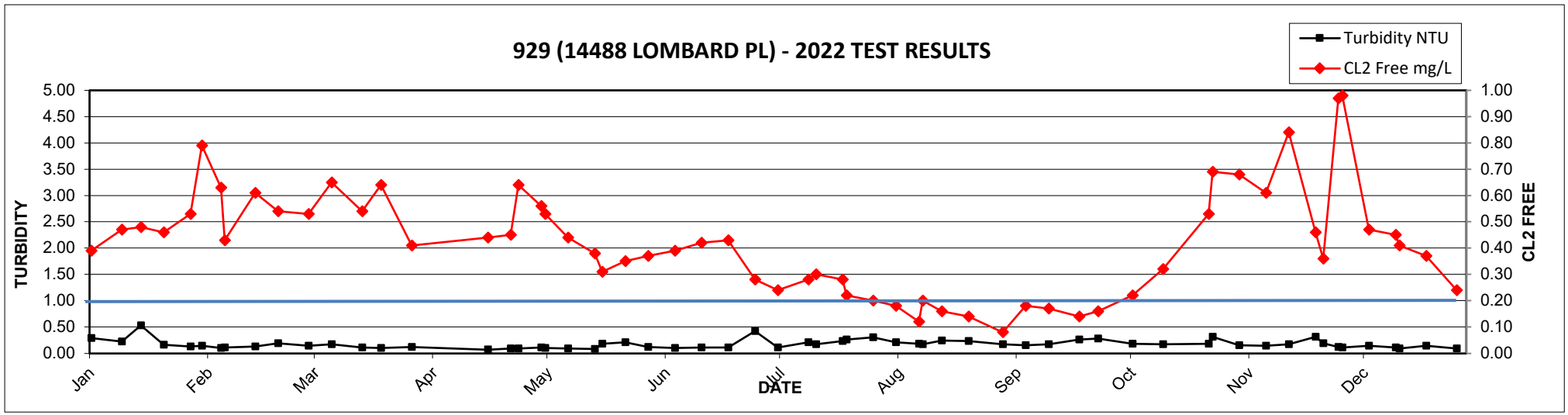

928 (15335 57 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
0
50
100
150
200
250
300
350
400
450
500
0
5
10
15
20
25
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


928 (15335 57 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 929 (14488 LOMBARD PL)

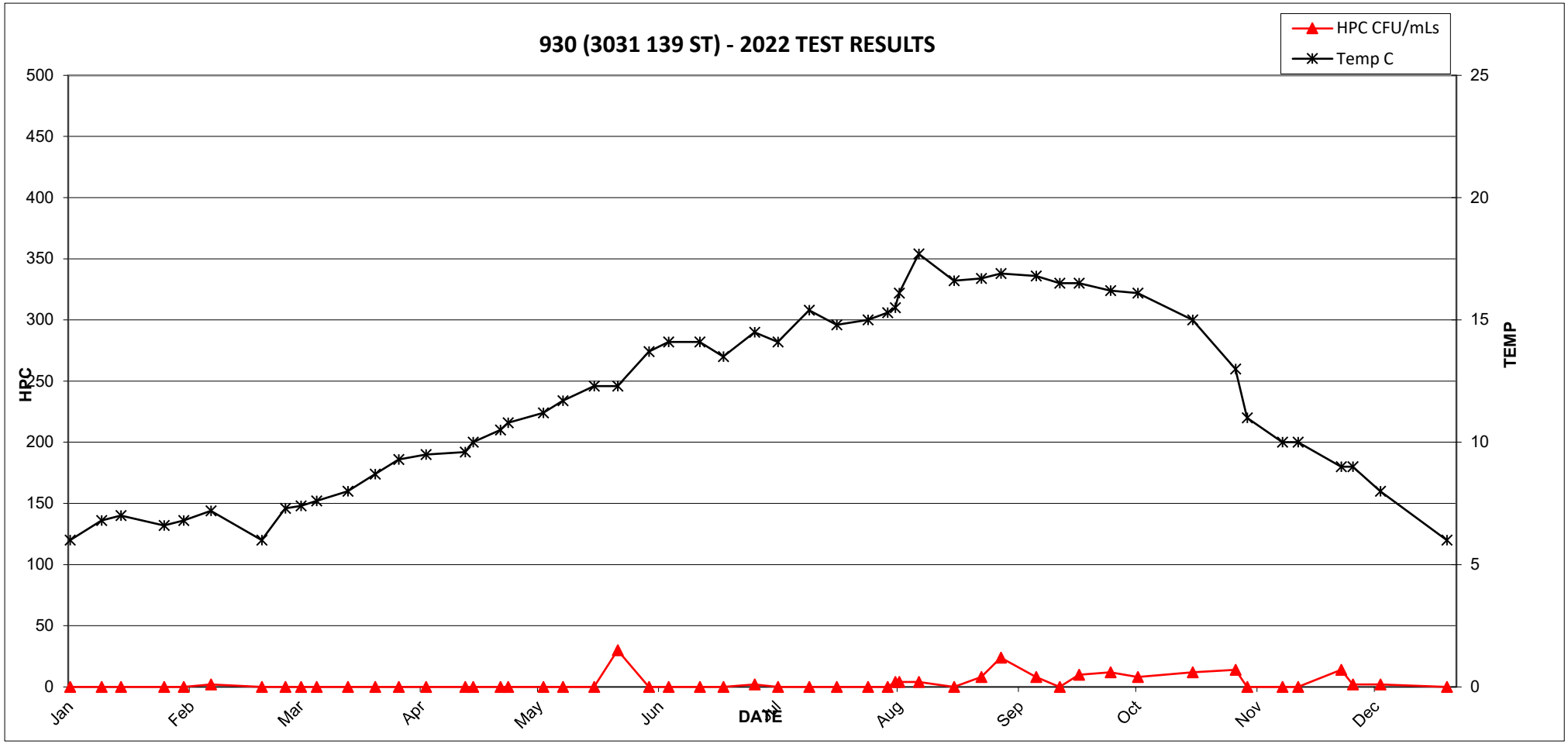
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.39	<1	<2	<1	4.9	0.29
13-Jan	0.47	<1	<2	<1	5.3	0.22
18-Jan	0.48	<1	<2	<1	6.4	0.53
24-Jan	0.46	<1	<2	<1	6.9	0.16
31-Jan	0.53	<1	<2	<1	6.8	0.13
03-Feb	0.79	<1	<2	<1	6.7	0.14
08-Feb	0.63	<1	<2	<1	7	0.10
09-Feb	0.43	<1	<2	<1	6	0.11
17-Feb	0.61	<1	<2	<1	7.4	0.13
23-Feb	0.54	<1	<2	<1	4.6	0.19
03-Mar	0.53	<1	2	<1	7	0.14
09-Mar	0.65	<1	6	<1	7.8	0.17
17-Mar	0.54	<1	<2	<1	7.5	0.11
22-Mar	0.64	<1	2	<1	7	0.10
30-Mar	0.41	<1	2	<1	7.3	0.12
19-Apr	0.44	<1	2	<1	10.1	0.07
25-Apr	0.45	<1	<2	<1	10.7	0.09
27-Apr	0.64	<1	<2	<1	8.1	0.09
03-May	0.56	<1	<2	<1	12	0.11
04-May	0.53	<1	<2	<1	8.6	0.10
10-May	0.44	<1	2	<1	10	0.09
17-May	0.38	<1	<2	<1	9.4	0.08
19-May	0.31	<1	2	<1	13.3	0.18
25-May	0.35	<1	<2	<1	12.3	0.21
31-May	0.37	<1	<2	<1	14.6	0.12
07-Jun	0.39	<1	<2	<1	10.7	0.10
14-Jun	0.42	<1	<2	<1	15.7	0.11
21-Jun	0.43	<1	6	<1	15.9	0.11
28-Jun	0.28	<1	<2	<1	16.5	0.42
04-Jul	0.24	<1	6	<1	17.5	0.11
12-Jul	0.28	<1	6	<1	14	0.21
14-Jul	0.30	<1	16	<1	18.6	0.17
21-Jul	0.28	<1	4	<1	14.8	0.23
22-Jul	0.22	<1	4	<1	19	0.26
29-Jul	0.20	<1	8	<1	19	0.30
04-Aug	0.18	<1	72	<1	15.3	0.21
10-Aug	0.12	<1	12	<1	20.3	0.18
11-Aug	0.20	<1	56	<1	19.1	0.17
16-Aug	0.16	<1	16	<1	19.8	0.24
23-Aug	0.14	<1	30	<1	20	0.23
01-Sep	0.08	<1	30	<1	20.7	0.17
07-Sep	0.18	<1	10	<1	16.6	0.15
13-Sep	0.17	<1	22	<1	16.7	0.17
21-Sep	0.14	<1	42	<1	16.6	0.26
26-Sep	0.16	<1	32	<1	17.4	0.28
05-Oct	0.22	<1	26	<1	16.3	0.18
13-Oct	0.32	<1	4	<1	16.1	0.17
25-Oct	0.53	<1	10	<1	15.6	0.18
26-Oct	0.69	<1	16	<1	15	0.31
02-Nov	0.68	<1	<2	<1	13	0.15
09-Nov	0.61	<1	<2	<1	10	0.14
15-Nov	0.84	<1	<2	<1	11	0.17
22-Nov	0.46	<1	<2	<1	9	0.31
24-Nov	0.36	<1	<2	<1	10	0.19

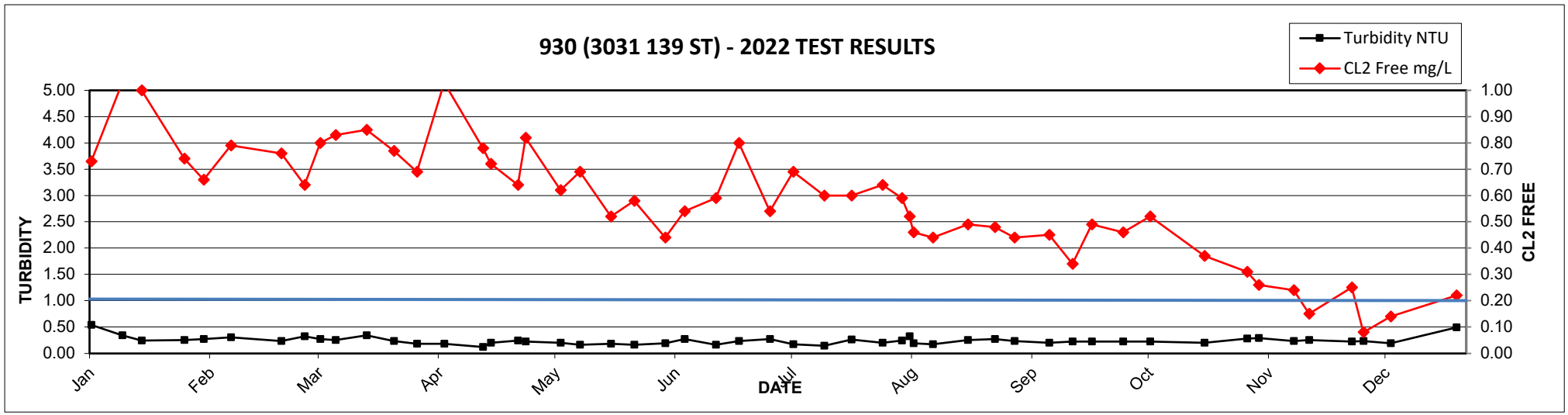

929 (14488 LOMBARD PL) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


929 (14488 LOMBARD PL) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 930 (3031 139 ST)

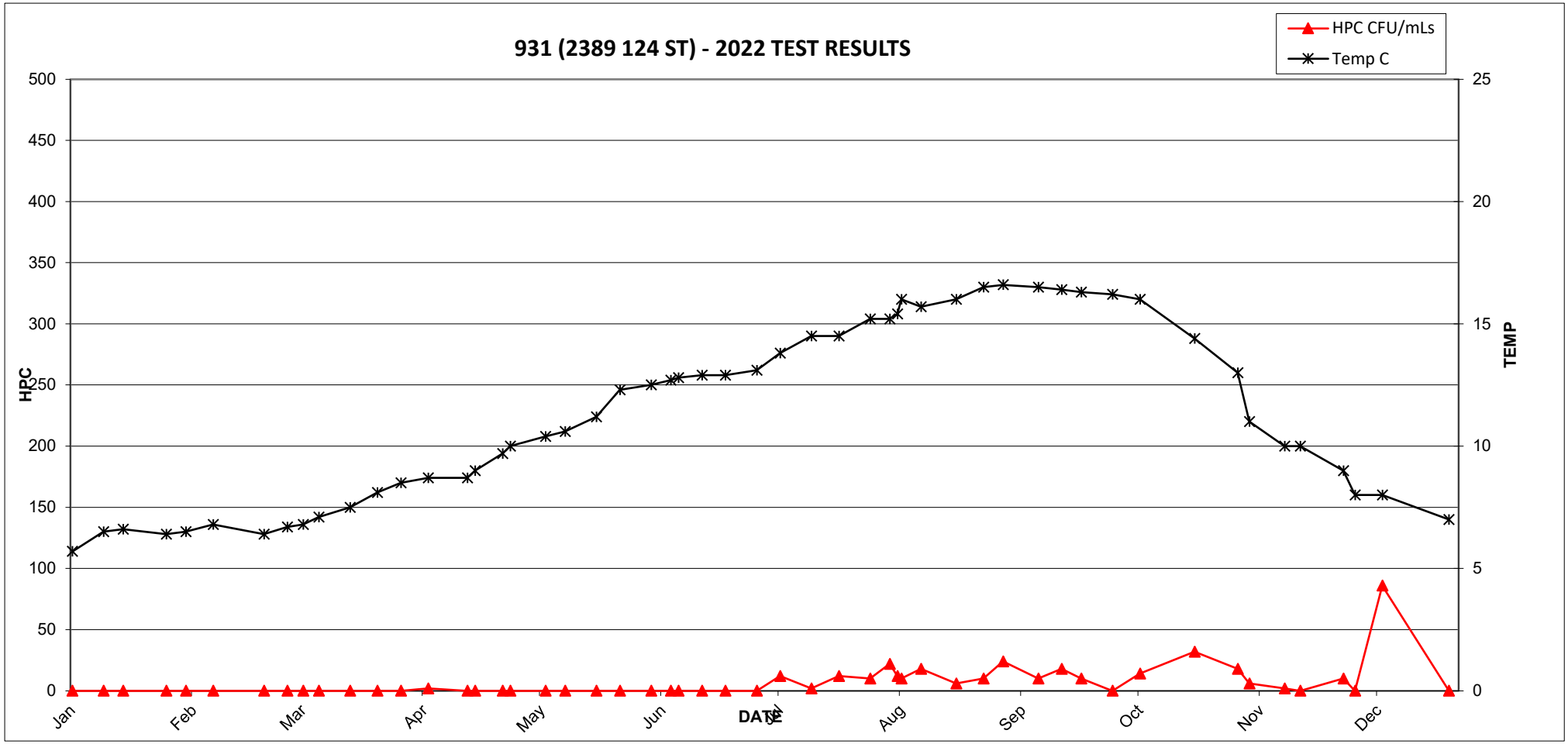
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	0.73	<1	<2	<1	6	0.54
19-Jan	1.03	<1	<2	<1	6.8	0.34
24-Jan	1.00	<1	<2	<1	7	0.24
04-Feb	0.74	<1	<2	<1	6.6	0.25
09-Feb	0.66	<1	<2	<1	6.8	0.27
16-Feb	0.79	<1	2	<1	7.2	0.30
01-Mar	0.76	<1	<2	<1	6	0.23
07-Mar	0.64	<1	<2	<1	7.3	0.32
11-Mar	0.80	<1	<2	<1	7.4	0.27
15-Mar	0.83	<1	<2	<1	7.6	0.25
23-Mar	0.85	<1	<2	<1	8	0.34
30-Mar	0.77	<1	<2	<1	8.7	0.23
05-Apr	0.69	<1	<2	<1	9.3	0.18
12-Apr	1.03	<1	<2	<1	9.5	0.18
22-Apr	0.78	<1	<2	<1	9.6	0.12
24-Apr	0.72	<1	<2	<1	10	0.20
01-May	0.64	<1	<2	<1	10.5	0.24
03-May	0.82	<1	<2	<1	10.8	0.22
12-May	0.62	<1	<2	<1	11.2	0.20
17-May	0.69	<1	<2	<1	11.7	0.16
25-May	0.52	<1	<2	<1	12.3	0.18
31-May	0.58	<1	30	<1	12.3	0.16
08-Jun	0.44	<1	<2	<1	13.7	0.19
13-Jun	0.54	<1	<2	<1	14.1	0.27
21-Jun	0.59	<1	<2	<1	14.1	0.16
27-Jun	0.80	<1	<2	<1	13.5	0.23
05-Jul	0.54	<1	2	<1	14.5	0.27
11-Jul	0.69	<1	<2	<1	14.1	0.17
19-Jul	0.60	<1	<2	<1	15.4	0.14
26-Jul	0.60	<1	<2	<1	14.8	0.26
03-Aug	0.64	<1	<2	<1	15	0.20
08-Aug	0.59	<1	<2	<1	15.30	0.24
10-Aug	0.52	<1	4	<1	15.5	0.32
11-Aug	0.46	<1	4	<1	16.1	0.19
16-Aug	0.44	<1	4	<1	17.7	0.17
25-Aug	0.49	<1	<2	<1	16.6	0.25
01-Sep	0.48	<1	8	<1	16.7	0.27
06-Sep	0.44	<1	24	<1	16.9	0.23
15-Sep	0.45	<1	8	<1	16.8	0.20
21-Sep	0.34	<1	<2	<1	16.5	0.22
26-Sep	0.49	<1	10	<1	16.5	0.22
04-Oct	0.46	<1	12	<1	16.2	0.22
11-Oct	0.52	<1	8	<1	16.1	0.22
25-Oct	0.37	<1	12	<1	15	0.20
05-Nov	0.31	<1	14	<1	13	0.28
08-Nov	0.26	<1	<2	<1	11	0.29
17-Nov	0.24	<1	<2	<1	10	0.23
21-Nov	0.15	<1	<2	<1	10	0.25
02-Dec	0.25	<1	14	<1	9	0.22
05-Dec	0.08	<1	2	<1	9	0.23
12-Dec	0.14	<1	2	<1	8	0.19
29-Dec	0.22	<1	NA	<1	6	0.49

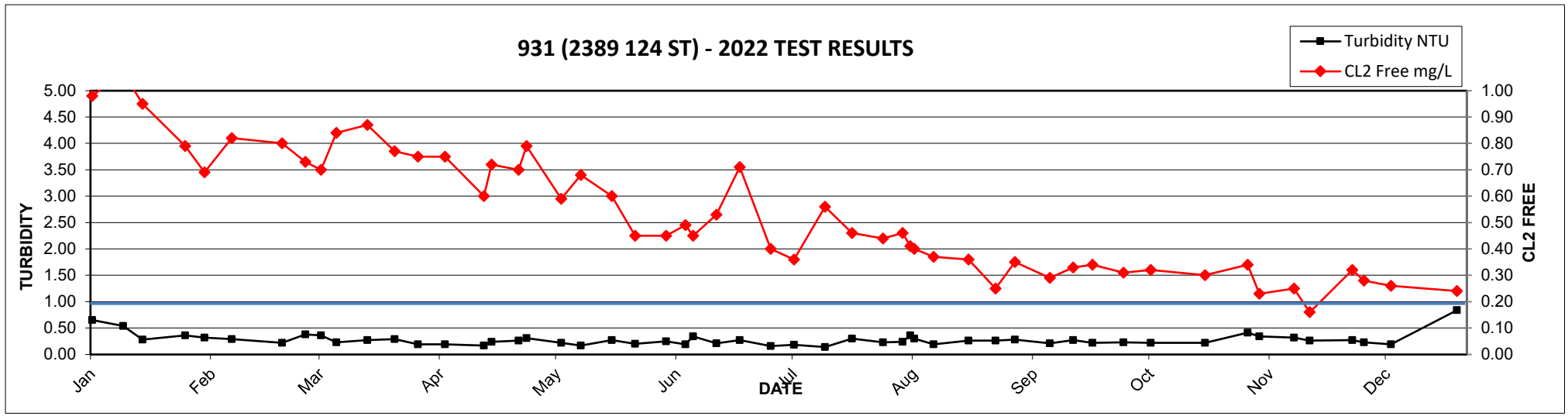

930 (3031 139 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
0
50
100
150
200
250
300
350
400
450
500
0
5
10
15
20
25
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


930 (3031 139 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 931 (2389 124 ST)

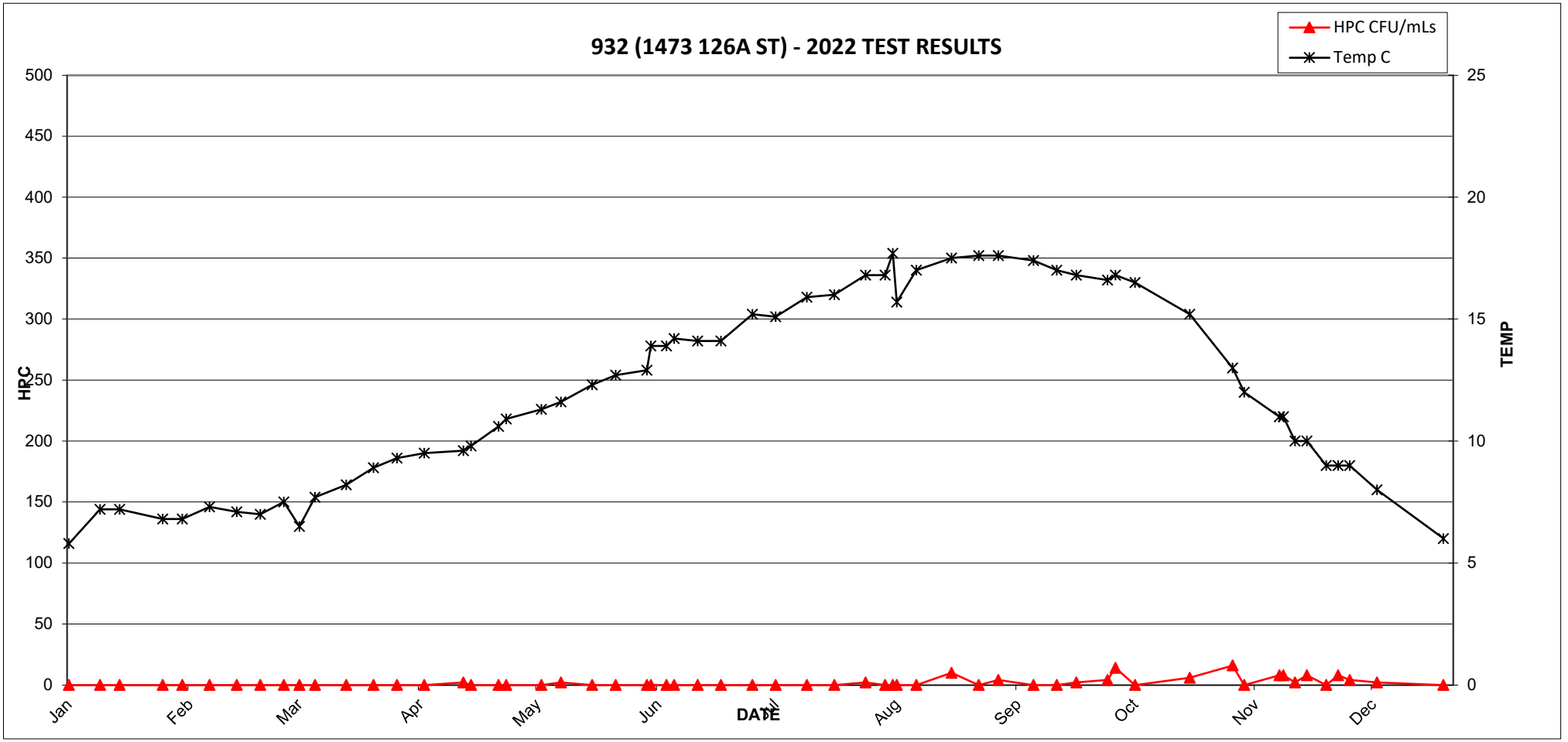
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	0.98	<1	<2	<1	5.7	0.65
19-Jan	1.07	<1	<2	<1	6.5	0.54
24-Jan	0.95	<1	<2	<1	6.6	0.28
04-Feb	0.79	<1	<2	<1	6.4	0.36
09-Feb	0.69	<1	<2	<1	6.5	0.32
16-Feb	0.82	<1	<2	<1	6.8	0.29
01-Mar	0.80	<1	<2	<1	6.4	0.22
07-Mar	0.73	<1	<2	<1	6.7	0.38
11-Mar	0.70	<1	<2	<1	6.8	0.36
15-Mar	0.84	<1	<2	<1	7.1	0.23
23-Mar	0.87	<1	<2	<1	7.5	0.27
30-Mar	0.77	<1	<2	<1	8.1	0.29
05-Apr	0.75	<1	<2	<1	8.5	0.19
12-Apr	0.75	<1	2	<1	8.7	0.19
22-Apr	0.60	<1	<2	<1	8.7	0.17
24-Apr	0.72	<1	<2	<1	9	0.24
01-May	0.70	<1	<2	<1	9.7	0.26
03-May	0.79	<1	<2	<1	10	0.31
12-May	0.59	<1	<2	<1	10.4	0.22
17-May	0.68	<1	<2	<1	10.6	0.17
25-May	0.60	<1	<2	<1	11.2	0.27
31-May	0.45	<1	<2	<1	12.3	0.20
08-Jun	0.45	<1	<2	<1	12.5	0.25
13-Jun	0.49	<1	<2	<1	12.7	0.19
15-Jun	0.45	<1	<2	<1	12.8	0.34
21-Jun	0.53	<1	<2	<1	12.9	0.21
27-Jun	0.71	<1	<2	<1	12.9	0.27
05-Jul	0.40	<1	<2	<1	13.1	0.16
11-Jul	0.36	<1	12	<1	13.8	0.18
19-Jul	0.56	<1	2	<1	14.5	0.14
26-Jul	0.46	<1	12	<1	14.5	0.30
03-Aug	0.44	<1	10	<1	15.2	0.23
08-Aug	0.46	<1	22	<1	15.2	0.24
10-Aug	0.41	<1	12	<1	15.4	0.36
11-Aug	0.4	<1	10	<1	16	0.30
16-Aug	0.37	<1	18	<1	15.7	0.19
25-Aug	0.36	<1	6	<1	16	0.26
01-Sep	0.25	<1	10	<1	16.5	0.26
06-Sep	0.35	<1	24	<1	16.6	0.28
15-Sep	0.29	<1	10	<1	16.5	0.21
21-Sep	0.33	<1	18	<1	16.4	0.27
26-Sep	0.34	<1	10	<1	16.3	0.22
04-Oct	0.31	<1	<2	<1	16.2	0.23
11-Oct	0.32	<1	14	<1	16	0.22
25-Oct	0.30	<1	32	<1	14.4	0.22
05-Nov	0.34	<1	18	<1	13	0.41
08-Nov	0.23	<1	6	<1	11	0.34
17-Nov	0.25	<1	2	<1	10	0.32
21-Nov	0.16	<1	<2	<1	10	0.26
02-Dec	0.32	<1	10	<1	9	0.27
05-Dec	0.28	<1	<2	<1	8	0.23
12-Dec	0.26	<1	86	<1	8	0.19
29-Dec	0.24	<1	NA	<1	7	0.84

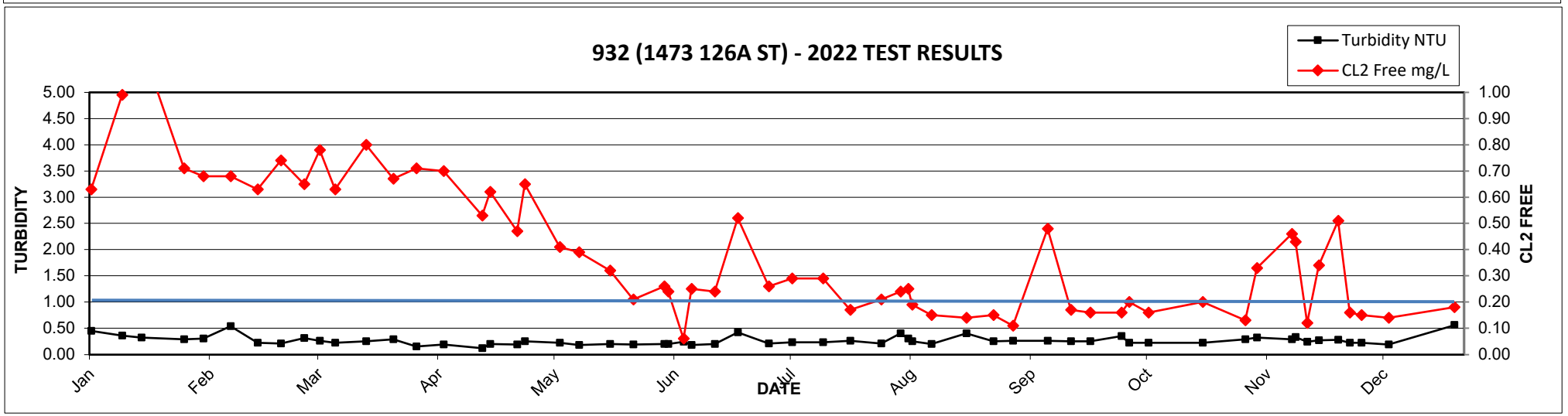

931 (2389 124 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


931 (2389 124 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 932 (1473 126A ST)

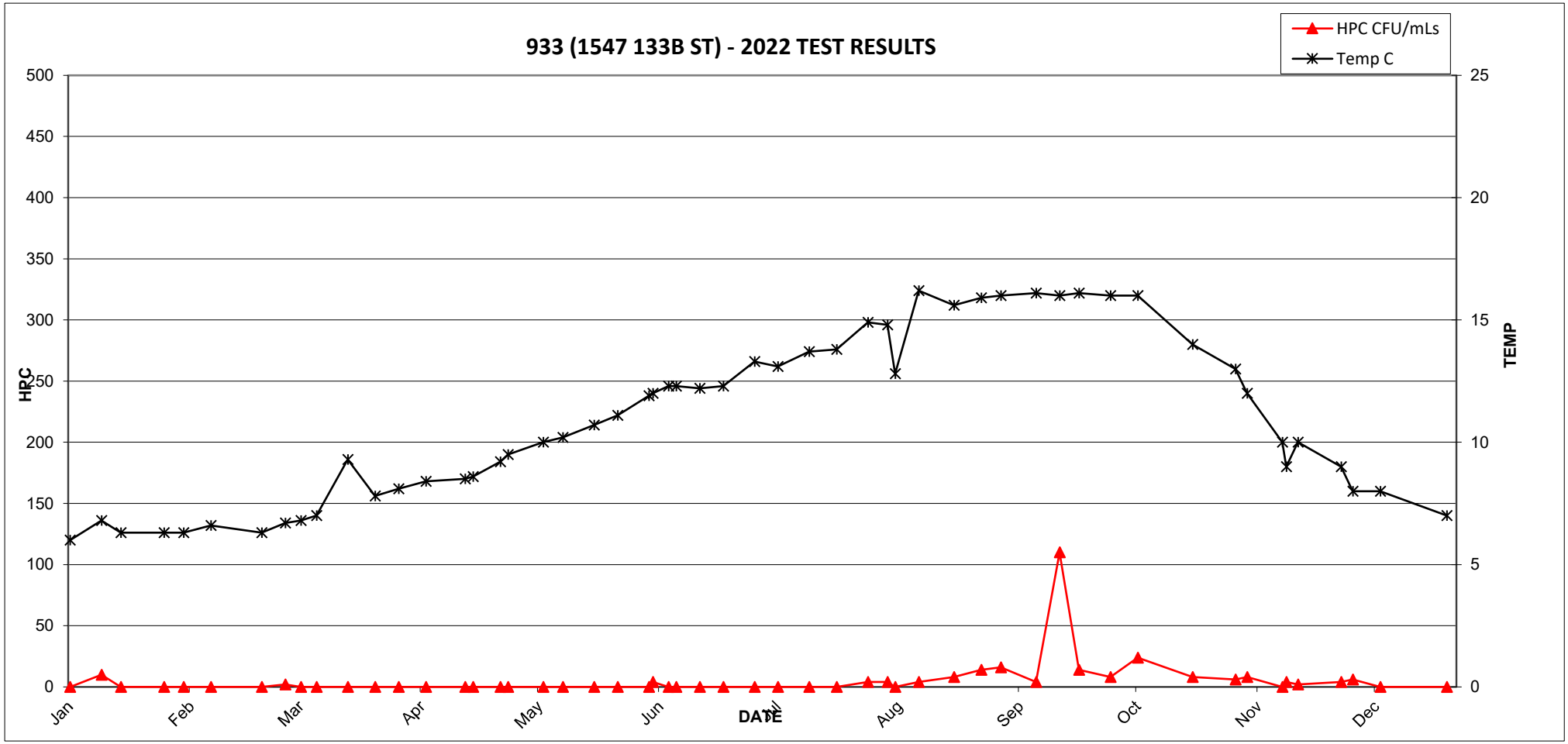
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	0.63	<1	<2	<1	5.8	0.45
19-Jan	0.99	<1	<2	<1	7.2	0.36
24-Jan	1.18	<1	<2	<1	7.2	0.32
04-Feb	0.71	<1	<2	<1	6.8	0.29
09-Feb	0.68	<1	<2	<1	6.8	0.30
16-Feb	0.68	<1	<2	<1	7.3	0.54
23-Feb	0.63	<1	<2	<1	7.1	0.22
01-Mar	0.74	<1	<2	<1	7	0.21
07-Mar	0.65	<1	<2	<1	7.5	0.31
11-Mar	0.78	<1	<2	<1	6.5	0.26
15-Mar	0.63	<1	<2	<1	7.7	0.22
23-Mar	0.80	<1	<2	<1	8.2	0.25
30-Mar	0.67	<1	<2	<1	8.9	0.29
05-Apr	0.71	<1	<2	<1	9.3	0.15
12-Apr	0.70	<1	<2	<1	9.5	0.19
22-Apr	0.53	<1	2	<1	9.6	0.12
24-Apr	0.62	<1	<2	<1	9.8	0.20
01-May	0.47	<1	<2	<1	10.6	0.19
03-May	0.65	<1	<2	<1	10.9	0.25
12-May	0.41	<1	<2	<1	11.3	0.22
17-May	0.39	<1	2	<1	11.6	0.18
25-May	0.32	<1	<2	<1	12.3	0.20
31-May	0.21	<1	<2	<1	12.7	0.19
08-Jun	0.26	<1	<2	<1	12.9	0.20
09-Jun	0.24	<1	<2	<1	13.9	0.20
13-Jun	0.06	<1	<2	<1	13.9	0.24
15-Jun	0.25	<1	<2	<1	14.2	0.18
21-Jun	0.24	<1	<2	<1	14.1	0.20
27-Jun	0.52	<1	<2	<1	14.1	0.42
05-Jul	0.26	<1	<2	<1	15.2	0.21
11-Jul	0.29	<1	<2	<1	15.1	0.23
19-Jul	0.29	<1	<2	<1	15.9	0.23
26-Jul	0.17	<1	<2	<1	16	0.26
03-Aug	0.21	<1	2	<1	16.8	0.21
08-Aug	0.24	<1	<2	<1	16.8	0.40
10-Aug	0.25	<1	<2	<1	17.7	0.30
11-Aug	0.19	<1	<2	<1	15.7	0.25
16-Aug	0.15	<1	<2	<1	17	0.20
25-Aug	0.14	<1	10	<1	17.5	0.40
01-Sep	0.15	<1	<2	<1	17.6	0.25
06-Sep	0.11	<1	4	<1	17.6	0.26
15-Sep	0.48	<1	<2	<1	17.4	0.26
21-Sep	0.17	<1	<2	<1	17	0.25
26-Sep	0.16	<1	2	<1	16.8	0.25
04-Oct	0.16	<1	4	<1	16.6	0.35
06-Oct	0.20	<1	14	<1	16.8	0.22
11-Oct	0.16	<1	<2	<1	16.5	0.22
25-Oct	0.20	<1	6	<1	15.2	0.22
05-Nov	0.13	<1	16	<1	13	0.29
08-Nov	0.33	<1	<2	<1	12	0.32
17-Nov	0.46	<1	8	<1	11	0.29
18-Nov	0.43	<1	8	<1	11	0.33
21-Nov	0.12	<1	2	<1	10	0.24
24-Nov	0.34	<1	8	<1	10	0.27
29-Nov	0.51	<1	<2	<1	9	0.28
02-Dec	0.16	<1	8	<1	9	0.22
05-Dec	0.15	<1	4	<1	9	0.22


932 (1473 126A ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


932 (1473 126A ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 933 (1547 133B ST)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	1.06	<1	<2	<1	6	0.78
19-Jan	1.09	<1	10	<1	6.8	0.38
24-Jan	1.01	<1	<2	<1	6.3	0.38
04-Feb	0.84	<1	<2	<1	6.3	0.38
09-Feb	0.71	<1	<2	<1	6.3	0.32
16-Feb	0.84	<1	<2	<1	6.6	0.27
01-Mar	0.80	<1	<2	<1	6.3	0.32
07-Mar	0.80	<1	2	<1	6.7	0.31
11-Mar	0.80	<1	<2	<1	6.8	0.29
15-Mar	0.88	<1	<2	<1	7	0.22
23-Mar	0.90	<1	<2	<1	9.3	0.22
30-Mar	0.78	<1	<2	<1	7.8	0.23
05-Apr	0.80	<1	<2	<1	8.1	0.17
12-Apr	0.94	<1	<2	<1	8.4	0.19
22-Apr	0.64	<1	<2	<1	8.5	0.25
24-Apr	0.80	<1	<2	<1	8.6	0.21
01-May	0.91	<1	<2	<1	9.2	0.24
03-May	0.84	<1	<2	<1	9.5	0.26
12-May	0.71	<1	<2	<1	10	0.21
17-May	0.79	<1	<2	<1	10.2	0.18
25-May	0.75	<1	<2	<1	10.7	0.21
31-May	0.60	<1	<2	<1	11.1	0.19
08-Jun	0.61	<1	<2	<1	11.9	0.20
09-Jun	0.60	<1	4	<1	12	0.24
13-Jun	0.53	<1	<2	<1	12.3	0.25
15-Jun	0.64	<1	<2	<1	12.3	0.21
21-Jun	0.75	<1	<2	<1	12.2	0.20
27-Jun	0.78	<1	<2	<1	12.3	0.27
05-Jul	0.60	<1	<2	<1	13.3	0.21
11-Jul	0.60	<1	<2	<1	13.1	0.20
19-Jul	0.80	<1	<2	<1	13.7	0.18
26-Jul	0.70	<1	<2	<1	13.8	0.29
03-Aug	0.66	<1	4	<1	14.9	0.17
08-Aug	0.64	<1	4	<1	14.8	0.22
10-Aug	0.63	<1	<2	<1	12.8	0.27
16-Aug	0.61	<1	4	<1	16.2	0.17
25-Aug	0.61	<1	8	<1	15.6	0.20
01-Sep	0.55	<1	14	<1	15.9	0.23
06-Sep	0.57	<1	16	<1	16	0.25
15-Sep	0.65	<1	4	<1	16.1	0.20
21-Sep	0.44	<1	110	<1	16	0.23
26-Sep	0.50	<1	14	<1	16.1	0.27
04-Oct	0.44	<1	8	<1	16	0.21
11-Oct	0.46	<1	24	<1	16	0.22
25-Oct	0.38	<1	8	<1	14	0.24
05-Nov	0.39	<1	6	<1	13	0.35
08-Nov	0.31	<1	8	<1	12	0.32
17-Nov	0.55	<1	<2	<1	10	0.26
18-Nov	0.44	<1	4	<1	9	0.33
21-Nov	0.34	<1	2	<1	10	0.28
02-Dec	0.35	<1	4	<1	9	0.25
05-Dec	0.36	<1	6	<1	8	0.22
12-Dec	0.44	<1	<2	<1	8	0.17
29-Dec	0.29	<1	NA	<1	7	0.75


