

ROD AND WIRE MILL INTERIM MEASURE 2021 PROGRESS REPORT

TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

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1.0 INTRODUCTION

This Progress Report for the Rod and Wire Mill Interim Measure at the Tradepoint Atlantic property has been prepared by ARM Group LLC (ARM). This report presents:

- a brief history of the Rod and Wire Mill Area (RWM),
- a description of historical interim measures (IMs) that operated at the RWM,
- a description of additional remedial efforts that were completed in 2016 and 2017 to treat soil and groundwater in the RWM area,
- the resulting changes observed in groundwater flow patterns and contaminant distribution, and
- an evaluation of the effectiveness of the interim measure.

1.1. TRADEPOINT ATLANTIC SITE BACKGROUND

The Tradepoint Atlantic property is located in Baltimore County, Maryland at the southeastern corner of the Baltimore metropolitan area, approximately nine miles from the downtown area. The property encompasses approximately 3,100 acres located on a peninsula situated on the Patapsco River near its confluence with the Chesapeake Bay, physically positioned in the mouth of the heavily industrialized and urbanized Baltimore Harbor / Patapsco River region. A land connection to the northeast links the peninsula with the adjacent community of Edgemere.

From the late 1800s until 2012, the property was used for the production and manufacturing of steel. Iron and steel production operations and processes at the Site included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steelmaking operations at the facility ceased in fall 2012, and current plans for the Site include demolition and redevelopment over the next several years. Some portions of the site have already undergone remediation and/or redevelopment.

The original topography of the peninsula was flat with elevations not exceeding 15 feet based on the North American Vertical Datum 1988 (NAVD88). The peninsula has been significantly altered since the inception of the steel manufacturing activities. Creeks have been filled in and new land has been added to various areas of the Site by building up near-shore areas of the river.

1.2. SITE OWNERSHIP HISTORY

Bethlehem Steel Corporation operated an integrated steelmaking facility at the site from approximately 1916 through 2003. As a result of multiple market factors, Bethlehem Steel declared bankruptcy in 2001 and the facility was subsequently operated by a succession of owners, the last of which (RG Steel Sparrows Point, LLC) filed for bankruptcy in 2012. The site was

subsequently purchased by Sparrows Point, LLC (SPLLC) at a bankruptcy sale on August 7, 2012. Sparrows Point Terminal, LLC (SPT) purchased the real property on September 18, 2014. SPT has subsequently undergone a name change and is now doing business as Tradepoint Atlantic.

1.3. REGULATORY PROCESS

Environmental responses for the RWM and for the site in general are being implemented pursuant to the following:

- Multi-Media Consent Decree (Decree) between Bethlehem Steel Corporation, the United States Environmental Protection Agency (EPA), and the Maryland Department of the Environment (MDE) (effective October 8, 1997); this Decree has been modified in accordance with a stipulated order entered into by Sparrows Point LLC and the respective agencies effective July 28, 2014;
- Administrative Consent Order (ACO) between Sparrows Point Terminal, LLC and the Maryland Department of the Environment (effective September 12, 2014); and,
- Settlement Agreement and Covenant Not to Sue (SA) between Sparrows Point Terminal, LLC and the United States Environmental Protection Agency (effective November 25, 2014).

The original Consent Decree for the Sparrows Point facility dealt with many issues associated with ongoing iron-making, steel-making, coking, byproduct, plating, and finishing operations. To the extent that these operations are no longer conducted, and the associated facilities no longer exist, many specific requirements of the Decree are no longer applicable and have been removed in accordance with the stipulated order implementing modifications to the Decree. The RWM is part of the acreage that remains subject to the requirements of the Decree as documented in correspondence received from EPA on September 12, 2014.

2.0 ROD AND WIRE MILL

2.1. SITE DESCRIPTION

2.1.1. Historical RWM Industrial Activities

The RWM (the Site) is located in the northwestern portion of the Tradepoint Atlantic property. This area has also been given the designation of Parcel A3, as the Tradepoint Atlantic property as a whole has been divided into several separate parcels. Parcel A3 (the RWM), is shown on **Figure 1**.

The RWM is the location of the former mill that produced rods and wire products from the 1940s to the early 1980s. All manufacturing activities at the RWM ceased operation in the early 1980s with subsequent demolition of all structures between 1994 and 2000, based on historical aerial photos.

Manufacturing activities at the RWM included leaching of zinc ore and a subsequent treatment process to remove cadmium impurities. The leaching process was implemented in large tanks located inside the north end of the former RWM building. From the 1950s, the acidic leach residue was stored in the Northwest Pond until about 1959 when filters were utilized to dewater the residues. Dewatered sludge generated from this process was temporarily stored on the ground outside the north end of the mill in the Former Sludge Bin Storage Area. Filtrate from the dewatering process was recycled to the wire plating process. Excess filtrate was discharged to the East Pond until 1971, after which it was sent to the Humphrey Creek Wastewater Treatment Plant (HCWWTP) for treatment. These operations ended in the early 1980s when the Rod and Wire Mill was shut down. The former locations of the Northwest Pond, the Sludge Bin Storage Area, and the East Pond are shown on **Figure 2**.

2.1.2. Site Geology/Hydrogeology

In general, the subsurface geology at the RWM includes slag fill materials overlying natural soils, which include fine-grained sediments (clays and silts) and coarse-grained sediments (sands). Groundwater occurrence at the Site has been segregated into three horizons identified as shallow, intermediate and deep hydrogeologic zones.

The shallow hydrogeologic zone includes recent sedimentary deposits or slag fill material and the unconfined water table at the Site. Monitoring wells and piezometers designated as shallow are screened within this uppermost, unconfined water bearing unit. The “shallow” bottom-of-screen elevations generally range from +5 to -20 feet above mean sea level (amsl). In some areas of the Site, the slag fill is directly underlain by and hydrologically connected to, the coarser-grained beds or lenses within the Talbot Formation that comprise the Upper Talbot Channel Unit. In these areas, the slag fill and Upper Talbot Channel Units form a single groundwater flow system. In much of

the investigation area, the slag fill material is underlain by finer-grained silts and clays that comprise the Talbot Clay Aquitard. In these areas, shallow groundwater flow may be separated from groundwater in any underlying coarse-grained beds or lenses.

The intermediate hydrogeologic zone was the focus of the pump and treat interim measure formerly used at the Site and is therefore also referred to as the intermediate pumping zone. The intermediate zone includes the unconfined to partially confined groundwater in the Pleistocene-aged Upper Talbot unit. The “intermediate” bottom-of-screen elevations range from approximately -20 to -50 feet amsl. The presence of clay and silt layers within the intermediate hydrogeologic zone likely retard the vertical recharge of groundwater from the upper fill material and Upper Talbot channel Unit.

The lower hydrogeologic zone includes the confined groundwater in the Lower Talbot or Upper Patapsco Sand unit. The “lower” bottom-of-screen elevations range from approximately -50 to -141 feet amsl. The lower hydrogeologic zone was not a primary focus of this groundwater investigation. Hydrogeologic zones at greater depth are known to exist based on a review of the regional geology; however, these deeper units are isolated from the upper three units and impacts associated with the former iron and steel operations have not been identified.

2.2. HISTORICAL INTERIM MEASURE FOR GROUNDWATER CONDITIONS

The historical operations within the RWM resulted in releases of cadmium and zinc to soil and groundwater. In 1986, a soil and groundwater remediation program was initiated to address groundwater exhibiting elevated levels of cadmium and zinc, as well as residual soil contamination in the Sludge Bin Storage Area. Remediation initially consisted of a soil flushing program and associated pumping and treatment of groundwater from shallow and intermediate wells. The groundwater pumping was discontinued, and the treatment plant was dismantled in 1999 to support the demolition of the Rod and Wire Mill, allowing for reassessment of the interim measure. A Work Plan to re-establish interim measures was submitted to the reviewing agencies (MDE and EPA) in July 2000, and the Work Plan was approved in November 2000. Re-establishment of the interim measures included the following:

- Institutional controls for soils were established to provide a “Restricted Work Area” to control the exposure of onsite workers to soils in the Former Sludge Bin Storage Area.
- A groundwater monitoring network consisting of 31 wells was installed to monitor the performance of the groundwater pump and treat system. This monitoring network was used to collect water level and groundwater quality data.
- A groundwater pump and treat system was operated and maintained, which consisted of two intermediate zone recovery wells (RW10-PZM020 and RW15-PZM020) that removed water at a rate of between 5 and 12 gallons per minute (gpm). The expected normal operating rate for the treatment system was set at a combined rate of 8 to 12 gpm, with a maximum design flow of 25 gpm.

- Recovered groundwater was transported via a pipeline to the HCWWTP for subsequent treatment and discharge in accordance with the NPDES permit requirements for the facility.

The pumping and treatment of groundwater resumed in September 2001, and continued until September 2016, when it was stopped to support the construction activities at the RWM. In particular, the pumping wells and associated pumps, piping, and pipe racks were shut down and removed in order to install the remediation trenches. The remediation trenches were constructed between October and December 2017 (*Interim Measures Construction Report, In-Situ Groundwater Treatment*, Advanced GeoServices Corp, January 2018).

3.0 NEW INTERIM MEASURE AND GROUNDWATER CONDITIONS

3.1. INTERIM MEASURE REMEDIAL APPROACH

EnviroAnalytics Group contracted Advanced GeoServices (AGS) to design and install remediation trenches to serve as the new interim measure for remediating groundwater at the RWM. The full details of the remediation design are presented in the AGS Work Plan, *Interim Measure Work Plan In-Situ Groundwater Treatment* (AGS, 2016). The primary purpose of this new interim measure, which focused on groundwater in the intermediate zone, was to reduce concentrations of dissolved metals and to minimize contaminant discharges from this zone to surface water. Groundwater in the shallow zone was noted to have a higher pH due to the presence of slag fill, and as a result, the distribution of metals in the shallow zone groundwater indicates very limited mobility (i.e., lack of migration). Therefore, the intermediate zone was the primary focus of the new interim measure.

Groundwater extraction from the pumping wells ceased in September 2016 to support the construction of the remediation trenches. The objective of the remediation trenches is to address the elevated dissolved cadmium and zinc in the intermediate groundwater zone by precipitating the dissolved metals in-situ. This is achieved by raising the existing groundwater pH from approximately 4 to a range of 9.5 to 10 through the addition of alkaline reagents into the intermediate groundwater zone at select high concentration areas. To accomplish this, excavated soils were replaced with alkaline charges that react with acidic groundwater to create alkaline conditions within the aquifer and remove the dissolved cadmium and zinc from solution. The alkaline charges utilized a combination of fast acting TerrabondMG (40% by weight) in conjunction with limestone aggregate (60% by weight). The reagents were placed in trenches in a staggered/offset alignment perpendicular to the anticipated groundwater flow. A typical cross-section of a remediation trench is provided as **Figure 3** and the approximate locations of the trenches are shown on the various maps provided as part of this report. As part of creating an updated conceptual site model in the Rod and Wire Mill Interim Measure Supplemental Investigation Report (ARM, Revision 1 dated April 8, 2020), lateral groundwater flow velocities were calculated based on groundwater level measurements in May 2019. Groundwater flow velocity was calculated at 33.8 ft/year in the shallow zone and 4.94 ft/year in the intermediate zone. Details of these calculations can be found in the Rod and Wire Mill Interim Measure Supplemental Investigation Report (ARM 2020a).

Approximately 2,392 cubic yards of contaminated soil were removed from the RWM during construction of the trenches and disposed of at an offsite facility. Construction of the trenches was completed in January 2017.

The interim groundwater treatment goals are to increase the pH in the intermediate groundwater zone in order to precipitate the dissolved metals and achieve a reduction in dissolved

concentrations of cadmium and zinc within and downgradient of the source areas. Ultimately the treatment goal is to demonstrate that the concentrations of the primary contaminants (cadmium and zinc) in groundwater discharging at the shoreline/property boundary are acceptable.

3.2. GROUNDWATER WELL NETWORK

In 2021, there were 76 monitoring wells located at the Site. All wells except two are installed with screen intervals in the shallow zone or the intermediate zone. A “well pair” refers to one shallow zone well and one intermediate zone well installed very close to each other whose well names begin with the same prefix (e.g., RWA-MWS and RWA-MWI). Shallow zone wells have been assigned a well name ending in “-MWS” while intermediate zone wells have been assigned a well name ending in “-MWI”. One monitoring well, RW06R-MWD, is installed with a screen interval in the deep zone. Another monitoring well, RW21-MWP, is installed with a screen interval in a localized perched zone (less deep than the shallow zone). This well was installed at the request of the Maryland Department of the Environment (MDE) to monitor non-aqueous phase liquid (NAPL) identified during a previous investigation. Only results from the shallow and intermediate wells are included in this report.

For the purposes of evaluating trends in groundwater, monitoring wells at the Site have been categorized into four groups:

- The “Perimeter” wells are generally located farthest to west (downgradient), running north-south.
- The “Interior” wells are located in the central portion of the site. The Focused well pairs—RWJ, RWK, and RWL—are a subset of Interior wells that were installed directly adjacent to one of the trenches to help assess the trench performance. Proximity was very important due to the rather slow intermediate zone groundwater velocity calculated for the site.
- The “Delineation” wells are located along the northern boundary of the site.
- The “Upgradient” wells are located farthest upgradient, generally farthest to the east.

Well categories are shown in the table below.

Well Categories			
Perimeter	Interior/Focused	Delineation	Upgradient
RW01-MWS/RW01-MWI	RW09-MWS/RW09-MWI	RW21-MWS/RW21-MWI	RW19-MWS/RW19-MWI
RW02-MWS/RW02-MWI	RW10-MWI	RWH-MWS/RWH-MWI	RWR-MWS/RWR-MWI
RW03-MWS/RW03-MWI	RW11-MWS/RW11-MWI	RWI-MWS/RWI-MWI	RWS-MWS/RWS-MWI
RW04-MWS	RW12-MWS/RW12-MWI	RWO-MWS/RWO-MWI	
RW05-MWS/RW05R-MWI	RW13-MWI	RWP-MWI	
RW06R-MWS/RW06-MWI	RW14-MWS	RWQ-MWS/RWQMWI	
RW07-MWS/RW07-MWI	RW15-MWS/RW15-MWI		
RW08-MWS/RW08-MWI	RW16-MWS/RW16-MWI		
RW22R-MWS/RW22R-MWI	RW18-MWS/RW18-MWI		
RWA-MWS/RWA-MWI	RW23-MWS/RW23-MWI		
RWB-MWS/RWB-MWI	RW24-MWS/RW24-MWI		
RWD-MWS/RWD-MWI	RW25-MWS/RW25-MWI		
RWE-MWS/RWE-MWI	RWJ-MWS/RWJ-MWI		
RWF-MWS/RWF-MWI	RWK-MWS/RWK-MWI		
RWG-MWS/RWG-MWI	RWL-MWS/RWL-MWI		
	RWM-MWS/RWM-MWI		
	RWN-MWS		

As detailed in the RWM Supplemental Investigation Report (ARM, 2020a), well pairs J – K – L were installed in close proximity to the western most trench in order to evaluate the trench performance. Well pair RWJ was installed directly adjacent to the trench. The other two well pairs (RWK and RWL) were installed progressively further from the RWJ pair in the southwestern direction, with the RWK pair approximately 10 feet away and the RWL pair approximately 25 feet away. These three well pairs, along with the RW12 well pair (located immediately upgradient of the western-most trench and approximately colinear with the J-K-L pairs), are used to assess the near-field effect of one of the remediation trenches.

Groundwater samples were collected from all existing shallow and intermediate wells on a monthly basis from February 2017 up to January 2018. Following the January 2018 sampling event, groundwater samples were collected from all existing shallow and intermediate wells on a quarterly basis.

ARM submitted a Rod and Wire Mill Monitoring Network Update Letter dated March 8, 2021 (MNU Letter) to outline a new groundwater sampling plan for the calendar year of 2021 and going forward. This plan consisted of collecting samples from some wells on a semiannual basis and others on an annual basis. The MNU Letter included tables showing the new sampling frequency for the wells and the rationale for each. These tables are included as **Table 1** (shallow wells) and **Table 2** (intermediate wells). Samples collected for the second quarter sampling event (Q2) were collected from May 26 to June 18, 2021. Samples collected for the fourth quarter sampling event (Q4) were collected from October 4 to October 18, 2021. Due to some anomalous sample concentrations from the Q2 sampling event, samples were collected again from a few select wells in a confirmation sampling event in November 2021.

As a result of ongoing grading activities in late 2020 and 2021, the surface completions for several wells were damaged or buried. Before being repaired, a few wells were unable to be opened for a groundwater sample to be collected during the one or both of the 2021 semiannual sampling events. Below is a table showing which wells were not sampled during 2021.

Well ID	Sample Frequency	Sample Not Collected	Reason	Repaired?
RW03-MWS	Semiannually	Q2 and Q4	Buried under landscaping; could not be located with GPS and metal detector.	No
RW03-MWI	Semiannually	Q2 and Q4	Buried under landscaping; could not be located with GPS and metal detector.	No
RW07-MWI	Semiannually	Q2	Buried under landscaping; ultimately uncovered.	Yes ¹
RW12-MWS	Semiannually	Q2	Paved over; ultimately uncovered.	Yes ¹
RW12-MWI	Semiannually	Q2 and Q4	Paved over; ultimately uncovered.	Yes ¹

Note 1: RW07-MWI and RW12-MWS were repaired after the Q2 2021 sampling event, while RW12-MWI was repaired after the Q4 sampling event.

The RW03 well pair is planned for replacement in 2022. As a result of the well damages, groundwater levels could not be measured for some of the wells during 2021. In addition, the subsequent repairs for some of the damaged wells raised or lowered the inner polyvinyl chloride (PVC) well casing but the new casing height was not immediately surveyed. The wells will be surveyed during the 1st quarter of 2022. The top of casing (TOC) elevation is a necessary reference point for determining groundwater elevations, so some of these wells do not appear on the groundwater elevation contour maps included with this report.

This IM Progress Report summarizes groundwater conditions following remediation trench installation, with focus on the results of the two semiannual sampling events carried out in 2021.

3.3. GROUNDWATER CONDITIONS IN 2021

3.3.1. Shallow Groundwater Zone

3.3.1.1 Groundwater Elevations

A synoptic round of groundwater level measurements was collected for the Q2 and Q4 sampling events. Based on the field measurements, groundwater potentiometric surface maps were constructed for the shallow zone for the Q2 and Q4 events and are included as **Figure 4** and **Figure 5**, respectively. As shown on the figures, the predominant flow direction for the shallow zone in the eastern portion of the Site is to the west. In the central and west portions of the Site groundwater flow is to the north and northwest. In the southwest portion of the Site (south of RW06R-MWS) flow is to the southwest.

3.3.1.2 Zinc

Figure 6 displays the distribution of zinc concentrations in the shallow zone during the Q2 sampling event. The highest measured concentration was at RWN-MWS (745,000 µg/L), located upgradient of the western-most remediation trench and within the former Sludge Bin Storage Area. In addition, zinc was measured in high concentrations (compared to other shallow well concentrations during this event) east of the trenches near the southern edges of the Former East Pond at RWR-MWS (269,000 µg/L), RWS-MWS (116,000), and north of the remediation trenches in RW22R-MWS (169,000 µg/L),

Figure 7 displays the distribution of zinc concentrations in the shallow zone during the Q4 sampling event. While samples were collected from fewer wells during this event, relatively high concentrations were measured again at RWR-MWS (298,000 µg/L) and RW22R-MWS (137,000 µg/L). The zinc distribution is similar to that of the June event. For contour purposes, if a sample was not collected during the Q4 sampling event, then the concentration from the Q2 sampling event was utilized.

Time-series graphs of zinc concentrations in shallow perimeter wells are included as **Figure 8** (original wells) and **Figure 9** (supplemental wells). Results for the perimeter shallow wells are compared to the relevant surface water criterion for zinc of 81 µg/L. The results show that zinc stayed relatively the same in most wells during the two 2021 semiannual events, except for RW02-MWS, RWE-MWS, and RWA-MWS. In RW02-MWS, zinc significantly decreased during both the Q2 and Q4 events, being measured at its lowest historical level ever during the Q4 2021 event. The zinc concentration in well RWE-MWS exhibited notable fluctuations in concentration during both the Q2 and Q4 events. Zinc in well RWA-MWS exhibited an overall decrease in 2021 from 2020 levels. During the Q4 sampling event, concentrations of zinc in perimeter shallow wells were below the relevant surface water criterion of 81 µg/L in five of the ten perimeter shallow wells sampled in the 4th Quarter 2021: RWA-MWS, RWB-MWS, RWD-MWS, RW02-MWS, and RW05-MWS.

Time-series graphs of zinc concentrations in shallow interior wells are included as **Figure 10** (original wells) and **Figure 11** (supplemental wells). Several interior shallow zone wells were only sampled during the Q2 sampling event. However, zinc levels in these wells remained relatively stable from their 2020 values. Slight increases were observed for zinc concentrations during the Q4 event for wells RW18-MWS, RWJ-MWS, and RW23-MWS (though all of these remained below the relevant surface water criterion of 81 µg/L).

A time-series graph displaying zinc concentrations for the delineation wells is included as **Figure 12**. Zinc concentrations in delineation wells generally remained stable (RWQ-MWS) or decreased (RWO-MWS and RWI-MWS) in 2021. The only exception is well RWH-MWS, which exhibited increases during both 2021 semiannual events.

A time-series graph of the zinc concentrations in the shallow upgradient wells is included as **Figure 13**. Zinc concentrations in upgradient shallow zone well RWS-MWS fluctuated, with an increase during the Q2 2021 event and a decrease during the Q4 event. The zinc level in RWR-MWS stayed relatively the same. Results for zinc concentrations in shallow wells are shown in **Table 3**. Laboratory reports for samples collected during 2021 are included as **Appendix A**.

3.3.1.3 Cadmium

Figure 14 displays a map of the distribution of cadmium concentrations in the shallow zone during the Q2 2021 sampling event. Monitoring well RWN-MWS (located within the Former Sludge Bin Storage Area) had the highest detected concentration of cadmium at 4,850 µg/L. All cadmium concentrations in wells along the shoreline in the shallow zone were below 15 µg/L (compared to the relevant surface water criterion for zinc of 7.9 µg/L). All other measured cadmium concentrations at shallow zone wells were below 100 µg/L.

Figure 15 displays the distribution of cadmium concentrations in the shallow zone during the Q4 sampling event. For contour purposes, if a sample was not collected during the Q4 sampling event, then the concentration from the Q2 sampling event was utilized. During the Q4 sampling event, RW22R-MWS had the highest detected concentration of cadmium (117 µg/L) (RWN-MWS is sampled annually in Q2 only). All cadmium concentrations along the shoreline in the intermediate zone were below 5 µg/L.

Time-series graphs of cadmium concentrations in shallow perimeter wells are included as **Figure 16** (original wells) and **Figure 17** (supplemental wells). Results for the perimeter shallow wells are compared to the relevant surface water criterion for cadmium of 7.9 µg/L. The results show that cadmium concentrations decreased or stayed relatively stable during the 2021 events. The only exception was well RW22R-MWS which exhibited increases in concentration during the Q2 and Q4 sampling events. During the Q4 2021 sampling event, concentrations of cadmium in perimeter shallow wells were below the relevant surface water criterion of 7.9 µg/L in all wells except RW22R-MWS (117 µg/L). Cadmium was not detected in several of the shallow perimeter wells during the 2021 events. Since February 2017, cadmium concentrations in perimeter wells have generally remained stable or decreased over time.

Time-series graphs of cadmium concentrations in shallow interior wells are included as **Figure 18** (original wells) and **Figure 19** (supplemental wells). Sampling results for interior shallow zone wells show that total cadmium was generally below 20 µg/L during 2021, except for in well RWN-MWS. This well is located within the former Sludge Bin Storage Area and had a cadmium concentration that was three orders of magnitude greater than concentrations of most of the shallow zone wells.

A time-series graph displaying cadmium concentrations for the delineation wells is included as **Figure 20**. Cadmium concentrations in delineation wells generally remained stable or decreased

since sampling began at these locations in May 2019, including through both semiannual events of 2021.

A time-series graph of cadmium concentrations in shallow upgradient wells is included as **Figure 21**. Cadmium was detected in upgradient shallow zone well RWS-MWS at very low levels (less than 2 µg/L). The cadmium level in supplemental well RWR-MWS remained relatively stable during both 2021 sampling events. Cadmium concentrations in shallow wells are shown in **Table 4**. Laboratory reports for samples collected during 2021 are included as **Appendix A**. Individual time-series graphs for each shallow zone monitoring well are presented in **Appendix B**.

3.3.1.4 *pH*

Measurements of pH in the shallow groundwater zone from the Q2 2021 sampling event, shown on **Figure 22**, ranged from 4.00 to 11.83. Values of pH were generally higher in wells near the shoreline. Wells RWJ-MWS, RW18-MWS and RW16-MWS also had relatively high pH values.

Measurements of pH in the shallow groundwater zone from the Q4 2021 sampling event, shown on **Figure 23**, generally ranged from 4 to 11, with a few pH values outside this range that may be anomalous. In 2022, pH levels that are considered to be anomalous may be tested with a second pH meter or via lab analysis.

3.3.2. Intermediate Groundwater Zone

3.3.2.1 *Groundwater Elevations*

A synoptic round of groundwater level measurements was collected for the Q2 and Q4 2021 sampling events. Based on these field measurements, groundwater elevation contour maps were constructed for the intermediate zone for the two semiannual events (included as **Figure 24** and **Figure 25**, respectively). The groundwater elevations reveal that the potentiometric surface in the intermediate zone was nearly flat during both 2021 events, with very little variation (less than a half foot of difference) amongst most calculated groundwater elevations across the Site. Well RW22R-MWI had the lowest groundwater elevation during both events and was the only location to have an elevation that was below mean sea level during either event. Well RW21-MWI had a notably higher groundwater elevation in the Q2 event (2.33 feet amsl) compared to its Q4 elevation (1.54 feet amsl) and also compared to other wells in the Q2 event (average of 1 foot amsl).

Groundwater elevations were generally higher (by about half a foot) during the Q4 event than the Q2 event. Well RW18-MWI had a notably higher groundwater elevation in the Q4 event (2.29 feet amsl) compared to its Q2 elevation (1.65 feet amsl) and also compared to other wells in the Q4 event (average of 1.50 feet amsl). Well RW02-MWI also had a notably high groundwater elevation in the Q4 event (2.54 feet amsl) but was not measured in the Q2 event.

Groundwater elevations in the intermediate zone are generally lower than in the shallow zone, indicating a downward vertical gradient. There are some exceptions, as some perimeter well pairs have had a higher groundwater elevation in the shallow well than in the intermediate well. During the Q2 sampling event, an upward gradient occurred in the RWB well pair. During the Q4 sampling event, an upward gradient occurred in the following well pairs, all located in the far southwest corner of the Site: RW01, RW02, RW05R, and RWF. The upward gradient has been observed in this area in several sampling events prior to 2021. During the Q4 sampling event, the shallow wells in well pairs RWH and RWO also had higher groundwater elevations than their intermediate wells. This is the first time an upward gradient has been observed in this area.

3.3.2.2 Zinc

Intermediate groundwater zinc concentrations during the Q2 2021 event, mapped spatially on **Figure 26**, generally decrease from east to west across the Site. Zinc concentrations were highest outside the north and south edges of the former East Pond source area, at RWP-MWI (3,990,000 µg/L), RWR-MWI (1,400,000 µg/L) and RWS-MWI (858,000). Zinc concentrations above 500,000 µg/L were also observed at locations RWH-MWI, RWI-MWI, and RW21-MWI (at similar concentrations to previous sampling events), which indicates that the contaminant plume in the intermediate zone extends beyond the northern limits of the treatment trenches and that the former Northwest Pond area may have acted as a source of contaminant mass to the intermediate zone groundwater. This impacted area was discussed in the Comment Response Letter: Rod and Wire Mill IM 2020 Progress Report and Parcel A3 NAPL Semi-Annual Monitoring Report (ARM 2022); it was identified in previous sampling and delineation events but was unable to be completely excavated due to the presence of overhead lines. The concentration observed in RWA-MWI was also elevated compared to other intermediate wells during this event. Based on the lower concentration in RW22R-MWI, the relatively high zinc concentration in RWA-MWI appears to be an isolated plume separated from the high concentrations observed around the former Northwest Pond area. At RWJ-MWI, the zinc concentration is low (1,990 µg/L) relative to other intermediate wells nearby. However, concentrations of zinc above 100,000 µg/L extend westward from RWL-MWI toward RWE-MWI, and also to the south from RWL-MWI to RW23-MWI.

Intermediate zone groundwater zinc concentrations during the Q4 2021 event are shown on **Figure 27**. For contour purposes, if a sample was not collected during the Q4 sampling event, then the concentration from the Q2 sampling event was utilized. Even though several interior wells were not sampled during the Q4 event, many of the wells that were sampled exhibited substantially lower concentrations during the Q4 event than the Q2 event. These wells consisted of:

Well	Q2 Concentration (µg/L)	Q4 Concentration (µg/L)	% Decrease
RWO-WMI	208,000	200 U	100%
RWP-MWI	3,990,000	14,300	99.60%
RWR-MWI	1,400,000	48,000	96.60%
RW05R-MWI	79,000	200 U	100%

Note: U flag indicates analyte was not detected.

The sampling purge logs for these wells from the Q4 sampling event were reviewed for any observations that could explain unusual groundwater conditions in these wells but no such observations were found. Due to the anomalous decreases in zinc concentrations, the wells with the three biggest drops by percent (RW05R-MWI, RWO-MWI, and RWP-MWI) were resampled in November 2021. The results are as follows:

- RW05R-MWI: 50,700 µg/L; increased back to a more typical level.
- RWO-MWI: 1,380 µg/L; increased from the original Q4 event (non-detect) but still several orders of magnitude lower than is typical for this well.
- RWP-MWI: 526 µg/L; decreased to an even lower level, several orders of magnitude lower than is typical for this well.

The concentration in well RWH-MWI near the former Northwest Pond was still elevated compared to other wells during this event. The isolated plume in the northwest corner near RWA-MWI persists, as well as the two axes of high concentrations (60,000-100,000 µg/L) extending from RWL-MWI westward to RWE-MWI and from RWL-MWI southward to RW23-MWI).

Time-series graphs of zinc concentrations in intermediate perimeter wells are included as **Figure 28** (original wells) and **Figure 29** (supplemental wells). While concentrations of zinc in some perimeter wells exhibited increases during 2021, concentrations in the majority of perimeter wells exhibited overall slight decreases during 2021. Well RW07-MWI exhibited a notable increase from June 2020, back to levels that were more typical for this well in March 2020 and 2019. RW02-MWI exhibited a significant decrease in the Q2 2021 event followed by a slight increase in the Q4 2021 event. Wells RW22R-MWI and RWB-MWI both exhibited slight increases during both 2021 events. The graph of RW05R-MWI, shown on **Figure 29**, is particularly revealing in that it shows that the November 2021 zinc concentration is consistent with the slight decreases seen in other perimeter wells and that the original Q4 zinc concentration for this well (collected in October 2021) was an outlier that is likely not representative of groundwater conditions at the well.

Based on accepting the November 2021 re-sample result for RW05-MWI (as opposed to the October 2021 result) as the more representative result, there was only one location (RWB-MWI, 19.1 µg/L) with zinc concentrations in the intermediate perimeter wells during the Q4 event below the relevant surface water criterion of 81 µg/L. The highest zinc concentration amongst perimeter wells in 2021 was consistently measured in well RWA-MWI.

Time-series graphs of zinc concentrations in intermediate interior wells are included as **Figure 30** (original wells) and **Figure 31** (supplemental wells). Results showed that zinc concentrations in most of these wells exhibited overall increases in 2021. More substantial fluctuations were observed in original wells while supplemental well concentrations saw only slight increases or

stayed relatively stable over 2021. The only interior well that exhibited a notable decrease in zinc concentration was RW18-MWI.

A time-series graph of zinc concentrations in intermediate delineation wells is included as **Figure 32**. Zinc concentrations in delineation wells have been mostly stable since their installation in March 2019 including through 2021, except for the aforementioned significant drops in concentrations seen during the Q4 2021 event in RWO-MWI and RWP-MWI.

A time-series graph of zinc concentrations in intermediate upgradient wells is included as **Figure 33**. The zinc concentration in upgradient intermediate zone well RW19-MWI exhibited a significant decrease in the Q2 2021 sampling event. The supplemental upgradient well RWR-MWI zinc concentration has generally decreased since its installation, inclusive of the significant decrease already mentioned that was seen in Q4 2021. All intermediate well zinc results are included in **Table 4**. Laboratory reports for samples collected during 2021 are included as **Appendix A**.

3.3.2.3 Cadmium

Intermediate zone cadmium concentrations during the Q2 event, shown on **Figure 34**, vary significantly across the Site. The highest cadmium concentration was measured in RW13-MWI (26,400 µg/L) located in the former Sludge Bin Storage Area. There were also relatively high concentrations compared to other intermediate well concentrations during this event north of the easternmost trench near the former East Pond in well RWP-MWI (8,430 µg/L) and north of the westernmost trench near the former Northwest Pond in wells RWI-MWI (6,810 µg/L) and RWH-MWI (6,760 µg/L). As with zinc, the high cadmium detection at the northwestern-most corner of the Site at RWA-MWI (11,700 µg/L) appears to be isolated from the known source areas.

Intermediate zone cadmium concentrations during the Q4 event, shown on **Figure 35**, are similar to those observed during the Q2 event. Relatively high concentrations persisted in northern wells RWH-MWI and RWP-MWI, as well as the isolated plume in the northwest corner at RWA-MWI. Cadmium concentrations in the intermediate perimeter wells during the Q4 event were below the relevant surface water criterion of 7.9 µg/L in RWB-MWI (1 µg/L), RW22R-MWI (2.5 µg/L) and RW02-MWI (1 µg/L). It is notable that the four wells (RWO-MWI, RWP-MWI, RWR-MWI, and RW05R-MWI) that exhibited near-100% reductions in zinc concentrations between the Q2 and the Q4 events did not have decreases of corresponding proportions in cadmium concentrations between the two events.

Time-series graphs of cadmium concentrations in intermediate perimeter wells are included as **Figure 36** (original wells) and **Figure 37** (supplemental wells). Concentrations of cadmium in wells RW01-MWI, RW06-MWI and RW07-MWI exhibited overall increases in 2021 while wells RW02-MWI, RWG-MWI and RW05R-MWI exhibited notable decreases in 2021. Concentrations of cadmium in most other perimeter wells remained relatively stable over the course of 2021.

While the cadmium level in RW05R-MWI remained relatively stable between the Q2 and Q4 events, it dropped significantly from the original Q4 (October 2021) event to the November 2021 event. This is surprising given that the zinc concentration in this well increased from an anomalously low concentration in the original Q4 sampling event to more typical concentrations in the November sampling event. The highest cadmium concentration in perimeter wells in 2021 was consistently measured in well RWA-MWI.

Time-series graphs of cadmium concentrations in intermediate interior wells are included as **Figure 38** (original wells) and **Figure 39** (supplemental wells). While many of the interior wells were only sampled during the Q2 event, cadmium concentrations in most of the interior wells stayed relatively stable or increased during 2021. Wells RW15-MWI and RW16-MWI exhibited slight increases during the Q2 sampling event. Well RW13-MWI continued its historical pattern of fluctuating significantly by increasing drastically when it was sampled in the Q2 event. Well RWJ-MWI increased during both the Q2 and Q4 events, while the remainder of the intermediate interior supplemental wells were relatively stable.

A time-series graph of cadmium concentrations in intermediate delineation wells is included as **Figure 40**. Cadmium concentrations in intermediate delineation wells remained relatively stable or exhibited slight decreases over the course of the 2021 sampling events, with the exception of well RWP-MWI (large decrease) and RWQ-MWI (slight increase). Similar to the cadmium concentration in RW05R-MWI, the cadmium level in RWP-MWI remained relatively stable between the Q2 and Q4 events but dropped significantly from the original Q4 (October) event to the November event. Unlike RW05-MWI however, the level of cadmium in the November event for RWP-MWI is consistent with the level of zinc observed in this well during the November event, both being more than three orders of magnitude lower than what was measured during the original Q4 sampling event.

A time-series graph of the cadmium concentrations in intermediate upgradient wells is included as **Figure 41**. The cadmium concentration in upgradient well RW19-MWI exhibited a notable decrease during the Q2 sampling event. Wells RWR-MWI and RWS-MWI decreased during the Q2 sampling event but then exhibited greater increases during the Q4 sampling event to new all-time maximum concentrations in each well. Cadmium results for all samples from the intermediate zone are included in **Table 5**. Individual time-series graphs for each intermediate zone monitoring well are presented in **Appendix C**.

3.3.2.4 pH

For both the Q2 and Q4 event, pH values in the intermediate groundwater zone generally ranged from 4 to 11, with a few pH values outside this range that may be anomalous. In 2022, pH levels that are considered to be anomalous may be tested with a second pH meter or via lab analysis.

Measurements of pH within the intermediate groundwater zone during the Q2 and Q4 events are shown on **Figure 42** and **Figure 43**, respectively. The highest pH value (7.37) during the Q4 event was measured in well RWJ-MWI, the well located directly adjacent to a trench. There were four intermediate zone monitoring wells with pH values less than 3.0 (RWB-MWI, RWE-MWI, RWG-MWI, and RWS-MWI). Previous pH values in these wells ranged from 5.75 to 8.0; therefore these values may be anomalous and will be checked in 2022.

3.3.3. Focused Well Pairs J-K-L

Figure 26 and **Figure 27** show the locations of the Focused wells relative to the trench, along with the intermediate zinc concentrations for the Q2 and Q4 2021 sampling events, respectively. These Focused wells were installed in 2019 which was more than two years following the trench installation. As indicated on **Figure 26**, intermediate groundwater upgradient of the westernmost trench in well RW13-MWI contains over 350,000 µg/L of dissolved zinc. The zinc concentration in RWJ-MWI, directly adjacent and downgradient of the trench, was 1,990 µg/L in the Q2 sampling event and 2,840 µg/L in the Q4 sampling event. As the distance downgradient from the trench increased, the zinc concentration was observed to increase such that the zinc concentration ranged from 23,700 µg/L to 34,600 µg/L in RWK-MWI and from 97,000 µg/L to 110,000 µg/L in RWL-MWI. The same pattern appears in the intermediate zone for cadmium concentrations. This suggests that the permeable reactive barrier treatment technology and the reagent appears to be effective in raising the pH of the groundwater and removing the metals concentrations. Based on the extremely slow groundwater flow velocity it appears that the treated groundwater has yet to reach RWL-MWI.

Figure 44 presents a time-series graphs of zinc concentrations for the three locations in the intermediate zone. This figure shows relatively stable zinc concentrations from 2019 through 2021 for well RWJ-MWI, RWK-MWI, RWL-MWI. As previously mentioned, these Focused wells were installed in 2019 which was more than two years following the trench installation. Concentrations upgradient from the trench (RW13-MWI concentration from 2021 or RW12-MWI concentrations from 2020) suggest that the zinc concentration at RWJ-MWI has significantly decreased from what it would have been in that area without installation of the trenches. Furthermore, the large differences between zinc levels amongst the Focused wells (shown on the graph) correspond to their distance away from the trench, with the closest well of the three (RWJ-MWI) having the lowest zinc concentration and the farthest well of the three (RWL-MWI) having the highest zinc concentration. The differences can also be seen on **Figure 45** with the time-series graphs of cadmium concentration in these three intermediate wells, although there is not as pronounced of a difference between the levels of RWJ-MWI and RWK-MWI as there is for zinc.

The time-series graph included as **Figure 46** shows that the zinc concentrations in the shallow zone downgradient wells RWK-MWS and RWL-MWS are several orders of magnitude greater than that of RWJ-MWS, which is located directly adjacent to the trench. **Figure 46** shows that the

shallow zone zinc concentrations have remained relatively stable from 2019 through 2021. Since cadmium is rarely detected or is detected below the reporting limit in the shallow Focused wells, no time-series graph was made for cadmium concentrations in these wells.

The groundwater elevations of the Focused well pairs provide evidence that groundwater may be draining through the trenches from the shallow zone to the intermediate zone. In both semiannual sampling events, there is a gradient toward the trench (from L toward J) in these three wells in the shallow zone but a gradient away from the trench (from J toward L) in the intermediate zone.

3.4. CONTAMINANT REDUCTION

The interim groundwater treatment goals are to increase the pH in the intermediate groundwater zone in order to precipitate the dissolved metals and achieve a reduction in dissolved concentrations of cadmium and zinc within the source areas.

The time-series graphs show that the cadmium and zinc concentrations have, in some cases, fluctuated by orders of magnitude between consecutive sampling events. As a result, the comparison of individual quarterly values for some wells can indicate an increase or decrease depending on which specific quarterly values are compared. For ease in visualizing overall trends and magnitude of reductions, annual average concentrations of cadmium and zinc were calculated for each well for which multiple years of data are available. Values for total and dissolved metals were used interchangeably in the calculations based on previous observations that nearly all of the total metals concentrations are accounted for by the dissolved fraction.

Table 7 summarizes average annual groundwater cadmium and zinc concentrations at each shallow zone well installed before the remediation trenches. The tables show that the average cadmium concentrations in shallow zone wells that were sampled in 2021 are all below the ambient surface water quality criterion of 7.9 ug/L, and most have shown decreases over the observed time period. Average cadmium concentrations at interior well RW11-MWS and perimeter well RW06R-MWS have increased since 2017 and 2018, respectively, but are still below the ambient water quality criterion.

Zinc concentrations in the easternmost interior shallow zone wells that were sampled in 2021 (RW16-MWS and RW18-MWS) showed reductions of 91% and 99%, respectively, over the observed time periods. However, zinc concentrations increased from 2015 to 2021 at the more western interior wells RW11-MWS and RW12-MWS. The largest percent increase (372%) was observed at interior well RW11-MWS. Zinc concentrations in perimeter wells RW02-MWS and RW05-MWS decreased by over 90% since they were installed. The only other well that was sampled in 2021 in which 2021 zinc concentrations showed an increase relative to its earliest yearly average was RW07-MWS.

Table 8 summarizes average annual groundwater cadmium and zinc concentrations at each intermediate zone well installed before the remediation trenches. The 2021 yearly average for upgradient well RW19-MWI showed a 95% reduction from its 2017 yearly average. Interior wells that were sampled in 2021 showed decreases from the earliest yearly average to the 2021 yearly average except for wells RW09-MWI and RW15-MWI. The most significant cadmium concentration decreases were observed at RW10-MWI, RW11-MWI, and RW18-MWI, with values decreasing by over 85%. Intermediate zone yearly average cadmium concentrations have increased in perimeter wells RW01-MWI, RW06-MWI and RW07-MWI. The most notable increases were at wells RW06-MWI and RW07-MWI, where average yearly cadmium concentrations increased by 1,655% and 1,653%, respectively, from their earliest yearly average to their 2021 yearly average. However, the 2021 averages for both wells are less than their 2019 averages. Decreases in cadmium concentrations were observed in RW02-MWI and RW08-MWI from their earliest yearly averages to their 2021 yearly averages.

Like cadmium, the 2021 yearly average concentration for zinc in intermediate zone upgradient well RW19-MWI decreased by 96% compared to the 2017 yearly average. Most interior wells showed significant decreases in zinc concentrations from the earliest yearly average to the 2021 yearly average. Only interior wells RW09-MWI and RW15-MWI exhibited increases from their earliest yearly average zinc concentrations to their 2021 average zinc concentrations (similar to corresponding average cadmium concentrations in these wells). Patterns in zinc concentrations for intermediate zone perimeter wells corresponded to those for intermediate zone cadmium, where RW01-MWI, RW06-MWI and RW07-MWI showed increases from their earliest yearly averages to their 2021 yearly averages.

4.0 SUMMARY AND CONCLUSIONS

The current approach for addressing the source area elevated dissolved cadmium and zinc in the intermediate groundwater zone is to precipitate the dissolved metals in-situ by raising the groundwater pH above 7. This approach relies on groundwater movement to distribute the reagent to increase pH and to intercept the migration of metals contaminants in the intermediate zone. Therefore, the effectiveness of the new interim measure is expected to be observed first in the intermediate zone wells closest to the trenches and, due to the relatively slow groundwater velocity (less than 5 ft/year), may not be apparent in downgradient wells for several years after trench installation in January 2017.

The three focused well pairs wells J -K- L were installed directly adjacent to the western most treatment trench to help evaluate overall trench performance. Well RWJ-MWI located closest to the trench exhibited elevated pH values (excluding the anomalous Q2 2021 event value) and most notably a lower zinc concentration when compared to the upgradient groundwater concentrations relative to the trench. It is still early in the generation and evaluation of the groundwater monitoring data, especially due to the relatively flat groundwater gradient in the intermediate zone (as shown on **Figures 24 and 25**). Flow through the trenches is what effects the treatment of the groundwater, and the flow is inhibited by the flat hydraulic gradient. Groundwater monitoring data and the overall trend will continue to be monitored and evaluated to assess the effectiveness of the treatment trenches in precipitating the dissolved metals from the groundwater.

Groundwater in the shallow zone is monitored, although it is not the focus of the interim measure. In general, cadmium and zinc concentrations in shallow wells stayed relatively the same or decreased during 2021, with notable exceptions of zinc in RWH-MWS and cadmium in RW22R-MWS (both located to the northwest of the former Northwest Pond). In the shallow wells along the western shoreline (perimeter wells), cadmium concentrations in nearly all wells are below the ambient surface water quality criterion. However, only about half of zinc concentrations in these wells are below the ambient surface water quality criterion.

In the intermediate groundwater zone, cadmium and zinc concentrations in the interior wells generally stayed relatively the same or exhibited increases during 2021. Both cadmium and zinc increased in well RWJ-MWI, the well installed directly adjacent to one of the trenches, during both 2021 events. As noted in previous reports, the supplemental wells have identified elevated concentrations at additional locations outside the area of influence of the current IM.

For zinc and cadmium concentrations in the intermediate zone perimeter wells, there were more overall increases than decreases in 2021. In delineation wells RWP-MWI and RWO-MWI there were substantial decreases in zinc concentration, as well as for the cadmium concentration in RWP-MWI and zinc concentration in RWR-MWI, during the Q4 2021 event. These

concentrations decreased by several orders of magnitude during this sampling event. They seem to be anomalous results that need to be verified by future sampling data from these wells.

In the IM design, the groundwater velocities were expected to be slow, in the range of 5 to 10 feet per year (later calculated to be less than five feet per year in the RWM Supplemental Investigation Report). Paving at the RWM, completed around the end of March 2018, has reduced aquifer recharge from precipitation. While the whole Site is not paved and it is possible there is some recharge to the intermediate zone via shallow zone groundwater draining through the trenches, it is evident that the end result is still a nearly flat potentiometric surface in the intermediate zone (shown on **Figures 24** and **25**). A lack of gradient in the intermediate zone will have caused the groundwater velocity to slow considerably. Therefore, the increases in metals concentrations observed in the perimeter wells would not be expected to be the result of migration from the upgradient source areas. Rather, the decrease in groundwater flow velocity allows for greater equilibration between the groundwater and residual contamination already present in the aquifer matrix downgradient of the IM area due to greater contact time.

The RWM IM Supplemental Investigation Report (ARM 2020a) identified some areas that may be outside the intended effective zone of the remediation trenches. The long-term effectiveness of the interim measure and the need for additional or alternative remedial measures will be evaluated further as described in the Rod and Wire Mill Groundwater Corrective Measures Study Work Plan (Revision 1, dated January 14, 2021).

Groundwater sampling at the RWM for dissolved cadmium and zinc will continue in 2022 in accordance with the schedule as presented in the RWM Monitoring Network Update letter (ARM 2021c). In accordance with the Comment Response Letter: Rod and Wire Mill IM 2020 Progress Report and Parcel A3 NAPL Semi-Annual Monitoring Report (ARM 2022), groundwater samples will also be collected from select intermediate wells to be analyzed for organics (volatile organic compounds, semi-volatile organic compounds, diesel range organics and gasoline range organics).

