



November 14, 2023

Mr. Kevin Krejny
Utilities Director
City of Piqua
121 Bridge Street
Piqua, OH 45356

Subject: Summary of Sampling Conducted in the Vicinity of the Former Water Treatment Plant and Roadside Dog Park

Dear Mr. Krejny:

The City of Piqua contracted WSP USA Environment & Infrastructure Inc. (WSP USA), an internationally recognized environmental consulting company, to collect surface water, potable water, and wipe samples in the vicinity of the former water treatment plant and Roadside Dog Park.

Inorganics and anions were detected in the potable water sample collected from the City of Piqua's water treatment plant at concentrations less than the US EPA enforceable standards known as Maximum Contaminant Levels (MCLs), OEPA Drinking Water Standards for Ohio Public Water Systems Action Levels, US EPA Secondary Maximum Contaminant Level (SMCLs), and US EPA Regional Screening Levels for Residential Tap Water (Hazard Index = 1).

Copper was the only inorganic metal detected at a concentration above the comparison criteria in the potable water sample collected from the Roadside Dog Park fountain. Copper was detected at a concentration 1.58 milligrams per Liter (mg/L), which exceeds the US EPA SMCL of 1.0 mg/L. Copper is a common component of plumbing fixtures and supply lines, and detections of copper in potable water can often be attributed to corrosion within a plumbing system. The US EPA SMCLs were established to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor.

Concentrations of aluminum, iron, and manganese detected in the surface water sample collected from Swift Run Lake were higher than the respective SMCLs of 0.05 to 0.2 mg/L (aluminum), 0.3 mg/L (iron), and 0.05 mg/L (manganese). Aluminum, iron, and manganese were not detected in the sample of the City of Piqua's potable water.

Table 1 presents the analytical data for the potable water and surface water samples collected on November 1, 2023.



Table 2 summarizes the analytical data from the wipe samples collected from the Roadside Dog Park. The wipe samples were collected from the water fountain at the dog park and from a rafter at the shelter house at the dog park. Zinc was the only parameter detected in the wipe sample that was not detected in the field blank (control sample).

For comparison purposes, Table 3 summarizes the analytical tests performed on the samples of wastewater collected by the Energy Safety Response Group (ESRG) in May and September 2023. Concentrations of inorganics and anions detected in the wastewater are much higher than what was observed in analytical data presented in Tables 1 and 2.

CLOSING

WSP USA appreciate the opportunity to work with you on this project. Please feel free to contact the undersigned at (937) 859-3600 if you have any questions or require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R. Dornbusch'.

Russell E. Dornbusch
Senior Geologist

A handwritten signature in black ink, appearing to read 'Paul J. Stork'.

Paul J. Stork
Principal Project Manager

Attachment Tables

Table 1
November 2023 Surface Water/Drinking Water Analytical Results
City of Piqua, Ohio

all results expressed in milligrams/liter (mg/L)

Sample Date:	Drinking Water Standard	Potable Water		Surface Water			
		Water Treatment Plant	Roadside Dog Park	Great Miami River	Swift Run Lake	Quarry Pump House	Great Miami River Upstream
		(WTP-110123) 11/1/2023	(RDP-110123) 11/1/2023	(GMR-110123) 11/1/2023	(SRL-110123) 11/1/2023	(QPH-110123) 11/1/2023	(GMRU-110123) 11/1/2023
Inorganics	MCL						
Antimony (Sb)	0.006	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Arsenic (As)	0.010	<0.00100	<0.00100	0.00163	0.00429	<0.00100	0.00146
Barium (Ba)	2.0	<0.0200	<0.0200	0.0807	0.0629	0.0275	0.0934
Beryllium (Be)	0.004	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium (Cd)	0.005	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chromium (Cr)	0.1	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Selenium (Se)	0.05	0.00119	0.00113	<0.00100	<0.00100	<0.00100	<0.00100
Thallium (Tl)	0.002	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Inorganics	SMCL						
Aluminum (Al)	0.05 to 0.2	<0.100	<0.100	<0.100	0.232	<0.100	<0.100
Copper (Cu)	1.0	0.00531	1.58	<0.00100	0.00177	0.00699	<0.00100
Iron (Fe)	0.3	<0.0200	0.0378	0.197	0.457	0.0464	0.163
Manganese (Mn)	0.05	<0.0200	<0.0200	<0.0200	0.111	<0.0200	<0.0200
Silver (Ag)	0.1	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400
Zinc (Zn)	5.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200

Inorganics	RSL						
Boron (B)	4.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Cobalt (Co)	0.006	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Lithium (Li)	0.04	<0.00840	<0.00840	<0.00840	<0.00840	<0.00840	<0.00840
Molybdenum (Mo)	0.1	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Strontium (Sr)	12.0	0.698	0.668	2.41	1.52	0.266	1.76
Tin (Sn)	12.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Vanadium (V)	0.1	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500