933 (1547 133B ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
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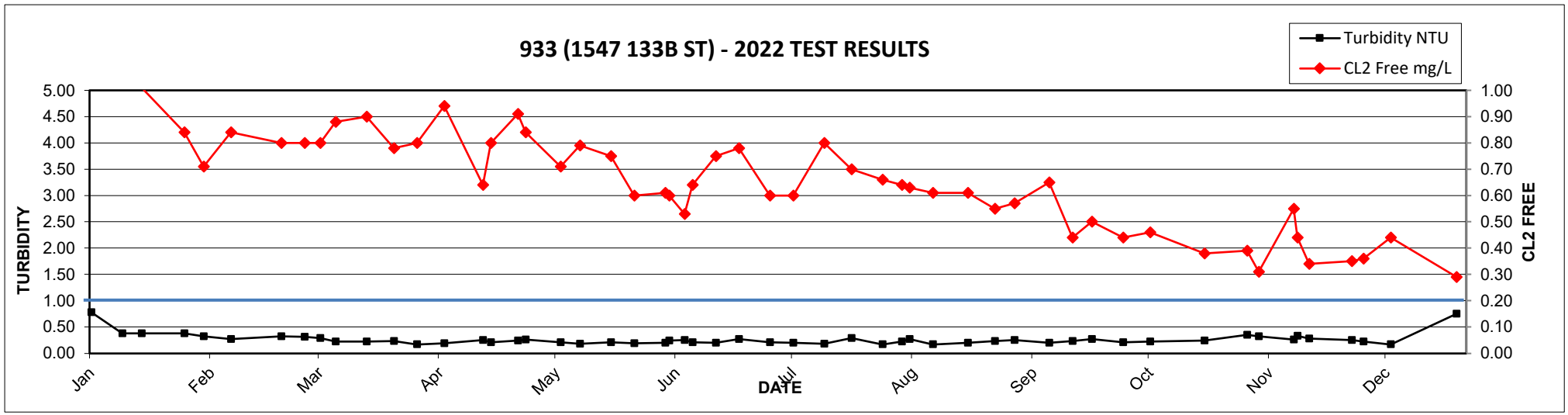
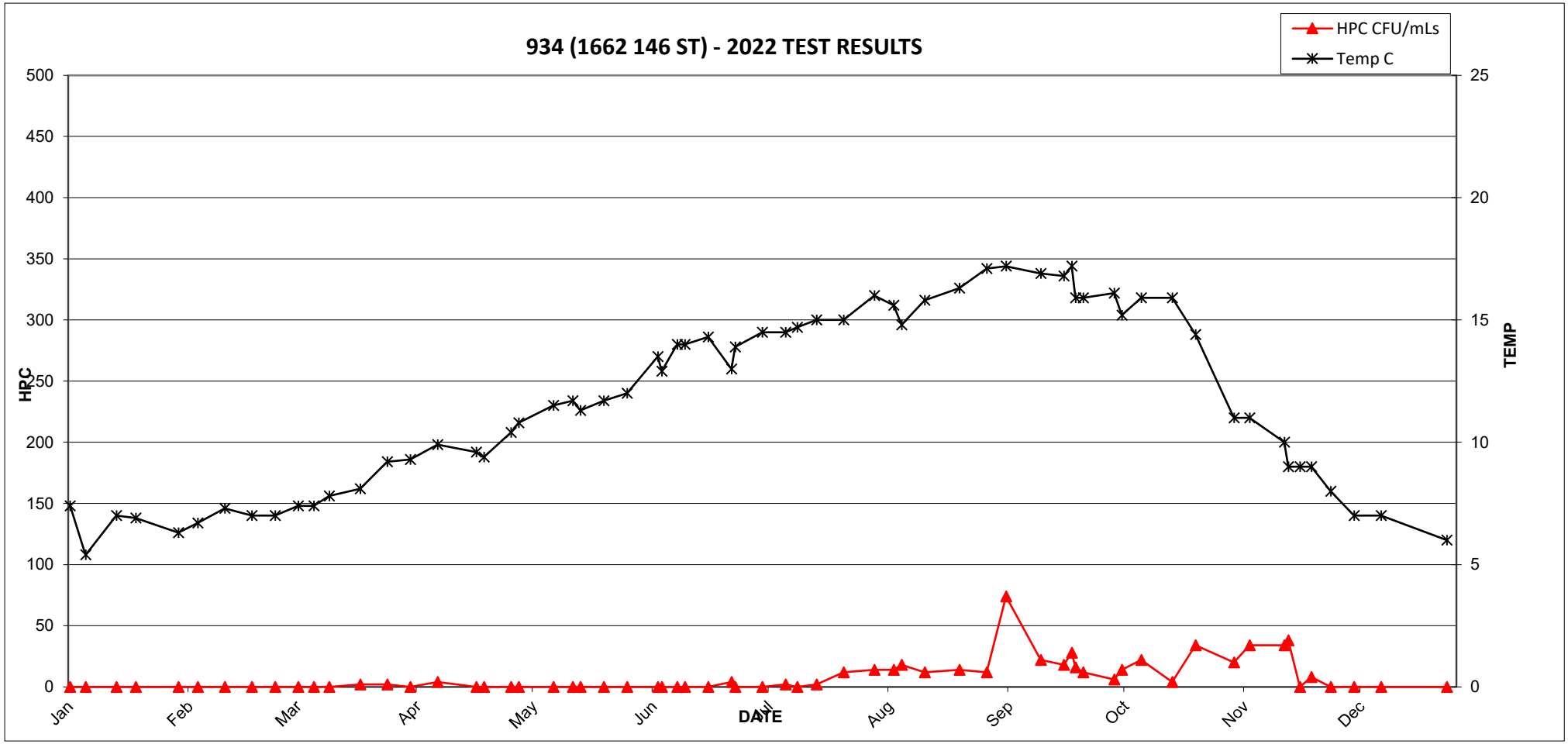
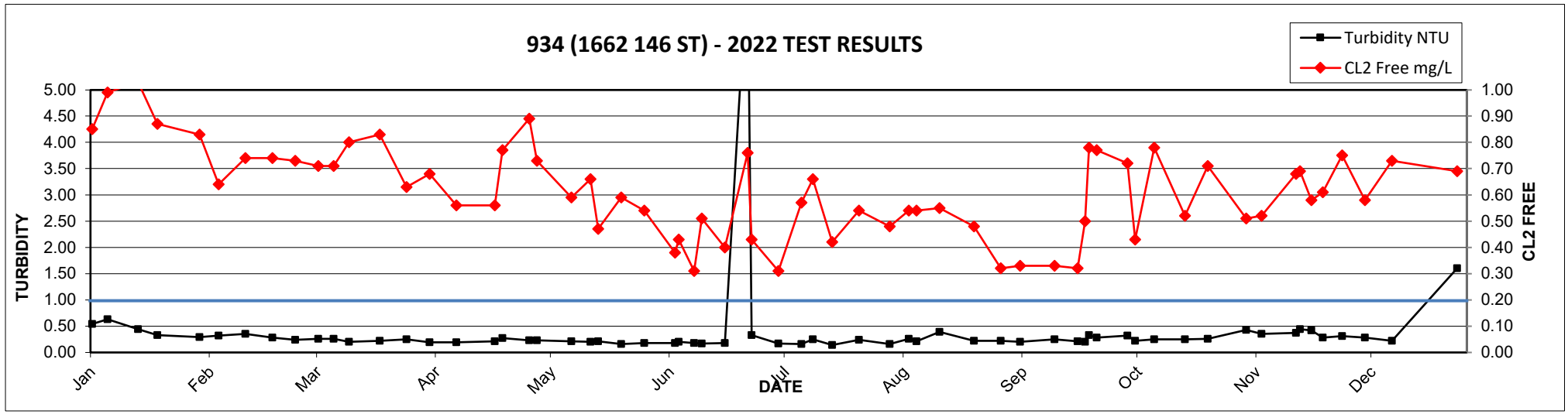
Sep
Oct
Nov
Dec


933 (1547 133B ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 934 (1662 146 ST)

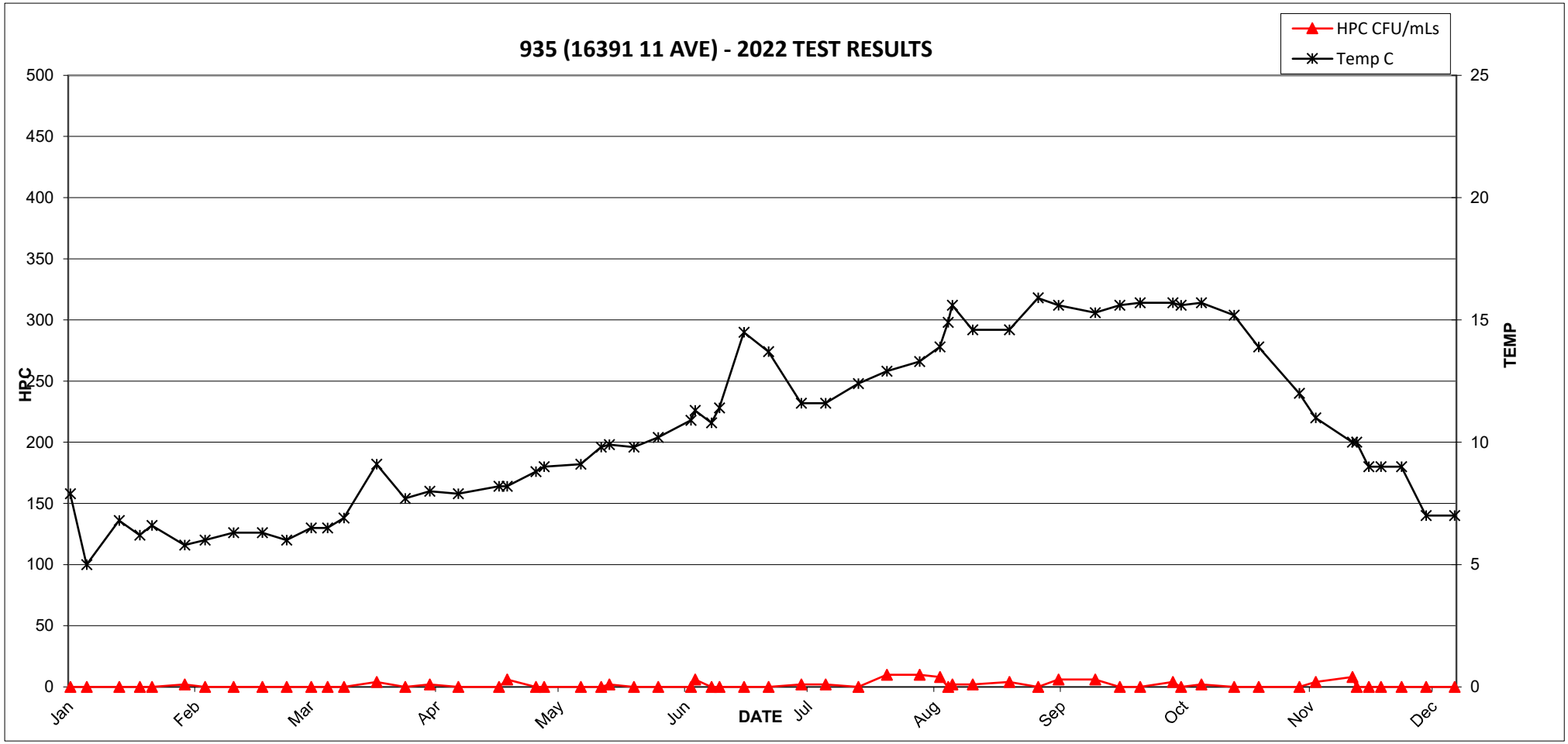
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
07-Jan	0.85	<1	<2	<1	7.4	0.54
11-Jan	0.99	<1	<2	<1	5.4	0.63
19-Jan	1.03	<1	<2	<1	7	0.44
24-Jan	0.87	<1	<2	<1	6.9	0.33
04-Feb	0.83	<1	<2	<1	6.3	0.29
09-Feb	0.64	<1	<2	<1	6.7	0.32
16-Feb	0.74	<1	<2	<1	7.3	0.35
23-Feb	0.74	<1	<2	<1	7	0.28
01-Mar	0.73	<1	<2	<1	7	0.24
07-Mar	0.71	<1	<2	<1	7.4	0.26
11-Mar	0.71	<1	<2	<1	7.4	0.26
15-Mar	0.80	<1	<2	<1	7.8	0.20
23-Mar	0.83	<1	2	<1	8.1	0.22
30-Mar	0.63	<1	2	<1	9.2	0.25
05-Apr	0.68	<1	<2	<1	9.3	0.19
12-Apr	0.56	<1	4	<1	9.9	0.19
22-Apr	0.56	<1	<2	<1	9.6	0.21
24-Apr	0.77	<1	<2	<1	9.4	0.27
01-May	0.89	<1	<2	<1	10.4	0.23
03-May	0.73	<1	LA	<1	10.8	0.23
12-May	0.59	<1	<2	<1	11.5	0.21
17-May	0.66	<1	<2	<1	11.7	0.20
19-May	0.47	<1	<2	<1	11.3	0.21
25-May	0.59	<1	<2	<1	11.7	0.16
31-May	0.54	<1	<2	<1	12	0.18
08-Jun	0.38	<1	<2	<1	13.5	0.18
09-Jun	0.43	<1	<2	<1	12.9	0.20
13-Jun	0.31	<1	<2	<1	14	0.18
15-Jun	0.51	<1	<2	<1	14	0.17
21-Jun	0.40	<1	<2	<1	14.3	0.18
28-Jun	0.43	<1	<2	<1	13.9	0.33
27-Jun	0.76	<1	4	<1	13	7.50
05-Jul	0.31	<1	<2	<1	14.5	0.17
11-Jul	0.57	<1	2	<1	14.5	0.16
14-Jul	0.66	<1	<2	<1	14.7	0.25
19-Jul	0.42	<1	2	<1	15	0.14
26-Jul	0.54	<1	12	<1	15	0.24
03-Aug	0.48	<1	14	<1	16	0.16
08-Aug	0.54	<1	14	<1	15.6	0.26
10-Aug	0.54	<1	18	<1	14.8	0.21
16-Aug	0.55	<1	12	<1	15.8	0.39
25-Aug	0.48	<1	14	<1	16.3	0.22
01-Sep	0.32	<1	12	<1	17.1	0.22
06-Sep	0.33	<1	74	<1	17.2	0.20
15-Sep	0.33	<1	22	<1	16.9	0.25
21-Sep	0.32	<1	18	1	16.8	0.21
23-Sep	0.50	<1	28	<1	17.2	0.20
24-Sep	0.78	<1	16	<1	15.9	0.33
26-Sep	0.77	<1	12	<1	15.9	0.28
04-Oct	0.72	<1	6	<1	16.1	0.32
06-Oct	0.43	<1	14	<1	15.2	0.22
11-Oct	0.78	<1	22	<1	15.9	0.25
19-Oct	0.52	<1	4	<1	15.9	0.25
25-Oct	0.71	<1	34	<1	14.4	0.26
04-Nov	0.51	<1	20	<1	11	0.43
08-Nov	0.52	<1	34	<1	11	0.35
17-Nov	0.68	<1	34	<1	10	0.37
18-Nov	0.69	<1	38	<1	9	0.44
21-Nov	0.58	<1	<2	<1	9	0.42
24-Nov	0.61	<1	8	<1	9	0.28
29-Nov	0.75	<1	<2	<1	8	0.31
05-Dec	0.58	<1	<2	<1	7	0.28
12-Dec	0.73	<1	<2	<1	7	0.22

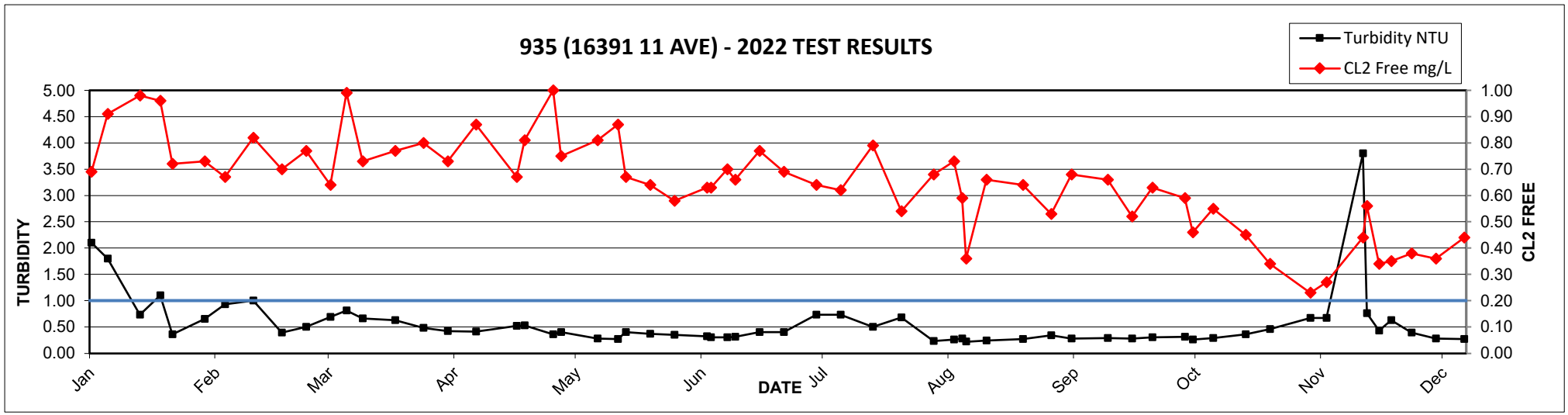

934 (1662 146 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


934 (1662 146 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 935 (16391 11 AVE)

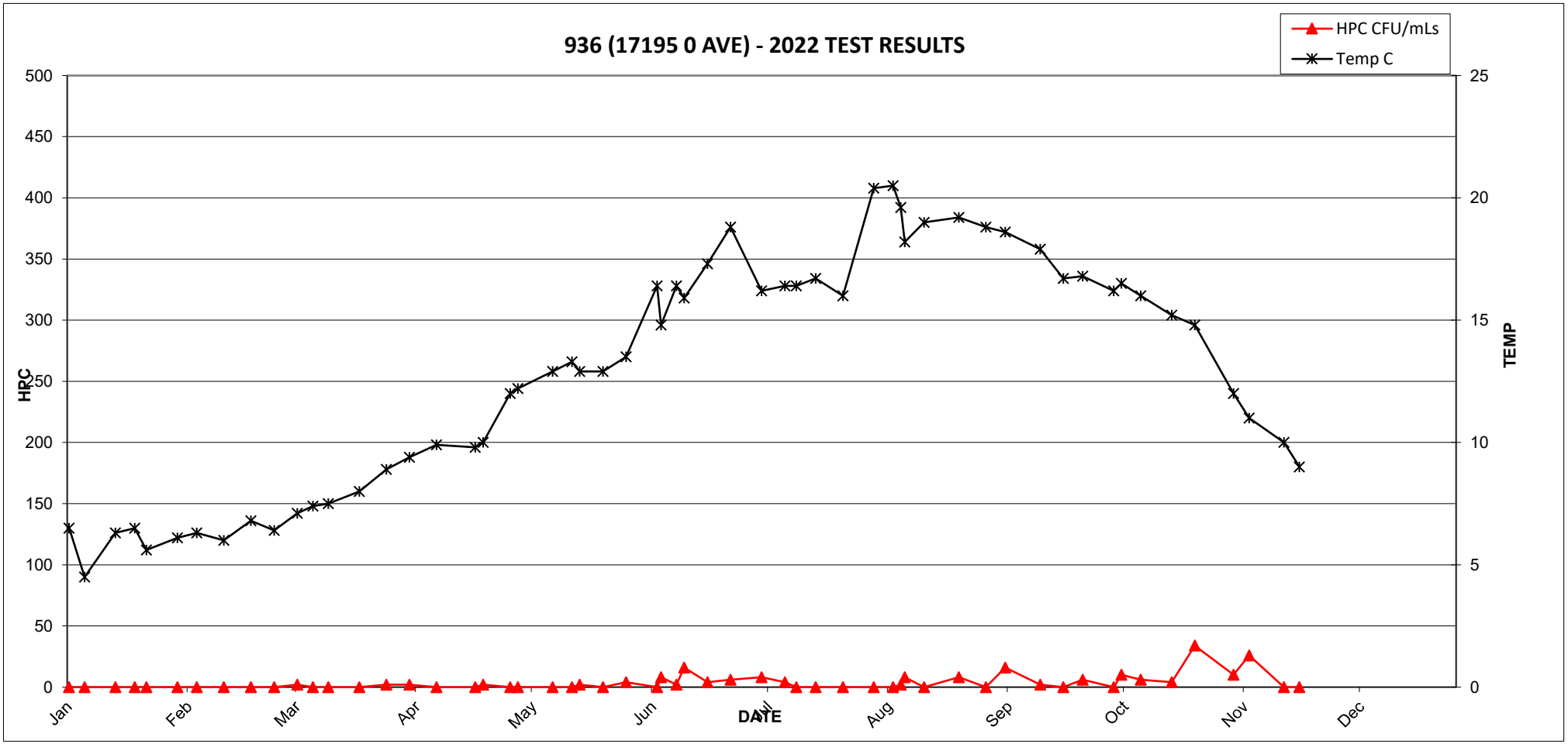
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
07-Jan	0.69	<1	<2	<1	7.9	2.10
11-Jan	0.91	<1	<2	<1	5	1.80
19-Jan	0.98	<1	<2	<1	6.8	0.73
24-Jan	0.96	<1	<2	<1	6.2	1.10
27-Jan	0.72	<1	<2	<1	6.6	0.36
04-Feb	0.73	<1	2	<1	5.8	0.65
09-Feb	0.67	<1	<2	<1	6	0.93
16-Feb	0.82	<1	<2	<1	6.3	1.00
23-Feb	0.70	<1	<2	<1	6.3	0.39
01-Mar	0.77	<1	<2	<1	6	0.50
07-Mar	0.64	<1	<2	<1	6.5	0.69
11-Mar	0.99	<1	<2	<1	6.5	0.81
15-Mar	0.73	<1	<2	<1	6.9	0.66
23-Mar	0.77	<1	4	<1	9.1	0.63
30-Mar	0.80	<1	<2	<1	7.7	0.48
05-Apr	0.73	<1	2	<1	8	0.42
12-Apr	0.87	<1	<2	<1	7.9	0.41
22-Apr	0.67	<1	<2	<1	8.2	0.52
24-Apr	0.81	<1	6	<1	8.2	0.53
01-May	1.00	<1	<2	<1	8.8	0.36
03-May	0.75	<1	<2	<1	9	0.40
12-May	0.81	<1	<2	<1	9.1	0.28
17-May	0.87	<1	<2	<1	9.8	0.27
19-May	0.67	<1	2	<1	9.9	0.40
25-May	0.64	<1	<2	<1	9.8	0.37
31-May	0.58	<1	<2	<1	10.2	0.35
08-Jun	0.63	<1	<2	<1	10.9	0.32
09-Jun	0.63	<1	6	<1	11.3	0.30
13-Jun	0.70	<1	<2	<1	10.8	0.30
15-Jun	0.66	<1	<2	<1	11.4	0.31
21-Jun	0.77	<1	<2	<1	14.5	0.40
27-Jun	0.69	<1	<2	<1	13.7	0.40
05-Jul	0.64	<1	2	<1	11.6	0.73
11-Jul	0.62	<1	2	<1	11.6	0.73
19-Jul	0.79	<1	<2	<1	12.4	0.50
26-Jul	0.54	<1	10	<1	12.9	0.68
03-Aug	0.68	<1	10	<1	13.3	0.23
08-Aug	0.73	<1	8	<1	13.9	0.26
10-Aug	0.59	<1	<2	<1	14.9	0.28
11-Aug	0.36	<1	2	<1	15.6	0.22
16-Aug	0.66	<1	2	<1	14.6	0.24
25-Aug	0.64	<1	4	<1	14.6	0.27
01-Sep	0.53	<1	<2	<1	15.9	0.34
06-Sep	0.68	<1	6	<1	15.6	0.28
15-Sep	0.66	<1	6	<1	15.3	0.29
21-Sep	0.52	<1	<2	<1	15.6	0.28
26-Sep	0.63	<1	<2	<1	15.7	0.30
04-Oct	0.59	<1	4	<1	15.7	0.31
06-Oct	0.46	<1	<2	<1	15.6	0.26
11-Oct	0.55	<1	2	<1	15.7	0.29
19-Oct	0.45	<1	<2	<1	15.2	0.36
25-Oct	0.34	<1	<2	<1	13.9	0.46
04-Nov	0.23	<1	<2	<1	12	0.67
08-Nov	0.27	<1	4	<1	11	0.67
17-Nov	0.44	<1	8	<1	10	3.80
18-Nov	0.56	<1	<2	<1	10	0.76
21-Nov	0.34	<1	<2	<1	9	0.43
24-Nov	0.35	<1	<2	<1	9	0.63
29-Nov	0.38	<1	<2	<1	9	0.39
05-Dec	0.36	<1	<2	<1	7	0.28
12-Dec	0.44	<1	<2	<1	7	0.27

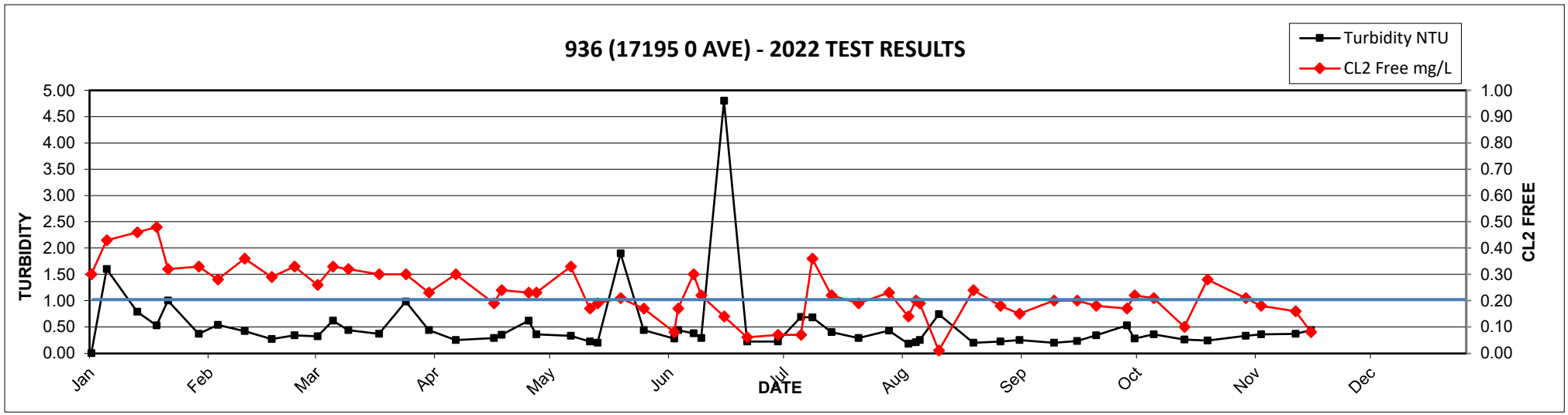

935 (16391 11 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


935 (16391 11 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 936 (17195 0 AVE)

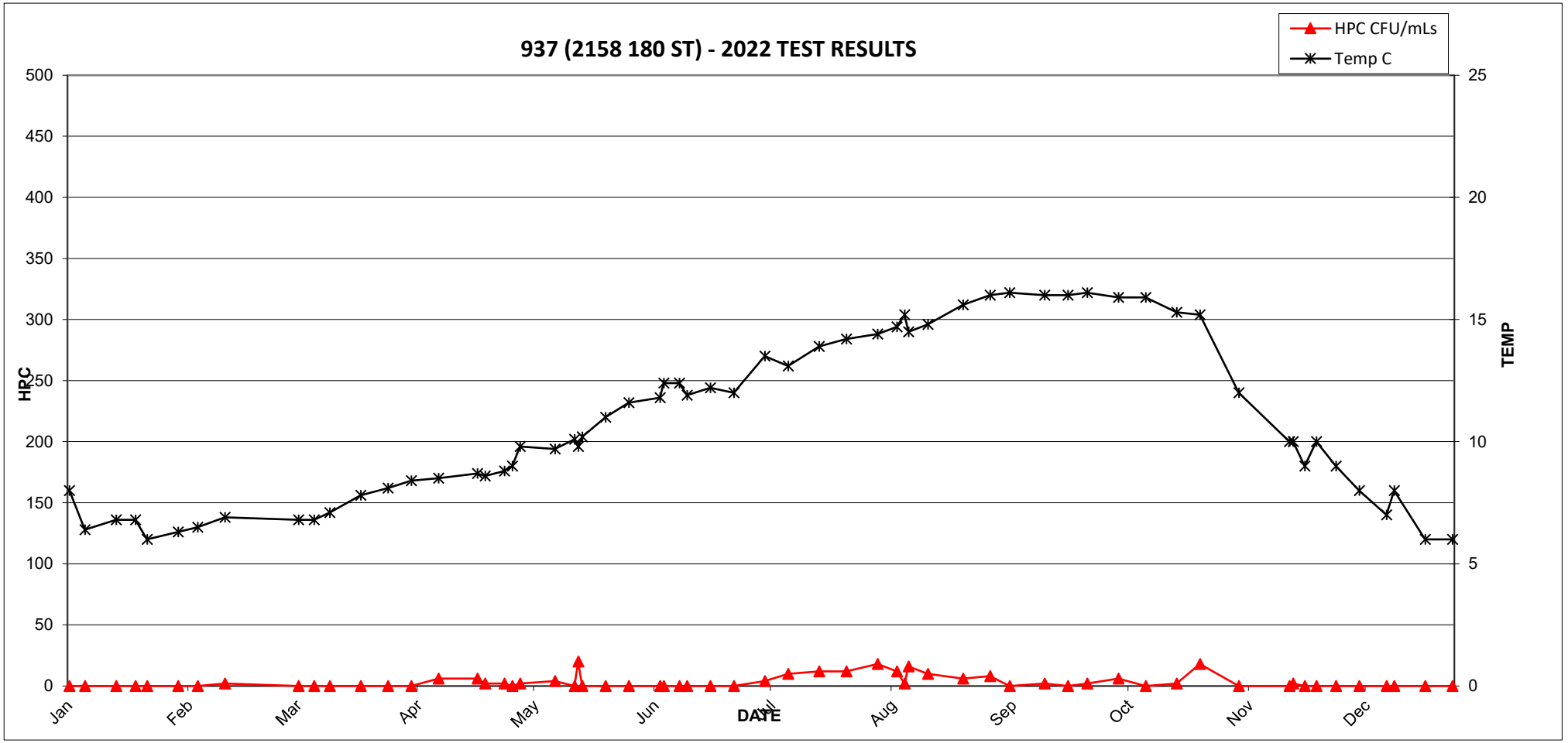
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
07-Jan	0.30	<1	<2	<1	6.5	1.60
11-Jan	0.43	<1	<2	<1	4.5	0.79
19-Jan	0.46	<1	<2	<1	6.3	0.53
24-Jan	0.48	<1	<2	<1	6.5	1.00
27-Jan	0.32	<1	<2	<1	5.6	0.37
04-Feb	0.33	<1	<2	<1	6.1	0.54
09-Feb	0.28	<1	<2	<1	6.3	0.42
16-Feb	0.36	<1	<2	<1	6	0.27
23-Feb	0.29	<1	<2	<1	6.8	0.34
01-Mar	0.33	<1	<2	<1	6.4	0.32
07-Mar	0.26	<1	2	<1	7.1	0.62
11-Mar	0.33	<1	<2	<1	7.4	0.44
15-Mar	0.32	<1	<2	<1	7.5	0.37
23-Mar	0.30	<1	<2	<1	8	0.98
30-Mar	0.30	<1	2	<1	8.9	0.44
05-Apr	0.23	<1	2	<1	9.4	0.25
12-Apr	0.30	<1	<2	<1	9.9	0.29
22-Apr	0.19	<1	<2	<1	9.8	0.35
24-Apr	0.24	<1	2	<1	10	0.62
01-May	0.23	<1	<2	<1	12	0.36
03-May	0.23	<1	<2	<1	12.2	0.33
12-May	0.33	<1	<2	<1	12.9	0.22
17-May	0.17	<1	<2	<1	13.3	0.20
19-May	0.19	<1	2	<1	12.9	1.90
25-May	0.21	<1	<2	<1	12.9	0.44
31-May	0.17	<1	4	<1	13.5	0.28
08-Jun	0.08	<1	<2	<1	16.4	0.44
09-Jun	0.17	<1	8	<1	14.8	0.38
13-Jun	0.30	<1	2	<1	16.4	0.29
15-Jun	0.22	<1	16	<1	15.9	4.80
21-Jun	0.14	<1	4	<1	17.3	0.22
27-Jun	0.06	<1	6	<1	18.8	0.22
05-Jul	0.07	<1	8	<1	16.2	0.69
11-Jul	0.07	<1	4	<1	16.4	0.68
14-Jul	0.36	<1	<2	<1	16.4	0.40
19-Jul	0.22	<1	<2	<1	16.7	0.29
26-Jul	0.19	<1	<2	<1	16	0.43
03-Aug	0.23	<1	<2	<1	20.4	0.18
08-Aug	0.14	<1	<2	<1	20.50	0.21
10-Aug	0.20	<1	2	<1	19.6	0.25
11-Aug	0.19	<1	8	<1	18.2	0.74
16-Aug	0.01	<1	<2	<1	19	0.20
25-Aug	0.24	<1	8	<1	19.2	0.22
01-Sep	0.18	<1	<2	<1	18.8	0.25
06-Sep	0.15	<1	16	<1	18.6	0.20
15-Sep	0.20	<1	2	<1	17.9	0.23
21-Sep	0.20	<1	<2	<1	16.7	0.34
26-Sep	0.18	<1	6	<1	16.8	0.53
04-Oct	0.17	<1	<2	<1	16.2	0.28
06-Oct	0.22	<1	10	<1	16.5	0.36
11-Oct	0.21	<1	6	<1	16	0.26
19-Oct	0.10	<1	4	<1	15.2	0.24
25-Oct	0.28	<1	34	<1	14.8	0.33
04-Nov	0.21	<1	10	<1	12	0.36
08-Nov	0.18	<1	26	<1	11	0.37

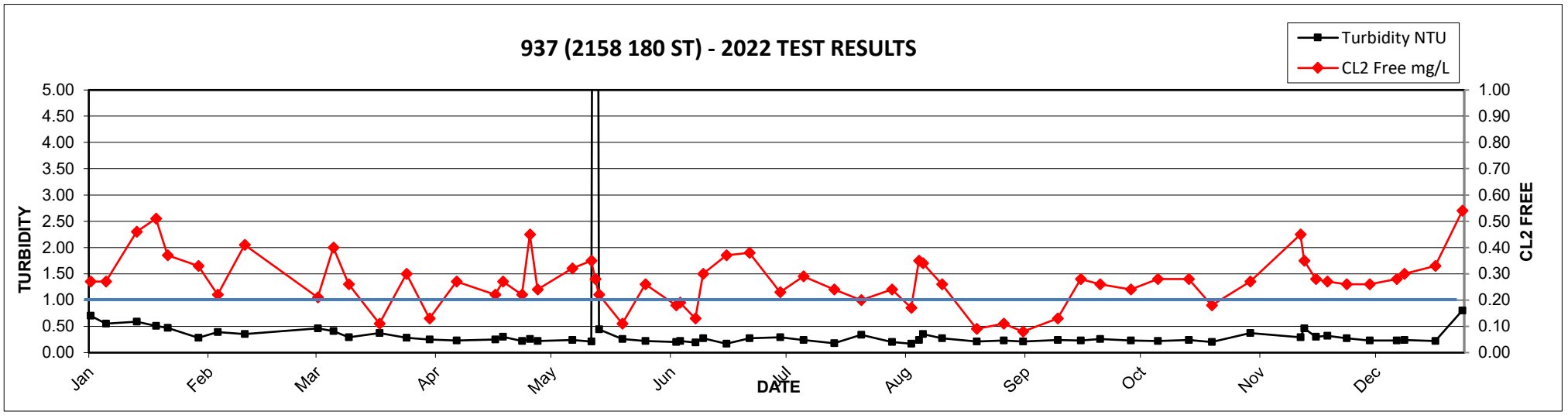

936 (17195 0 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


936 (17195 0 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 937 (2158 180 ST)