5.0 REFERENCES

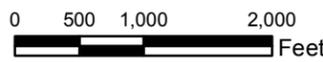
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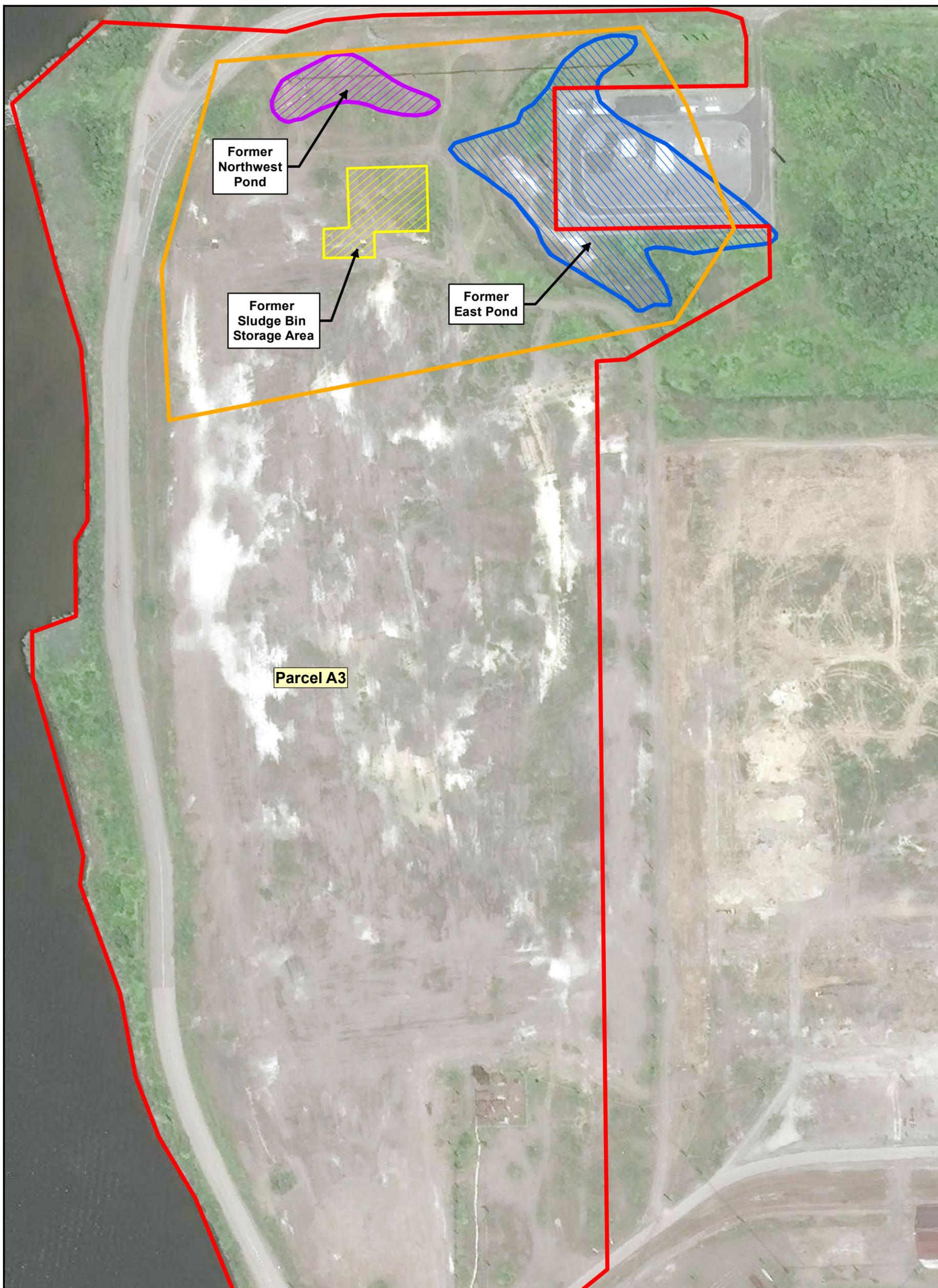
FIGURES

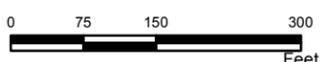


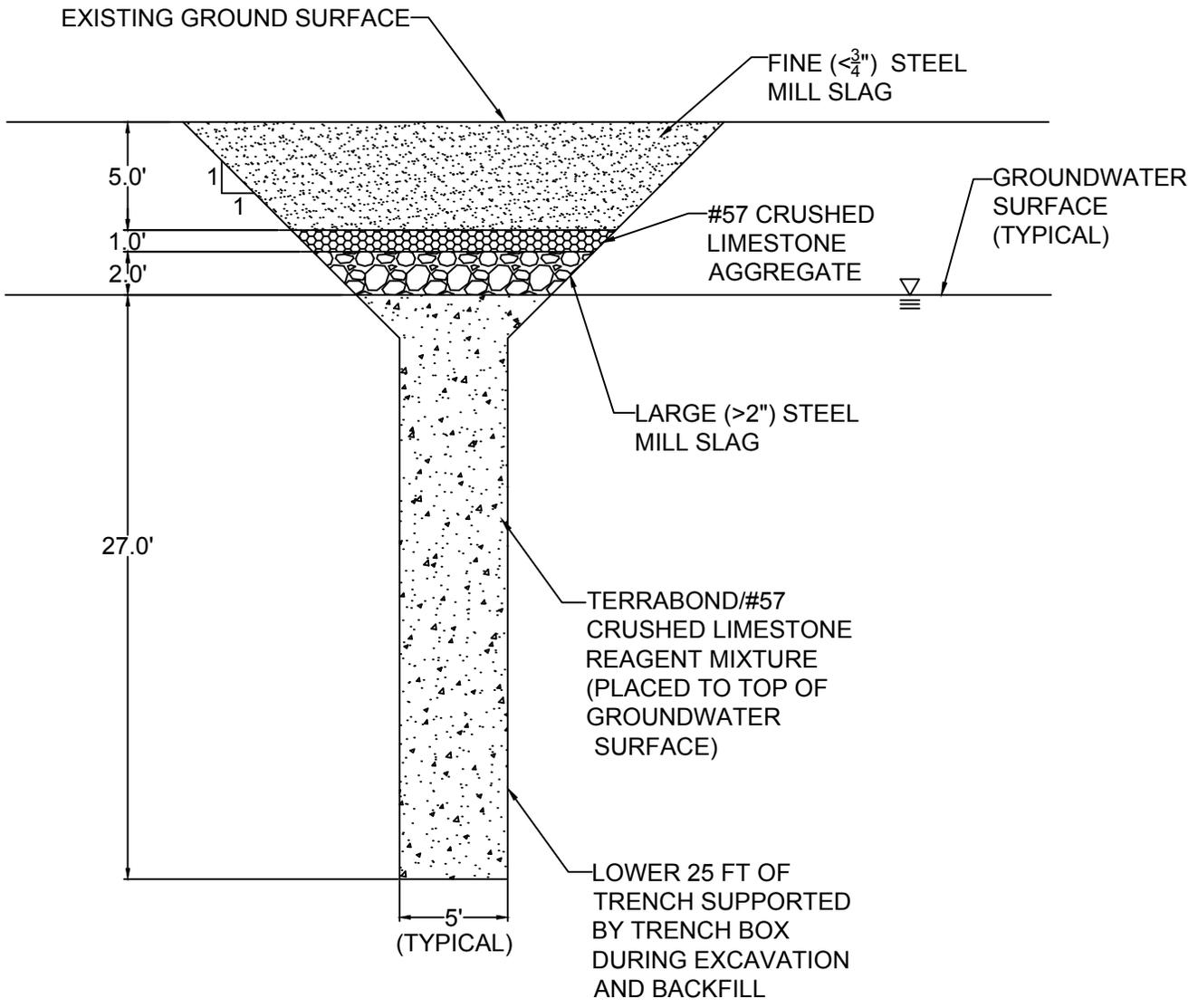
 Property Boundary
 Rod & Wire Mill (RWM)

RWM

Trade Point Atlantic Location Map March 30, 2021		Figure 1
  ARM Group LLC Engineers and Scientists	Tradepoint Atlantic	
	Sparrows Point	
	Baltimore County, MD	
	ARM Project 21010103	
		



Parcel A3 (Rod & Wire Mill) Location of Historical Activities January 13, 2020		Figure 2
Tradepoint Atlantic	Sparrows Point	
ARM Project 21010103	Baltimore County, MD	
 ARM Group LLC Engineers and Scientists	<ul style="list-style-type: none">  Former Northwest Pond  Former East Pond  Former Sludge Bin Storage Area  Approximate Boundary of Remedial Design Area  Parcel A3 (RWM) boundary 	
 		



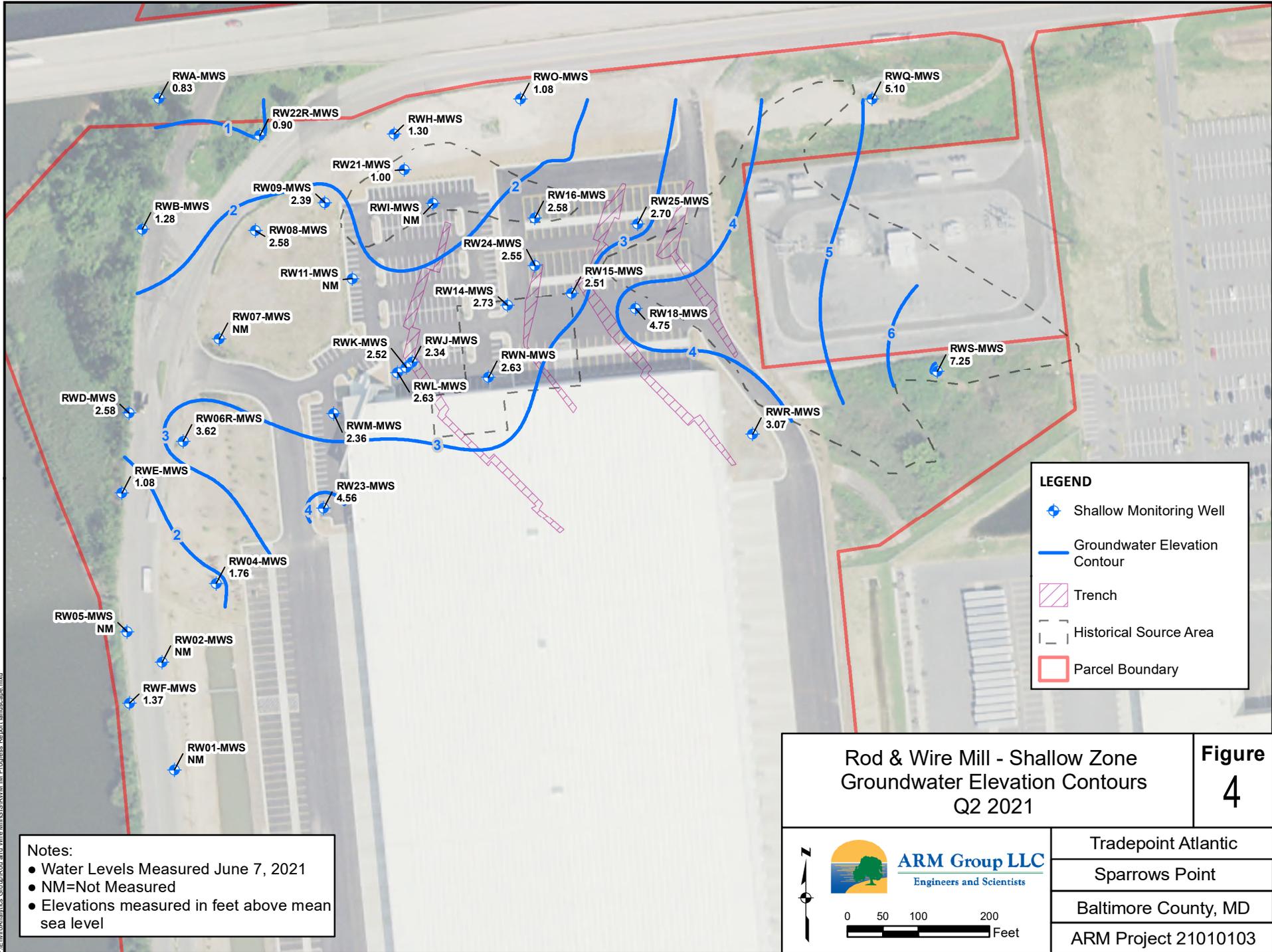
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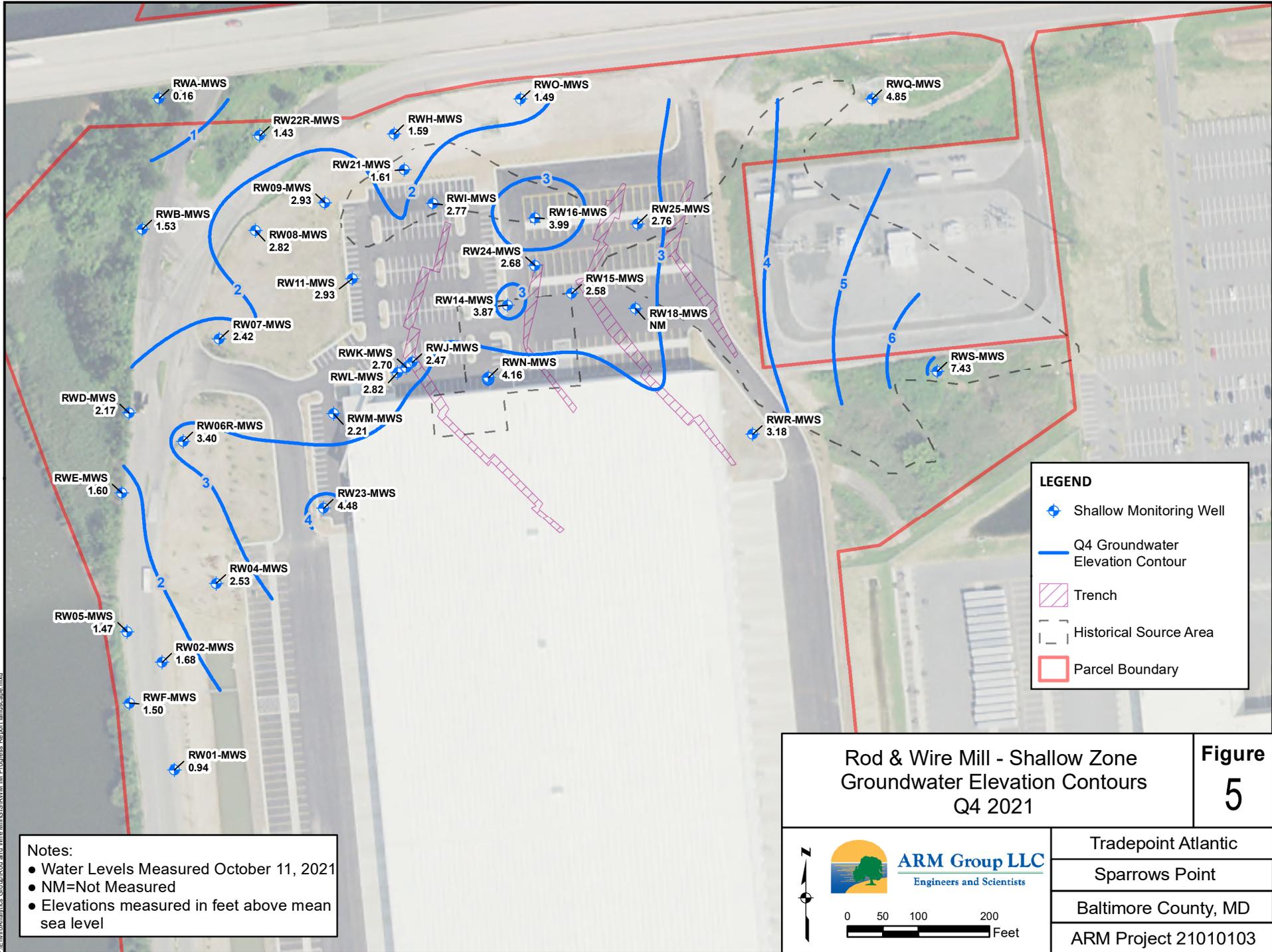
INTERIM REMEDIAL MEASURES
 FORMER ROD AND WIRE MILL AREA
 SPARROWS POINT, MD

TYPICAL TREATMENT TRENCH BACKFILL PROFILE SECTION VIEW

PROJECT ENGINEER:	JSD	SCALE:	1" = 8'
CHECKED BY:		PROJECT NUMBER:	2016-3421
DRAWN BY:	EEE	DATE:	3/23/2017
			FIGURE: 3



P:\Environ\Analytics_Ground\Rod and Wire Mill\GIS\RWMA_LM Progress_Report_Landscape.mxd



Notes:

- Water Levels Measured October 11, 2021
- NM=Not Measured
- Elevations measured in feet above mean sea level

LEGEND

- ◆ Shallow Monitoring Well
- Q4 Groundwater Elevation Contour
- ▨ Trench
- - - Historical Source Area
- ▭ Parcel Boundary

Rod & Wire Mill - Shallow Zone
Groundwater Elevation Contours
Q4 2021

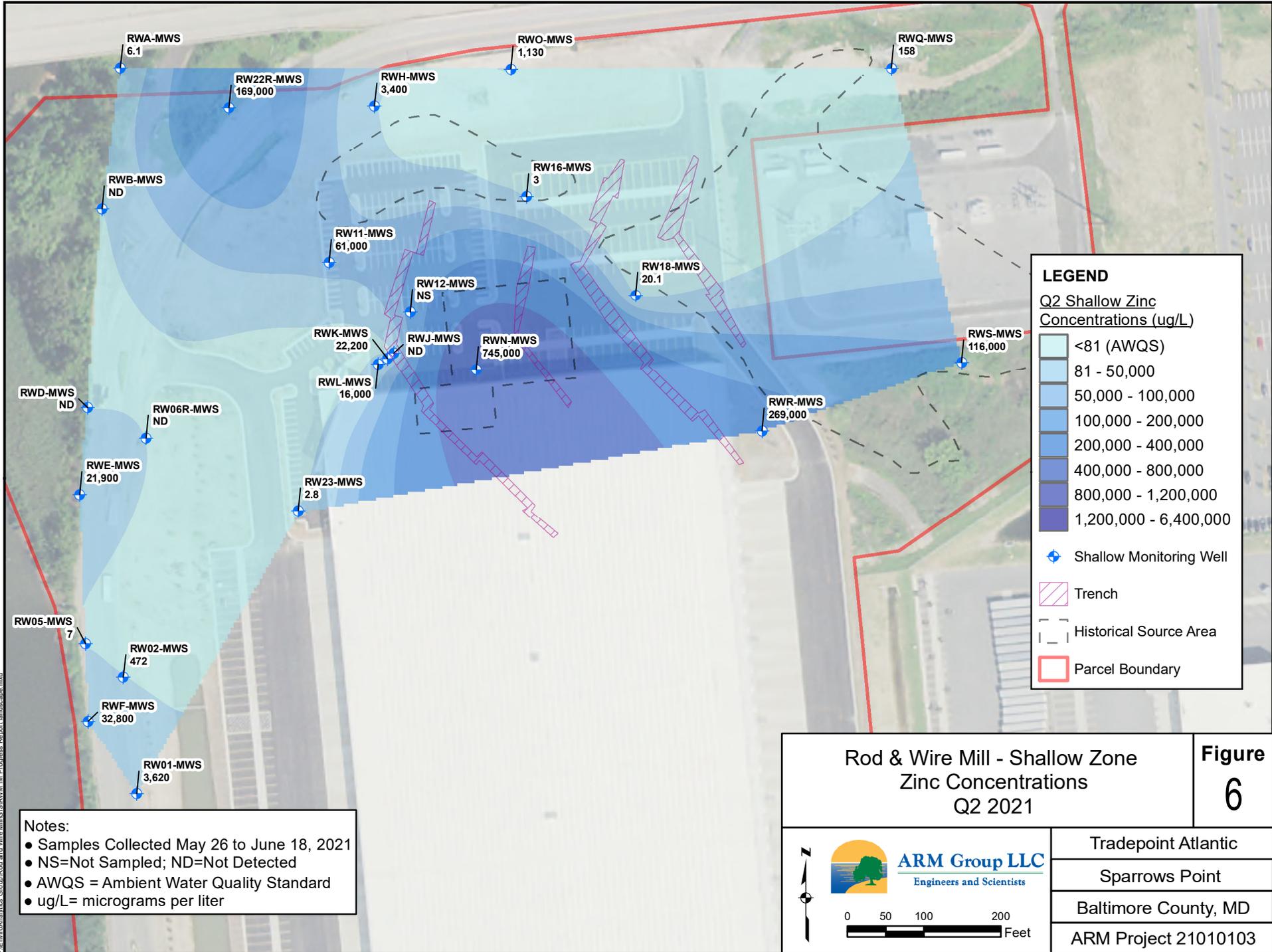
Figure
5



ARM Group LLC
 Engineers and Scientists

0 50 100 200 Feet

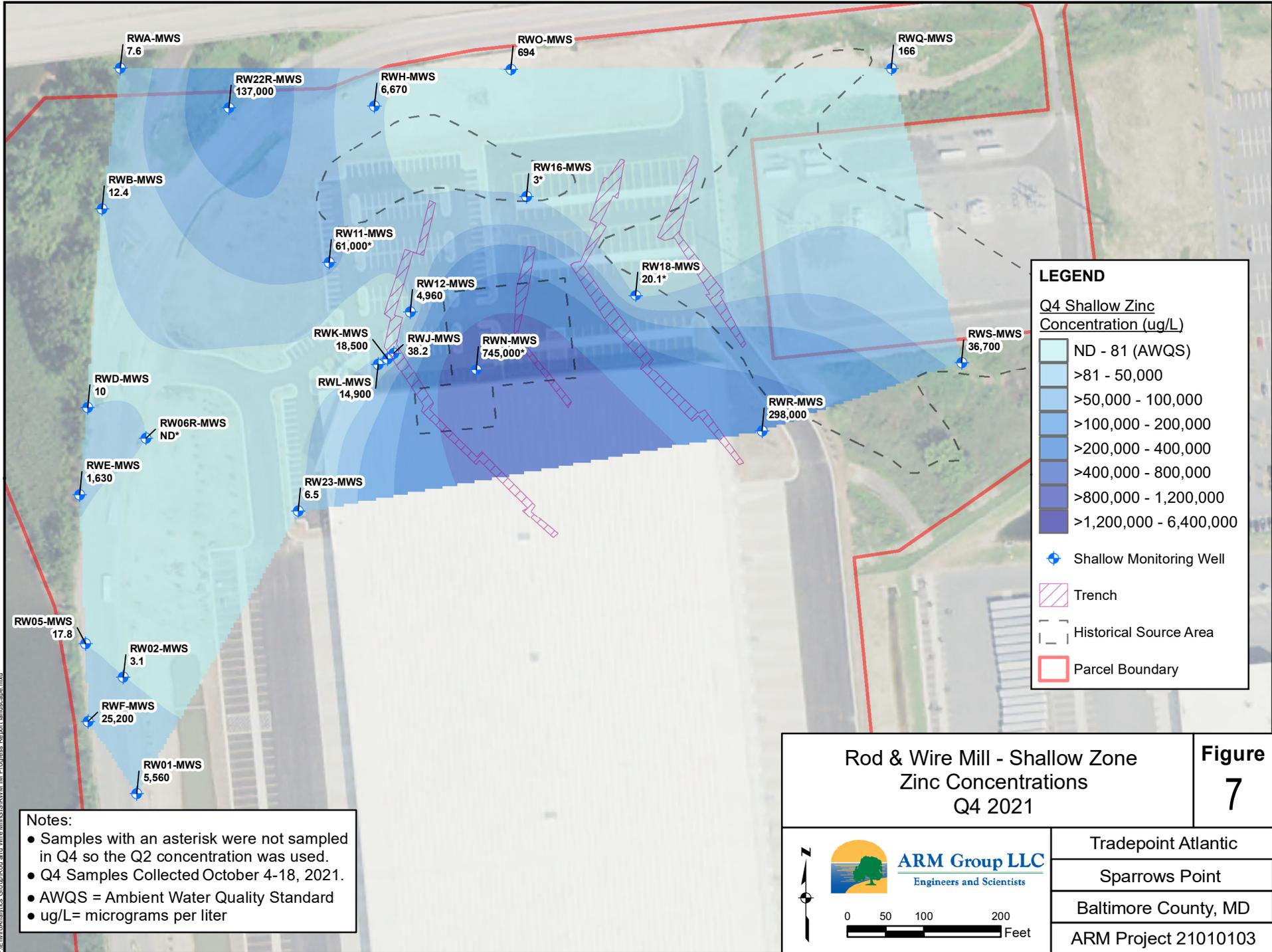
Tradepoint Atlantic
 Sparrows Point
 Baltimore County, MD
 ARM Project 21010103



Notes:

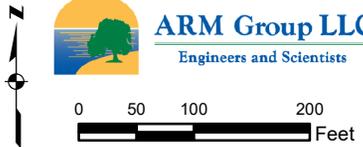
- Samples Collected May 26 to June 18, 2021
- NS=Not Sampled; ND=Not Detected
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

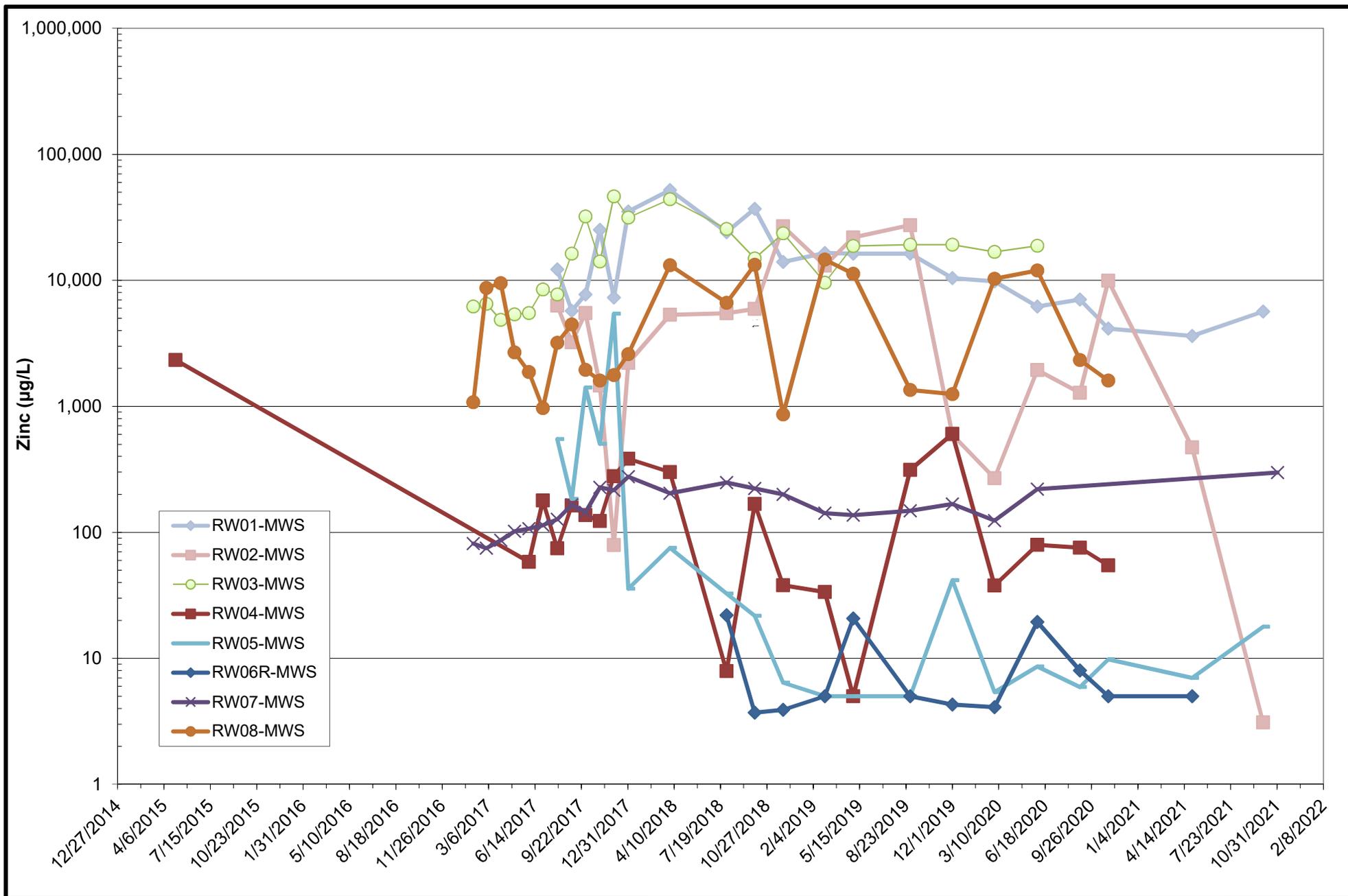
Rod & Wire Mill - Shallow Zone Zinc Concentrations Q2 2021		Figure 6
ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103



Notes:

- Samples with an asterisk were not sampled in Q4 so the Q2 concentration was used.
- Q4 Samples Collected October 4-18, 2021.
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

Rod & Wire Mill - Shallow Zone Zinc Concentrations Q4 2021		Figure 7
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
		



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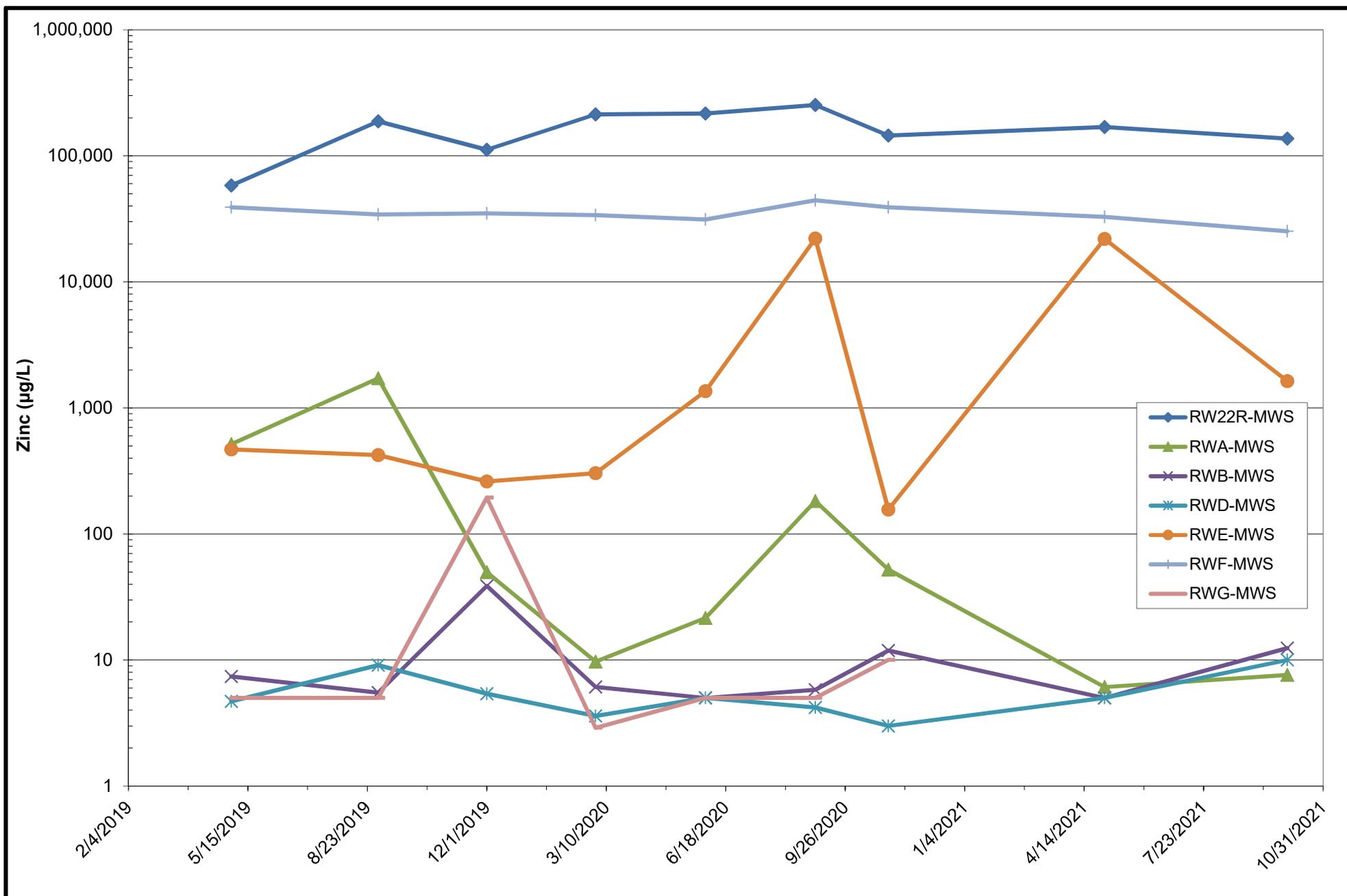
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Perimeter Zinc Concentrations (Original Wells)

February 2022

**Figure
8**



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Engineers and Scientists

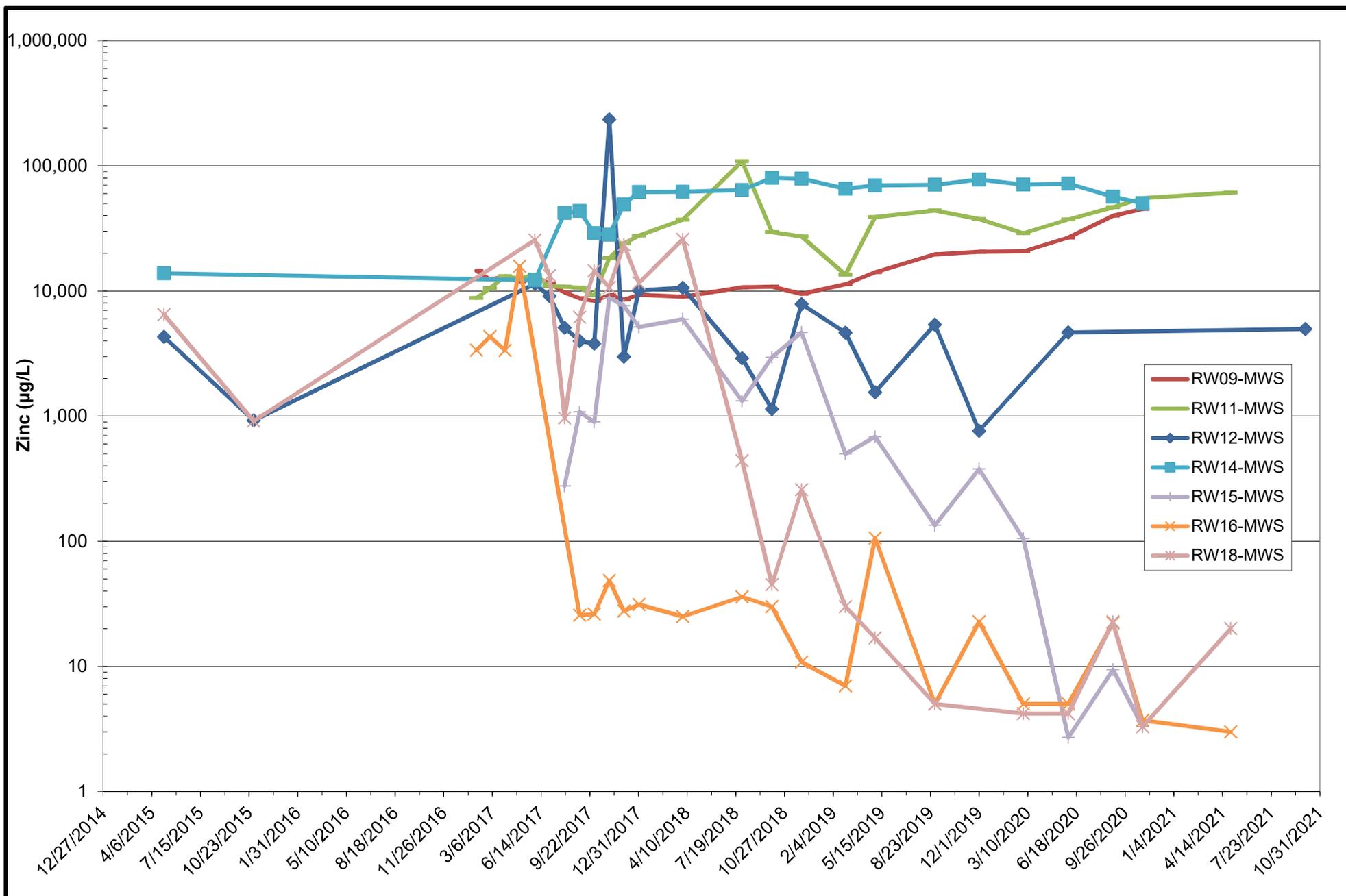
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Perimeter Zinc Concentrations (Supplemental Wells)

February 2022

**Figure
9**



ARM Group LLC
Engineers and Scientists

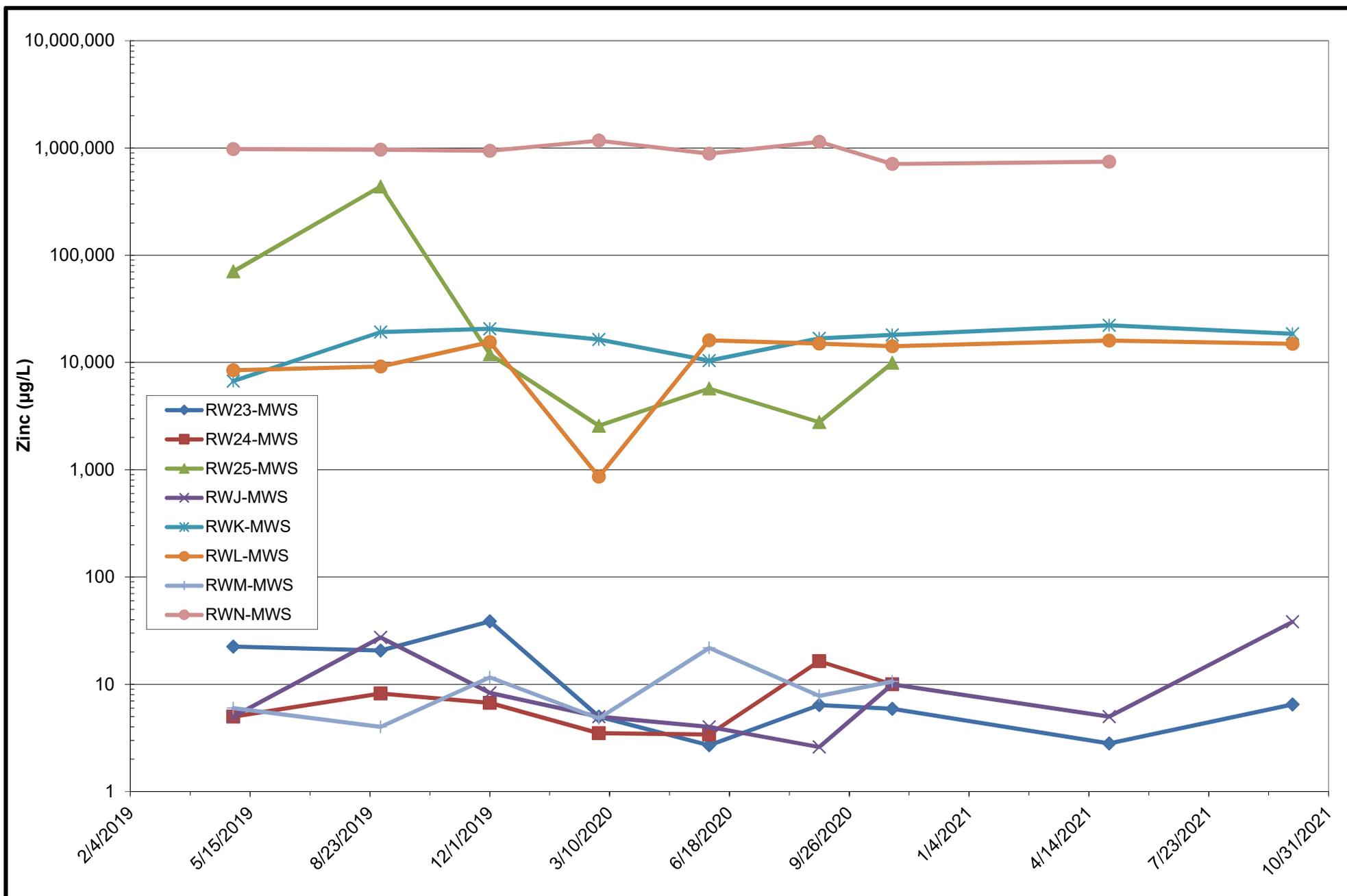
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Interior Zinc Concentrations (Original Wells)

February 2022

**Figure
10**



ARM Group LLC
Engineers and Scientists

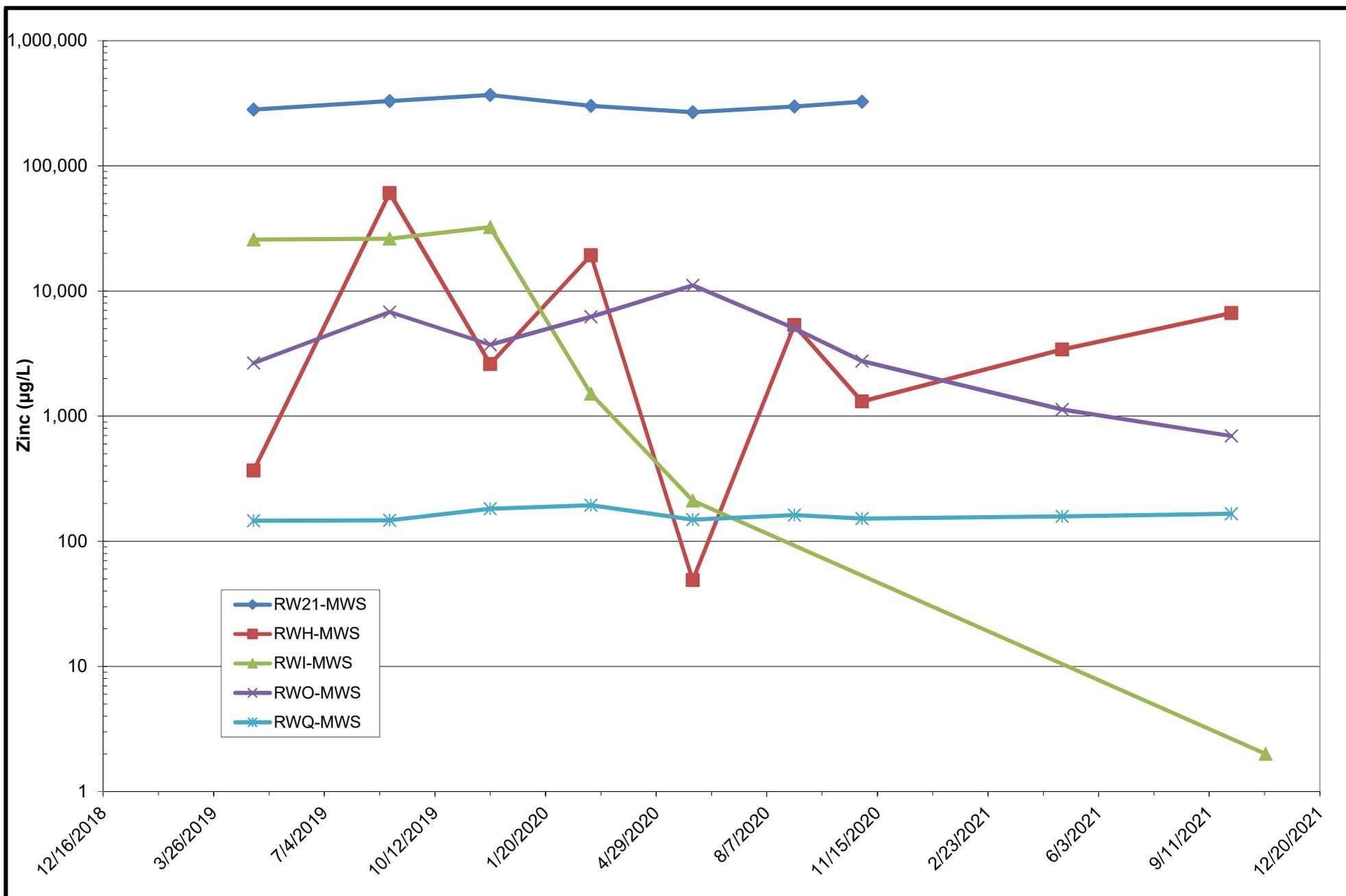
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Interior Zinc Concentrations (Supplemental Wells)

February 2022

**Figure
11**



ARM Group LLC
Engineers and Scientists

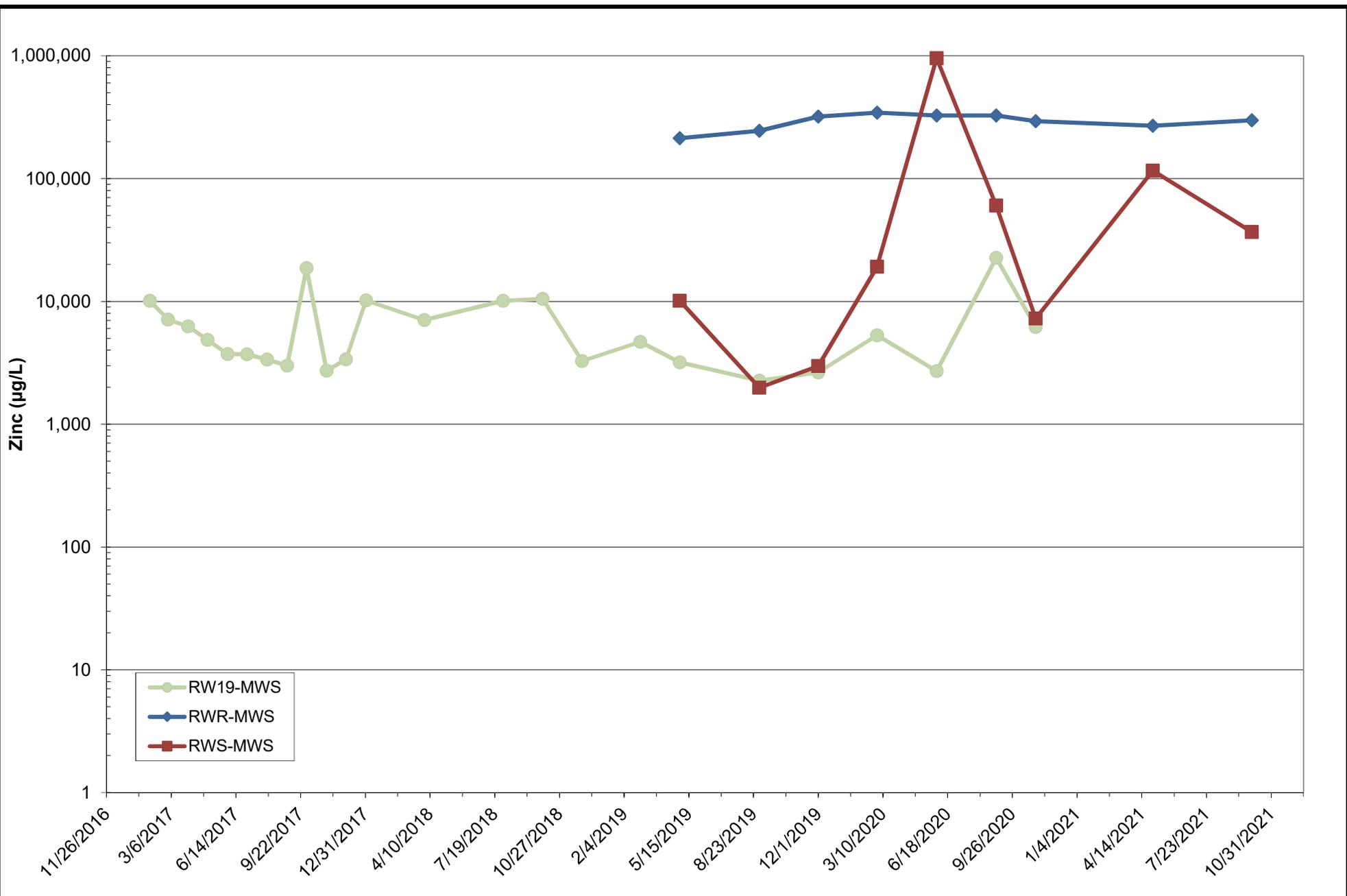
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Delineation Wells Zinc Concentrations

February 2022

**Figure
12**



ARM Group LLC
Engineers and Scientists

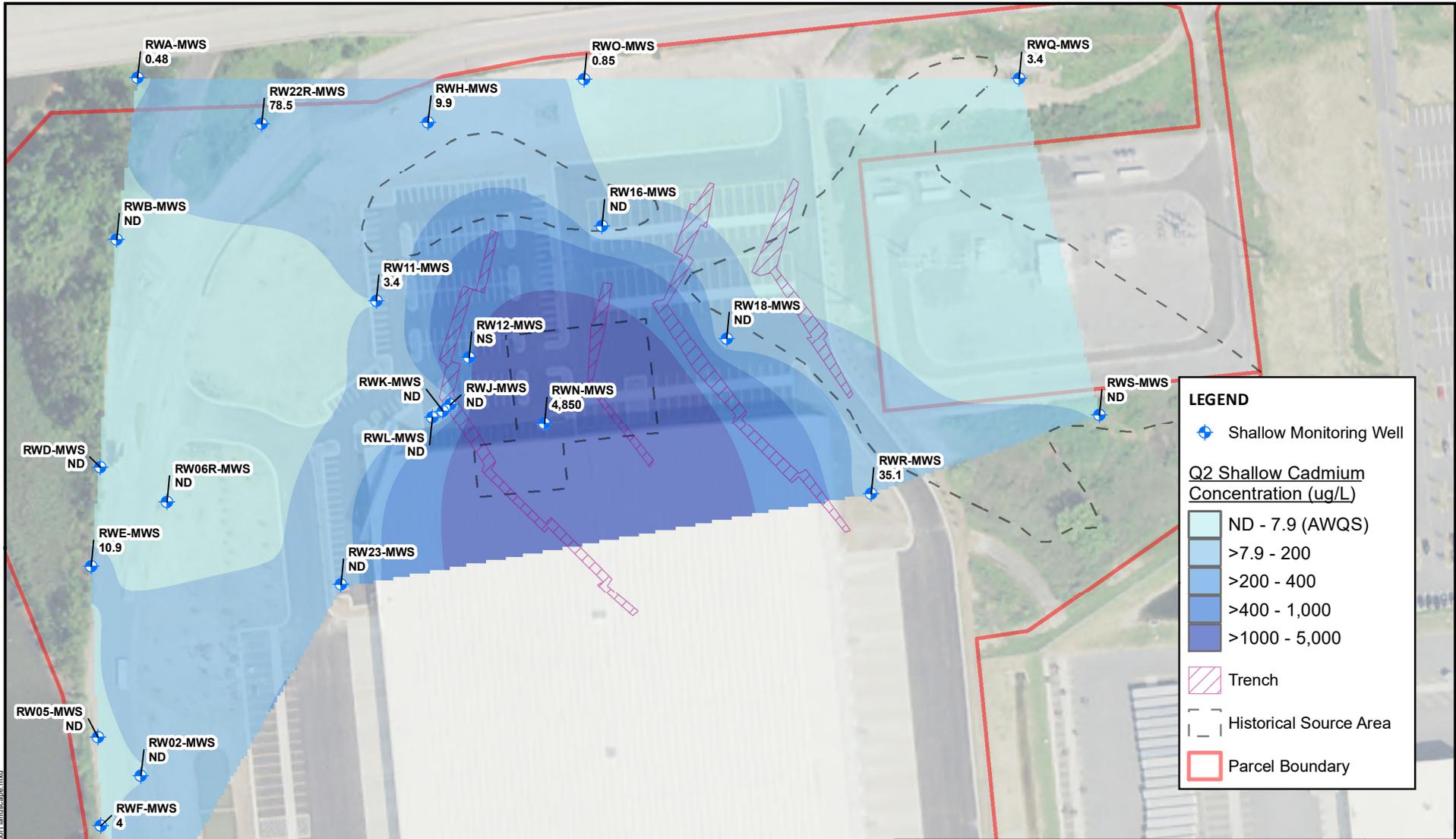
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Upgradient Zinc Concentrations

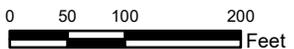
February 2022

**Figure
13**

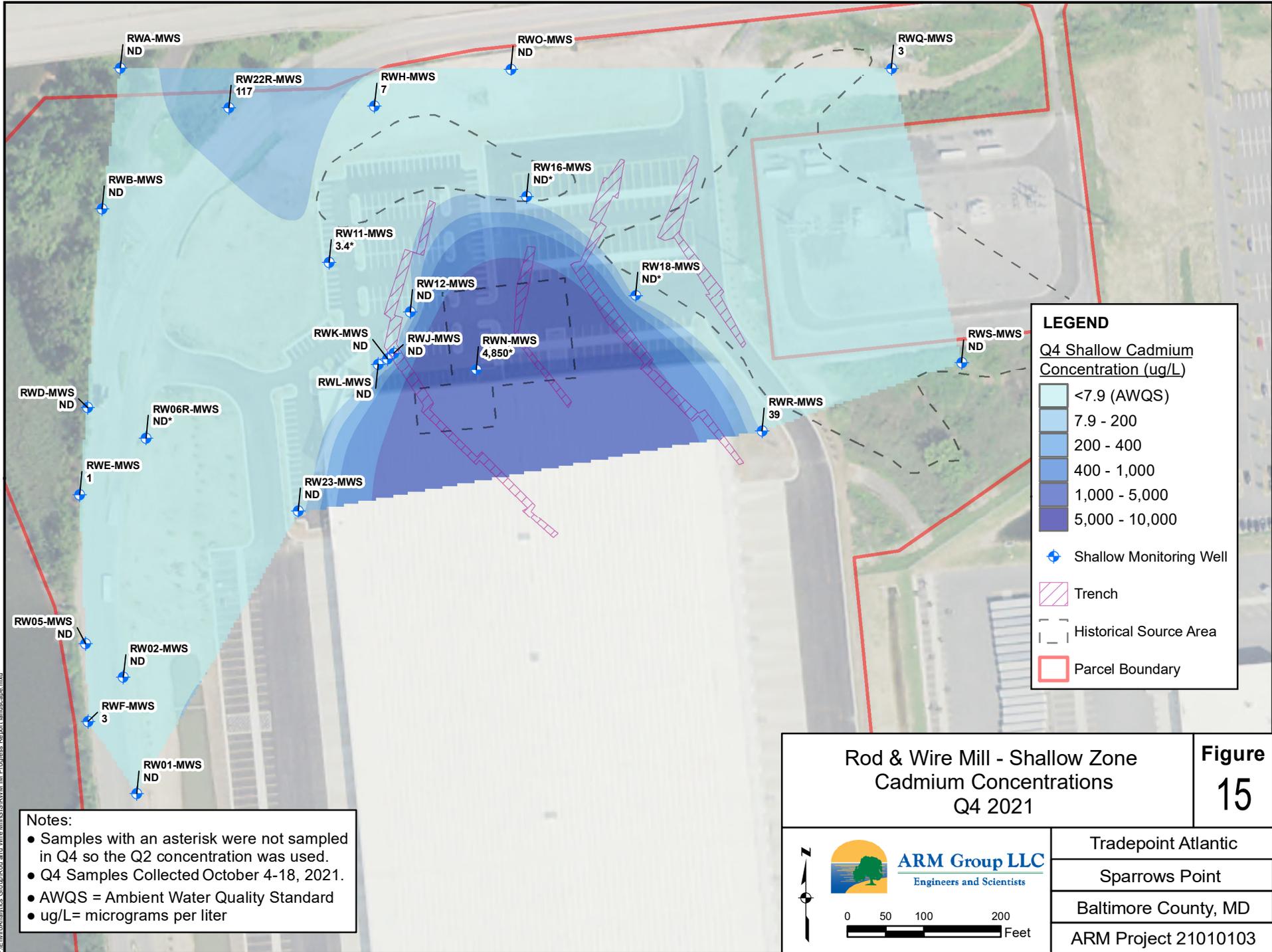


Notes:

- Samples Collected May 26 to June 18, 2021.
- NS=Not Sampled; ND=Not Detected
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