Inorganics	AL						
Copper (Cu)	1.3	0.00531	1.58	<0.00100	0.00177	0.00699	<0.00100
Lead (Pb)	0.015	<0.00100	0.00179	<0.00100	<0.00100	<0.00100	<0.00100

Inorganics							
Calcium (Ca)	NE	32.3	24.2	82.2	69.3	22.5	82.9
Magnesium (Mg)	NE	18.3	15.5	36.5	33.0	30.0	35.2
Nickel (Ni)	NE	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Phosphorus (P)	NE	<0.500	0.594	<0.500	<0.500	<0.500	<0.500
Potassium (K)	NE	5.36	5.30	5.83	4.64	2.44	3.86
Silicon (Si)	NE	2.27	1.79	3.36	3.21	2.85	4.03
Sodium (Na)	NE	40.1	44.3	42.2	28.2	21.7	28.4
Titanium (Ti)	NE	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200

Anions	MCL						
Fluoride	4.0	0.671	0.668	0.380	0.323	0.156	0.354
Nitrate-N	10	0.803	0.653	0.616	0.0939	0.0838	0.862
Nitrite-N	1.0	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330

Anions	SMCLs						
Chloride	250	50.0	54.6	47.5	46.3	38.6	41.7
Sulfate	250	73.3	74.7	83.1	40.2	31.7	48.9

Anions							
Bromide	NE	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Orthophosphate-P	NE	0.296	0.360	0.300	<0.160	<0.160	0.416

Calculated Analytes							
Phosphate	NE	<1.00	1.82	1.01	<1.00	<1.00	1.27

MCL = Maximum Contaminant Level
SMCL = Secondary Maximum Contaminant Levels
RSL = US EPA Regional Screening Levels, Residential Tap Water Noncancer Child Hazard Index (HI) = 1
AL = OEPA Drinking Water Standards for Ohio Public Water Systems
Detected values are **Bolded**
Values over action level are **bolded** and shaded
NE= None established

Table 2
November 2023 Wipe Samples Analytical Results
Roadside Dog Park, Piqua, Ohio
all results expressed in milligrams/wipe (mg/wipe)

Date:	Roadside Dog Park Fountain (RDPF-110123) 11/1/2023	Roadside Dog Park Shelter (RDPS-110123) 11/1/2023	Roadside Dog Park Field Blank (RDPFB-110123) 11/1/2023
Metals - 6010			
Aluminum	<0.00500	<0.00500	<0.00500
Antimony	<0.00500	<0.00500	<0.00500
Arsenic	<0.00500	<0.00500	<0.00500
Barium	<0.00500	<0.00500	<0.00500
Beryllium	<0.00500	<0.00500	<0.00500
Boron	<0.00500	<0.00500	<0.00500
Cadmium	<0.00500	<0.00500	<0.00500
Calcium	0.0588 (B)	0.0791 (B)	0.0305 (B)
Chromium	<0.00500	<0.00500	<0.00500
Cobalt	<0.00500	<0.00500	<0.00500
Copper	<0.00500	<0.00500	<0.00500
Iron	<0.00500	<0.00500	<0.00500
Lead	<0.00500	<0.00500	<0.00500
Lithium	<0.00500	<0.00500	<0.00500
Magnesium	0.0314	0.0392	0.0312
Manganese	<0.00500	<0.00500	<0.00500
Molybdenum	<0.00500	<0.00500	<0.00500
Nickel	<0.00500	<0.00500	<0.00500
Phosphorus	<0.0500	<0.0500	<0.0500
Potassium	<0.100	<0.100	<0.100
Selenium	<0.00500	<0.00500	<0.00500
Silicon	<0.200	<0.200	<0.100
Silver	<0.00500	<0.00500	<0.00500
Sodium	<1.00	<1.00	<1.00
Strontium	<0.00500	<0.00500	<0.00500
Thallium	<0.00500	<0.00500	<0.00500
Tin	<0.00500	<0.00500	<0.00500
Titanium	<0.0500	<0.0500	<0.0500
Vanadium	<0.00500	<0.00500	<0.00500
Zinc	<0.00500	0.0201	<0.00500

Detected values are **Bolded**

B = The analyte was detected in the Method Blank at a concentration greater than the reporting limit.


Waste Water Analytical Results
Former Water Treatment Plant, Piqua, Ohio
all results expressed in milligrams/liter (mg/L)