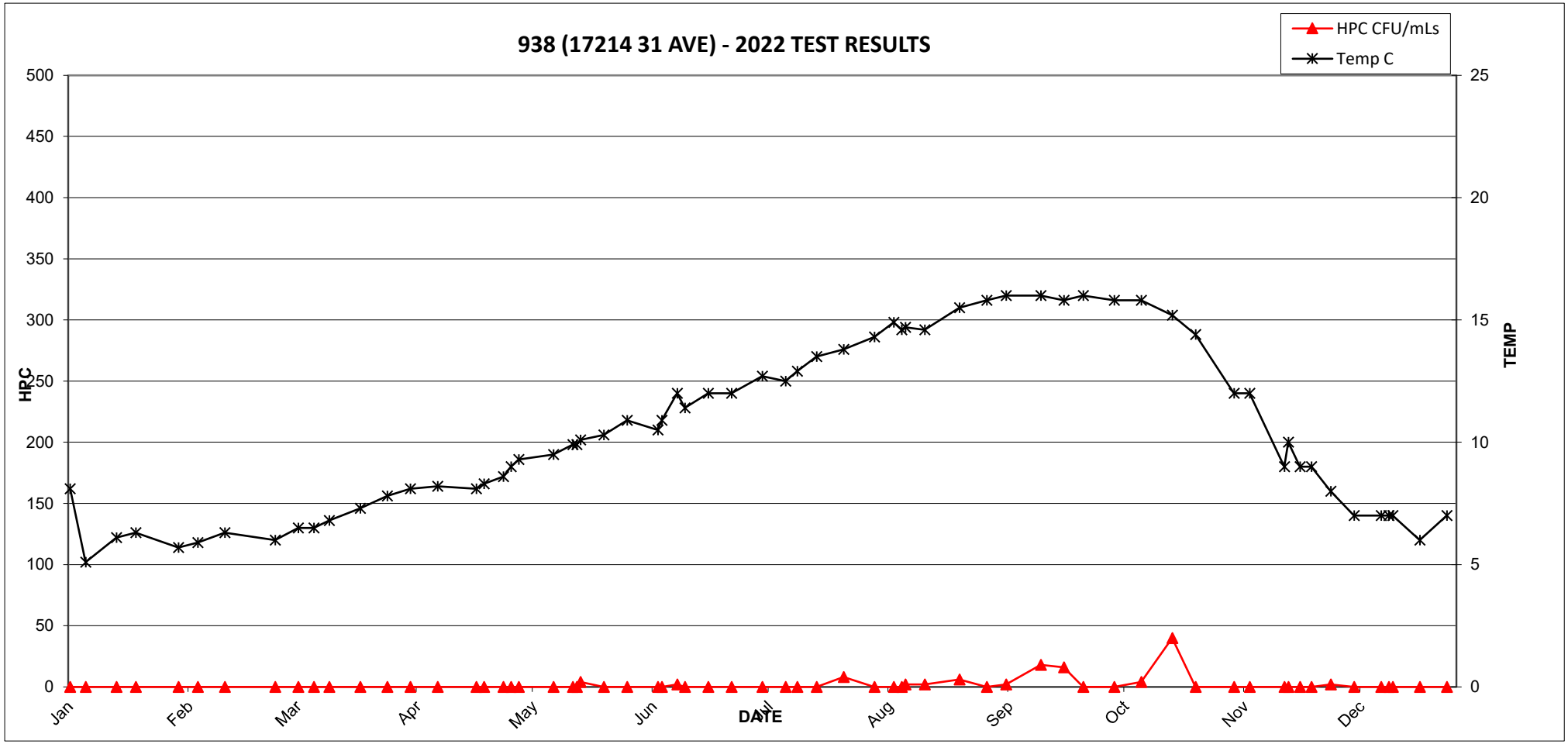
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
07-Jan	0.27	<1	<2	<1	8	0.70
11-Jan	0.27	<1	<2	<1	6.4	0.55
19-Jan	0.46	<1	<2	<1	6.8	0.59
24-Jan	0.51	<1	<2	<1	6.8	0.51
27-Jan	0.37	<1	<2	<1	6	0.47
04-Feb	0.33	<1	<2	<1	6.3	0.28
09-Feb	0.22	<1	<2	<1	6.5	0.39
16-Feb	0.41	<1	2	<1	6.9	0.35
07-Mar	0.21	<1	<2	<1	6.8	0.46
11-Mar	0.40	<1	<2	<1	6.8	0.41
15-Mar	0.26	<1	<2	<1	7.1	0.29
23-Mar	0.11	<1	<2	<1	7.8	0.37
30-Mar	0.30	<1	<2	<1	8.1	0.28
05-Apr	0.13	<1	<2	<1	8.4	0.25
12-Apr	0.27	<1	6	<1	8.5	0.23
22-Apr	0.22	<1	6	<1	8.7	0.25
24-Apr	0.27	<1	2	<1	8.6	0.30
29-Apr	0.22	<1	2	<1	8.8	0.22
01-May	0.45	<1	<2	<1	9	0.26
03-May	0.24	<1	2	<1	9.8	0.22
12-May	0.32	<1	4	<1	9.7	0.24
17-May	0.35	<1	<2	<1	10.1	0.21
18-May	0.28	<1	20	<1	9.8	29.00
19-May	0.22	<1	<2	<1	10.2	0.44
25-May	0.11	<1	<2	<1	11	0.26
31-May	0.26	<1	<2	<1	11.6	0.22
08-Jun	0.18	<1	<2	<1	11.8	0.20
09-Jun	0.19	<1	<2	<1	12.4	0.22
13-Jun	0.13	<1	<2	<1	12.4	0.19
15-Jun	0.30	<1	<2	<1	11.9	0.27
21-Jun	0.37	<1	<2	<1	12.2	0.17
27-Jun	0.38	<1	<2	<1	12	0.27
05-Jul	0.23	<1	4	<1	13.5	0.29
11-Jul	0.29	<1	10	<1	13.1	0.24
19-Jul	0.24	<1	12	<1	13.9	0.18
26-Jul	0.20	<1	12	<1	14.2	0.34
03-Aug	0.24	<1	18	<1	14.4	0.20
08-Aug	0.17	<1	12	<1	14.7	0.17
10-Aug	0.35	<1	2	<1	15.2	0.24
11-Aug	0.34	<1	16	<1	14.5	0.35
16-Aug	0.26	<1	10	<1	14.8	0.27
25-Aug	0.09	<1	6	<1	15.6	0.21
01-Sep	0.11	<1	8	<1	16	0.23
06-Sep	0.08	<1	<2	<1	16.1	0.21
15-Sep	0.13	<1	2	<1	16	0.24
21-Sep	0.28	<1	<2	<1	16	0.23
26-Sep	0.26	<1	2	<1	16.1	0.26
04-Oct	0.24	<1	6	<1	15.9	0.23
11-Oct	0.28	<1	<2	<1	15.9	0.22
19-Oct	0.28	<1	2	<1	15.3	0.24
25-Oct	0.18	<1	18	<1	15.2	0.20
04-Nov	0.27	<1	<2	<1	12	0.37
17-Nov	0.45	<1	<2	<1	10	0.29
18-Nov	0.35	<1	2	<1	10	0.46
21-Nov	0.28	<1	<2	<1	9	0.30
24-Nov	0.27	<1	<2	<1	10	0.32
29-Nov	0.26	<1	<2	<1	9	0.27
05-Dec	0.26	<1	<2	<1	8	0.23
12-Dec	0.28	<1	<2	<1	7	0.23
14-Dec	0.3	<1	<2	<1	8	0.24
22-Dec	0.33	<1	NA	<1	6	0.22
29-Dec	0.54	<1	NA	<1	6	0.80


937 (2158 180 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


937 (2158 180 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 938 (17214 31 AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
07-Jan	0.46	<1	<2	<1	8.1	0.58
11-Jan	0.37	<1	<2	<1	5.1	0.67
19-Jan	0.61	<1	<2	<1	6.1	0.54
24-Jan	0.60	<1	<2	<1	6.3	0.56
04-Feb	0.44	<1	<2	<1	5.7	0.46
09-Feb	0.34	<1	<2	<1	5.9	0.36
16-Feb	0.47	<1	<2	<1	6.3	0.38
01-Mar	0.43	<1	<2	<1	6	0.35
07-Mar	0.36	<1	<2	<1	6.5	0.46
11-Mar	0.54	<1	<2	<1	6.5	0.40
15-Mar	0.42	<1	<2	<1	6.8	0.33
23-Mar	0.45	<1	<2	<1	7.3	0.39
30-Mar	0.42	<1	<2	<1	7.8	0.32
05-Apr	0.37	<1	<2	<1	8.1	0.24
12-Apr	0.51	<1	<2	<1	8.2	0.22
22-Apr	0.32	<1	<2	<1	8.1	0.40
24-Apr	0.43	<1	<2	<1	8.3	0.27
29-Apr	0.33	<1	<2	<1	8.6	0.26
01-May	0.48	<1	<2	<1	9	0.31
03-May	0.39	<1	<2	<1	9.3	0.27
12-May	0.48	<1	<2	<1	9.5	0.24
17-May	0.63	<1	<2	<1	9.9	0.31
18-May	0.38	<1	<2	<1	9.9	0.33
19-May	0.46	<1	4	<1	10.1	0.26
25-May	0.42	<1	<2	<1	10.3	0.24
31-May	0.37	<1	<2	<1	10.9	0.25
08-Jun	0.36	<1	<2	<1	10.5	0.27
09-Jun	0.41	<1	<2	<1	10.9	0.26
13-Jun	0.32	<1	2	<1	12	0.20
15-Jun	0.40	<1	<2	<1	11.4	0.21
21-Jun	0.44	<1	<2	<1	12	0.18
27-Jun	0.53	<1	<2	<1	12	0.29
05-Jul	0.37	<1	<2	<1	12.7	0.23
11-Jul	0.42	<1	<2	<1	12.5	0.27
14-Jul	0.54	<1	<2	<1	12.9	0.30
19-Jul	0.47	<1	<2	<1	13.5	0.21
26-Jul	0.40	<1	8	<1	13.8	0.24
03-Aug	0.39	<1	<2	<1	14.3	0.20
08-Aug	0.47	<1	<2	<1	14.9	0.24
10-Aug	0.47	<1	<2	<1	14.6	0.23
11-Aug	0.35	<1	2	<1	14.7	0.35
16-Aug	0.38	<1	2	<1	14.6	0.26
25-Aug	0.39	<1	6	<1	15.5	0.29
01-Sep	0.39	<1	<2	<1	15.8	0.26
06-Sep	0.31	<1	2	<1	16	0.33
15-Sep	0.31	<1	18	<1	16	0.24
21-Sep	0.30	<1	16	<1	15.8	0.26
26-Sep	0.27	<1	<2	<1	16	0.23
04-Oct	0.26	<1	<2	<1	15.8	0.23
11-Oct	0.26	<1	4	<1	15.8	0.23
19-Oct	0.21	<1	40	<1	15.2	0.24
25-Oct	0.25	<1	<2	<1	14.4	0.27
04-Nov	0.20	<1	<2	<1	12	0.39
08-Nov	0.25	<1	<2	<1	12	0.33
17-Nov	0.31	<1	<2	<1	9	0.27
18-Nov	0.22	<1	<2	<1	10	0.32
21-Nov	0.22	<1	<2	<1	9	0.28
24-Nov	0.30	<1	<2	<1	9	0.42
29-Nov	0.47	<1	2	<1	8	0.30


938 (17214 31 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
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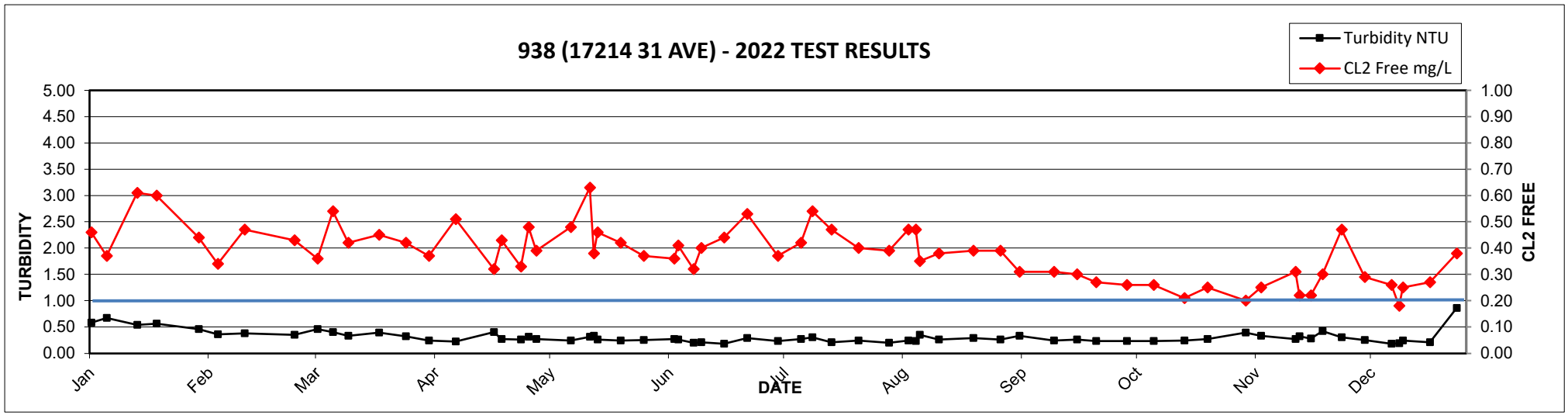
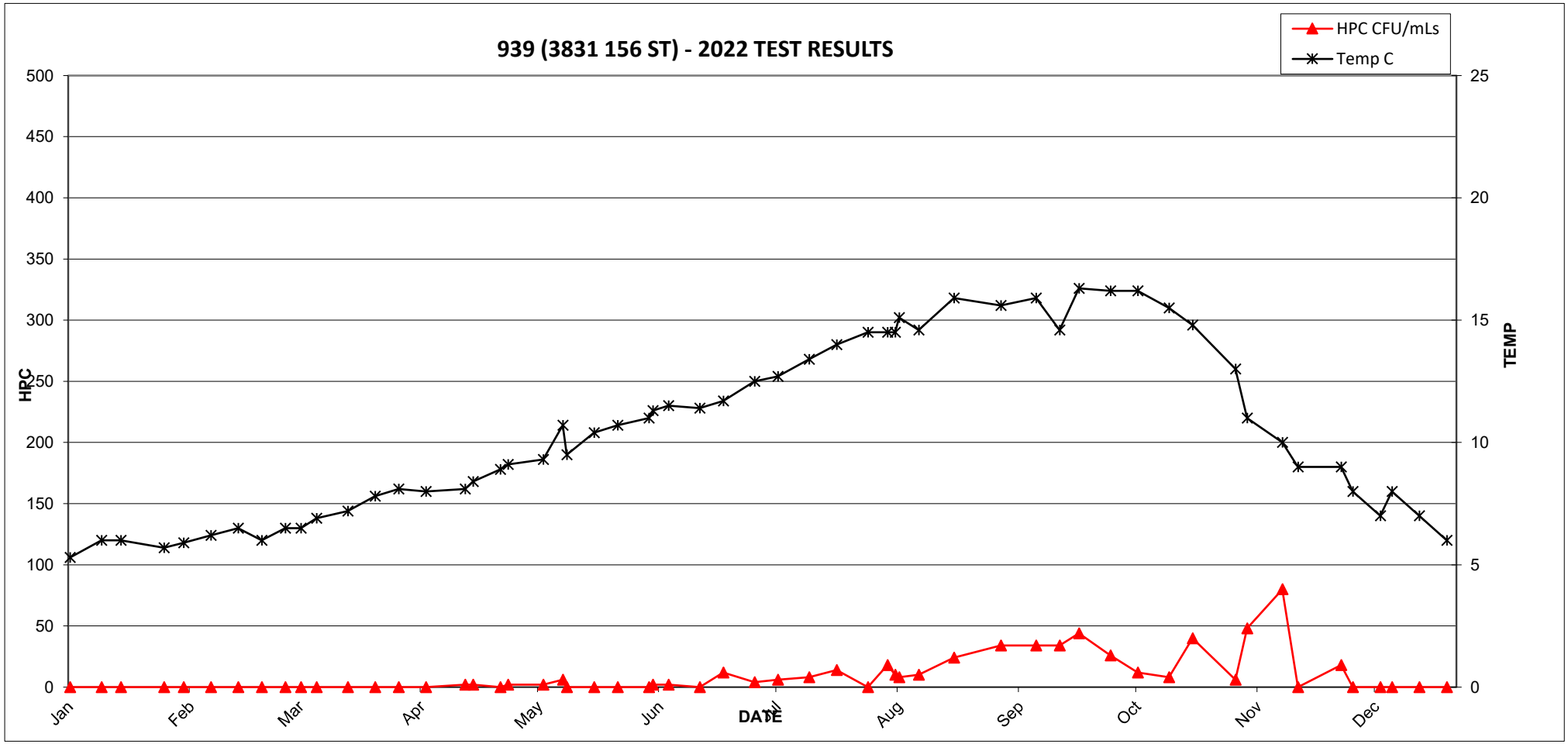
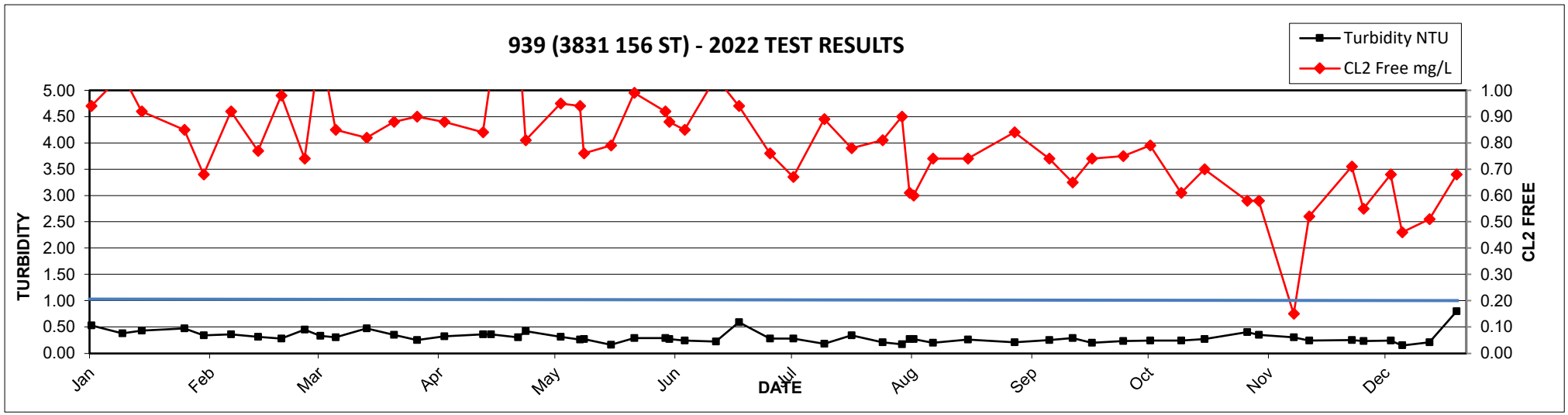
Aug
Sep
Oct
Nov
Dec


938 (17214 31 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 939 (3831 156 ST)

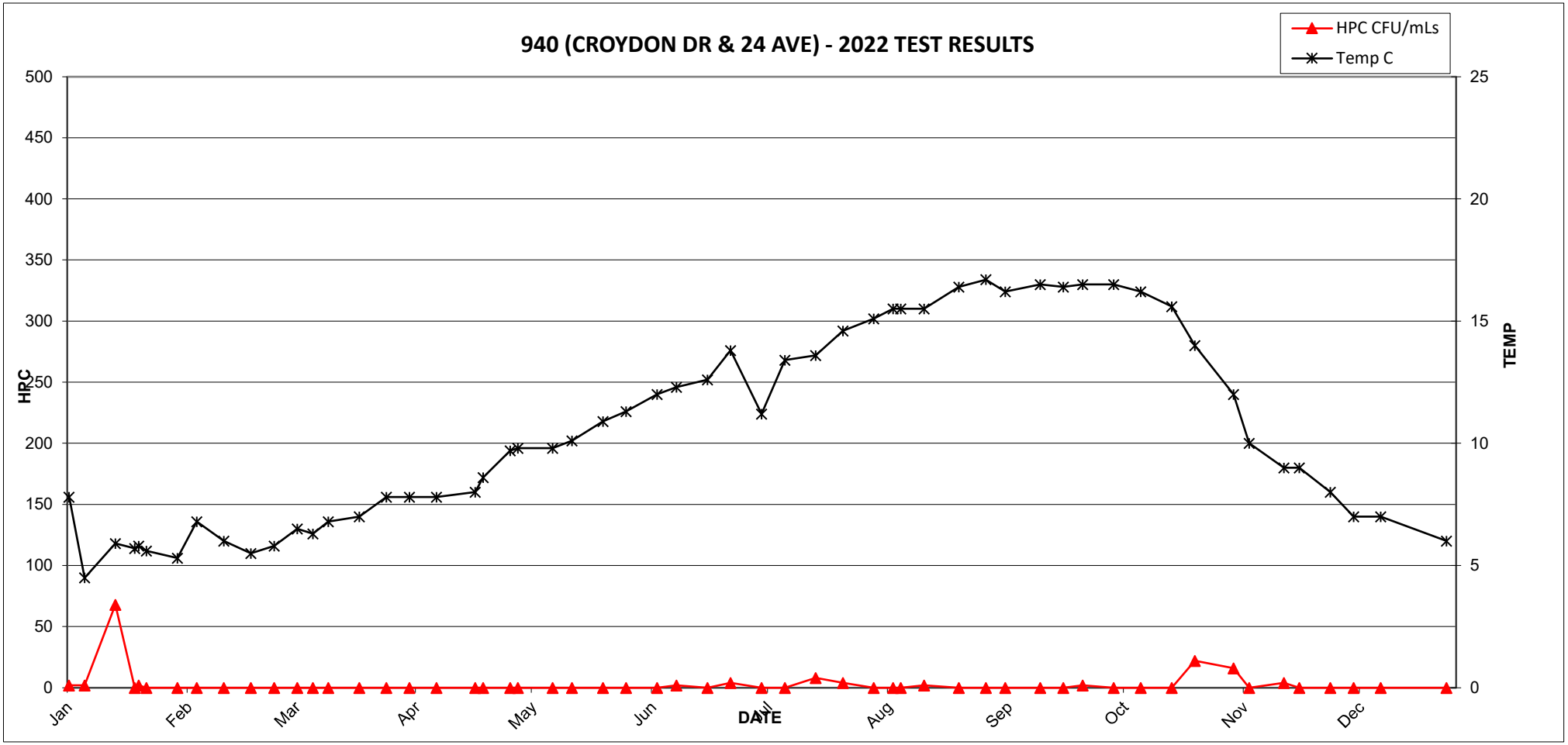
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	0.94	<1	<2	<1	5.3	0.53
19-Jan	1.06	<1	<2	<1	6	0.38
24-Jan	0.92	<1	<2	<1	6	0.43
04-Feb	0.85	<1	<2	<1	5.7	0.47
09-Feb	0.68	<1	<2	<1	5.9	0.34
16-Feb	0.92	<1	<2	<1	6.2	0.36
23-Feb	0.77	<1	<2	<1	6.5	0.31
01-Mar	0.98	<1	<2	<1	6	0.28
07-Mar	0.74	<1	<2	<1	6.5	0.45
11-Mar	1.17	<1	<2	<1	6.5	0.33
15-Mar	0.85	<1	<2	<1	6.9	0.30
23-Mar	0.82	<1	<2	<1	7.2	0.47
30-Mar	0.88	<1	<2	<1	7.8	0.35
05-Apr	0.90	<1	<2	<1	8.1	0.25
12-Apr	0.88	<1	<2	<1	8	0.32
22-Apr	0.84	<1	2	<1	8.1	0.36
24-Apr	1.05	<1	2	<1	8.4	0.36
01-May	1.24	<1	<2	<1	8.9	0.30
03-May	0.81	<1	2	<1	9.1	0.42
12-May	0.95	<1	2	<1	9.3	0.31
17-May	0.94	<1	6	<1	10.7	0.26
18-May	0.76	<1	<2	<1	9.5	0.27
25-May	0.79	<1	<2	<1	10.4	0.16
31-May	0.99	<1	<2	<1	10.7	0.29
08-Jun	0.92	<1	<2	<1	11	0.29
09-Jun	0.88	<1	2	<1	11.3	0.27
13-Jun	0.85	<1	2	<1	11.5	0.24
21-Jun	1.05	<1	<2	<1	11.4	0.22
27-Jun	0.94	<1	12	<1	11.7	0.59
05-Jul	0.76	<1	4	<1	12.5	0.28
11-Jul	0.67	<1	6	<1	12.7	0.28
19-Jul	0.89	<1	8	<1	13.4	0.18
26-Jul	0.78	<1	14	<1	14	0.34
03-Aug	0.81	<1	<2	<1	14.5	0.21
08-Aug	0.90	<1	18	<1	14.5	0.17
10-Aug	0.61	<1	10	<1	14.5	0.27
11-Aug	0.60	<1	8	<1	15.1	0.27
16-Aug	0.74	<1	10	<1	14.6	0.20
25-Aug	0.74	<1	24	<1	15.9	0.26
06-Sep	0.84	<1	34	<1	15.6	0.21
15-Sep	0.74	<1	34	<1	15.9	0.25
21-Sep	0.65	<1	34	<1	14.6	0.29
26-Sep	0.74	<1	44	<1	16.3	0.20
04-Oct	0.75	<1	26	<1	16.2	0.23
11-Oct	0.79	<1	12	<1	16.2	0.24
19-Oct	0.61	<1	8	<1	15.5	0.24
25-Oct	0.70	<1	40	<1	14.8	0.27
05-Nov	0.58	<1	6	<1	13	0.40
08-Nov	0.58	<1	48	<1	11	0.35
17-Nov	0.15	<1	80	<1	10	0.30
21-Nov	0.52	<1	<2	<1	9	0.24
02-Dec	0.71	<1	18	<1	9	0.25
05-Dec	0.55	<1	<2	<1	8	0.23
12-Dec	0.68	<1	<2	<1	7	0.24
15-Dec	0.46	<1	<2	<1	8	0.15
22-Dec	0.51	<1	NA	<1	7	0.21
29-Dec	0.68	<1	NA	<1	6	0.80


939 (3831 156 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


939 (3831 156 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 940 (CROYDON DR & 24 AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
07-Jan	0.59	<1	2	<1	7.8	0.44
11-Jan	1.03	<1	2	<1	4.5	0.62
19-Jan	1.02	<1	68	<1	5.9	0.53
24-Jan	1.03	<1	<2	<1	5.7	12.00
25-Jan	0.99	<1	2	<1	5.8	0.39
27-Jan	0.77	<1	<2	<1	5.6	0.35
04-Feb	0.73	<1	<2	<1	5.3	0.32
09-Feb	0.71	<1	<2	<1	6.8	0.35
16-Feb	0.88	<1	<2	<1	6	0.32
23-Feb	0.76	<1	<2	<1	5.5	0.33
01-Mar	0.76	<1	<2	<1	5.8	0.35
07-Mar	0.54	<1	<2	<1	6.5	0.47
11-Mar	0.92	<1	<2	<1	6.3	0.41
15-Mar	0.87	<1	<2	<1	6.8	0.33
23-Mar	0.79	<1	<2	<1	7	0.82
30-Mar	0.82	<1	<2	<1	7.8	0.32
05-Apr	0.80	<1	<2	<1	7.8	0.23
12-Apr	0.94	<1	<2	<1	7.8	0.28
22-Apr	0.74	<1	<2	<1	8	0.45
24-Apr	0.87	<1	<2	<1	8.6	0.35
01-May	1.04	<1	<2	<1	9.7	0.26
03-May	0.80	<1	<2	<1	9.8	0.29
12-May	0.84	<1	<2	<1	9.8	0.26
17-May	0.86	<1	<2	<1	10.1	0.25
25-May	0.80	<1	<2	<1	10.9	0.27
31-May	0.66	<1	<2	<1	11.3	0.27
08-Jun	0.74	<1	<2	<1	12	0.28
13-Jun	0.77	<1	2	<1	12.3	0.23
21-Jun	0.94	<1	<2	<1	12.6	0.22
27-Jun	0.85	<1	4	<1	13.8	0.35
05-Jul	0.75	<1	<2	<1	11.2	0.93
11-Jul	0.59	<1	<2	<1	13.4	0.23
19-Jul	0.82	<1	8	<1	13.6	0.19
26-Jul	0.64	<1	4	<1	14.6	0.27
03-Aug	0.73	<1	<2	<1	15.1	0.20
08-Aug	0.72	<1	<2	<1	15.5	0.19
10-Aug	0.74	<1	<2	<1	15.5	1.10
16-Aug	0.65	<1	2	<1	15.5	0.26
25-Aug	0.64	<1	<2	<1	16.4	0.26
01-Sep	0.59	<1	<2	<1	16.7	0.21
06-Sep	0.70	<1	<2	<1	16.2	0.26
15-Sep	0.64	<1	<2	<1	16.5	0.35
21-Sep	0.61	<1	<2	<1	16.4	0.25
26-Sep	0.66	<1	2	<1	16.5	0.27
04-Oct	0.62	<1	<2	<1	16.5	0.29
11-Oct	0.65	<1	<2	<1	16.2	0.24
19-Oct	0.50	<1	<2	<1	15.6	0.26
25-Oct	0.44	<1	22	<1	14	0.24
04-Nov	0.53	<1	16	<1	12	0.41
08-Nov	0.51	<1	<2	<1	10	0.36
17-Nov	0.80	<1	4	<1	9	0.33
21-Nov	0.51	<1	<2	<1	9	0.28
29-Nov	0.52	<1	<2	<1	8	0.31
05-Dec	0.53	<1	<2	<1	7	0.25
12-Dec	0.62	<1	<2	<1	7	0.18
29-Dec	0.58	<1	NA	<1	6	0.78


940 (CROYDON DR & 24 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
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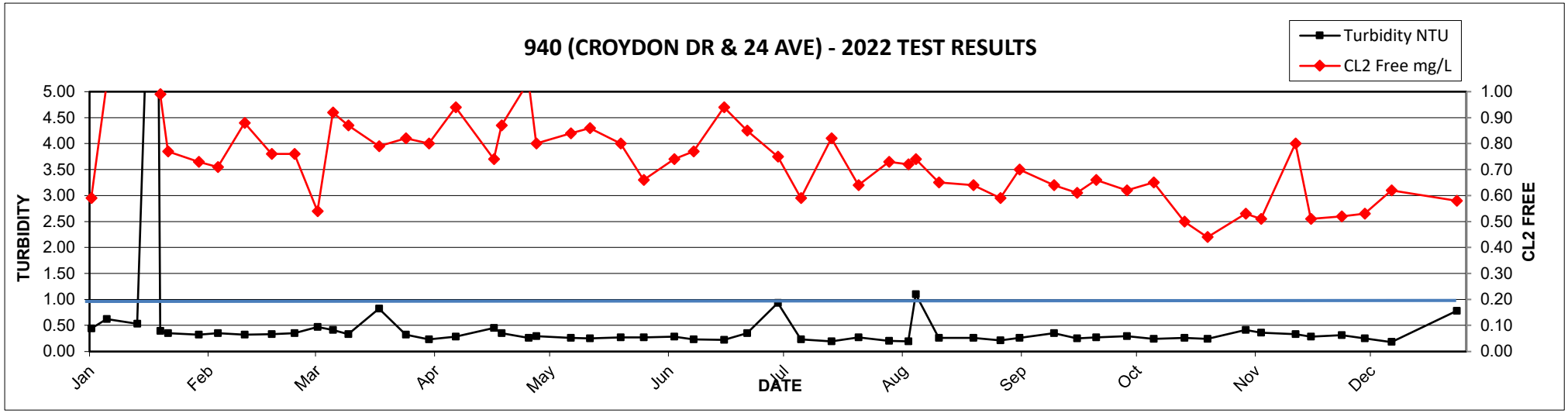
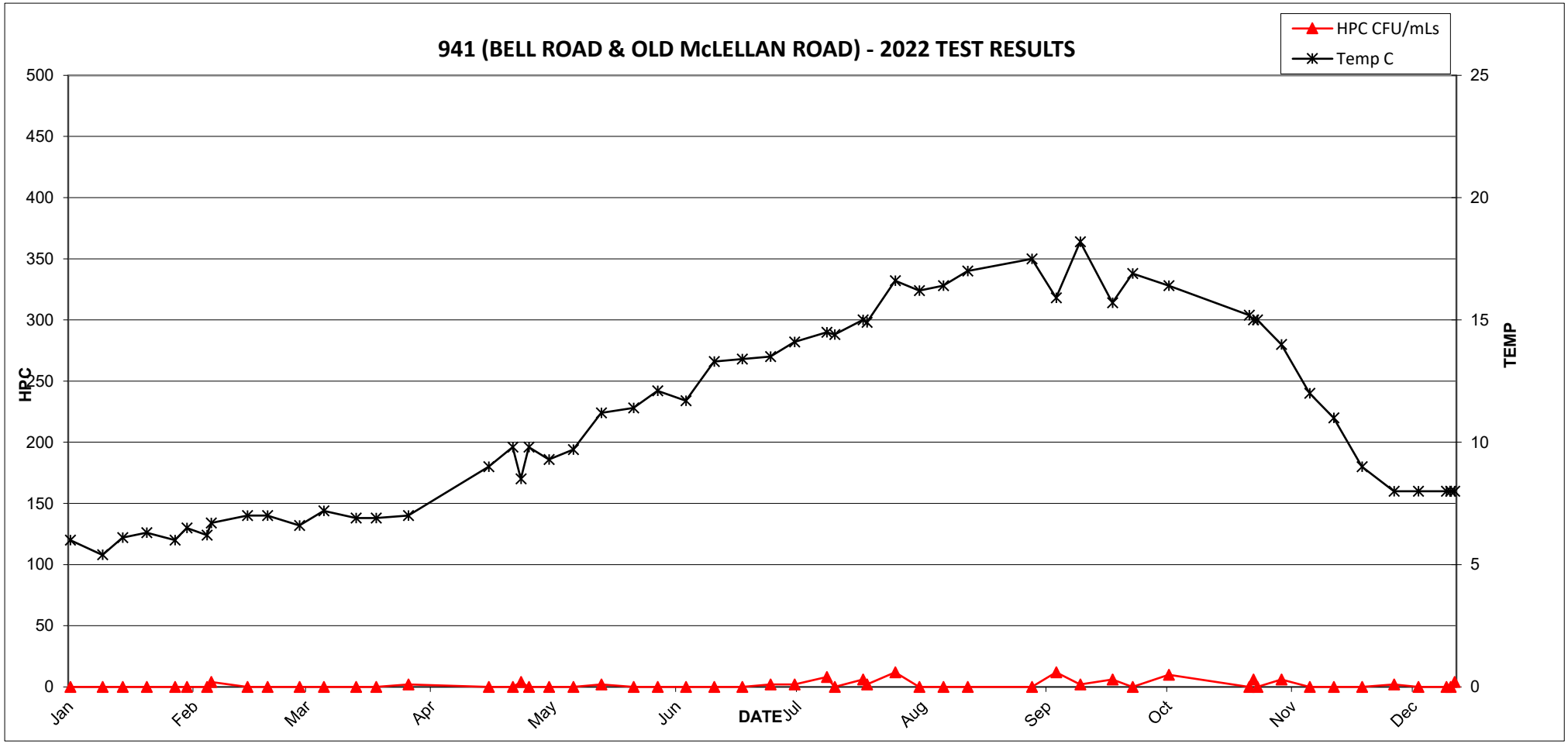
Nov
Dec


940 (CROYDON DR & 24 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 941 (BELL ROAD & OLD McLELLAN ROAD)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.61	<1	<2	<1	6	0.70
13-Jan	0.71	<1	<2	<1	5.4	0.43
18-Jan	0.61	<1	<2	<1	6.1	0.83
24-Jan	0.45	<1	<2	<1	6.3	0.17
31-Jan	0.55	<1	<2	<1	6	0.20
03-Feb	0.52	<1	<2	<1	6.5	0.25
08-Feb	0.58	<1	<2	<1	6.2	0.15
09-Feb	0.63	<1	4	<1	6.7	0.20
18-Feb	0.71	<1	<2	<1	7	0.28
23-Feb	0.71	<1	<2	<1	7	0.28
03-Mar	1.00	<1	<2	<1	6.6	0.50
09-Mar	0.94	<1	<2	<1	7.2	0.44
17-Mar	0.78	<1	<2	<1	6.9	0.51
22-Mar	0.73	<1	<2	<1	6.9	0.37
30-Mar	0.86	<1	2	<1	7	0.36
19-Apr	0.57	<1	<2	<1	9	0.23
25-Apr	0.86	<1	<2	<1	9.8	0.25
27-Apr	0.79	<1	4	<1	8.5	0.29
29-Apr	0.77	<1	<2	<1	9.8	0.25
04-May	0.61	<1	<2	<1	9.3	0.32
10-May	0.77	<1	<2	<1	9.7	0.23
17-May	0.74	<1	2	<1	11.2	0.20
25-May	0.72	<1	<2	<1	11.4	0.31
31-May	0.82	<1	<2	<1	12.1	0.24
07-Jun	0.54	<1	<2	<1	11.7	0.23
14-Jun	0.77	<1	<2	<1	13.3	0.24
21-Jun	0.77	<1	<2	<1	13.4	0.18
28-Jun	0.59	<1	2	<1	13.5	0.26
04-Jul	0.59	<1	2	<1	14.1	0.20
12-Jul	0.76	<1	8	<1	14.5	0.27
14-Jul	0.73	<1	<2	<1	14.4	0.33
21-Jul	0.62	<1	6	<1	15	0.28
22-Jul	0.51	<1	2	<1	14.9	0.28
29-Jul	0.54	<1	12	<1	16.6	0.29
04-Aug	0.56	<1	<2	<1	16.2	0.22
10-Aug	0.58	<1	<2	<1	16.4	0.22
16-Aug	0.47	<1	<2	<1	17	0.20
01-Sep	0.56	<1	<2	<1	17.5	0.24
07-Sep	0.58	<1	12	<1	15.9	0.27
13-Sep	0.49	<1	2	<1	18.2	0.2
21-Sep	0.41	<1	6	<1	15.7	0.27
26-Sep	0.48	<1	<2	<1	16.9	0.22
05-Oct	0.42	<1	10	<1	16.4	0.28
25-Oct	0.34	<1	<2	<1	15.2	0.22
26-Oct	0.46	<1	6	<1	15	0.28
27-Oct	0.42	<1	<2	<1	15	0.35
02-Nov	0.40	<1	6	<1	14	0.34
09-Nov	0.20	<1	<2	<1	12	0.30
15-Nov	0.43	<1	<2	<1	11	0.30
22-Nov	0.51	<1	<2	<1	9	0.31
30-Nov	0.68	<1	2	<1	8	0.32
06-Dec	0.65	<1	<2	<1	8	0.24
13-Dec	0.52	<1	<2	<1	8	0.20
14-Dec	0.66	<1	<2	<1	8	0.20
15-Dec	0.14	<1	4	<1	8	0.23
21-Dec	0.88	<1	NA	<1	7	0.23