Rod & Wire Mill - Shallow Zone Cadmium Concentrations Q2 2021		Figure 14
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
 		

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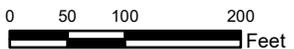
Q4 Shallow Cadmium Concentration (ug/L)

- <7.9 (AWQS)
- 7.9 - 200
- 200 - 400
- 400 - 1,000
- 1,000 - 5,000
- 5,000 - 10,000

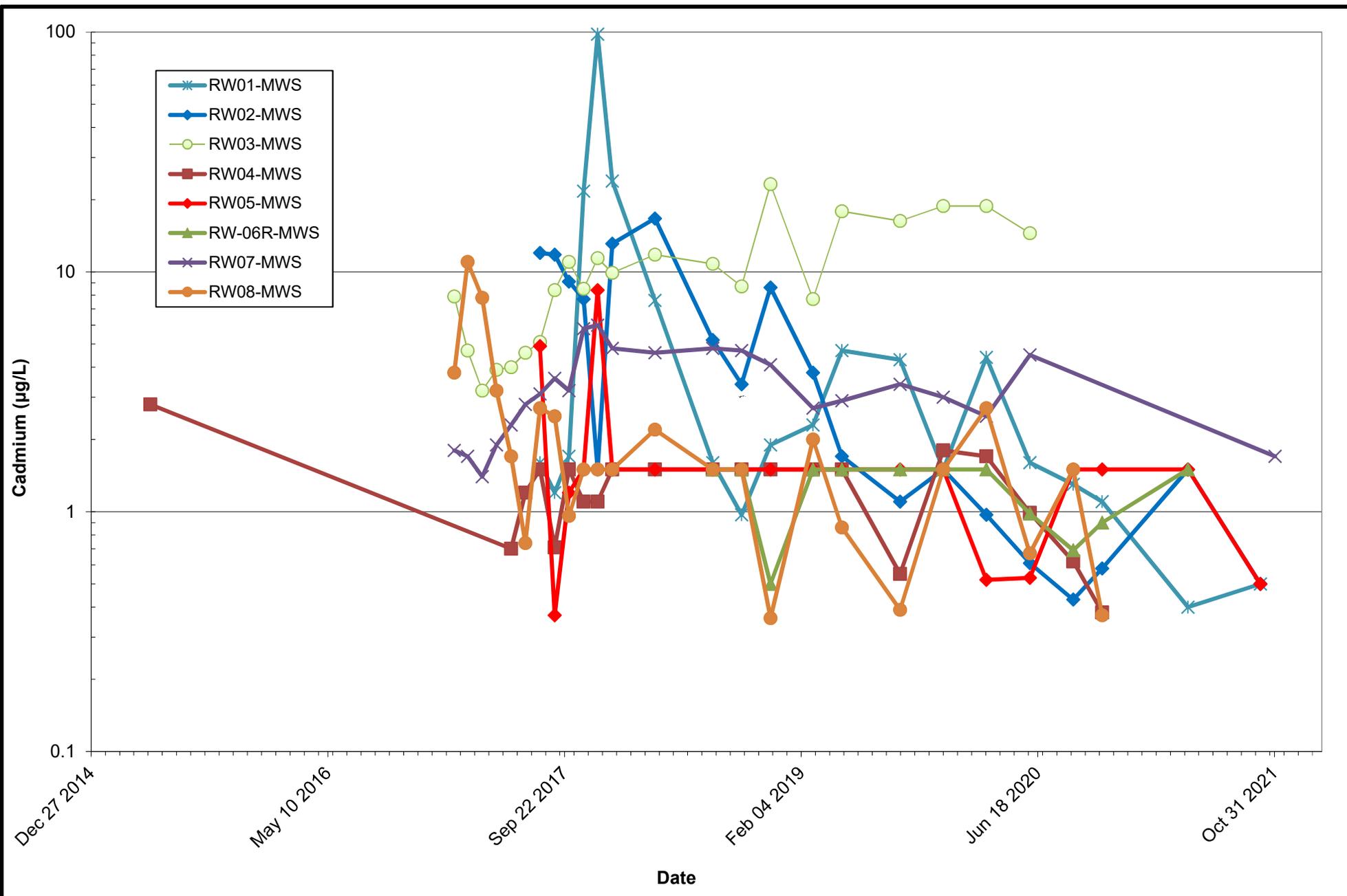
- Shallow Monitoring Well
- Trench
- Historical Source Area
- Parcel Boundary

Notes:

- Samples with an asterisk were not sampled in Q4 so the Q2 concentration was used.
- Q4 Samples Collected October 4-18, 2021.
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

Rod & Wire Mill - Shallow Zone Cadmium Concentrations Q4 2021		Figure 15
		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
		

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ARM Group LLC
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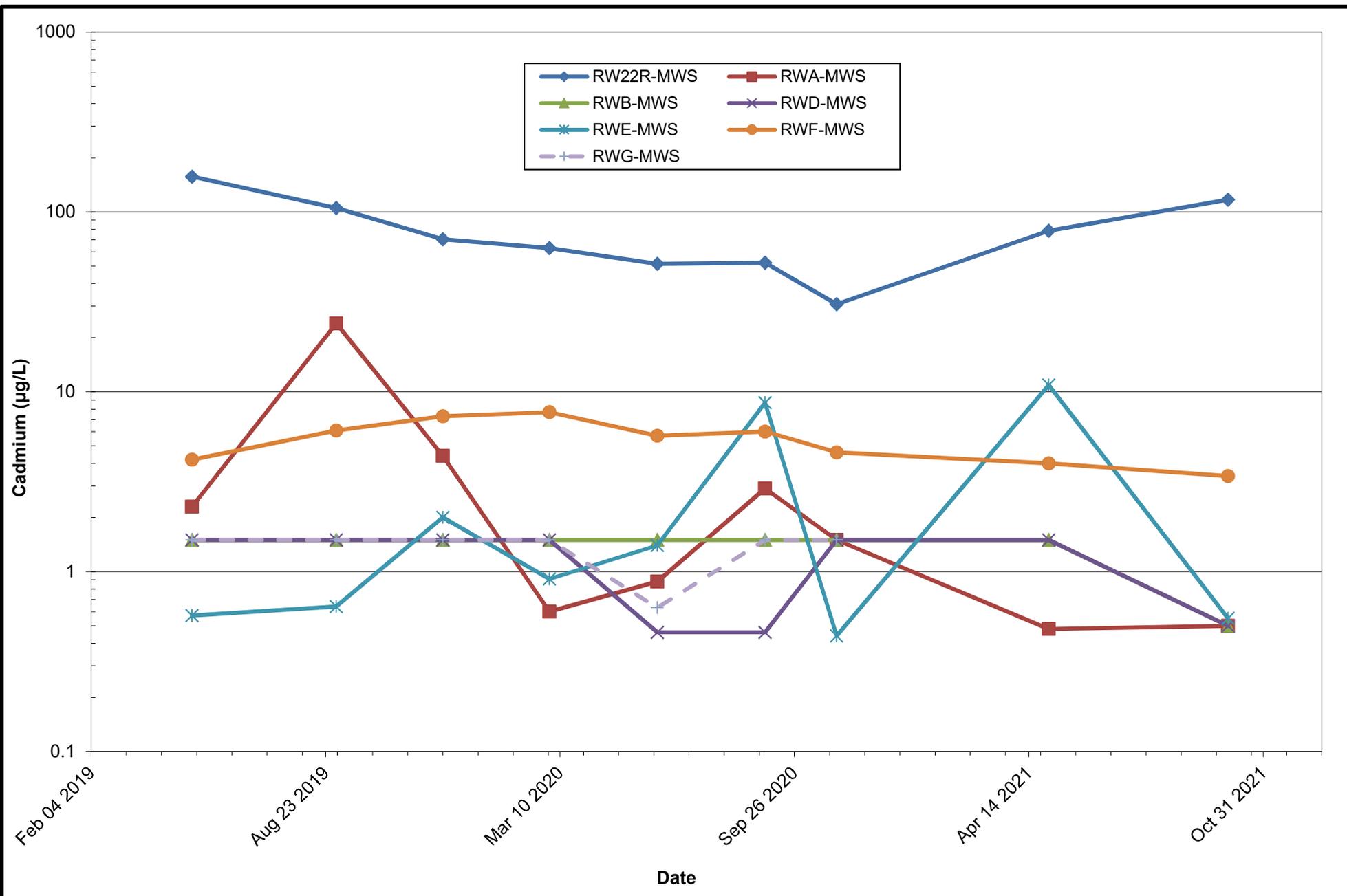
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**Shallow Perimeter Cadmium
Concentrations (Original Wells)**

February 2022

**Figure
16**



ARM Group LLC
Engineers and Scientists

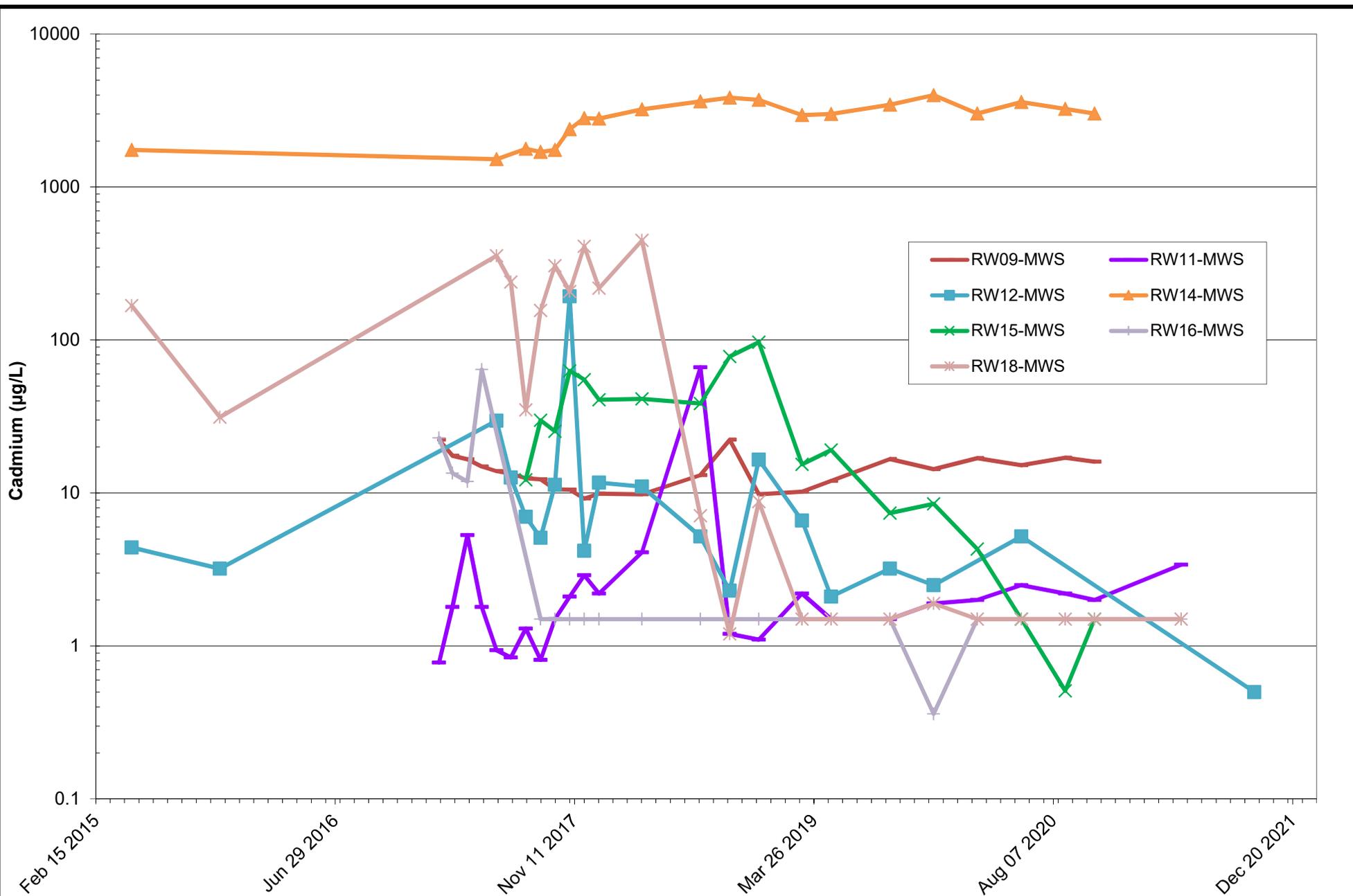
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Perimeter Cadmium Concentrations (Supplemental Wells)

February 2022

**Figure
17**



ARM Group LLC
Engineers and Scientists

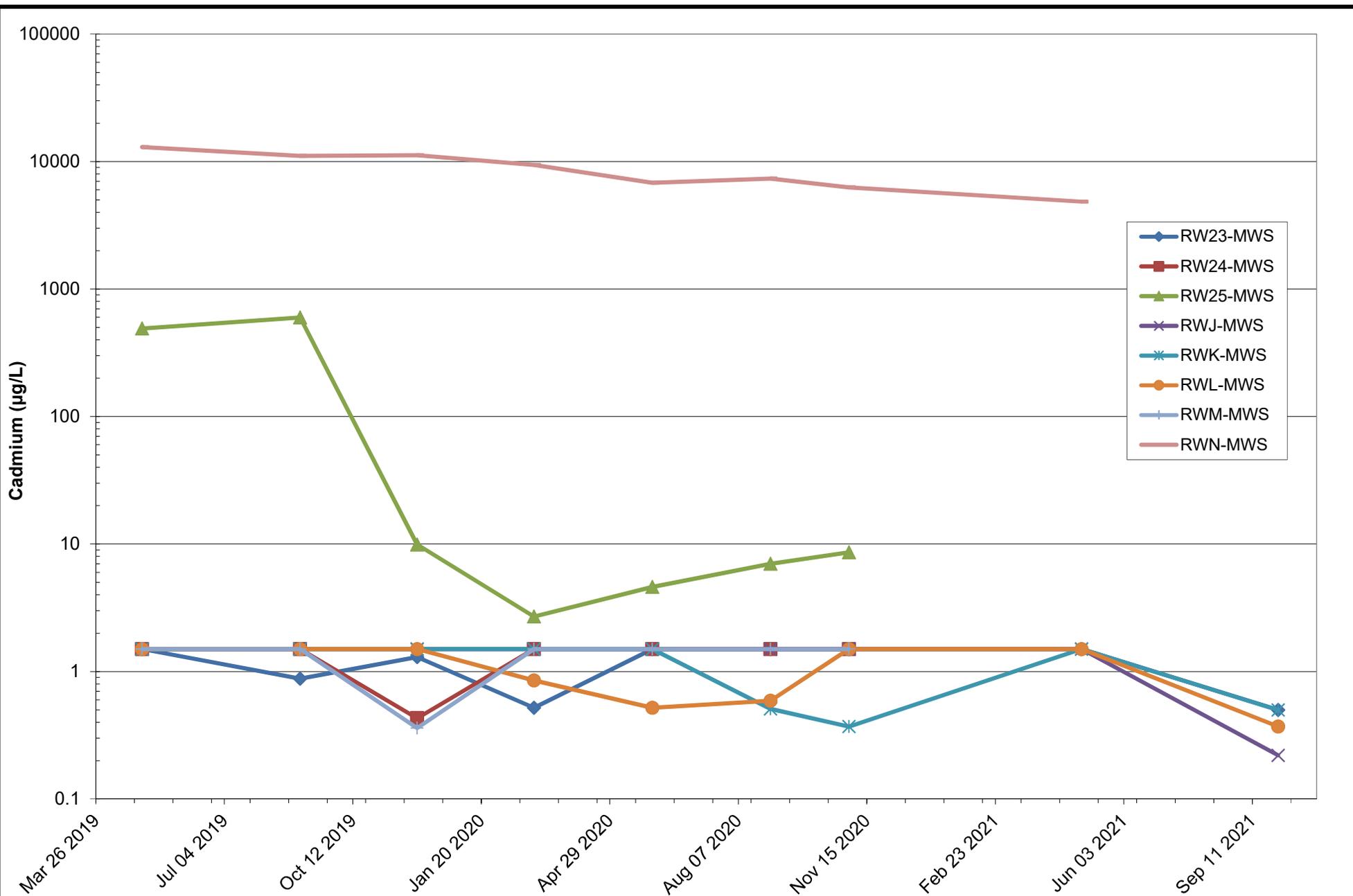
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Interior Cadmium
Concentrations (Original Wells)

February 2022

**Figure
18**



ARM Group LLC
Engineers and Scientists

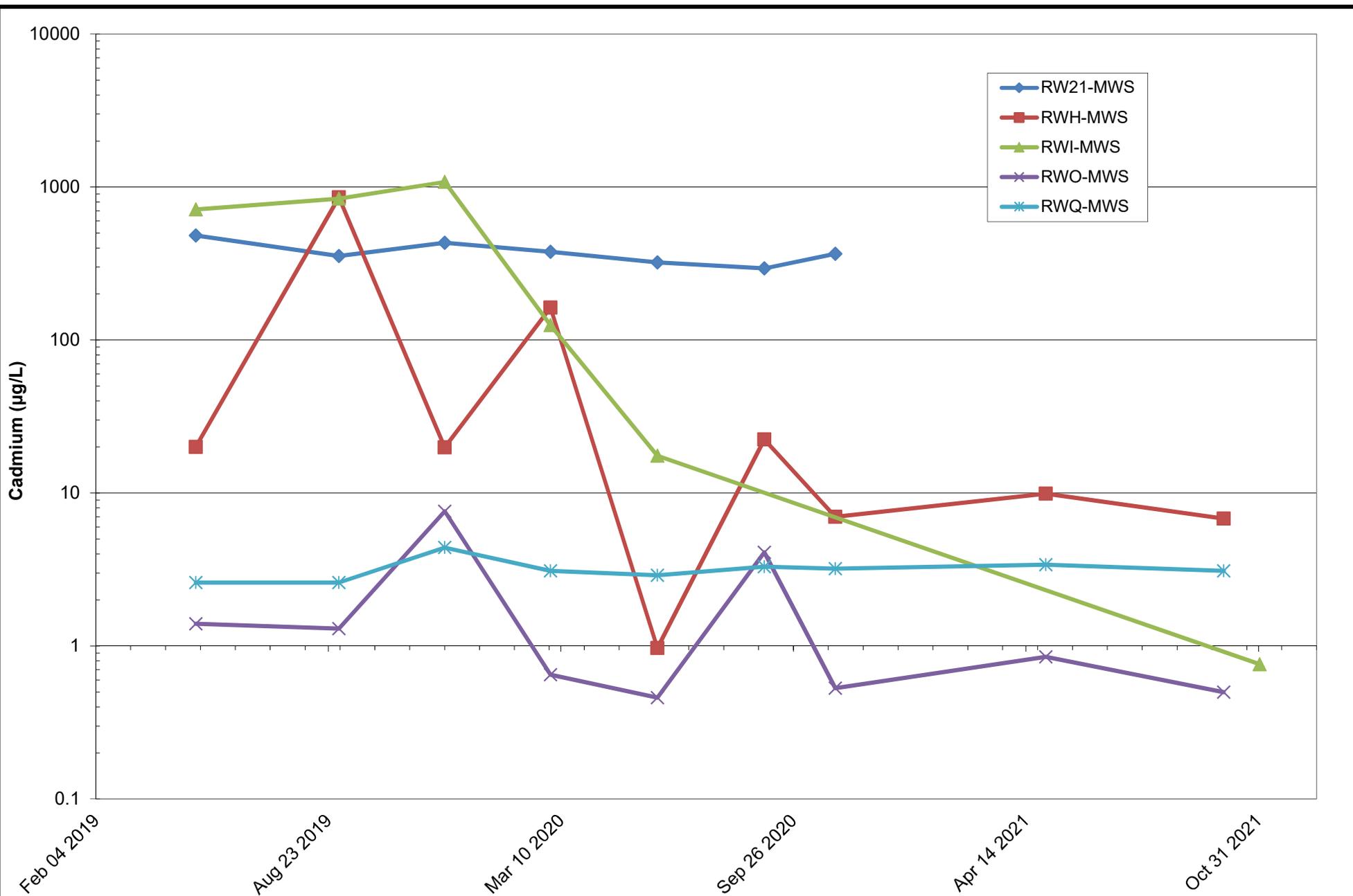
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Interior Cadmium
Concentrations (Supplemental Wells)

February 2022

**Figure
19**



ARM Group LLC
Engineers and Scientists

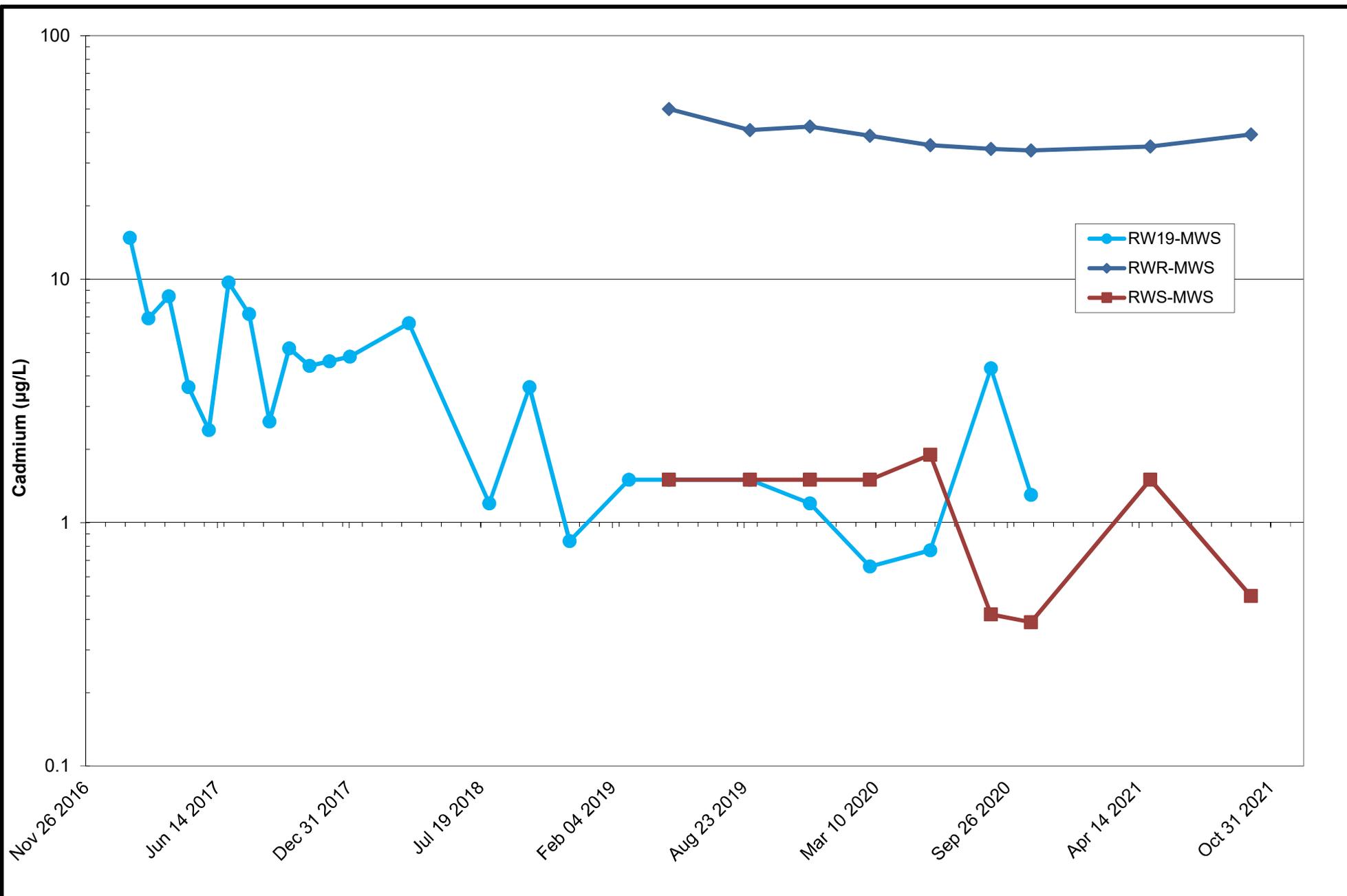
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Shallow Delineation Cadmium Concentrations

February 2022

**Figure
20**



ARM Group LLC
Engineers and Scientists

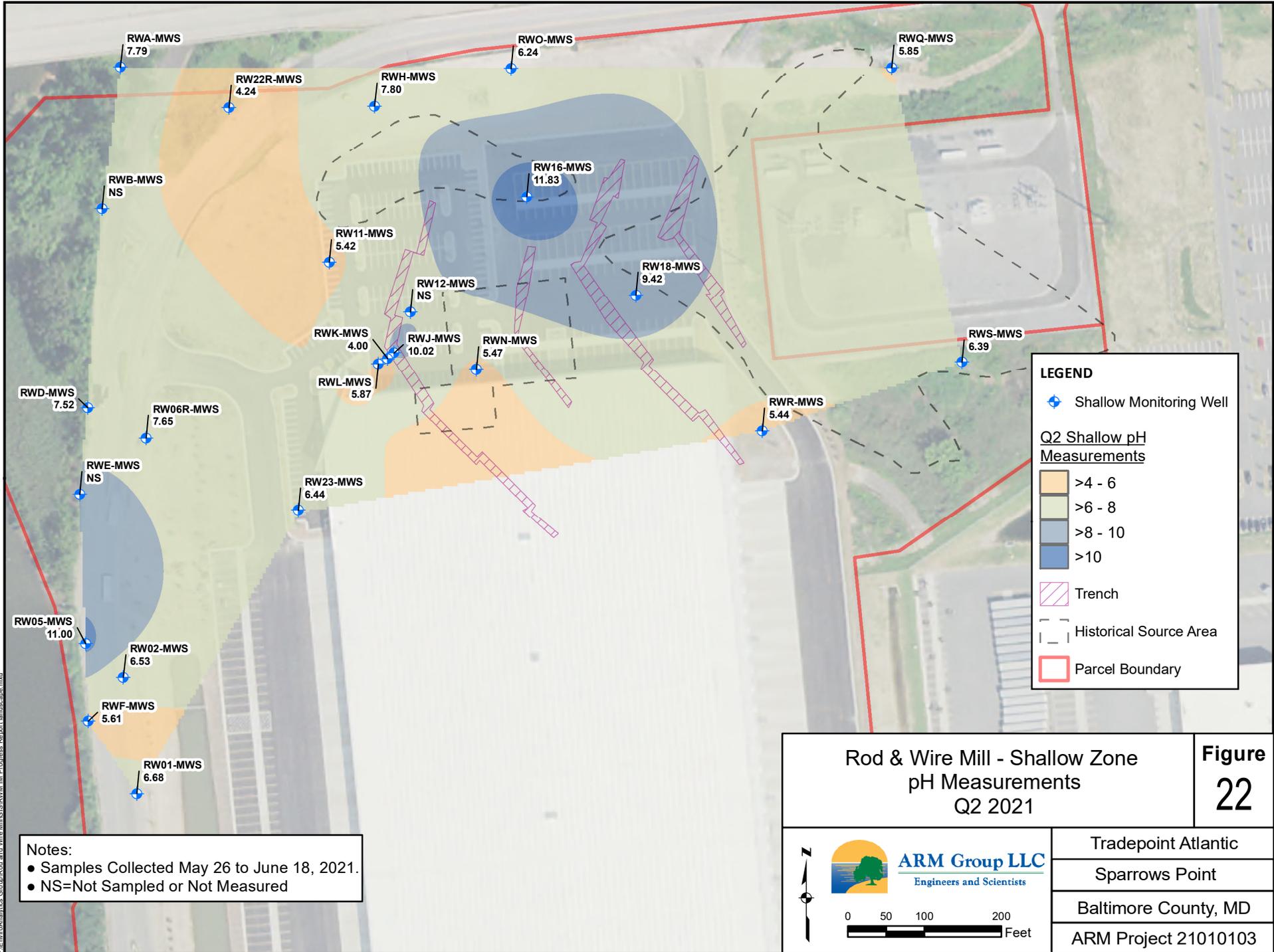
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

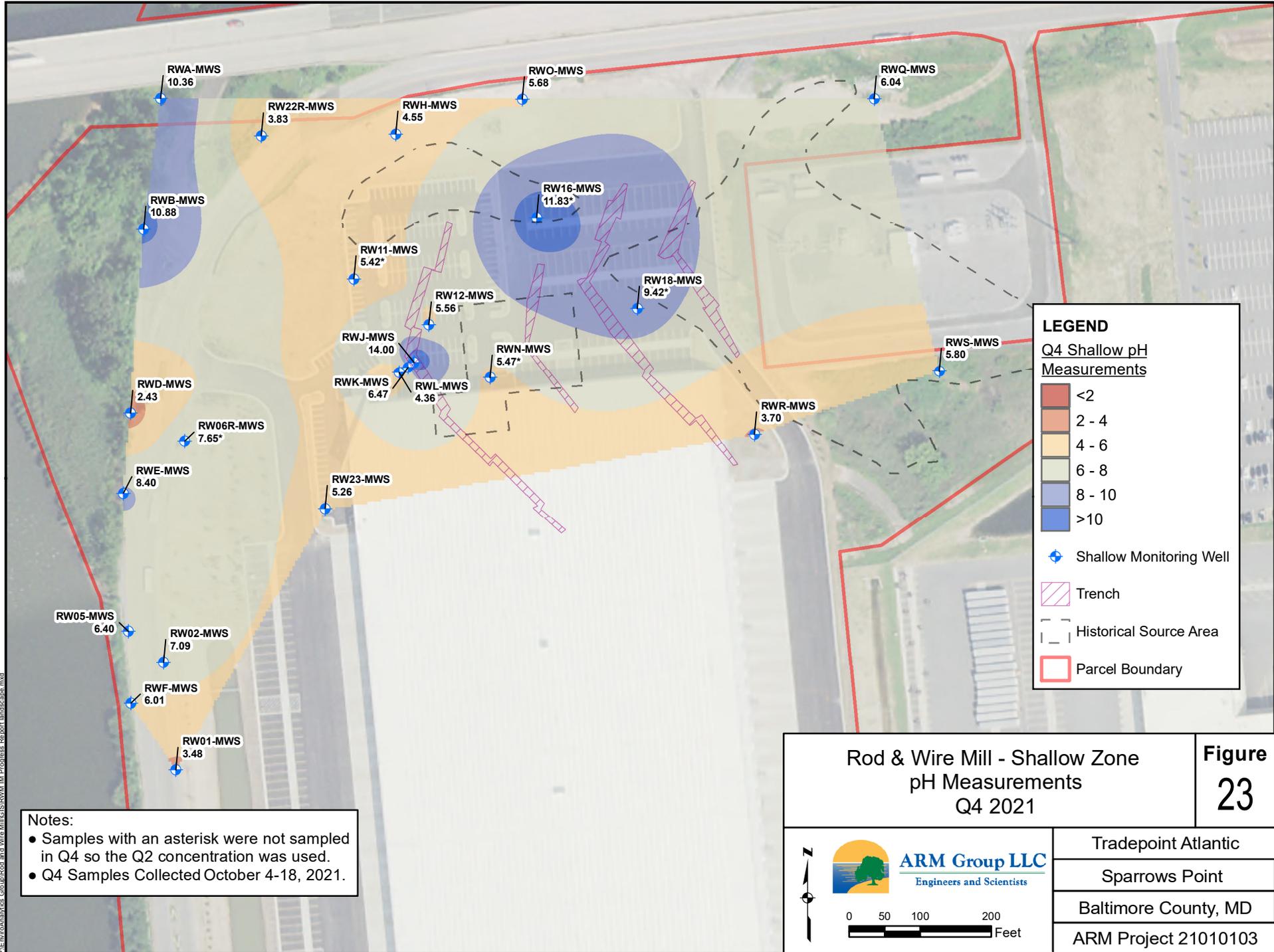
Shallow Upgradient Cadmium Concentration

February 2022

**Figure
21**



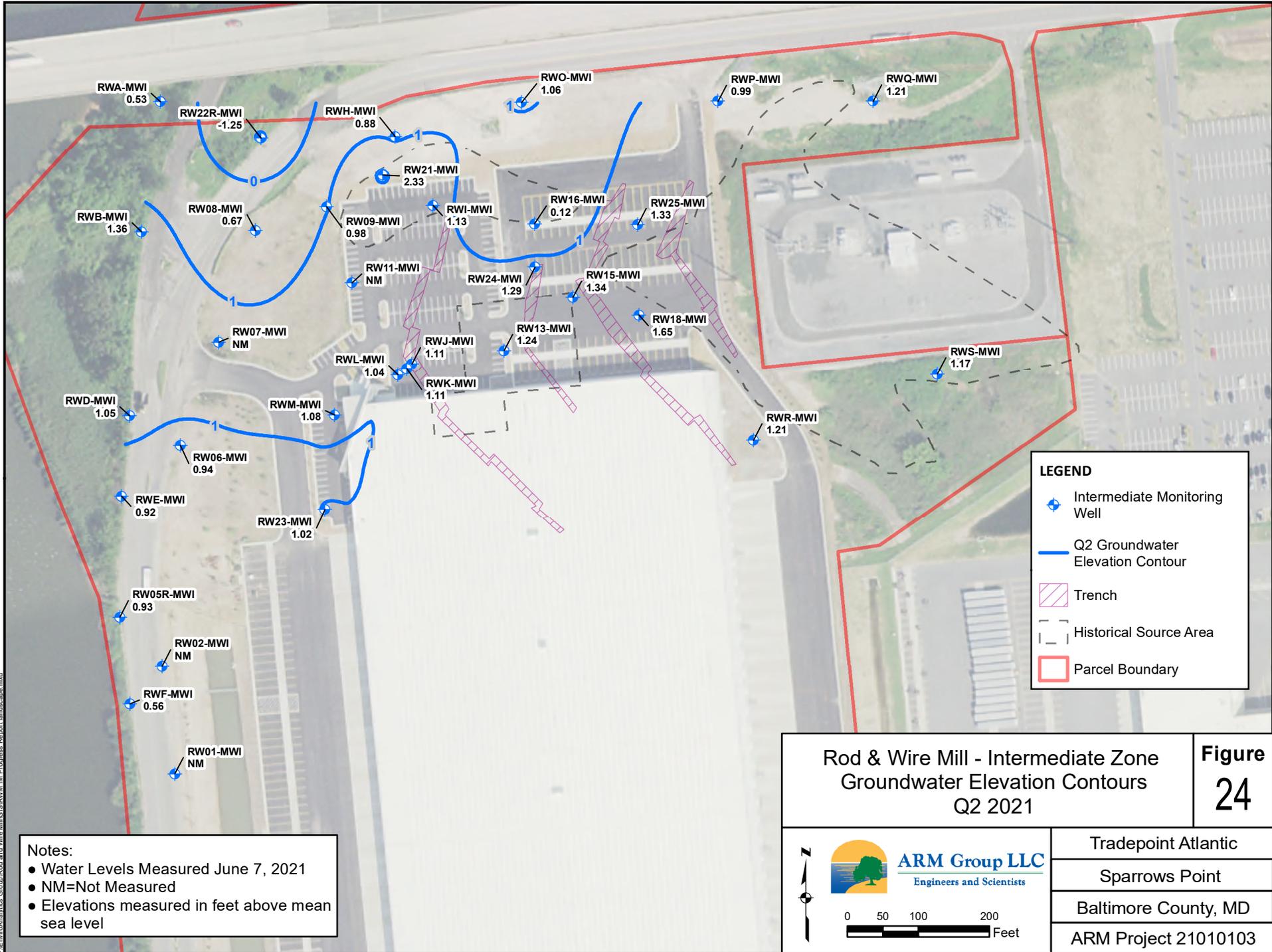
P:\EProc\Analytics_Ground\Rod and Wire Mill\GIS\RWMLM Progress Report_Landscape.mxd



Notes:

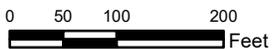
- Samples with an asterisk were not sampled in Q4 so the Q2 concentration was used.
- Q4 Samples Collected October 4-18, 2021.

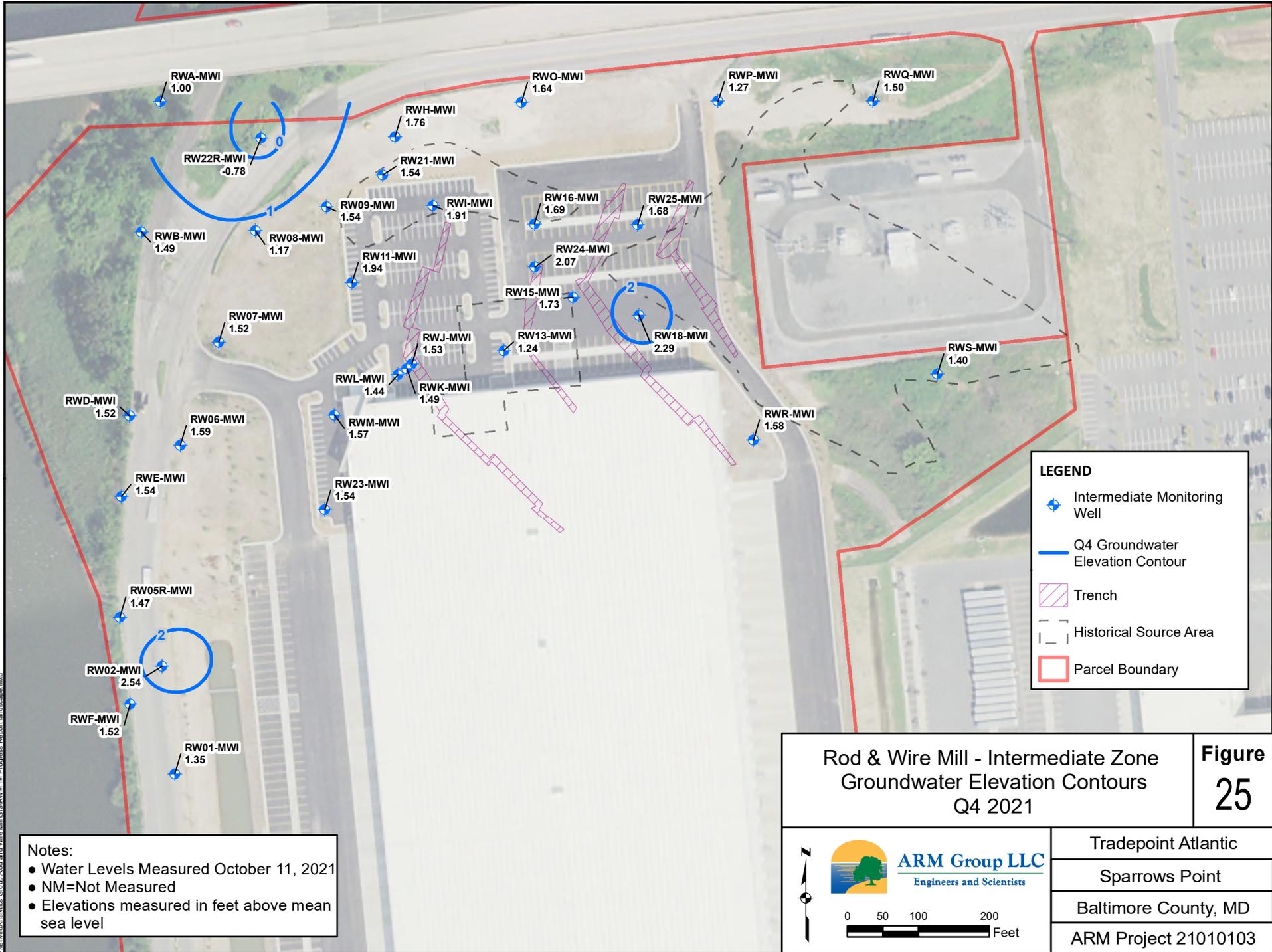
Rod & Wire Mill - Shallow Zone pH Measurements Q4 2021		Figure 23
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103



LEGEND

- ◆ Intermediate Monitoring Well
- Q2 Groundwater Elevation Contour
- ▨ Trench
- - - Historical Source Area
- ▭ Parcel Boundary

Rod & Wire Mill - Intermediate Zone Groundwater Elevation Contours Q2 2021		Figure 24
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
		

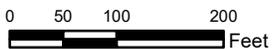


Notes:

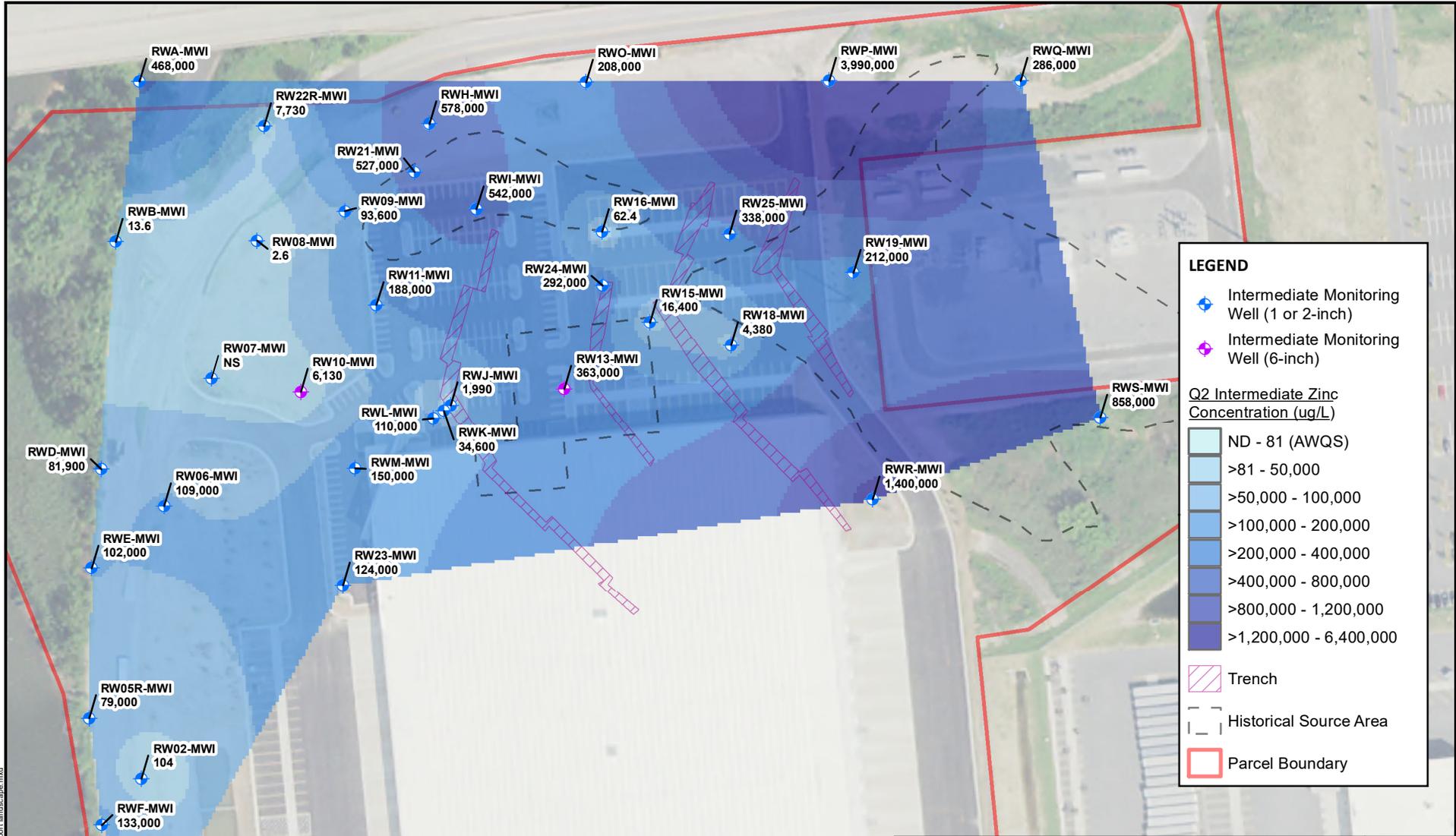
- Water Levels Measured October 11, 2021
- NM=Not Measured
- Elevations measured in feet above mean sea level

LEGEND

- ◆ Intermediate Monitoring Well
- Q4 Groundwater Elevation Contour
- ▨ Trench
- - - Historical Source Area
- ▭ Parcel Boundary

Rod & Wire Mill - Intermediate Zone Groundwater Elevation Contours Q4 2021		Figure 25
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
		

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Notes:

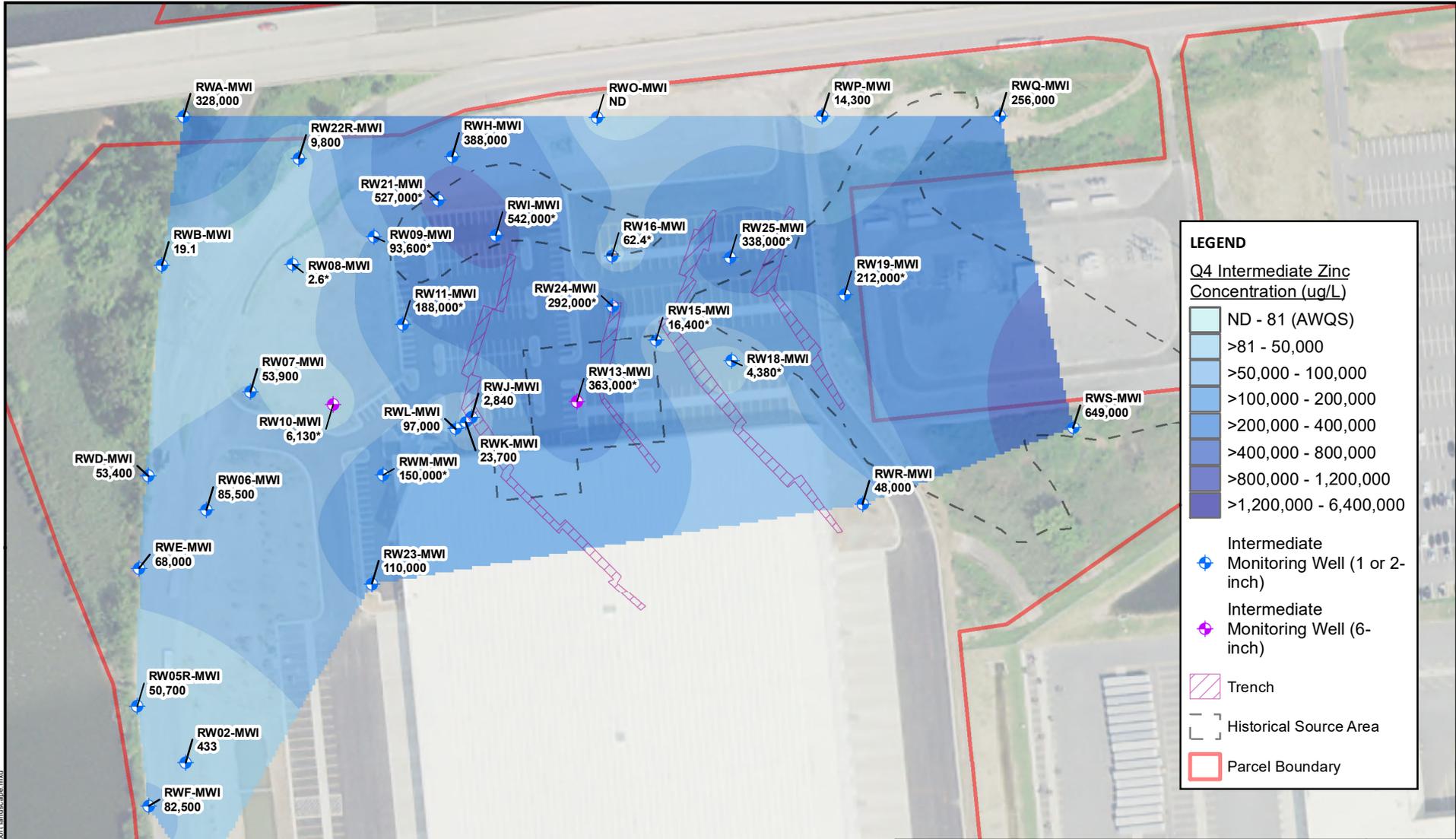
- Samples Collected May 26 to June 18, 2021.
- ND=Non-Detect; NS=Not Sampled
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

Rod & Wire Mill - Intermediate Zone
Zinc Concentrations
Q2 2021

Figure 26

 ARM Group LLC Engineers and Scientists	Tradepoint Atlantic
	Sparrows Point
	Baltimore County, MD
	ARM Project 21010103

0 50 100 200 Feet



LEGEND

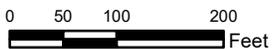
Q4 Intermediate Zinc Concentration (ug/L)

- ND - 81 (AWQS)
- >81 - 50,000
- >50,000 - 100,000
- >100,000 - 200,000
- >200,000 - 400,000
- >400,000 - 800,000
- >800,000 - 1,200,000
- >1,200,000 - 6,400,000

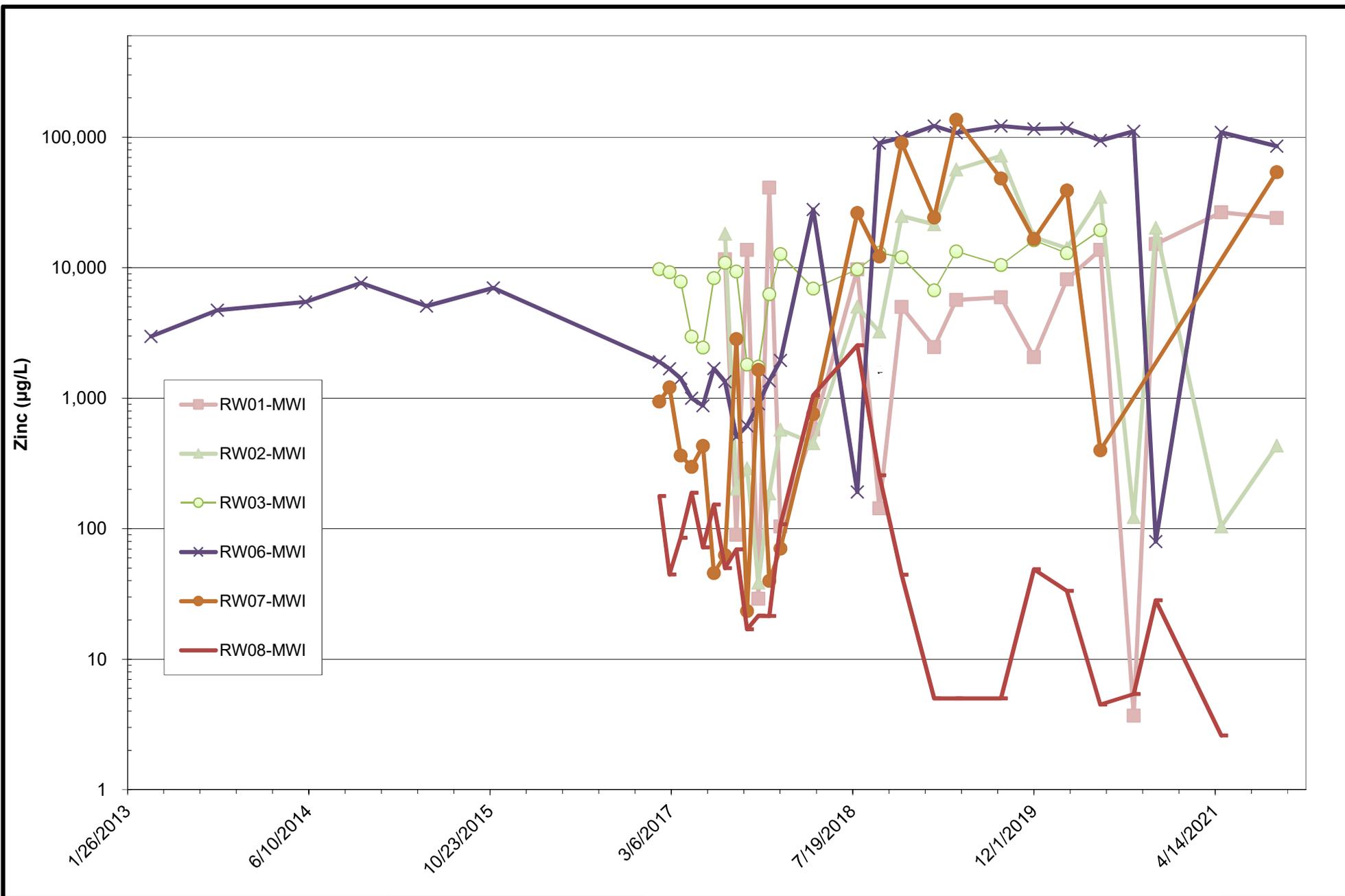
- Intermediate Monitoring Well (1 or 2-inch)
- Intermediate Monitoring Well (6-inch)
- Trench
- Historical Source Area
- Parcel Boundary