	City of Piqua Local NPDES Limits (mg/L)	Alloway Laboratory				ALS Environmental Laboratory				
		House IBC Comp	Fire House Room	House Outside Pit North	House Outside Pit South	Composite A	Composite B	North Basin	South Basin	Burn Room Basin
Date:		5/16/2023	5/16/2023	5/16/2023	5/16/2023	9/28/2023	9/28/2023	9/28/2023	9/28/2023	9/28/2023
Anions										
Phosphate	NE	---	---	---	---	<2.0	4.4	2.1	<2.0	<2.0
Inorganics										
Aluminum (Al)	NE	31	25	26	0.37	1.5	2.4	<0.50	0.54	1.4
Barium (Ba)	NE	<0.050	3.4	0.39	0.027	<0.10	<0.10	<0.10	<0.10	0.14
Boron (B)	NE	1.3	0.19	1.9	0.076	0.16	0.19	0.12	<0.10	7.6
Calcium (Ca)	NE	61.2	137	21.9	18.5	27	29	11	12	47
Chromium (Cr)	38.2	0.090	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	0.041	0.021
Cobalt (Co)	NE	1.4	17	100	1.4	0.48	3.0	0.097	0.022	0.45
Iron (Fe)	NE	15	50	1.1	0.74	<0.20	9.1	0.37	0.29	1.7
Lithium (Li)	NE	0.2	<0.50	<1.0	0.032	17	20	14	5.5	15
Magnesium (Mg)	NE	22.8	9.70	2.47	2.93	1.4	2.8	1.5	0.66	2.2
Manganese (Mn)	NE	4.7	17	120	5.3	0.91	3.8	0.97	0.36	3.8
Molybdenum (Mo)	10.0	<0.050	<0.050	<0.050	<0.010	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel (Ni)	31.4	2.4	33	0.22	1.4	0.71	6.9	0.21	0.069	1.3
Phosphorus (P)	NE	47.1	19.6	5.62	2.29	0.88	3.8	1.7	0.37	2.0
Potassium (K)	NE	17	9.8	19	10	9.5	11	12	9.4	12
Silicon (Si)	NE	32.3	13.4	5.46	4.04	1.5	3.7	1.9	1.3	2.8
Silver (Ag)	1.2	0.0018	<0.0010	<0.0010	<0.0010	<0.050	<0.050	<0.050	<0.050	<0.050
Sodium (Na)	NE	55.9	8.02	14.0	6.83	7.2	9.3	7.0	4.4	15
Strontium (Sr)	NE	0.40	0.49	0.12	0.069	<0.10	<0.10	<0.10	<0.10	0.13
Tin (Sn)	NE	0.12	0.28	0.062	<0.010	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium (Ti)	NE	0.35	0.39	0.88	<0.010	<0.10	<0.10	<0.10	<0.10	<0.10
Vanadium (V)	NE	<0.050	<0.050	<0.050	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc(Zn)	32.2	72	3.2	4.8	0.82	0.26	1.2	0.26	<0.20	<0.20
Inorganics										
Antimony (Sb)	NE	0.2	0.12	0.25	0.016	0.10	0.16	0.070	0.021	0.016
Arsenic (As)	2.5	<0.015	<0.015	<0.015	<0.0030	<0.010	0.050	<0.010	<0.010	<0.010
Beryllium (Be)	NE	<0.0025	<0.0025	<0.0025	<0.0005	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	1.5	<0.0025	<0.0025	<0.0025	<0.0005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper (Cu)	50.2	1.2	4.7	0.66	0.016	<0.025	0.19	0.049	0.026	0.16
Lead (Pb)	14.4	0.024	0.070	0.037	0.0043	<0.015	0.049	0.018	<0.015	<0.015
Selenium (Se)	2.7	<0.025	<0.025	0.062	<0.0050	<0.030	<0.030	<0.030	<0.030	<0.030
Thallium (Tl)	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.050	<0.050	<0.050	<0.050	<0.050
Anions										
Bromide	NE	---	---	---	---	2.3	<2.0	<2.0	<2.0	<2.0
Chloride	NE	140	9.1	58	5.3	19	17	7.3	2.6	8.7
Fluoride	NE	152	45.5	194	5.55	32	34	26	6.0	25
Nitrate/Nitrite-N	NE	0.59	<0.50	<0.50	<0.50	---	---	---	---	---
Nitrate-N	NE	---	---	---	---	<0.45	<0.45	0.62	0.59	<0.45
Nitrite-N	NE	---	---	---	---	<0.61	<0.61	<0.61	<0.61	<0.61
Orthophosphate-P	NE	144	59.9	17.2	7.02	<0.65	1.4	0.70	<0.65	<0.65
Sulfate	NE	63	160	48	5.7	69	51	17	8.3	52

Detected values are **Bolded**
--- - Not analyzed
NE= None established




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LEGEND
 Approximate Sample Location

Google Earth Pro image dated 11/2021.

 APPROXIMATE SCALE IN FEET

CONSULTANT NAME
 WSP USA Environment & Infrastructure Inc.

CONSULTANT	
DATE	11/07/2023
DESIGNED	---
PREPARED	RLB
REVIEWED	RED
APPROVED	RED/PJS

CLIENT NAME
 CITY OF PIQUA
 Former Water Treatment Plant, Piqua, Ohio

CLIENT


PROJECT
 ENVIRONMENTAL CONSULTANT SERVICES

TITLE
 SAMPLE LOCATION MAP

PROJECT NO. 7775 23 2021
 REV. _____
 FIGURE 2