941 (BELL ROAD & OLD McLELLAN ROAD) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
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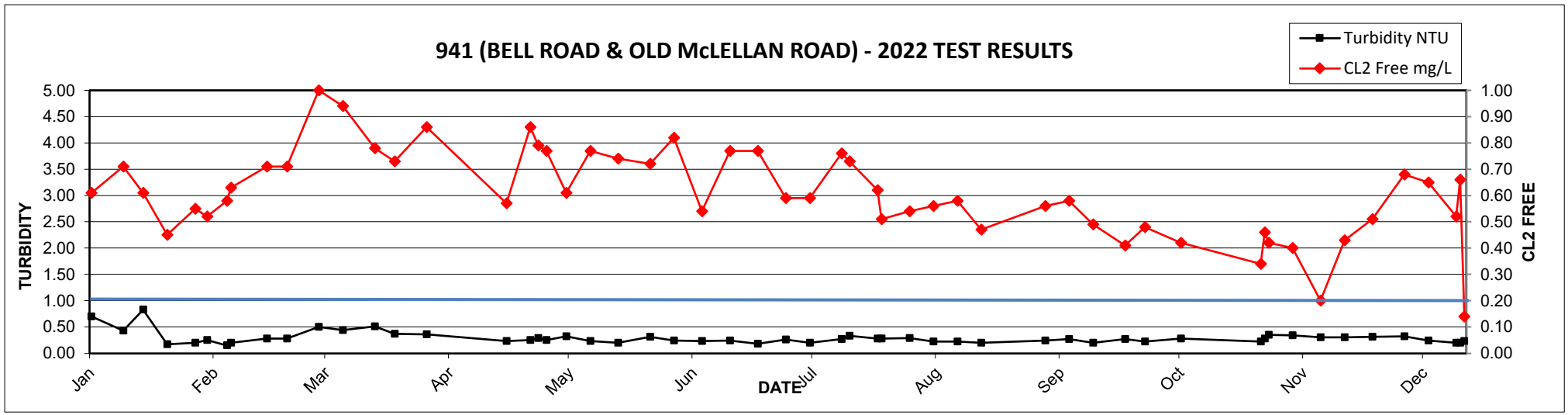
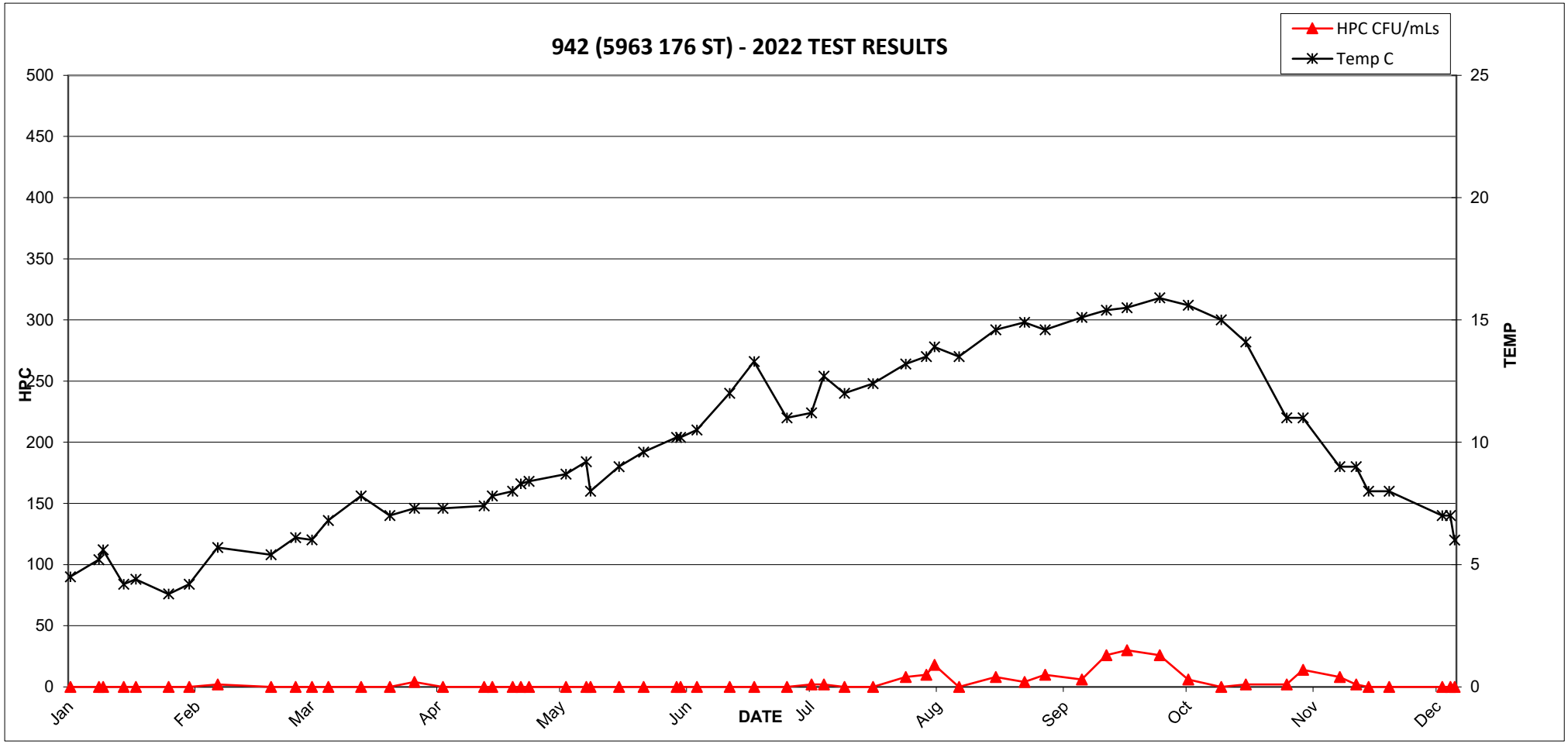
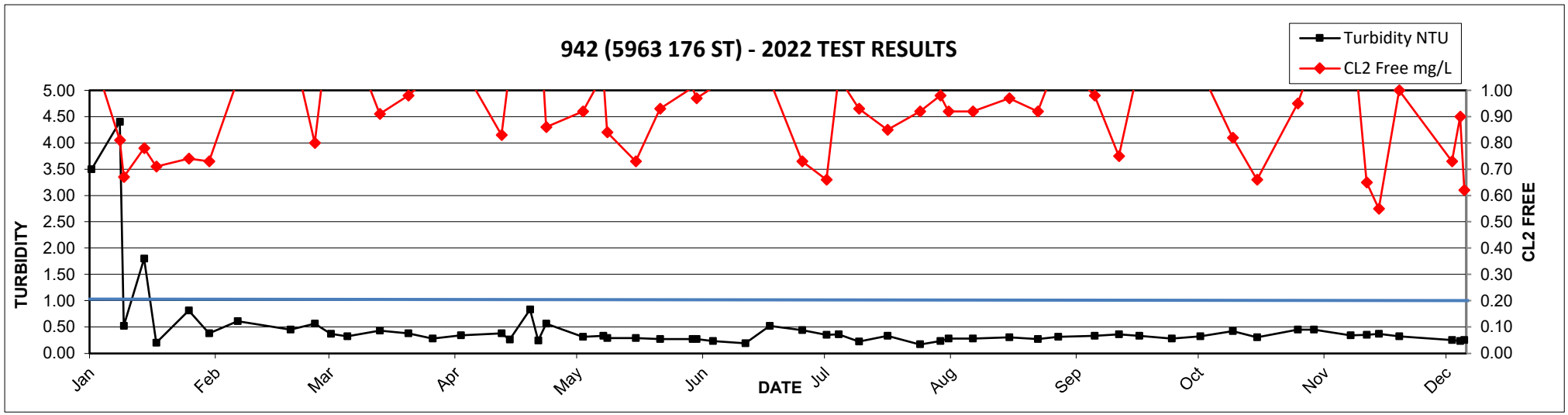
Sep
Oct
Nov
Dec


941 (BELL ROAD & OLD McLELLAN ROAD) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 942 (5963 176 ST)

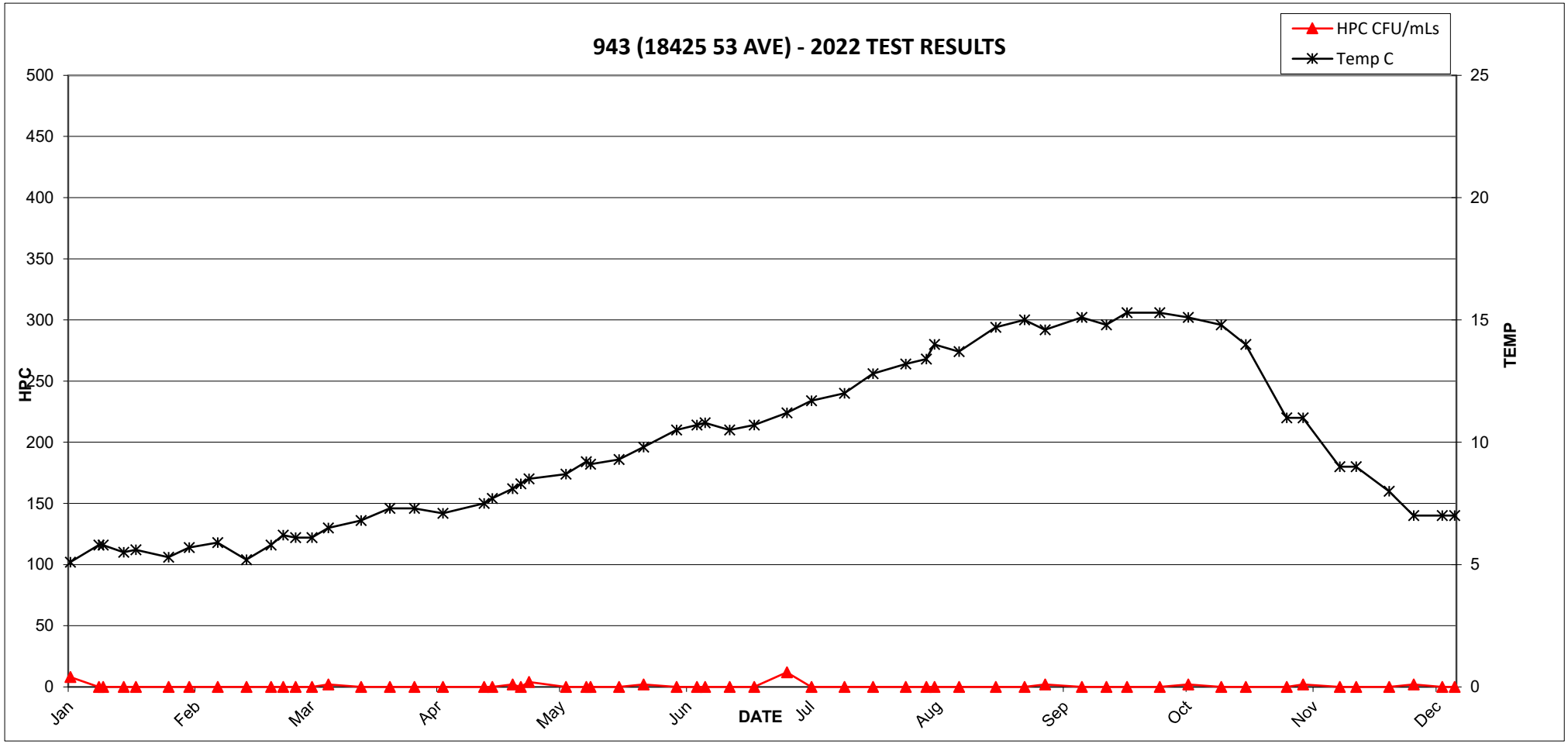
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	1.15	<1	<2	<1	4.5	3.50
18-Jan	0.81	<1	<2	<1	5.2	4.40
19-Jan	0.67	<1	<2	<1	5.6	0.52
24-Jan	0.78	<1	<2	<1	4.2	1.80
27-Jan	0.71	<1	<2	<1	4.4	0.20
04-Feb	0.74	<1	<2	<1	3.8	0.81
09-Feb	0.73	<1	<2	<1	4.2	0.38
16-Feb	1.04	<1	2	<1	5.7	0.61
01-Mar	1.20	<1	<2	<1	5.4	0.45
07-Mar	0.80	<1	<2	<1	6.1	0.56
11-Mar	1.31	<1	<2	<1	6.01	0.37
15-Mar	1.23	<1	<2	<1	6.8	0.32
23-Mar	0.91	<1	<2	<1	7.8	0.43
30-Mar	0.98	<1	<2	<1	7	0.38
05-Apr	1.06	<1	4	<1	7.3	0.28
12-Apr	1.10	<1	<2	<1	7.3	0.34
22-Apr	0.83	<1	<2	<1	7.4	0.38
24-Apr	1.08	<1	<2	<1	7.8	0.26
29-Apr	1.02	<1	<2	<1	8	0.83
01-May	1.37	<1	<2	<1	8.3	0.24
03-May	0.86	<1	<2	<1	8.4	0.56
12-May	0.92	<1	<2	<1	8.7	0.31
17-May	1.06	<1	<2	<1	9.2	0.33
18-May	0.84	<1	<2	<1	8	0.29
25-May	0.73	<1	<2	<1	9	0.29
31-May	0.93	<1	<2	<1	9.6	0.27
08-Jun	1.01	<1	<2	<1	10.2	0.27
09-Jun	0.97	<1	<2	<1	10.2	0.27
13-Jun	1.01	<1	<2	<1	10.5	0.23
21-Jun	1.14	<1	<2	<1	12	0.19
27-Jun	1.04	<1	<2	<1	13.3	0.52
05-Jul	0.73	<1	<2	<1	11	0.44
11-Jul	0.66	<1	2	<1	11.2	0.35
14-Jul	1.05	<1	2	<1	12.7	0.36
19-Jul	0.93	<1	<2	<1	12	0.22
26-Jul	0.85	<1	<2	<1	12.4	0.33
03-Aug	0.92	<1	8	<1	13.2	0.17
08-Aug	0.98	<1	10	<1	13.5	0.23
10-Aug	0.92	<1	18	<1	13.9	0.28
16-Aug	0.92	<1	<2	<1	13.5	0.28
25-Aug	0.97	<1	8	<1	14.6	0.30
01-Sep	0.92	<1	4	<1	14.9	0.27
06-Sep	1.12	<1	10	<1	14.6	0.31
15-Sep	0.98	<1	6	<1	15.1	0.33
21-Sep	0.75	<1	26	<1	15.4	0.36
26-Sep	1.10	<1	30	<1	15.5	0.33
04-Oct	1.01	<1	26	<1	15.9	0.28
11-Oct	1.08	<1	6	<1	15.6	0.32
19-Oct	0.82	<1	<2	<1	15	0.42
25-Oct	0.66	<1	2	<1	14.1	0.30
04-Nov	0.95	<1	2	<1	11	0.45
08-Nov	1.12	<1	14	<1	11	0.45
17-Nov	1.32	<1	8	<1	9	0.34
21-Nov	0.65	<1	2	<1	9	0.35
24-Nov	0.55	<1	<2	<1	8	0.37
29-Nov	1	<1	<2	<1	8	0.32
12-Dec	0.73	<1	<2	<1	7	0.25
14-Dec	0.90	<1	<2	<1	7	0.23

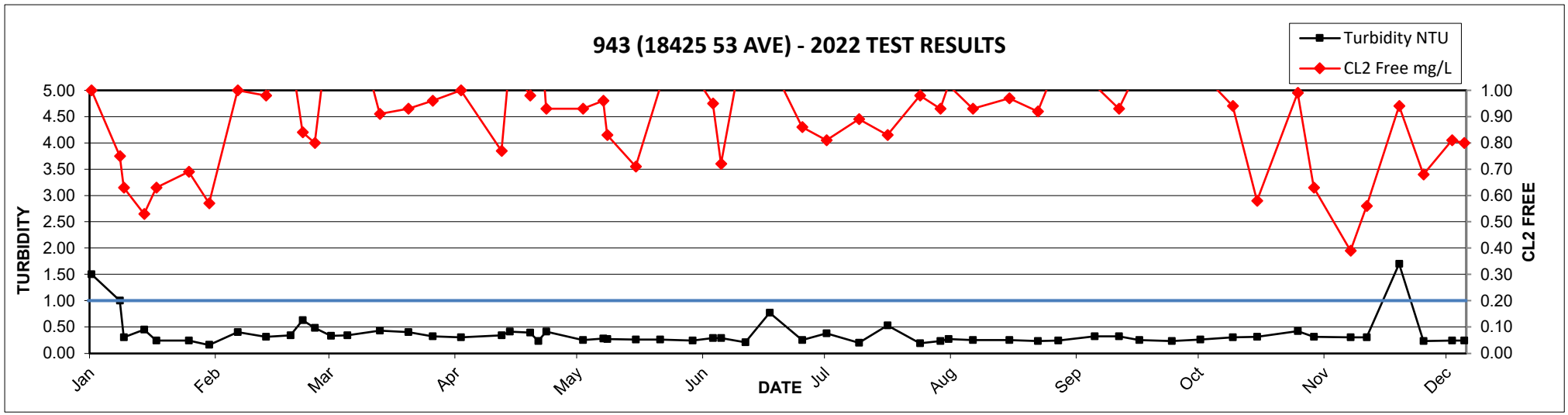

942 (5963 176 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


942 (5963 176 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 943 (18425 53 AVE)

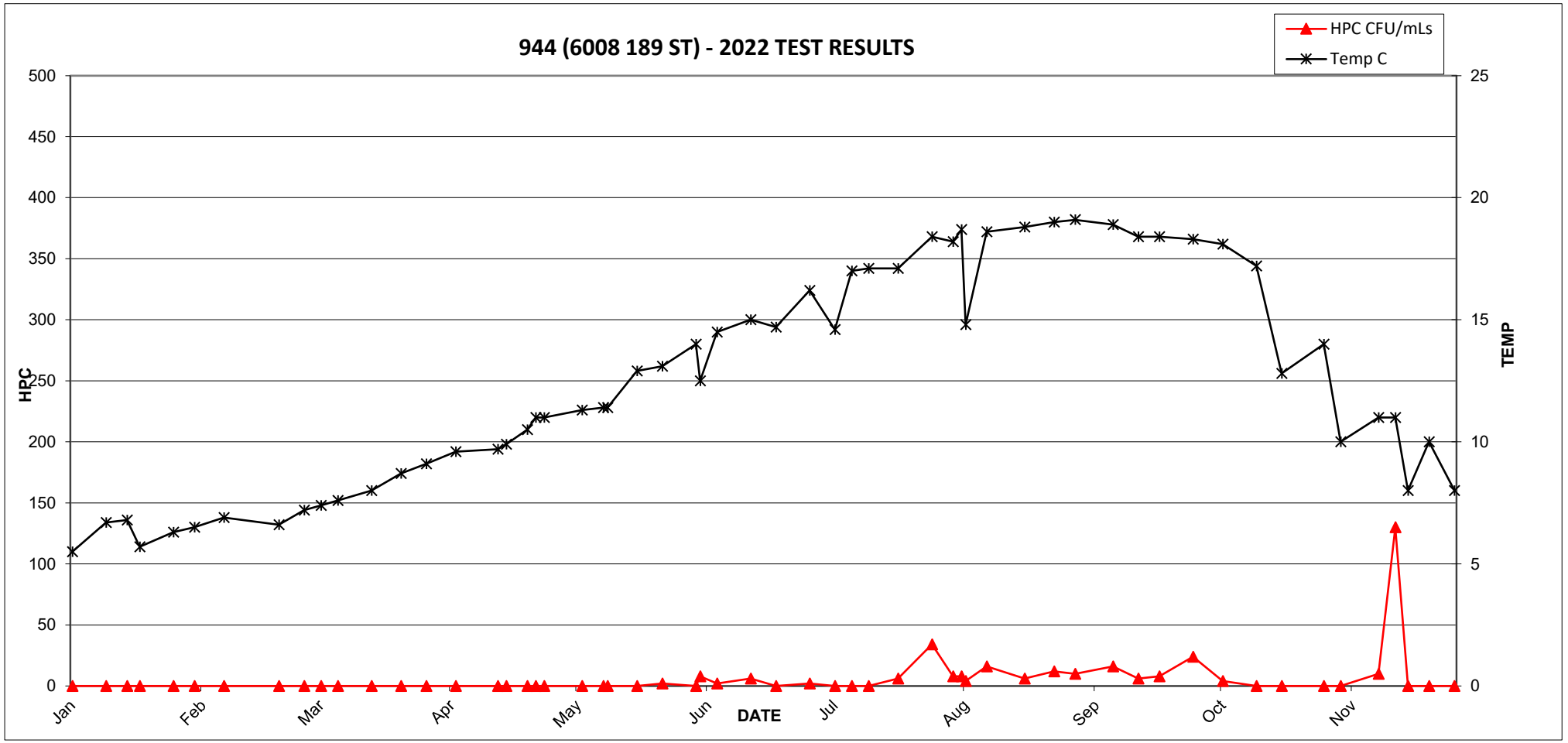
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	1.00	<1	8	<1	5.1	1.50
18-Jan	0.75	<1	<2	<1	5.8	1.00
19-Jan	0.63	<1	<2	<1	5.8	0.30
24-Jan	0.53	<1	<2	<1	5.5	0.45
27-Jan	0.63	<1	<2	<1	5.6	0.24
04-Feb	0.69	<1	<2	<1	5.3	0.24
09-Feb	0.57	<1	<2	<1	5.7	0.16
16-Feb	1.00	<1	<2	<1	5.9	0.40
23-Feb	0.98	<1	<2	<1	5.2	0.31
01-Mar	1.15	<1	<2	<1	5.8	0.34
04-Mar	0.84	<1	<2	<1	6.2	0.63
07-Mar	0.80	<1	<2	<1	6.1	0.48
11-Mar	1.30	<1	<2	<1	6.1	0.33
15-Mar	1.38	<1	2	<1	6.5	0.34
23-Mar	0.91	<1	<2	<1	6.8	0.43
30-Mar	0.93	<1	<2	<1	7.3	0.40
05-Apr	0.96	<1	<2	<1	7.3	0.32
12-Apr	1.00	<1	<2	<1	7.1	0.30
22-Apr	0.77	<1	<2	<1	7.5	0.34
24-Apr	1.11	<1	<2	<1	7.7	0.41
29-Apr	0.98	<1	2	<1	8.1	0.39
01-May	1.35	<1	<2	<1	8.3	0.23
03-May	0.93	<1	4	<1	8.5	0.41
12-May	0.93	<1	<2	<1	8.7	0.25
17-May	0.96	<1	<2	<1	9.2	0.28
18-May	0.83	<1	<2	<1	9.1	0.27
25-May	0.71	<1	<2	<1	9.3	0.26
31-May	1.01	<1	2	<1	9.8	0.26
08-Jun	1.07	<1	<2	<1	10.5	0.24
13-Jun	0.95	<1	<2	<1	10.7	0.29
15-Jun	0.72	<1	<2	<1	10.8	0.29
21-Jun	1.22	<1	<2	<1	10.5	0.21
27-Jun	1.11	<1	<2	<1	10.7	0.77
05-Jul	0.86	<1	12	<1	11.2	0.25
11-Jul	0.81	<1	<2	<1	11.7	0.38
19-Jul	0.89	<1	<2	<1	12	0.20
26-Jul	0.83	<1	<2	<1	12.8	0.53
03-Aug	0.98	<1	<2	<1	13.2	0.19
08-Aug	0.93	<1	<2	<1	13.4	0.23
10-Aug	1.02	<1	<2	<1	14	0.27
16-Aug	0.93	<1	<2	<1	13.7	0.25
25-Aug	0.97	<1	<2	<1	14.7	0.25
01-Sep	0.92	<1	<2	<1	15	0.23
06-Sep	1.11	<1	2	<1	14.6	0.24
15-Sep	1.02	<1	<2	<1	15.1	0.32
21-Sep	0.93	<1	<2	<1	14.8	0.32
26-Sep	1.09	<1	<2	<1	15.3	0.25
04-Oct	1.03	<1	<2	<1	15.3	0.23
11-Oct	1.07	<1	2	<1	15.1	0.26
19-Oct	0.94	<1	<2	<1	14.8	0.30
25-Oct	0.58	<1	<2	<1	14	0.31
04-Nov	0.99	<1	<2	<1	11	0.42
08-Nov	0.63	<1	2	<1	11	0.31
17-Nov	0.39	<1	<2	<1	9	0.30
21-Nov	0.56	<1	<2	<1	9	0.30
29-Nov	0.94	<1	<2	<1	8	1.70
05-Dec	0.68	<1	2	<1	7	0.23
12-Dec	0.81	<1	<2	<1	7	0.24
15-Dec	0.8	<1	<2	<1	7	0.24


943 (18425 53 AVE) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


943 (18425 53 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 944 (6008 189 ST)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	0.89	<1	<2	<1	5.5	0.58
19-Jan	1.01	<1	<2	<1	6.7	0.40
24-Jan	1.11	<1	<2	<1	6.8	0.25
27-Jan	0.88	<1	<2	<1	5.7	0.22
04-Feb	0.96	<1	<2	<1	6.3	0.26
09-Feb	1.10	<1	<2	<1	6.5	0.19
16-Feb	1.41	<1	<2	<1	6.9	0.15
01-Mar	1.06	<1	<2	<1	6.6	0.19
07-Mar	0.97	<1	<2	<1	7.2	0.13
11-Mar	1.20	<1	<2	<1	7.4	0.21
15-Mar	0.98	<1	<2	<1	7.6	0.19
23-Mar	1.21	<1	<2	<1	8	0.15
30-Mar	0.94	<1	<2	<1	8.7	0.15
05-Apr	0.93	<1	<2	<1	9.1	0.20
12-Apr	0.84	<1	<2	<1	9.6	0.18
22-Apr	0.54	<1	<2	<1	9.7	0.23
24-Apr	0.95	<1	<2	<1	9.9	0.25
29-Apr	0.70	<1	<2	<1	10.5	0.22
01-May	1.01	<1	<2	<1	11	0.18
03-May	0.92	<1	<2	<1	11	0.56
12-May	0.73	<1	<2	<1	11.3	0.22
17-May	1.11	<1	<2	<1	11.4	0.19
18-May	0.71	<1	<2	<1	11.4	0.24
25-May	0.85	<1	<2	<1	12.9	0.23
31-May	0.67	<1	2	<1	13.1	0.22
08-Jun	0.59	<1	<2	<1	14	0.20
09-Jun	0.54	<1	8	<1	12.5	0.27
13-Jun	0.83	<1	2	<1	14.5	0.23
21-Jun	0.78	<1	6	<1	15	0.18
27-Jun	0.70	<1	<2	<1	14.7	0.32
05-Jul	0.51	<1	2	<1	16.2	0.19
11-Jul	0.49	<1	<2	<1	14.6	0.21
15-Jul	0.58	<1	<2	<1	17	0.30
19-Jul	0.55	<1	<2	<1	17.1	0.20
26-Jul	0.51	<1	6	<1	17.1	0.29
03-Aug	0.73	<1	34	<1	18.4	0.18
08-Aug	0.69	<1	8	<1	18.2	0.20
10-Aug	0.47	<1	8	<1	18.7	0.21
11-Aug	0.37	<1	4	<1	14.8	0.17
16-Aug	0.50	<1	16	<1	18.6	0.20
25-Aug	0.41	<1	6	<1	18.8	0.24
01-Sep	0.47	<1	12	<1	19	0.30
06-Sep	0.33	<1	10	<1	19.1	0.23
15-Sep	0.17	<1	16	<1	18.9	0.24
21-Sep	0.29	<1	6	<1	18.4	0.30
26-Sep	0.44	<1	8	<1	18.4	0.23
04-Oct	0.38	<1	24	<1	18.3	0.23
11-Oct	0.45	<1	4	<1	18.1	0.30
19-Oct	0.25	<1	<2	<1	17.2	0.58
25-Oct	0.44	<1	<2	<1	12.8	0.23
04-Nov	0.49	<1	<2	<1	14	0.36
08-Nov	0.25	<1	<2	<1	10	0.32
17-Nov	0.40	<1	10	<1	11	0.30
21-Nov	0.26	<1	130	<1	11	0.26
24-Nov	0.63	<1	<2	<1	8	0.33
29-Nov	0.44	<1	<2	<1	10	0.26
05-Dec	0.31	<1	<2	<1	8	0.35
12-Dec	0.31	<1	<2	<1	8	0.17
14-Dec	0.56	<1	<2	<1	8	0.32
22-Dec	0.41	<1	NA	<1	7	0.17
29-Dec	0.69	<1	NA	<1	6	0.69


944 (6008 189 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
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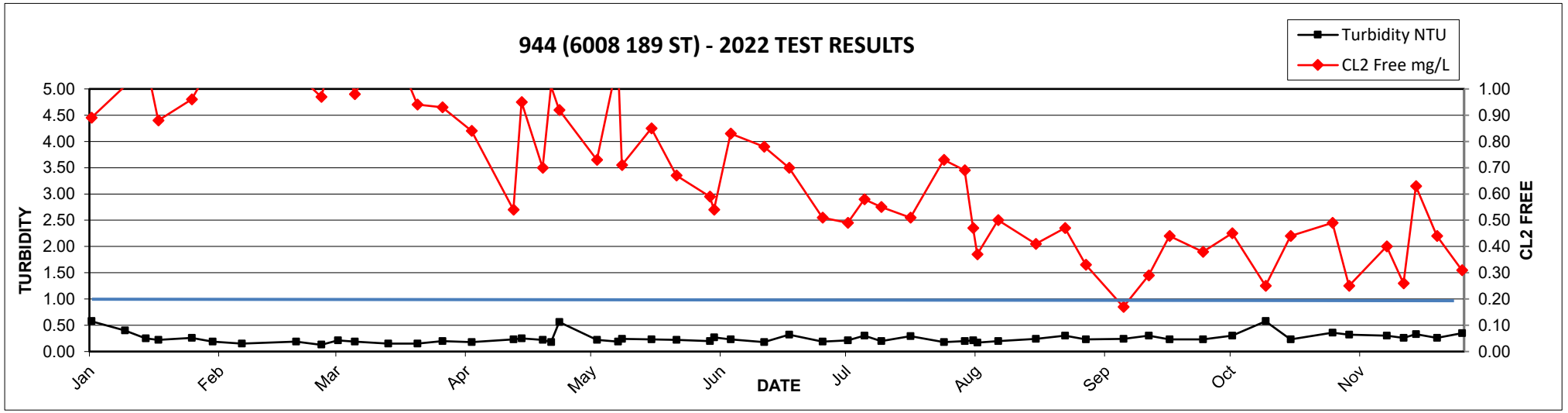
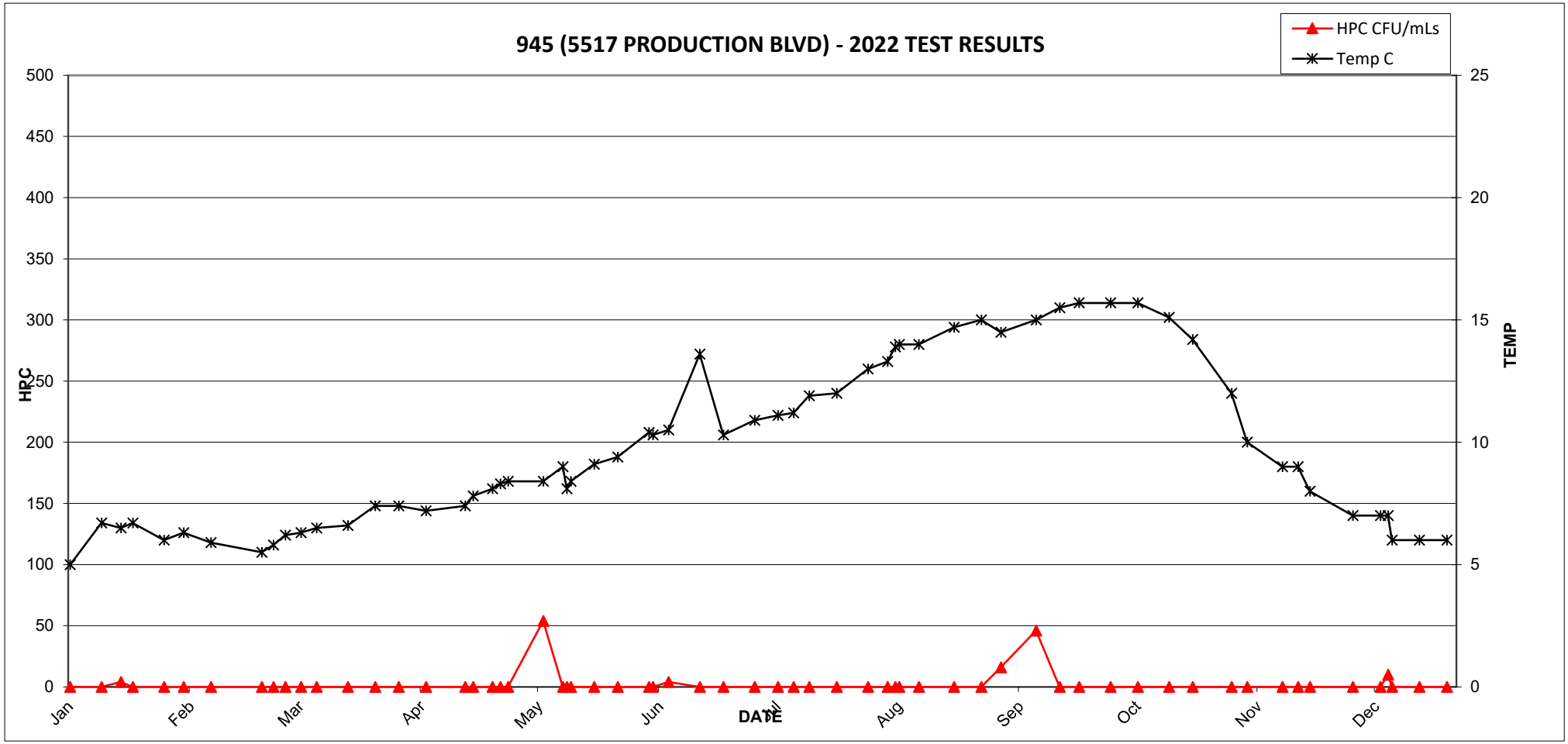
Sep
Oct
Nov


944 (6008 189 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov

2022 MV Laboratory Report - 945 (5517 PRODUCTION BLVD)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	0.82	<1	<2	<1	5	0.57
19-Jan	0.50	<1	<2	<1	6.7	0.36
24-Jan	0.37	<1	4	<1	6.5	0.26
27-Jan	0.44	<1	<2	<1	6.7	0.23
04-Feb	0.48	<1	<2	<1	6	0.27
09-Feb	0.51	<1	<2	<1	6.3	0.18
16-Feb	0.87	<1	<2	<1	5.9	0.39
01-Mar	1.19	<1	<2	<1	5.5	0.35
04-Mar	0.83	<1	<2	<1	5.8	0.64
07-Mar	0.69	<1	<2	<1	6.2	0.45
11-Mar	1.21	<1	<2	<1	6.3	0.38
15-Mar	1.27	<1	<2	<1	6.5	0.38
23-Mar	0.89	<1	<2	<1	6.6	0.46
30-Mar	0.93	<1	<2	<1	7.4	0.40
05-Apr	0.94	<1	<2	<1	7.4	0.24
12-Apr	0.94	<1	<2	<1	7.2	0.32
22-Apr	0.86	<1	<2	<1	7.4	0.41
24-Apr	1.05	<1	<2	<1	7.8	0.28
29-Apr	1.07	<1	<2	<1	8.1	0.30
01-May	1.32	<1	<2	<1	8.3	0.23
03-May	0.92	<1	<2	<1	8.4	0.41
12-May	1.00	<1	54	<1	8.4	0.26
17-May	0.89	<1	<2	<1	9	0.31
18-May	0.80	<1	<2	<1	8.1	0.28
19-May	0.88	<1	<2	<1	8.4	0.35
25-May	0.64	<1	<2	<1	9.1	0.28
31-May	1.09	<1	<2	<1	9.4	0.25
08-Jun	0.96	<1	<2	<1	10.4	0.36
09-Jun	0.90	<1	<2	<1	10.3	0.24
13-Jun	0.99	<1	4	<1	10.5	0.22
21-Jun	1.02	<1	<2	<1	13.6	0.20
27-Jun	1.05	<1	<2	<1	10.3	0.57
05-Jul	0.84	<1	<2	<1	10.9	0.28
11-Jul	0.70	<1	<2	<1	11.1	0.30
15-Jul	0.99	<1	<2	<1	11.2	0.25
19-Jul	1.02	<1	<2	<1	11.9	0.21
26-Jul	1.07	<1	<2	<1	12	0.35
03-Aug	0.90	<1	<2	<1	13	0.16
08-Aug	0.84	<1	<2	<1	13.3	0.21
10-Aug	0.89	<1	<2	<1	13.9	0.23
11-Aug	0.70	<1	<2	<1	14	0.25
16-Aug	0.94	<1	<2	<1	14	0.24
25-Aug	0.96	<1	<2	<1	14.7	0.28
01-Sep	0.92	<1	<2	<1	15	0.27
06-Sep	1.12	<1	16	<1	14.5	0.27
15-Sep	0.91	<1	46	<1	15	0.25
21-Sep	0.77	<1	<2	<1	15.5	0.24
26-Sep	0.99	<1	<2	<1	15.7	0.28
04-Oct	1.06	<1	<2	<1	15.7	0.32
11-Oct	1.07	<1	<2	<1	15.7	0.31
19-Oct	0.91	<1	<2	<1	15.1	0.29
25-Oct	1.03	<1	<2	<1	14.2	0.32
04-Nov	0.98	<1	<2	<1	12	0.38
08-Nov	0.82	<1	<2	<1	10	0.35
17-Nov	0.89	<1	<2	<1	9	0.28
21-Nov	0.62	<1	<2	<1	9	0.31
24-Nov	0.69	<1	<2	<1	8	0.31
05-Dec	0.65	<1	<2	<1	7	0.28
12-Dec	0.89	<1	<2	<1	7	0.28
14-Dec	0.76	<1	10	<1	7	0.18
15-Dec	0.70	<1	<2	<1	6	0.22


945 (5517 PRODUCTION BLVD) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
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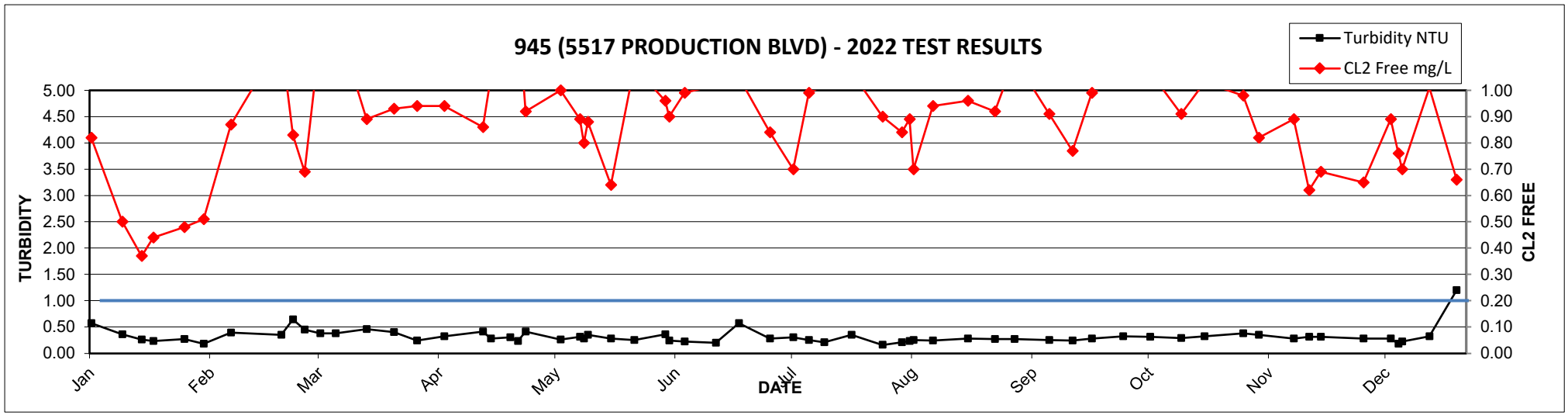
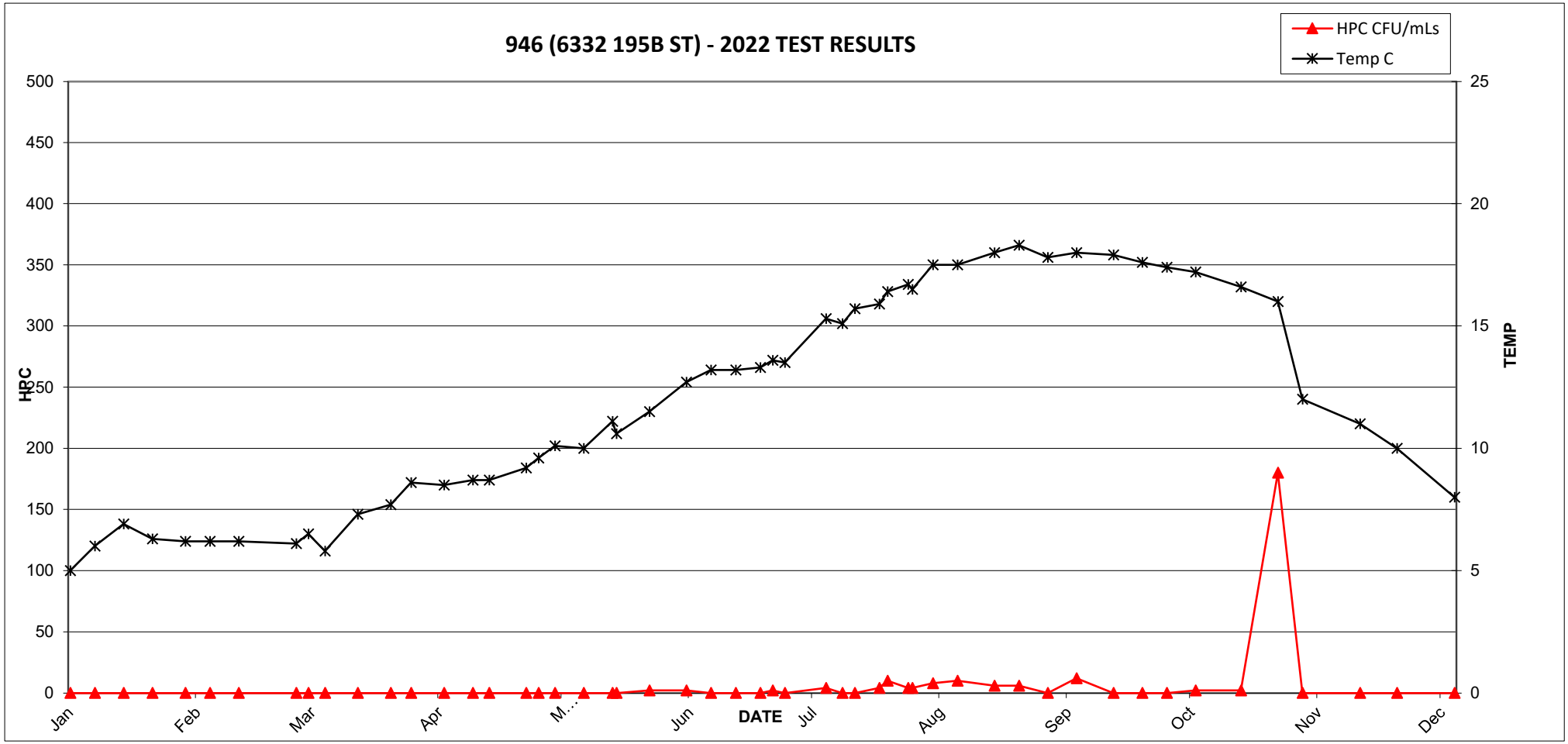
Jul
Aug
Sep
Oct
Nov
Dec