Notes:

- Samples with an asterisk were not sampled in Q4 so the Q2 concentration was used.
- Q4 Samples Collected October 4-18, 2021.
- ND=Not Detected
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

Rod & Wire Mill - Intermediate Zone Zinc Concentrations Q4 2021		Figure 27
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
 		

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ARM Group LLC
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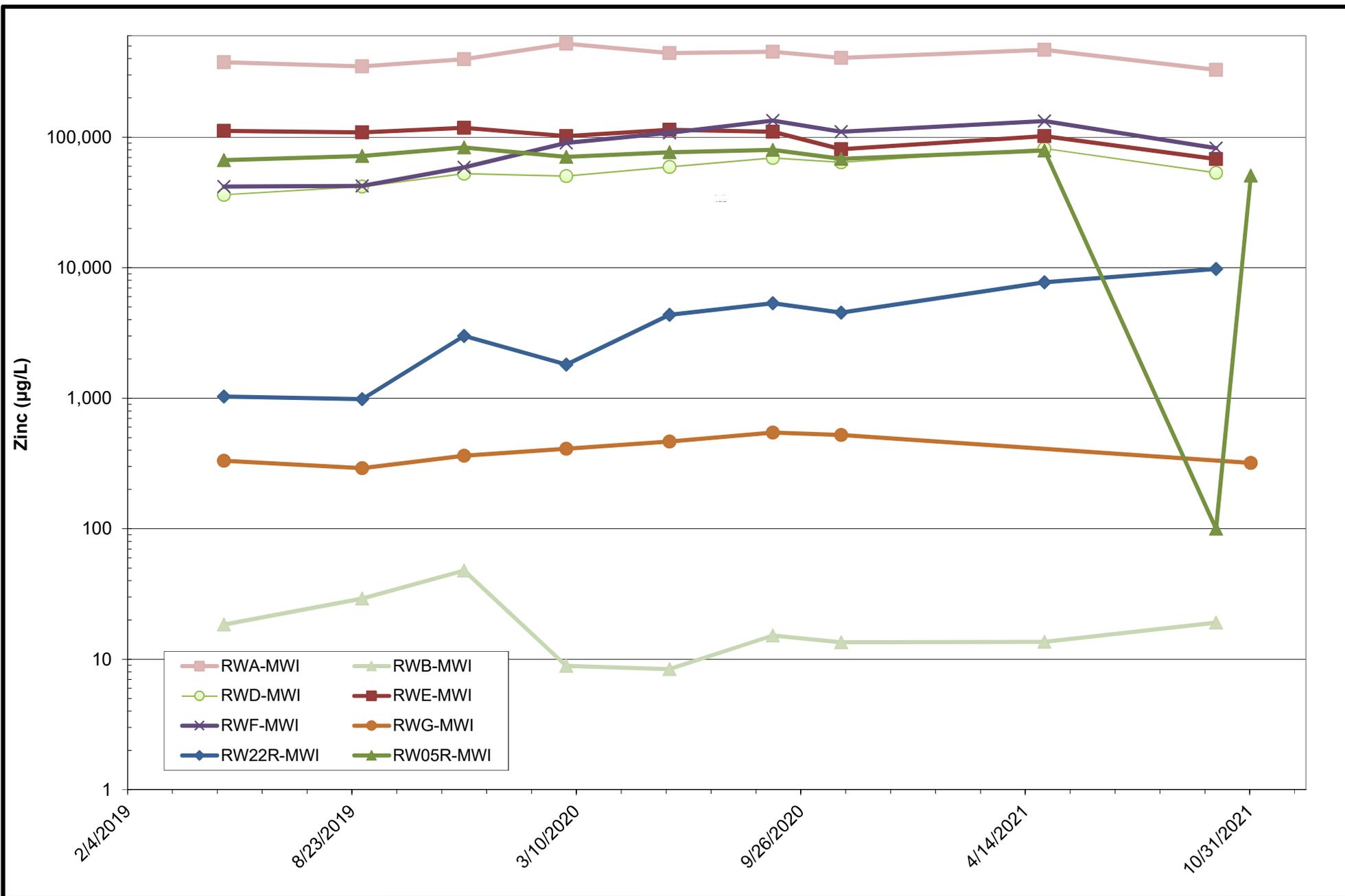
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Intermediate Perimeter Zinc
Concentrations (Original Wells)

February 2022

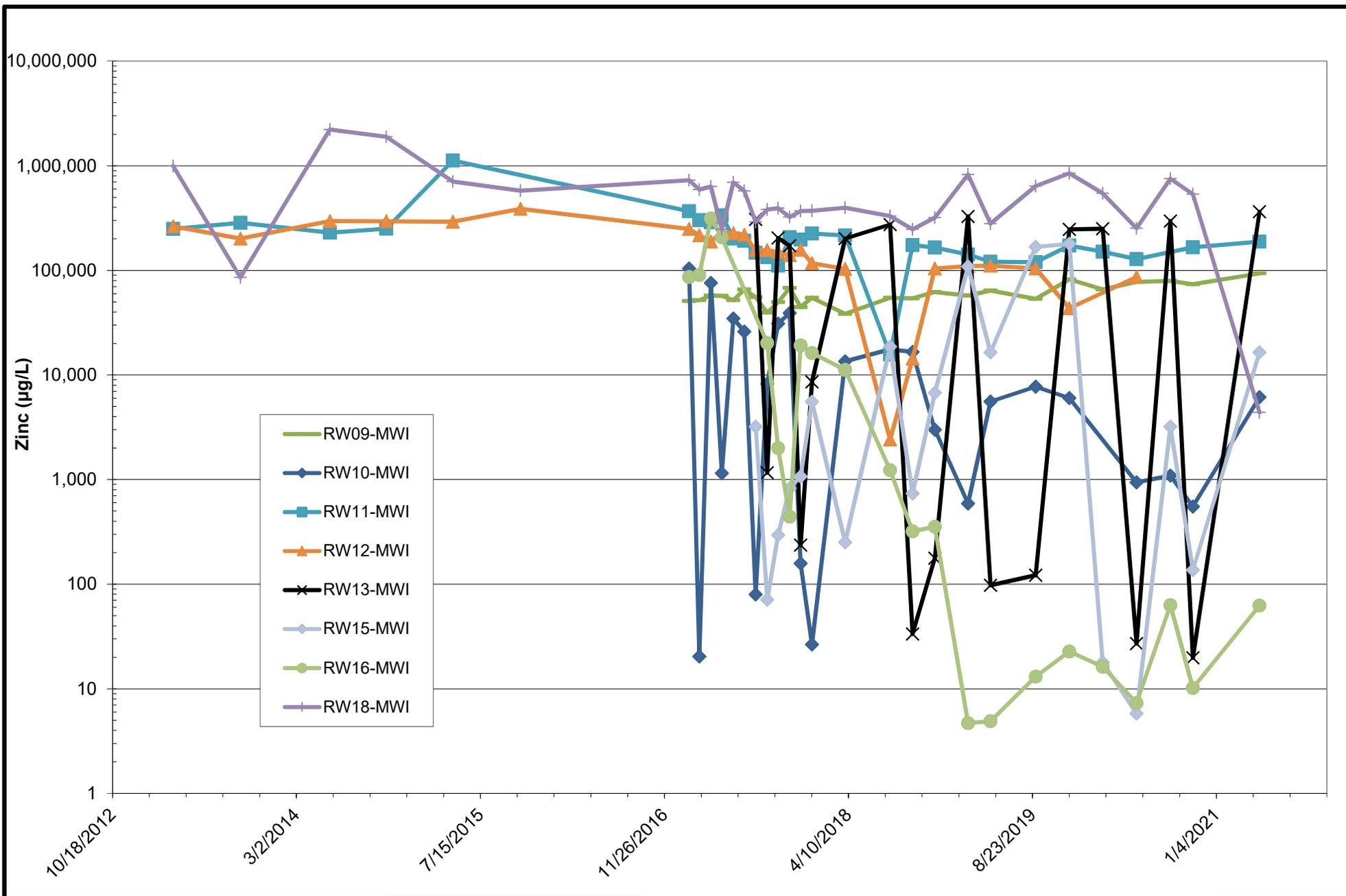
**Figure
28**



Rod and Wire Mill
Tradeport Atlantic
Sparrows Point, Maryland

Intermediate Perimeter Zinc
Concentrations (Supplemental Wells)
February 2022

**Figure
29**



ARM Group LLC
Engineers and Scientists

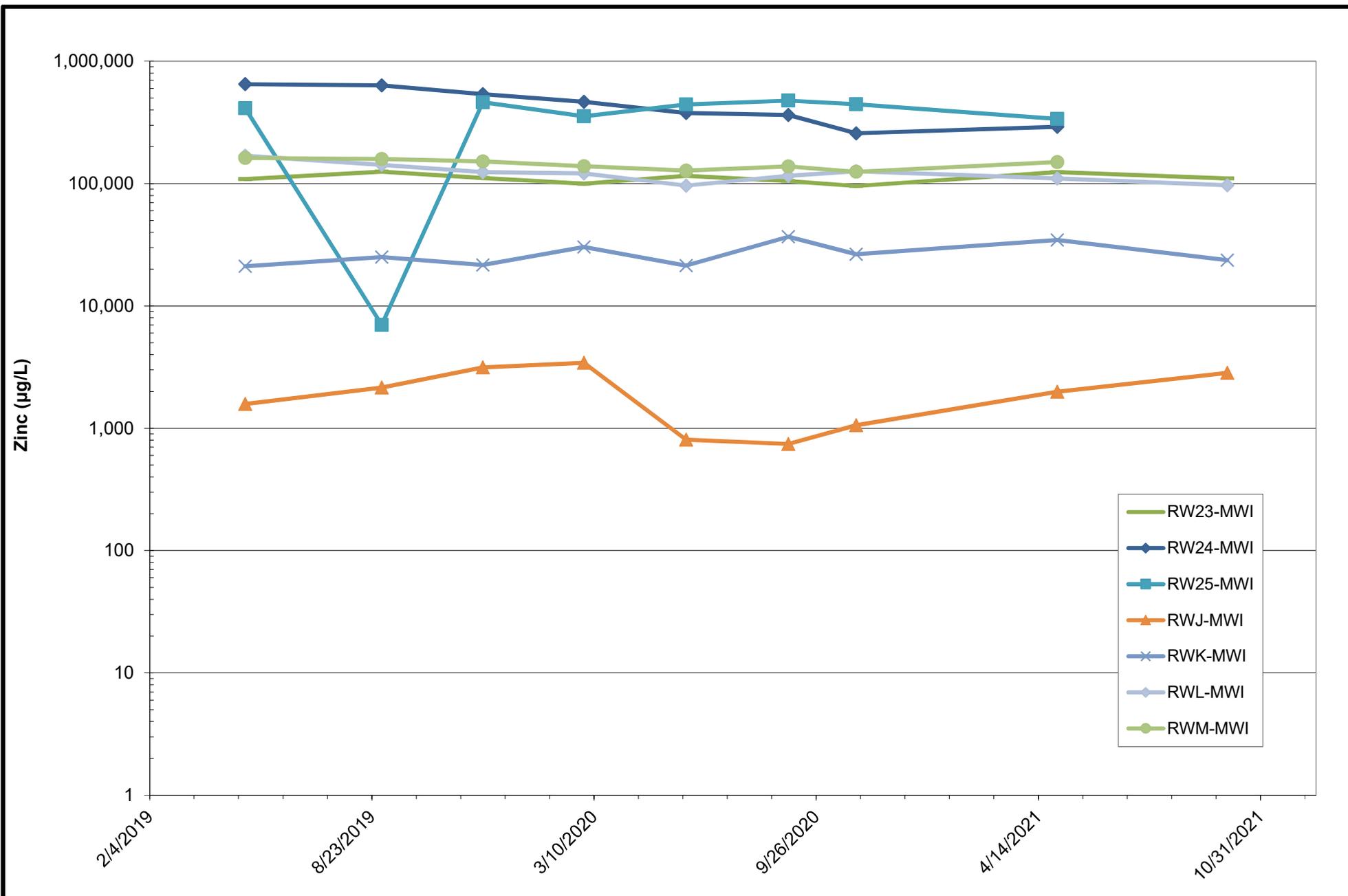
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Intermediate Interior Zinc
Concentrations (Original Wells)

February 2022

**Figure
30**



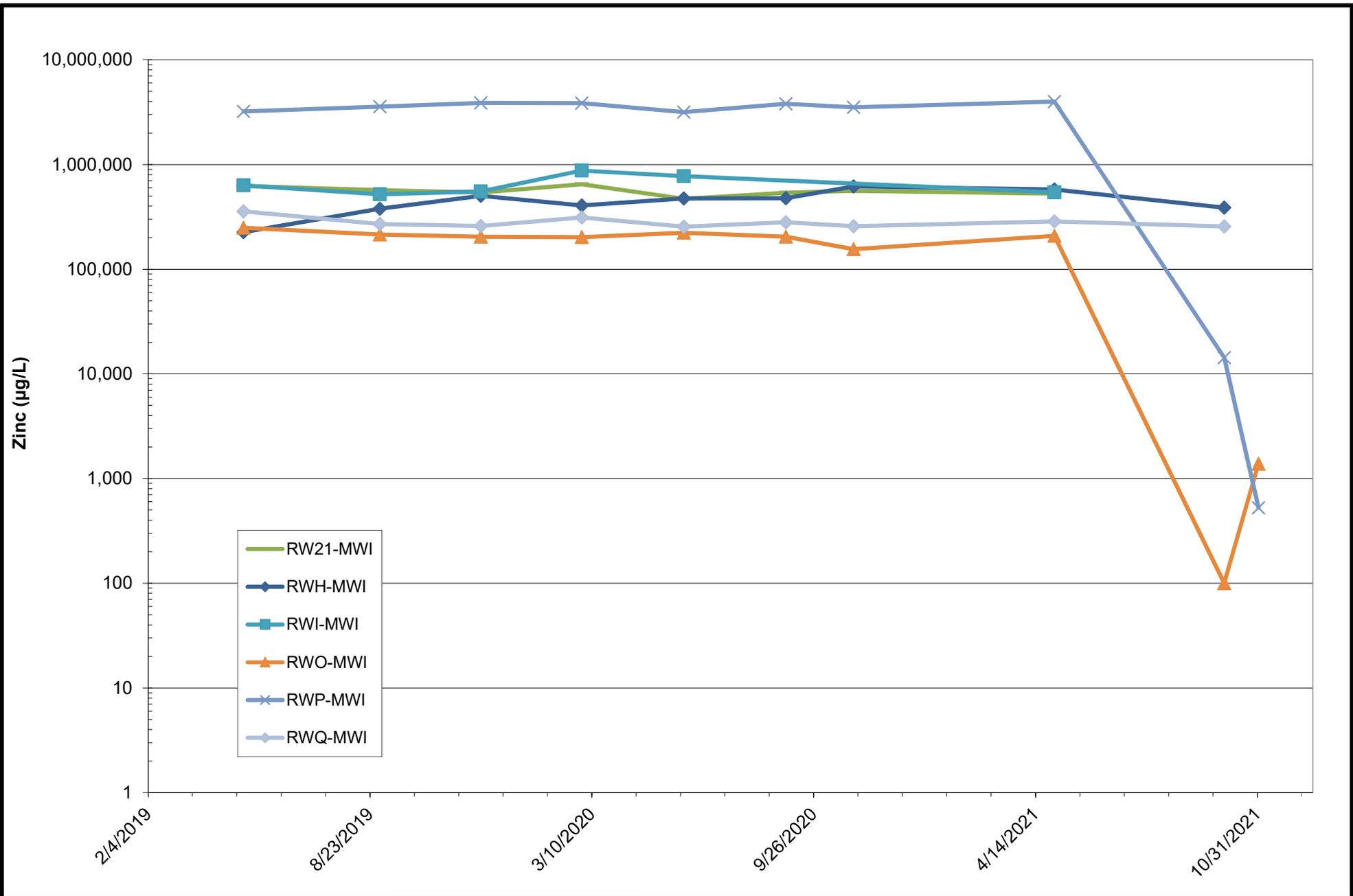
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Intermediate Interior Zinc
Concentrations (Supplemental Wells)

February 2022

**Figure
31**



ARM Group LLC
Engineers and Scientists

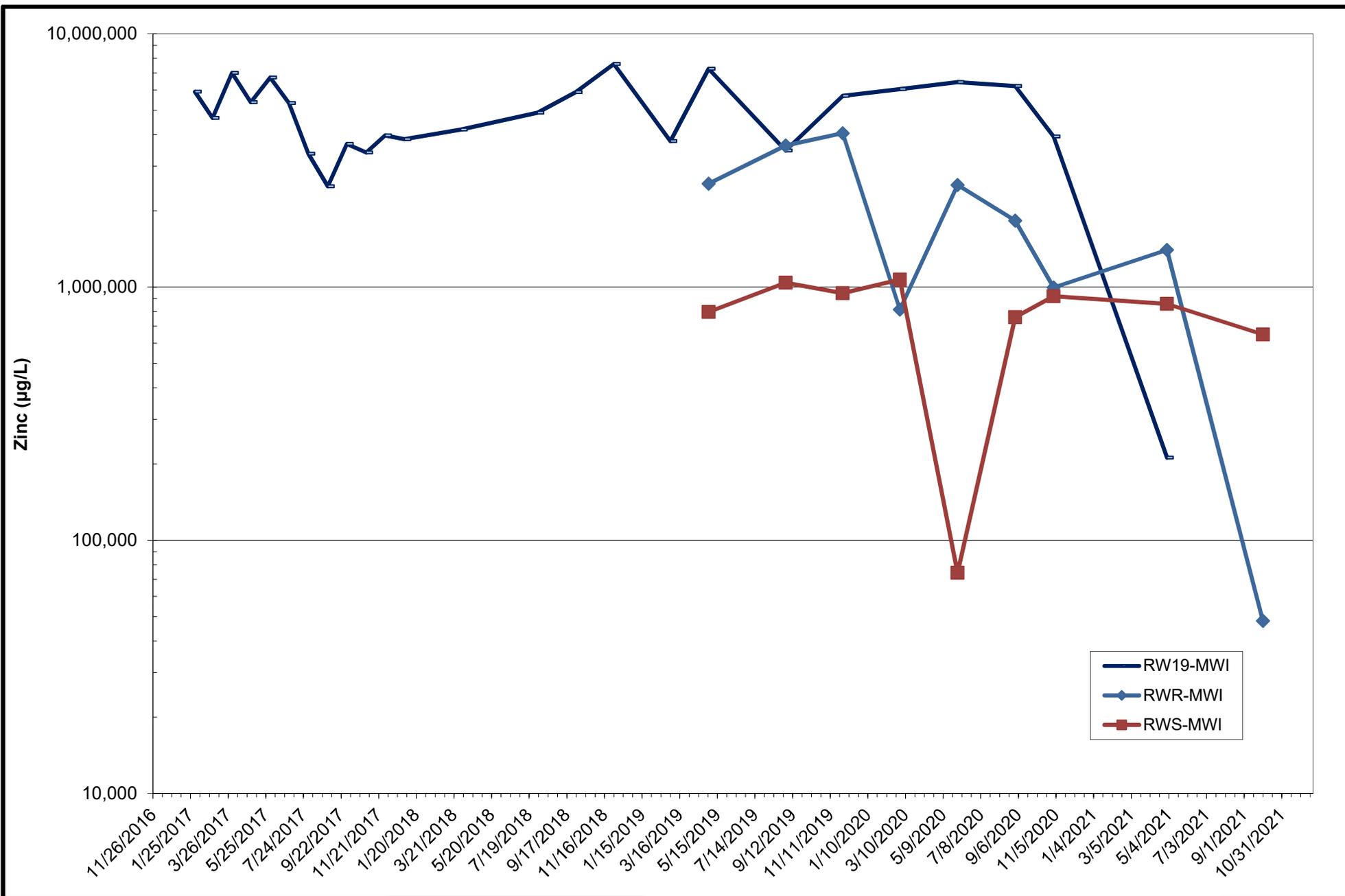
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**Intermediate Delineation Wells
Zinc Concentrations**

February 2022

**Figure
32**



ARM Group LLC
Engineers and Scientists

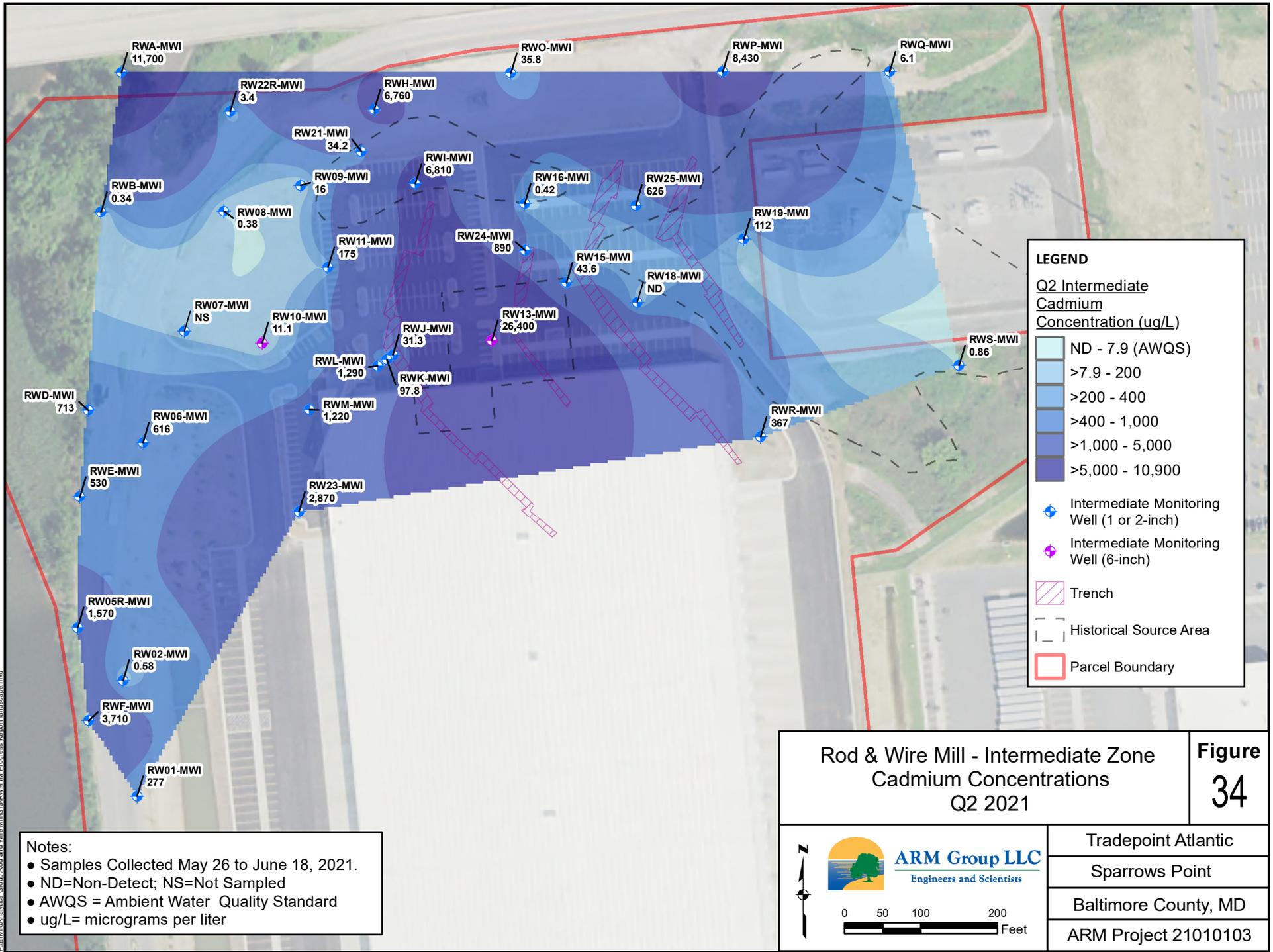
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**Intermediate Upgradient
Zinc Concentrations**

February 2022

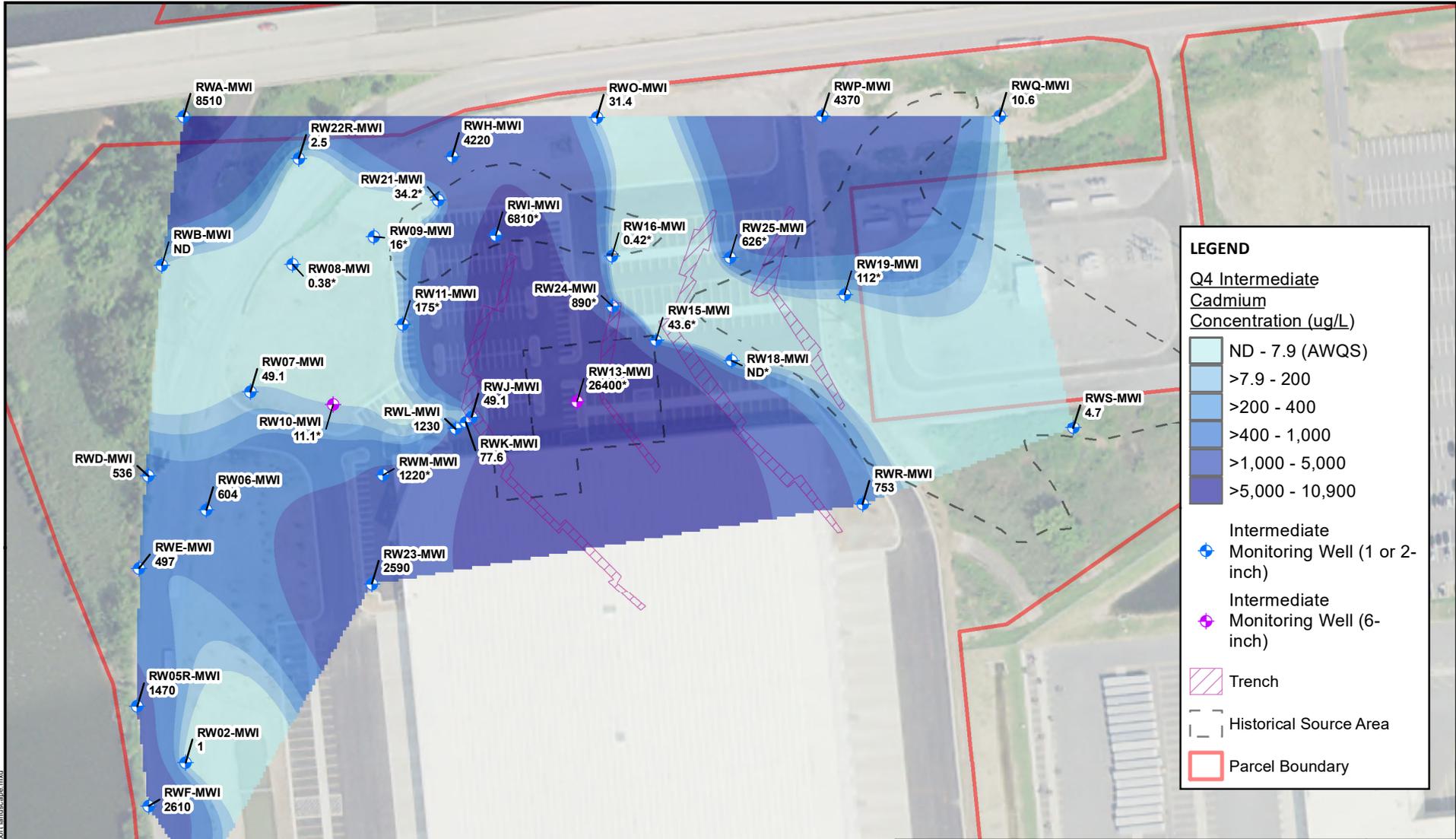
**Figure
33**



Notes:

- Samples Collected May 26 to June 18, 2021.
- ND=Non-Detect; NS=Not Sampled
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

Rod & Wire Mill - Intermediate Zone Cadmium Concentrations Q2 2021		Figure 34
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
 		



LEGEND

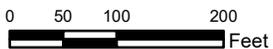
Q4 Intermediate Cadmium Concentration (ug/L)

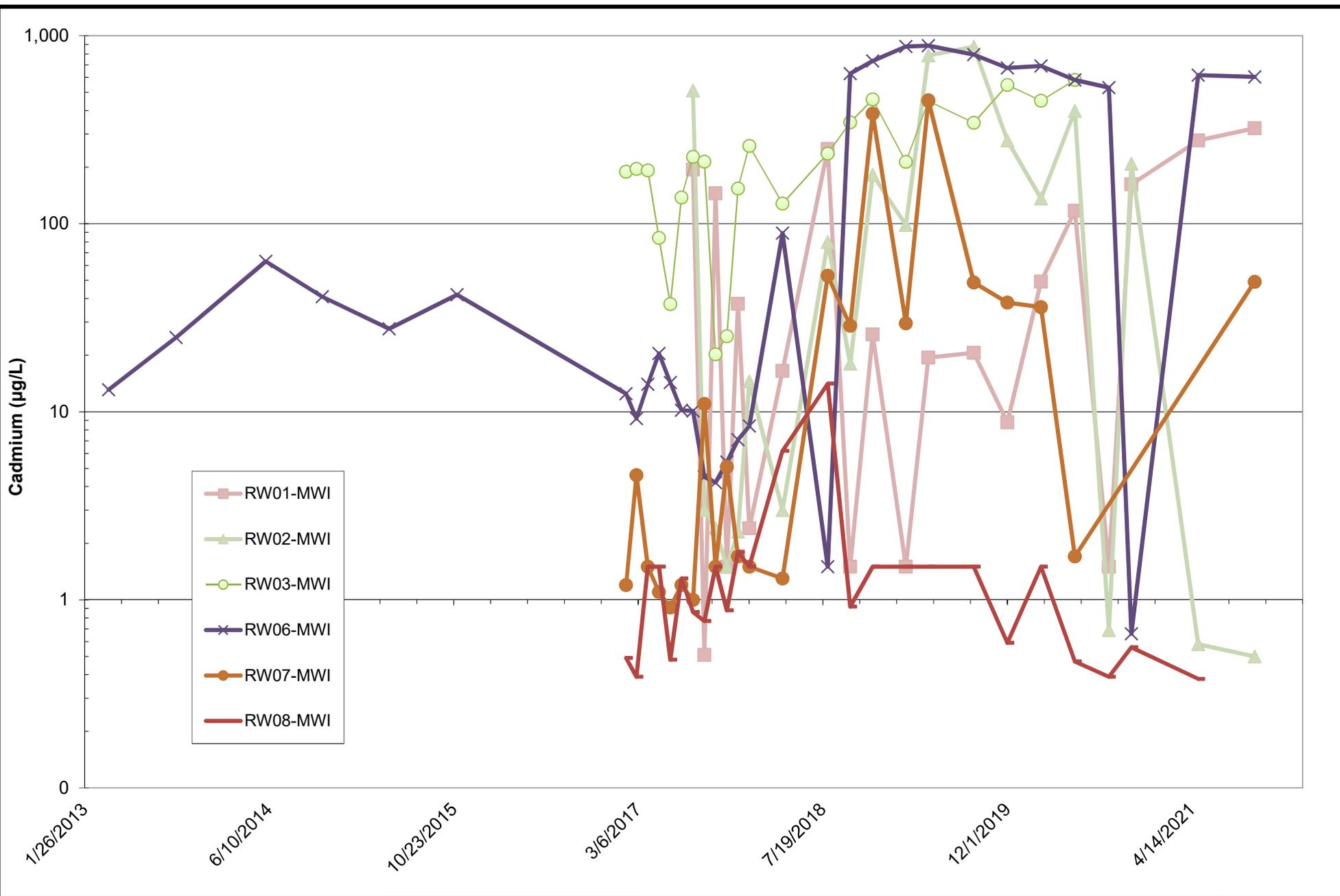
- ND - 7.9 (AWQS)
- >7.9 - 200
- >200 - 400
- >400 - 1,000
- >1,000 - 5,000
- >5,000 - 10,900

- Intermediate Monitoring Well (1 or 2-inch)
- Intermediate Monitoring Well (6-inch)
- Trench
- Historical Source Area
- Parcel Boundary

Notes:

- Samples with an asterisk were not sampled in Q4 so the Q2 concentration was used.
- Q4 Samples Collected October 4-18, 2021.
- ND=Not Detected
- AWQS = Ambient Water Quality Standard
- ug/L= micrograms per liter

Rod & Wire Mill - Intermediate Zone Cadmium Concentrations Q4 2021		Figure 35
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic Sparrows Point Baltimore County, MD ARM Project 21010103
 		



ARM Group LLC
Engineers and Scientists

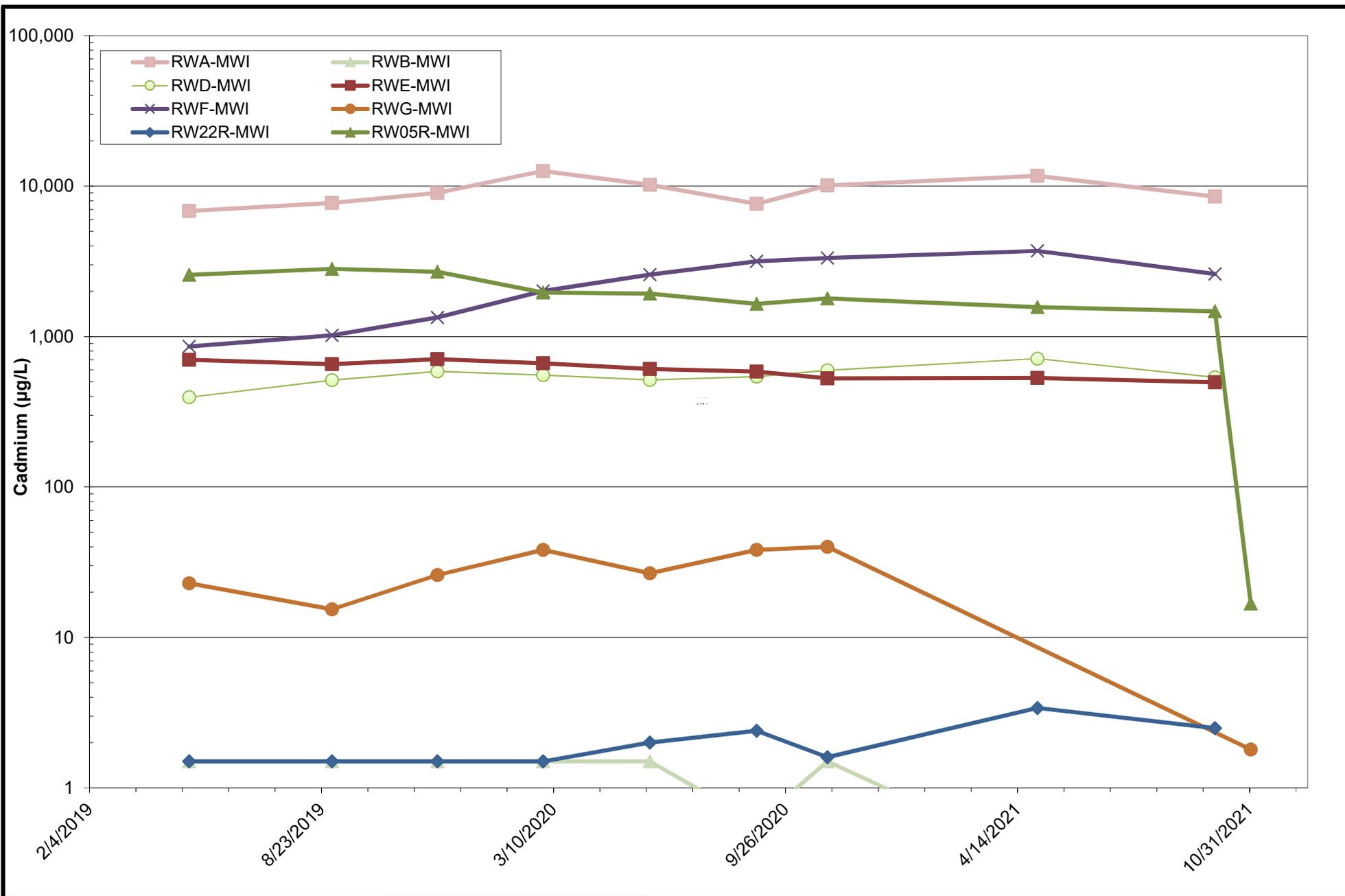
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**Intermediate Perimeter Cadmium
Concentrations (Original Wells)**

February 2022

**Figure
36**



ARM Group LLC
Engineers and Scientists

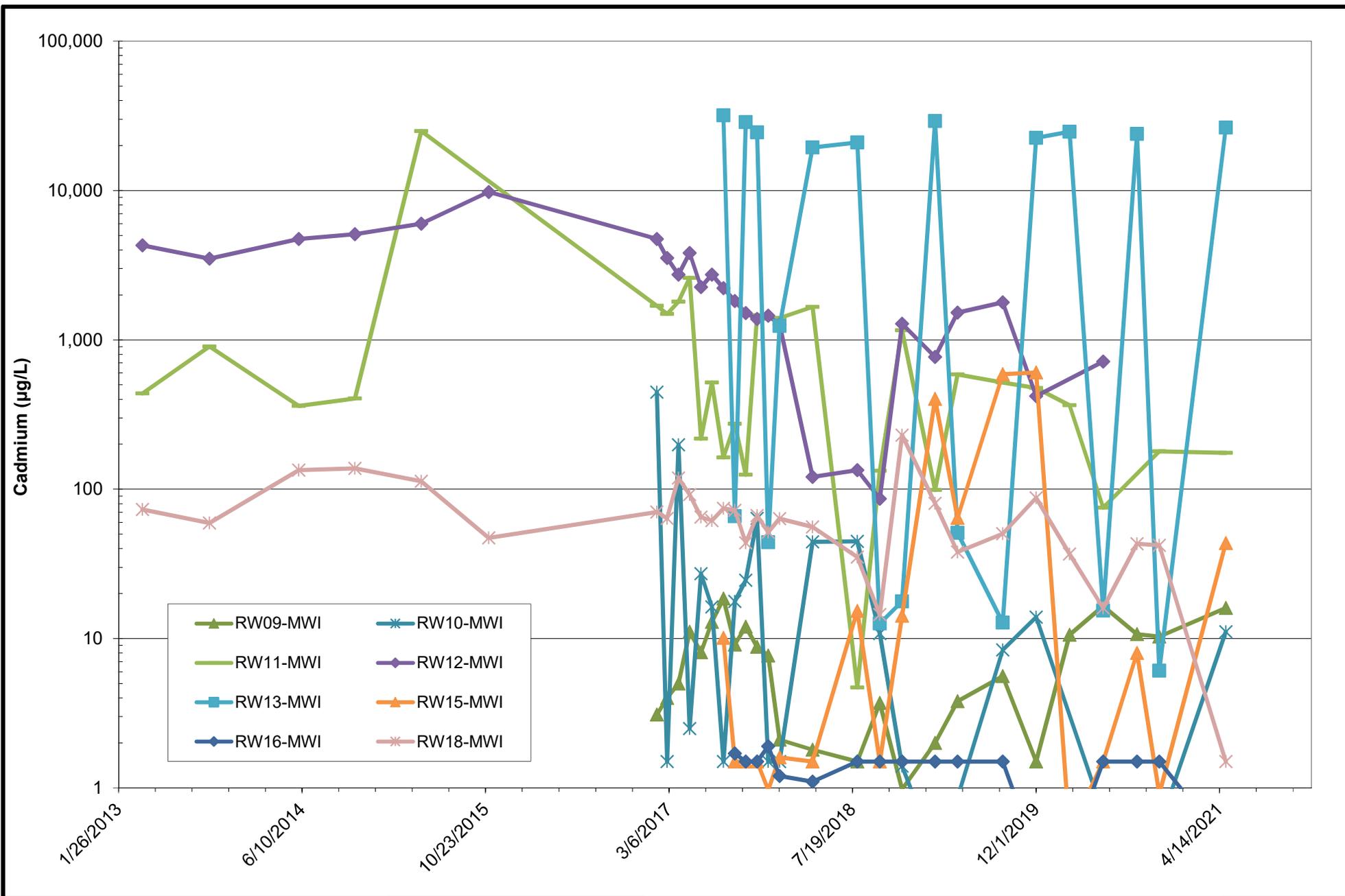
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**Intermediate Perimeter Cadmium
Concentrations (Supplemental Wells)**

February 2022

**Figure
37**



ARM Group LLC
Engineers and Scientists

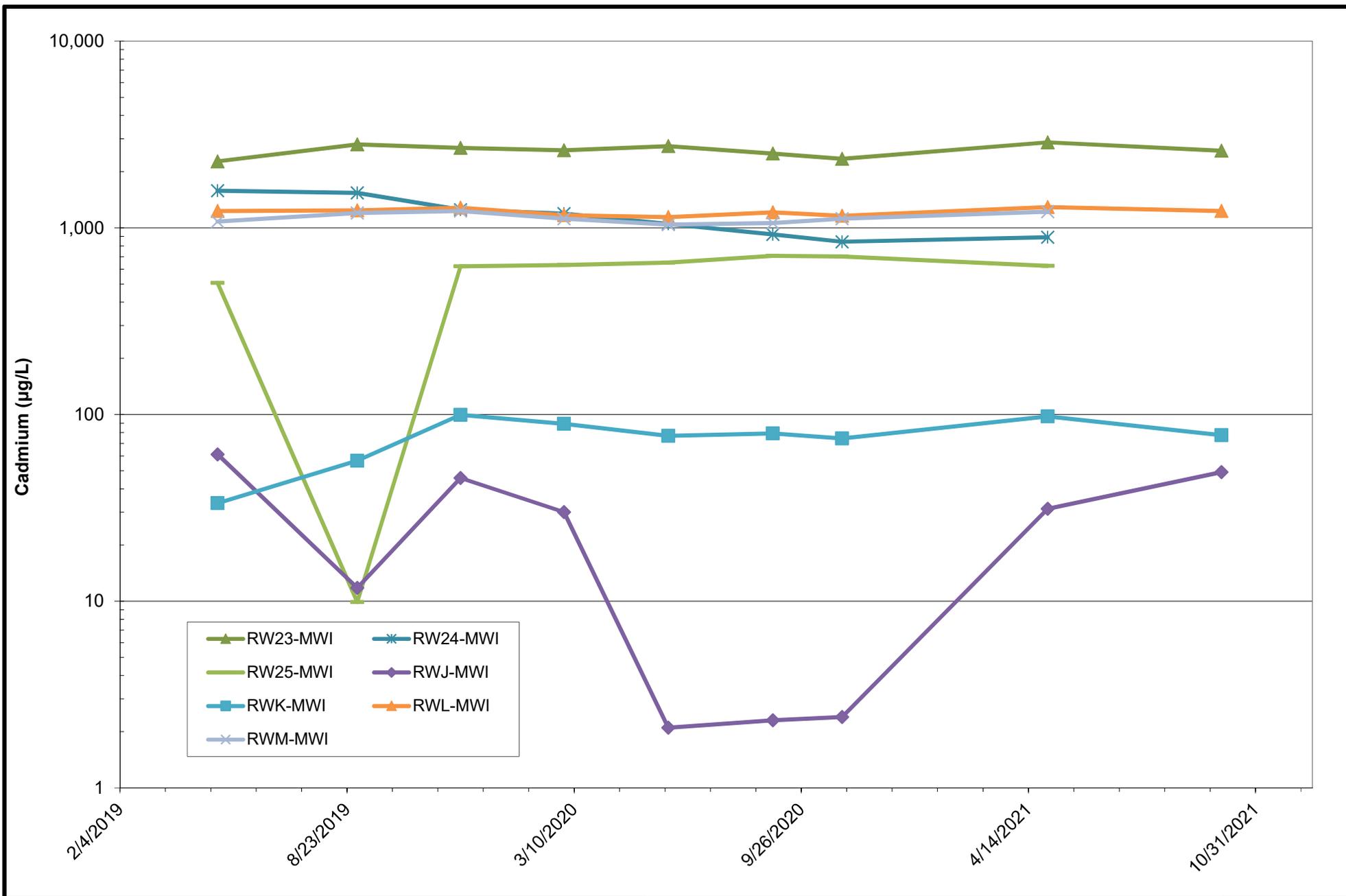
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**Intermediate Interior Cadmium
Concentrations (Original Wells)**

February 2022

**Figure
38**



ARM Group LLC
Engineers and Scientists

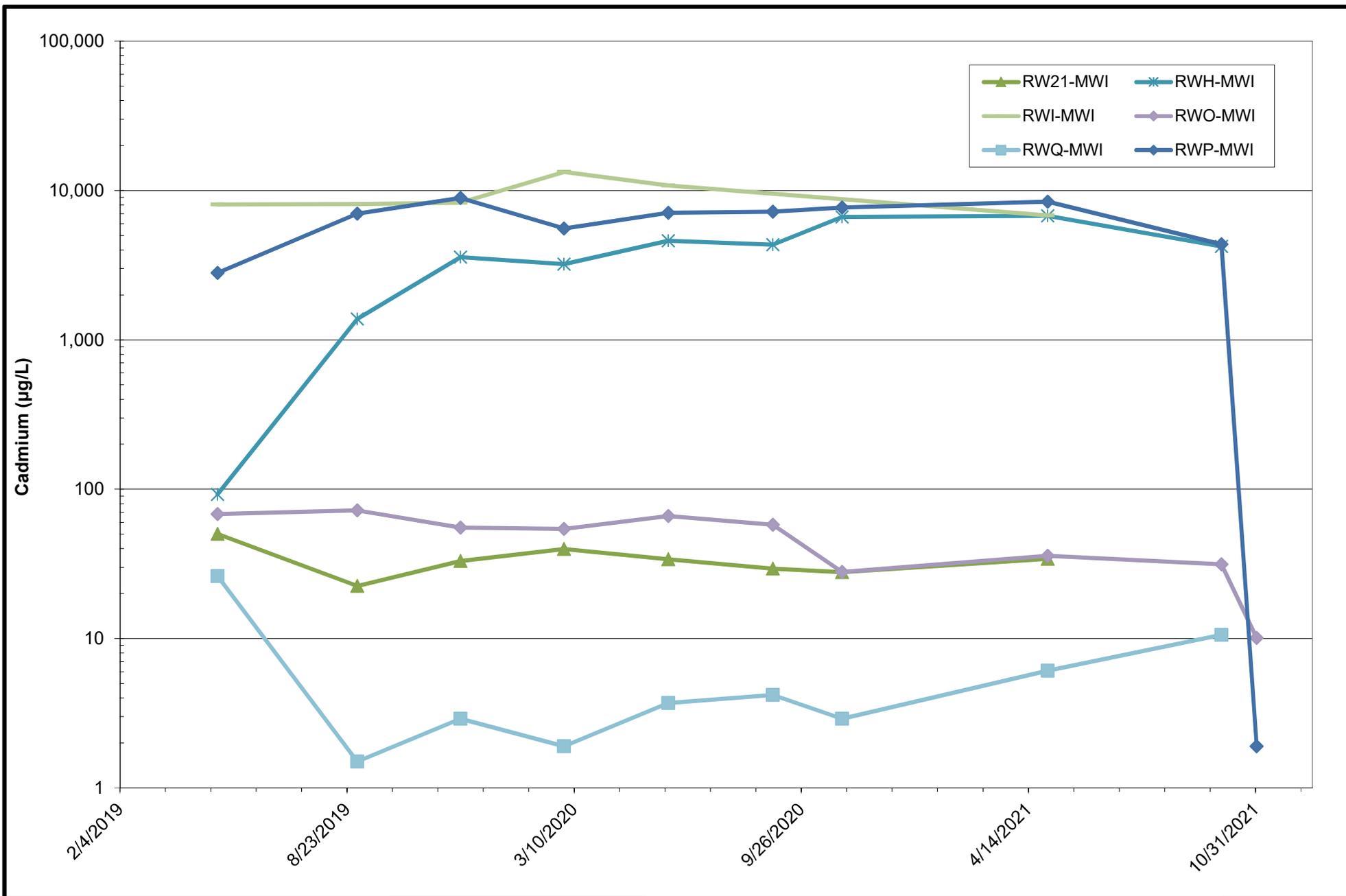
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

Intermediate Interior Cadmium
Concentrations (Supplemental Wells)

February 2022

**Figure
39**



ARM Group LLC
Engineers and Scientists

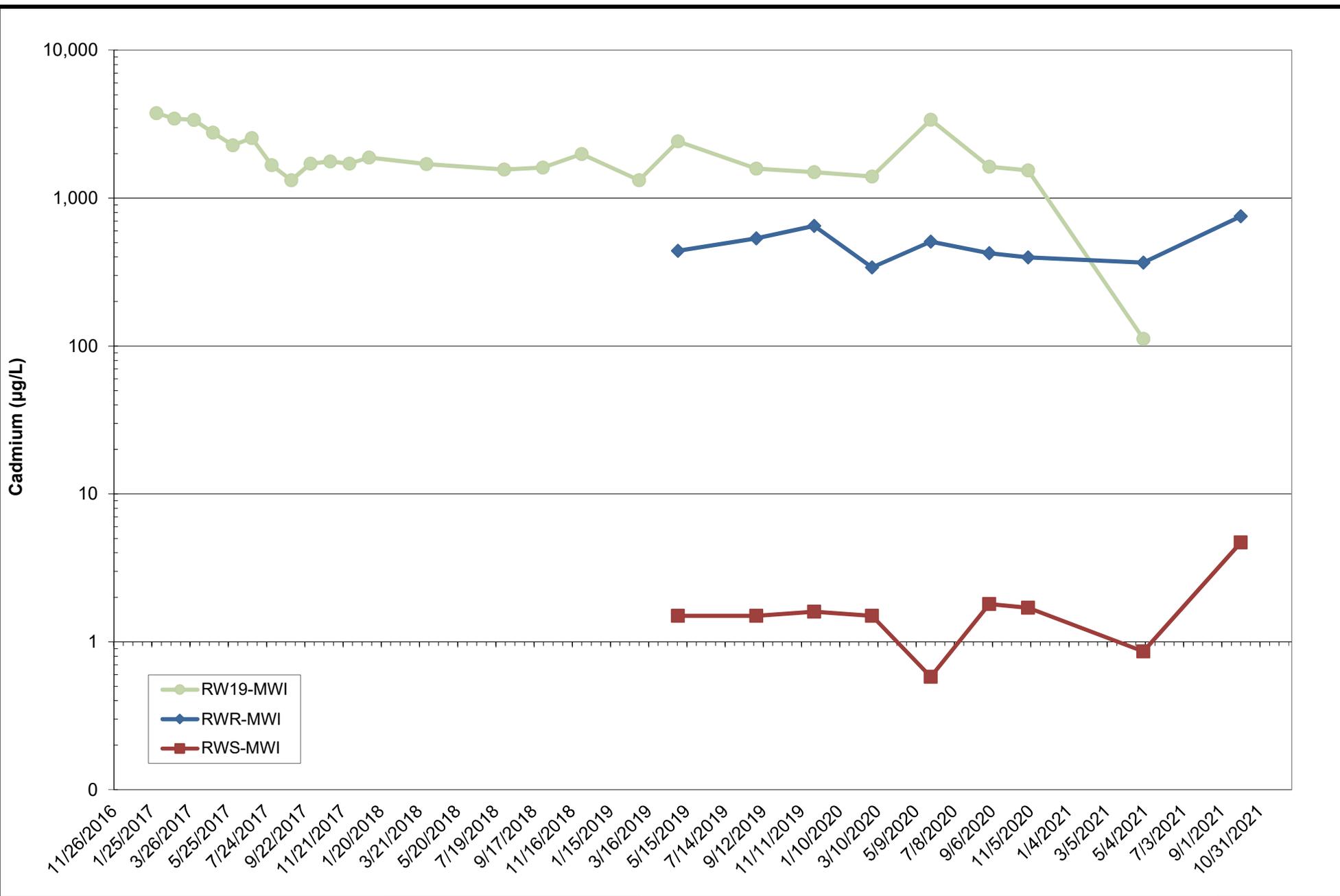
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**Intermediate Delineation Wells
Cadmium Concentrations**

February 2022

**Figure
40**



ARM Group LLC
Engineers and Scientists

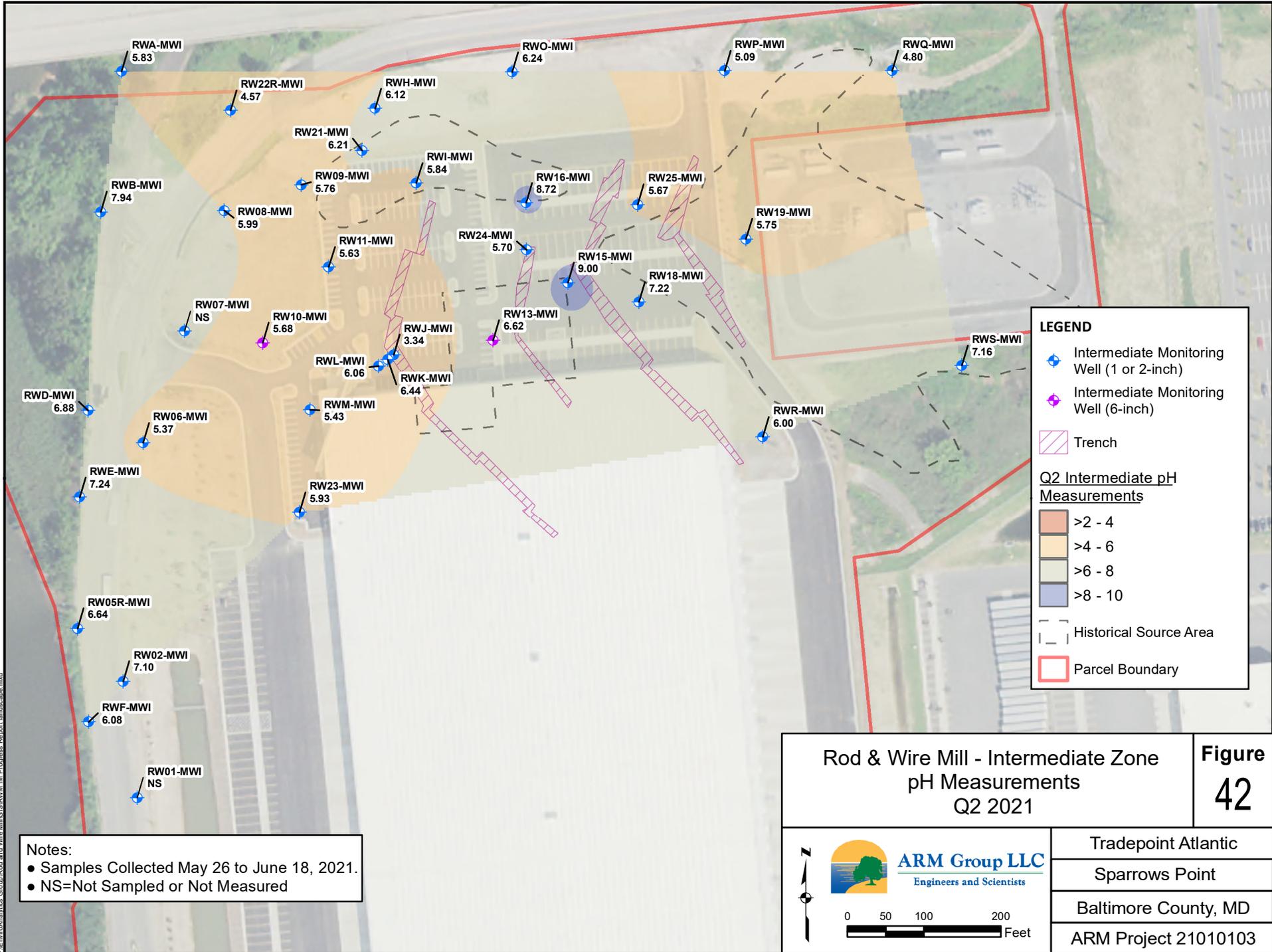
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

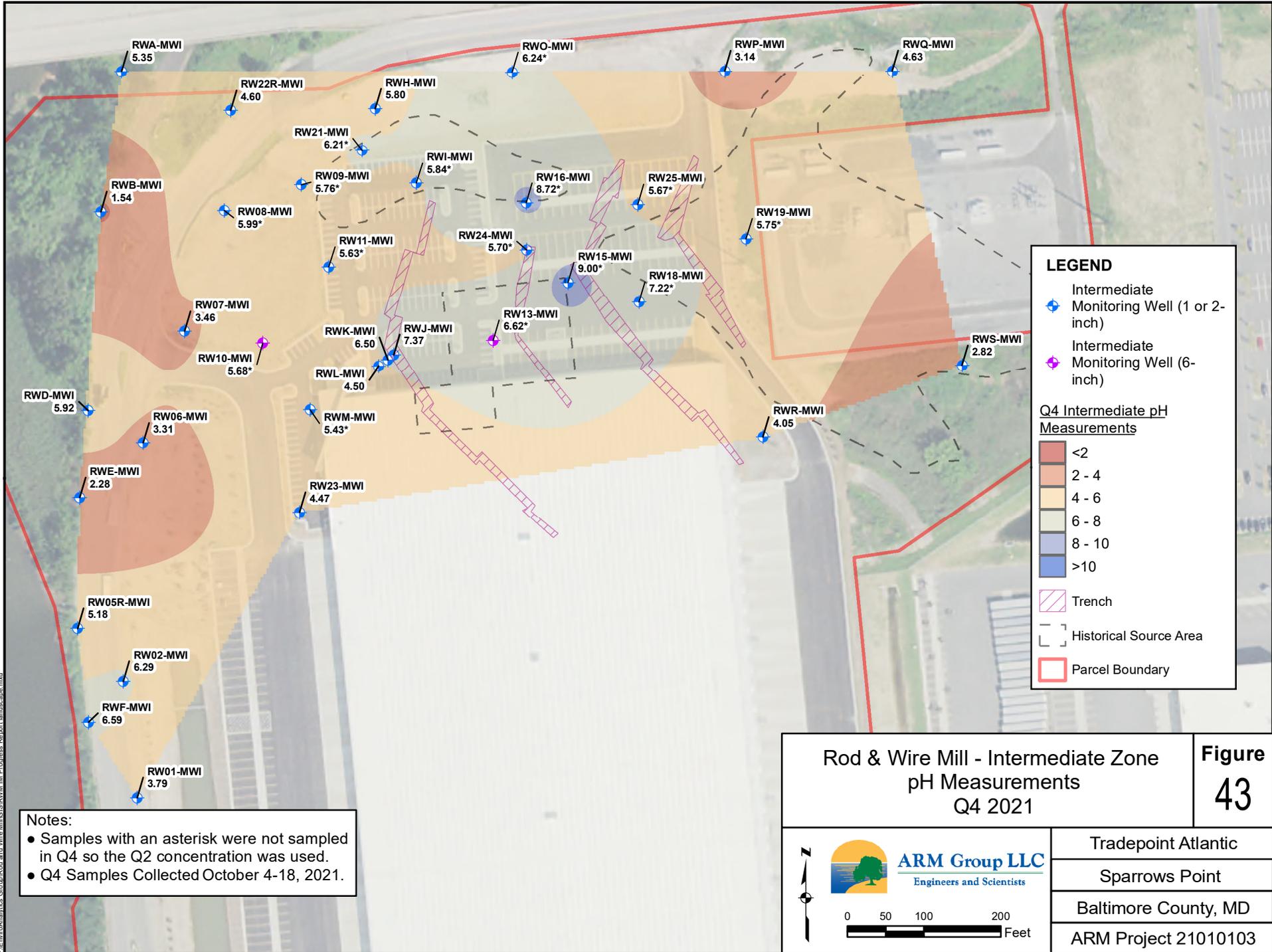
**Intermediate Upgradient
Cadmium Concentrations**

February 2022

**Figure
41**



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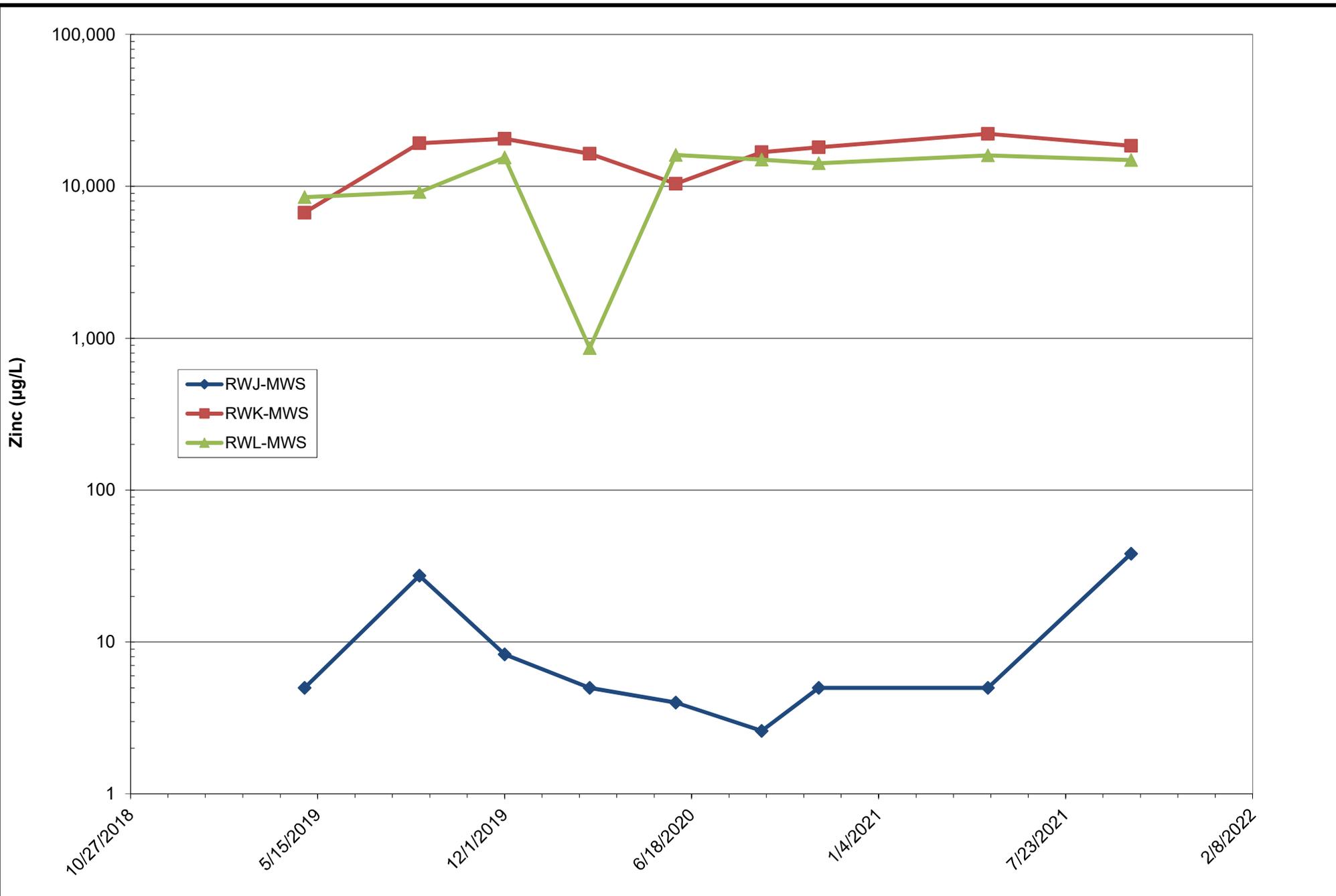
Rod & Wire Mill - Intermediate Zone
pH Measurements
Q4 2021

Figure
43


ARM Group LLC
 Engineers and Scientists

0 50 100 200 Feet

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010103



ARM Group LLC
Engineers and Scientists

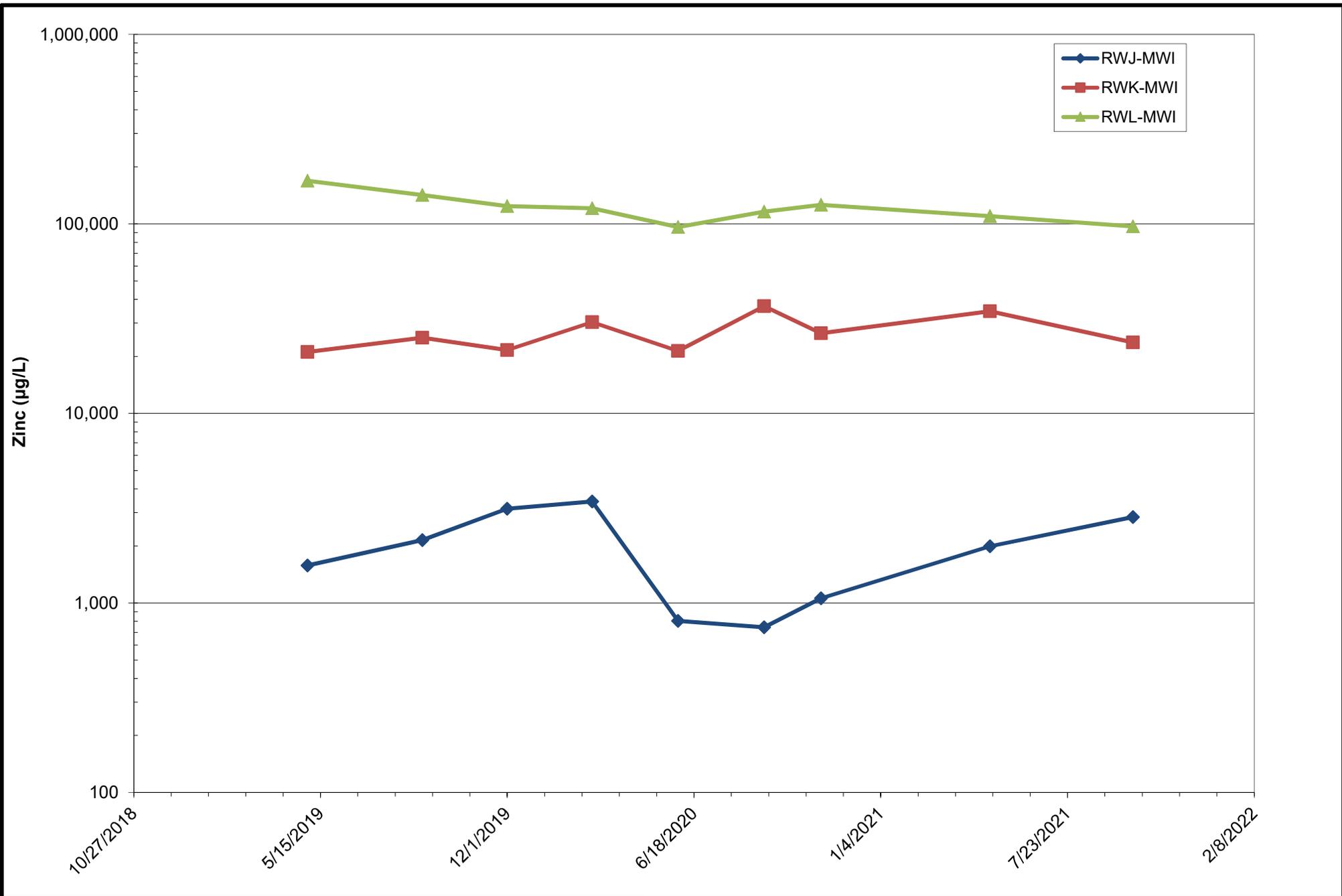
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWJ-MWS, RWK-MWS, and RWL-MWS
Zinc Concentrations**

February 2022

**Figure
44**



ARM Group LLC
Engineers and Scientists

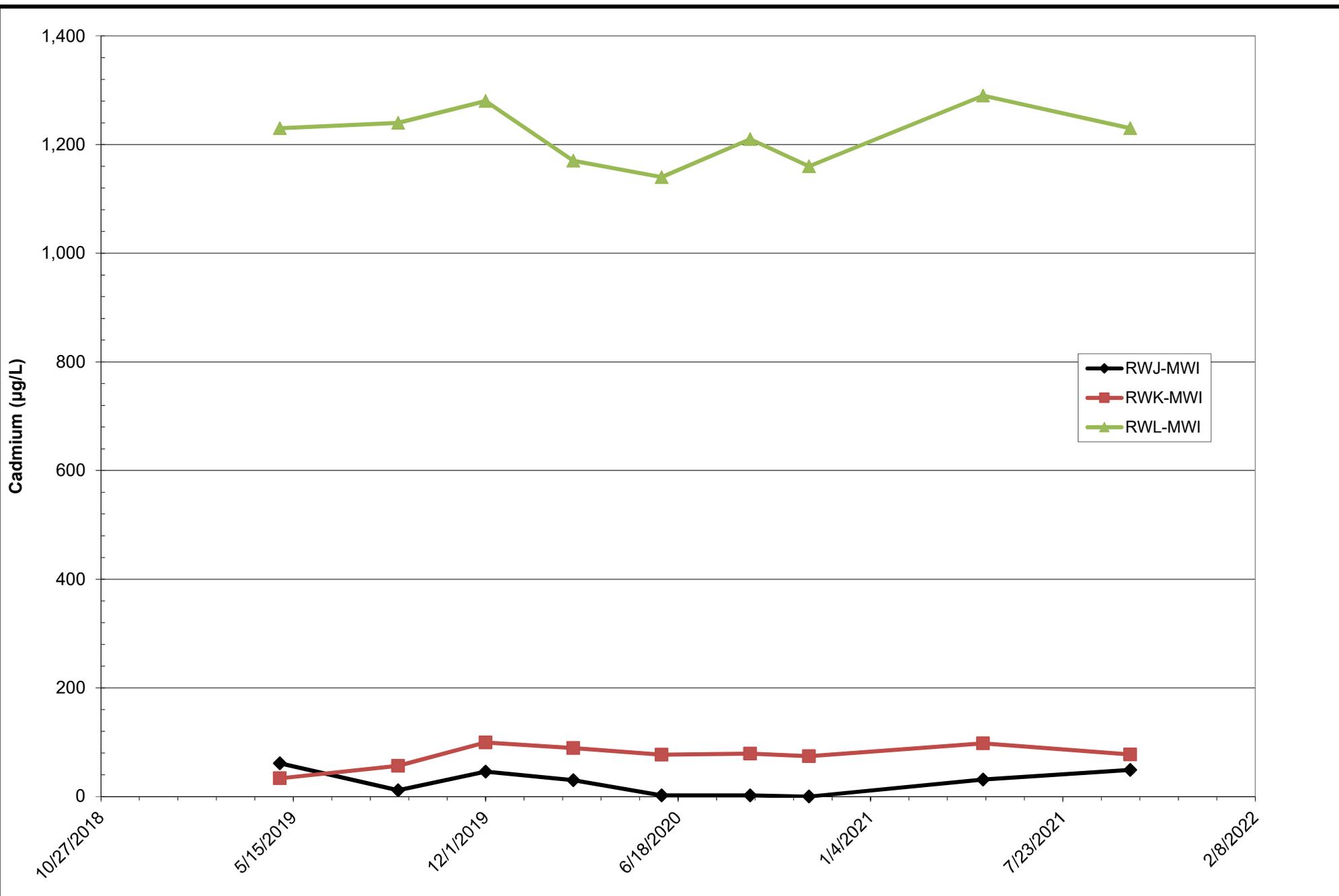
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

RWJ-MWI, RWK-MWI, and RWL-MWI
Zinc Concentrations

February 2022

**Figure
45**



ARM Group LLC
Engineers and Scientists

Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

RWJ-MWI, RWK-MWI, and RWL-MWI
Cadmium Concentrations

February 2022

**Figure
46**

TABLES

**Table 1 - Rod and Wire Mill
Shallow Wells Sampling Frequency**

Well Name	Monitoring Area	Sample Frequency	Sampling Rationale
RWA-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWB-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWD-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWE-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWF-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWG-MWS	Perimeter	Not Sampled	Outside the area of concern (south) and do not expect to see any changes
RWH-MWS	Delineation	Semi-Annually	Monitor northern perimeter concentrations
RWI-MWS	Delineation	Annually	Monitor the northwest pond
RWJ-MWS	Interior	Semi-Annually	Compare to the intermediate well to assess potential vertical migration
RWK-MWS	Interior	Semi-Annually	Compare to the intermediate well to assess potential vertical migration
RWL-MWS	Interior	Semi-Annually	Compare to the intermediate well to assess potential vertical migration
RWM-MWS	Interior	Not Sampled	Not monitoring the perimeter
RWN-MWS	Interior	Annually	Monitor effect on former sludge storage area and any southern direction impacts before the operational building
RWO-MWS	Delineation	Semi-Annually	Monitor northern perimeter concentrations
RWQ-MWS	Delineation	Semi-Annually	Monitor northern perimeter concentrations
RWR-MWS	Upgradient	Semi-Annually	Monitor eastern perimeter concentrations
RWS-MWS	Upgradient	Semi-Annually	Monitor eastern perimeter concentrations
RW01-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW02-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW03-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW04-MWS	Perimeter	Not Sampled	In close proximity to RW03-MWS; not needed to monitor the perimeter
RW05-MWS	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW06R-MWS	Perimeter	Annually	In close proximity to RWD and RWE-MWS; not needed to monitor the perimeter
RW07-MWS	Perimeter	Annually	In close proximity to RWB; not needed to monitor the perimeter
RW08-MWS	Perimeter	Not Sampled	Not monitoring the perimeter
RW09-MWS	Interior	Not Sampled	Not monitoring the perimeter
RW11-MWS	Interior	Annually	Provide spatial coverage in central area
RW12-MWS	Interior	Semi-Annually	Compare to the intermediate well to assess potential vertical migration
RW14-MWS	Interior	Not Sampled	Redundant with other wells monitoring central area
RW15-MWS	Interior	Not Sampled	Redundant with other wells monitoring central area
RW16-MWS	Interior	Annually	Within the area of the northwest disposal pond; provide spatial coverage in central area
RW18-MWS	Interior	Annually	Monitor any southern direction impacts before the operational building; provide spatial coverage in central area
RW19-MWS	Upgradient	Not Sampled	Do not expect to see changes in conditions
RW21-MWP	Delineation	Not Sampled	Installed for NAPL monitoring
RW21-MWS	Delineation	Not Sampled	Redundant with other monitoring wells in the central area
RW22R-MWS	Perimeter	Semi-Annually	Monitor downgradient of northwest pond area; monitor northern perimeter concentrations
RW23-MWS	Interior	Semi-Annually	Monitor southern perimeter and immediately downgradient of operational building concentrations
RW24-MWS	Interior	Not Sampled	Redundant with other monitoring wells in the central area
RW25-MWS	Interior	Not Sampled	Redundant with other monitoring wells in the central area

**Table 2 - Rod and Wire Mill
Intermediate Wells Sampling Frequency**

Well Name	Monitoring Area	Sample Frequency	Sampling Rationale
RWA-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWB-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWD-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWE-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWF-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RWG-MWI	Perimeter	Annually	Monitor for changes in perimeter concentrations
RWH-MWI	Delineation	Semi-Annually	Monitor northern perimeter conditions
RWI-MWI	Delineation	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RWJ-MWI	Performance	Semi-Annually	Near field wells to monitor trench effectiveness; inside final treatment trench
RWK-MWI	Performance	Semi-Annually	Near field wells to monitor trench effectiveness; immediate well downgradient after final treatment trench
RWL-MWI	Performance	Semi-Annually	Near field wells to monitor trench effectiveness; delineation of final treatment trench
RWM-MWI	Performance	Annually	Trench effectiveness is already being monitored closer to the area of concern
RWO-MWI	Delineation	Semi-Annually	Monitor northern perimeter conditions
RWP-MWI	Delineation	Semi-Annually	Monitor northern perimeter conditions
RWQ-MWI	Delineation	Semi-Annually	Monitor northern perimeter conditions
RWR-MWI	Upgradient	Semi-Annually	Monitor eastern perimeter conditions; monitor concentrations proximal to the operational building
RWS-MWI	Upgradient	Semi-Annually	Monitor eastern perimeter conditions
RW01-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW02-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW03-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW05R-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW06-MWI	Perimeter	Semi-Annually	Monitor for changes in perimeter concentrations
RW06R-MWD	Perimeter	Annually	Monitor any vertical movement of groundwater into lower hydrogeologic zone
RW07-MWI	Perimeter	Semi-Annually	Monitor western perimeter
RW08-MWI	Perimeter	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW09-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW10-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW11-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW12-MWI	Performance	Semi-Annually	Near field wells to monitor trench effectiveness; well immediate upgradient to final treatment trench
RW13-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW15-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW16-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW18-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW19-MWI	Upgradient	Annually	Do not expect to see changing conditions because it is upgradient of all treatment trenches
RW21-MWI	Delineation	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW22R-MWI	Perimeter	Semi-Annually	Monitor downgradient of northwest pond area; monitor northern perimeter concentrations
RW23-MWI	Performance	Semi-Annually	Monitor the concentrations along the southern perimeter and immediately downgradient of operational building
RW24-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater
RW25-MWI	Performance	Annually	Do not expect to see rapid changing conditions due to passive condition and slow migration of groundwater

TABLE 3
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Sampling Dates	Units	RW01-MWS	RW02-MWS	RW03-MWS	RW04-MWS	RW05-MWS	RW06R-MWS	RW07-MWS	RW08-MWS	RW09-MWS	RW11-MWS
2/10/2017-2/14/2017	µg/L	NS	NS	6,200	NS	NS	NS	81.6	1,080	14,500	8,790
3/28/2017-3/29/2017	µg/L	NS	NS	6,510	NS	NS	NS	74.8	8,710	12,400	10,500
4/25/2017-4/27/2017	µg/L	NS	NS	4,860	NS	NS	NS	86.4	9,520	12,900	13,100
5/22/2017-5/24/2017	µg/L	NS	NS	5,380	NS	NS	NS	102	2,680	11,900	12,500
6/5/2017-6/8/2017	µg/L	NS	NS	5,500	58.2	NS	NS	107	1,870	13,000	13,500
7/10/2017-7/12/2017	µg/L	NS	NS	8,460	179	NS	NS	114	968	11,500	10,900
8/7/2017-8/10/2017	µg/L	12,200	6,290	7,730	74.7	550	NS	127	3,190	9,700	10,800
9/1/2017-9/8/2017	µg/L	5,730	3,220	16,300	163	184	NS	165	4,460	8,750	10,600
10/2/2017-10/6/2017	µg/L	7,730	5,490	32,100	137	1,410	NS	144	1,950	8,310 ML	9,270
11/3/2017-11/13/2017	µg/L	25,200	1,460	14,100	123	503	NS	227	1,600	9,290	18,300
12/4/2017-12/8/2017	µg/L	7,300	79.3	46,400	279	5,440	NS	216	1,770	8,550	24,000
1/2/2018-1/9/2018	µg/L	35,200	2,210	31,500	384	35.7	NS	276	2,600	9,310	27,700
4/8/2018-4/13/2018	µg/L	52,000	5,320	44,000	300	75.3	NS	204	13,200	8,980	37,100
7/30/2018-8/3/2018	µg/L	24,100	5,470	25,600	7.9 J	32.6	22	248	6,640	10,700	109,000
10/1/2018-10/5/2018	µg/L	37,000	5,930	14,900	168	21.7	3.7 J	223	13,300	10,800	29,500
12/10/2018-12/14/2018*	µg/L	13,700	27,400	23,300	23.5	<i>10 U</i>	<i>10 U</i>	176	931	9,200	28,900
3/12/2019-3/19/2019*	µg/L	16,500	13,100	9,570	33.6	<i>10 U</i>	<i>10 U</i>	142	14,600	11,300	13,500
5/3/2019-6/7/2019*	µg/L	16,300	21,900	18,700	<i>10 U</i>	<i>10 U</i>	20.7	137	11,300	14,100	38,900
9/10/2019-9/23/2019*	µg/L	16,300	27,400	19,200	313	<i>8.3 B</i>	<i>4.1 B</i>	148	1,350	19,600	44,000
12/3/2019-12/11/2019	µg/L	10,400	594	19,200	604	41.6	4.3 J	168	1,250	20,600	37,500
3/11/20-3/23/20*	µg/L	9,810	269	16,800	37.8	5.4 J	4.1 J	124	10,300	20,700	28,900
6/8/20-6/30/20*	µg/L	6,200	1,940	18,800	79.4	8.6 J	19.4	220	12,000	26,700	37,200
9/9/20-9/29/20*	µg/L	7,050	1,280	NS	75.4	5.9 J	8 J	NS	2,330	39,900	46,600
11/5/20-11/19/20*	µg/L	4,140	9,950	NS	54.6	9.8 J	<i>10 U</i>	NS	1,600	45,200	55,200
5/26/21-6/18/21*	µg/L	3,620	472	NS	NS	7.0 J	<i>10 U</i>	NS	NS	NS	61,000
10/4/21-10/18/21*	µg/L	5,660	3.1 J	NS	NS	17.8 J	NS	NS	NS	NS	NS
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	298	NS	NS	NS

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TABLE 3
Shallow Zinc Concentrations
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Sampling Dates	Units	RW12-MWS	RW14-MWS	RW15-MWS	RW16-MWS	RW18-MWS	RW19-MWS	RW21-MWS	RW22R-MWS	RW23-MWS	RW24-MWS
2/10/2017-2/14/2017	µg/L	NS	NS	NS	NS	NS	10,100	DNE	DNE	DNE	DNE
3/28/2017-3/29/2017	µg/L	NS	NS	NS	NS	NS	7,100	DNE	DNE	DNE	DNE
4/25/2017-4/27/2017	µg/L	NS	NS	NS	NS	NS	6,260	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	NS	NS	NS	NS	NS	4,860	DNE	DNE	DNE	DNE
6/5/2017-6/8/2017	µg/L	11,400	NS	NS	NS	25,500	3,720	DNE	DNE	DNE	DNE
7/10/2017-7/12/2017	µg/L	9,090	NS	NS	NS	13,300	3,700	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	5,090	42,000	276	NS	964	3,360	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	3,980	43,500	1,080	25.6	6,160	2,990	DNE	DNE	DNE	DNE
10/2/2017-10/6/2017	µg/L	3,790	28,900	900	26.2	14,500	18,700	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	235,000	28,100	8,800	48.6	10,700	2,730	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	2,980	49,200	7,630	27.7	23,400	3,380	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	10,100	61,800	5,150	31.2	11,600	10,200	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	10,600	62,100	5,940	25	25,900	7,060	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	2,900	64,100	1,320	35.9	439	10,100	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	1,140	80,100	2,950	30.0	44.9	10,500	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	8,570	79,200	4,380	5.5 J	12.7	3,390	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	4,640	65,700	499	7 J	30	4,680	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	1,550	69,600	684	106	16.9	3,180	282,000	58,100	22.4	5 J
9/10/2019-9/23/2019*	µg/L	5,390	70,500	134	10.0 U	4.3 B	2,260	330,000	188,000	20.6	8.2 J
12/3/2019-12/11/2019	µg/L	763	77,500	378	22.7	15.2	2,640	368,000	112,000	38.6	6.7 J
3/11/20-3/23/20*	µg/L	NS	70,800	105	10 U	4.2 J	5,300	301,000	213,000	5 J	3.5 J
6/8/20-6/30/20*	µg/L	4,660	71,900	2.7 J	10 U	4.2 J	2,710	268,000	217,000	2.7 J	3.4 J
9/9/20-9/29/20*	µg/L	NS	56,600	9.4 J	22.3	22.7	22,600	298,000	253,000	6.4 J	16.4
11/5/20-11/19/20*	µg/L	NS	50,200	3.3 J	3.7 J	3.3 J	6,190	325,000	145,000	5.9 J	10 U
5/26/21-6/18/21*	µg/L	NS	NS	NS	3.0 J	20.1	NS	NS	169,000	2.8 J	NS
10/4/21-10/18/21*	µg/L	4,960	NS	NS	NS	NS	NS	NS	137,000	6.5 J	NS
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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TABLE 3
Shallow Zinc Concentrations
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Sampling Dates	Units	RW25-MWS	RWA-MWS	RWB-MWS	RWD-MWS	RWE-MWS	RWF-MWS	RWG-MWS	RWH-MWS	RWI-MWS	RWJ-MWS
2/10/2017-2/14/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/28/2017-3/29/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/27/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/12/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/6/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	70,500	516	7.4 J	4.7 J	468	39,100	10 U	367	25,800	10 U
9/10/2019-9/23/2019*	µg/L	437,000	1,720	5.5 J	9.1 J	422	34,300	10.0 U	60,600	26,200	27
12/3/2019-12/11/2019	µg/L	11,900	49.7	38.7	5.4 J	261	35,000	194	2,600	32,400	8.3 J
3/11/20-3/23/20*	µg/L	2,570	9.7 J	6.1 J	3.6 J	303	33,900	2.9 J	19,300	1,510	10 U
6/8/20-6/30/20*	µg/L	5,720	21.5	10 U	10 U	1,360	31,200	9.8 J	48.9	211	4 J
9/9/20-9/29/20*	µg/L	2,780	182	5.8 J	4.2 J	22,100	44,400	10 U	5,330	NS	2.6 J
11/5/20-11/19/20*	µg/L	9,930	52.1	11.9	3 J	156	39,000	10 U	1,310	NS	10 U
5/26/21-6/18/21*	µg/L	NS	6.1 J	10 U	10 U	21,900	32,800	NS	3,400	NS	10 U
10/4/21-10/18/21*	µg/L	NS	7.6 J	12.4 J	10 J	1,630	25,200	NS	6,670	NS	38.2
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	2.0 J	NS

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Sampling Dates	Units	RWK-MWS	RWL-MWS	RWM-MWS	RWN-MWS	RWO-MWS	RWQ-MWS	RWR-MWS	RWS-MWS
2/10/2017-2/14/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/28/2017-3/29/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/27/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/12/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/6/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	6,710	8,480	6 J	978,000	2,660	146	213,000	10,100
9/10/2019-9/23/2019*	µg/L	19,200	9,180	4.0 J	964,000	6,790	147	245,000	1,980
12/3/2019-12/11/2019	µg/L	20,600	15,500	11.6	943,000	3,720	182	320,000	2,970
3/11/20-3/23/20*	µg/L	16,400	861	4.8 J	1,170,000	6,220	194	344,000	19,100
6/8/20-6/30/20*	µg/L	10,400	16,100	21.8	884,000	11,100	149	327,000	954,000
9/9/20-9/29/20*	µg/L	16,800	15,000	7.8 J	1,140,000	5,030	162	326,000	60,300
11/5/20-11/19/20*	µg/L	18,100	14,200	10.6	709,000	2,750	152	293,000	7,260
5/26/21-6/18/21*	µg/L	22,200	16,000	NS	745,000	1,130	158	269,000	116,000
10/4/21-10/18/21*	µg/L	18,500	14,900	NS	NS	694	166	298,000	36,700
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS

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TABLE 4
Shallow Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW01-MWS	RW02-MWS	RW03-MWS	RW04-MWS	RW05-MWS	RW06R-MWS	RW07-MWS	RW08-MWS	RW09-MWS	RW11-MWS
2/10/2017-2/14/2017	µg/L	NS	NS	7.9	NS	NS	NS	1.8 J	3.8	22.3	0.78 J
3/28/2017-3/29/2017	µg/L	NS	NS	4.7	NS	NS	NS	1.7 J	11	17.5	1.8 J
4/25/2017-4/27/2017	µg/L	NS	NS	3.2	NS	NS	NS	1.4 J	7.8	16.6	5.3
5/22/2017-5/24/2017	µg/L	NS	NS	3.9	NS	NS	NS	1.9 J	3.2	14.9	1.8 J
6/5/2017-6/8/2017	µg/L	NS	NS	4	0.7 J	NS	NS	2.3 J	1.7 J	13.9	0.94 J
7/10/2017-7/12/2017	µg/L	NS	NS	4.6	1.2 J	NS	NS	2.8 J	0.74 J	13.4	0.84 J
8/7/2017-8/10/2017	µg/L	1.6 J	12	5.1	3 U	4.9	NS	3.1	2.7 J	12.5	1.3 J
9/1/2017-9/8/2017	µg/L	1.2 J	11.8	8.4	0.71 J	0.37 J	NS	3.6	2.5 J	12.3	0.81 J
10/2/2017-10/6/2017	µg/L	1.7 J	9.1	11	3 U	1.2 J	NS	3.2	0.96 J	10.6	3 U
11/3/2017-11/13/2017	µg/L	21.7	7.7	8.5	1.1 J	3 U	NS	5.8	3 U	10.5	2.1 J
12/4/2017-12/8/2017	µg/L	98	3 U	11.4	1.1 J	8.4	NS	6	3 U	9.2	2.9 J
1/2/2018-1/9/2018	µg/L	23.9	13.1	9.9	3 U	3 U	NS	4.8	3 U	9.9	2.2 J
4/8/2018-4/13/2018	µg/L	7.6	16.7	11.8	3 U	3 U	NS	4.6	2.2 J	9.8	4.1
7/30/2018-8/3/2018	µg/L	1.6 J	5.2	10.8	3 U	3 U	3 U	4.8	3 U	13.1	66.3
10/1/2018-10/5/2018	µg/L	0.97 J	3.4	8.7	3 U	3 U	3 U	4.7	3 U	22.3	1.2 J
12/10/2018-12/14/2018*	µg/L	1.8 J	9	24	3 U	3 U	0.56 J	4.1	3 U	9.3	0.81 J
3/12/2019-3/19/2019*	µg/L	2.3 J	3.8	7.7	3 U	3 U	3 U	2.7 J	2 J	10.2	2.2 J
5/3/2019-6/7/2019*	µg/L	4.7	1.7 J	17.9	3 U	3 U	3 U	2.9 J	0.86 J	12	1.1 B
9/10/2019-9/23/2019*	µg/L	4.3	1.1 J	16.3	0.55 J	3.0 U	3.0 U	3.4	0.39 J	16.7	3.0 U
12/3/2019-12/11/2019	µg/L	3.9 B	0.55 B	18.8	1.8 J	3.0 U	3.0 U	3.0 J	3.0 U	14.3	1.9 J
3/11/20-3/23/20*	µg/L	4.4	0.97 J	18.8	1.7 J	0.52 J	3 U	2.5 J	2.7 J	16.9	2 J
6/8/20-6/30/20*	µg/L	1.6 J	0.61 J	14.5	0.99 J	0.53 J	0.98 J	4.5	0.67 J	15.2	2.5 J
9/9/20-9/29/20*	µg/L	1.3 J	0.43 J	NS	0.62 J	3 U	0.69 J	NS	3 U	17	2.2 J
11/5/20-11/19/20*	µg/L	1.1 J	0.58 J	NS	0.38 J	3 U	0.9 J	NS	0.37 J	16	2 J
5/26/21-6/18/21*	µg/L	0.40 J	3 U	NS	NS	3 U	3 U	NS	NS	NS	3.4
10/4/21-10/18/21*	µg/L	1 U	1 U	NS	NS	1 U	NS	NS	NS	NS	NS
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	1.7	NS	NS	NS

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TABLE 4
Shallow Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW12-MWS	RW14-MWS	RW15-MWS	RW16-MWS	RW18-MWS	RW19-MWS	RW21-MWS	RW22R-MWS	RW23-MWS	RW24-MWS
2/10/2017-2/14/2017	µg/L	NS	NS	NS	NS	NS	14.8	DNE	DNE	DNE	DNE
3/28/2017-3/29/2017	µg/L	NS	NS	NS	NS	NS	6.9	DNE	DNE	DNE	DNE
4/25/2017-4/27/2017	µg/L	NS	NS	NS	NS	NS	8.5	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	NS	NS	NS	NS	NS	3.6	DNE	DNE	DNE	DNE
6/5/2017-6/8/2017	µg/L	29.7	NS	NS	NS	356	2.4 J	DNE	DNE	DNE	DNE
7/10/2017-7/12/2017	µg/L	12.6	NS	NS	NS	240	9.7	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	7	1,780	12.2	NS	34.9	7.2	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	5.1	1,700	29.9	3 U	156	2.6 J	DNE	DNE	DNE	DNE
10/2/2017-10/6/2017	µg/L	11.3	1,750	25.3	3 U	306	5.2	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	193	2,390	63	3 U	208	4.4	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	4.2	2,820	55	3 U	410	4.6	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	11.7	2,800	40.7	3 U	218	4.8	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	11	3,220	41.2	3 U	448	6.6	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	5.2	3,630	38.5	3 U	7.1	1.2 J	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	2.3 J	3,840	78.1	3 U	1.2 J	3.6	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	15.3	3,730	94.4	3 U	1.5 J	3 U	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	6.6	2,960	15.4	3 U	3 U	3 U	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	2.1 J	3,000	19.1	3 U	3 U	3 U	483	157	3 U	3 U
9/10/2019-9/23/2019*	µg/L	3.2	3,450	7.4	3.0 U	3.0 U	3.0 U	354	105	0.88 J	3.0 U
12/3/2019-12/11/2019	µg/L	2.5 J	3,990	8.5	0.36 J	1.9 J	1.2 J	433	70.4	1.3 J	0.43 J
3/11/20-3/23/20*	µg/L	NS	3,020	4.3	3 U	3 U	0.66 J	378	62.9	0.52 J	3 U
6/8/20-6/30/20*	µg/L	5.2	3,590	3 U	3 U	3 U	0.77 J	322	51.4	3 U	3 U
9/9/20-9/29/20*	µg/L	NS	3,240	0.51 J	3 U	3 U	4.3	294	52.1	3 U	3 U
11/5/20-11/19/20*	µg/L	NS	3,020	3 U	3 U	3 U	1.3 J	367	30.7	3 U	3 U
5/26/21-6/18/21*	µg/L	NS	NS	NS	3 U	3 U	NS	NS	78.5	3 U	NS
10/4/21-10/18/21*	µg/L	1 U	NS	NS	NS	NS	NS	NS	117	1 U	NS
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Bold indicates detection above the reporting limit

NS = Not Sampled

DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

TABLE 4
Shallow Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW25-MWS	RWA-MWS	RWB-MWS	RWD-MWS	RWE-MWS	RWF-MWS	RWG-MWS	RWH-MWS	RWI-MWS	RWJ-MWS
2/10/2017-2/14/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/28/2017-3/29/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/27/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/12/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/6/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	491	2.3 J	3 U	3 U	0.57 J	4.2	3 U	20	714	3 U
9/10/2019-9/23/2019*	µg/L	599	24	3.0 U	3.0 U	0.64 J	6.1	3.0 U	856	840	3.0 U
12/3/2019-12/11/2019	µg/L	9.9	4.4	3.0 U	3.0 U	2.0 J	7.3	3.0 U	19.9	1,080	3.0 U
3/11/20-3/23/20*	µg/L	2.7 J	0.6 J	3 U	3 U	0.91 J	7.7	3 U	163	125	3 U
6/8/20-6/30/20*	µg/L	4.6	0.88 J	3 U	0.46 J	1.4 J	5.7	0.63 J	0.97 J	17.5	3 U
9/9/20-9/29/20*	µg/L	7.0	2.9 J	3 U	0.46 J	8.7	6.0	3 U	22.4	NS	3 U
11/5/20-11/19/20*	µg/L	8.6	1.5 J	3 U	3 U	0.44 J	4.6	3 U	7.0	NS	3 U
5/26/21-6/18/21*	µg/L	NS	0.48 J	3 U	3 U	10.9	4.0	NS	9.9	NS	3 U
10/4/21-10/18/21*	µg/L	NS	1 U	1 U	1 U	0.55 J	3.4	NS	6.8	NS	0.22 J
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	0.76 J	NS

Bold indicates detection above the reporting limit

NS = Not Sampled

DNE = Did Not Exist

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TABLE 4
Shallow Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RWK-MWS	RWL-MWS	RWM-MWS	RWN-MWS	RWO-MWS	RWQ-MWS	RWR-MWS	RWS-MWS
2/10/2017-2/14/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/28/2017-3/29/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/27/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/12/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/6/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	3 U	3 U	3 U	13,000	1.4 J	2.6 J	50	3 U
9/10/2019-9/23/2019*	µg/L	3.0 U	3.0 U	3.0 U	11,100	1.3 J	2.6 J	41	3.0 U
12/3/2019-12/11/2019	µg/L	3.0 U	3.0 U	0.36 J	11,200	7.6	4.4	42.3	3.0 U
3/11/20-3/23/20*	µg/L	3 U	0.85 J	3 U	9,420	0.65 J	3.1	38.8	3 U
6/8/20-6/30/20*	µg/L	3 U	0.52 J	3 U	6,810	0.46 J	2.9 J	35.5	1.9 J
9/9/20-9/29/20*	µg/L	0.51 J	0.59 J	3 U	7,350	4.1	3.3	34.3	0.42 J
11/5/20-11/19/20*	µg/L	0.37 J	3 U	3 U	6,260	0.53 J	3.2	33.8	0.39 J
5/26/21-6/18/21*	µg/L	3 U	3 U	NS	4,850	0.85 J	3.4	35.1	3 U
10/4/21-10/18/21*	µg/L	1 U	0.37 J	NS	NS	1 U	3.1	39.3	10 U
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS

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TABLE 5
Intermediate Zinc Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW01-MWI	RW02-MWI	RW03-MWI	RW05-MWI	RW05R-MWI	RW06-MWI	RW07-MWI	RW08-MWI	RW09-MWI	RW10-MWI
2/10/2017-2/16/2017	µg/L	NS	NS	9,740	NS	DNE	1,900	944	178	51,000	104,000
3/27/2017-3/30/2017	µg/L	NS	NS	9,240	NS	DNE	1,680	1,210	44.6	51,900	20.4
4/25/2017-4/28/2017	µg/L	NS	NS	7,830	NS	DNE	1,420	364	85	57,500	75,800
5/22/2017-5/24/2017	µg/L	NS	NS	2,960	NS	DNE	999	298	188	57,200	1,150
6/5/2017-6/9/2017	µg/L	NS	NS	2,440	374	DNE	876	432	71.9	51,900	34,600
7/10/2017-7/13/2017	µg/L	NS	NS	8,330	1,730	DNE	1,690	45.7	153	65,600	25,900
8/7/2017-8/10/2017	µg/L	11,600	18,200	10,900	1,730	DNE	1,340	62.7	49.8	55,500	79.7
9/1/2017-9/8/2017	µg/L	90	203	9,340	328	DNE	508	2,840	69.4	39,400	8,220
10/2/2017-10/9/2017	µg/L	13,700	290	1,810	349	DNE	615	23.4	16.9	49,700	31,000
11/3/2017-11/13/2017	µg/L	29	38.6	1,750	502	DNE	909	1,650	21.5	67,900	39,000
12/4/2017-12/8/2017	µg/L	41,000	186	6,270	205	DNE	1,360	39.8	21.4	44,500	158
1/2/2018-1/9/2018	µg/L	104	573	12,700	173	DNE	1,950	70.6	108	54,700	26.5
4/8/2018-4/13/2018	µg/L	576	452	6,920	402	DNE	27,900	756	1,050	38,400	13,500
7/30/2018-8/3/2018	µg/L	9,710	5,030	9,710	282	DNE	191	26,300	2,540	54,700	17,600
10/1/2018-10/5/2018	µg/L	143	3,240	13,000	110	DNE	90,100	12,200	256	53,800	16,600
12/10/2018-12/14/2018*	µg/L	3,880	25,300	14,900	177	DNE	99,600	86,000	11	66,600	2,520
3/12/2019-3/19/2019*	µg/L	2,460	21,500	6,720	7.5 J	DNE	122,000	24,200	10 U	57,500	591
5/3/2019-6/7/2019*	µg/L	5,670	56,600	13,300	NS	66,800	108,000	136,000	10 U	64,200	5,560
9/10/2019-9/23/2019*	µg/L	5,940	72,000	10,500	NS	71,700	122,000	48,300	11.2 B	53,300	7,730
12/3/2019-12/11/2019	µg/L	2,060	17,200	16,200	NS	83,400	116,000	16,600	48.9	82,000	6,020
3/11/20-3/23/20*	µg/L	8,120	14,100	12,900	NS	70,700	117,000	39,000	33.4	65,600	NS
6/8/20-6/30/20*	µg/L	13,700	34,900	19,400	NS	76,600	94,400	400	4.5 J	77,800	940
9/9/20-9/29/20*	µg/L	3.7 J	123	NS	NS	80,000	111,000	NS	5.4 J	79,100	1,090
11/5/20-11/19/20*	µg/L	15,200	20,200	NS	NS	68,200	79.7	NS	28.3	73,700	550
5/26/21-6/18/21*	µg/L	26,600	104	NS	NS	79,000	109,000	NS	2.6 J	93,600	6,130
10/4/21-10/18/21*	µg/L	24,000	433	NS	NS	200 U	85,500	53,900	NS	NS	NS
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	50,700	NS	NS	NS	NS	NS

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TABLE 5
Intermediate Zinc Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW11-MWI	RW12-MWI	RW13-MWI	RW15-MWI	RW16-MWI	RW18-MWI	RW19-MWI	RW21-MWI	RW22-MWI	RW22R-MWI
2/10/2017-2/16/2017	µg/L	368,000	249,000	NS	NS	NS	728,000	5,900,000	DNE	NS	DNE
3/27/2017-3/30/2017	µg/L	301,000	216,000	NS	NS	NS	592,000	4,650,000	DNE	NS	DNE
4/25/2017-4/28/2017	µg/L	288,000	188,000	NS	NS	NS	633,000	7,010,000	DNE	NS	DNE
5/22/2017-5/24/2017	µg/L	336,000	232,000	NS	NS	NS	246,000	5,370,000	DNE	NS	DNE
6/5/2017-6/9/2017	µg/L	201,000	226,000	NS	NS	NS	694,000	6,720,000	DNE	303	DNE
7/10/2017-7/13/2017	µg/L	192,000	219,000	NS	NS	NS	575,000	5,330,000	DNE	103	DNE
8/7/2017-8/10/2017	µg/L	147,000	156,000	308,000	3,210	NS	290,000	3,360,000	DNE	NS	DNE
9/1/2017-9/8/2017	µg/L	134,000	156,000	1,160	71.1	20,200	382,000	2,500,000	DNE	43,000	DNE
10/2/2017-10/9/2017	µg/L	111,000	150,000	204,000	295	2,000	393,000	3,670,000	DNE	16,100	DNE
11/3/2017-11/13/2017	µg/L	207,000	140,000	172,000	825	441	323,000	3,400,000	DNE	3,700	DNE
12/4/2017-12/8/2017	µg/L	197,000	157,000	237	1,070	19,200	369,000	3,970,000	DNE	19,500	DNE
1/2/2018-1/9/2018	µg/L	225,000	117,000	8,600	5,540	16,200	370,000	3,840,000	DNE	27,200	DNE
4/8/2018-4/13/2018	µg/L	215,000	103,000	201,000	252	11,200	396,000	4,190,000	DNE	44,700	DNE
7/30/2018-8/3/2018	µg/L	15,700	2,410	274,000	18,600	1,230	330,000	4,880,000	DNE	73,300	DNE
10/1/2018-10/5/2018	µg/L	174,000	14,300	33.4	736	320	247,000	5,880,000	DNE	47,100	DNE
12/10/2018-12/14/2018*	µg/L	176,000	109,000	116	6,540	6 J	318,000	7,580,000	DNE	68,100	DNE
3/12/2019-3/19/2019*	µg/L	142,000	110,000	328,000	109,000	4.7 J	822,000	3,770,000	DNE	81,100	DNE
5/3/2019-6/7/2019*	µg/L	121,000	111,000	97.7	16,400	4.9 J	279,000	7,280,000	624,000	NS	1,030
9/10/2019-9/23/2019*	µg/L	120,000	104,000	122	168,000	13.1	640,000	3,460,000	570,000	NS	983
12/3/2019-12/11/2019	µg/L	173,000	43,500	246,000	179,000	22.7	849,000	5,690,000	539,000	NS	3,000
3/11/20-3/23/20*	µg/L	151,000	NS	250,000	17.9	16.2	545,000	6,050,000	648,000	NS	1,810
6/8/20-6/30/20*	µg/L	128,000	86,400	27	5.8 J	7.3 J	252,000	6,450,000	470,000	NS	4,350
9/9/20-9/29/20*	µg/L	NS	NS	296,000	3,210	63.1	753,000	6,220,000	536,000	NS	5,340
11/5/20-11/19/20*	µg/L	166,000	NS	19.8	137	10.2	534,000	3,930,000	562,000	NS	4,520
5/26/21-6/18/21*	µg/L	188,000	NS	363,000	16,400	62.4	4,380	212,000	527,000	NS	7,730
10/4/21-10/18/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	9,800
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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TABLE 5
Intermediate Zinc Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW23-MWI	RW24-MWI	RW25-MWI	RWA-MWI	RWB-MWI	RWD-MWI	RWE-MWI	RWF-MWI	RWG-MWI	RWH-MWI
2/10/2017-2/16/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/27/2017-3/30/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/28/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	109,000	650,000	413,000	375,000	18	36,200	112,000	41,900	332	226,000
9/10/2019-9/23/2019*	µg/L	125,000	635,000	7,000	349,000	29.2	41,900	109,000	42,300	291	378,000
12/3/2019-12/11/2019	µg/L	111,000	538,000	462,000	396,000	47.8	52,600	118,000	58,800	362	502,000
3/11/20-3/23/20*	µg/L	100,000	466,000	355,000	521,000	8.9 J	50,400	102,000	90,400	411	406,000
6/8/20-6/30/20*	µg/L	116,000	378,000	443,000	441,000	8.4 J	59,300	114,000	108,000	465	474,000
9/9/20-9/29/20*	µg/L	105,000	364,000	477,000	452,000	15.2	69,300	110,000	134,000	545	477,000
11/5/20-11/19/20*	µg/L	95,600	258,000	445,000	406,000	13.5	64,200	80,800	110,000	522	618,000
5/26/21-6/18/21*	µg/L	124,000	292,000	338,000	468,000	13.6	81,900	102,000	133,000	NS	578,000
10/4/21-10/18/21*	µg/L	110,000	NS	NS	328,000	19.1 J	53,400	68,000	82,500	NS	388,000
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	319	NS

Bold indicates detection above the reporting limit

NS = Not Sampled

DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

TABLE 5
Intermediate Zinc Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RWI-MWI	RWJ-MWI	RWK-MWI	RWL-MWI	RWM-MWI	RWO-MWI	RWP-MWI	RWQ-MWI	RWR-MWI	RWS-MWI
2/10/2017-2/16/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/27/2017-3/30/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/28/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	632,000	1,580	21,100	169,000	162,000	249,000	3,210,000	357,000	2,560,000	797,000
9/10/2019-9/23/2019*	µg/L	519,000	2,150	25,100	142,000	159,000	214,000	3,570,000	270,000	3,620,000	1,040,000
12/3/2019-12/11/2019	µg/L	554,000	3,140	21,600	124,000	152,000	204,000	3,880,000	258,000	4,050,000	946,000
3/11/20-3/23/20*	µg/L	875,000	3,430	30,300	121,000	139,000	202,000	3,860,000	312,000	814,000	1,070,000
6/8/20-6/30/20*	µg/L	775,000	805	21,400	96,300	128,000	223,000	3,160,000	255,000	2,530,000	74,300
9/9/20-9/29/20*	µg/L	<i>NS</i>	744	36,800	116,000	138,000	204,000	3,810,000	280,000	1,830,000	760,000
11/5/20-11/19/20*	µg/L	<i>NS</i>	1,060	26,500	126,000	125,000	155,000	3,520,000	257,000	996,000	919,000
5/26/21-6/18/21*	µg/L	542,000	1,990	34,600	110,000	150,000	208,000	3,990,000	286,000	1,400,000	858,000
10/4/21-10/18/21*	µg/L	<i>NS</i>	2,840	23,700	97,000	<i>NS</i>	<i>200 U</i>	14,300	256,000	48,000	649,000
11/29/21-11/30/21*	µg/L	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>	1,380	526	<i>NS</i>	<i>NS</i>	<i>NS</i>

Bold indicates detection above the reporting limit

NS = Not Sampled

DNE = Did Not Exist

*Indicates concentrations are for dissolved metals. All other events show total metals.