945 (5517 PRODUCTION BLVD) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 946 (6332 195B ST)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.49	<1	<2	<1	5	0.46
11-Jan	1.10	<1	<2	<1	6	0.51
18-Jan	0.64	<1	<2	<1	6.9	0.48
25-Jan	1.17	<1	<2	<1	6.3	0.17
02-Feb	0.90	<1	<2	<1	6.2	0.90
08-Feb	1.06	<1	<2	<1	6.2	0.19
15-Feb	0.89	<1	<2	<1	6.2	0.13
01-Mar	1.13	<1	LA	<1	6.1	0.20
04-Mar	1.08	<1	<2	<1	6.5	0.15
08-Mar	0.71	<1	<2	<1	5.8	0.27
16-Mar	1.17	<1	<2	<1	7.3	0.17
24-Mar	0.94	<1	<2	<1	7.7	0.20
29-Mar	0.77	<1	<2	<1	8.6	0.20
06-Apr	0.86	<1	<2	<1	8.5	0.21
13-Apr	1.04	<1	<2	<1	8.7	0.33
17-Apr	0.76	<1	<2	<1	8.7	0.06
26-Apr	0.73	<1	<2	<1	9.2	0.24
29-Apr	0.82	<1	<2	<1	9.6	0.22
03-May	0.78	<1	<2	<1	10.1	0.27
10-May	0.81	<1	<2	<1	10	0.37
17-May	0.71	<1	<2	<1	11.1	0.22
18-May	0.71	<1	<2	<1	10.6	0.24
26-May	0.64	<1	2	<1	11.5	0.27
04-Jun	0.68	<1	2	<1	12.7	0.41
10-Jun	0.60	<1	<2	<1	13.2	0.22
16-Jun	0.75	<1	<2	<1	13.2	0.24
22-Jun	0.58	<1	<2	<1	13.3	0.18
25-Jun	0.79	<1	2	<1	13.6	0.22
28-Jun	0.78	<1	<2	<1	13.5	0.31
08-Jul	0.56	<1	4	<1	15.3	0.28
12-Jul	0.65	<1	<2	<1	15.1	0.31
15-Jul	0.6	<1	<2	<1	15.7	0.23
21-Jul	0.73	<1	4	<1	15.9	0.24
23-Jul	0.75	<1	10	<1	16.4	0.30
28-Jul	0.58	<1	4	<1	16.7	0.25
29-Jul	0.51	<1	4	<1	16.5	0.27
03-Aug	0.78	<1	8	<1	17.5	0.20
09-Aug	0.73	<1	10	<1	17.5	0.20
18-Aug	0.27	<1	6	<1	18	0.25
24-Aug	0.42	<1	6	<1	18.3	0.21
31-Aug	0.50	<1	<2	<1	17.8	0.25
07-Sep	0.52	<1	12	<1	18	0.21
16-Sep	0.42	<1	<2	<1	17.9	0.19
23-Sep	0.52	<1	<2	<1	17.6	0.26
29-Sep	0.48	<1	<2	<1	17.4	0.26
06-Oct	0.54	<1	2	<1	17.2	0.26
17-Oct	0.57	<1	2	<1	16.6	0.23
26-Oct	0.61	<1	180	<1	16	0.26
01-Nov	0.54	<1	<2	<1	12	0.42
15-Nov	0.69	<1	<2	<1	11	0.30
24-Nov	0.60	<1	<2	<1	10	0.33
08-Dec	0.59	<1	<2	<1	8	0.21
15-Dec	0.63	<1	<2	<1	8	0.22


946 (6332 195B ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
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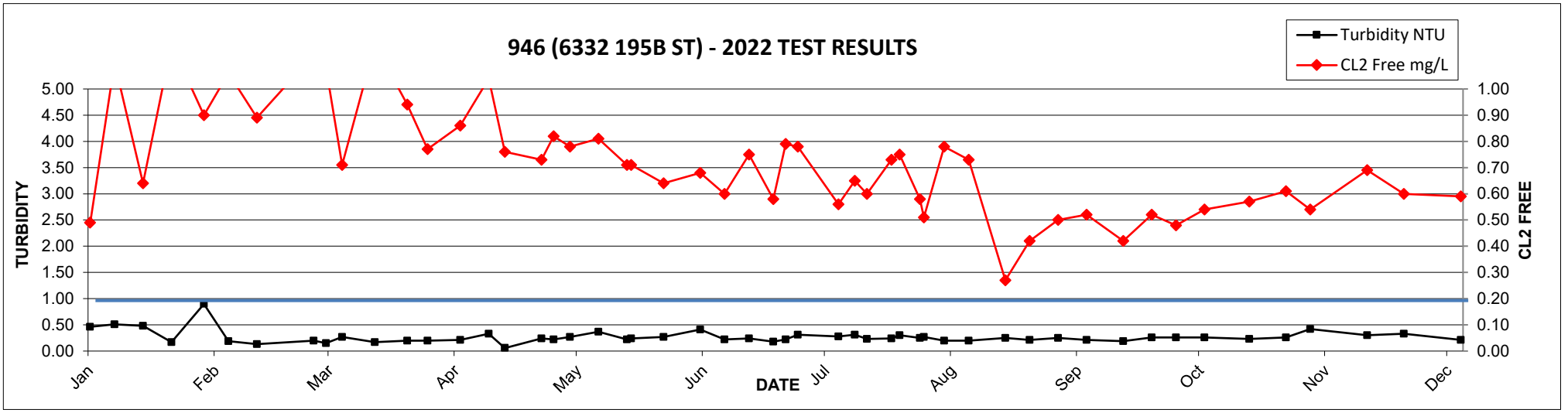
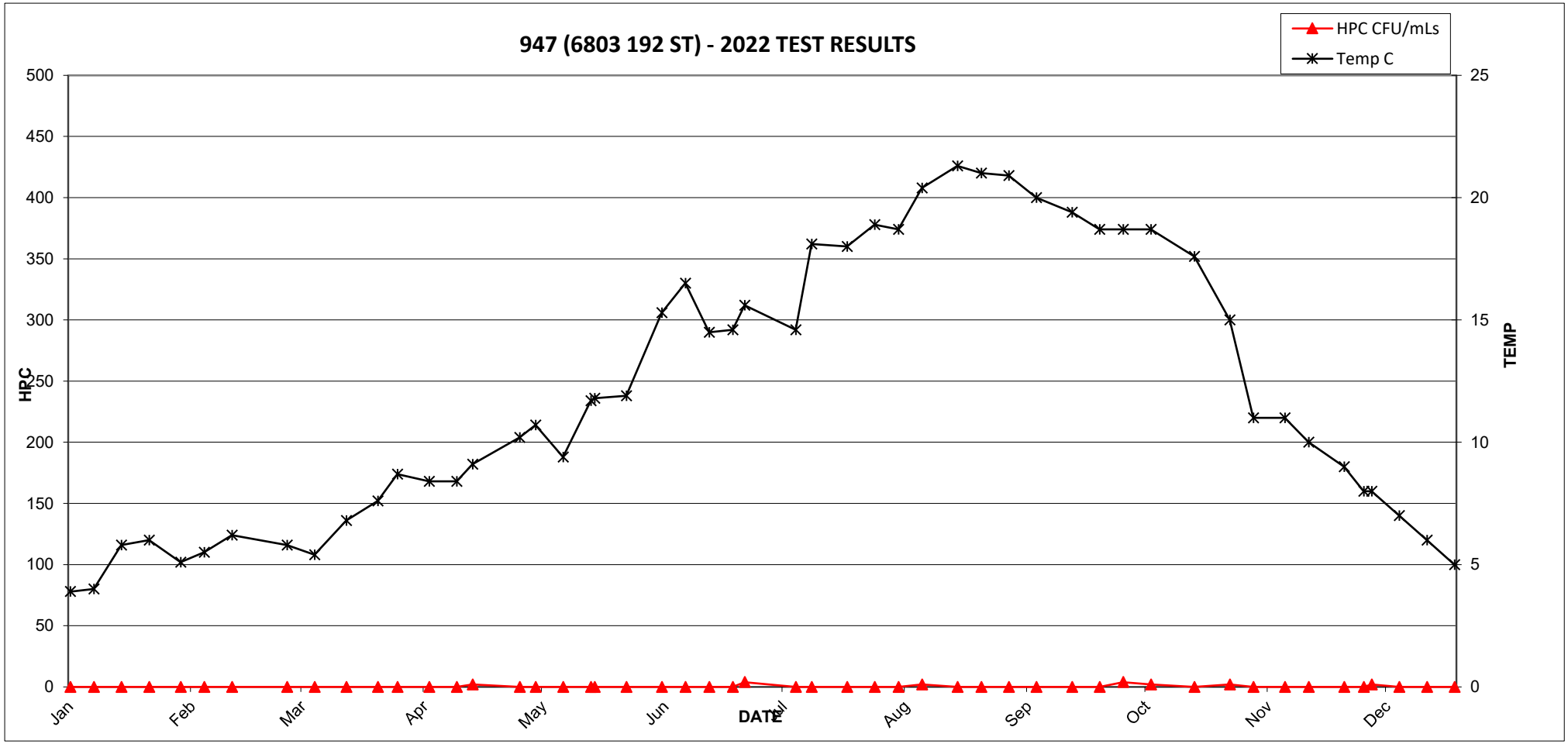
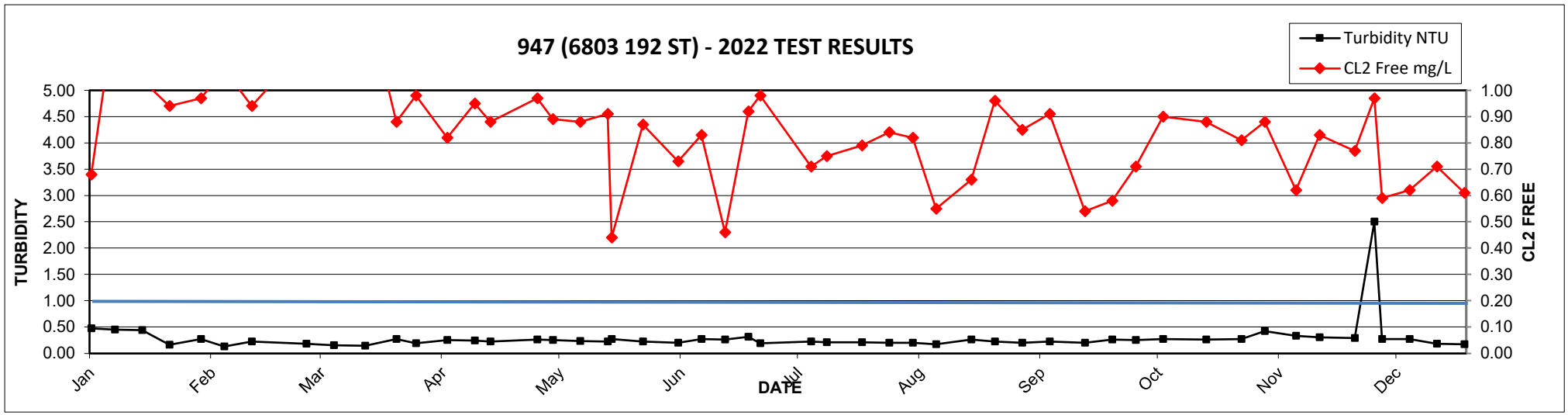
Nov
Dec


946 (6332 195B ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 947 (6803 192 ST)

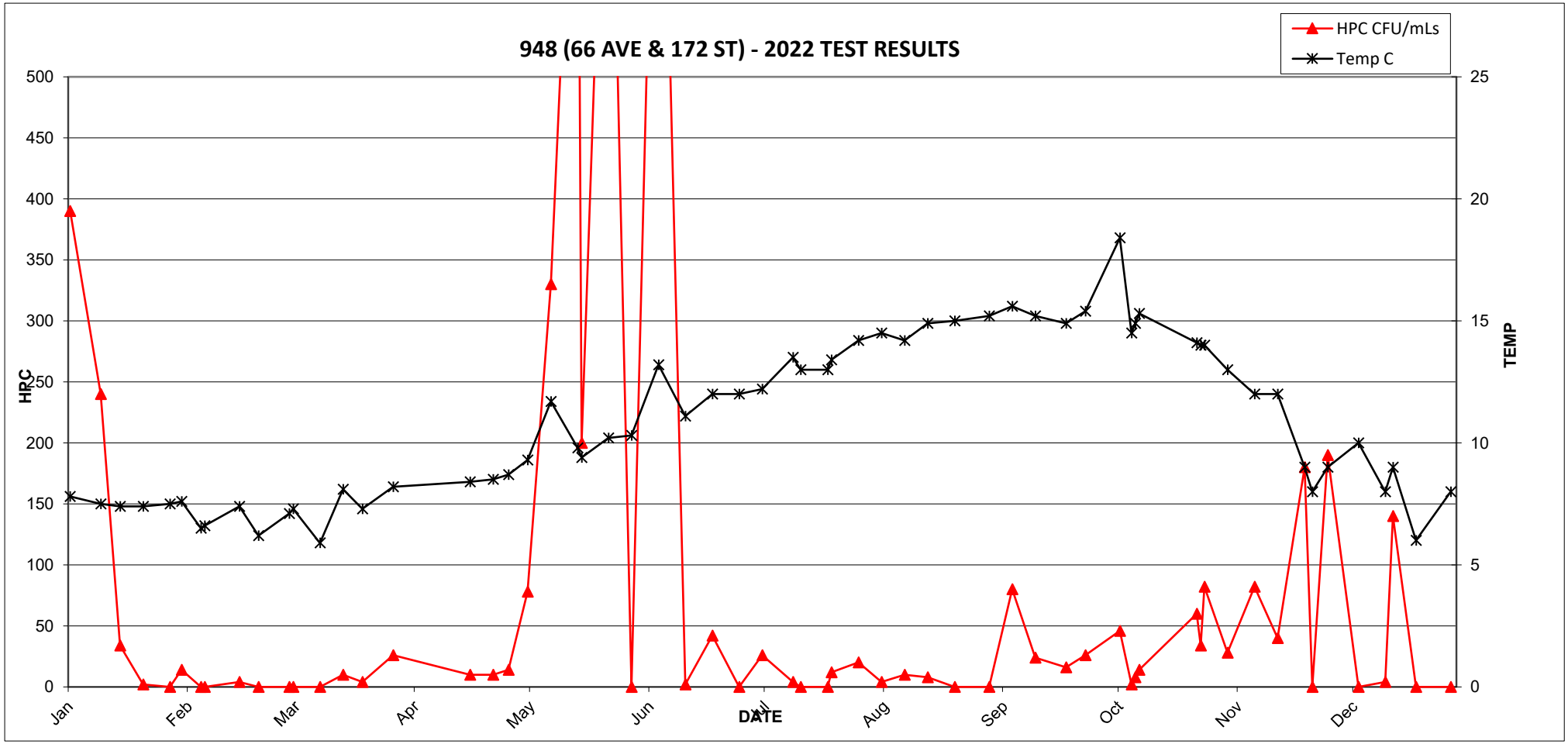
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.68	<1	<2	<1	3.9	0.47
11-Jan	1.30	<1	<2	<1	4	0.45
18-Jan	1.04	<1	<2	<1	5.8	0.44
25-Jan	0.94	<1	<2	<1	6	0.16
02-Feb	0.97	<1	<2	<1	5.1	0.27
08-Feb	1.08	<1	<2	<1	5.5	0.13
15-Feb	0.94	<1	<2	<1	6.2	0.22
01-Mar	1.17	<1	<2	<1	5.8	0.18
08-Mar	1.01	<1	<2	<1	5.4	0.15
16-Mar	1.37	<1	<2	<1	6.8	0.14
24-Mar	0.88	<1	<2	<1	7.6	0.27
29-Mar	0.98	<1	<2	<1	8.7	0.19
06-Apr	0.82	<1	<2	<1	8.4	0.25
13-Apr	0.95	<1	<2	<1	8.4	0.24
17-Apr	0.88	<1	2	<1	9.1	0.22
29-Apr	0.97	<1	<2	<1	10.2	0.26
03-May	0.89	<1	<2	<1	10.7	0.25
10-May	0.88	<1	<2	<1	9.4	0.23
17-May	0.91	<1	<2	<1	11.7	0.22
18-May	0.44	<1	<2	<1	11.8	0.27
26-May	0.87	<1	<2	<1	11.9	0.22
04-Jun	0.73	<1	<2	<1	15.3	0.20
10-Jun	0.83	<1	<2	<1	16.5	0.27
16-Jun	0.46	<1	<2	<1	14.5	0.26
22-Jun	0.92	<1	<2	<1	14.6	0.31
25-Jun	0.98	<1	4	<1	15.6	0.19
08-Jul	0.71	<1	<2	<1	14.6	0.22
12-Jul	0.75	<1	<2	<1	18.1	0.21
21-Jul	0.79	<1	<2	<1	18	0.21
28-Jul	0.84	<1	<2	<1	18.9	0.20
03-Aug	0.82	<1	<2	<1	18.7	0.20
09-Aug	0.55	<1	2	<1	20.4	0.17
18-Aug	0.66	<1	<2	<1	21.3	0.26
24-Aug	0.96	<1	<2	<1	21	0.22
31-Aug	0.85	<1	<2	<1	20.9	0.20
07-Sep	0.91	<1	<2	<1	20	0.22
16-Sep	0.54	<1	<2	<1	19.4	0.20
23-Sep	0.58	<1	<2	<1	18.7	0.26
29-Sep	0.71	<1	4	<1	18.7	0.25
06-Oct	0.90	<1	2	<1	18.7	0.27
17-Oct	0.88	<1	<2	<1	17.6	0.26
26-Oct	0.81	<1	2	<1	15	0.27
01-Nov	0.88	<1	<2	<1	11	0.42
09-Nov	0.62	<1	<2	<1	11	0.33
15-Nov	0.83	<1	<2	<1	10	0.30
24-Nov	0.77	<1	<2	<1	9	0.29
29-Nov	0.97	<1	<2	<1	8	2.50
01-Dec	0.59	<1	2	<1	8	0.27
08-Dec	0.62	<1	<2	<1	7	0.27
15-Dec	0.71	<1	<2	<1	6	0.18
22-Dec	0.61	<1	NA	<1	5	0.17

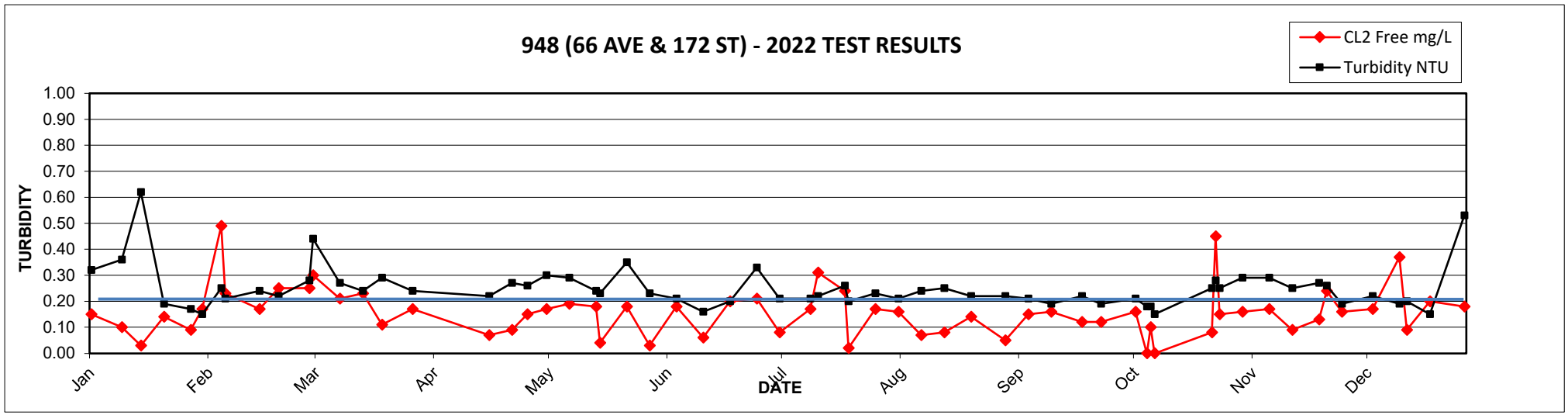

947 (6803 192 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


947 (6803 192 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 948 (66 AVE & 172 ST)

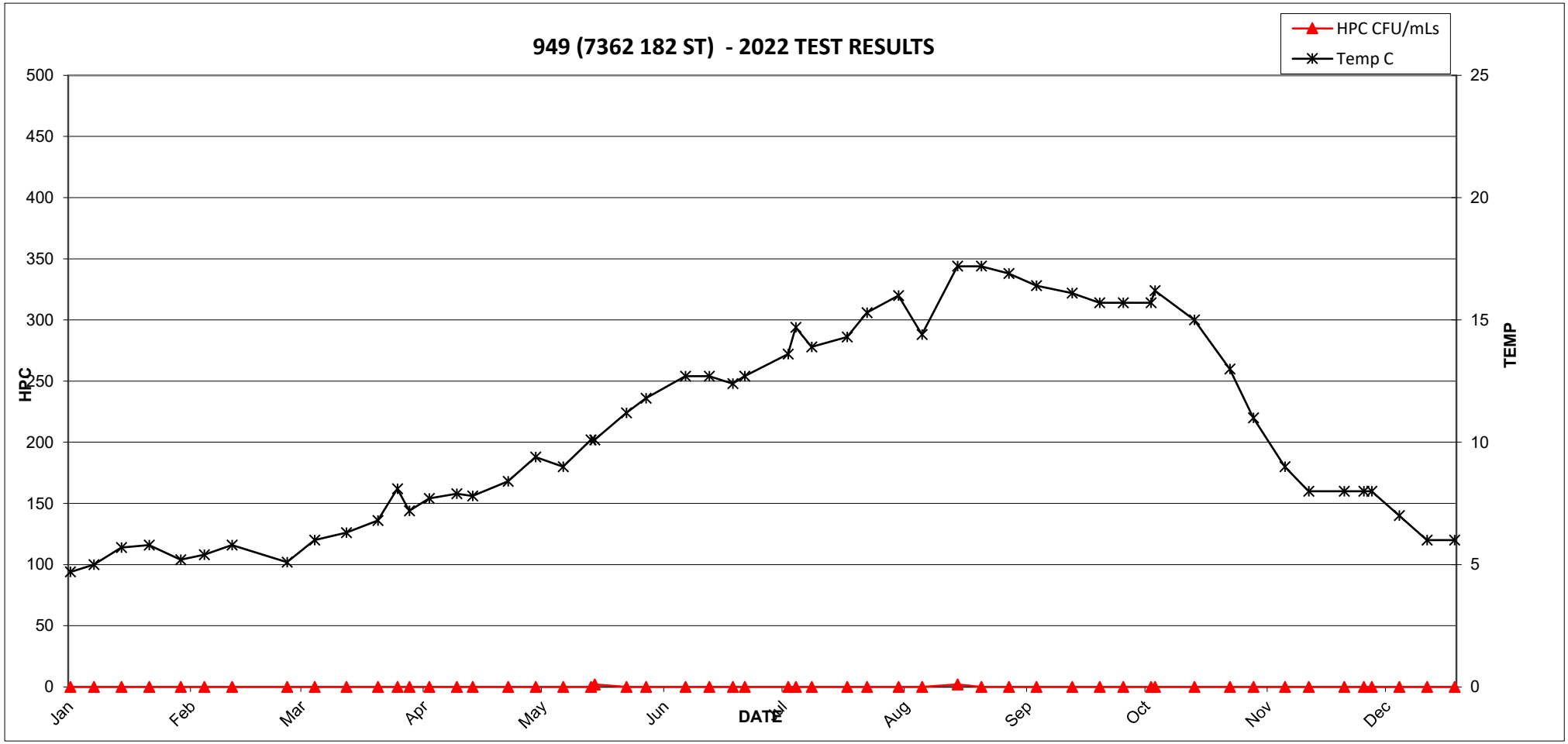
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.15	<1	390	<1	7.8	0.32
13-Jan	0.10	<1	240	<1	7.5	0.36
18-Jan	0.03	<1	34	<1	7.4	0.62
24-Jan	0.14	<1	2	<1	7.4	0.19
31-Jan	0.09	<1	<2	<1	7.5	0.17
03-Feb	0.17	<1	14	<1	7.6	0.15
08-Feb	0.49	<1	<2	<1	6.5	0.25
09-Feb	0.23	<1	<2	<1	6.6	0.21
18-Feb	0.17	<1	4	<1	7.4	0.24
23-Feb	0.25	<1	<2	<1	6.2	0.22
03-Mar	0.25	<1	<2	<1	7.1	0.28
04-Mar	0.30	<1	<2	<1	7.3	0.44
11-Mar	0.21	<1	<2	<1	5.9	0.27
17-Mar	0.23	<1	10	<1	8.1	0.24
22-Mar	0.11	<1	4	<1	7.3	0.29
30-Mar	0.17	<1	26	<1	8.2	0.24
19-Apr	0.07	<1	10	<1	8.4	0.22
25-Apr	0.09	<1	10	<1	8.5	0.27
29-Apr	0.15	<1	14	<1	8.7	0.26
04-May	0.17	<1	78	<1	9.3	0.30
10-May	0.19	<1	330	<1	11.7	0.29
17-May	0.18	<1	820	<1	9.8	0.24
18-May	0.04	<1	200	<1	9.4	0.23
25-May	0.18	<1	840	<1	10.2	0.35
31-May	0.03	<1	LA	<1	10.3	0.23
07-Jun	0.18	<1	900	<1	13.2	0.21
14-Jun	0.06	<1	2	<1	11.1	0.16
21-Jun	0.20	<1	42	<1	12	0.20
28-Jun	0.21	<1	<2	<1	12	0.33
04-Jul	0.08	<1	26	<1	12.2	0.21
12-Jul	0.17	<1	4	<1	13.5	0.21
14-Jul	0.31	<1	<2	<1	13	0.22
21-Jul	0.24	<1	<2	<1	13	0.26
22-Jul	0.02	<1	12	<1	13.4	0.20
29-Jul	0.17	<1	20	<1	14.2	0.23
04-Aug	0.16	<1	4	<1	14.5	0.21
10-Aug	0.07	<1	10	<1	14.2	0.24
16-Aug	0.08	<1	8	<1	14.9	0.25
23-Aug	0.14	<1	<2	<1	15	0.22
01-Sep	0.05	<1	<2	<1	15.2	0.22
07-Sep	0.15	<1	80	<1	15.6	0.21
13-Sep	0.16	<1	24	<1	15.2	0.19
21-Sep	0.12	<1	16	<1	14.9	0.22
26-Sep	0.12	<1	26	<1	15.4	0.19
05-Oct	0.16	<1	46	9	18.4	0.21
08-Oct	0	<1	2	<1	14.5	0.18
09-Oct	0.10	<1	8	<1	14.9	0.18
10-Oct	0.00	<1	14	<1	15.3	0.15
25-Oct	0.08	<1	60	<1	14.1	0.25
26-Oct	0.45	<1	34	<1	14	0.28
27-Oct	0.15	<1	82	<1	14	0.25
02-Nov	0.16	<1	28	<1	13	0.29
09-Nov	0.17	<1	82	<1	12	0.29
15-Nov	0.09	<1	40	<1	12	0.25
22-Nov	0.13	<1	180	<1	9	0.27
24-Nov	0.24	<1	<2	<1	8	0.26
28-Nov	0.16	<1	190	<1	9	0.19
06-Dec	0.17	<1	<2	<1	10	0.22
13-Dec	0.37	<1	4	<1	8	0.19
15-Dec	0.09	<1	140	<1	9	0.20

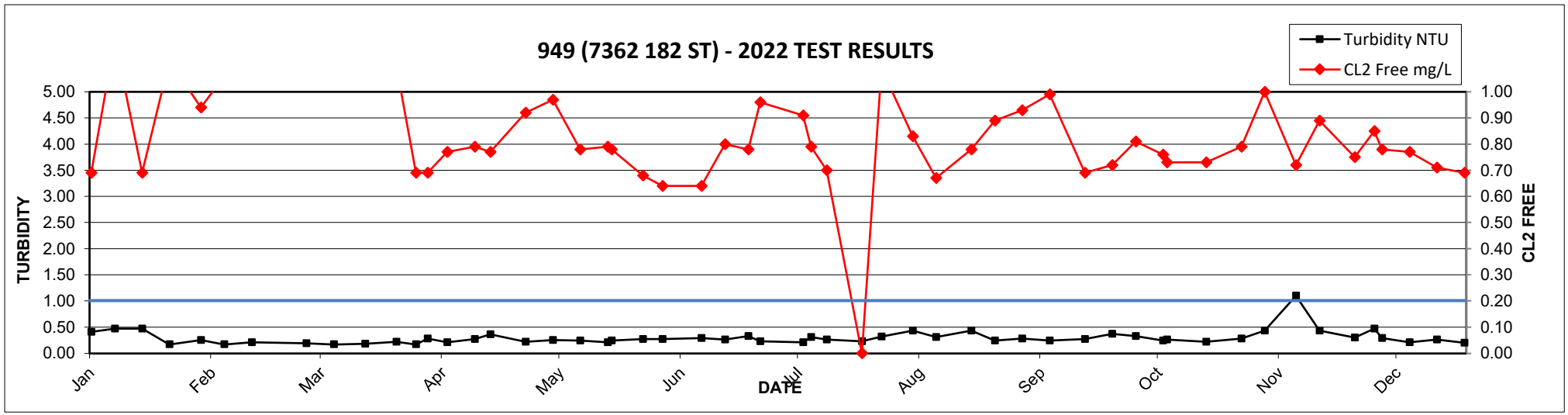

948 (66 AVE & 172 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HRC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


948 (66 AVE & 172 ST) - 2022 TEST RESULTS
CL2 Free mg/L
Turbidity NTU
TURBIDITY
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 949 (7362 182 ST)

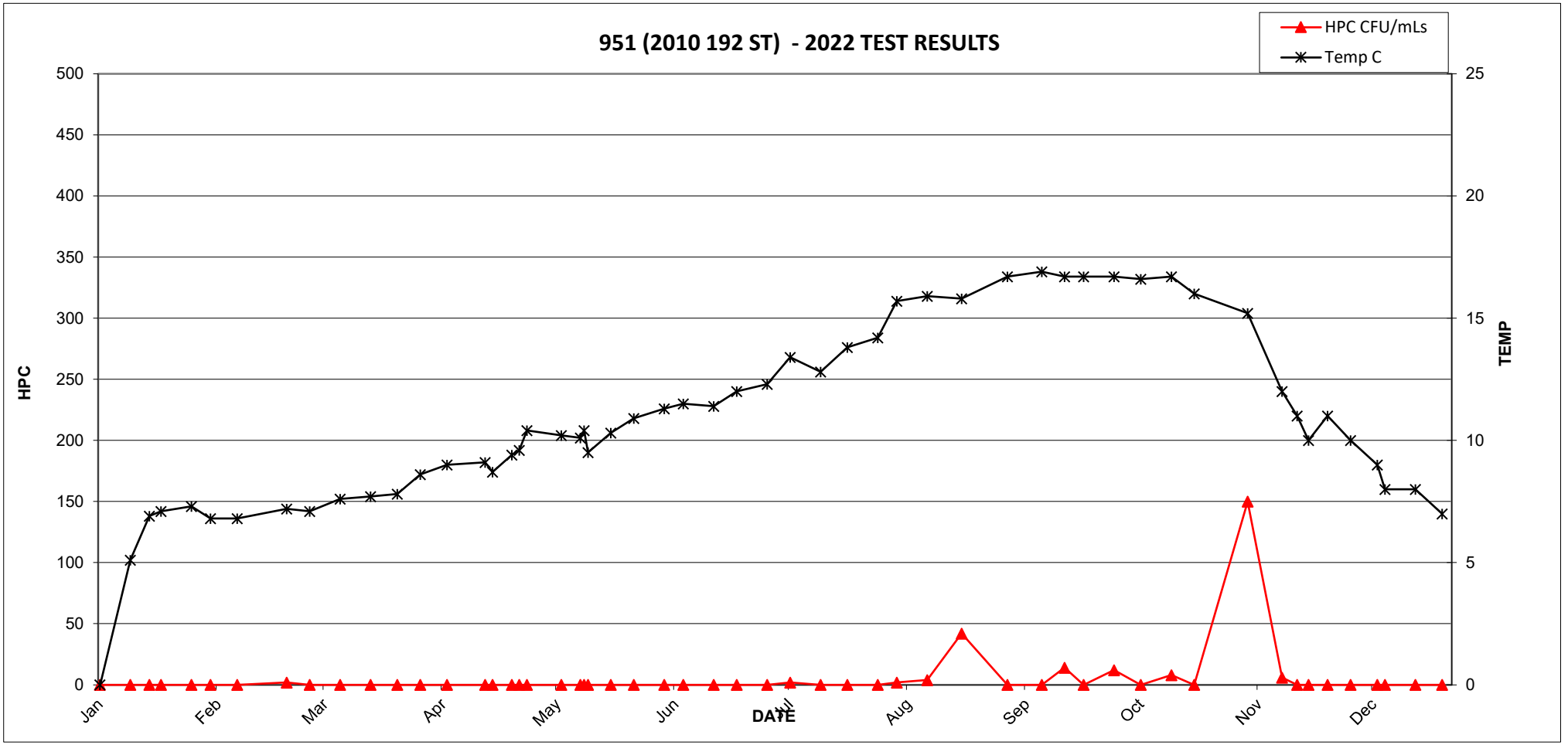
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
05-Jan	0.69	<1	<2	<1	4.7	0.41
11-Jan	1.20	<1	<2	<1	5	0.47
18-Jan	0.69	<1	<2	<1	5.7	0.47
25-Jan	1.12	<1	<2	<1	5.8	0.17
02-Feb	0.94	<1	<2	<1	5.2	0.25
08-Feb	1.06	<1	<2	<1	5.4	0.17
15-Feb	1.11	<1	<2	<1	5.8	0.21
01-Mar	1.12	<1	<2	<1	5.1	0.19
08-Mar	1.22	<1	<2	<1	6	0.17
16-Mar	1.17	<1	<2	<1	6.3	0.18
24-Mar	1.10	<1	<2	<1	6.8	0.22
29-Mar	0.69	<1	<2	<1	8.1	0.17
01-Apr	0.69	<1	<2	<1	7.2	0.28
06-Apr	0.77	<1	<2	<1	7.7	0.21
13-Apr	0.79	<1	<2	<1	7.9	0.27
17-Apr	0.77	<1	<2	<1	7.8	0.36
26-Apr	0.92	<1	<2	<1	8.4	0.22
03-May	0.97	<1	<2	<1	9.4	0.25
10-May	0.78	<1	<2	<1	9	0.24
17-May	0.79	<1	<2	<1	10.1	0.21
18-May	0.78	<1	2	<1	10.1	0.24
26-May	0.68	<1	<2	<1	11.2	0.27
31-May	0.64	<1	<2	<1	11.8	0.27
10-Jun	0.64	<1	<2	<1	12.7	0.29
16-Jun	0.80	<1	<2	<1	12.7	0.26
22-Jun	0.78	<1	<2	<1	12.4	0.33
25-Jun	0.96	<1	<2	<1	12.7	0.23
06-Jul	0.91	<1	<2	<1	13.6	0.21
08-Jul	0.79	<1	<2	<1	14.7	0.31
12-Jul	0.70	<1	<2	<1	13.9	0.26
21-Jul	0.00	<1	<2	<1	14.3	0.23
26-Jul	1.09	<1	<2	<1	15.3	0.32
03-Aug	0.83	<1	<2	<1	16	0.43
09-Aug	0.67	<1	<2	<1	14.4	0.31
18-Aug	0.78	<1	2	<1	17.2	0.43
24-Aug	0.89	<1	<2	<1	17.2	0.24
31-Aug	0.93	<1	<2	<1	16.9	0.28
07-Sep	0.99	<1	<2	<1	16.4	0.24
16-Sep	0.69	<1	<2	<1	16.1	0.27
23-Sep	0.72	<1	<2	<1	15.7	0.37
29-Sep	0.81	<1	<2	<1	15.7	0.33
06-Oct	0.76	<1	<2	<1	15.7	0.24
07-Oct	0.73	<1	<2	<1	16.2	0.26
17-Oct	0.73	<1	<2	<1	15	0.22
26-Oct	0.79	<1	<2	<1	13	0.28
01-Nov	1.00	<1	<2	<1	11	0.43
09-Nov	0.72	<1	<2	<1	9	1.10
15-Nov	0.89	<1	<2	<1	8	0.43
24-Nov	0.75	<1	<2	<1	8	0.30
29-Nov	0.85	<1	<2	<1	8	0.47
01-Dec	0.78	<1	<2	<1	8	0.29
08-Dec	0.77	<1	<2	<1	7	0.21
15-Dec	0.71	<1	<2	<1	6	0.26
22-Dec	0.69	<1	NA	<1	6	0.20