TABLE 6
Intermediate Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW01-MWI	RW02-MWI	RW03-MWI	RW05-MWI	RW05R-MWI	RW06-MWI	RW07-MWI	RW08-MWI	RW09-MWI	RW10-MWI
2/10/2017-2/16/2017	µg/L	NS	NS	189	NS	DNE	12.5	1.2 J	0.49 J	3.1	446
3/27/2017-3/30/2017	µg/L	NS	NS	196	NS	DNE	9.2	4.6	0.39 J	4	3 U
4/25/2017-4/28/2017	µg/L	NS	NS	192	NS	DNE	14	3 U	3 U	5	198
5/22/2017-5/24/2017	µg/L	NS	NS	84	NS	DNE	20.4	1.1 J	1.5 J	11.1	2.5 J
6/5/2017-6/9/2017	µg/L	NS	NS	37.4	1.9 J	DNE	14.3	0.91 J	0.48 J	8.1	27.2
7/10/2017-7/13/2017	µg/L	NS	NS	138	17.5	DNE	10.2	1.2 J	1.3 J	12.9	16.3
8/7/2017-8/10/2017	µg/L	194	511	227	19.3	DNE	10.1	1 J	0.86 J	18.5	3 U
9/1/2017-9/8/2017	µg/L	0.51 J	3 J	214	3.7	DNE	4.5	11	0.77 J	9.1	17.7
10/2/2017-10/9/2017	µg/L	145	2.4 J	20.2	4.2	DNE	4.2	3 U	3 U	12	24.6
11/3/2017-11/13/2017	µg/L	3 U	3 U	25.2	4.9	DNE	5.4	5.1	0.88 J	8.8	63.7
12/4/2017-12/8/2017	µg/L	37.5	2.3 J	154	2.7 J	DNE	7.1	1.7 J	1.8 J	7.7	3 U
1/2/2018-1/9/2018	µg/L	2.4 J	14.5	259	2.2 J	DNE	8.4	3 U	3 U	2.1 J	3 U
4/8/2018-4/13/2018	µg/L	16.5	3	128	2.6 J	DNE	89.2	1.3 J	6.2	1.8 J	44.4
7/30/2018-8/3/2018	µg/L	250	79.9	236	1.3 J	DNE	3 U	52.9	14.1	3 U	44.7
10/1/2018-10/5/2018	µg/L	3 U	18	346	3 U	DNE	629	28.7	0.92 J	3.7	10.8
12/10/2018-12/14/2018*	µg/L	9.3	191	342	0.76 J	DNE	752	344	3 U	0.96 J	3 U
3/12/2019-3/19/2019*	µg/L	3 U	98.3	213	3 U	DNE	876	29.5	3 U	2 J	0.38 J
5/3/2019-6/7/2019*	µg/L	19.4	785	449	NS	2,570	885	453	3 U	3.8	0.86 J
9/10/2019-9/23/2019*	µg/L	20.6	873	344	NS	2,820	793	48.7	3.0 U	5.6	8.4
12/3/2019-12/11/2019	µg/L	8.8	277	546	NS	2,700	673	38.1	0.59 J	4.2 B	13.9
3/11/20-3/23/20*	µg/L	49.3	136	451	NS	1,960	690	36	3 U	10.6	NS
6/8/20-6/30/20*	µg/L	117	398	581	NS	1,930	582	1.7 J	0.47 J	16.5	0.67 J
9/9/20-9/29/20*	µg/L	3 U	0.69 J	NS	NS	1,650	530	NS	0.39 J	10.7	0.77 J
11/5/20-11/19/20*	µg/L	162	208	NS	NS	1,790	0.66 J	NS	0.56 J	10.3	0.55 J
5/26/21-6/18/21*	µg/L	277	0.58 J	NS	NS	1,570	616	NS	0.38 J	16	11.1
10/4/21-10/18/21*	µg/L	322	1 U	NS	NS	1,470	604	49.1	NS	NS	NS
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	16.8	NS	NS	NS	NS	NS

Bold indicates detection above the reporting limit

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DNE = Did Not Exist

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TABLE 6
Intermediate Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW11-MWI	RW12-MWI	RW13-MWI	RW15-MWI	RW16-MWI	RW18-MWI	RW19-MWI	RW21-MWI	RW22-MWI	RW22R-MWI
2/10/2017-2/16/2017	µg/L	1,690	4,740	NS	NS	NS	70.3	3,760	DNE	NS	DNE
3/27/2017-3/30/2017	µg/L	1,490	3,530	NS	NS	NS	63.8	3,450	DNE	NS	DNE
4/25/2017-4/28/2017	µg/L	1,800	2,730	NS	NS	NS	119	3,380	DNE	NS	DNE
5/22/2017-5/24/2017	µg/L	2,600	3,820	NS	NS	NS	92	2,770	DNE	NS	DNE
6/5/2017-6/9/2017	µg/L	218	2,260	NS	NS	NS	65.1	2,280	DNE	0.35 J	DNE
7/10/2017-7/13/2017	µg/L	518	2,730	NS	NS	NS	61.7	2,550	DNE	3 U	DNE
8/7/2017-8/10/2017	µg/L	163	2,220	31,800	10.1	NS	74.4	1,670	DNE	NS	DNE
9/1/2017-9/8/2017	µg/L	274	1,820	66	3 U	1.7 J	72.2	1,320	DNE	2.3 J	DNE
10/2/2017-10/9/2017	µg/L	125	1,510	28,700	3 U	3 U	43.7	1,710	DNE	3 U	DNE
11/3/2017-11/13/2017	µg/L	1,460	1,380	24,500	3 U	3 U	66.6	1,770	DNE	3.8	DNE
12/4/2017-12/8/2017	µg/L	1,380	1,450	44.2	0.97 J	1.9 J	51.5	1,710	DNE	15.2	DNE
1/2/2018-1/9/2018	µg/L	1,400	1,270	1,240	1.6 J	1.2 J	63.5	1,880	DNE	4.1	DNE
4/8/2018-4/13/2018	µg/L	1,660	121	19,400	3 U	1.1 J	55.8	1,700	DNE	3 U	DNE
7/30/2018-8/3/2018	µg/L	4.7	134	21,000	15.3	3 U	35.1	1,560	DNE	3 U	DNE
10/1/2018-10/5/2018	µg/L	133	86.3	12.6	3 U	3 U	14.5	1,610	DNE	3 U	DNE
12/10/2018-12/14/2018*	µg/L	1,160	1,220	3.2	12.9	3 U	44.7	1,900	DNE	3 U	DNE
3/12/2019-3/19/2019*	µg/L	98.9	768	29,200	402	3 U	80.3	1,320	DNE	3 U	DNE
5/3/2019-6/7/2019*	µg/L	586	1,520	51.1	64.2	3 U	38.0	2,420	50.2	NS	3 U
9/10/2019-9/23/2019*	µg/L	517	1,780	12.8	589	3.0 U	50.4	1,580	23	NS	3.0 U
12/3/2019-12/11/2019	µg/L	476	420	22,500	605	0.36 J	87.6	1,500	33.1	NS	3.0 U
3/11/20-3/23/20*	µg/L	365	NS	24,700	0.5 J	0.36 J	36.8	1,400	39.8	NS	3 U
6/8/20-6/30/20*	µg/L	75.1	716	15.4	3 U	3 U	16	3,390	34	NS	2 J
9/9/20-9/29/20*	µg/L	NS	NS	23,900	8	3 U	43.1	1,630	29.4	NS	2.4 J
11/5/20-11/19/20*	µg/L	179	NS	6.1	0.91 J	3 U	42.1	1,540	27.8	NS	1.6 J
5/26/21-6/18/21*	µg/L	175	NS	26,400	43.6	0.42 J	3 U	112	34.2	NS	3.4
10/4/21-10/18/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	2.5 J
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Bold indicates detection above the reporting limit

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TABLE 6
Intermediate Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RW23-MWI	RW24-MWI	RW25-MWI	RWA-MWI	RWB-MWI	RWD-MWI	RWE-MWI	RWF-MWI	RWG-MWI	RWH-MWI
2/10/2017-2/16/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/27/2017-3/30/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/28/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	2,270	1,580	507	6,830	3 U	395	700	859	23	92
9/10/2019-9/23/2019*	µg/L	2,800	1,540	9.9	7,740	3.0 U	514	656	1,020	15.4	1,380
12/3/2019-12/11/2019	µg/L	2,680	1,250	622	9,020	3.0 U	586	707	1,340	26.0	3,580
3/11/20-3/23/20*	µg/L	2,600	1,190	633	12,600	3 U	555	664	2,010	38.2	3,210
6/8/20-6/30/20*	µg/L	2,740	1,050	652	10,200	3 U	515	609	2,580	26.7	4,610
9/9/20-9/29/20*	µg/L	2,500	922	708	7,630	0.59 J	541	584	3,170	38.2	4,330
11/5/20-11/19/20*	µg/L	2,340	842	703	10,100	3 U	596	527	3,330	40.0	6,650
5/26/21-6/18/21*	µg/L	2,870	890	626	11,700	0.34 J	713	530	3,710	NS	6,760
10/4/21-10/18/21*	µg/L	2,590	NS	NS	8,510	1 U	536	497	2,610	NS	4,220
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	1.8	NS

Bold indicates detection above the reporting limit

NS = Not Sampled

DNE = Did Not Exist

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TABLE 6
Intermediate Cadmium Concentrations
Rod Wire Mill Interim Measures Progress Report

Sampling Dates	Units	RWI-MWI	RWJ-MWI	RWK-MWI	RWL-MWI	RWM-MWI	RWO-MWI	RWP-MWI	RWQ-MWI	RWR-MWI	RWS-MWI
2/10/2017-2/16/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/27/2017-3/30/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/25/2017-4/28/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/22/2017-5/24/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
6/5/2017-6/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/10/2017-7/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
8/7/2017-8/10/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
9/1/2017-9/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/2/2017-10/9/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
11/3/2017-11/13/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/4/2017-12/8/2017	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
1/2/2018-1/9/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
4/8/2018-4/13/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
7/30/2018-8/3/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
10/1/2018-10/5/2018	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
12/10/2018-12/14/2018*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
3/12/2019-3/19/2019*	µg/L	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
5/3/2019-6/7/2019*	µg/L	8,050	61.2	33.5	1,230	1,080	68	2,810	26.2	440	3 U
9/10/2019-9/23/2019*	µg/L	8,120	11.8	56.5	1,240	1,200	72.1	6,990	3.0 U	535	3.0 U
12/3/2019-12/11/2019	µg/L	8,270	45.7	99.5	1,280	1,230	55.4	8,910	2.9 J	650	1.6 J
3/11/20-3/23/20*	µg/L	13,300	30.0	89.1	1,170	1,120	54.3	5,560	1.9 J	340	3 U
6/8/20-6/30/20*	µg/L	10,800	2.1 J	76.9	1,140	1,040	66.2	7,090	3.7	508	0.58 J
9/9/20-9/29/20*	µg/L	NS	2.3 J	79.1	1,210	1,060	57.8	7,220	4.2	425	1.8 J
11/5/20-11/19/20*	µg/L	NS	2.4 J	74.4	1,160	1,120	27.9	7,700	2.9 J	398	1.7 J
5/26/21-6/18/21*	µg/L	6,810	31.3	97.8	1,290	1,220	35.8	8,430	6.1	367	0.86 J
10/4/21-10/18/21*	µg/L	NS	49.1	77.6	1,230	NS	31.4	4,370	10.6	753	4.7 J
11/29/21-11/30/21*	µg/L	NS	NS	NS	NS	NS	10.1	2	NS	NS	NS

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TABLE 7
Average Historical Shallow Zone Concentrations
 Rod Wire Mill Interim Measure Progress Report

Shallow Zone Cadmium Concentration (µg/L)								
Well Group	Well	2015	2017	2018	2019	2020	2021	% Change from Earliest Yearly Average
Upgradient	RW19-MWS	NA	6.4	3.4	1.4	1.8	NS	NA
Interior	RW09-MWS	NA	14.0	13.0	13.3	16.3	NS	NA
	RW11-MWS	NA	1.8	15.0	1.8	2.2	3.4	86%
	RW12-MWS	3.8	37.6	9.3	3.6	5.2	0.5	-87%
	RW14-MWS	NA	2,088	3,440	3,350	3,218	NS	NA
	RW15-MWS	NA	37.1	59.1	12.6	2.0	NS	NA
	RW16-MWS	NA	1.5	1.5	1.2	1.5	1.5	0%
Perimeter	RW18-MWS	100	244	137	1.6	1.5	1.5	-98%
	RW01-MWS	NA	24.8	7.2	3.2	2.1	0.5	-98%
	RW02-MWS	NA	8.4	9.4	2.0	0.6	1.0	-88%
	RW03-MWS	NA	6.6	12.9	15.2	16.7	NS	NA
	RW04-MWS	2.8	1.1	1.5	1.3	0.9	NS	NA
	RW05-MWS	NA	3.3	1.5	1.5	1.0	1.0	-69%
	RW06R-MWS	NA	NA	1.2	1.5	1.0	1.5	29%
	RW07-MWS	NA	3.1	4.6	3.0	3.5	1.7	-44%
RW08-MWS	NA	3.4	1.4	1.2	1.3	NS	NA	

Shallow Zone Zinc Concentration (µg/L)								
Well Group	Well	2015	2017	2018	2019	2020	2021	% Change from Earliest Yearly Average
Upgradient	RW19-MWS	NA	6,082	8,226	3,190	9,200	NS	NA
Interior	RW09-MWS	NA	10,982	9,856	16,400	33,125	NS	NA
	RW11-MWS	NA	12,933	46,100	33,475	41,975	61,000	372%
	RW12-MWS	2,608	38,761	6,516	3,086	4,660	4,960	90%
	RW14-MWS	NA	38,340	69,380	70,825	62,375	NS	NA
	RW15-MWS	NA	3,737	4,002	424	30	NS	NA
	RW16-MWS	NA	32	26.6	35.2	9.0	3.0	-91%
Perimeter	RW18-MWS	3,691	13,503	7,648	17.3	8.6	20.1	-99%
	RW01-MWS	NA	11,632	32,460	14,875	6,800	4,640	-60%
	RW02-MWS	NA	3,308	9,146	15,749	3,360	238	-93%
	RW03-MWS	NA	13,958	27,920	16,668	17,800	NS	NA
	RW04-MWS	2,330	145	180	239	62	NS	NA
	RW05-MWS	NA	1,617	34.3	14.2	7.4	12.4	-99%
	RW06R-MWS	NA	NA	9.9	8.8	9.1	5.0	-49%
	RW07-MWS	NA	131	230	149	172	298	127%
RW08-MWS	NA	3,436	7,320	7,125	6,558	NS	NA	

Positive % change
 Negative % change
 NA = Not Applicable
 NS = Not Sampled

TABLE 8
Average Historical Intermediate Zone Concentrations
 Rod Wire Mill Interim Measure Progress Report

Average Cadmium Concentration (µg/L)								
Well Group	Well	2015	2017	2018	2019	2020	2021	% Change from Earliest Yearly Average
Upgradient	RW19-MWI	NA	2,397	1,748	1,705	1,990	112	-95%
Interior	RW09-MWI	NA	9.1	2.0	3.2	12.0	16.0	75%
	RW10-MWI	NA	72.8	20.6	5.9	0.7	11.1	-85%
	RW11-MWI	25,000	1,065	872	419	206	175	-99%
	RW12-MWI	7,890	2,563	578	1,122	716	NS	NA
	RW13-MWI	44,500	17,022	8,334	12,941	12,155	26,400	-41%
	RW15-MWI	NA	3.1	6.8	415	2.7	43.6	1300%
	RW16-MWI	NA	1.7	1.4	1.2	1.2	0.42	-75%
	RW18-MWI	80.1	70.9	79.8	64.1	34.5	1.5	-98%
Perimeter	RW01-MWI	NA	75.7	59.2	12.6	82.5	299.5	296%
	RW02-MWI	NA	104	59.5	508	186	1	-99%
	RW03-MWI	NA	134	285	388	516	NS	NA
	RW06-MWI	34.8	10.2	292	807	451	610	1655%
	RW07-MWI	NA	2.8	93.9	142	18.9	49.1	1653%
	RW08-MWI	NA	1.0	4.8	1.3	0.7	0.38	-64%

Average Zinc Concentration (µg/L)								
Well Group	Well	2015	2017	2018	2019	2020	2020	% Change from Earliest Yearly Average
Upgradient	RW19-MWI	NA	4,716,364	5,278,000	5,050,000	5,662,500	212,000	-96%
Interior	RW09-MWI	NA	53,827	52,740	64,250	74,050	93,600	74%
	RW10-MWI	NA	29,084	10,143	4,975	860	6,130	-79%
	RW11-MWI	1,120,000	225,636	158,940	139,000	148,333	188,000	-83%
	RW12-MWI	339,000	189,909	68,142	92,125	86,400	NS	NA
	RW13-MWI	658,000	137,079	96,762	143,555	136,512	363,000	-45%
	RW15-MWI	NA	1,094	6,374	118,100	843	16,400	1399%
	RW16-MWI	NA	10,460	5,861	11.4	29.8	62.4	-99%
	RW18-MWI	642,000	475,000	332,400	647,500	521,000	4,380	-99%
Perimeter	RW01-MWI	NA	13,284	3,107	4,033	9,256	25,300	90%
	RW02-MWI	NA	3,784	6,839	41,825	17,331	269	-93%
	RW03-MWI	NA	6,419	10,866	11,680	16,150	NS	NA
	RW06-MWI	6,045	1,209	43,988	117,000	80,620	97,250	1509%
	RW07-MWI	NA	719	25,985	56,275	19,700	53,900	7396%
	RW08-MWI	NA	81.8	800	16.0	17.9	2.6	-97%

Positive % change

Negative % change

NA = Not Applicable

NS = Not Sampled

The RW13-MWI concentrations for 2015 are actually results for a sample from RW-057-PZ, a PDI piezometer existing in November 2015 at a location within a few feet of the current location of RW13-MWI.

APPENDIX A

June 10, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30422745

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on May 26, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30422745

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30422745

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30422745001	RWB-MWI	Water	05/26/21 09:30	05/26/21 22:30
30422745002	RWD-MWS	Water	05/26/21 10:35	05/26/21 22:30
30422745003	RWD-MWI	Water	05/26/21 11:15	05/26/21 22:30
30422745004	RWE-MWS	Water	05/26/21 12:40	05/26/21 22:30
30422745005	RWE-MWI	Water	05/26/21 13:40	05/26/21 22:30
30422745006	RWB-MWS	Water	05/26/21 14:00	05/26/21 22:30
30422745007	RW05R-MWI	Water	05/26/21 15:00	05/26/21 22:30

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling

Pace Project No.: 30422745

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30422745001	RWB-MWI	EPA 6010C	CTS	2	PASI-PA
30422745002	RWD-MWS	EPA 6010C	CTS	2	PASI-PA
30422745003	RWD-MWI	EPA 6010C	CTS	2	PASI-PA
30422745004	RWE-MWS	EPA 6010C	CTS	2	PASI-PA
30422745005	RWE-MWI	EPA 6010C	CTS	2	PASI-PA
30422745006	RWB-MWS	EPA 6010C	CTS	2	PASI-PA
30422745007	RW05R-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30422745

Sample: RWB-MWI		Lab ID: 30422745001	Collected: 05/26/21 09:30	Received: 05/26/21 22:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	0.34J	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 10:19	7440-43-9	
Zinc, Dissolved	13.6	ug/L	10.0	2.4	1	06/01/21 09:00	06/09/21 10:19	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30422745

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWD-MWS Lab ID: 30422745002 Collected: 05/26/21 10:35 Received: 05/26/21 22:30 Matrix: Water									
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 10:32	7440-43-9	
Zinc, Dissolved	10.0 U	ug/L	10.0	2.4	1	06/01/21 09:00	06/09/21 10:32	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30422745

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWD-MWI									
Lab ID: 30422745003									
Collected: 05/26/21 11:15 Received: 05/26/21 22:30 Matrix: Water									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	713	ug/L	300	34.0	100	06/01/21 09:00	06/09/21 10:34	7440-43-9	
Zinc, Dissolved	81900	ug/L	1000	238	100	06/01/21 09:00	06/09/21 10:34	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30422745

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWE-MWS Lab ID: 30422745004 Collected: 05/26/21 12:40 Received: 05/26/21 22:30 Matrix: Water									
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	10.9	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 10:42	7440-43-9	
Zinc, Dissolved	21900	ug/L	1000	238	100	06/01/21 09:00	06/09/21 11:42	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30422745

Sample: RWE-MWI		Lab ID: 30422745005		Collected: 05/26/21 13:40		Received: 05/26/21 22:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	530	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 10:44	7440-43-9	
Zinc, Dissolved	102000	ug/L	1000	238	100	06/01/21 09:00	06/09/21 11:44	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30422745

Sample: RWB-MWS		Lab ID: 30422745006	Collected: 05/26/21 14:00	Received: 05/26/21 22:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 11:46	7440-43-9	
Zinc, Dissolved	10.0 U	ug/L	10.0	2.4	1	06/01/21 09:00	06/09/21 11:46	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30422745

Sample: RW05R-MWI **Lab ID: 30422745007** Collected: 05/26/21 15:00 Received: 05/26/21 22:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	1570	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 10:48	7440-43-9	
Zinc, Dissolved	79000	ug/L	1000	238	100	06/01/21 09:00	06/09/21 11:48	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30422745

QC Batch: 450269 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30422745001, 30422745002, 30422745003, 30422745004, 30422745005, 30422745006, 30422745007

METHOD BLANK: 2173184 Matrix: Water
Associated Lab Samples: 30422745001, 30422745002, 30422745003, 30422745004, 30422745005, 30422745006, 30422745007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/09/21 10:15	
Zinc, Dissolved	ug/L	10.0 U	10.0	2.4	06/09/21 10:15	

LABORATORY CONTROL SAMPLE: 2173185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	492	98	80-120	
Zinc, Dissolved	ug/L	500	516	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2173187 2173188

Parameter	Units	30422745001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	0.34J	500	500	543	536	109	107	75-125	1	20	
Zinc, Dissolved	ug/L	13.6	500	500	561	551	109	108	75-125	2	20	

MATRIX SPIKE SAMPLE: 2173190

Parameter	Units	30423005004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	78.5	500	616	108	75-125	
Zinc, Dissolved	ug/L	169000	500	172000	680	75-125 MH	

SAMPLE DUPLICATE: 2173186

Parameter	Units	30422745001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	0.34J	3.0 U		20	
Zinc, Dissolved	ug/L	13.6	12.8	6	20	

SAMPLE DUPLICATE: 2173189

Parameter	Units	30423005004 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	78.5	76.8	2	20	
Zinc, Dissolved	ug/L	169000	168000	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30422745

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

MH Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling

Pace Project No.: 30422745

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30422745001	RWB-MWI	EPA 3005A	450269	EPA 6010C	450501
30422745002	RWD-MWS	EPA 3005A	450269	EPA 6010C	450501
30422745003	RWD-MWI	EPA 3005A	450269	EPA 6010C	450501
30422745004	RWE-MWS	EPA 3005A	450269	EPA 6010C	450501
30422745005	RWE-MWI	EPA 3005A	450269	EPA 6010C	450501
30422745006	RWB-MWS	EPA 3005A	450269	EPA 6010C	450501
30422745007	RW05R-MWI	EPA 3005A	450269	EPA 6010C	450501

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:
Company: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone:
Fax:

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number:
Project Name: RWM GW Sampling
Project Number: 20010103
Requested Due Date/TAT: 5 day

Section C
Invoice Information:
Attention: Matt Newman
Company Name: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
Site Location STATE: MD

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIFE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	Requested Analysis Filtered (Y/N)		Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	
1	RWB - MW1				G		1				001
2	RWN - MWS				G		1				002
3	RWN - MW1				G		1				003
4	RWE - MWS				G		1				004
5	RWE - MW1				G		1				005
6	RWB - MWS				G		1				006
7	RW05R - MW1				G		1				007
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS

Data Package Required? (Y/N): *Y*

Data Validation Required? (Y/N): *Y*

If data package is required, attach data package checklist.

REQUISITIONED BY/AFFILIATION | **DATE** | **TIME** | **ACCEPTED BY/AFFILIATION** | **DATE** | **TIME** | **SAMPLE CONDITIONS**

[Signature] | 5/26/21 | 1100 | *[Signature]* | 5/26/21 | 1405

[Signature] | 5/26/21 | 1900 | *[Signature]* | 5/26/21 | 1905

[Signature] | 5/26/21 | 2230 | *[Signature]* | 5/26/21 | 2230

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: *Leandra M. Gumbac*
 SIGNATURE OF SAMPLER: *[Signature]* | DATE Signed (MM/DD/YYYY): 05/26/21

Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Tradegant Atlantic

Project # #-30422745

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label	<u>MCC</u>
LIMS Login	<u>MCC</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 12 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp .1 °C Correction Factor: 1.5 °C Final Temp: .6 °C
Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:	
				<u>10D3801</u>	<u>MCC</u>	<u>5/27/2021</u>
Chain of Custody Present:	/			1.		
Chain of Custody Filled Out:	/			2.		
Chain of Custody Relinquished:	/			3.		
Sampler Name & Signature on COC:	/			4.		
Sample Labels match COC:				5.		
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	/			6.		
Short Hold Time Analysis (<72hr remaining):	/			7.		
Rush Turn Around Time Requested:	/			8.		
Sufficient Volume:	/			9.		
Correct Containers Used:	/			10.		
-Pace Containers Used:	/					
Containers Intact:	/			11.		
Orthophosphate field filtered			/	12.		
Hex Cr Aqueous sample field filtered			/	13.		
Organic Samples checked for dechlorination:			/	14.		
Filtered volume received for Dissolved tests			/	15.		
All containers have been checked for preservation.	/			16.		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	/			Initial when completed	<u>MCC</u>	Date/time of preservation
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):			/	17.		
Trip Blank Present:			/	18.		
Trip Blank Custody Seals Present			/			
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed:	Date:	Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____
Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

June 10, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30423005

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on May 27, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30423005

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling

Pace Project No.: 30423005

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30423005001	RW23-MWS	Water	05/27/21 08:40	05/27/21 22:45
30423005002	RW23-MWI	Water	05/27/21 09:40	05/27/21 22:45
30423005003	RWP-MWI	Water	05/27/21 10:30	05/27/21 22:45
30423005004	RW22R-MWS	Water	05/27/21 12:00	05/27/21 22:45
30423005005	RW22R-MWI	Water	05/27/21 12:50	05/27/21 22:45
30423005006	RW01-MWS	Water	05/27/21 14:20	05/27/21 22:45
30423005007	RW01-MWI	Water	05/27/21 15:15	05/27/21 22:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30423005

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30423005001	RW23-MWS	EPA 6010C	CTS	2	PASI-PA
30423005002	RW23-MWI	EPA 6010C	CTS	2	PASI-PA
30423005003	RWP-MWI	EPA 6010C	CTS	2	PASI-PA
30423005004	RW22R-MWS	EPA 6010C	CTS	2	PASI-PA
30423005005	RW22R-MWI	EPA 6010C	CTS	2	PASI-PA
30423005006	RW01-MWS	EPA 6010C	CTS	2	PASI-PA
30423005007	RW01-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423005

Sample: RW23-MWS		Lab ID: 30423005001		Collected: 05/27/21 08:40		Received: 05/27/21 22:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 11:51	7440-43-9	
Zinc, Dissolved	2.8J	ug/L	10.0	2.4	1	06/01/21 09:00	06/09/21 11:51	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30423005

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RW23-MWI Lab ID: 30423005002 Collected: 05/27/21 09:40 Received: 05/27/21 22:45 Matrix: Water									
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	2870	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 10:53	7440-43-9	
Zinc, Dissolved	124000	ug/L	1000	238	100	06/01/21 09:00	06/09/21 11:53	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423005

Sample: RWP-MWI		Lab ID: 30423005003		Collected: 05/27/21 10:30		Received: 05/27/21 22:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	8430	ug/L	300	34.0	100	06/01/21 09:00	06/09/21 11:55	7440-43-9	
Zinc, Dissolved	3990000	ug/L	10000	2380	1000	06/01/21 09:00	06/09/21 12:03	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423005

Sample: RW22R-MWS **Lab ID: 30423005004** Collected: 05/27/21 12:00 Received: 05/27/21 22:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	78.5	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 10:57	7440-43-9	
Zinc, Dissolved	169000	ug/L	1000	238	100	06/01/21 09:00	06/09/21 12:05	7440-66-6	MH

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423005

Sample: RW22R-MWI **Lab ID: 30423005005** Collected: 05/27/21 12:50 Received: 05/27/21 22:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	3.4	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 11:13	7440-43-9	
Zinc, Dissolved	7730	ug/L	10.0	2.4	1	06/01/21 09:00	06/09/21 11:13	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30423005

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RW01-MWS Lab ID: 30423005006 Collected: 05/27/21 14:20 Received: 05/27/21 22:45 Matrix: Water									
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	0.40J	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 11:15	7440-43-9	
Zinc, Dissolved	3620	ug/L	10.0	2.4	1	06/01/21 09:00	06/09/21 11:15	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423005

Sample: RW01-MWI **Lab ID: 30423005007** Collected: 05/27/21 15:15 Received: 05/27/21 22:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	277	ug/L	3.0	0.34	1	06/01/21 09:00	06/09/21 11:17	7440-43-9	
Zinc, Dissolved	26600	ug/L	1000	238	100	06/01/21 09:00	06/09/21 12:12	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30423005

QC Batch: 450269 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30423005001, 30423005002, 30423005003, 30423005004, 30423005005, 30423005006, 30423005007

METHOD BLANK: 2173184 Matrix: Water
Associated Lab Samples: 30423005001, 30423005002, 30423005003, 30423005004, 30423005005, 30423005006, 30423005007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/09/21 10:15	
Zinc, Dissolved	ug/L	10.0 U	10.0	2.4	06/09/21 10:15	

LABORATORY CONTROL SAMPLE: 2173185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	492	98	80-120	
Zinc, Dissolved	ug/L	500	516	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2173187 2173188

Parameter	Units	30422745001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	0.34J	500	500	543	536	109	107	75-125	1	20	
Zinc, Dissolved	ug/L	13.6	500	500	561	551	109	108	75-125	2	20	

MATRIX SPIKE SAMPLE: 2173190

Parameter	Units	30423005004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	78.5	500	616	108	75-125	
Zinc, Dissolved	ug/L	169000	500	172000	680	75-125 MH	

SAMPLE DUPLICATE: 2173186

Parameter	Units	30422745001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	0.34J	3.0 U		20	
Zinc, Dissolved	ug/L	13.6	12.8	6	20	

SAMPLE DUPLICATE: 2173189

Parameter	Units	30423005004 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	78.5	76.8	2	20	
Zinc, Dissolved	ug/L	169000	168000	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30423005

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

MH Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30423005

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30423005001	RW23-MWS	EPA 3005A	450269	EPA 6010C	450501
30423005002	RW23-MWI	EPA 3005A	450269	EPA 6010C	450501
30423005003	RWP-MWI	EPA 3005A	450269	EPA 6010C	450501
30423005004	RW22R-MWS	EPA 3005A	450269	EPA 6010C	450501
30423005005	RW22R-MWI	EPA 3005A	450269	EPA 6010C	450501
30423005006	RW01-MWS	EPA 3005A	450269	EPA 6010C	450501
30423005007	RW01-MWI	EPA 3005A	450269	EPA 6010C	450501

REPORT OF LABORATORY ANALYSIS

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WO#: 30423005



Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone:
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number:
Project Name: RWM GW Sampling
Project Number: 2001083

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location: MD
 STATE:

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER PRODUCT P SOLID OIL OL WIFE VP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
				DATE	TIME						
1	RW23-mws	W	G	5/27/21	0840		1	Unpreserved	X	Y	100
2	RW23-mw1	W	G	5/27/21	0940		1	Unpreserved	X	Y	200
3	RWP-mw1	W	G	5/27/21	1030		1	Unpreserved	X	Y	003
4	RW22R-mws	W	G	5/27/21	1200		1	Unpreserved	X	Y	004
5	RW22R-mw1	W	G	5/27/21	1250		1	Unpreserved	X	Y	005
6	RW01-mws	W	G	5/27/21	1425		1	Unpreserved	X	Y	006
7	RW01-mw1	W	G	5/27/21	1515		1	Unpreserved	X	Y	007
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS
 Data Package Required? (Y/N) Y
 Data Validation Required? (Y/N) Y
 if data package is required, attach data package checklist.

RELINQUISHED BY/AFFILIATION DATE TIME
[Signature] 5/27/21 1600
[Signature] 5/27/21 1850
[Signature] 5/27/21 2045

ACCEPTED BY/AFFILIATION DATE TIME
[Signature] 5/27/21 1625
[Signature] 5/27/21 1900
[Signature] 5/27/2021 2045

Received on Ice (Y/N) Y
 Custody Sealed Cooler (Y/N) Y
 Samples Intact (Y/N) Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Samantha Bayura
 SIGNATURE of SAMPLER: [Signature] DATE Signed (MM/DD/YY): 5/27/21

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Tradepoint Atlantic Project # 30423005

30423005

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: UVA

Label	<u>MIC</u>
LIMS Login	<u>MIC</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 12 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp .4 °C Correction Factor: +5 °C Final Temp: .9 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:	
				<u>10D3801</u>	<u>MIC</u>	<u>5/28/2021</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.		
Sample Labels match COC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.		
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.		
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed	<u>MIC</u>	Date/time of preservation
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed:		Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

January 28, 2022

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GM Sampling
Pace Project No.: 30423589

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 01, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

This project follows the April 5, 2016 revision 3 Quality Assurance Project Plan for Sparrows Point Terminal Site, Sparrows Point, MD prepared for EnviroAnalytics Group and is not for PA DEP compliance reporting.

(Greensburg, PA) - Revision 1 - This report replaces the June, 10, 2021 report. This project was revised on January, 28, 2022 to revise sample IDs RWS-MWS to RWJ-MWS and RWU-MWI to RWJ-MWI per client's request. .

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: RWM GM Sampling
Pace Project No.: 30423589

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GM Sampling
Pace Project No.: 30423589

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30423589001	RWJ-MWS	Water	06/01/21 09:25	06/01/21 23:00
30423589002	RWJ-MWI	Water	06/01/21 10:25	06/01/21 23:00
30423589003	RWK-MWS	Water	06/01/21 11:30	06/01/21 23:00
30423589004	RWK-MWI	Water	06/01/21 12:30	06/01/21 23:00
30423589005	RWL-MWS	Water	06/01/21 13:50	06/01/21 23:00
30423589006	RWL-MWI	Water	06/01/21 15:00	06/01/21 23:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GM Sampling

Pace Project No.: 30423589

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30423589001	RWJ-MWS	EPA 6010C	CTS	2	PASI-PA
30423589002	RWJ-MWI	EPA 6010C	CTS	2	PASI-PA
30423589003	RWK-MWS	EPA 6010C	CTS	2	PASI-PA
30423589004	RWK-MWI	EPA 6010C	CTS	2	PASI-PA
30423589005	RWL-MWS	EPA 6010C	CTS	2	PASI-PA
30423589006	RWL-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RWM GM Sampling
Pace Project No.: 30423589

Method: EPA 6010C
Description: 6010C MET ICP,Dissolved
Client: Tradepoint Atlantic
Date: January 28, 2022

General Information:

6 samples were analyzed for EPA 6010C by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 451176

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30423589001,30423821005

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 2177875)
- Zinc, Dissolved

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GM Sampling

Pace Project No.: 30423589

Sample: RWJ-MWS **Lab ID: 30423589001** Collected: 06/01/21 09:25 Received: 06/01/21 23:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 08:58	7440-43-9	
Zinc, Dissolved	10.0 U	ug/L	10.0	2.4	1	06/07/21 09:15	06/10/21 08:58	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GM Sampling

Pace Project No.: 30423589

Sample: RWJ-MWI **Lab ID: 30423589002** Collected: 06/01/21 10:25 Received: 06/01/21 23:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	31.3	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:10	7440-43-9	
Zinc, Dissolved	1990	ug/L	10.0	2.4	1	06/07/21 09:15	06/10/21 09:10	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GM Sampling
Pace Project No.: 30423589

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWK-MWS Lab ID: 30423589003 Collected: 06/01/21 11:30 Received: 06/01/21 23:00 Matrix: Water									
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:13	7440-43-9	
Zinc, Dissolved	22200	ug/L	1000	238	100	06/07/21 09:15	06/10/21 13:39	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GM Sampling
Pace Project No.: 30423589

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWK-MWI									
Lab ID: 30423589004									
Collected: 06/01/21 12:30 Received: 06/01/21 23:00 Matrix: Water									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	97.8	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:19	7440-43-9	
Zinc, Dissolved	34600	ug/L	1000	238	100	06/07/21 09:15	06/10/21 13:41	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GM Sampling
Pace Project No.: 30423589

Sample: RWL-MWS									
Lab ID: 30423589005									
Collected: 06/01/21 13:50 Received: 06/01/21 23:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:22	7440-43-9	
Zinc, Dissolved	16000	ug/L	1000	238	100	06/07/21 09:15	06/10/21 13:43	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GM Sampling

Pace Project No.: 30423589

Sample: RWL-MWI		Lab ID: 30423589006	Collected: 06/01/21 15:00	Received: 06/01/21 23:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	1290	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:24	7440-43-9	
Zinc, Dissolved	110000	ug/L	1000	238	100	06/07/21 09:15	06/10/21 13:45	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GM Sampling
Pace Project No.: 30423589

QC Batch: 451176 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30423589001, 30423589002, 30423589003, 30423589004, 30423589005, 30423589006

METHOD BLANK: 2177869 Matrix: Water
Associated Lab Samples: 30423589001, 30423589002, 30423589003, 30423589004, 30423589005, 30423589006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/10/21 08:53	
Zinc, Dissolved	ug/L	10.0 U	10.0	2.4	06/10/21 08:53	

LABORATORY CONTROL SAMPLE: 2177870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	491	98	80-120	
Zinc, Dissolved	ug/L	500	508	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2177872 2177873

Parameter	Units	30423589001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	3.0 U	500	500	554	575	111	115	75-125	4	20	
Zinc, Dissolved	ug/L	10.0 U	500	500	521	542	104	108	75-125	4	20	

MATRIX SPIKE SAMPLE: 2177875

Parameter	Units	30423821005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	6810	500	7290	95	75-125	
Zinc, Dissolved	ug/L	542000	500	535000	-1360	75-125 ML	

SAMPLE DUPLICATE: 2177871

Parameter	Units	30423589001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0 U		20	
Zinc, Dissolved	ug/L	10.0 U	10.0 U		20	

SAMPLE DUPLICATE: 2177874

Parameter	Units	30423821005 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	6810	6870	1	20	
Zinc, Dissolved	ug/L	542000	537000	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GM Sampling
Pace Project No.: 30423589

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GM Sampling

Pace Project No.: 30423589

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30423589001	RWJ-MWS	EPA 3005A	451176	EPA 6010C	451310
30423589002	RWJ-MWI	EPA 3005A	451176	EPA 6010C	451310
30423589003	RWK-MWS	EPA 3005A	451176	EPA 6010C	451310
30423589004	RWK-MWI	EPA 3005A	451176	EPA 6010C	451310
30423589005	RWL-MWS	EPA 3005A	451176	EPA 6010C	451310
30423589006	RWL-MWI	EPA 3005A	451176	EPA 6010C	451310

REPORT OF LABORATORY ANALYSIS

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Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint

Project # 30423589

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
 Tracking #: _____

Label	<u>JK</u>
LIMS Login	<u>WPC</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 12 Type of Ice: Wei Blue None

Cooler Temperature Observed Temp 4.3 °C Correction Factor: -0.15 °C Final Temp: 4.8 °C
 Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents:	
	Yes	No	N/A		
Chain of Custody Present:	-			1003801	JK 6-2-21
Chain of Custody Filled Out:	-				
Chain of Custody Relinquished:	-				
Sampler Name & Signature on COC:	-				
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	-				
Samples Arrived within Hold Time:	-				
Short Hold Time Analysis (<72hr remaining):		-			
Rush Turn Around Time Requested:	-				
Sufficient Volume:	-				
Correct Containers Used: -Pace Containers Used:	-				
Containers Intact:	-				
Orthophosphate field filtered			-		
Hex Cr Aqueous sample field filtered			-		
Organic Samples checked for dechlorination:			-		
Filtered volume received for Dissolved tests			-		
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	-				
All containers meet method preservation requirements.	-			Initial when completed: <u>JK</u>	Date/time of preservation: _____
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			-		
Trip Blank Present:			-		
Trip Blank Custody Seals Present			-		
Rad Samples Screened < 0.5 mrem/hr			-	Initial when completed: <u>JK</u>	Date: <u>6-2-21</u> Survey Meter SN: _____

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
 *PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Greensburg Lab -Sample Container Count



Client: Tradeport H Profile Number: 3367
 Site: Rum Gas Sampling Notes: _____

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC
1	WT																											
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

Container Codes

Sample Line Item	Description	Code
GJN	1 Gallon Jug with HNO3	DG9S
AG5U	100mL amber glass unreserved	VG9U
AG5T	100mL amber glass Na Thiosulfate	VG9T
GJN	1 Gallon Jug	VG9H
AG1S	1L amber glass H2SO4	JGFU
AG1H	1L amber glass HCl	WGFU
AG1T	1L amber glass Na Thiosulfate	BG2U
BG1U	1L clear glass unreserved	AG2U
AG3S	250mL amber glass H2SO4	WGKU
AG3U	250mL amber glass unreserved	

Sample Line Item	Description	Code
GCUB	1 Gallon Cubitainer	EZI
12GN	1/2 Gallon Cubitainer	VOAK
SP5T	120mL Coliform Na Thiosulfate	I
BP1N	1L plastic HNO3	ZPLC
BP1U	1L plastic unreserved	
BP3S	250mL plastic H2SO4	WT
BP3N	250mL plastic HNO3	SL
BP3U	250mL plastic unreserved	OL
BP3C	250ml plastic NAOH	WP
BP2S	500mL plastic H2SO4	
BP2U	500mL plastic unreserved	

Plastic / Misc.

EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag
WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

30423589

June 10, 2021

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30423821

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 02, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

This project follows the April 5, 2016 revision 3 Quality Assurance Project Plan for Sparrows Point Terminal Site, Sparrows Point, MD prepared for EnviroAnalytics Group and is not for PA DEP compliance reporting.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30423821

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30423821

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30423821001	RW02-MWS	Water	06/02/21 08:35	06/02/21 23:00
30423821002	RW02-MWI	Water	06/02/21 09:20	06/02/21 23:00
30423821003	RWH-MWS	Water	06/02/21 10:40	06/02/21 23:00
30423821004	RWH-MWI	Water	06/02/21 11:50	06/02/21 23:00
30423821005	RWI-MWI	Water	06/02/21 13:05	06/02/21 23:00
30423821006	RWS-MWS	Water	06/02/21 13:50	06/02/21 23:00
30423821007	RWS-MWI	Water	06/02/21 15:00	06/02/21 23:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30423821

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30423821001	RW02-MWS	EPA 6010C	CTS	2	PASI-PA
30423821002	RW02-MWI	EPA 6010C	CTS	2	PASI-PA
30423821003	RWH-MWS	EPA 6010C	CTS	2	PASI-PA
30423821004	RWH-MWI	EPA 6010C	CTS	2	PASI-PA
30423821005	RWI-MWI	EPA 6010C	CTS	2	PASI-PA
30423821006	RWS-MWS	EPA 6010C	CTS	2	PASI-PA
30423821007	RWS-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RWM GW Sampling
Pace Project No.: 30423821

Method: EPA 6010C
Description: 6010C MET ICP,Dissolved
Client: Tradepoint Atlantic
Date: June 10, 2021

General Information:

7 samples were analyzed for EPA 6010C by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 451176

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30423589001,30423821005

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 2177875)
- Zinc, Dissolved

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423821

Sample: RW02-MWS		Lab ID: 30423821001		Collected: 06/02/21 08:35		Received: 06/02/21 23:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:26	7440-43-9	
Zinc, Dissolved	472	ug/L	10.0	2.4	1	06/07/21 09:15	06/10/21 09:26	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423821

Sample: RW02-MWI **Lab ID: 30423821002** Collected: 06/02/21 09:20 Received: 06/02/21 23:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	0.58J	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:28	7440-43-9	
Zinc, Dissolved	104	ug/L	10.0	2.4	1	06/07/21 09:15	06/10/21 09:28	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423821

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWH-MWS									
Lab ID: 30423821003									
Collected: 06/02/21 10:40									
Received: 06/02/21 23:00									
Matrix: Water									
6010C MET ICP,Dissolved Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	9.9	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:30	7440-43-9	
Zinc, Dissolved	3400	ug/L	10.0	2.4	1	06/07/21 09:15	06/10/21 09:30	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423821

Sample: RWH-MWI		Lab ID: 30423821004	Collected: 06/02/21 11:50	Received: 06/02/21 23:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	6760	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:32	7440-43-9	
Zinc, Dissolved	578000	ug/L	1000	238	100	06/07/21 09:15	06/10/21 13:47	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423821

Sample: RWI-MWI		Lab ID: 30423821005	Collected: 06/02/21 13:05	Received: 06/02/21 23:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	6810	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 09:35	7440-43-9	
Zinc, Dissolved	542000	ug/L	1000	238	100	06/07/21 09:15	06/10/21 13:50	7440-66-6	ML

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30423821

Sample: RWS-MWS		Lab ID: 30423821006		Collected: 06/02/21 13:50		Received: 06/02/21 23:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 10:11	7440-43-9	
Zinc, Dissolved	116000	ug/L	1000	238	100	06/07/21 09:15	06/10/21 13:56	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30423821

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWS-MWI									
Lab ID: 30423821007									
Collected: 06/02/21 15:00 Received: 06/02/21 23:00 Matrix: Water									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	0.86J	ug/L	3.0	0.34	1	06/07/21 09:15	06/10/21 10:13	7440-43-9	
Zinc, Dissolved	858000	ug/L	10000	2380	1000	06/07/21 09:15	06/10/21 14:05	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30423821

QC Batch: 451176 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30423821001, 30423821002, 30423821003, 30423821004, 30423821005, 30423821006, 30423821007

METHOD BLANK: 2177869 Matrix: Water
Associated Lab Samples: 30423821001, 30423821002, 30423821003, 30423821004, 30423821005, 30423821006, 30423821007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/10/21 08:53	
Zinc, Dissolved	ug/L	10.0 U	10.0	2.4	06/10/21 08:53	

LABORATORY CONTROL SAMPLE: 2177870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	491	98	80-120	
Zinc, Dissolved	ug/L	500	508	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2177872 2177873

Parameter	Units	30423589001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	3.0 U	500	500	554	575	111	115	75-125	4	20	
Zinc, Dissolved	ug/L	10.0 U	500	500	521	542	104	108	75-125	4	20	

MATRIX SPIKE SAMPLE: 2177875

Parameter	Units	30423821005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	6810	500	7290	95	75-125	
Zinc, Dissolved	ug/L	542000	500	535000	-1360	75-125 ML	

SAMPLE DUPLICATE: 2177871

Parameter	Units	30423589001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0 U		20	
Zinc, Dissolved	ug/L	10.0 U	10.0 U		20	

SAMPLE DUPLICATE: 2177874

Parameter	Units	30423821005 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	6810	6870	1	20	
Zinc, Dissolved	ug/L	542000	537000	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30423821

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30423821

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30423821001	RW02-MWS	EPA 3005A	451176	EPA 6010C	451310
30423821002	RW02-MWI	EPA 3005A	451176	EPA 6010C	451310
30423821003	RWH-MWS	EPA 3005A	451176	EPA 6010C	451310
30423821004	RWH-MWI	EPA 3005A	451176	EPA 6010C	451310
30423821005	RWI-MWI	EPA 3005A	451176	EPA 6010C	451310
30423821006	RWS-MWS	EPA 3005A	451176	EPA 6010C	451310
30423821007	RWS-MWI	EPA 3005A	451176	EPA 6010C	451310

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:
Company: Tradeport Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number: _____
Project Name: RWM GW Sampling
Project Number: _____

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradeport Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location
STATE: **MD**

ITEM #	Valid Matrix Codes MATRIX CODE CRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOLUSOID SL OIL OL WIPE WIP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB						
		DATE	TIME	DATE	TIME						
1	RW02-mws	11/02/1990	1835	11/02/1990	1835	1	Unpreserved	X	Y	001	
2	RW02-mw1	11/02/1990	1926	11/02/1990	1926	1	Unpreserved	X	Y	002	
3	RWH-mws	11/02/1990	1040	11/02/1990	1040	1	Unpreserved	X	Y	003	
4	RWH-mw1	11/02/1990	1150	11/02/1990	1150	1	Unpreserved	X	Y	004	
5	RW1-mw1	11/02/1990	1305	11/02/1990	1305	1	Unpreserved	X	Y	005	
6	RWS-mws	11/02/1990	1350	11/02/1990	1350	1	Unpreserved	X	Y	006	
7	RWS-mw1	11/02/1990	1500	11/02/1990	1500	1	Unpreserved	X	Y	007	
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS

Data Package Required? (Y/N) *Y*

Data Validation Required? (Y/N) *Y*

If data package is required, attach data package checklist.