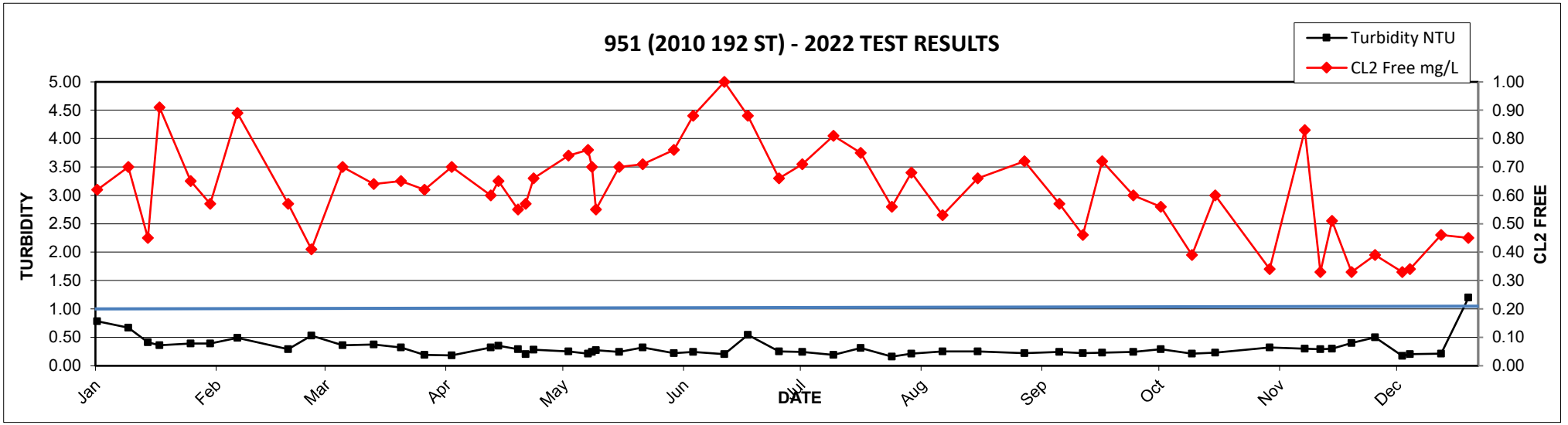

949 (7362 182 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


949 (7362 182 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 951 (2010 192 ST)

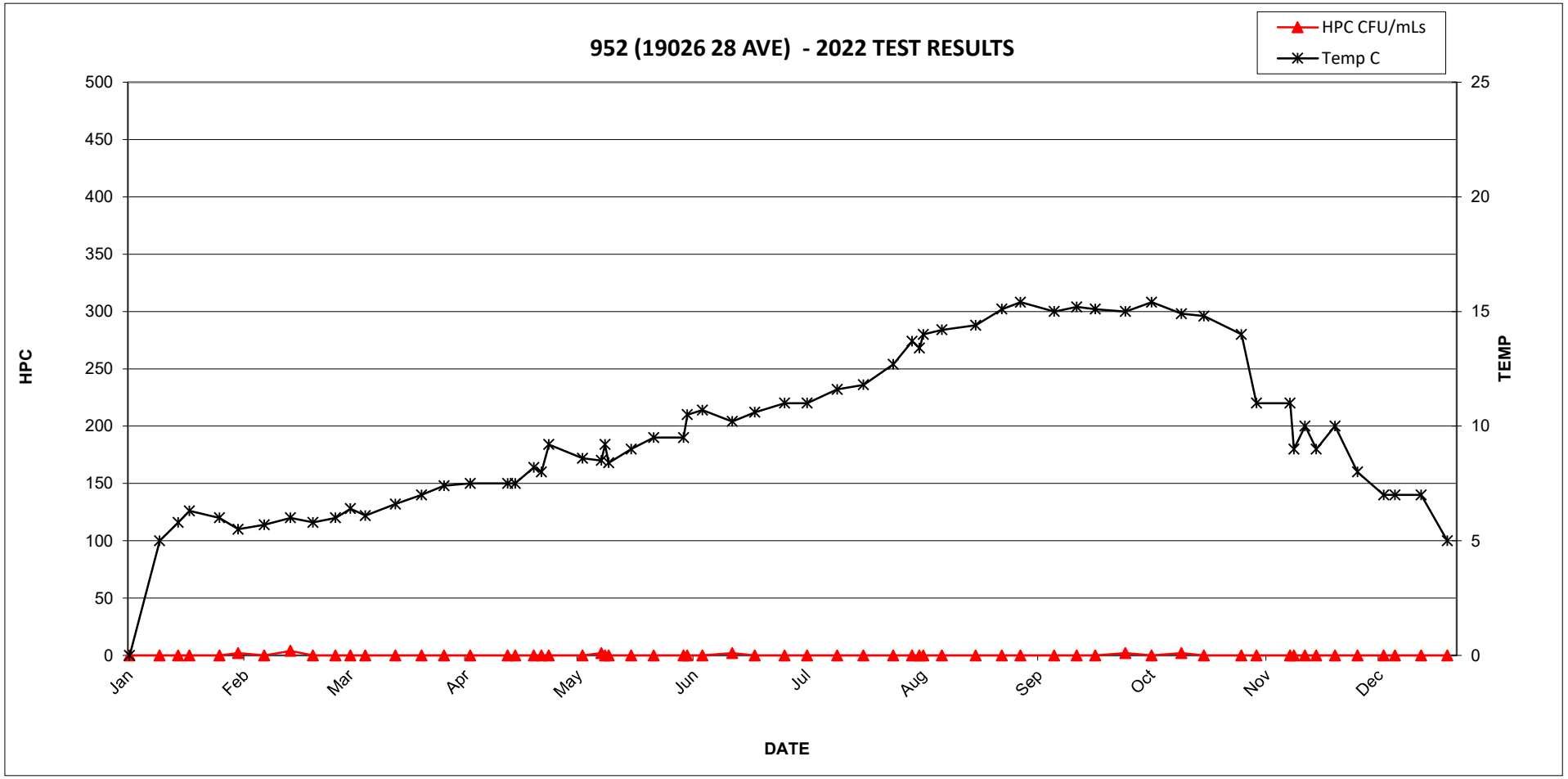
Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	0.62	<1	<2	<1	5.1	0.78
19-Jan	0.70	<1	<2	<1	6.9	0.67
24-Jan	0.45	<1	<2	<1	7.1	0.41
27-Jan	0.91	<1	<2	<1	7.3	0.36
04-Feb	0.65	<1	<2	<1	6.8	0.39
09-Feb	0.57	<1	<2	<1	6.8	0.39
16-Feb	0.89	<1	2	<1	7.2	0.49
01-Mar	0.57	<1	<2	<1	7.1	0.29
07-Mar	0.41	<1	<2	<1	7.6	0.53
15-Mar	0.70	<1	<2	<1	7.7	0.36
23-Mar	0.64	<1	<2	<1	7.8	0.37
30-Mar	0.65	<1	<2	<1	8.6	0.32
05-Apr	0.62	<1	<2	<1	9	0.19
12-Apr	0.70	<1	<2	<1	9.1	0.18
22-Apr	0.60	<1	<2	<1	8.7	0.32
24-Apr	0.65	<1	<2	<1	9.4	0.35
29-Apr	0.55	<1	<2	<1	9.6	0.29
01-May	0.57	<1	<2	<1	10.4	0.20
03-May	0.66	<1	<2	<1	10.2	0.28
12-May	0.74	<1	<2	<1	10.1	0.25
17-May	0.76	<1	<2	<1	10.4	0.21
18-May	0.70	<1	<2	<1	9.5	0.24
19-May	0.55	<1	<2	<1	10.3	0.27
25-May	0.70	<1	<2	<1	10.9	0.24
31-May	0.71	<1	<2	<1	11.3	0.32
08-Jun	0.76	<1	<2	<1	11.5	0.22
13-Jun	0.88	<1	<2	<1	11.4	0.24
21-Jun	1.00	<1	<2	<1	12	0.20
27-Jun	0.88	<1	<2	<1	12.3	0.54
05-Jul	0.66	<1	2	<1	13.4	0.25
11-Jul	0.71	<1	<2	<1	12.8	0.24
19-Jul	0.81	<1	<2	<1	13.8	0.19
26-Jul	0.75	<1	<2	<1	14.2	0.31
03-Aug	0.56	<1	2	<1	15.7	0.16
08-Aug	0.68	<1	4	<1	15.9	0.21
16-Aug	0.53	<1	42	<1	15.8	0.25
25-Aug	0.66	<1	<2	<1	16.7	0.25
06-Sep	0.72	<1	<2	<1	16.9	0.22
15-Sep	0.57	<1	14	<1	16.7	0.24
21-Sep	0.46	<1	<2	<1	16.7	0.22
26-Sep	0.72	<1	12	<1	16.7	0.23
04-Oct	0.60	<1	<2	<1	16.6	0.24
11-Oct	0.56	<1	8	<1	16.7	0.29
19-Oct	0.39	<1	<2	<1	16	0.21
25-Oct	0.60	<1	150	<1	15.2	0.23
08-Nov	0.34	<1	6	<1	12	0.32
17-Nov	0.83	<1	<2	<1	11	0.30
21-Nov	0.33	<1	<2	<1	10	0.29
24-Nov	0.51	<1	<2	<1	11	0.30
29-Nov	0.33	<1	<2	<1	10	0.40
05-Dec	0.39	<1	<2	<1	9	0.50
12-Dec	0.33	<1	<2	<1	8	0.17
14-Dec	0.34	<1	<2	<1	8	0.20
22-Dec	0.46	<1	NA	<1	7	0.21
29-Dec	0.45	<1	NA	<1	6	1.20


951 (2010 192 ST) - 2022 TEST RESULTS
HPC CFU/mLs
Temp C
HPC
TEMP
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


951 (2010 192 ST) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
DATE
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

2022 MV Laboratory Report - 952 (19026 28 AVE)

Date Collected	CL2 Free mg/L	Ecoli MF/100mLs	HPC CFU/mLs	Tcoli MF/100mLs	Temp C	Turbidity NTU
11-Jan	1.06	<1	<2	<1	5	3.50
19-Jan	1.08	<1	<2	<1	5.8	1.30
24-Jan	0.84	<1	<2	<1	6.3	0.50
27-Jan	0.87	<1	<2	<1	6	0.44
04-Feb	0.93	<1	2	<1	5.5	0.51
09-Feb	0.76	<1	<2	<1	5.7	0.33
16-Feb	1.01	<1	4	<1	6	0.34
23-Feb	0.74	<1	<2	<1	5.8	0.32
01-Mar	0.88	<1	<2	<1	6	0.33
07-Mar	0.66	<1	<2	<1	6.4	0.44
11-Mar	1.02	<1	<2	<1	6.1	0.34
15-Mar	0.90	<1	<2	<1	6.6	0.30
23-Mar	0.74	<1	<2	<1	7	0.36
30-Mar	0.80	<1	<2	<1	7.4	0.33
05-Apr	1.00	<1	<2	<1	7.5	0.23
12-Apr	1.06	<1	<2	<1	7.5	0.31
22-Apr	0.72	<1	<2	<1	7.5	0.34
24-Apr	0.97	<1	<2	<1	8.2	0.34
29-Apr	0.95	<1	<2	<1	8	0.77
01-May	0.95	<1	<2	<1	9.2	0.19
03-May	0.90	<1	<2	<1	8.6	0.42
12-May	1.05	<1	2	<1	8.5	0.25
17-May	1.02	<1	<2	<1	9.2	0.31
18-May	0.86	<1	<2	<1	8.4	0.35
19-May	0.67	<1	<2	<1	9	0.31
25-May	0.87	<1	<2	<1	9.5	0.29
31-May	0.99	<1	<2	<1	9.5	0.29
08-Jun	1.10	<1	<2	<1	10.5	0.29
09-Jun	0.80	<1	<2	<1	10.7	0.24
13-Jun	0.91	<1	2	<1	10.2	0.25
21-Jun	1.18	<1	<2	<1	10.6	0.19
27-Jun	1.11	<1	<2	<1	11	0.61
05-Jul	0.92	<1	<2	<1	11	0.24
11-Jul	0.81	<1	<2	<1	11.6	0.23
19-Jul	0.96	<1	<2	<1	11.8	0.32
26-Jul	1.03	<1	<2	<1	12.7	0.36
03-Aug	0.86	<1	<2	<1	13.7	0.19
08-Aug	0.88	<1	<2	<1	13.4	0.25
10-Aug	0.99	<1	<2	<1	14	0.27
11-Aug	0.63	<1	<2	<1	14.2	0.22
16-Aug	0.83	<1	<2	<1	14.4	0.26
25-Aug	0.89	<1	<2	<1	15.1	0.29
01-Sep	0.68	<1	<2	<1	15.4	0.21
06-Sep	1.00	<1	<2	<1	15	0.29
15-Sep	0.83	<1	<2	<1	15.2	0.25
21-Sep	0.69	<1	<2	<1	15.1	0.28
26-Sep	0.98	<1	2	<1	15	0.30
04-Oct	0.83	<1	<2	<1	15.4	0.23
11-Oct	0.87	<1	2	<1	14.9	0.27
19-Oct	0.78	<1	<2	<1	14.8	0.28
25-Oct	0.66	<1	<2	<1	14	0.28
04-Nov	0.72	<1	<2	<1	11	0.37
08-Nov	0.75	<1	<2	<1	11	0.32
17-Nov	0.47	<1	<2	<1	9	0.35
18-Nov	0.90	<1	<2	<1	10	0.36
21-Nov	0.52	<1	<2	<1	9	0.28
24-Nov	0.47	<1	<2	<1	10	0.29
29-Nov	0.68	<1	<2	<1	8	0.34
05-Dec	0.64	<1	<2	<1	7	0.23
12-Dec	0.76	<1	<2	<1	7	0.20
15-Dec	0.74	<1	<2	<1	7	0.20
22-Dec	0.70	<1	NA	<1	5	0.24
29-Dec	0.48	<1	NA	<1	7	0.79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HPC CFU/mLs
Temp C
HPC
TEMP
DATE
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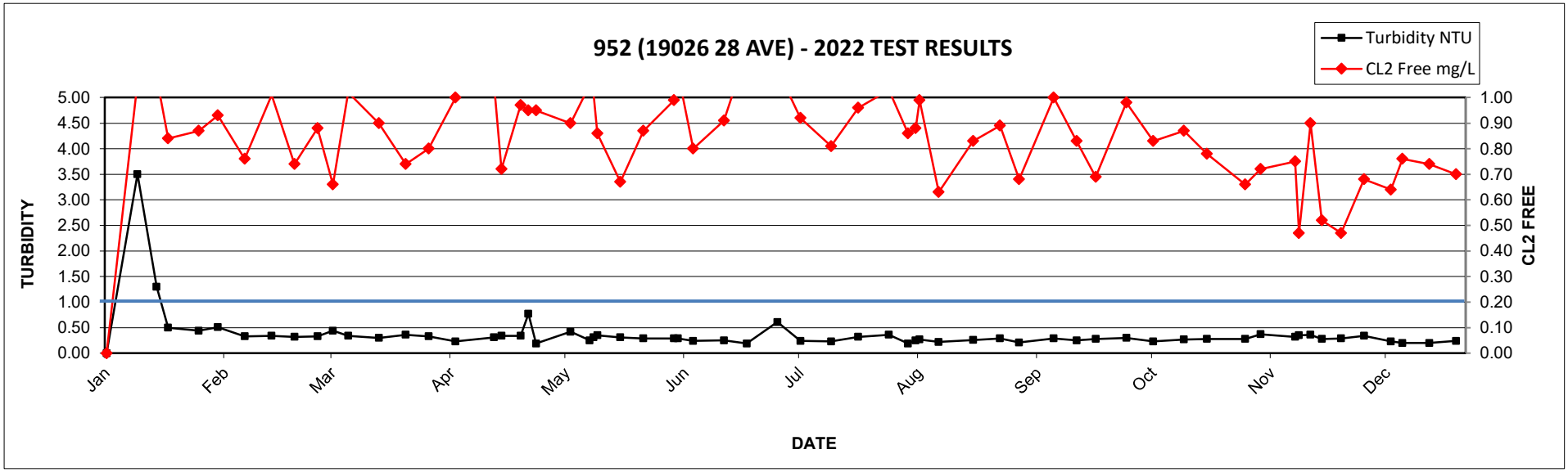
100
150
200
250
300
350
400
450
500
0
5
10
15
20
25
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


952 (19026 28 AVE) - 2022 TEST RESULTS
Turbidity NTU
CL2 Free mg/L
TURBIDITY
CL2 FREE
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1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

APPENDIX B

Water Quality Monitoring and Reporting Plan for Metro Vancouver and Member Municipalities

metrovancouver

Water Quality Monitoring and Reporting Plan for Metro Vancouver (GVWD) and Local Government Members

23563796

Updated: August 2018

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Appendices

Appendix 1 GVWD Drinking Water Quality Monitoring Sites
Appendix 2 Local Government Member's Drinking Water Quality Monitoring Sites

1. Introduction

1.1 Background

The Water Quality Monitoring and Reporting Plan (WQMRP) was originally developed under the BC Safe Drinking Water Regulation (BCSDWR) which was promulgated under the Health Act in 1992. In short, the BCSDWR required suppliers of drinking water (purveyors) in BC to hold an Operating Permit which, in effect, confirmed that the Medical Health Officer for the area in question had approved of the public water supply and the purveyor's plans for assuring potability, monitoring, reporting and notification in the case of emergency or other unusual circumstances. The BCSDWR was replaced in 2003 with the BC Drinking Water Protection Regulation (BCDWPR) under the Drinking Water Protection Act (DWPA) which was promulgated in 2001. This update builds on the original WQMRP which was published in May of 2000 as a result of joint efforts between Metro Vancouver (then GVRD), local government members, and the Region's Medical Health Officers. All parties mentioned above have been involved in the update of the plan[1].

The Drinking Water Protection Act places a number of responsibilities on water suppliers. Sections relevant to this plan are shown in the table below:

Table 1. Water Supplier Responsibilities under the Drinking Water Protection Act

Section of Act	Requirement	Relevance
8	Operating Permits and Requirements For Water Systems	Places monitoring and reporting responsibilities on water suppliers.
10	Emergency Response and Contingency Plans	Places requirement for emergency response and contingency plans on water suppliers.
11	Water Monitoring Requirements	Outlines water monitoring and associated responsibilities for water suppliers.

[1]**Note:** The legal entity for water supply under the Metro Vancouver umbrella is the Greater Vancouver Water District (GVWD). GVWD is used this document when referring directly or indirectly to the water supply function. Metro Vancouver (MV) is used when referring to the Metro Vancouver laboratory accredited under that name.

12	Notice if Immediate Reporting Standard Not Met	Outlines immediate reporting responsibilities for laboratories and water suppliers.
13	Water Supplier Must Report Threats to Drinking Water	Places notification responsibilities on water suppliers for situations where the water might not be potable.
15	Publication of Other Information	Places reporting responsibilities on water suppliers.

Even though this document describes a monitoring and reporting plan for the GVWD and its local government members using GVWD water sources, it can also be used as a template for monitoring and reporting on separate water supplies that exist within some local governments. Many of the monitoring initiatives described in this plan are already in place. Hence, it is written for the most part in the present tense.

1.2 Quality Control

All analyses should be conducted by a laboratory that is approved by the Provincial Health Officer for bacteriological analyses with participation in the Enhanced Water Quality Assurance (EWQA) program and is certified by the Canadian *Association* for Laboratory Accreditation (CALA) or an equivalent certification program for the other tests performed. It is recognized that certification may not be available for all parameters.

With the exception of *Giardia* and *Cryptosporidium*, all of the microbiological analyses discussed in this report are performed at the Metro Vancouver laboratory except for those for the Tsawwassen First Nation.

For water from GVWD sources (Capilano, Seymour, Coquitlam) many of the chemical and physical analyses are performed by the Metro Vancouver laboratory. The Metro Vancouver laboratory is a member of, and is accredited by, CALA. The Metro Vancouver laboratory is accredited (or certified) for many of the available parameters offered by CALA including general parameters, metals, trihalomethanes (THMs) and total coliforms. The Metro Vancouver laboratory also performs analyses for haloacetic acids (HAAs). CALA does not offer proficiency testing evaluation for HAAs or for radioisotopes.

Analyses for organic chemical contaminants (vinyl chloride, herbicides, pesticides, etc.) and uranium and radioactivity as shown in the Guidelines for Canadian Drinking Water Quality are performed by contract laboratories. The contract laboratories are accredited and the scope of accreditation includes the following parameters: BTEX, PAHs, THMs and specific pesticides. The GVWD uses the Test America in Richland, Washington, for radioactivity analyses. The US Environmental Protection Agency has certified this laboratory for radioactivity related analyses.

CALA certification and accreditation are valuable but they are no substitute for critical review of laboratory results (including review of Quality Control/Quality Assurance procedures and results) by the agency responsible for reporting the results. Metro Vancouver staff review all laboratory results (including results from the MV laboratory and contract laboratories) for QA/QC and local government members should do the same for results not reviewed for QA/QC by MV.

Samples should be collected and shipped in accordance with the most recent edition (22nd edition now available) of Standard Methods: For The Examination of Water and Wastewater (APHA, AWWA, WEF).

2. Definitions

BCDWPR	British Columbia Drinking Water Protection Regulation
BCSDWR	British Columbia Safe Drinking Water Regulation
CALA	Canadian Association for Laboratory Accreditation
CWTP	Coquitlam Water Treatment Plant
Distribution System	Local government owned and operated water mains and reservoirs
DWO	Drinking Water Officer
DWPA	Drinking Water Protection Act
E. coli	*Escherichia coli* is a member of the coliform group, part of the family Enterobacteriaceae, and is described as a facultative anaerobic, Gram-negative, non-spore forming, rod-shaped bacterium that possesses the enzyme β-glucuronidase.
FH	Fraser Health Authority
GCDWQ	Guidelines For Canadian Drinking Water Quality
GVRD	Greater Vancouver Regional District
GVWD	Greater Vancouver Water District
GVWD Customer	A purchaser of water from the GVWD (eg. a local government)
HPC	Heterotrophic Plate Count
LCOC	Lake City Operations Centre (a Metro Vancouver facility)
MHO	Medical Health Officer
MV	Metro Vancouver
Primary Disinfection	Initial disinfection of the water as it enters the water transmission system
SCADA	Supervisory Control and Data Acquisition (system)
SCFP	Seymour Capilano Filtration Plant
Source Water	Untreated water as it enters the GVWD water supply intakes.
Total Coliform	Gram-negative, non-spore forming, rod-shaped bacterium that develops a salmon coloured colony within 24 hrs at 35°C on Chromocult media
Transmission System	Large diameter water mains, pump stations and water reservoirs operated by the GVWD.
VCH	Vancouver Coastal Health Authority
WQMRP	Water Quality Monitoring and Reporting Plan

3. Source (Untreated) Water Quality Monitoring

The GVWD monitors both the microbiological and chemical characteristics of the three major water sources, Capilano, Seymour and Coquitlam. Where a local government uses a water source other than that from the GVWD (i.e. from Capilano, Seymour or Coquitlam), it is the responsibility of that local government to monitor the source water. Every effort is made to carry out the various monitoring programs according to the frequencies discussed below, however, it should be recognized that occasionally a scheduled sample may be missed due to equipment failure or inclement weather conditions.

3.1 Microbiological Monitoring

3.1.1 Bacteria

An important consideration in the type and degree of treatment required for a water supply is the bacteriological quality of the source water. In order to assist this assessment process in the GVWD, and to maintain an ongoing record of source water quality, samples of untreated water are collected at the water supply intakes daily and analyzed for total coliforms, *E. coli*, and HPC.

3.1.2 *Giardia and Cryptosporidium*

The GVWD routinely monitors the source waters at the water supply intakes for *Giardia and Cryptosporidium*. Once a month a sample is taken at Coquitlam intake, SCFP Recycled Clarified Water, and Capilano intake. Analysis is carried out at the Enhanced Water Testing Laboratory, British Columbia Centre for Disease Control.

3.2 Chemical and Physical Monitoring

3.2.1 Turbidity

Since elevated turbidity levels in water may interfere with disinfection, it is important that a water utility monitors the turbidity of the source water on a regular basis. Samples are collected daily from all three sources and analyzed for turbidity in the laboratory. In addition, the GVWD has in-line turbidity monitors at all water supply intakes. Results from these monitors are transmitted via SCADA to Systems Control where appropriate action (changes in the operation of the water system) can be taken should a turbidity problem develop.

3.2.2 General Chemical and Physical Quality

The chemical and physical characteristics of each water supply (before treatment) are tested on a routine basis according to the frequencies shown in Table 2. Monitoring is used to demonstrate compliance with the GCDWQ, provide up-to-date background information on water quality and to assess long term changes. Some water quality characteristics, such as iron, ammonia and organic carbon, are monitored more frequently by the GVWD depending on operational requirements and other needs. Samples for source water analysis are collected up-stream of water treatment.

Table 2. Physical and Chemical Testing of GVWD Source Waters (S)

Parameter	Frequency
Aldicarb[1]	Annually
Aldrin + Dieldrin[1]	Annually
Aluminum (Tot. & Diss.)	Semi-annually
Antimony	Semi-annually
Arsenic	Semi-annually
Atrazine + Metabolites	Annually
Azinphos-Methyl	Annually
Barium	Semi-annually
Bendiocarb	Annually
Benzene	Annually
Benzo(α)pyrene	Semi-annually
Boron	Semi-annually
Bromide	Quarterly
Bromoxynil	Annually
Cadmium	Semi-annually
Carbaryl	Annually
Carbofuran	Annually
Carbon Tetrachloride	Annually
Chloride	Annually
Chloramine	Annually
Chlorpyrifos	Annually
Chromium	Semi-annually
Colour	Weekly
Copper	Semi-annually
Cyanazine[1]	Annually
Cyanide	Annually
Diazinon	Annually
Dicamba	Annually
Dichlorobenzene, 1,2-	Annually
Dichlorobenzene, 1,4-	Annually
Dichloroethane, 1,2-	Annually
Dichloroethylene, 1,1-	Annually
Dichloromethane	Annually
Dichlorophenol, 2,4-	Annually
Dichlorophenoxyacetic Acid 2,4 (2,4-D)	Annually
Diclofop-Methyl	Annually
Dimethoate	Annually
Dinoseb[1]	Annually
Diquat	Annually
Diuron	Annually
Ethylbenzene	Annually
Fluoride	Annually

Parameter	Frequency
Glyphosate	Annually
Iron	Semi-annually
Lead	Semi-annually
Malathion	Annually
Manganese	Semi-annually
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	Annually
Mercury	Semi-annually
Methoxychlor	Annually
Metolachlor[1]	Annually
Metribuzin	Annually
Monochlorobenzene	Annually
Nitrate	Semi-annually
N-nitrosodimethylamine (NDMA)	Annually
Nitrilotriacetic Acid (NTA)	Annually
Odour	Complaint Basis
Paraquat (As Dichloride)	Annually
Parathion	Annually
Pentachlorophenol	Annually
pH	Weekly
Phorate	Annually
Picloram	Annually
Radionuclides (Gross Alpha And Gross Beta)	Annually
Selenium	Annually
Simazine	Annually
Sodium	Semi-annually
Sulphate	Semi-annually
Sulphide (as H_2S)	N/A *
Taste	Complaint Basis
Temperature	Quarterly
Terbufos	Annually
Tetrachloroethylene	Annually
Tetrachlorophenol, 2,3,4,6-	Annually
Toluene	Annually
Total Diss. Solids (TDS)	Semi-annually
Trichloroethylene	Annually
Trichlorophenol, 2,4,6-	Annually
Trifluralin	Annually
Turbidity	Daily
Uranium	Annually
Vinyl Chloride	Annually
Xylenes (Total)	Annually
Zinc	Semi-annually

* Sulphide (as H_2S) not monitored on surface water supplies; should be monitored on well water.

[1]Need to confirm with Health if parameter still to be monitored as GCDWQ was removed for these parameters.

4. Transmission/Distribution System Monitoring – Treated Water

4.1 Bacteriology Sampling Stations – Type, Location and Number

Dedicated sampling stations connected directly to the water main are preferred (over convenience stations in public buildings) for a number of reasons including consistency of results and accessibility. If the sample is not constantly running the sample line should be of suitable size to allow water from the main to reach the sample tap after a brief period of flushing.

4.1.1 GVWD Transmission Mains and Reservoirs

Each day (except Christmas Day), the GVWD collects a sample from each water supply at a location downstream of water treatment and upstream of the first customer. The GVWD also collects samples weekly from sites at or just before the last connection on all supply mains as well as at other sites of interest. Samples are also collected weekly from all GVWD treated water reservoirs.

4.1.2 Local Government Distribution Mains

Local government sampling locations for monitoring the bacteriological quality of the delivered water are distributed as follows:

- 10% source water - ***this refers to water entering the local government distribution grid from the GVWD transmission mains*****.** Samples taken from GVWD transmission mains in the area can be used to meet this requirement as well as samples from the local government distribution system just downstream of the connection to the GVWD transmission main.
- 40% medium flow.
- 40% low flow.
- 10% dead ends, un-looped lines, stagnant areas.

If they deem it valuable, GVWD customers may consider using temporary sampling sites to provide a more comprehensive assessment of water quality throughout their distribution systems. This is independent of the 10% dead end requirements.

The number of samples per local government, as recommended by the Guidelines for Canadian Drinking Water Quality, is based on population (Table 3). Samples collected from all sites in the GVWD transmission system, reservoirs and from local government distribution systems are analyzed for total coliform and *E. coli* bacteria. All samples analyzed in the GVWD laboratory are also tested for the presence of Heterotrophic Plate Count bacteria on R2A media, with 5 days

incubation at 28°C. This test is used to monitor the system for the early warning signs of regrowth and overall water quality.

GVWD sampling locations are shown in Appendix 1. Sampling locations in the local government member's distribution systems are shown in Appendix 2.

Table 3. Bacteriology Monitoring – Local Government Members Samples

Local Government Members	Service Population (2016 Estimate)	Number of Sample Sites	Minimum Number of Samples per Month as Required by Schedule B of the BCDWPR
Anmore	2,255	4	4
Belcarra	647	13	4
Burnaby	242,704	64	105
Coquitlam	144,461	34	95
Delta	104,111	33	91
Langley City	26,639	14	27
Langley Township	119,775	5	93
Maple Ridge	83,590	20	84
New Westminster	71,685	13	72
North Van City	53,815	20	54
North Van District	89,711	39	90
Pitt Meadows	19,154	9	19
Port Coquitlam	60,473	14	60
Port Moody	34,904	10	35
Richmond	214,509	40	102
Surrey	524,433	51	133
Tsawwassen First Nation	862	7	4
University of British Columbia	13.848	15	12
University Endowment Lands	3,345	8	4
Vancouver	637,362	53	147
West Vancouver	47,373	18	47
Metro Vancouver Total[1]	**2,541,238**	**477**	**1282**

[1]Metro Vancouver total population includes areas not listed on table.

This monitoring program provides a representative picture of drinking water quality in the GVWD water system and within local government mains. It does not provide a definite picture of drinking water quality within buildings, where water quality can change significantly due to pipe materials, standing times, temperature, and other factors. It can be assumed that samples taken within buildings will be of different quality than those taken from sites on local government mains.

4.2 Chemical and Physical Parameters

4.2.1 GVWD Transmission Mains

Table 4 lists the chemical and physical testing program for GVWD transmission mains. Sampling for the effects of water main lining associated problems will require expanding the sampling for the associated parameters (eg. BTEX) into affected local government distribution systems as is described in the table.

Table 4. Chemical/Physical Monitoring in GVWD Transmission System

Parameter	GVWD Location	Minimum Frequency
Aluminum	GVWD sites downstream of SCFP	Semi-annually
Benzo(α)pyrene	GVWD mains with history of coal tar related problems	Semi-annually
Bromate	GVWD mains downstream of ozonation	Quarterly
Calcium	GVWD sites downstream of SCFP	Semi-annually
Chloride*	GVWD System. Downstream of Coquitlam at primary chlorination evaluation	Semi-annually
Chlorine - Free	All sites except source intakes	With every bacteriological sample
Chlorine - Total	GVWD Sites – primary disinfection evaluation stations	Daily
Ethylbenzene	GVWD mains with history of epoxy lining related problems	As required
Haloacetic acids	GVWD Sites – end of transmission system.	Quarterly
Odour	As required	Complaint Basis
pH	GVWD Sites – before and after corrosion control	Semi-annually
Sodium	GVWD Sites – after corrosion control and secondary disinfection	Semi-annually
Taste	As required	Complaint Basis
Temperature	GVWD Sites – primary disinfection evaluation stations	Daily
Toluene	GVWD mains with history of epoxy lining related problems and a representative number of affected local government distribution mains	As required
Total Dissolved Solids	GVWD Sites – pre and post corrosion control.	Semi-annually
Trihalomethanes	GVWD Sites – end of transmission system.	Quarterly
Turbidity	All GVWD Sites	With every bacteriological sample
Xylenes	GVWD mains with history of epoxy lining related problems	As required

*Confirm with Health if Chloride analysis should be dropped now that Coquitlam source chlorine disinfection is sodium hypochlorite not chlorine gas.

4.2.2 Local Government Distribution Mains

The proposed monitoring program for chemical and physical characteristics of the water in local government distribution mains is shown in Table 5. Except where otherwise noted, approximately 10% of the sample sites in each local government system will be sampled for the following parameters at the frequency shown. The sample sites for this testing will be selected with regard to local conditions including factors such as water source, pipe materials, location of water treatment facilities, etc.

Table 5. Chemical/Physical Monitoring in Local Government Members Distribution Systems

Parameter	Location	Minimum Frequency
Free Chlorine Residual	All	With every bacteriological sample
Copper	Local Government Members Distribution System **	Semi-annually
Haloacetic acids	Local Government Sites – cross section, representative of all three sources. Minimum of one per local government.	Quarterly
Iron	Representative Local Government sites – unlined iron and steel mains.	Semi-annually
Lead	Local Government Distribution System **	Semi-annually
Odour	Any or all sites.	Complaint Basis *
pH	Local Government Sites – cross section, representative of all three sources. Minimum of one per local government.	Semi-annually
Taste	Any or all sites.	Complaint Basis *
Temperature	Representative Local Government sites.	With every bacteriological sample
Trihalomethanes	Local Government Sites – cross section, representative of all sources, minimum of three per local government.	Quarterly
Turbidity	All	With every bacteriological sample
Vinyl Chloride	Local Government sites where PVC pipe is used in the distribution system – minimum of one per potentially affected system.	Semi-annually
Zinc	Local Government Distribution System**	Semi-annually

* If a complaint is received by Metro Vancouver, Metro Vancouver will bring it to the attention of the relevant local government.

** The GCDWQ stipulate that samples for metals analysis should be from a flushed location. This provides rationale to sample for metals in the distribution system as opposed to locations in buildings.

5. Reporting

Section 15 (b) of the DWPA requires a water supplier to report on monitoring results. As well, in accordance with Sec. 11 of the BCDWPR, each purveyor, local government and the GVWD must make an annual written report to the consumers and to its Medical Health Officer by the end of June. The annual report will include the quality of the water with respect to all microbiological and chemical standards. This report must also include the purveyor's plan (including time lines) for addressing any standards that are not met. Reporting is summarized in Table 6.

Table 6. Reports

Title	Report Content	Target Audience	Frequency
Routine Reports to Local Governments	Local Government distribution system microbiological analyses and related parameters (chlorine, turbidity, temperature, HPC).*	Local Governments** Health Authority	Batch basis. In general once per week.
GVWD Monthly Lab Reports	Microbiological analyses and related parameters (chlorine, turbidity, temperature, HPC) for sampling locations on GVWD transmission mains within local governments. Information is used to supplement monitoring data from the same local government for the same reporting period.	Health Authority	Monthly
GVWD Annual Water Quality Report	GVWD source water microbiological, chemical and physical quality, GVWD treated water quality, local government water quality. Summary presentation of all monitoring information.	Health Authority GVWD Board Local Government Councils General Public	Annually (Public Report by the end of June)
Local Government Annual Water Quality Reports	Local government distribution system water quality, microbiological and related parameters (see Table 5). Summary presentation of all source water chemistry and distribution system water monitoring information.	Health Authority Local Government Councils General Public	Annually (Public Report by the end of June)

* Reports from the MV lab for samples from local governments using the MV lab.

** Preliminary reports are provided verbally or by electronic mail immediately if the MV laboratory suspects a problem at a particular sample site. Written reports are sent out by the MV lab only after data have been certified. Results not meeting standards will be highlighted in written reports where possible.

The WQMRP has been accepted by both Vancouver Coastal Health and Fraser Health. The WQMRP is intended to fully meet the requirements of the DWPA and the BCDWPR however it

is acknowledged that there may be circumstances that the water supplier's MHO, DWO (or DWO delegate) may place additional requirements in accordance with the provisions of the DWPA.

5.1 Unusual Occasions

Public Health should be notified in the situations shown in Table 7.

Table 7. Notification for Unusual Situations Affecting Water Potability

Situation	Notifying Agency	Agency Notified	Time Frame For Notification
GVWD *E. Coli* Positive Sample	GVWD	VCH or FH DWO* Local government(s) [1]	Immediate
Local government *E. Coli* Positive Sample	Laboratory [2] Local government [3]	VCH or FH DWO	Immediate
Chemical Contamination - GVWD	GVWD	VCH or FH DWO Local government(s) [1]	Immediate
Chemical Contamination - Local government	Local government	VCH or FH DWO	Immediate
Turbidity > 5 NTU (Coquitlam source only)	GVWD	VCH or FH MHO Local government(s) [1]	Immediate
Water Treatment Failure – Source Water (Primary Treatment)	GVWD	VCH or FH MHO Local government(s) [1]	Immediate (As per DWPA)
Loss of Pressure	Local government	VCH or FH DWO GVWD	Immediate
Line Break [4] – Local government	Local government	VCH or FH DWO	As required by Health Authority
Line Break [4] – GVWD	GVWD	Local government(s)	As required by Local government(s)
Line Break [5] – Local government	Local government	VCH or FH MHO	Immediate
Line Break [5] – GVWD	GVWD	VCH or FH MHO Local government(s) [1]	Immediate

* Geographically determined (if issue is in VCH, then it will be VCH DWO)

1. Affected local government(s) are required to notify local public health contact.
2. Laboratory to immediately notify the MHO, the DWO (or delegates) and the water supplier as per section 12 (1) of the DWPA.
3. Local government to immediately notify the MHO, the DWO (or delegates) as per section 12 (2) of the DWPA.
4. With no suspected contamination.
5. With suspected contamination.