RELINQUISHED BY / AFFILIATION: *[Signature]* DATE: 11/02/1990 TIME: 1600

ACCEPTED BY / AFFILIATION: *[Signature]* DATE: 09/21/1995 TIME: 1955

RECEIVED ON: 09/21/1995

COOLER (Y/N) *Y*

SAMPLES INTACT (Y/N) *Y*

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: *Sandra M Gilmac*

SIGNATURE of SAMPLER: *[Signature]* DATE Signed (MM/DD/YY): 09/21/1995

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

Label	<u>AL</u>
LIMS Login	<u>WPK</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 12 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 3.6 °C Correction Factor: 0.5 °C Final Temp: 4.1 °C

Temp should be above freezing to 6°C

30423821

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:	
				<u>1003514</u>	<u>AL</u>	<u>6-3-21</u>
Chain of Custody Present:	-			1.		
Chain of Custody Filled Out:	-			2.		
Chain of Custody Relinquished:	-			3.		
Sampler Name & Signature on COC:	-			4.		
Sample Labels match COC:	-			5.		
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	-			6.		
Short Hold Time Analysis (<72hr remaining):		-		7.		
Rush Turn Around Time Requested:	-			8.		
Sufficient Volume:	-			9.		
Correct Containers Used:	-			10.		
-Pace Containers Used:	-					
Containers Intact:	-			11.		
Orthophosphate field filtered			-	12.		
Hex Cr Aqueous sample field filtered			-	13.		
Organic Samples checked for dechlorination:			-	14.		
Filtered volume received for Dissolved tests			-	15.		
All containers have been checked for preservation.	-			16.		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	-			Initial when completed:	<u>AL</u>	Date/time of preservation
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):			-	17.		
Trip Blank Present:			-	18.		
Trip Blank Custody Seals Present			-			
Rad Samples Screened < 0.5 mrem/hr			-	Initial when completed:	<u>AL</u>	Date: <u>6-3-21</u> Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.



Pace Greensburg Lab -Sample Container Count

Client Tradeplant

Profile Number 13367

Site Rum Gu Sampling

Notes

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC
1	WT																											
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

Container Codes

Glass	
GJN	1 Gallon Jug with HNO3
AG5U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
GJN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass Na Thiosulfate
BG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved
DG9S	40mL amber VOA vial H2SO4
VG9U	40mL clear VOA vial
VG9T	40mL clear VOA vial Na Thiosul
VG9H	40mL clear VOA vial HCl
JGFU	4oz amber wide jar
WGFU	4oz wide jar unpreserved
BG2U	500mL clear glass unpreserved
AG2U	500mL amber glass unpreserved
WGKU	8oz wide jar unpreserved

Plastic / Misc.	
GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250ml plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved
EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag
WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

30423821

June 11, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30424014

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 03, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30424014

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30424014

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30424014001	RW06-MWS	Water	06/03/21 09:25	06/03/21 23:30
30424014002	RW06-MWI	Water	06/03/21 10:15	06/03/21 23:30
30424014003	RW06-MWD	Water	06/03/21 11:20	06/03/21 23:30
30424014004	RWM-MWI	Water	06/03/21 12:30	06/03/21 23:30
30424014005	RW10-MWI	Water	06/03/21 14:50	06/03/21 23:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30424014

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30424014001	RW06-MWS	EPA 6010C	CTS	2	PASI-PA
30424014002	RW06-MWI	EPA 6010C	CTS	2	PASI-PA
30424014003	RW06-MWD	EPA 6010C	CTS	2	PASI-PA
30424014004	RWM-MWI	EPA 6010C	CTS	2	PASI-PA
30424014005	RW10-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424014

Sample: RW06-MWS		Lab ID: 30424014001		Collected: 06/03/21 09:25		Received: 06/03/21 23:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:00	7440-43-9	
Zinc, Dissolved	10.0 U	ug/L	10.0	2.4	1	06/07/21 14:53	06/11/21 08:00	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424014

Sample: RW06-MWI		Lab ID: 30424014002	Collected: 06/03/21 10:15	Received: 06/03/21 23:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	616	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:13	7440-43-9	
Zinc, Dissolved	109000	ug/L	1000	238	100	06/07/21 14:53	06/11/21 08:55	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424014

Sample: RW06-MWD **Lab ID: 30424014003** Collected: 06/03/21 11:20 Received: 06/03/21 23:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	0.59J	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:15	7440-43-9	
Zinc, Dissolved	64.9	ug/L	10.0	2.4	1	06/07/21 14:53	06/11/21 08:15	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424014

Sample: RWM-MWI		Lab ID: 30424014004		Collected: 06/03/21 12:30		Received: 06/03/21 23:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	1220	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:22	7440-43-9	
Zinc, Dissolved	150000	ug/L	1000	238	100	06/07/21 14:53	06/11/21 08:57	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424014

Sample: RW10-MWI **Lab ID: 30424014005** Collected: 06/03/21 14:50 Received: 06/03/21 23:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	11.1	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:24	7440-43-9	
Zinc, Dissolved	6130	ug/L	10.0	2.4	1	06/07/21 14:53	06/11/21 08:24	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30424014

QC Batch: 451258 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30424014001, 30424014002, 30424014003, 30424014004, 30424014005

METHOD BLANK: 2178185 Matrix: Water
Associated Lab Samples: 30424014001, 30424014002, 30424014003, 30424014004, 30424014005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/11/21 07:56	
Zinc, Dissolved	ug/L	10.0 U	10.0	2.4	06/11/21 07:56	

LABORATORY CONTROL SAMPLE: 2178186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	484	97	80-120	
Zinc, Dissolved	ug/L	500	492	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2178188 2178189

Parameter	Units	30424014001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	3.0 U	500	500	517	518	103	104	75-125	0	20	
Zinc, Dissolved	ug/L	10.0 U	500	500	494	492	98	98	75-125	0	20	

SAMPLE DUPLICATE: 2178187

Parameter	Units	30424014001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0 U		20	
Zinc, Dissolved	ug/L	10.0 U	10.0 U		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30424014

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30424014

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30424014001	RW06-MWS	EPA 3005A	451258	EPA 6010C	451321
30424014002	RW06-MWI	EPA 3005A	451258	EPA 6010C	451321
30424014003	RW06-MWD	EPA 3005A	451258	EPA 6010C	451321
30424014004	RWM-MWI	EPA 3005A	451258	EPA 6010C	451321
30424014005	RW10-MWI	EPA 3005A	451258	EPA 6010C	451321

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
Project Name: RWM GW Sampling
Project Number: 20010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote: _____
Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location
STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WF AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Analysis Test ↑	Requested Analysis Filtered (Y/N)		Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME		H ₂ SO ₄	HNO ₃	
1		W01G	G	5/10/21	0925		1						001
2		W01G	G	5/10/21	1015		1						002
3		W01G	G	5/10/21	1120		1						003
4		W01G	G	5/10/21	1220		1						004
5		W01G	G	5/10/21	1450		1						005
6													
7													
8													
9													
10													
11													
12													

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / -)
Sample IDs MUST BE UNIQUE

RECEIVED BY / AFFILIATION
DATE TIME

ACCEPTED BY / AFFILIATION
DATE TIME

RELINQUISHED BY / AFFILIATION
DATE TIME

ADDITIONAL COMMENTS

Data Package Required? (Y/N) _____

Data Validation Required? (Y/N) _____

If data package is required, attach data package checklist.

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Sandra M. Gurnea
SIGNATURE of SAMPLER: [Signature]
DATE Signed (MM/DD/YY): 06/03/2021

Received on Ice (Y/N) _____
Custody Sealed Cooler (Y/N) _____
Samples Intact (Y/N) _____

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Tradeport Atlantic

Project # 30424014

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label	<u>mll</u>
LIMS Login	<u>mll</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 0.4 °C Correction Factor: 0 °C Final Temp: 0.4 °C
Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents	
				<u>10D3801</u>	<u>mll</u>	<u>6/4/2021</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.		
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.		
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>mll</u>	Date/time of preservation	
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed:	Date:	Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

June 11, 2021

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30424223

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 04, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30424223

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: RWM GW Sampling

Pace Project No.: 30424223

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30424223001	RW15-MWI	Water	06/04/21 09:42	06/04/21 23:55
30424223002	RW13-MWI	Water	06/04/21 10:12	06/04/21 23:55
30424223003	RWN-MWS	Water	06/04/21 11:17	06/04/21 23:55
30424223004	RW16-MWS	Water	06/04/21 12:32	06/04/21 23:55
30424223005	RW16-MWI	Water	06/04/21 13:25	06/04/21 23:55

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30424223

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30424223001	RW15-MWI	EPA 6010C	CTS	2	PASI-PA
30424223002	RW13-MWI	EPA 6010C	CTS	2	PASI-PA
30424223003	RWN-MWS	EPA 6010C	CTS	2	PASI-PA
30424223004	RW16-MWS	EPA 6010C	CTS	2	PASI-PA
30424223005	RW16-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424223

Sample: RW15-MWI		Lab ID: 30424223001		Collected: 06/04/21 09:42		Received: 06/04/21 23:55		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	43.6	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:27	7440-43-9	
Zinc, Dissolved	16400	ug/L	1000	238	100	06/07/21 14:53	06/11/21 08:46	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424223

Sample: RW13-MWI		Lab ID: 30424223002		Collected: 06/04/21 10:12	Received: 06/04/21 23:55	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	26400	ug/L	300	34.0	100	06/07/21 14:53	06/11/21 08:48	7440-43-9	
Zinc, Dissolved	363000	ug/L	1000	238	100	06/07/21 14:53	06/11/21 08:48	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424223

Sample: RWN-MWS		Lab ID: 30424223003	Collected: 06/04/21 11:17	Received: 06/04/21 23:55	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	4850	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:31	7440-43-9	
Zinc, Dissolved	745000	ug/L	1000	238	100	06/07/21 14:53	06/11/21 08:50	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424223

Sample: RW16-MWS **Lab ID: 30424223004** Collected: 06/04/21 12:32 Received: 06/04/21 23:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A									
Pace Analytical Services - Greensburg									
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:52	7440-43-9	
Zinc, Dissolved	3.0J	ug/L	10.0	2.4	1	06/07/21 14:53	06/11/21 08:52	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30424223

Sample: RW16-MWI		Lab ID: 30424223005		Collected: 06/04/21 13:25		Received: 06/04/21 23:55		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	0.42J	ug/L	3.0	0.34	1	06/07/21 14:53	06/11/21 08:35	7440-43-9	
Zinc, Dissolved	62.4	ug/L	10.0	2.4	1	06/07/21 14:53	06/11/21 08:35	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30424223

QC Batch: 451258 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30424223001, 30424223002, 30424223003, 30424223004, 30424223005

METHOD BLANK: 2178185 Matrix: Water
Associated Lab Samples: 30424223001, 30424223002, 30424223003, 30424223004, 30424223005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/11/21 07:56	
Zinc, Dissolved	ug/L	10.0 U	10.0	2.4	06/11/21 07:56	

LABORATORY CONTROL SAMPLE: 2178186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	484	97	80-120	
Zinc, Dissolved	ug/L	500	492	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2178188 2178189

Parameter	Units	30424014001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	3.0 U	500	500	517	518	103	104	75-125	0	20	
Zinc, Dissolved	ug/L	10.0 U	500	500	494	492	98	98	75-125	0	20	

SAMPLE DUPLICATE: 2178187

Parameter	Units	30424014001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0 U		20	
Zinc, Dissolved	ug/L	10.0 U	10.0 U		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30424223

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30424223

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30424223001	RW15-MWI	EPA 3005A	451258	EPA 6010C	451321
30424223002	RW13-MWI	EPA 3005A	451258	EPA 6010C	451321
30424223003	RWN-MWS	EPA 3005A	451258	EPA 6010C	451321
30424223004	RW16-MWS	EPA 3005A	451258	EPA 6010C	451321
30424223005	RW16-MWI	EPA 3005A	451258	EPA 6010C	451321

REPORT OF LABORATORY ANALYSIS

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Section A Required Client Information:
 Company: Tradepoint Atlantic
 Address: 1600 Sparrows Point Blvd
 Sparrows Point, MD 21219
 Email To: _____
 Phone: _____ Fax: _____
 Requested Due Date/TAT: 5 day

Section B Required Project Information:
 Report To: Matt Newman
 Copy To: Stew Kabis
 PO Number: _____
 Project Name: RWM GW Sampling
 Project Number: 20010103

Section C Invoice Information:
 Attention: Matt Newman
 Company Name: Tradepoint Atlantic
 Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
 Pace Quote Reference: _____
 Pace Project Manager: Samantha Bayura
 Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location
 STATE: **MD**

ITEM #	Valid Matrix Codes MATRIX DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIFE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Requested Analysis Filtered (Y/N)	Pace Project No. / Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB							H ₂ SO ₄	HNO ₃		
1	RWB15-MWFI	WT G	G			6/4/21	0900				1	Unpreserved			001
2	RWB3-MWFI	WT G	G			6/4/21	1012				1				002
3	RWN1-MWIS	WT G	G			6/4/21	1117				1				003
4	RWB16-MWIS	WT G	G			6/4/21	1238				1				004
5	RWB16-MWFI	WT G	G			6/4/21	1305				1				005
6															
7															
8															
9															
10															
11															
12															

WO# : 30424223



30424223

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions
Data Package Required? (Y/N)	MW Bowm ARM	6/4/21	1400	Jace	6/4/21	1900	
Data Validation Required? (Y/N)	Jace	6/4/21	1900	RDS Jace	6/4/21	23:55	3.7 N Y
If data package is required, attach data package checklist.							
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <u>Jasha Bowm</u> SIGNATURE of SAMPLER: <u>[Signature]</u>							
RECEIVED ON: <u>06/04/21</u> DATE SIGNED (MM/DD/YYYY): <u>06/04/21</u>							



Client Name: Tradepoint Atlantic Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label	<u>rpm</u>
LIMS Login	<u>rlm</u>

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 11 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 3-8 °C Correction Factor: -0.1 °C Final Temp: 3.7 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:	
				<u>10D3801</u>	<u>6-5-21</u>	<u>ja</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.		
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.		
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.		
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.		
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed	<u>ja</u>	Date/time of preservation
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed:	<u>ja</u>	Date: _____ Survey Meter SN: _____

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

PM: SMB
CLIENT: TRADEPOINT
Due Date: 06/14/21

MO#: 30424223

June 17, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30425019

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30425019

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30425019

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30425019001	RWA-MWS	Water	06/09/21 10:15	06/09/21 22:15
30425019002	RWA-MWI	Water	06/09/21 11:15	06/09/21 22:15
30425019003	RWO-MWS	Water	06/09/21 12:10	06/09/21 22:15
30425019004	RWO-MWI	Water	06/09/21 13:10	06/09/21 22:15
30425019005	RWQ-MWS	Water	06/09/21 14:05	06/09/21 22:15
30425019006	RWQ-MWI	Water	06/09/21 14:50	06/09/21 22:15

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling

Pace Project No.: 30425019

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30425019001	RWA-MWS	EPA 6010C	CTS	2	PASI-PA
30425019002	RWA-MWI	EPA 6010C	CTS	2	PASI-PA
30425019003	RWO-MWS	EPA 6010C	CTS	2	PASI-PA
30425019004	RWO-MWI	EPA 6010C	CTS	2	PASI-PA
30425019005	RWQ-MWS	EPA 6010C	CTS	2	PASI-PA
30425019006	RWQ-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425019

Sample: RWA-MWS		Lab ID: 30425019001		Collected: 06/09/21 10:15	Received: 06/09/21 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	0.48J	ug/L	3.0	0.34	1	06/14/21 15:15	06/17/21 07:56	7440-43-9	
Zinc, Dissolved	6.1J	ug/L	10.0	2.4	1	06/14/21 15:15	06/17/21 07:56	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30425019

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWA-MWI Lab ID: 30425019002 Collected: 06/09/21 11:15 Received: 06/09/21 22:15 Matrix: Water									
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	11700	ug/L	300	34.0	100	06/14/21 15:15	06/17/21 08:26	7440-43-9	
Zinc, Dissolved	468000	ug/L	1000	238	100	06/14/21 15:15	06/17/21 08:26	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425019

Sample: RWO-MWS		Lab ID: 30425019003	Collected: 06/09/21 12:10	Received: 06/09/21 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	0.85J	ug/L	3.0	0.34	1	06/14/21 15:15	06/17/21 08:10	7440-43-9	
Zinc, Dissolved	1130	ug/L	10.0	2.4	1	06/14/21 15:15	06/17/21 08:10	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30425019

Sample: RWO-MWI		Lab ID: 30425019004	Collected: 06/09/21 13:10	Received: 06/09/21 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	35.8	ug/L	3.0	0.34	1	06/14/21 15:15	06/17/21 08:17	7440-43-9	
Zinc, Dissolved	208000	ug/L	1000	238	100	06/14/21 15:15	06/17/21 08:28	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425019

Sample: RWQ-MWS		Lab ID: 30425019005		Collected: 06/09/21 14:05	Received: 06/09/21 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3.4	ug/L	3.0	0.34	1	06/14/21 15:15	06/17/21 08:20	7440-43-9	
Zinc, Dissolved	158	ug/L	10.0	2.4	1	06/14/21 15:15	06/17/21 08:20	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425019

Sample: RWQ-MWI		Lab ID: 30425019006	Collected: 06/09/21 14:50	Received: 06/09/21 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	6.1	ug/L	3.0	0.34	1	06/14/21 15:15	06/17/21 08:22	7440-43-9	
Zinc, Dissolved	286000	ug/L	1000	238	100	06/14/21 15:15	06/17/21 08:30	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30425019

QC Batch: 452306 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30425019001, 30425019002, 30425019003, 30425019004, 30425019005, 30425019006

METHOD BLANK: 2183614 Matrix: Water
Associated Lab Samples: 30425019001, 30425019002, 30425019003, 30425019004, 30425019005, 30425019006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/17/21 07:51	
Zinc, Dissolved	ug/L	3.4J	10.0	2.4	06/17/21 07:51	

LABORATORY CONTROL SAMPLE: 2183615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	514	103	80-120	
Zinc, Dissolved	ug/L	500	535	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2183617 2183618

Parameter	Units	30425019001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	0.48J	500	500	549	531	110	106	75-125	3	20	
Zinc, Dissolved	ug/L	6.1J	500	500	528	507	104	100	75-125	4	20	

SAMPLE DUPLICATE: 2183616

Parameter	Units	30425019001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	0.48J	0.44J		20	
Zinc, Dissolved	ug/L	6.1J	5.9J		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30425019

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30425019

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30425019001	RWA-MWS	EPA 3005A	452306	EPA 6010C	452368
30425019002	RWA-MWI	EPA 3005A	452306	EPA 6010C	452368
30425019003	RWO-MWS	EPA 3005A	452306	EPA 6010C	452368
30425019004	RWO-MWI	EPA 3005A	452306	EPA 6010C	452368
30425019005	RWQ-MWS	EPA 3005A	452306	EPA 6010C	452368
30425019006	RWQ-MWI	EPA 3005A	452306	EPA 6010C	452368

REPORT OF LABORATORY ANALYSIS

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WO#: 30425019

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed.

Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number: _____
Project Name: RWM GW Sampling
Project Number: 20010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location
STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER WATER WASTE WATER PRODUCT SOIL/SOLID OIL WIPE AIR OTHER TISSUE	COLLECTED COMPOSITE START COMPOSITE END/GRAB	DATE TIME	DATE TIME	RELINQUISHED BY / AFFILIATION	DATE TIME	ACCEPTED BY / AFFILIATION	DATE TIME	SAMPLE CONDITIONS	Requested Analysis Filtered (Y/N)	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other DI Water	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	# OF CONTAINERS	SAMPLE TEMP AT COLLECTION	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE ID		Pace Project No. / Lab I.D.
																	DATE	TIME	
1	RWA - MWS		5/6/12	1600	Stew Kabis	5/6/12	1600	5/9/12	1600	Y			1						100
2	RWA - MWJ		6/9/12	1845	Stew Kabis	6/9/12	1845	6-9-12	1845	Y			1						200
3	RWG - MWS		6/9/12	1450	Stew Kabis	6/9/12	1450	6-9-12	1450	Y			1						003
4	RWG - MWJ		6/9/12	1450	Stew Kabis	6/9/12	1450	6-9-12	1450	Y			1						004
5	RWG - MWS		6/9/12	1450	Stew Kabis	6/9/12	1450	6-9-12	1450	Y			1						005
6	RWG - MWJ		6/9/12	1450	Stew Kabis	6/9/12	1450	6-9-12	1450	Y			1						006
7																			
8																			
9																			
10																			
11																			
12																			

ADDITIONAL COMMENTS
Data Package Required? (Y/N): _____
Data Validation Required? (Y/N): _____
If data package is required, attach data package checklist.

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Stew Kabis
SIGNATURE of SAMPLER: _____
DATE Signed (MM/DD/YYYY): 6/9/12

Received on (Y/N) _____
Cooler (Y/N) _____
Samples Intact (Y/N) _____

Pittsburgh Lab Sample Condition Upon Receipt

#-30425019



Client Name: Tradepoint Atlantic Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label MCC
LIMS Login MCC

Tracking #: NIA

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 11 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.2 °C Correction Factor: -.1 °C Final Temp: 4.1 °C
Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and initials of person examining contents:	
	Yes	No	N/A		
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1003801	MCC 6/9/2021
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.	
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11.	
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.	
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.	
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	
				Initial when completed	Date/time of preservation
				<u>MCC</u>	
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed:	Survey Meter SN:
				Date:	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____
Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

June 17, 2021

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30425340

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30425340

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30425340

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30425340001	RW11-MWS	Water	06/10/21 12:40	06/10/21 22:30
30425340002	RW11-MWI	Water	06/10/21 13:40	06/10/21 22:30
30425340003	RW08-MWI	Water	06/10/21 14:50	06/10/21 22:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30425340

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30425340001	RW11-MWS	EPA 6010C	CTS	2	PASI-PA
30425340002	RW11-MWI	EPA 6010C	CTS	2	PASI-PA
30425340003	RW08-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30425340

Sample: RW11-MWS		Lab ID: 30425340001		Collected: 06/10/21 12:40		Received: 06/10/21 22:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3.4	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 08:49	7440-43-9	
Zinc, Dissolved	61000	ug/L	1000	238	100	06/16/21 08:37	06/17/21 09:43	7440-66-6	1c,B,ML

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425340

Sample: RW11-MWI		Lab ID: 30425340002		Collected: 06/10/21 13:40		Received: 06/10/21 22:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	175	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 09:02	7440-43-9	
Zinc, Dissolved	188000	ug/L	1000	238	100	06/16/21 08:37	06/17/21 10:02	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425340

Sample: RW08-MWI		Lab ID: 30425340003	Collected: 06/10/21 14:50	Received: 06/10/21 22:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	0.38J	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 09:19	7440-43-9	
Zinc, Dissolved	2.6J	ug/L	10.0	2.4	1	06/16/21 08:37	06/17/21 09:19	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30425340

QC Batch: 452599 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30425340001, 30425340002, 30425340003

METHOD BLANK: 2185004 Matrix: Water
Associated Lab Samples: 30425340001, 30425340002, 30425340003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/17/21 08:45	
Zinc, Dissolved	ug/L	22.9	10.0	2.4	06/17/21 08:45	B

LABORATORY CONTROL SAMPLE: 2185005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	510	102	80-120	
Zinc, Dissolved	ug/L	500	512	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2185007 2185008

Parameter	Units	30425340001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	3.4	500	500	578	534	115	106	75-125	8	20	
Zinc, Dissolved	ug/L	61000	500	500	60200	60700	-170	-66	75-125	1	20 ML	

SAMPLE DUPLICATE: 2185006

Parameter	Units	30425340001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	3.4	3.0	12	20	
Zinc, Dissolved	ug/L	61000	59000	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30425340

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1c The PDS recovery was outside of the laboratory control limits. Result may be biased high.

B Analyte was detected in the associated method blank.

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30425340

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30425340001	RW11-MWS	EPA 3005A	452599	EPA 6010C	452739
30425340002	RW11-MWI	EPA 3005A	452599	EPA 6010C	452739
30425340003	RW08-MWI	EPA 3005A	452599	EPA 6010C	452739

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.



30425340

Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone:
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number:
Project Name: RWM GW Sampling
Project Number: 20010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
Site Location
STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID S OIL OI WIPE WI AIR AR OTHER OT TISSUE TS	SAMPLE ID (A-Z, 0-9 /, -) Sample IDs MUST BE UNIQUE	COLLECTED		MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	Preservatives Unpreserved H ₂ O ₂ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other DI Water	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No / Lab I.D.
			DATE	TIME							
1		RW11-MWS	6/10/21	1240	WT G	1			Y	001	
2		RW11-MW1	6/10/21	1340	WT G	1			Y	002	
3		RW108-MW1	6/10/21	1440	WT G	1			Y	003	
4											
5											
6											
7											
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions
Data Package Required? (Y/N):	[Signature]	6/10/21	1600	[Signature]	6/10/21	1600	
Data Validation Required? (Y/N):	[Signature]	6/10/21	1972	[Signature]	6/10/21	1975	
If data package is required, attach data package checklist.	[Signature]	6/10/21	2030	[Signature]	6-10-2021	2030	

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: [Signature]
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 6/10/21
 Received on Ice (Y/N)
 Custody Sealed Cooler (Y/N)
 Samples Intact (Y/N)

*Important Note: By signing this form, you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month to any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Tradeport Atlantic

Project # 30425340

30425340

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label <u>mll</u>
LIMS Login <u>mll</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 1.3 °C Correction Factor: 0 °C Final Temp: 1.3 °C

Temp should be above freezing to 6°C

pH paper Lot# <u>N/A</u>	Date and Initials of person examining contents: <u>mll 6/11/2021</u>
--------------------------	--

Comments:

	Yes	No	N/A		
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.	
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.	
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.	
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>mll</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

June 17, 2021

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30425556

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 11, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

This project follows the April 5, 2016 revision 3 Quality Assurance Project Plan for Sparrows Point Terminal Site, Sparrows Point, MD prepared for EnviroAnalytics Group and is not for PA DEP compliance reporting.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30425556

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling

Pace Project No.: 30425556

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30425556001	RW24-MWI	Water	06/11/21 10:05	06/11/21 21:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30425556

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30425556001	RW24-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RWM GW Sampling

Pace Project No.: 30425556

Method: EPA 6010C

Description: 6010C MET ICP,Dissolved

Client: Tradepoint Atlantic

Date: June 17, 2021

General Information:

1 sample was analyzed for EPA 6010C by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 452599

B: Analyte was detected in the associated method blank.

- BLANK for HBN 452599 [MPRP/309 (Lab ID: 2185004)]
 - Zinc, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 452599

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30425340001

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 2185007)
 - Zinc, Dissolved
- MSD (Lab ID: 2185008)
 - Zinc, Dissolved

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RWM GW Sampling

Pace Project No.: 30425556

Method: EPA 6010C

Description: 6010C MET ICP,Dissolved

Client: Tradepoint Atlantic

Date: June 17, 2021

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425556

Sample: RW24-MWI		Lab ID: 30425556001		Collected: 06/11/21 10:05		Received: 06/11/21 21:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	890	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 09:21	7440-43-9	
Zinc, Dissolved	292000	ug/L	1000	238	100	06/16/21 08:37	06/17/21 10:04	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30425556

QC Batch: 452599 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30425556001

METHOD BLANK: 2185004 Matrix: Water
Associated Lab Samples: 30425556001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/17/21 08:45	
Zinc, Dissolved	ug/L	22.9	10.0	2.4	06/17/21 08:45	B

LABORATORY CONTROL SAMPLE: 2185005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	510	102	80-120	
Zinc, Dissolved	ug/L	500	512	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2185007 2185008

Parameter	Units	30425340001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	3.4	500	500	578	534	115	106	75-125	8	20	
Zinc, Dissolved	ug/L	61000	500	500	60200	60700	-170	-66	75-125	1	20 ML	

SAMPLE DUPLICATE: 2185006

Parameter	Units	30425340001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	3.4	3.0	12	20	
Zinc, Dissolved	ug/L	61000	59000	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30425556

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30425556

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30425556001	RW24-MWI	EPA 3005A	452599	EPA 6010C	452739

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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Section A
Required Client Information:
Company: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
Company Name: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

Section C
Invoice Information:
Attention: Matt Newman
REGULATORY AGENCY: _____
Site Location: _____
STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	Preservatives HCl HNO ₃ H ₂ SO ₄ Unpreserved NaOH Na ₂ O ₃ Other DI Water	Requested Analysis Filtered (Y/N)	Y	N	Analysis Test	Dissolved Cadmium	Dissolved Zinc	Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB									
1		WT G		DATE	TIME	DATE	TIME							
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

NO#: 30425556



30425556

ADDITIONAL COMMENTS

Data Package Required? (Y/N) _____
 Data Validation Required? (Y/N) _____
 If data package is required, attach data package checklist.

RELINQUISHED BY//AFFILIATION: _____ DATE: _____ TIME: _____
 ACCEPTED BY//AFFILIATION: _____ DATE: _____ TIME: _____

Received on: _____ Iced (Y/N) _____ Custody Sealed (Y/N) _____ Samples Intact (Y/N) _____

SAMPLER NAME AND SIGNATURE: _____
 PRINT Name of SAMPLER: _____
 SIGNATURE of SAMPLER: _____

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt

#-30425556



Client Name: Tradeprint

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label	<u>JSm</u>
LIMS Login	<u>JSm</u>

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 1a Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 2.3 °C Correction Factor: 40.5 °C Final Temp: 2.8 °C
 Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and initials of person examining contents: <u>JSm 8/13/21</u>	
				<u>10D5301</u>		
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.		
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.		
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed	<u>JSm</u>	Date/time of preservation
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed:		Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

June 17, 2021

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30425808

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

This project follows the April 5, 2016 revision 3 Quality Assurance Project Plan for Sparrows Point Terminal Site, Sparrows Point, MD prepared for EnviroAnalytics Group and is not for PA DEP compliance reporting.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30425808

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30425808

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30425808001	RW05-MWS	Water	06/14/21 09:05	06/14/21 23:30
30425808002	RWF-MWI	Water	06/14/21 10:15	06/14/21 23:30
30425808003	RWF-MWS	Water	06/14/21 11:15	06/14/21 23:30
30425808004	RW09-MWI	Water	06/14/21 12:30	06/14/21 23:30
30425808005	RW21-MWI	Water	06/14/21 14:55	06/14/21 23:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30425808

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30425808001	RW05-MWS	EPA 6010C	CTS	2	PASI-PA
30425808002	RWF-MWI	EPA 6010C	CTS	2	PASI-PA
30425808003	RWF-MWS	EPA 6010C	CTS	2	PASI-PA
30425808004	RW09-MWI	EPA 6010C	CTS	2	PASI-PA
30425808005	RW21-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RWM GW Sampling

Pace Project No.: 30425808

Method: EPA 6010C

Description: 6010C MET ICP,Dissolved

Client: Tradepoint Atlantic

Date: June 17, 2021

General Information:

5 samples were analyzed for EPA 6010C by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 452599

B: Analyte was detected in the associated method blank.

- BLANK for HBN 452599 [MPRP/309 (Lab ID: 2185004)
- Zinc, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 452599

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30425340001

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 2185007)
 - Zinc, Dissolved
- MSD (Lab ID: 2185008)
 - Zinc, Dissolved

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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PROJECT NARRATIVE

Project: RWM GW Sampling

Pace Project No.: 30425808

Method: EPA 6010C

Description: 6010C MET ICP,Dissolved

Client: Tradepoint Atlantic

Date: June 17, 2021

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425808

Sample: RW05-MWS		Lab ID: 30425808001		Collected: 06/14/21 09:05		Received: 06/14/21 23:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 10:06	7440-43-9	
Zinc, Dissolved	7.0J	ug/L	10.0	2.4	1	06/16/21 08:37	06/17/21 10:06	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30425808

Sample: RWF-MWI		Lab ID: 30425808002	Collected: 06/14/21 10:15	Received: 06/14/21 23:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	3710	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 09:26	7440-43-9	
Zinc, Dissolved	133000	ug/L	1000	238	100	06/16/21 08:37	06/17/21 10:08	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30425808

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWF-MWS Lab ID: 30425808003 Collected: 06/14/21 11:15 Received: 06/14/21 23:30 Matrix: Water									
6010C MET ICP,Dissolved									
Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg									
Cadmium, Dissolved	4.0	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 09:28	7440-43-9	
Zinc, Dissolved	32800	ug/L	1000	238	100	06/16/21 08:37	06/17/21 10:10	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425808

Sample: RW09-MWI		Lab ID: 30425808004		Collected: 06/14/21 12:30		Received: 06/14/21 23:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	16.0	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 09:30	7440-43-9	
Zinc, Dissolved	93600	ug/L	1000	238	100	06/16/21 08:37	06/17/21 10:13	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30425808

Sample: RW21-MWI		Lab ID: 30425808005		Collected: 06/14/21 14:55		Received: 06/14/21 23:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	34.2	ug/L	3.0	0.34	1	06/16/21 08:37	06/17/21 09:32	7440-43-9	
Zinc, Dissolved	527000	ug/L	1000	238	100	06/16/21 08:37	06/17/21 10:15	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30425808

QC Batch: 452599 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET Dissolved
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30425808001, 30425808002, 30425808003, 30425808004, 30425808005

METHOD BLANK: 2185004 Matrix: Water
Associated Lab Samples: 30425808001, 30425808002, 30425808003, 30425808004, 30425808005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/17/21 08:45	
Zinc, Dissolved	ug/L	22.9	10.0	2.4	06/17/21 08:45	B

LABORATORY CONTROL SAMPLE: 2185005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	510	102	80-120	
Zinc, Dissolved	ug/L	500	512	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2185007 2185008

Parameter	Units	30425340001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	3.4	500	500	578	534	115	106	75-125	8	20	
Zinc, Dissolved	ug/L	61000	500	500	60200	60700	-170	-66	75-125	1	20 ML	

SAMPLE DUPLICATE: 2185006

Parameter	Units	30425340001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	3.4	3.0	12	20	
Zinc, Dissolved	ug/L	61000	59000	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30425808

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling

Pace Project No.: 30425808

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30425808001	RW05-MWS	EPA 3005A	452599	EPA 6010C	452739
30425808002	RWF-MWI	EPA 3005A	452599	EPA 6010C	452739
30425808003	RWF-MWS	EPA 3005A	452599	EPA 6010C	452739
30425808004	RW09-MWI	EPA 3005A	452599	EPA 6010C	452739
30425808005	RW21-MWI	EPA 3005A	452599	EPA 6010C	452739

REPORT OF LABORATORY ANALYSIS

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NO#: 30425808



MINUTEMAN ANALYTICAL REQUEST DOCUMENT
 Min-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: () of ()

Section A

Required Client Information:

Company: Tradepoint Atlantic
 Address: 1600 Sparrows Point Blvd
 Sparrows Point, MD 21219
 Email To:
 Phone:
 Fax:
 Requested Due Date/TAT: 5 day

Section C

Invoice Information:

Report To: Matt Newman
 Copy To: Stew Kabis
 PO Number:
 Project Name: RWM GW Sampling
 Project Number: 210102103

Attention: Matt Newman
 Company Name: Tradepoint Atlantic
 Address: 1600 Sparrows Point Blvd Sparrows Point, MD 21219
 Pace Quote Reference: Samantha Bayura
 Pace Project Manager: Samantha Bayura
 Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location
 STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOLID S OIL OL WIFE WP AIR AR OTHER OT TISSUE TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other DI Water	Analysis Test Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
			DATE	TIME						
1	RW05-MWS	WTG	6/14/12	1905	1	1		XX	Y	001
2	RWF-MWT	WTG		1015	1	1		XX	Y	002
3	RWF-MWS	WTG		1115	1	1		XX	Y	003
4	RW09-MWT	WTG		1230	1	1		XX	Y	004
5	RW21-MWF	WTG		1455	1	1		XX	Y	005
6										
7										
8										
9										
10										
11										
12										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions
Data Package Required? (Y/N):	Shore	6/14/12	1900	Shore	6/14/12	1630	
Data Validation Required? (Y/N):	Shore	6/14/12	1900	Shore	6/14/12	1630	X
If data package is required, attach data package checklist.	RDS - Shore	6/14/12	1930	RDS - Shore	6/14/12	1730	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Lisa Penn
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YY): 6/14/12

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Trade point

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label <u>BSM</u>
LIMS Login <u>BSM</u>

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 11 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.6 °C Correction Factor: -0.1 °C Final Temp: 4.5 °C

Temp should be above freezing to 6°C

pH paper Lot# <u>1003801</u>	Date and Initials of person examining contents: <u>6/15/21 BSM</u>
---------------------------------	---

Comments:

	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests	/			15.
All containers have been checked for preservation.	/			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				
All containers meet method preservation requirements.	/			Initial when completed <u>BSM</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			/	17.
Trip Blank Present:			/	18.
Trip Blank Custody Seals Present			/	
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed: Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 30425808

Due Date: 06/22/21

PM: SMB

CLIENT: TRADEPOINT

June 23, 2021

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30426051

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 15, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

This project follows the April 5, 2016 revision 3 Quality Assurance Project Plan for Sparrows Point Terminal Site, Sparrows Point, MD prepared for EnviroAnalytics Group and is not for PA DEP compliance reporting.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30426051

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling

Pace Project No.: 30426051

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30426051001	RW19-MWI	Water	06/15/21 10:35	06/15/21 23:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30426051

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30426051001	RW19-MWI	EPA 6010C	CTS	2	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: RWM GW Sampling
Pace Project No.: 30426051

Method: EPA 6010C
Description: 6010C MET ICP,Dissolved
Client: Tradepoint Atlantic
Date: June 23, 2021

General Information:

1 sample was analyzed for EPA 6010C by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 453291

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30426051001

MH: Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

- MS (Lab ID: 2188539)
 - Zinc, Dissolved
- MSD (Lab ID: 2188540)
 - Zinc, Dissolved

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30426051

Sample: RW19-MWI		Lab ID: 30426051001		Collected: 06/15/21 10:35		Received: 06/15/21 23:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP,Dissolved		Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Greensburg							
Cadmium, Dissolved	112	ug/L	3.0	0.34	1	06/21/21 08:40	06/23/21 08:28	7440-43-9	
Zinc, Dissolved	212000	ug/L	1000	238	100	06/21/21 08:40	06/23/21 08:58	7440-66-6	MH

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30426051

QC Batch: 453291	Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A	Analysis Description: 6010C MET Dissolved
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30426051001

METHOD BLANK: 2188536 Matrix: Water
Associated Lab Samples: 30426051001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.34	06/23/21 08:23	
Zinc, Dissolved	ug/L	10.0 U	10.0	2.4	06/23/21 08:23	

LABORATORY CONTROL SAMPLE: 2188537

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	500	515	103	80-120	
Zinc, Dissolved	ug/L	500	514	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2188539 2188540

Parameter	Units	30426051001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	112	500	500	661	660	110	110	75-125	0	20	
Zinc, Dissolved	ug/L	212000	500	500	213000	221000	200	1820	75-125	4	20 MH	

SAMPLE DUPLICATE: 2188538

Parameter	Units	30426051001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cadmium, Dissolved	ug/L	112	112	0	20	
Zinc, Dissolved	ug/L	212000	223000	5	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30426051

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

MH Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30426051

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30426051001	RW19-MWI	EPA 3005A	453291	EPA 6010C	453397

REPORT OF LABORATORY ANALYSIS

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Section A Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B Required Project Information:
Report To: Matt Newiman
Copy To: Stew Kabis
PO Number: _____
Project Name: RWM GW Sampling
Project Number: 21019103

Section C Invoice Information:
Attention: Matt Newiman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location: MD
STATE: _____

Page: _____ of _____

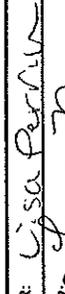
ITEM #	Section D Required Client Information		Valid Matrix Codes		COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)	Y/N	Analysis Test ↓	Pace Project No./ Lab I.D.
	MATRIX CODE	DRINKING WATER DW	WATER WT	WASTE WATER WW	PRODUCT P	SOIL/SOLID SL							
1	RW19-MWF						DATE: 6/15/21 TIME: 1035						
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

WO#: 30426051

 30426051

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions
Data Package Required? (Y/N)	Shed	6/15/21	1600	Jace	6/15/21	1600	
Data Validation Required? (Y/N)	Jace	6/15/21	1919	CPDS Jace	6/15/21	2025	Y
If data package is required, attach data package checklist.	CPDS Jace	6/15/21	2330	Jace	6-15-21	2330	Y
							N
							Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lisa Perrin
 SIGNATURE of SAMPLER: 
 DATE Signed (MM/DD/YYYY): 6/15/21

Received on _____ (Y/N)
 Cooler (Y/N)
 Samples Intact (Y/N)

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TRADE POINT

Project # 0-30426051

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label <u>yes</u>
LIMS Login <u>yes</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 12 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 3.3 °C Correction Factor: ±.5 °C Final Temp: 3.8 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:	
				<u>1003801</u>	<u>Apr 6-16-21</u>	<u>AP</u>
Chain of Custody Present:	/			1.		
Chain of Custody Filled Out:	/			2.		
Chain of Custody Relinquished:	/			3.		
Sampler Name & Signature on COC:	/			4.		
Sample Labels match COC:	/			5.		
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	/			6.		
Short Hold Time Analysis (<72hr remaining):		/		7.		
Rush Turn Around Time Requested:		/		8.		
Sufficient Volume:	/			9.		
Correct Containers Used:	/			10.		
-Pace Containers Used:	/					
Containers Intact:	/			11.		
Orthophosphate field filtered			/	12.		
Hex Cr Aqueous sample field filtered			/	13.		
Organic Samples checked for dechlorination:			/	14.		
Filtered volume received for Dissolved tests			/	15.		
All containers have been checked for preservation.	/			16.		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	/			Initial when completed <u>AP</u>	Date/time of preservation	
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):			/	17.		
Trip Blank Present:			/	18.		
Trip Blank Custody Seals Present			/			
Rad Samples Screened <0.5 mrem/hr			/	Initial when completed:	Date:	Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

June 29, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30426983

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
J.Price, ARM Group Inc.
Mr. Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: RWM GW Sampling

Pace Project No.: 30426983

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01*

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30426983

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30426983001	RWR-MWS	Water	06/18/21 09:20	06/21/21 22:30
30426983002	RWR-MWI	Water	06/18/21 09:50	06/21/21 22:30
30426983003	RW18-MWI	Water	06/18/21 10:27	06/21/21 22:30
30426983004	RW18-MWS	Water	06/18/21 11:35	06/21/21 22:30
30426983005	RW25-MWI	Water	06/18/21 12:37	06/21/21 22:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30426983

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30426983001	RWR-MWS	EPA 6010D	DM	2	PASI-M
30426983002	RWR-MWI	EPA 6010D	DM	2	PASI-M
30426983003	RW18-MWI	EPA 6010D	DM	2	PASI-M
30426983004	RW18-MWS	EPA 6010D	DM	2	PASI-M
30426983005	RW25-MWI	EPA 6010D	DM	2	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30426983

Sample: RWR-MWS		Lab ID: 30426983001	Collected: 06/18/21 09:20	Received: 06/21/21 22:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis							
Cadmium, Dissolved	35.1	ug/L	3.0	0.28	1	06/28/21 05:04	06/28/21 14:50	7440-43-9	
Zinc, Dissolved	269000	ug/L	500	78.0	25	06/28/21 05:04	06/28/21 15:18	7440-66-6	P6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30426983

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWR-MWI									
Lab ID: 30426983002									
Collected: 06/18/21 09:50 Received: 06/21/21 22:30 Matrix: Water									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Cadmium, Dissolved	367	ug/L	3.0	0.28	1	06/28/21 05:04	06/28/21 15:00	7440-43-9	
Zinc, Dissolved	1400000	ug/L	1000	156	50	06/28/21 05:04	06/28/21 15:46	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30426983

Sample: RW18-MWI **Lab ID: 30426983003** Collected: 06/18/21 10:27 Received: 06/21/21 22:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.28	1	06/28/21 05:04	06/28/21 15:11	7440-43-9	
Zinc, Dissolved	4380	ug/L	20.0	3.1	1	06/28/21 05:04	06/28/21 15:11	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30426983

Sample: RW18-MWS		Lab ID: 30426983004		Collected: 06/18/21 11:35	Received: 06/21/21 22:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis							
Cadmium, Dissolved	3.0 U	ug/L	3.0	0.28	1	06/28/21 05:04	06/28/21 15:09	7440-43-9	
Zinc, Dissolved	20.1	ug/L	20.0	3.1	1	06/28/21 05:04	06/28/21 15:09	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30426983

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RW25-MWI Lab ID: 30426983005 Collected: 06/18/21 12:37 Received: 06/21/21 22:30 Matrix: Water									
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Cadmium, Dissolved	626	ug/L	3.0	0.28	1	06/28/21 05:04	06/28/21 15:12	7440-43-9	
Zinc, Dissolved	338000	ug/L	500	78.0	25	06/28/21 05:04	06/28/21 15:16	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30426983

QC Batch: 752029 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 30426983001, 30426983002, 30426983003, 30426983004, 30426983005

METHOD BLANK: 4010487 Matrix: Water
Associated Lab Samples: 30426983001, 30426983002, 30426983003, 30426983004, 30426983005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	3.0 U	3.0	0.28	06/28/21 14:47	
Zinc, Dissolved	ug/L	20.0 U	20.0	3.1	06/28/21 14:47	

LABORATORY CONTROL SAMPLE: 4010488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Zinc, Dissolved	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4010489 4010490

Parameter	Units	30426983001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	35.1	1000	1000	1040	1030	100	100	75-125	1	20	
Zinc, Dissolved	ug/L	269000	1000	1000	273000	271000	421	193	75-125	1	20 P6	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30426983

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30426983

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30426983001	RWR-MWS	EPA 3010A	752029	EPA 6010D	752515
30426983002	RWR-MWI	EPA 3010A	752029	EPA 6010D	752515
30426983003	RW18-MWI	EPA 3010A	752029	EPA 6010D	752515
30426983004	RW18-MWS	EPA 3010A	752029	EPA 6010D	752515
30426983005	RW25-MWI	EPA 3010A	752029	EPA 6010D	752515

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone:
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number:
Project Name: RWM GW Sampling
Project Number: 20010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:

REGULATORY AGENCY
NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER
Site Location: **MD**
STATE:

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER WATER WASTE WATER PRECIPITATION SOIL/SOLID OIL WIFE AIR OTHER TISSUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		# OF CONTAINERS	UNPRESERVED H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ O ₃ Other DI Water	Analysis Test ↑		Pace Project No. / Lab I.D.
				DATE	TIME			Y/N	Y/N	
1	RWR-MWS	WT G	G	6/18/21	1400	1		X	X	001
2	RWR-MWT	WT G	G	6/18/21	1400	1		X	X	002
3	RW18-MWT	WT G	G	6/18/21	1400	1		X	X	003
4	RW16-MWS	WT G	G	6/18/21	1400	1		X	X	004
5	RW25-MWT	WT G	G	6/18/21	1400	1		X	X	005

ADDITIONAL COMMENTS
Data Package Required? (Y/N) **Y**
Data Validation Required? (Y/N) **Y**
If data package is required, attach data package checklist.

RELINQUISHED BY / AFFILIATION **DATE** **TIME**
Jenny Bann ARM 6/18/21 1400
Jenny Bann ARM 6/18/21 1400
Jenny Bann ARM 6/18/21 1400

ACCEPTED BY / AFFILIATION **DATE** **TIME**
Jenny Bann ARM 6/18/21 1400
Jenny Bann ARM 6/18/21 1400
Jenny Bann ARM 6/18/21 1400

RECEIVED ON **DATE** **TIME**
6/18/21 1400
6/18/21 1400
6/18/21 1400

COOLER (Y/N) **RECEIVED ON ICE (Y/N)** **SAMPLES INTACT (Y/N)**
Y Y Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: **Jenny Bann**
SIGNATURE of SAMPLER: **Jenny Bann**
DATE Signed (MM/DD/YYYY): **06/18/21**

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Tradeport Atlantic

Project # \$ 30426983

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label	<u>ml</u>
LIMS Login	<u>ml</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 1.5 °C Correction Factor: 0 °C Final Temp: 1.5 °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents:	
	Yes	No	N/A		
Chain of Custody Present:	/			10D3801	mlc 6/21/2021
Chain of Custody Filled Out:	/				
Chain of Custody Relinquished:	/				
Sampler Name & Signature on COC:	/				
Sample Labels match COC:	/				
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):	/				
Rush Turn Around Time Requested:	/				
Sufficient Volume:	/				
Correct Containers Used:	/				
-Pace Containers Used:	/				
Containers Intact:	/				
Orthophosphate field filtered			/		
Hex Cr Aqueous sample field filtered			/		
Organic Samples checked for dechlorination:			/		
Filtered volume received for Dissolved tests			/		
All containers have been checked for preservation.	/				
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	/			Initial when completed <u>mlc</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			/		
Trip Blank Present:			/		
Trip Blank Custody Seals Present			/		
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Internal Transfer Chain of Custody



Samples Pre-Logged into eCOC.