Appendix 1

GVWD Drinking Water Quality Monitoring Sites

GREATER VANCOUVER WATER DISTRICT (GVWD)

POTABLE WATER SAMPLING SITES

Sample Number	Site Name	Municipality
GV-005	Seymour main #2 (before SCFP) (untreated water)	North Vancouver
GV-007	Seymour Intake (untreated water)	North Vancouver
GV-009	Capilano Intake (untreated water)	North Vancouver
GV-010	Stanley Park	Vancouver
GV-011	Coquitlam Intake (untreated water)	Coquitlam
GV-012	Haney Moody	Coquitlam
GV-013	Newton Reservoir #2	Surrey
GV-014	Vancouver Heights Reservoir	North Burnaby
GV-015	19th and Stride	Burnaby
GV-016	Kersland Reservoir #1	Vancouver
GV-017	North Road Main at Hume Park	New Westminster
GV-019	Scott Road and Annacis No. 2 Main	Surrey
GV-021	Glenmore Tank # 1	West Vancouver
GV-022	Glenmore Tank # 2	West Vancouver
GV-023	Sasamat Reservoir	Vancouver
GV-024	McDonald Beach (Angus Dr. Main - North Arm Crossing)	Richmond
GV-025	Whalley Reservoir	Surrey
GV-026	Burnaby Tank	Burnaby
GV-027	Jackson and Brunette (Sapperton Main)	Coquitlam
GV-028	Westburnco Reservoir	New Westminster
GV-029	Point Roberts Supply Main	Tsawwassen - Delta
GV-030	Hellings Tank	North Delta
GV-031	Barnston Island Main	Langley
GV-032	Burnaby Mountain Reservoir	Burnaby
GV-033	Prospect Reservoir	North Vancouver
GV-034	Clayton - Langley Main	Langley
GV-035	23rd Street and Alden (Cap #7 Main)	North Vancouver

GREATER VANCOUVER WATER DISTRICT (GVWD)

POTABLE WATER SAMPLING SITES

Sample Number	Site Name	Municipality
GV-038	Hill Ave. and 401 (North Bby Main)	Burnaby
GV-039	North Road and Gatineau Blvd. (East Bby Main)	Burnaby
GV-041	Royal Ave. and McBride (Queensborough Main)	New Westminster
GV-043	Annacis South	Delta
GV-044	North Road @ Chapman (Burnaby Mtn Main)	Burnaby
GV-047	Lynn Valley Main @ Sutherland & 22nd	North Vancouver
GV-050	37th Ave. Main	Vancouver
GV-051	Sunnyside Reservoir #1	Surrey
GV-052	Sunnyside Reservoir #2	Surrey
GV-053	Queensborough (Annacis Is. Main #4)	Surrey
GV-054	Bose Road and 126th Street (Surrey - Westerman Main)	Surrey
GV-055	Capilano #4 at Little Mountain	New Westminster
GV-057	Whalley - Kennedy Link Main	Surrey
GV-059	Beach Yard - Cap 7 Main	North Vancouver
GV-060	Ingleton #1 (Boundary #1 Main)	Burnaby
GV-061	Montrose Main	Burnaby
GV-062	Oak and Marine - West Crossing	Vancouver
GV-062A	Oak and Marine - East Crossing	Vancouver
GV-063	Oak and River (Shaughnessy Crossing)	Richmond
GV-064	Clayton Tank	Surrey
GV-065	Rice Mill Road (Lulu - Delta Main)	Richmond
GV-066	Ferry and Dyke (River Rd West Main)	Ladner - Delta
GV-068	Grandview - Sunnyside Main	Surrey
GV-069	Central Park Reservoir	Burnaby
GV-069A	Tilbury Main @ Central Park	Burnaby
GV-069B	South Burnaby Main @ Central Park	Burnaby
GV-070	Viewmount (Port Moody Main #1)	Port Moody

GREATER VANCOUVER WATER DISTRICT (GVWD)

POTABLE WATER SAMPLING SITES

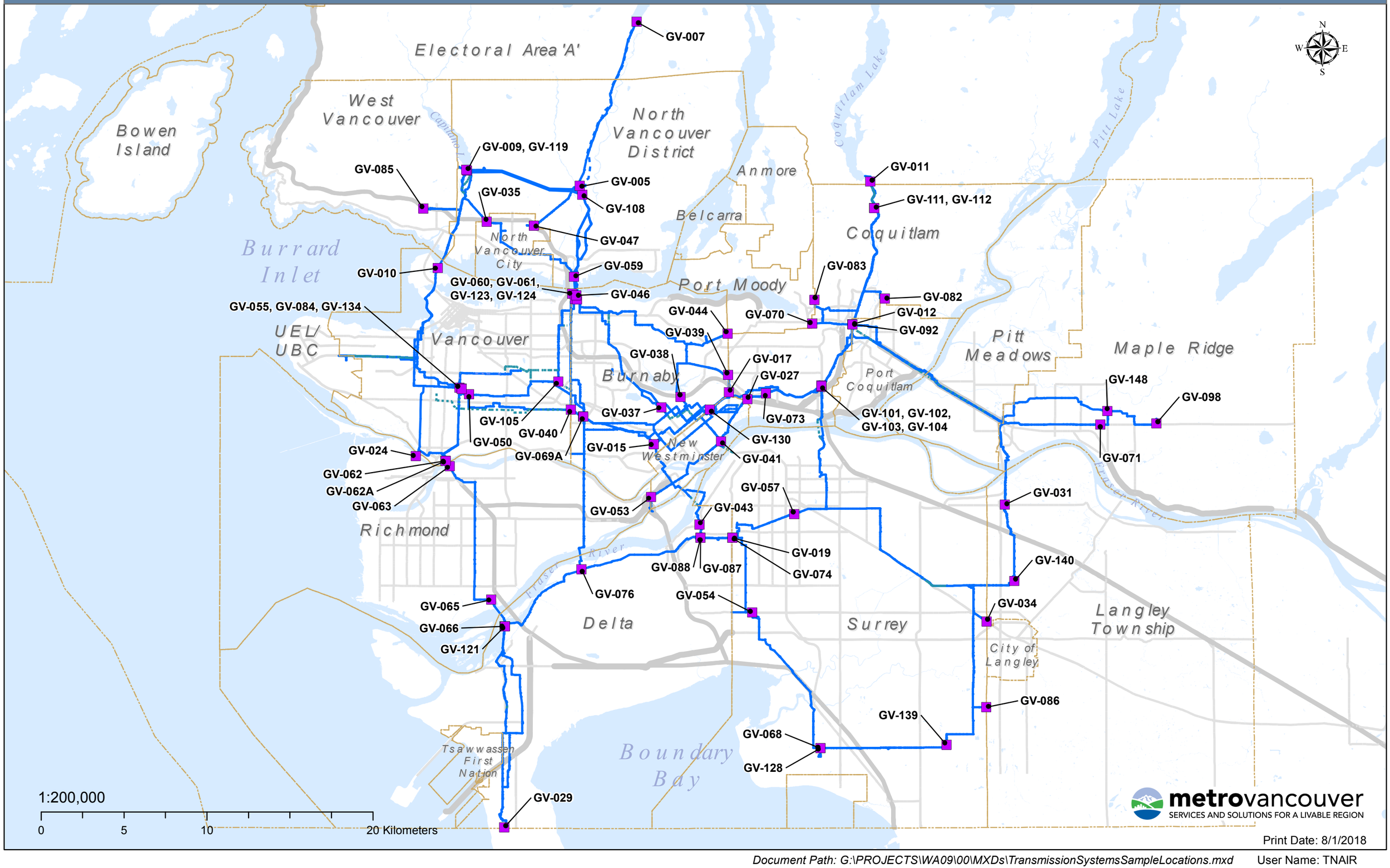
Sample Number	Site Name	Municipality
GV-071	Haney Main #2	Maple Ridge
GV-073	Sapperton Main at King Edward	Coquitlam
GV-074	86th Ave Main @ Scott Rd. and Hellings	Surrey
GV-075	Newton Reservoir #1	Surrey
GV-076	Tilbury Main @ River Rd.	Delta
GV-078	Kennedy Reservoir	Surrey
GV-079	Cape Horn Reservoir	Coquitlam
GV-082	Oxford Heights Main	Port Coquitlam
GV-083	Ioco (Port Moody Main #2)	Coquitlam
GV-084	Seymour Feed at Little Mtn.	Vancouver
GV-085	Mathers Main #2	West Vancouver
GV-086	36th Ave. Main @ 196th Street	Langley
GV-087	Annacis Main #2 @ Devon Gardens	Delta
GV-088	River Road East Main @ Devon Gardens	Delta
GV-090	Grandview Reservoir	Surrey
GV-092	Coquitlam Main #3	Coquitlam
GV-094	Greenwood Reservoir	North Vancouver
GV-095	Maple Ridge Reservoir	Maple Ridge
GV-097	Pebble Hill Reservoir - Cell #3	Tsawwassen - Delta
GV-097A	Pebble Hill Reservoir - Feed Main #2	Tsawwassen - Delta
GV-097B	Pebble Hill Reservoir - All Cells (Suction Header)	Tsawwassen - Delta
GV-097C	Pebble Hill Reservoir - Cell #1	Tsawwassen - Delta
GV-097D	Pebble Hill Reservoir - Cell #2	Tsawwassen - Delta
GV-098	Maple Ridge Chamber Main	Maple Ridge
GV-101	Port Mann Main at Cape Horn *Chlorine only site*	Coquitlam

GREATER VANCOUVER WATER DISTRICT (GVWD)

POTABLE WATER SAMPLING SITES

Sample Number	Site Name	Municipality
GV-102	Coq. #3 Main East at Cape Horn *Chlorine only site*	Coquitlam
GV-103	Coq. #3 Main West at Cape Horn (Sapperton #2) *Chlorine only site*	Coquitlam
GV-104	Coq. #2 Main at Cape Horn *Chlorine only site*	Coquitlam
GV-105	Boundary Road Main #5	Vancouver
GV-108	Seymour Main #5	North Vancouver
GV-111	Coquitlam No. 2 Main	Coquitlam Watershed
GV-112	Coquitlam No. 3 Main	Coquitlam Watershed
GV-113	Central Park Main	Burnaby
GV-119	Capilano before Break Head Tank	North Vancouver
GV-121	Ferry and Dyke - (Lulu Island - Delta Main)	North Vancouver
GV-123	Boundary Rd #4 Line Valve @ Van Heights *Chlorine only site*	Burnaby
GV-124	North Burnaby Main @ Van Heights *Chlorine only site*	Burnaby
GV-126	Seymour at Westburnco	New Westminster
GV-127	Westburnco 1st and 11th (Douglas Rd Main)	Burnaby
GV-128	Grandview from Newton (South Surrey Supply Main)	Surrey
GV-134	COV feed at Little Mountain	Vancouver
GV-135	Little Mountain Reservoir Cell # 1	Vancouver
GV-136	Little Mountain Reservoir Cell # 1	Vancouver
GV-137	Little Mountain Reservoir Cell # 2	Vancouver
GV-138	Little Mountain Reservoir Cell # 2	Vancouver
GV-139	Grandview Pump Station (Grandview Main)	City of Langley
GV-140	Willoughby Pump Station (Barnston Main)	City of Langley
GV-148	Maple Ridge Main - West	Maple Ridge

Metro Vancouver Water Transmission Line Sampling Locations



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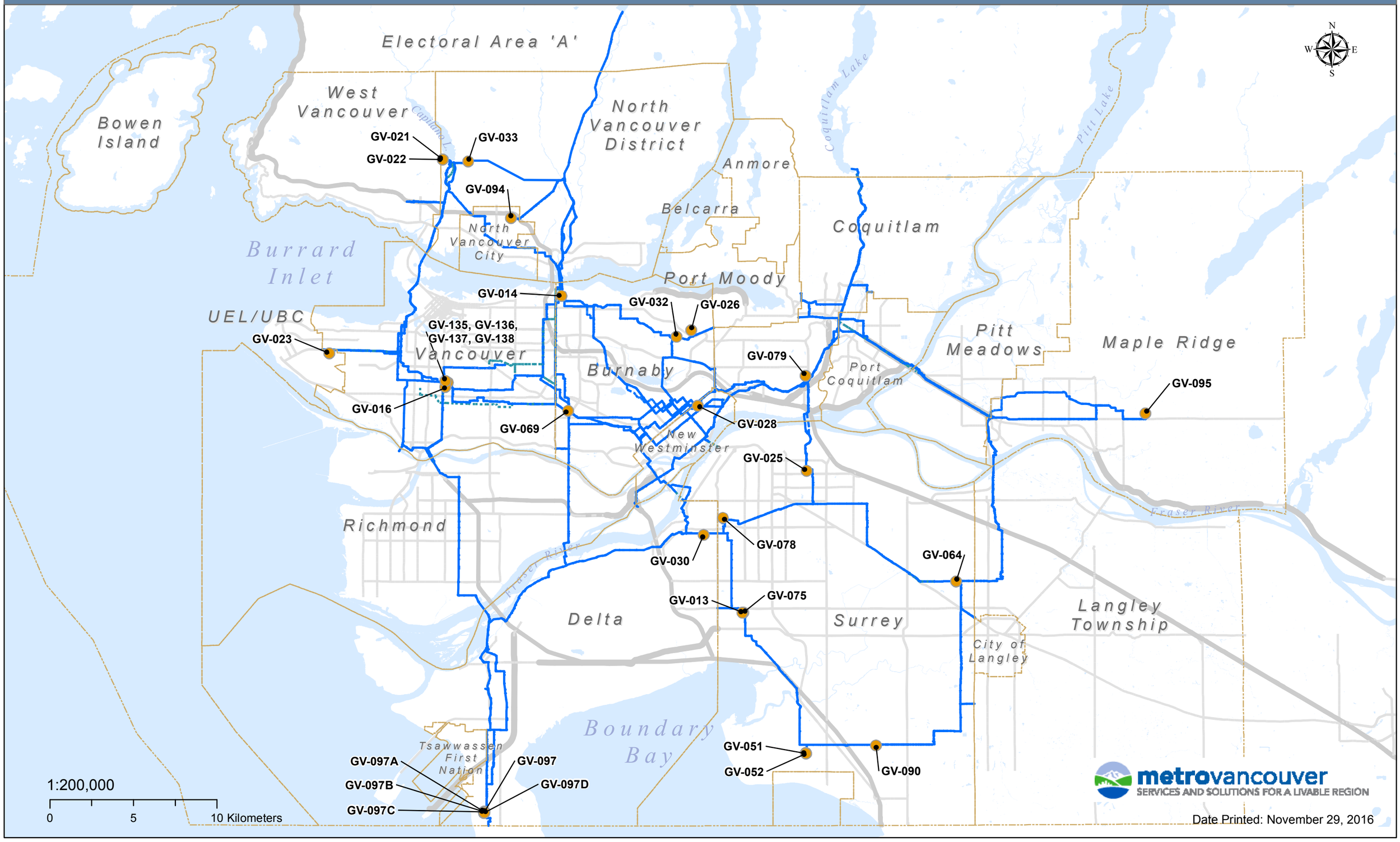
Metro Vancouver Reservoir Sampling Locations



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Appendix 2

Local Government Member's Drinking Water Quality Monitoring Sites

SURREY

POTABLE WATER SAMPLING SITES

Sample Number	Civic Address
SUR- 901	92 Ave & 180 St
SUR- 902	18995-87A Ave.
SUR- 903	19287-98A Ave.
SUR- 904	Triggs Road
SUR- 905	170 A St. & 102 Ave.
SUR- 906	161 St & 102 Ave.
SUR- 907	10796 155A St. on 108 Ave
SUR- 908	112 Ave & 159 A St.
SUR- 909	14669 Wellington Dr.
SUR- 910	115 Ave. & Bedford Dr.
SUR- 911	Bridgeview Pump Station – 12893 114A Ave.
SUR- 912	10680 Timberland Rd.
SUR- 913	98 A Ave & 118B St.
SUR- 914	105 Ave. & 132 St.
SUR- 915	Whalley Pump Station
SUR- 916	97 A Ave & 137 St
SUR- 917	13031 Lanark Place
SUR- 918	Glen Place and Lauder Dr.
SUR- 919	92 A Ave. & 151 St.
SUR- 920	162 St. & 90 Ave.
SUR- 921	107 A St. & 80 Ave.
SUR- 922	7768 155 St.
SUR- 923	8241 120 A St.
SUR- 924	138 St. & 74 Ave.
SUR- 925	Newton Station 62 Ave. & 128St.
SUR- 926	12059 56 Ave.

SURREY

POTABLE WATER SAMPLING SITES

Sample Number	Civic Address
SUR- 927	City Works Yard – 66 Ave. & 148 St.
SUR- 928	15349 57 Ave.
SUR- 929	Lombard Pl. & 144A St.
SUR- 930	South of 3031 139 St.
SUR- 931	SW corner 124 St. & 24 Ave.
SUR- 932	1463 126A St
SUR- 933	Opposite 13341 15B Ave.
SUR- 934	16A Ave. & 146 St.
SUR- 935	11 Ave. & 164 St.
SUR- 936	17195 0 Ave.
SUR- 937	180 St. & 21A Ave.
SUR- 938	172 St. & 31 Ave.
SUR- 939	156 St & 38A Ave.
SUR- 940	Opposite 15909 24 Ave.
SUR- 941	57A Ave. & Old McLellan Rd.
SUR- 942	Behind 5963 176 St. (in lane)
SUR- 943	18412 54 Ave.
SUR- 944	60 Ave. & 189 St.
SUR- 945	Production Boulevard & 55 Ave.
SUR- 946	195B St. & 63 A Ave.
SUR- 947	192 St. & 68 Ave.
SUR- 948	172 St. & 66 Ave.
SUR- 949	182 St. & 74 Ave.
SUR- 951	2010 192 St.
SUR- 952	19026 28th Ave.

Water Quality Sites in City of Surrey

N

SUR-909 SUR-910 SUR-911 SUR-908 SUR-912 SUR-907 SUR-914 SUR-915 SUR-904 SUR-906 SUR-905 SUR-913 SUR-903 SUR-916 SUR-919 SUR-901 SUR-920 SUR-917 SUR-918 SUR-902 SUR-923 SUR-922 SUR-921 SUR-924 SUR-949 SUR-947 SUR-927 SUR-948 SUR-946 SUR-925 SUR-942 SUR-944 SUR-928 SUR-941 SUR-945 SUR-926 SUR-929 SUR-943 SUR-939 SUR-938 SUR-930 SUR-952 SUR-931 SUR-940 SUR-937 SUR-951 SUR-934 SUR-933 SUR-932 SUR-935 SUR-936

GV-015 GV-041 GV-053 GV-025 GV-057 GV-078 GV-043 GV-088 GV-087 GV-074 GV-019 GV-030 GV-076 GV-064 GV-140 GV-013 GV-054 GV-075 GV-034 GV-086 GV-068 GV-128 GV-052 GV-051 GV-090 GV-139

PMS-429 GV-031

0 1.25 2.5 5 KM

Legend

Sampling Stations

- Surrey
- Reservoir
- GVWD
- GVWD Water Main

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APPENDIX C

B.C. Drinking Water Protection Regulation

B.C. Reg. 200/2003
O.C. 508/2003

Deposited May 16, 2003

This consolidation is current to March 24, 2020.

Link to consolidated regulation (PDF)

Link to Point in Time

Drinking Water Protection Act

DRINKING WATER PROTECTION REGULATION

[includes amendments up to B.C. Reg. 237/2018, November 15, 2018]

Contents

Definitions

1 In this regulation:

"Act" means the *Drinking Water Protection Act*;

"building system" means a system, within a building, to which the British Columbia Plumbing Code applies, that receives water from a water supply system operating under a valid operating permit under the Act;

"connection" means the line from the water main to a dwelling, campsite or premises;

"decal" means an adhesive label that is issued and affixed to an operating permit at the time fees under this regulation are paid or remitted;

"fiscal year" means the period from April 1 in one year to March 31 in the next year;

"small system" means a water supply system that serves up to 500 individuals during any 24 hour period;

"system within a system" means a water supply system that, in the opinion of a drinking water officer or issuing official,

(a) redistributes water from a water supply system operating under a valid operating permit under the Act, and

(b) does not require further treatment processes, additional infrastructure or ongoing maintenance to prevent a drinking water health hazard.

[en. B.C. Reg. 352/2005, s. 1; am. B.C. Regs. 5/2007, App. 1, s. 1; 363/2008, s. 1; 87/2011, s. 1.]

Standards for potable water

2 The prescribed water quality standards for potable water are set out in Schedule A.

Domestic water system

3 The following are excluded from the definition of "domestic water system" in the Act:

(a) equipment, works and facilities constructed, operated or maintained

(i) under a licence, as defined in the *Water Sustainability Act*, for conservation, power or storage purposes,

(ii) under a permit issued under the *Water Sustainability Act*,

(iii) for bottled water production or distribution, or

(iv) for drinking water dispensing machines;

(b) a reservoir relating to a licence or permit referred to in paragraph (a);

(c) a building system;

(d) a system within a system.

[en. B.C. Reg. 352/2005, s. 2; am. B.C. Regs. 363/2008, s. 2; 87/2011, s. 2; 41/2016, s. 9 (a).]

Exemptions

3.1 The following are exempt from section 6 of the Act:

(a) a small system, if

(i) each recipient of the water from the small system has a point of entry or point of use treatment system that makes the water potable, and

(ii) the water supplier ensures that the location of non-potable water discharge and non-potable water piping are identified by markings that are permanent, distinct and easily recognized;

(b) a water supply system, including a small system, if

(i) the system does not provide water for human consumption or food preparation purposes,

(ii) the system is not connected to a water supply system that provides water for human consumption or food preparation purposes, and

(iii) the water supplier ensures that the location of non-potable water discharge and non-potable water piping are identified by markings that are permanent, distinct and easily recognized.

[en. B.C. Reg. 122/2013.]

Prescribed water supply systems

4 (1) All water supply systems are prescribed for the purposes of sections 8, 10, 11 and 22 (1) (b) of the Act.

(2) All water supply systems, except small systems, are prescribed for the purposes of section 9 of the Act.

[en. B.C. Reg. 352/2005, s. 4.]

Treatment

5 (1) In this section:

"surface water" means water from a source which is open to the atmosphere and includes streams, lakes, rivers, creeks and springs.

(2) For the purposes of section 6 (b) of the Act, drinking water from a water supply system must be disinfected by a water supplier if the water originates from

(a) surface water, or

(b) groundwater that, in the opinion of a drinking water officer, is at risk of containing pathogens.

[am. B.C. Regs. 352/2005, s. 5; 41/2016, s. 9 (b) and (c).]

Construction permits

6 (1) The following individuals are authorized to issue construction permits:

(a) a drinking water officer who is a professional engineer, or who is working under the direction of a professional engineer;

(b) a professional engineer who has been approved by a drinking water officer.

(2) An issuing official under subsection (1) may issue a construction permit to a person after receiving an application in a form satisfactory to the issuing official.

(3) A person does not require a construction permit

(a) if the person is undertaking emergency repairs to a water supply system,

(b) for a water supply system that is a tank truck or a vehicle water tank, or

(c) for a small system, provided that an issuing official waives the requirement for a construction permit.

(4) A valid and subsisting construction permit that was issued under section 2 of the Safe Drinking Water Regulation, B.C. Reg. 230/92, before the repeal of that regulation is deemed to be a construction permit issued under this regulation and remains valid until its expiration date unless earlier surrendered, suspended or cancelled.

[am. B.C. Reg. 352/2005, s. 6.]

Operating permits and fees

7 (1) A drinking water officer may issue an operating permit to a water supplier after receiving

(a) an application for an operating permit in a form satisfactory to the drinking water officer, and

(b) the fee set out in Schedule C.

(2) An operating permit in force on March 31 of a year expires on March 31 of that year.

(3) Despite subsection (2), an operating permit issued for a period of less than 12 months expires on the date specified on the approved application.

(4) A drinking water officer may renew an operating permit if

(a) the operating permit was in force anytime during the 12 months prior to the renewal in respect of the same water supply system, and

(b) the fee set out in Schedule C is paid before the effective date of the renewal.

(5) Approval is given for the remission of a fee paid under this section if

(a) the water supplier applies for the remission, and

(b) the fee is for a month of the fiscal year for which the water supplier was not required to have the operating permit to which the fee applies.

(6) A valid and subsisting operating permit that was issued under section 4 of the Safe Drinking Water Regulation, B.C. Reg. 230/92, before the repeal of that regulation is deemed to be an operating permit issued under this regulation and remains valid until its expiration date unless earlier surrendered, suspended or cancelled.

[en. B.C. Reg. 5/2007, App. 1, s. 2.]

Decals

7.1 (1) If, in accordance with section 7, an operating permit is issued or renewed, a drinking water officer must issue a decal to the water supplier to cover the period for which the fee is paid.

(2) If an operating permit does not bear a decal or if that decal does not cover the current date, then the operating permit is not valid.

[en. B.C. Reg. 5/2007, App. 1, s. 2.]

Permits and decals not transferable

7.2 An operating permit or a decal is not transferable.

[en. B.C. Reg. 5/2007, App. 1, s. 2.]

Temporary facilities

7.3 Despite sections 7 and 7.1, if an operating permit is issued for no more than 14 days during a fiscal year, then

(a) approval is given for a reduction in the applicable fee so that the water supplier is not required to pay the fee set out in the Schedule, and

(b) the operating permit is not required to bear a decal to be valid.

[en. B.C. Reg. 5/2007, App. 1, s. 2.]

Water monitoring analysis

8 (1) A water supplier must transport water samples to a laboratory in accordance with the procedures established by a drinking water officer.

(2) For the purpose of section 11 (1) of the Act, a water supplier must monitor for total coliform bacteria and, effective April 1, 2006, *Escherichia coli*, at the frequencies set out in Schedule B of this regulation.

(3) Despite subsection (2), a drinking water officer may establish different sampling frequencies for a water supplier.

(4) A laboratory carrying out monitoring analyses for the parameters referred to in subsection (2) must be approved in writing by the Provincial health officer.

(5) If requested to do so by a drinking water officer, a laboratory must provide to the drinking water officer, the water supplier, or both, a report

(a) listing all water samples sent by the water supplier to the laboratory, and

(b) describing, for all samples analyzed, the results of any monitoring analyses for total coliform bacteria and *Escherichia coli*.

[am. B.C. Reg. 352/2005, s. 7.]

Immediate reporting standard

9 (1) Subject to subsection (2), immediate reporting is required under section 12 of the Act if the water quality standards in Schedule A are not met for the fecal coliform bacteria or *Escherichia coli* parameters.

(2) Immediate reporting is not required if a water sample that failed to meet the immediate reporting standard

(a) was collected from a location in the water supply system before the water is treated for the removal or inactivation of pathogens,

(b) is not used for domestic purposes, or

(c) is water for which a public advisory to boil for drinking water has been issued.

Public notification

10 If water provided by a domestic water system is not or may not be potable water, the owner of a public premises that is served by the domestic water system must do both of the following:

(a) notify the public that the water is not potable water by posting a sign at every sink or drinking water fountain accessible to the public;

(b) if normal business practices provide an opportunity, verbally advise any person who may use the domestic water system for a domestic purpose that the water is not potable water.

Time limits for publication

11 For the purposes of section 15 (b) of the Act, a water supplier must prepare and make public, within 6 months of the end of the calendar year, an annual report of the results of the monitoring required by this regulation, its operating permit or the drinking water officer.

Qualification standards for persons operating water supply systems

12 (1) In this section, **"Environmental Operators Certification Program"** means the program of classification and certification for water supply system operators established in British Columbia by the Environmental Operators Certification Program Society.

(2) Subject to subsections (3) and (6), a person is qualified to operate, maintain or repair a water supply system if the person is certified by the Environmental Operators Certification Program for that class of system as classified under the Environmental Operators Certification Program.

(3) Subsection (2) applies to water supply systems classified as level 1 or level 2, and effective January 1, 2006, water supply systems classified as level 3.

(4) Despite section 4 (2) of this regulation, an operating permit may require a person to be certified to operate, maintain or repair a small system.

(5) Despite subsection (3), an operating permit may establish a later date on which subsection (2) applies to a water supply system.

(6) Subsection (2) does not apply to a person with specialist knowledge immediately relevant to maintenance or repair of a water supply system provided the maintenance or repair is conducted following procedures approved by a person certified by the Environmental Operators Certification Program.

[en. B.C. Reg. 352/2005, s. 8.]

Emergency response and contingency plan

13 (1) In this section, **"environmental health officer"** has the same meaning as in the *Public Health Act*.

(2) A water supplier must include the following in an emergency response and contingency plan:

(a) the names and telephone numbers of

(i) the management personnel for the water supply system,

(ii) the drinking water officer, medical health officer and environmental health officer, and

(iii) other agencies and officials specified by the drinking water officer;

(b) the persons referred to in paragraph (a) to be contacted in each type of emergency or abnormal operational circumstance;

(c) the steps to follow in the event of an emergency or abnormal operational circumstance;

(d) protocols to follow respecting public notice if an immediate reporting standard is not met.

(3) A water supplier must

(a) make the emergency response and contingency plan accessible to the staff of the water supplier, and

(b) provide a copy of the emergency response and contingency plan to the drinking water officer.

(4) A water supplier must make a summary of the emergency response and contingency plan accessible to the users served by its water supply system.

(5) A water supplier must not include in the summary referred to in subsection (4) any information that may reasonably pose a risk to the water supply system.

[am. B.C. Reg. 237/2018, Sch. 2.]

Well floodproofing

14 For the purpose of section 16 of the Act, the following persons must floodproof their wells in the manner described in section 63 (a) and (b) of the Groundwater Protection Regulation:

(a) the owner or operator of a well that provides or may provide drinking water and that is identified in an assessment as being at risk of flooding;

(b) the owner of a well completed after October 31, 2005 that is for the purpose of supplying a water supply system.

[en. B.C. Reg. 300/2004; am. B.C. Reg. 41/2016, s. 9 (d).]

Assessment response plan

15 For the purposes of section 22 (3) of the Act, an assessment response plan must include provisions to identify, eliminate and prevent cross connections with non-potable water sources.

Schedule A

Water Quality Standards for Potable Water

(sections 2 and 9)

Parameter:	Standard:
Fecal coliform bacteria	No detectable fecal coliform bacteria per 100 ml
Escherichia coli	No detectable *Escherichia coli* per 100 ml
Total coliform bacteria	
(a) 1 sample in a 30 day period	No detectable total coliform bacteria per 100 ml
(b) more than 1 sample in a 30 day period	At least 90% of samples have no detectable total coliform bacteria per 100 ml and no sample has more than 10 total coliform bacteria per 100 ml

Schedule B

Frequency of Monitoring Samples for Prescribed Water Supply Systems

(section 8)

Population Served by the Prescribed Water Supply System:	Number of Samples Per Month:

less than 5 000	4
5 000 to 90 000	1 per 1 000 of population
more than 90 000	90 plus 1 per 10 000 of population in excess of 90 000

Schedule C

[en. B.C. Reg. 5/2007, App. 1, s. 3.]

Operating Permit Fees

(section 7)

1 The operating permit fee for a fiscal year is:

(a)	for 1 - 14 connections	no charge
(b)	for 15 - 300 connections	$150
(c)	for 301 - 10 000 connections	$250
(d)	for 10 001 - 20 000 connections	$500
(e)	for more than 20 000 connections	$1 000

2 If an operating permit is issued for a period of less than 12 months, the fee is calculated using the following formula:

$$fee = \frac{n \times z}{12}$$

where

n is the number of calendar months of the fiscal year in which the permit will apply, and

z is the applicable fee under section 1.

[Provisions relevant to the enactment of this regulation: *Drinking Water Protection Act*, S.B.C. 2001, c. 9, sections 48 and 49]

APPENDIX D

Guidelines for Canadian Drinking Water Quality – Summary Table

Guidelines for Canadian Drinking Water Quality
Summary Table

Prepared by

Health Canada

In collaboration with the

Federal-Provincial-Territorial Committee on Drinking Water

of the

Federal-Provincial-Territorial Committee on Health and the Environment

September 2020

This document may be cited as follows:

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The document was prepared by Health Canada in collaboration with the Federal-Provincial-Territorial Committee on Drinking Water of the Federal-Provincial-Territorial Committee on Health and the Environment.

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Other documents for the Guidelines for Canadian Drinking Water Quality can be found on the following web page:
https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality.html

Table of Contents

Introduction

The Guidelines for Canadian Drinking Water Quality are established by Health Canada in collaboration with the Federal-Provincial-Territorial Committee on Drinking Water (CDW) and other federal government departments. They are published by Health Canada. This table is a summary of the values and key information from each of the guidelines. It is updated regularly and published on Health Canada's website (https://www.canada.ca/en/health-canada/services/environmental-workplace-health/water-quality/drinking-water.html).

Each guideline was established based on current, published scientific research related to health effects, aesthetic effects, and operational considerations. Guidelines (maximum acceptable concentrations or treatment goals) are based on a comprehensive review of the known health effects associated with each contaminant, on exposure levels and on the availability of treatment and analytical technologies. Aesthetic objectives (e.g., for taste or odour) are provided when they play a role in determining whether consumers will consider the water drinkable. Operational guidance values are provided when a substance may interfere with or impair a treatment process or technology (e.g., turbidity interfering with chlorination or UV disinfection) or adversely affect drinking water infrastructure (e.g., corrosion of pipes).

Guidelines for Canadian Drinking Water Quality are established specifically for contaminants that meet all of the following criteria:

1. Exposure to the contaminant could lead to adverse health effects in humans;
2. The contaminant is frequently detected or could be expected to be found in a large number of drinking water supplies throughout Canada; and
3. The contaminant is detected, or could be expected to be detected, in drinking water at a level that is of possible human health significance.

If a contaminant or issue of interest does not meet all these criteria, Health Canada and CDW may choose not to establish a numerical guideline or develop a guideline technical document. In that case, advice may be provided through a guidance document in order to convey operational or management information related to a contaminant or issue of concern.

Guidelines are systematically reviewed to assess the need to update them. When a guideline is reaffirmed, both the year of the original publication and the year of reaffirmation are shown after the name of the parameter.

Science-based guideline technical documents and guidance documents are published to support the *Guidelines for Canadian Drinking Water Quality*. These are developed following a literature review, internal and external peer-reviews, public consultations, and approval by federal, provincial and territorial partners. For more information on specific guidelines, please refer to the guideline technical document or guidance document for the parameter of concern, available on the Health Canada website (https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality.html)

Acronyms

A	acceptability (parameter type)
ALARA	as low as reasonably achievable
AO	aesthetic objective
CDW	Federal-Provincial-Territorial Committee on Drinking Water
D	disinfectant (parameter type)
DBP	disinfectant by-product (parameter type)
HPC	heterotrophic plate count
I	inorganic chemical (parameter type)
MAC	maximum acceptable concentration
NTU	nephelometric turbidity units
O	organic chemical (parameter type)
OG	operational guidance value
P	pesticide (parameter type)
QMRA	quantitative microbial risk assessment
T	treatment-related (parameter type)
TCU	true colour units

Tables

Table 1. Microbiological Parameters

In general, the highest priority guidelines are those dealing with microbiological contaminants, such as bacteria, protozoa and viruses. Since it is difficult to perform routine analysis of harmful microorganisms that might be present in inadequately treated drinking water, the microbiological guidelines focus on indicator organisms such as *E.coli* and total coliforms, and treatment goals for pathogens. The use of a source-to-tap approach that includes source water protection, adequate treatment, and a well maintained distribution system helps to reduce microorganisms to levels that have not been associated with illness and meet the guidelines outlined below.

Parameter (published, reaffirmed)	Guideline	Common Sources	Health Considerations	Applying the Guideline/Comments
Enteric protozoa: *Giardia* and *Cryptosporidium* (2019)	Treatment goal: Minimum 3 log removal and/or inactivation of cysts and oocysts	Human and animal faeces	*Giardia* and *Cryptosporidium* are commonly associated with gastrointestinal upset (nausea, vomiting, diarrhoea). Less common health effects vary. *Giardia* infections may include prolonged gastrointestinal upset, malaise and malabsorption. *Cryptosporidium* infections, in immunocompromised individuals, can occur outside the gastrointestinal tract.	Monitoring for *Cryptosporidium* and *Giardia* in source waters will provide valuable information for a risk-based assessment of treatment requirements. Depending on the source water quality, a greater log removal and/or inactivation may be required.
Enteric viruses (2019)	Treatment goal: Minimum 4 log reduction (removal and/or inactivation) of enteric viruses	Human faeces	Commonly associated with gastrointestinal upset (nausea, vomiting, diarrhoea); less common health effects can include respiratory symptoms, central nervous system infections, liver infections and muscular syndromes.	Enteric viruses have been detected in surface and groundwater sources. Routine monitoring for viruses is not practical, and assessing the vulnerability of source waters to viral contamination is difficult; thus, treatment is a way to reduce risk. Disinfection is a critical barrier.

Parameter (published, reaffirmed)	Guideline	Common Sources	Health Considerations	Applying the Guideline/Comments
Escherichia coli (*E. coli*) (2020)	MAC: None detectable per 100 mL	Human and animal faeces	*E. coli* is an indicator of fecal contamination that is used as a tool to verify the quality of the drinking water. Its detection indicates recent fecal contamination and that microorganisms capable of causing gastrointestinal illnesses may also be present. Pathogens in human and animal feces pose the greatest immediate danger to public health.	In water leaving a treatment plant, the presence of *E. coli* indicates a serious breach in treatment. In a distribution or storage system, detection of *E. coli* can indicate that the water has become contaminated during distribution. In non-disinfected groundwater, the presence of *E. coli* indicates that the groundwater has been affected by fecal contamination. *E. coli* should be monitored in conjunction with other indicators, as part of a source-to-tap approach to producing drinking water of an acceptable quality.
Total coliforms (2020)	MAC of none detectable/100 mL in water leaving a treatment plant and in non-disinfected groundwater leaving the well	Human and animal faeces; naturally occurring in water, soil and vegetation	Total coliforms are not used as indicators of potential health effects from pathogenic microorganisms; they are used as a tool to determine how well the drinking water treatment system is operating and to indicate water quality changes in the distribution system.	Total coliforms should be monitored in the distribution system because they are used to indicate changes in water quality. In water leaving a treatment plant, total coliforms should be measured in conjunction with other indicators to assess water quality; the presence of total coliforms indicates a serious breach in treatment. In a distribution and storage system, detection of total coliforms can indicate regrowth of the bacteria in biofilms or intrusion of untreated water. Detection of total coliforms from consecutive samples from the same site or from more than 10% of the samples collected in a given sampling period should be investigated. In non-disinfected groundwater, the presence of total coliforms may indicate that the system is vulnerable to contamination, or it may be a sign of bacterial regrowth.

Parameter (published, reaffirmed)	Guideline	Common Sources	Health Considerations	Applying the Guideline/Comments
Turbidity (2012)	Treatment limits for individual filters or units: - Conventional and direct filtration: ≤ 0.3 NTU[1] - slow sand and diatomaceous earth filtration: ≤ 1.0 NTU[2] - membrane filtration: ≤ 0.1 NTU[3]	Naturally occurring particles: *Inorganic*: clays, silts, metal precipitates *Organic*: decomposed plant & animal debris, microorganisms	Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	Guidelines apply to individual filter turbidity for systems using surface water or groundwater under the direct influence of surface water. The decision to exempt a waterworks from filtration should be made by the appropriate authority based on site-specific considerations, including historical and ongoing monitoring data. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less. For systems that use groundwater, turbidity should generally be below 1.0 NTU. Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU.

[1] in at least 95% of measurements either per filter cycle or per month; never to exceed 1.0 NTU.
[2] in at least 95% of measurements either per filter cycle or per month; never to exceed 3.0 NTU.
[3] in at least 99% of measurements per operational filter period or per month. Measurements greater than 0.1 NTU for a period greater than 15 minutes from an individual membrane unit should immediately trigger an investigation of the membrane unit integrity.

Table 2. Chemical and Physical Parameters

Guidelines for chemical and physical parameters are:

1. health based and listed as maximum acceptable concentrations (MAC);
2. based on aesthetic considerations and listed as aesthetic objectives (AO); or
3. established based on operational considerations and listed as operational guidance values (OG).

In general, the highest priority guidelines are those dealing with microbiological contaminants. Any measure taken to reduce concentrations of chemical contaminants should not compromise the effectiveness of disinfection.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
T	Aluminum (1998)		OG: < 0.1 (conventional treatment); < 0.2 (other treatment types)	Aluminum salts used as coagulants in drinking water treatment; naturally occurring	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans.	The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.
I	Ammonia (2013)	None required		Naturally occurring; released from agricultural or industrial wastes; added as part of chloramination for drinking water disinfection	Levels of ammonia, either naturally present in the source water or added as part of a disinfection strategy, can affect water quality in the distribution system (e.g., nitrification) and should be monitored. A guideline value is not necessary as it is produced in the body and efficiently metabolized in healthy people; no adverse effects at levels found in drinking water.	To help prevent nitrification, limit excess free ammonia entering the distribution system to below 0.1 mg/L, and preferably below 0.05 mg/L, measured as nitrogen. Nitrification can lead to the formation of nitrite/nitrate, decreased chloramine residual and increased bacterial count.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
I	Antimony (1997)	0.006		Naturally occurring (erosion); soil runoff; industrial effluents; leaching from plumbing materials and solder	**Health basis of MAC:** Microscopic changes in organs and tissues (thymus, kidney, liver, spleen, thyroid)	MAC takes into consideration analytical achievability; plumbing should be thoroughly flushed before water is used for consumption.
I	Arsenic (2006)	0.010 ALARA		Naturally occurring (erosion and weathering of soils, minerals, ores); releases from mining; industrial effluent	**Health basis of MAC:** Cancer (lung, bladder, liver, skin) (classified as human carcinogen) **Other:** Skin, vascular and neurological effects (numbness and tingling of extremities)	MAC based on treatment achievability; elevated levels associated with certain groundwaters; levels should be kept as low as reasonably achievable.
I	Asbestos (1989, 2005)	None required		Naturally occurring (erosion of asbestos minerals and ores); decay of asbestos-cement pipes		Guideline value not necessary; no evidence of adverse health effects from exposure through drinking water.
P	Atrazine (1993)	0.005		Leaching and/or runoff from agricultural use	**Health basis of MAC:** Developmental effects (reduced body weight of offspring) **Other:** Potential increased risk of ovarian cancer or lymphomas (classified as possible carcinogen)	MAC applies to sum of atrazine and its *N*-dealkylated metabolites - diethylatrazine, deisopropylatrazine, hydroxyatrazine, diaminochlorotriazine; Persistent in source waters.
P	Azinphos-methyl (1989, 2005)	0.02		Leaching and/or runoff from agricultural use	**Health basis of MAC:** Neurological effects (plasma cholinesterase)	All uses were phased out by 2012.
I	Barium (2020)	2.0		Naturally occurring; releases or spills from industrial uses	**Health basis of MAC:** Kidney effects	MAC is for total barium and takes into consideration exposure estimates from all sources.
O	Benzene (2009)	0.005		Releases or spills from industrial uses	**Health basis of MAC:** Bone marrow (red and white blood cell) changes and cancer (classified as human carcinogen) **Other:** Blood system and immunological responses	MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing.
O	Benzo[*a*]pyrene (2016)	0.000 04		Leaching from liners in water distribution systems	**Health basis of MAC:** Stomach tumours (classified as human carcinogen)	

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
I	Boron (1990)	5		Naturally occurring; leaching or runoff from industrial use	**Health basis of MAC:** Reproductive effects (testicular atrophy, spermatogenesis) **Other:** Limited evidence of reduced sexual function in men	MAC based on treatment achievability.
DBP	Bromate[3] (2018)	0.01		Contaminant in hypochlorite solution; by-product of drinking water disinfection with ozone	**Health basis of MAC:** Tumours of the testicular mesothelium (classified as a possible human carcinogen)	Efforts to reduce bromate concentrations must not compromise the effectiveness of disinfection. Bromate is difficult to remove from drinking water once formed. The recommended strategy is controlling the ozonation process; use of certified treatment chemicals and; appropriate handling and storage of hypochlorite. Quarterly monitoring of raw water bromide is recommended to allow correlation to bromate or brominated DBPs.
P	Bromoxynil (1987, 2005)	0.005		Leaching or runoff from agricultural use	**Health basis of MAC:** Reduced liver to body weight ratios	
I	Cadmium (2020)	0.007		Leaching from galvanized pipes and solders ; industrial and municipal waste	**Health basis of MAC:** Kidney damage. **Other:** Bone effects (decreased bone density)	MAC is for total cadmium and takes into consideration exposure estimates from all sources. Sampling should be done at the tap to reflect average exposure similar to sampling done for lead. The contribution of cadmium in drinking water is generally from the galvanized steel used in pipes and well components. The best approach to minimize exposure to cadmium from drinking water is to replace galvanized steel and components. Drinking water treatment devices are also an effective option.
I	Calcium (1987, 2005)	None required		Naturally occurring (erosion and weathering of soils, minerals, ores)	No evidence of adverse health effects from calcium in drinking water.	Guideline value not necessary; calcium contributes to hardness.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
P	Carbaryl (1991, 2005)	0.09		Leaching or runoff from agricultural use	**Health basis of MAC:** Decreased kidney function (may be rapidly reversible after exposure ceases)	MAC takes into consideration exposure estimates from all sources.
P	Carbofuran (1991, 2005)	0.09		Leaching or runoff from agricultural use	**Health basis of MAC:** Nervous system effects (cholinesterase inhibition) and growth suppression	MAC takes into consideration exposure estimates from all sources.
O	Carbon tetrachloride (2010)	0.002		Industrial effluents and leaching from hazardous waste sites	**Health basis of MAC:** Liver toxicity **Other:** Kidney damage; liver tumours (classified as probable carcinogen)	MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing.
D	Chloramines (2020)	None required		Monochloramine is used as a secondary disinfectant; formed in drinking water when chlorine is added in the presence of ammonia	Guideline value not necessary due to low toxicity at concentrations found in drinking water	Chloramine residuals in most Canadian drinking water distribution systems are typically below 4 mg/L.
DBP	Chlorate (2008)	1		By-product of drinking water disinfection with chlorine dioxide; possible contaminant in hypochlorite solution	**Health basis of MAC:** Thyroid gland effects (colloid depletion)	As chlorate is difficult to remove once formed, its formation should be controlled by respecting the maximum feed dose of 1.2 mg/L of chlorine dioxide and managing /monitoring formation in hypochlorite solutions.
I	Chloride (1979, 2005)		AO: ≤ 250	Naturally occurring (seawater intrusion); dissolved salt deposits, highway salt, industrial effluents, oil well operations, sewage, irrigation drainage, refuse leachates	A guideline value is not necessary as health effects are not of concern at levels found in drinking water.	Based on taste and potential for corrosion in the distribution system.
D	Chlorine (2009)	None required		Used as drinking water disinfectant	A guideline value is not necessary due to low toxicity at concentrations found in drinking water	Free chlorine concentrations in most Canadian drinking water distribution systems range from 0.04 to 2.0 mg/L.
D	Chlorine dioxide (2008)	None required		Used as drinking water disinfectant (primary disinfection only)	A guideline value for chlorine dioxide is not required because of its rapid reduction to chlorite in drinking water	A maximum feed dose of 1.2 mg/L of chlorine dioxide should not be exceeded to control the formation of chlorite and chlorate.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
DBP	Chlorite (2008)	1		By-product of drinking water disinfection with chlorine dioxide	**Health basis of MAC:** Neurobehavioural effects (lowered auditory startle amplitude, decreased exploratory activity), decreased absolute brain weight, altered liver weights	Chlorite formation should be controlled by respecting the maximum feed dose of 1.2 mg/L of chlorine dioxide and managing /monitoring formation in hypochlorite solutions.
P	Chlorpyrifos (1986)	0.09		Leaching and/or runoff from agricultural or other uses	**Health basis of MAC:** Nervous system effects (cholinesterase inhibition)	Not expected to leach significantly into groundwater.
I	Chromium (2018)	0.05		Naturally occurring (erosion of minerals); releases or spills from industrial uses	**Health basis of MAC:** Hyperplasia of the small intestine from chromium (VI). **Other:** No definitive evidence of toxicity to Chromium (III).	MAC protects against both cancer and non-cancer effects from Chromium (VI) and is established for total chromium.
T	Colour (1979, 2005)		AO: ≤ 15 TCU	Naturally occurring organic substances, metals; industrial wastes	A guideline value is not necessary as health effects are not of concern at levels found in drinking wat**er.**	May interfere with disinfection; removal is important to ensure effective treatment.
I	Copper (2019)	2	AO: 1	Naturally occurring; leaching from copper piping	**Health basis of MAC:** Gastronintestinal effects (short-term), liver and kidney effects (long-term).	Water samples should be taken at the tap. MAC is for total copper and protects against both short term and long term exposures. AO is based on taste and water discolouration (resulting in staining of laundry and plumbing fixtures).
I	Cyanide (1991)	0.2		Industrial and mining effluents; release from organic compounds	**Health basis of MAC:** No clinical or other changes at the highest dose tested	At the levels seen in Canadian waters, cyanide is not a concern as it can be detoxified to a certain extent in the human body.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
O	Cyanobacterial toxins (2018)	0.0015		Naturally occurring - released from populations of cyanobacteria (planktonic blooms and benthic mats)	**Health basis of MAC:** Liver effects	MAC is for total microcystins (intra- and extra-cellular) Note that infants can ingest a significantly larger volume of water per body weight. As a precautionary measure, where levels of total microcystins in treated water are detected above a reference value of 0.4 µg/L, the public in the affected area should use an alternate suitable source of drinking water (such as bottled water) to reconstitute infant formula.
P	Diazinon (1986, 2005)	0.02		Runoff from agricultural or other uses	**Health basis of MAC:** Nervous system effects (cholinesterase inhibition)	Not expected to leach significantly into groundwater.
P	Dicamba (1987, 2005)	0.12		Leaching or runoff from agricultural or other uses	**Health basis of MAC:** Liver effects (vacuolization, necrosis, fatty deposits and liver weight changes)	Readily leaches into groundwater.
O	1,2-Dichlorobenzene[2] (1987)	0.2	AO: ≤ 0.003	Releases or spills from industrial effluents	**Health basis of MAC:** Increased blood cholesterol, protein and glucose levels	AO based on odour; levels above the AO would render drinking water unpalatable.
O	1,4-Dichlorobenzene[2] (1987)	0.005	AO: ≤ 0.001	Releases or spills from industrial effluents; use of urinal deodorants	**Health basis of MAC:** Benign liver tumours and adrenal gland tumours (classified as probable carcinogen)	AO based on odour; levels above the AO would render drinking water unpalatable.
O	1,2-Dichloroethane (2014)	0.005		Releases or spills from industrial effluents; leachate from waste disposal	**Health basis of MAC:** Cancer of the mammary gland (classified as probable carcinogen)	The MAC protects against both cancer and non-cancer effects and takes into consideration all exposures from drinking water, which include ingestion as well as inhalation and dermal absorption during showering and bathing.
O	1,1-Dichloroethylene (1994)	0.014		Releases or spills from industrial effluents	**Health basis of MAC:** Liver effects (fatty changes)	

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
O	Dichloromethane (2011)	0.05		Industrial and municipal wastewater discharges	**Health basis of MAC:** Liver effects (liver foci and areas of cellular alteration). **Other:** Classified as probable carcinogen	The MAC protects against both cancer and non-cancer effects and takes into consideration all exposures from drinking water, which include ingestion as well as inhalation and dermal absorption during showering and bathing.
O	2,4-Dichlorophenol (1987, 2005)	0.9	AO: ≤ 0.0003	By-product of drinking water disinfection with chlorine; releases from industrial effluents	**Health basis of MAC:** Liver effects (cellular changes)	AO based on odour; levels above the AO would render drinking water unpalatable.
P	2,4-Dichlorophenoxy acetic acid (2,4-D) (1991)	0.1		Leaching and/or runoff from use as a weed controller; releases from industrial effluents	**Health basis of MAC:** Kidney effects (tubular cell pigmentation)	MAC takes into consideration exposure estimates from all sources.
P	Diclofop-methyl (1987, 2005)	0.009		Leaching and/or runoff from use as a weed controller; added directly to water to control aquatic weeds	**Health basis of MAC:** Liver effects (enlargement and enzyme changes)	Low potential for groundwater contamination.
P	Dimethoate (1986, 2005)	0.02		Leaching and/or runoff from residential, agricultural and forestry use	**Health basis of MAC:** Nervous system effects (cholinesterase inhibition)	MAC takes into consideration exposure estimates from all sources.
P	Diquat (1986, 2005)	0.07		Leaching and/or runoff from agricultural use; added directly to water to control aquatic weeds	**Health basis of MAC:** Cataract formation	Unlikely to leach into groundwater.
P	Diuron (1987, 2005)	0.15		Leaching and/or runoff from use in controlling vegetation	**Health basis of MAC:** Weight loss, increased liver weight and blood effects	High potential to leach into groundwater.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
O	Ethylbenzene (2014)	0.14	AO: 0.0016	Emissions, effluents or spills from petroleum and chemical industries	**Health basis of MAC:** Effects on the liver and pituitary gland. **Other:** Tumour formation at various sites in animals, including kidney, lung, liver and testes.	MAC protects against both cancer and non-cancer health effects. MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing. AO is based on odour.
I	Fluoride (2010)	1.5		Naturally occurring (rock and soil erosion); may be added to promote dental health	**Basis of MAC:** Moderate dental fluorosis (based on cosmetic effect, not health)	Beneficial in preventing dental caries.
DBP	Formaldehyde (1997)	None required		By-product of disinfection with ozone; releases from industrial effluents	A guideline value is not necessary as health effects are not of concern at levels found in drinking water.	A guideline value is not necessary, as levels in drinking water are below the level at which adverse health effects may occur.
P	Glyphosate (1987, 2005)	0.28		Leaching and/or runoff from various uses in weed control	**Health basis of MAC:** Reduced body weight gain	Not expected to migrate to groundwater.
DBP	Haloacetic acids – Total (HAAs)[3] (2008)	0.08 ALARA		By-product of drinking water disinfection with chlorine	**Health basis of MAC:** Liver cancer (DCA); DCA is classified as probably carcinogenic to humans **Other:** Other organ cancers (DCA, DBA, TCA); liver and other organ effects (kidney and testes weights) (MCA)	Refers to the total of monochloroacetic acid (MCA), dichloroacetic acid (DCA), trichloroacetic acid (TCA), monobromoacetic acid (MBA) and dibromoacetic acid (DBA); MAC is based on ability to achieve HAA levels in distribution systems without compromising disinfection; precursor removal limits formation.
T	Hardness (1979)	None required		Naturally occurring (sedimentary rock erosion and seepage, runoff from soils); levels generally higher in groundwater	Although hardness may have significant aesthetic effects, a guideline has not been established because public acceptance of hardness may vary considerably according to the local conditions; major contributors to hardness (calcium and magnesium) are not of direct public health concern	Hardness levels between 80 and 100 mg/L (as $CaCO_3$) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
I	Iron (1978, 2005)		AO: ≤ 0.3	Naturally occurring (erosion and weathering of rocks and minerals); acidic mine water drainage, landfill leachates, sewage effluents and iron-related industries	No evidence exists of dietary iron toxicity in the general population.	Based on taste and staining of laundry and plumbing fixtures.
I	Lead (2019)	0.005 ALARA		Leaching from plumbing (lead service lines, lead solder and brass fittings)	**Health basis of MAC:** Reduced intelligence in children measured as decreases in IQ is the most sensitive and well established health effect of lead exposure. There is no known safe exposure level to lead. **Other:** Possible effects include behavioral effects in children. Reduced cognition, increased blood pressure, and renal dysfunction in adults are also possible;.classified as probably carcinogenic to humans	MAC is for total lead. Lead levels should be kept as low as reasonably achievable. Sampling should be done at the tap to reflect average exposure. The most significant contribution of lead in drinking water is generally from the lead service line that supplies drinking water to the home. The best approach to minimize exposure to lead from drinking water is to remove the full lead service line. Drinking water treatment devices are also an effective option.
I	Magnesium (1978)	None required		Naturally occurring (erosion and weathering of rocks and minerals)	No evidence of adverse health effects from magnesium in drinking water, therefore a guideline value is not necessary.	No additional comments.
P	Malathion (1986, 2005)	0.19		Leaching and/or runoff from agricultural and other uses	**Health basis of MAC:** Nervous system effects (cholinesterase inhibition)	Not expected to leach into groundwater.
I	Manganese (2019)	0.12	AO: ≤ 0.02	Dissolution of naturally occurring minerals commonly found in soil and rock. Other sources include industrial discharge, mining activities and leaching from landfills.	**Health Basis of MAC:** Effects on neurological development and behaviour; deficits in memory, attention, and motor skills. **Other:** Formula-fed infants (where water containing manganese at levels above the MAC is used to prepare formula) may be especially at risk.	AO based on minimizing the occurrence of discoloured water, consumer complaints and staining of laundry.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
I	Mercury (1986)	0.001		Releases or spills from industrial effluents; waste disposal; irrigation or drainage of areas where agricultural pesticides are used	**Health basis of MAC:** Irreversible neurological symptoms	Applies to all forms of mercury; mercury generally not found in drinking water, as it binds to sediments and soil.
P	2-Methyl-4-chlorophenoxyacetic acid (MCPA) (2010)	0.1		Leaching and/or runoff from agricultural and other uses	**Health basis of MAC:** Kidney effects (increased absolute and relative weights, urinary bilirubin, crystals and pH) **Other:** Systemic, liver, testicular, reproductive/developmental and nervous system effects	Can potentially leach into groundwater.
O	Methyl tertiary-butyl ether (MTBE) (2006)		AO: ≤ 0.015	Spills from gasoline refineries, filling stations and gasoline-powered boats; seepage into groundwater from leaking storage tanks	The AO is lower than levels associated with potential toxicological effects, it is considered protective of human health. Studies on toxic effects remain inconclusive.	AO based on odour; levels above the AO would render water unpalatable.
P	Metolachlor (1986)	0.05		Leaching and/or runoff from agricultural or other uses	**Health basis of MAC:** Liver lesions and nasal cavity tumours	Readily binds to organic matter in soil; little leaching expected in soils with high organic and clay content
P	Metribuzin (1986, 2005)	0.08		Leaching and/or runoff from agricultural use	**Health basis of MAC:** Liver effects (increased incidence and severity of mucopolysaccharide droplets)	Leaching into groundwater depends on the organic matter content of the soil.
O	Monochlorobenzene (1987)	0.08	AO: ≤ 0.03	Releases or spills from industrial effluents	**Health basis of MAC:** Reduced survival and body weight gain	AO based on odour.
I	Nitrate (2013)	45 as nitrate; 10 as nitrate-nitrogen		Naturally occurring; leaching or runoff from agricultural fertilizer use, manure and domestic sewage; may be produced from excess ammonia or nitirification in the distribution system	**Health basis of MAC:** Methaemoglobinaemia (blue baby syndrome) and effects on thyroid gland function in bottle-fed infants **Other:** Classified as possible carcinogen under conditions that result in endogenous nitrosation	Systems using chloramine disinfection or that have naturally occurring ammonia should monitor the level of nitrate in the distribution system. Homeowners with a well should test concentration of nitrate in their water supply.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
I	Nitrilotriacetic acid (NTA) (1990)	0.4		Sewage contamination	**Health basis of MAC:** Kidney effects (nephritis and nephrosis) **Other:** Classified as possible carcinogen	MAC is based upon exposure mainly attributable (80%) to drinking water with 20% of exposure attributable to food.
I	Nitrite (2013)	3 as nitrite; 1 as nitrite-nitrogen		Naturally occurring; leaching or runoff from agricultural fertilizer use, manure and domestic sewage; may be produced from excess ammonia or nitirification in the distribution system	**Health basis of MAC:** Methaemoglobinaemia (blue baby syndrome) in bottle-fed infants less than 6 months of age **Other:** Classified as possible carcinogen under conditions that result in endogenous nitrosation	Systems using chloramine disinfection or that have naturally occurring ammonia should monitor the level of nitrite in the distribution system. Homeowners with a well should test concentration of nitrite in their water supply.
DBP	*N*-Nitroso dimethylamine (NDMA) (2010)	0.000 04		By-product of drinking water disinfection with chlorine or chloramines; industrial and sewage treatment plant effluents	**Health basis of MAC:** Liver cancer (classified as probable carcinogen)	MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing.; levels should be kept low by preventing formation during treatment.
A	Odour (1979, 2005)		Inoffensive	Biological or industrial sources	**Not applicable**	Important to provide drinking water with no offensive odour, as consumers may seek alternative sources that are less safe.
P	Paraquat (1986, 2005)	0.01 as paraquat dichloride; 0.007 as paraquat ion		Leaching and/or runoff from agricultural and other uses; added directly to water to control aquatic weeds	**Health basis of MAC:** Various effects on body weight, spleen, testes, liver, lungs, kidney, thyroid, heart and adrenal gland	Entry into drinking water unlikely from crop applications (clay binding); however, may persist in water for several days if directly applied to water.
O	Pentachlorophenol (1987, 2005)	0.06	AO: ≤ 0.03	By-product of drinking water disinfection with chlorine; industrial effluents	**Health basis of MAC:** Reduced body weight, changes in clinical parameters, histological changes in kidney and liver, reproductive effects (decreased neonatal survival and growth)	AO based on odour; levels above the AO would render drinking water unpalatable.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
O	Perfluorooctane Sulfonate (PFOS) (2018)	0.0006		Synthetic chemical used in consumer products and fire-fighting foams for their water and oil repellant properties.	**Health basis of MAC:** Adverse effects in the liver. Additional effects at low doses include thyroid and immune effects and changes in serum lipid levels.	Additive effects with PFOA were considered. The sum of PFOS and PFOA concentrations in drinking water divided by their respective MAC should not exceed 1.
O	Perfluorooactanoic Acid (PFOA) (2018)	0.0002		Synthetic chemical used in consumer products and fire-fighting foams for their water and oil repellant properties.	**Health basis of MAC:** Adverse effects in the liver. Additional effects at low doses include delay in mammary, estrogenic and developmental effects.	Additive effects with PFOS were considered. The sum of PFOA and PFOS concentrations in drinking water divided by their respective MAC should not exceed 1.
T	pH (2015)		7.0–10.5[4]	Not applicable	**Not applicable**	The control of pH is important to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.
P	Phorate (1986, 2005)	0.002		Leaching and/or runoff from agricultural and other uses	**Health basis of MAC:** Nervous system effects (cholinesterase inhibition)	Some potential to leach into groundwater.
P	Picloram (1988, 2005)	0.19		Leaching and/or runoff from agricultural and other uses	**Health basis of MAC:** Changes in body and liver weights and clinical chemistry parameters **Other:** Kidney effects (liver to body weight ratios and histopathology)	Significant potential to leach into groundwater.
I	Selenium (2014)	0.05		Naturally occurring (erosion and weathering of rocks and soils) and release from coal ash from coal-fired power plants and mining, refining of copper and other metals.	**Health basis of MAC:** chronic selenosis symptoms in humans following exposure to high levels **Other:** Hair loss, tooth decay, weakened nails and nervous system disturbances at extremely high levels of exposure	Selenium is an essential nutrient. Most exposure is from food; little information on toxicity of selenium from drinking water. Selenium can be found in non-leaded brass alloy where it is added to replace lead.
I	Silver (1986, 2005)	None required		Naturally occurring (erosion and weathering of rocks and soils)	**Not applicable**	Guideline value not required as drinking water contributes negligibly to an individual's daily intake.
P	Simazine (1986)	0.01		Leaching and/or runoff from agricultural and other uses	**Health basis of MAC:** Body weight changes and effects on serum and thyroid gland	Extent of leaching decreases with increasing organic matter and clay content.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
I	Sodium (1979)		AO: ≤ 200	Naturally occurring (erosion and weathering of salt deposits and contact with igneous rock, seawater intrusion); sewage and industrial effluents; sodium-based water softeners	For persons on strict sodium-reduced diets applying to all sources, levels in drinking water should be below 20 mg/L	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.
I	Strontium (2019)	7.0		Naturally occurring (erosion and weathering of rocks); effluents from mining or other industries	**Health basis of MAC**: Bone effects (adverse effects on bone formation in infants as well as rickets, osteomalacia)	MAC is protective of the most sensitive sub-population, infants.
I	Sulphate (1994)		AO: ≤ 500	Industrial wastes	High levels (above 500 mg/L) can cause physiological effects such as diarrhoea or dehydration	Based on taste; it is recommended that health authorities be notified of drinking water sources containing sulphate concentrations above 500 mg/L.
I	Sulphide (1992)		AO: ≤ 0.05	Can occur in the distribution system from the reduction of sulphates by sulphate-reducing bacteria; industrial wastes	Not applicable	Based on taste and odour; levels above the AO would render water unpalatable.
A	Taste (1979, 2005)		Inoffensive	Biological or industrial sources	Not applicable	Important to provide drinking water with no offensive taste, as consumers may seek alternative sources that are less safe.
T	Temperature (1979, 2005)		AO: ≤ 15°C	Not applicable	Not applicable	Temperature indirectly affects health and aesthetics through impacts on disinfection, corrosion control and formation of biofilms in the distribution system.
P	Terbufos (1987, 2005)	0.001		Leaching and/or runoff from agricultural and other uses	**Health basis of MAC:** Nervous system effects (cholinesterase inhibition)	Based on analytical achievability.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
O	Tetrachloroethylene (2015)	0.01		Spill or other point source of contamination	**Health basis of MAC:** Neurological effects (colour confusion) in humans **Other:** Classified as probably carcinogenic to humans, based on sufficient evidence in experimental animals and limited evidence in humans	Primarily a concern in groundwater, as it volatilizes easily from surface water; MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing.
O	2,3,4,6-Tetrachlorophenol (1986, 2005)	0.1	AO: ≤ 0.001	By-product of drinking water disinfection with chlorine; industrial effluents and use of pesticides	**Health basis of MAC:** Developmental effects (embryotoxicity)	AO based on odour; levels above the AO would render drinking water unpalatable.
O	Toluene (2014)	0.06	AO: 0.024	Emissions, effluents or spills from petroleum and chemical industries	**Health basis of MAC:** Adverse neurological effects, including vibration thresholds, colour discrimination, auditory thresholds, attention, memory and psychomotor functions **Other:** Insufficient information to determine whether toluene is carcinogenic to humans.	MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing. AO is based on odour.
A	Total dissolved solids (TDS) (1991)		AO: ≤ 500	Naturally occurring; sewage, urban and agricultural runoff, industrial wastewater	Not applicable	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.
O	Trichloroethylene (2005)	0.005		Industrial effluents and spills from improper disposal	**Health basis of MAC:** Developmental effects (heart malformations) **Other:** Classified as probable carcinogen	MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing.
O	2,4,6-Trichlorophenol (1987, 2005)	0.005	AO: ≤ 0.002	By-product of drinking water disinfection with chlorine; industrial effluents and spills	**Health basis of MAC:** Liver cancer (classified as probable carcinogen)	AO based on odour; levels above the AO would render drinking water unpalatable.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
P	Trifluralin (1989, 2005)	0.045		Runoff from agricultural uses	**Health basis of MAC:** Changes in liver and spleen weights and in serum chemistry	Unlikely to leach into groundwater.
DBP	Trihalomethanes[3] (THMs) (2006)	0.1		By-product of drinking water disinfection with chlorine; industrial effluents	**Health basis of MAC:** Liver effects (fatty cysts) (chloroform classified as possible carcinogen) **Other:** Kidney and colorectal cancers	Refers to the total of chlorodibromomethane, chloroform, bromodichloromethane and bromoform; MAC based on health effects of chloroform. MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing. Utilities should make every effort to maintain concentrations as low as reasonably achievable without compromising the effectiveness of disinfection. Recommended strategy is precursor removal. The separate MAC for BDCM was rescinded in April 2009.
I	Uranium (2019)	0.02		Naturally occurring (erosion and weathering of rocks and soils); mill tailings; emissions from nuclear industry and combustion of coal and other fuels; phosphate fertilizers	**Health basis of MAC:** Kidney effects	Based on challenges and operational cost impacts for some private wells and small systems; MAC is for total uranium and is protective in relation to both chemical and radiological hazards.
O	Vinyl chloride (2013)	0.002 ALARA		Industrial effluents; degradation product from organic solvents in groundwater; leaching from polyvinyl chloride pipes	**Health basis of MAC:** Liver cancer (classified as human carcinogen) **Other:** Raynaud's disease, effects on bone, circulatory system, thyroid, spleen, central nervous system	Based on analytical achievability. MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing. Leaching from polyvinyl chloride pipe is not expected to be significant.

Type[1]	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Applying the Guideline/Comments
O	Xylenes (total) (2014)	0.09	AO: 0.02	Emissions, effluents or spills from petroleum and chemical industries	**Health basis of MAC:** Adverse neuromuscular effects **Other:** Insufficient information to determine whether xylenes are carcinogenic to humans	MAC takes into consideration all exposures from drinking water, which include ingestion, as well as inhalation and dermal absorption during showering and bathing. AO is based on odour.
I	Zinc (1979, 2005)		AO: ≤ 5.0	Naturally occurring; industrial and domestic emissions; leaching may occur from galvanized pipes, hot water tanks and brass fittings	Zinc is an essential element and is generally considered to be non-toxic, however levels above the AO in water would render it unpalatable.	AO based on taste; water with zinc levels above the AO tends to be opalescent and develops a greasy film when boiled; plumbing should be thoroughly flushed before water is consumed.

[1] Parameter types: **A** – Acceptability; **D** – Disinfectant; **DBP** – Disinfection by-product; **P** – Pesticide; **I** – Inorganic chemical; **O** – Organic chemical; **T** – Treatment related parameter.
In cases where total dichlorobenzenes are measured and concentrations exceed the most stringent value (0.005 mg/L), the concentrations of the individual isomers should be established.
[3] Expressed as a locational running annual average of quarterly samples.
[4] No units.

Table 3. Radiological Parameters

Guidelines for radiological parameters focus on routine operational conditions of existing and new water supplies and do not apply in the event of contamination during an emergency involving a large release of radionuclides into the environment. MACs have been established for the most commonly detected natural and artificial radionuclides in Canadian drinking water sources, using internationally accepted equations and principles and based solely on health considerations.

The MACs are based on exposure solely to a specific radionuclide. The radiological effects of two or more radionuclides in the same drinking water source are considered to be additive. Thus, the sum of the ratios of the observed concentration to the MAC for each contributing radionuclide should not exceed 1.

Water samples may be initially analysed for the presence of radioactivity using gross alpha and gross beta screening rather than measurements of individual radionuclides. If screening levels are exceeded (0.5 Bq/L for gross alpha and 1.0 Bq/L for gross beta), then concentrations of specific radionuclides should be analysed. A guideline for radon in drinking water is not deemed necessary and has not been established. Information on radon is presented because of its significance for indoor air quality in certain situations.

Parameter (published, reaffirmed)	MAC (Bq/L)	Common sources	Health basis of MAC	Comments
Cesium-137 (2009)	10	Nuclear weapons fallout and emissions from nuclear reactors	Cancer of the lung, breast, thyroid, bone, digestive organs and skin; leukaemia	Fixation by sediments in aquatic environments reduces its concentration in water bodies. Ingested 137Cs is readily absorbed into soft tissues, but is eliminated relatively quickly.
Iodine-131 (2009)	6	Sewage effluent	Cancer of the lung, breast, thyroid, bone, digestive organs and skin; leukaemia	No additional comments
Lead-210 (2009)	0.2	Naturally occurring (decay product of radon)	Cancer of the lung, breast, thyroid, bone, digestive organs and skin; leukaemia	Corresponds to total lead concentration of 7×10^{-8} µg/L
Radium-226 (2009)	0.5	Naturally occurring	Cancer of the lung, breast, thyroid, bone, digestive organs and skin; leukaemia	No additional comments
Radon (2009)	None required	Naturally occurring (leaching from radium-bearing rocks and soils; decay product of radium-226)	Health risk from ingestion considered negligible due to high volatility	Mainly a groundwater concern; if concentrations in drinking water exceed 2000 Bq/L actions should be taken to reduce release into indoor air (e.g. proper venting of drinking water supply)

Parameter (published, reaffirmed)	MAC (Bq/L)	Common sources	Health basis of MAC	Comments
Strontium-90 (2009)	5	Nuclear weapons fallout	Cancer of the lung, breast, thyroid, bone, digestive organs and skin; leukaemia	Has a long residence time in bone and its beta particles have high energy. Radioactive strontium (90Sr) should not be confused with stable strontium. The two species of strontium have quite different origins, and their concentrations in drinking water are not correlated.
Tritium (2009)	7000	Naturally occurring (cosmogenic radiation); releases from nuclear reactors	Cancer of the lung, breast, thyroid, bone, digestive organs and skin; leukaemia	Not removed by drinking water treatment
Uranium 1999	N/A		MAC based on chemical properties	See information provided in Table 2

Table 4. Guidance Documents

In certain situations, Health Canada, in collaboration with the Federal-Provincial-Territorial Committee on Drinking Water, may choose to develop guidance documents for issues that do not meet the criteria for guideline development and for specific issues for which operational or management guidance is warranted. These documents are offered as information for drinking water authorities and help provide guidance relating to contaminants, drinking water management issues or emergency situations.

Parameter/subject (published)	Comments
Chloral hydrate in drinking water (2008)	Exposure levels in Canada far below concentration that would cause health effects; levels above 0.2 mg/L may indicate a concern for health effects and should be investigated.
Controlling corrosion in drinking water distribution systems (2009)	Addresses strategies to deal with leaching of lead from materials in the distribution system; sampling protocols can be used to assess corrosion and the effectiveness of remediation/control measures to reduce lead levels in drinking water; corrective measures are outlined to address lead sources.
Heterotrophic plate count (HPC) (2012)	A useful operational tool for monitoring general bacteriological water quality through the treatment process and in the distribution system. HPC results are not an indicator of water safety and should not be used as an indicator of potential adverse human health effects.
Issuing and rescinding boil water advisories in Canadian drinking water supplies (2015)	Summarizes factors for consideration when responsible authorities issue or rescind boil water advisories. Provides trend information on reasons boil water advisories are issued in Canada.

Parameter/subject (published)	Comments
Issuing and rescinding drinking water avoidance advisories in emergency situations (2009)	Summarizes factors for consideration when responsible authorities issue or rescind drinking water avoidance advisories in emergency situations.
Natural organic matter in drinking water (NOM) (2020)	The presence and characteristics of natural organic matter (NOM) can have significant impacts on drinking water treatment processes, and consequently the safety of drinking water. Seasonal and weather-related events can significantly affect the concentration and character of NOM. This guidance document reviews and assesses: 1) the impacts of NOM and the associated indirect health risks; 2) source-specific treatability study requirements to ensure the most appropriate process is selected to meet treated water quality goals; 3) treatment options and their effectiveness; 4) tools available to monitor raw, treated and distribution system water quality.
Potassium from water softeners (2008)	Not a concern for general population; those with kidney disease or other conditions, such as heart disease, coronary artery disease, hypertension or diabetes, and those who are taking medications that interfere with normal body potassium handling should avoid the consumption of water treated by water softeners using potassium chloride.
Use of Enterococci as an indicator in Canadian drinking water supplies (2020)	Enterococci are a bacteriological indicator of fecal contamination. This indicator can supplement E. coli and total coliforms monitoring programs to provide additional information into fecal contamination issues. The document provides information on how enterococci can be used in a drinking water monitoring program.
Use of the microbiological drinking water guidelines (2013)	Provides an overview of the microbiological considerations to ensure drinking water quality, integrating key content of the relevant guideline technical documents and guidance documents to illustrate how they fit into the source-to-tap approach.
Use of Quantitative Microbial Risk Assessment (QMRA) in Drinking Water (2019)	Provides guidance on the use of QMRA to assist in understanding microbiological risks in Canadian water systems.
Waterborne bacterial pathogens (2013)	Originate from human or animal faeces or may be naturally occurring in the environment. Commonly associated with gastrointestinal upset (nausea, vomiting, diarrhoea); some pathogens may infect wounds, lungs, skin, eyes, central nervous system or liver. Document provides information on these pathogens and treatment options, and recommends using the source-to-tap approach to reduce their levels.

Table 5. Withdrawn Guidelines

Health Canada, in collaboration with the Federal-Provincial-Territorial Committee on Drinking Water, has established a science-based process to systematically review older guidelines and withdraw those that are no longer required. Guidelines are withdrawn for parameters that are no longer found in Canadian drinking water supplies at levels that could pose a risk to human

health. This includes pesticides that are no longer registered for use in Canada and mixtures of contaminants that are addressed individually.

Type	Parameter	Type	Parameter
P	Aldicarb	**P**	Parathion
P	Aldrin + dieldrin	**P**	Pesticides (total)
P	Bendiocarb	**O**	Phenols (total)
P	Chlordane (total isomers)	**O**	Phthalic acid esters (PAE)
P	Cyanazine	**O**	Polychlorinated biphenyls (PCBs)
P	Dichlorodiphenyltrichloroethane (DDT) + metabolites	**O**	Polycyclic aromatic hydrocarbons (PAHs) (excluding benzo[*a*]pyrene)
P	Dinoseb	**O**	Resin acids
P	Endrin	**O**	Tannin
O	Gasoline and its organic constituents	**P**	Temephos
P	Heptachlor + heptachlor epoxide	**O**	Total organic carbon
O	Lignin	**P**	Toxaphene
P	Lindane	**P**	Triallate
P	Methoxychlor	**P**	2,4,5-Trichlorophenoxyacetic acid[2] (2,4,5-T)
P	Methyl-parathion	**P**	2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP)
P	Mirex		

APPENDIX E

Fraser Health Authority

“Flush” Message

fraserhealth Better health. Best in health care.

May 20, 2020

Water System Operators

Re: Metals in Drinking Water – "Flush" Message in Annual Reports

Fraser Health has recently revised its metals at the tap "Flush" message and we are asking all water systems to please include the following health message with your next annual reports to your users.

Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until you notice a change in temperature. (This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer.) The more time water has been sitting in your home's pipes, the more lead it may contain.

Use only water from the cold-tap for drinking, cooking, and especially making baby formula. Hot water is likely to contain higher levels of lead.

The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

Conserving water is still important. Rather than just running the water down the drain you could use the water for things such as watering your plants.

If you have any questions, please contact our Drinking Water Program at 604-870-7903.

Sincerely,

Blair Choquette
Health Protection Manager
Drinking Water Program

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Health Protection

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