State Of Origin: Yes No

Cert. Needed: Yes No

Owner Received Date: 6/21/2021 Results Requested By: 6/29/2021

Workorder: 30426983 Workorder Name: RWM GW Sampling

Subcontract To

Requested Analysis

Samantha Bayura
Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2,3,4
Greensburg, PA 15601
Phone (724)850-5622

Pace Analytical Minnesota
1700 Elm Street SE
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

WO#: 10566927



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			LAB USE ONLY
						303	304	305	
1	RWR-MWS	PS	6/18/2021 09:20	30426983001	Water				LL1
2	RWR-MWI	PS	6/18/2021 09:50	30426983002	Water				LL7
3	RW18-MWI	PS	6/18/2021 10:27	30426983003	Water				LL3
4	RW18-MWS	PS	6/18/2021 11:35	30426983004	Water				LL4
5	RW25-MWI	PS	6/18/2021 12:37	30426983005	Water				LL5

6010 Dissolved Cd, Zn

Comments

Transfers	Released By	Date/Time	Received By	Date/Time
1			<i>ck</i>	6/21/2021
2				
3				

Cooler Temperature on Receipt 2.7 °C Custody Seal Y or (Y) Received on Ice (Y) or N Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name:
Sample Condition Upon Receipt (SCUR) - MN
 Document No.:
ENV-FRM-MIN4-0150 Rev.02

Document Revised: 14Apr2021
Page 1 of 1
 Pace Analytical Services -
Minneapolis

**Sample Condition
 Upon Receipt**

Client Name:
Pace Pittsburgh

Project #:

WO# : 10566927
PM: JDD **Due Date: 07/01/21**
CLIENT: PASI-PITT

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial

Tracking Number: 9242 2962 8348 See Exceptions
 ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459) OS418-LS T4(0254) T5(0489) 160285052 **Type of Ice:** Wet Blue None Dry Melted

Did Samples Originate in West Virginia? Yes No **Were All Container Temps Taken?** Yes No N/A
 Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** _____ °C **Average Corrected Temp (no temp blank only):** 3.9 °C See Exceptions ENV-FRM-MIN4-0142 1 Container
Correction Factor: +0.1°C **Cooler Temp Corrected w/temp blank:** _____ °C

USDA Regulated Soil: N/A, water sample, Other: _____ **Date/Initials of Person Examining Contents:** CS/24/21
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No **Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?** Yes No
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other _____	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>001-005</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <u>(HNO₃, H₂SO₄, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)</u>	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142 Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# Res. Chlorine <input type="checkbox"/> 0-6 Roll <input type="checkbox"/> 0-6 Strip <input type="checkbox"/> 0-14 Strip <u>221419</u>
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

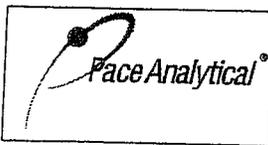
CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ **Field Data Required?** Yes No
 Comments/Resolution: _____

Project Manager Review: _____ **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: CS
 Page 16 of 17



Document Name:
Sample Condition Upon Receipt (SCUR) Exception Form
 Document No.:
ENV-FRM-MIN4-0142 Rev.01

Document Revised: 04Jun2020
Page 1 of 1
 Pace Analytical Services -
Minneapolis

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No															
			If yes, indicate who was contacted/date/time. If no, indicate reason why.															
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No <small>If you answered yes, fill out information to the left.</small>															
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr> <td>4.9</td> <td>9.0</td> <td rowspan="4">3.9</td> </tr> <tr> <td>4.1</td> <td>4.2</td> </tr> <tr> <td>2.9</td> <td>3.0</td> </tr> <tr> <td>3.4</td> <td>3.5</td> </tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp	4.9	9.0	3.9	4.1	4.2	2.9	3.0	3.4	3.5
No Temp Blank																		
Read Temp	Corrected Temp	Average Temp																
4.9	9.0	3.9																
4.1	4.2																	
2.9	3.0																	
3.4	3.5																	

Tracking Number/Temperature

Issue Type:	Container Type	# of Containers
Sample ID		

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after a addition? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

October 25, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30443597

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Leandra Glumac, ARM Group Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30443597

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30443597

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30443597001	RWE-MWI	Water	10/04/21 08:40	10/04/21 21:45
30443597002	RWE-MWS	Water	10/04/21 09:35	10/04/21 21:45
30443597003	RWD-MWI	Water	10/04/21 11:05	10/04/21 21:45
30443597004	RWD-MWS	Water	10/04/21 12:15	10/04/21 21:45
30443597005	RWA-MWS	Water	10/04/21 14:00	10/04/21 21:45
30443597006	RWA-MWI	Water	10/04/21 15:10	10/04/21 21:45

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30443597

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30443597001	RWE-MWI	EPA 6010D	MEH	2	PASI-BVWV
30443597002	RWE-MWS	EPA 6010D	MEH	2	PASI-BVWV
30443597003	RWD-MWI	EPA 6010D	MEH	2	PASI-BVWV
30443597004	RWD-MWS	EPA 6010D	MEH	2	PASI-BVWV
30443597005	RWA-MWS	EPA 6010D	MEH	2	PASI-BVWV
30443597006	RWA-MWI	EPA 6010D	MEH	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30443597

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWE-MWI Lab ID: 30443597001 Collected: 10/04/21 08:40 Received: 10/04/21 21:45 Matrix: Water									
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	497	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 16:07	7440-43-9	
Zinc, Dissolved	68000	ug/L	2000	197	100	10/15/21 14:42	10/22/21 16:43	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443597

Sample: RWE-MWS		Lab ID: 30443597002		Collected: 10/04/21 09:35		Received: 10/04/21 21:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	0.55J	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 16:09	7440-43-9	
Zinc, Dissolved	1630	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 16:09	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443597

Sample: RWD-MWI		Lab ID: 30443597003		Collected: 10/04/21 11:05		Received: 10/04/21 21:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	536	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 16:11	7440-43-9	
Zinc, Dissolved	53400	ug/L	2000	197	100	10/15/21 14:42	10/22/21 16:45	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443597

Sample: RWD-MWS		Lab ID: 30443597004		Collected: 10/04/21 12:15		Received: 10/04/21 21:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 16:17	7440-43-9	
Zinc, Dissolved	10J	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 16:17	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443597

Sample: RWA-MWS		Lab ID: 30443597005	Collected: 10/04/21 14:00	Received: 10/04/21 21:45	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 16:19	7440-43-9	
Zinc, Dissolved	7.6J	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 16:19	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443597

Sample: RWA-MWI		Lab ID: 30443597006		Collected: 10/04/21 15:10	Received: 10/04/21 21:45	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	8510	ug/L	100	18.7	100	10/15/21 14:42	10/22/21 16:47	7440-43-9	
Zinc, Dissolved	328000	ug/L	2000	197	100	10/15/21 14:42	10/22/21 16:47	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling

Pace Project No.: 30443597

QC Batch:	87256	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D MET Dissolved
		Laboratory:	Pace Analytical Services - WestVirginia

Associated Lab Samples: 30443597001, 30443597002, 30443597003, 30443597004, 30443597005, 30443597006

METHOD BLANK: 428535 Matrix: Water
Associated Lab Samples: 30443597001, 30443597002, 30443597003, 30443597004, 30443597005, 30443597006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	10/20/21 15:18	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	10/20/21 15:18	

LABORATORY CONTROL SAMPLE: 428536

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1090	109	80-120	
Zinc, Dissolved	ug/L	2000	2170	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 428550 428551

Parameter	Units	30444377001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	2590	1000	1000	3610	3560	102	97	80-120	1	20	
Zinc, Dissolved	ug/L	110000	2000	2000	80200	78700	-1480	-1550	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30443597

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling

Pace Project No.: 30443597

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30443597001	RWE-MWI	EPA 3010A	87256	EPA 6010D	87712
30443597002	RWE-MWS	EPA 3010A	87256	EPA 6010D	87712
30443597003	RWD-MWI	EPA 3010A	87256	EPA 6010D	87712
30443597004	RWD-MWS	EPA 3010A	87256	EPA 6010D	87712
30443597005	RWA-MWS	EPA 3010A	87256	EPA 6010D	87712
30443597006	RWA-MWI	EPA 3010A	87256	EPA 6010D	87712

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number: _____
Project Name: RWM GW Sampling
Project Number: 2-1010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____
Site Location _____
STATE: MD

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER WT PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H ₂ O ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other DI Water	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB						
1	RWE-MWI		WT G		DATE: 10/4/21	TIME: 840	1			X		001
2	RWE-MUS		WT B		DATE: 10/4/21	TIME: 935	1			X		002
3	RWD-MWI		WT B		DATE: 10/4/21	TIME: 1105	1			X		003
4	RWD-MUS		WT B		DATE: 10/4/21	TIME: 1215	1			X		004
5	RWA-MUS		WT B		DATE: 10/4/21	TIME: 1400	1			X		005
6	RWB-MWI		WT B		DATE: 10/4/21	TIME: 1510	1			X		006
7												
8												
9												
10												
11												
12												

ADDITIONAL COMMENTS
 Data Package Required? (Y/N): Y
 Data Validation Required? (Y/N): Y
 If data package is required, attach data package checklist.

REQUISITED BY / AFFILIATION
 DATE: 10/4/21 TIME: 1540
 DATE: 10/4/21 TIME: 1750
 DATE: 10/4/21 TIME: 1750

ACCEPTED BY / AFFILIATION
 DATE: 10/4/21 TIME: 1540
 DATE: 10/4/21 TIME: 1750
 DATE: 10/4/21 TIME: 1750

Sample Conditions
 Received on Ice (Y/N): Y
 Custody Sealed (Y/N): Y
 Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Lisa Penn
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 10/4/21

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint Atlantic

Project # 30443597

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label	<u>m/c</u>
LIMS Login	<u>m/c</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 11 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 1.4 °C Correction Factor: -.3 °C Final Temp: 1.1 °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and initials of person examining contents	
	Yes	No	N/A		
Chain of Custody Present:	/			1000411	10/5/2021
Chain of Custody Filled Out:	/				
Chain of Custody Relinquished:	/				
Sampler Name & Signature on COC:	/				
Sample Labels match COC:	/				
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):		/			
Rush Turn Around Time Requested:		/			
Sufficient Volume:	/				
Correct Containers Used:	/				
-Pace Containers Used:	/				
Containers Intact:	/				
Orthophosphate field filtered			/		
Hex Cr Aqueous sample field filtered			/		
Organic Samples checked for dechlorination:			/		
Filtered volume received for Dissolved tests			/		
All containers have been checked for preservation.	/				
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	/			Initial when completed <u>m/c</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			/		
Trip Blank Present:			/		
Trip Blank Custody Seals Present			/		
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pittsburgh Lab Sample Condition Upon Receipt

Face Analytical

Client Name: TradePaint Atlanta

30443597
MO# : 7393072

PM: BMJ Due Date: 10/20/21
 CLIENT: PACEPITT

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: DPA

Custody Seal on Cooler/Box Present: yes no Seals Intact: yes no

Thermometer Used 11 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 14 °C Correction Factor: 3 °C Final Temp: 11 °C

Temp should be above freezing to 8°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and initials of person examining contents
-----------	-----	----	-----	---------------	--

Chain of Custody Present: Yes No N/A 10D0411 10/5/2021

Chain of Custody Filled Out: Yes No N/A

Chain of Custody Relinquished: Yes No N/A

Sampler Name & Signature on COC: Yes No N/A

Sample Labels match COC: Yes No N/A

-Includes date/time/ID Matrix: MT

Samples Arrived within Hold Time: Yes No N/A

Short Hold Time Analysis (<72hr remaining): Yes No N/A

Rush Turn Around Time Requested: Yes No N/A

Sufficient Volume: Yes No N/A

Correct Containers Used: Yes No N/A

-Pace Containers Used: Yes No N/A

Containers Intact: Yes No N/A

Orthophosphate field filtered: Yes No N/A

Hex Cr Aqueous sample field filtered: Yes No N/A

Organic Samples checked for dechlorination: Yes No N/A

Filtered volume received for Dissolved tests: Yes No N/A

All containers have been checked for preservation: Yes No N/A

exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix

All containers meet method preservation requirements: Yes No N/A

Lot # of added preservative

Headspace in VOA Vials (>6mm): Yes No N/A

Trip Blank Present: Yes No N/A

Trip Blank Custody Seals Present: Yes No N/A

Rad Samples Screened < 0.5 mrem/hr: Yes No N/A

Initial when completed: MLK Date/time of preservation

Survey Meter SN: _____

Client Notification/ Resolution: _____

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENHR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
 *PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

LIMS73 Lab Sample Condition Upon Receipt (West Virginia)

WO# : 7393072

PM : **BMJ** Due Date: **10/20/21**

CLIENT : **PACPIITT**



Client Name: _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other: **3rd Party**

Tracking #: _____

Custody Seal on Cooler/Box/Containers Present: yes no

Seals intact: yes no

Thermometer Used

Type of Ice: Met Blue None

Cooler Temperature

Observed Temp **23**

1.2 °C

Correction Factor: **1.0** °C

Final Temp: **1.2** °C

Comments:

pH paper Lot# **223419** Date and Initials of person examining contents: **DDW 10-13-21**

	Yes	No	N/A		
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	Sub from P.I.H
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	
-Includes date/time/ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Matrix: WT Lab Labeled by: _____ Checked by: _____
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.	5 Days
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.	
Orthophosphate field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.	
Hex Cr Aqueous sample field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.	
-pH adjusted within 24 hours? (If yes, indicate acid lot #)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.	
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Initial when completed: DDW Date: 10-13-21
Headspace in VOA Vials:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	Tests not preserved:
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.	
Trip Blank Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Initial when completed: DDW Date: 10-13-21

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

October 25, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30443868

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Leandra Glumac, ARM Group Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30443868

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30443868

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30443868001	RWR-MWS	Water	10/05/21 09:25	10/05/21 22:00
30443868002	RWR-MWI	Water	10/05/21 10:35	10/05/21 22:00
30443868003	RWB-MWI	Water	10/05/21 13:30	10/05/21 22:00
30443868004	RWB-MWS	Water	10/05/21 14:25	10/05/21 22:00
30443868005	RW07-MWI	Water	10/05/21 15:15	10/05/21 22:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30443868

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30443868001	RWR-MWS	EPA 6010D	MEH	2	PASI-BVWV
30443868002	RWR-MWI	EPA 6010D	MEH	2	PASI-BVWV
30443868003	RWB-MWI	EPA 6010D	MEH	2	PASI-BVWV
30443868004	RWB-MWS	EPA 6010D	MEH	2	PASI-BVWV
30443868005	RW07-MWI	EPA 6010D	MEH	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443868

Sample: RWR-MWS		Lab ID: 30443868001	Collected: 10/05/21 09:25	Received: 10/05/21 22:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	39.3	ug/L	10.0	1.9	10	10/15/21 14:47	10/20/21 13:53	7440-43-9	
Zinc, Dissolved	298000	ug/L	200	19.7	10	10/15/21 14:47	10/20/21 13:53	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443868

Sample: RWR-MWI		Lab ID: 30443868002	Collected: 10/05/21 10:35	Received: 10/05/21 22:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	753	ug/L	10.0	1.9	10	10/15/21 14:47	10/20/21 13:55	7440-43-9	
Zinc, Dissolved	48000	ug/L	20000	1970	1000	10/15/21 14:47	10/22/21 17:17	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443868

Sample: RWB-MWI		Lab ID: 30443868003	Collected: 10/05/21 13:30	Received: 10/05/21 22:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/15/21 14:47	10/20/21 13:57	7440-43-9	
Zinc, Dissolved	19.1J	ug/L	20.0	2.0	1	10/15/21 14:47	10/20/21 13:57	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30443868

Sample: RWB-MWS		Lab ID: 30443868004	Collected: 10/05/21 14:25	Received: 10/05/21 22:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/15/21 14:47	10/20/21 13:59	7440-43-9	
Zinc, Dissolved	12.4J	ug/L	20.0	2.0	1	10/15/21 14:47	10/20/21 13:59	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30443868

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RW07-MWI									
Lab ID: 30443868005									
Collected: 10/05/21 15:15 Received: 10/05/21 22:00 Matrix: Water									
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	49.1	ug/L	10.0	1.9	10	10/15/21 14:47	10/20/21 14:01	7440-43-9	
Zinc, Dissolved	53900	ug/L	200	19.7	10	10/15/21 14:47	10/20/21 14:01	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30443868

QC Batch: 87266 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Laboratory: Pace Analytical Services - WestVirginia
Associated Lab Samples: 30443868001, 30443868002, 30443868003, 30443868004, 30443868005

METHOD BLANK: 428578 Matrix: Water
Associated Lab Samples: 30443868001, 30443868002, 30443868003, 30443868004, 30443868005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	10/20/21 13:17	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	10/20/21 13:17	

LABORATORY CONTROL SAMPLE: 428579

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1120	112	80-120	
Zinc, Dissolved	ug/L	2000	2240	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 428593 428594

Parameter	Units	30444324001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	1080	1110	108	111	80-120	3	20	
Zinc, Dissolved	ug/L	ND	2000	2000	2240	2300	111	114	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30443868

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30443868

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30443868001	RWR-MWS	EPA 3010A	87266	EPA 6010D	87709
30443868002	RWR-MWI	EPA 3010A	87266	EPA 6010D	87709
30443868003	RWB-MWI	EPA 3010A	87266	EPA 6010D	87709
30443868004	RWB-MWS	EPA 3010A	87266	EPA 6010D	87709
30443868005	RW07-MWI	EPA 3010A	87266	EPA 6010D	87709

REPORT OF LABORATORY ANALYSIS

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WO#: 30443868



REGULATORY AGENCY
30443868

Section A
Required Client Information:
Company: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number: _____
Project Name: RWM GW Sampling
Project Number: Z-1010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____
 Site Location: _____ STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other	Analysis Test ↓ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB						
1		WTG		DATE	TIME						P01
2		WTG		10/5/21	1925						P02
3		WTG			1835						P03
4		WTG			1330						P04
5		WTG			1425						P05
6		WTG			1515						
7											
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS
Data Package Required? (Y/N) Y
Data Validation Required? (Y/N) Y
If data package is required, attach data package checklist.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<u>Stew Kabis</u>	10/5/21	1600	<u>REB</u>	10/5/21	1600	
<u>RDS</u>	10/5/21	1830	<u>RDS</u>	10/5/21	1835	Y
<u>RDS</u>	10/5/21	2000	<u>REB</u>	10/5/21	2100	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Stew Kabis DATE Signed (MM/DD/YY): 10/5/21
 SIGNATURE of SAMPLER: [Signature]

Received on _____ (Y/N) _____
 Custody Sealed (Y/N) _____
 Samples Intact (Y/N) _____

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Trade Point At Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label RM
LIMS Login RM

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.8 °C Correction Factor: -0.1 °C Final Temp: 4.7 °C

Temp should be above freezing to 6°C

WO#: 30443868

Due Date: 10/13/21

PM: SMB

CLIENT: TRADEPOINT

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents: <u>RM 10-6-21</u>	
				<u>600411</u>		
Chain of Custody Present:	/					
Chain of Custody Filled Out:	/					
Chain of Custody Relinquished:	/					
Sampler Name & Signature on COC:	/					
Sample Labels match COC:	/					
-Includes date/time/ID Matrix: <u>WT</u>						
Samples Arrived within Hold Time:	/					
Short Hold Time Analysis (<72hr remaining):		/				
Rush Turn Around Time Requested:	/					
Sufficient Volume:	/					
Correct Containers Used:	/					
-Pace Containers Used:	/					
Containers Intact:	/					
Orthophosphate field filtered			/			
Hex Cr Aqueous sample field filtered			/			
Organic Samples checked for dechlorination:			/			
Filtered volume received for Dissolved tests			/			
All containers have been checked for preservation.	/					
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	/			Initial when completed <u>RM</u>	Date/time of preservation	
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):			/			
Trip Blank Present:			/			
Trip Blank Custody Seals Present			/			
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed:	Date:	Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

W0#: 7393091

INTER LABORATORY WORK ORDER # 30443868
(To be completed by sending lab)

PM: BMJ Due Date: 10/20/21

eaever West Virginia
Industrial Park RD
WV 25813
(800)999-0105

Sending Project No:	30443868
Receiving Project No:	
Check Box for Consolidated Invoice:	<input type="checkbox"/>
Date Prepared:	10/12/21
REQUESTED COMPLETION DATE:	10/20/2021

Sending Region	IR30-Pittsburgh	Sending Project Mgr.	Samantha Bayura
Receiving Region	IR73-WestVirginia	External Client	Tradepoint Atlantic
State of Sample Origin	MD	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight IRWO Lab Need to run? _____ Cert. Needed _____

WORK REQUESTED						
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
6010C Dissolved Cd, Zn	BP3N		HNO3	5	\$22.00	\$110.00
TOTAL						\$110.00

Special Requirements: Report D, QC Limits, MDLs (D) Enviroanalytics (841)

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
Metals	20	\$110.00	\$88.00	\$22.00
* Custom Revenue Allocation		TOTAL	\$110.00	\$22.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: Yes No

DISPOSITION OF FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

WO#: 30443868

WO#: 7393091

PM: BMJ Due Date: 10/20/21
CLIENT: PACEPITT

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Tradepoint Atlantic		Report To: Matt Newman		Attention: Matt Newman	
Address: 1600 Sparrows Point Blvd		Copy To: Stew Kabis		Company Name: Tradepoint Atlantic	
Sparrows Point, MD 21219				Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219	
Email To:		PO Number:		Pace Quote Reference:	
Phone:		Project Name: RWM GW Sampling		Pace Project Manager: Samantha Bayura	
Requested Due Date/TAT: 5 day		Project Number: 21010103		Pace Profile #:	
				Site Location: <input type="checkbox"/> US <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
				STATE: MD	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	COLLECTED	PRESERVATIVES	Requested Analysis Filtered (Y/N)												Pace Project No./ Lab I.D.				
					DATE	TIME	DATE	TIME	# OF CONTAINERS	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Other		DI Water	Analysis Test	Dissolved Cadmium	Dissolved Zinc
1	RWR-mWS	WTG	10/5/21 925	1												XX		001			
2	RWR-mWF	WTG	10/5/21 1035	1												XX		002			
3	RWB-mWF	WTG	10/5/21 1330	1												XX		003			
4	RWB-mWS	WTG	10/5/21 1425	1												XX		004			
5	RW07-mWF	WTG	10/5/21 1515	1												XX		005			
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions
Data Package Required? (Y/N)	[Signature]	10/5/21	1600	[Signature] PACE	10/5/21	1600	
Data Validation Required? (Y/N)	[Signature] PACE	10/5/21	1830	[Signature] PACE	10-5-21	1835	Y
If data package is required, attach data package checklist.	[Signature] PACE	10-5-21	2200	[Signature]	10-5-21	2200	Y N Y

SAMPLER NAME AND SIGNATURE: [Signature]		Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Lisa Pean	DATE Signed (MM/DD/YY): 10/5/21			
SIGNATURE of SAMPLER: [Signature]				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt

Face Analytical

Client Name:

Trade Services H/Project #

Courier: Fed Ex UPS USPS Client Commercial Face Other

Label RCR
LIMS Login RCR

Tracking #: NS/A
Custody Seal on Cooler/Box Present: yes no Seals Intact: yes no

Thermometer Used 13 Type of Ice: Met Blue None
Cooler Temperature Observed Temp 4.8 °C Correction Factor: 1 °C Final Temp: 4.7 °C
Temp should be above freezing to 6°C

Comments: pH paper Lot# 1600911 Date and initials of person examining contents: RCR 10-6-21

Chain of Custody Present:	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	N/A	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>					
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>					
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>					
Sample Labels match COC:	<input checked="" type="checkbox"/>					
-Includes date/time/ID	<input checked="" type="checkbox"/>					Matrix: <u>W/S</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>					6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>					7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>					8.
Sufficient Volume:	<input checked="" type="checkbox"/>					9.
Correct Containers Used:	<input checked="" type="checkbox"/>					10.
-Pace Containers Used:	<input checked="" type="checkbox"/>					
Containers Intact:	<input checked="" type="checkbox"/>					11.
Orthophosphate field filtered	<input checked="" type="checkbox"/>					12.
Hex Cr Aqueous sample field filtered	<input checked="" type="checkbox"/>					13.
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>					14.
Filtered Volume received for Dissolved tests	<input checked="" type="checkbox"/>					15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>					16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix						
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>					Initial when completed <u>RCR</u> Date/time of preservation
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/>					Lot # of added preservative
Tip Blank Present:	<input checked="" type="checkbox"/>					17.
Tip Blank Custody Seals Present:	<input checked="" type="checkbox"/>					18.
Rad Samples Screened < 0.5 mrem/yr	<input checked="" type="checkbox"/>					Initial when completed: Date: Survey Meter SN:

Client Notification/ Resolution: Person Contacted: _____ Date/Time: _____ Contacted By: _____
Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO# : 30443868
WO# : 7393091
 PM: BMJ Due Date: 10/20/21
 CLIENT: PACEPITT Page 18 of 19



LIMS73 Lab Sample Condition Upon Receipt (West Virginia)

W0#: 7393091

PM: BMJ Due Date: 10/20/21
CLIENT: PACEPITT

Client Name:

Courier: Fed Ex UPS USPS Client Commercial Pace Other: *3rd Party*

Tracking #: _____

Custody Seal on Cooler/Box/Containers Present: yes no

Thermometer Used

23

Type of Ice: Met Blue None

Seals intact: yes no

Cooler Temperature

Observed Temp *1.2 °C*

Correction Factor: *1.0 °C* Final Temp: *1.2 °C*

Comments:

pH paper Lot# *223419* Date and initials of person examining contents: *DDW 10-13-21*

	Yes	No	N/A
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Includes date/time/ID		Matrix: <i>WT</i>	Lab Labeled by: _____
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Checked by: _____
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Orthophosphate field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hex Cr Aqueous sample field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
-pH adjusted within 24 hours? (If yes, indicate acid lot #)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous matrix			
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <i>DDW</i> Date: <i>10-13-21</i>
Tests not preserved:	<input type="checkbox"/>	<input type="checkbox"/>	
Headspace in VOA Vials:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Trip Blank Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

November 16, 2021

Mr. Bob Tworkowski
TradePoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30444377

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on October 07, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

(Greensburg, PA) - Revision 1 - This report replaces the October, 29, 2021 report. This project was revised on November, 1, 2021 to report Dissolved Zn on sample 005.

(Greensburg, PA) - Revision 2 - This report replaces the November, 01, 2021 report. This project was revised on November, 16, 2021 to report Dissolved Zn on sample 005.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30444377

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30444377

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30444377001	RW23-MWI	Water	10/06/21 09:05	10/07/21 23:00
30444377002	RW23-MWS	Water	10/06/21 10:10	10/07/21 23:00
30444377003	RW22R-MWS	Water	10/06/21 11:30	10/07/21 23:00
30444377004	RW22R-MWI	Water	10/06/21 12:40	10/07/21 23:00
30444377005	RWP-MWI	Water	10/06/21 14:05	10/07/21 23:00
30444377006	RW06-MWI	Water	10/06/21 15:40	10/07/21 23:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30444377

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30444377001	RW23-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444377002	RW23-MWS	EPA 6010D	MEH	2	PASI-BVWV
30444377003	RW22R-MWS	EPA 6010D	MEH	2	PASI-BVWV
30444377004	RW22R-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444377005	RWP-MWI	EPA 6010D	ACH1, MEH	2	PASI-BVWV
30444377006	RW06-MWI	EPA 6010D	MEH	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444377

Sample: RW23-MWI		Lab ID: 30444377001		Collected: 10/06/21 09:05	Received: 10/07/21 23:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	2590	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:22	7440-43-9	
Zinc, Dissolved	110000	ug/L	2000	197	100	10/15/21 14:42	10/22/21 16:35	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444377

Sample: RW23-MWS		Lab ID: 30444377002		Collected: 10/06/21 10:10		Received: 10/07/21 23:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:37	7440-43-9	
Zinc, Dissolved	6.5J	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 15:37	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444377

Sample: RW22R-MWS		Lab ID: 30444377003		Collected: 10/06/21 11:30		Received: 10/07/21 23:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	117	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:39	7440-43-9	
Zinc, Dissolved	137000	ug/L	2000	197	100	10/15/21 14:42	10/22/21 16:37	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444377

Sample: RW22R-MWI		Lab ID: 30444377004		Collected: 10/06/21 12:40	Received: 10/07/21 23:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	2.5J	ug/L	10.0	1.9	10	10/15/21 14:42	10/20/21 15:41	7440-43-9	
Zinc, Dissolved	9800	ug/L	200	19.7	10	10/15/21 14:42	10/20/21 15:41	7440-66-6	

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444377

Sample: RWP-MWI		Lab ID: 30444377005		Collected: 10/06/21 14:05	Received: 10/07/21 23:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	4370	ug/L	1.0	0.19	1	10/25/21 12:56	10/27/21 15:59	7440-43-9	
Zinc, Dissolved	14300	ug/L	2000	197	100	10/25/21 12:56	10/29/21 17:41	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444377

Sample: RW06-MWI		Lab ID: 30444377006		Collected: 10/06/21 15:40	Received: 10/07/21 23:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	604	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:45	7440-43-9	
Zinc, Dissolved	85500	ug/L	2000	197	100	10/15/21 14:42	10/22/21 16:39	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30444377

QC Batch: 87256 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Laboratory: Pace Analytical Services - WestVirginia
Associated Lab Samples: 30444377001, 30444377002, 30444377003, 30444377004, 30444377006

METHOD BLANK: 428535 Matrix: Water
Associated Lab Samples: 30444377001, 30444377002, 30444377003, 30444377004, 30444377006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	10/20/21 15:18	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	10/20/21 15:18	

LABORATORY CONTROL SAMPLE: 428536

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1090	109	80-120	
Zinc, Dissolved	ug/L	2000	2170	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 428550 428551

Parameter	Units	30444377001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	2590	1000	1000	3610	3560	102	97	80-120	1	20	
Zinc, Dissolved	ug/L	110000	2000	2000	80200	78700	-1480	-1550	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30444377

QC Batch: 88235 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Laboratory: Pace Analytical Services - WestVirginia

Associated Lab Samples: 30444377005

METHOD BLANK: 433900 Matrix: Water
Associated Lab Samples: 30444377005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	2.6	1.0	0.19	10/27/21 15:45	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	10/27/21 15:45	

LABORATORY CONTROL SAMPLE: 433901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1070	107	80-120	
Zinc, Dissolved	ug/L	2000	2130	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 433910 433911

Parameter	Units	30439085001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	2.1	1000	1000	922	984	92	98	80-120	6	20	
Zinc, Dissolved	ug/L	0.0040J mg/L	2000	2000	1800	1930	90	96	80-120	7	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30444377

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30444377

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30444377001	RW23-MWI	EPA 3010A	87256	EPA 6010D	87712
30444377002	RW23-MWS	EPA 3010A	87256	EPA 6010D	87712
30444377003	RW22R-MWS	EPA 3010A	87256	EPA 6010D	87712
30444377004	RW22R-MWI	EPA 3010A	87256	EPA 6010D	87712
30444377005	RWP-MWI	EPA 3010A	88235	EPA 6010D	88573
30444377006	RW06-MWI	EPA 3010A	87256	EPA 6010D	87712

REPORT OF LABORATORY ANALYSIS

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WO#: 30444377



Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone:
Fax:
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number:
Project Name: RWM GW Sampling
Project Number: 210102103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, MD 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:
Site Location: MD
STATE: MD
NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER PRODUCT P SOIL/SOLID SL OIL OL WIFE WP AIR AR OTHER OT TISSUE TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₈ Other DI Water	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)			Pace Project No. / Lab I.D.	
			DATE	TIME					DATE	TIME	DATE		TIME
1	RW23-MWIF	MIG	10/6/21	1905		1		X					
2	RW23-MWIS	MIG		1010		1		X					
3	RW22-R-MWIS	MIG		1130		1		X					
4	RW22-R-MWIF	MIG		1240		1		X					
5	RWP-MWIF	MIG		1465		1		X					
6	RW06-MWIF	MIG		1540		1		X					
7													
8													
9													
10													
11													
12													
ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions			Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Data Package Required? (Y/N)		Shawar	10/6/21	1600	RDS - PACE	10/6/21	1603						
Data Validation Required? (Y/N)		RDS - PACE	10/6/21	1745	RDS - PACE	10/7/21	1900				Y		
If data package is required, attach data package checklist.		RDS - PACE	10/7/21	2300	Brumen	10/7/21	2300				Y	Y	Y

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

Label	<u>M</u>
LIMS Login	<u>[Signature]</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 5.0 °C Correction Factor: 0.1 °C Final Temp: 4.9 °C

Temp should be above freezing to 6°C

pH paper Lot#	Date and Initials of person examining contents:
<u>102011</u>	<u>M 10-5-21</u>

Comments:

	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>W</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>[Signature]</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed: <u>[Signature]</u> Date: <u>10-8</u> Survey Meter SN: _____

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 30444377

Due Date: 10/15/21

PM: SMB

CLIENT: TRADEPOINT

Client

TradePoint

Profile Number

13372

Site

Remm 6w Samples

Notes

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC
1	WT																											
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

Container Codes

Glass	
GJN	1 Gallon Jug with HNO3
AG5U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
GJN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass Na Thiosulfate
BG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved
DG9S	40mL amber VOA vial H2SO4
VG9U	40mL clear VOA vial
VG9T	40mL clear VOA vial Na Thiosulfate
VG9H	40mL clear VOA vial HCl
JGFU	4oz amber wide jar
WGFU	4oz wide jar unpreserved
BG2U	500mL clear glass unpreserved
AG2U	500mL amber glass unpreserved
WGKU	8oz wide jar unpreserved

Plastic / Misc.	
GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic Na
BP2S	500mL plastic H
BP2U	500mL plastic unpreserved
EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag
WT	Water
SL	Solid

WO#: 30444377

PM: SMB Due Date: 10/15/21
CLIENT: TRADEPOINT

W0#: 7392872

PM: BMJ Due Date: 10/19/21
CLIENT: PRCEPITT

INTER LABORATORY WORK ORDER # 30444377

(To be completed by sending lab)

To:
Beaver West Virginia
Industrial Park RD
Beaver, WV 25813
Phone (800)999-0105

Sending Project No:	30444377
Receiving Project No:	
Check Box for Consolidated Invoice:	<input type="checkbox"/>
Date Prepared:	10/11/21
REQUESTED COMPLETION DATE:	10/15/2021

Sending Region	IR30-Pittsburgh	Sending Project Mgr:	Megan J Smetanka
Receiving Region	IR73-WestVirginia	External Client	Tradepoint Atlantic
State of Sample Origin	MD	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Dry Weight IRWO Lab Need to run? Cert. Needed _____

WORK REQUESTED						
Method Description	Container Type	Quantity of Containers	Preservative	Quantity of Samples	Unit Price	Amount
6010C Dissolved Cd, Zn	BP3N		HNO3	6	\$22.00	\$132.00
TOTAL						\$132.00

Special Requirements: Report D, QC Limits, MDLs (D), Enviroanalytics (841)

Receiving Region Department	Acctg. Code	Totals from above		Revenue Allocation	
		Receiving Region (80%)	Client Services Dept. Sending Region (20%)		
Metals	20	\$132.00	\$105.60		\$26.40
* Custom Revenue Allocation		TOTAL	\$132.00		\$26.40

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: Yes No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to incorporate as needed.

5 Days



Pace Greensburg Lab - Sample Container Count

WO#: 7392872

PM: BMJ Due Date: 10/19/21
 CLIENT: PACEPITT

Profile Number 13372

Notes _____

Client TradePoint
 Site Rum Run Samples

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	
1	GA																												
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

Container Codes

Glass			
JN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
G5U	100mL amber glass unpreserved	VG9U	40mL clear VOA vial
G5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosulfate
JN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
G1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
G1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
G1T	1L amber glass Na Thiosulfate	BG2U	500mL clear glass unpreserved
G1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserved
G3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
G3U	250mL amber glass unpreserved		

Plastic / Misc.			
GCUB	1 Gallon Cubitainer	EZI	5g Encore
12GN	1/2 Gallon Cubitainer	VOAK	Kit for Volatile Solid
SP5T	120mL Coliform Na Thiosulfate	I	Wipe/Swab
BP1N	1L plastic HNO3	ZPLC	Ziploc Bag
BP1U	1L plastic unpreserved		
BP3S	250mL plastic H2SO4	WT	Water
BP3N	250mL plastic HNO3	SL	Solid
BP3U	250mL plastic ur		
BP3C	250ml plastic N/		
BP2S	500mL plastic H		
BP2U	500mL plastic ur		

WO#: 30444377
 PM: SMB Due Date: 10/15/21
 CLIENT: TRADEPOINT



LIMS73 Lab Sample Condition Upon Receipt (West Virginia)

MO#: 7392872

PM: BMJ

Due Date: 10/19/20

CLIENT: PACEPITT

Client Name:

Courier: Fed Ex UPS

USPS Client

Commercial

Pace

Other:

3rd Party

Tracking #:

Custody Seal on Cooler/Box/Containers Present: yes no

Seals Intact: yes no

Thermometer Used

Type of Ice: Wet Blue None

Cooler Temperature

Observed Temp

10 °C

Correction Factor: .0 °C

Final Temp: .0 °C

Comments:

pH paper Lot# 223419 Date and Initials of person examining contents: DMW 10-12-21

	Yes	No	N/A
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Includes date/time/ID	Matrix: WTI		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthophosphate field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hex Cr Aqueous sample field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-pH adjusted within 24 hours? (If yes, indicate acid lot #)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous matrix			
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initial when completed	DMW	Date:	10-12-21
Tests not preserved:			
Headspace in VOA Vials:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trip Blank Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Client Notification/ Resolution:

Person Contacted:

Date/Time:

Contacted By:

Comments/ Resolution:

A check in this box indicates that additional information has been stored in reports.

*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

October 25, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30444395

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on October 07, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Leandra Glumac, ARM Group Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30444395

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30444395

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30444395001	RWL-MWI	Water	10/07/21 08:45	10/07/21 23:00
30444395002	RWL-MWS	Water	10/07/21 10:00	10/07/21 23:00
30444395003	RWK-MWI	Water	10/07/21 11:20	10/07/21 23:00
30444395004	RWK-MWS	Water	10/07/21 12:30	10/07/21 23:00
30444395005	RWJ-MWI	Water	10/07/21 13:55	10/07/21 23:00
30444395006	RWJ-MWS	Water	10/07/21 14:50	10/07/21 23:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30444395

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30444395001	RWL-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444395002	RWL-MWS	EPA 6010D	MEH	2	PASI-BVWV
30444395003	RWK-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444395004	RWK-MWS	EPA 6010D	MEH	2	PASI-BVWV
30444395005	RWJ-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444395006	RWJ-MWS	EPA 6010D	MEH	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444395

Sample: RWL-MWI		Lab ID: 30444395001	Collected: 10/07/21 08:45	Received: 10/07/21 23:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1230	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:47	7440-43-9	
Zinc, Dissolved	97000	ug/L	2000	197	100	10/15/21 14:42	10/22/21 16:41	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444395

Sample: RWL-MWS		Lab ID: 30444395002	Collected: 10/07/21 10:00	Received: 10/07/21 23:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	0.37J	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:53	7440-43-9	
Zinc, Dissolved	14900	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 15:53	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444395

Sample: RWK-MWI **Lab ID: 30444395003** Collected: 10/07/21 11:20 Received: 10/07/21 23:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	77.6	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:55	7440-43-9	
Zinc, Dissolved	23700	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 15:55	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444395

Sample: RWK-MWS **Lab ID: 30444395004** Collected: 10/07/21 12:30 Received: 10/07/21 23:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:57	7440-43-9	
Zinc, Dissolved	18500	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 15:57	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444395

Sample: RWJ-MWI **Lab ID: 30444395005** Collected: 10/07/21 13:55 Received: 10/07/21 23:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	49.1	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 15:59	7440-43-9	
Zinc, Dissolved	2840	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 15:59	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444395

Sample: RWJ-MWS		Lab ID: 30444395006		Collected: 10/07/21 14:50	Received: 10/07/21 23:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	0.22J	ug/L	1.0	0.19	1	10/15/21 14:42	10/20/21 16:01	7440-43-9	
Zinc, Dissolved	38.2	ug/L	20.0	2.0	1	10/15/21 14:42	10/20/21 16:01	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30444395

QC Batch: 87256 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Laboratory: Pace Analytical Services - WestVirginia
Associated Lab Samples: 30444395001, 30444395002, 30444395003, 30444395004, 30444395005, 30444395006

METHOD BLANK: 428535 Matrix: Water
Associated Lab Samples: 30444395001, 30444395002, 30444395003, 30444395004, 30444395005, 30444395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	10/20/21 15:18	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	10/20/21 15:18	

LABORATORY CONTROL SAMPLE: 428536

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1090	109	80-120	
Zinc, Dissolved	ug/L	2000	2170	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 428550 428551

Parameter	Units	30444377001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	2590	1000	1000	3610	3560	102	97	80-120	1	20	
Zinc, Dissolved	ug/L	110000	2000	2000	80200	78700	-1480	-1550	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30444395

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30444395

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30444395001	RWL-MWI	EPA 3010A	87256	EPA 6010D	87712
30444395002	RWL-MWS	EPA 3010A	87256	EPA 6010D	87712
30444395003	RWK-MWI	EPA 3010A	87256	EPA 6010D	87712
30444395004	RWK-MWS	EPA 3010A	87256	EPA 6010D	87712
30444395005	RWJ-MWI	EPA 3010A	87256	EPA 6010D	87712
30444395006	RWJ-MWS	EPA 3010A	87256	EPA 6010D	87712

REPORT OF LABORATORY ANALYSIS

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Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label	<u>PM</u>
LIMS Login	<u>UP</u>

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 2.9 °C Correction Factor: 0.1 °C Final Temp: 2.8 °C
Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and initials of person examining contents:	
				<u>105001</u>	<u>PM 10-8-21</u>	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.		
Sample Labels match COC: -Includes date/time/ID Matrix: <u>CUA</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.		
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<u>plus</u>	<input type="checkbox"/>	8.		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.		
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.		
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.		
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>PM</u>	Date/time of preservation	
				Lot # of added preservative		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed: <u>PM</u>	Date: <u>10-8</u>	Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 30444395

PM: SMB Due Date: 10/15/21 CLIENT: TRADEPOINT



Pace Greensburg Lab -Sample Container Count

Client

TradePoint

Profile Number

13372

Site

Rum GU

Notes

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC
1	WT																											
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

Container Codes

Glass	
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass Na Thiosulfate
BG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved
DG9S	40mL amber VOA vial H2SO4
VG9U	40mL clear VOA vial
VG9T	40mL clear VOA vial Na Thiosulfate
VG9H	40mL clear VOA vial HCl
JGFU	4oz amber wide jar
WG1U	1L amber glass H2SO4
BG2U	1L amber glass Na Thiosulfate
AG2U	1L clear glass unpreserved
WG2U	250mL amber glass H2SO4
WG3U	250mL amber glass unpreserved

WO#: 30444395

Due Date: 10/15/21

PM: SMB

CLIENT: TRADEPOINT

Plastic / Misc.	
GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
	stic unpreserved
	plastic H2SO4
	plastic HNO3
	plastic unpreserved
	plastic NAOH
	plastic H2SO4
BP2U	500mL plastic unpreserved
EZ1	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag
WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

Pace Analytical

Client Name: Pacepitt

Project # _____

Label	<u>PM</u>
LIMS Login	<u>WPI</u>

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____
 Custody Seal on Cooler/Box Present: yes no Seals Intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None
 Cooler Temperature Observed Temp 2.9 °C Correction Factor: 0.1 °C Final Temp: 2.8 °C
 Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>1055M1</u>	<u>PM 10-8-21</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Includes date/time/ID					
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Hex Or Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
 *PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 7392878
 PM: BMJ Due Date: 10/19/21
 CLIENT: PACEPITT
 Page 19 of 21



Pace Greensburg Lab -Sample Container Count

Client TradePoint
 Site Rum GU

Profile Number 13372
 Notes _____

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC
1	↑																1											
2																												
3																												
4																												
5																												
6	↓																											
7																												
8																												
9																												
10																												
11																												
12																												

Container Codes

Glass

1N	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
35U	100mL amber glass unpreserved	VG9U	40mL clear VOA vial
35T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosulfate
1N	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
31S	1L amber glass H2SO4	JGFU	4oz amber wide jar
31H	1L amber glass HCl	WGFU	
31T	1L amber glass Na Thiosulfate	BG2U	
31U	1L clear glass unpreserved	AG2U	
33S	250mL amber glass H2SO4	WGKU	
33U	250mL amber glass unpreserved		

Plastic / Misc.

GCUB	1 Gallon Cubitainer	EZ1	5g Encore
12GN	1/2 Gallon Cubitainer	VOAK	Kit for Volatile Solid
SP5T	120mL Coliform Na Thiosulfate	W	Wipe/Swab
BP1N	1L plastic HNO3	ZPLC	Ziploc Bag
	plastic unpreserved		
	plastic H2SO4	WT	Water
	plastic HNO3	SL	Solid
	plastic unpreserved	OL	Non-aqueous liquid
	plastic NaOH	WP	Wipe
	plastic H2SO4		
BP2U	500mL plastic unpreserved		

WO#: 7392878
 PM: BMJ Due Date: 10/19/21
 CLIENT: PACEPITT

LIMS73 Lab Sample Condition Upon Receipt (West Virginia

W0# : 7392878

PM: BMJ
CLIENT: PAGEPITT

Due Date: 10/19/21



Client Name: _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other: 3rd Party

Tracking #: _____
 Custody Seal on Cooler/Box/Containers Present: yes no
 Seals Intact: yes no

Thermometer Used: 23 Type of Ice: Wet Blue None
 Cooler Temperature: _____ Observed Temp: 10 °C Correction Factor: 0 °C Final Temp: 10 °C

Comments: _____
 pH paper Lot# 233419 Date and Initials of person examining contents: BMJ 10-12-21

	Yes	No	N/A
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Includes date/time/ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthophosphate field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hex Cr Aqueous sample field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-pH adjusted within 24 hours? (if yes, indicate acid lot #)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initial when completed: <u>BMJ</u> Date: <u>10-12-21</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tests not preserved:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headspace in VOA Vials:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trip Blank Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initial when completed: <u>BMJ</u> Date: <u>10-12-21</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Client Notification/ Resolution: _____
 Person Contacted: _____ Date/Time: _____ Contacted By: _____
 Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.
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October 25, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30444936

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on October 12, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Leandra Glumac, ARM Group Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling

Pace Project No.: 30444936

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813

Virginia VELAP 460148

West Virginia DEP 060

West Virginia DHHR 00412CM

North Carolina DEQ 466

Kentucky Wastewater Certification KY90039

Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30444936

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30444936001	RWH-MWI	Water	10/12/21 09:55	10/12/21 19:43
30444936002	RWH-MWS	Water	10/12/21 10:45	10/12/21 19:43
30444936003	RWQ-MWI	Water	10/12/21 12:20	10/12/21 19:43
30444936004	RWQ-MWS	Water	10/12/21 13:20	10/12/21 19:43
30444936005	RWS-MWI	Water	10/12/21 14:30	10/12/21 19:43
30444936006	RWS-MWS	Water	10/12/21 15:15	10/12/21 19:43

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling

Pace Project No.: 30444936

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30444936001	RWH-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444936002	RWH-MWS	EPA 6010D	MEH	2	PASI-BVWV
30444936003	RWQ-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444936004	RWQ-MWS	EPA 6010D	MEH	2	PASI-BVWV
30444936005	RWS-MWI	EPA 6010D	MEH	2	PASI-BVWV
30444936006	RWS-MWS	EPA 6010D	MEH	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30444936

Sample: RWH-MWI		Lab ID: 30444936001	Collected: 10/12/21 09:55	Received: 10/12/21 19:43	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	4220	ug/L	10.0	1.9	10	10/15/21 14:47	10/20/21 13:37	7440-43-9	
Zinc, Dissolved	388000	ug/L	200	19.7	10	10/15/21 14:47	10/20/21 13:37	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30444936

Sample: RWH-MWS		Lab ID: 30444936002	Collected: 10/12/21 10:45	Received: 10/12/21 19:43	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	6.8	ug/L	1.0	0.19	1	10/15/21 14:47	10/20/21 13:39	7440-43-9	
Zinc, Dissolved	6670	ug/L	20.0	2.0	1	10/15/21 14:47	10/20/21 13:39	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444936

Sample: RWQ-MWI		Lab ID: 30444936003		Collected: 10/12/21 12:20		Received: 10/12/21 19:43		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	10.6	ug/L	10.0	1.9	10	10/15/21 14:47	10/20/21 13:41	7440-43-9	
Zinc, Dissolved	256000	ug/L	200	19.7	10	10/15/21 14:47	10/20/21 13:41	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444936

Sample: RWQ-MWS		Lab ID: 30444936004	Collected: 10/12/21 13:20	Received: 10/12/21 19:43	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	3.1	ug/L	1.0	0.19	1	10/15/21 14:47	10/20/21 13:43	7440-43-9	
Zinc, Dissolved	166	ug/L	20.0	2.0	1	10/15/21 14:47	10/20/21 13:43	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30444936

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWS-MWI Lab ID: 30444936005 Collected: 10/12/21 14:30 Received: 10/12/21 19:43 Matrix: Water									
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	4.7J	ug/L	10.0	1.9	10	10/15/21 14:47	10/20/21 13:45	7440-43-9	
Zinc, Dissolved	649000	ug/L	20000	1970	1000	10/15/21 14:47	10/22/21 17:09	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30444936

Sample: RWS-MWS		Lab ID: 30444936006		Collected: 10/12/21 15:15	Received: 10/12/21 19:43	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	10.0 U	ug/L	10.0	1.9	10	10/15/21 14:47	10/20/21 13:51	7440-43-9	
Zinc, Dissolved	36700	ug/L	200	19.7	10	10/15/21 14:47	10/20/21 13:51	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling

Pace Project No.: 30444936

QC Batch:	87266	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D MET Dissolved
		Laboratory:	Pace Analytical Services - WestVirginia

Associated Lab Samples: 30444936001, 30444936002, 30444936003, 30444936004, 30444936005, 30444936006

METHOD BLANK: 428578 Matrix: Water
Associated Lab Samples: 30444936001, 30444936002, 30444936003, 30444936004, 30444936005, 30444936006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	10/20/21 13:17	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	10/20/21 13:17	

LABORATORY CONTROL SAMPLE: 428579

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1120	112	80-120	
Zinc, Dissolved	ug/L	2000	2240	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 428593 428594

Parameter	Units	30444324001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	1080	1110	108	111	80-120	3	20	
Zinc, Dissolved	ug/L	ND	2000	2000	2240	2300	111	114	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30444936

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30444936

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30444936001	RWH-MWI	EPA 3010A	87266	EPA 6010D	87709
30444936002	RWH-MWS	EPA 3010A	87266	EPA 6010D	87709
30444936003	RWQ-MWI	EPA 3010A	87266	EPA 6010D	87709
30444936004	RWQ-MWS	EPA 3010A	87266	EPA 6010D	87709
30444936005	RWS-MWI	EPA 3010A	87266	EPA 6010D	87709
30444936006	RWS-MWS	EPA 3010A	87266	EPA 6010D	87709

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:
Company: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number: _____
Project Name: RWM GW Sampling
Project Number: 2101003

Section C
Invoice Information:
Attention: Matt Newman
Company Name: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, MD 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location STATE
MD

ITEM #	Valid Matrix Codes MATRIX CODE	Matrix	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ SO ₄	Other	DI Water	Analysis Test ↑	Dissolved Cadmium	Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.	
					COMPOSITE START	COMPOSITE END/GROUP																
1	RWH-MWI	DRINKING WATER	WTG	WTG	10/12/21	955		1														
2	RWH-MWS	WASTE WATER	WTG	WTG	10/12/21	1045		1														
3	RWR-MWI	WASTE WATER PRODUCT	WTG	WTG	10/12/21	1220		1														
4	RWR-MWS	SOLID	WTG	WTG	10/12/21	1320		1														
5	RWS-MWI	WASTE WATER	WTG	WTG	10/12/21	1430		1														
6	RWS-MWS	WASTE WATER	WTG	WTG	10/12/21	1515		1														

ADDITIONAL COMMENTS	RELINQUISHED BY/AFFILIATION	DATE	TIME	ACCEPTED BY/AFFILIATION	DATE	TIME	Sample Conditions
Data Package Required? (Y/N)	KLONDS	10/12/21	1555	KEVIN PACE	10/12/21	1600	
Data Validation Required? (Y/N)	KLONDS	10/12/21	1800	RDS PACE	10/12/21	1800	
If data package is required, attach data package checklist.	RDS PACE	10/12/21	2030	MOMMS CAMP	10/12/21	2045	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Kevin PACE
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 10/12/21

Received on Ice (Y/N) Cooled Sealed (Y/N) Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month (6% per invoice) not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint

Project # _____

Label	<u>MS1</u>
LIMS Login	<u>MS1</u>

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp .4 °C Correction Factor 1 °C Final Temp: 3 °C

Temp should be above freezing to 6°C

Comments:

	Yes	No	N/A	pH Paper Lot#	Date and Initials of person examining contents:
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>10D0411</u>	<u>MTC 10/12/2021</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Includes date/time/ID		<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Matrix: <u>MS</u>					
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Hex Cr Aqueous sample field filtered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Initial when completed	<u>MTC</u>				
Lot # of added preservative					
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rad Samples Screened < 0.5 mem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Initial when completed:					
Date:					
Survey Meter SN:					

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 7393075

PM: BMJ

Due Date: 10/20/21

CLIENT: PACEPITT

LIMS73 Lab Sample Condition Upon Receipt (West Virginia)



Client Name: _____

W0# : 7393075
 PM: BMJ Due Date: 10/20/21
 CLIENT : PACEPITT

Courier: Fed Ex UPS USPS Client Commercial Pace Other: 3rd Party

Tracking #: _____ Seals Intact: yes no

Custody Seal on Cooler/Box/Containers Present: yes no
 Thermometer Used _____ Type of Ice: Met Blue None
 Cooler Temperature _____ Observed Temp 1.2 °C Correction Factor: 10 °C Final Temp: 1.2 °C

Comments:

pH paper Lot# 203419 Date and Initials of person examining contents: DDW 10-13-21

	Yes	No	N/A
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Relinquished:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Includes date/time/ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Matrix: <u>WT</u>			
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthophosphate field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hex Cr Aqueous sample field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-pH adjusted within 24 hours? (If yes, indicate acid lot #)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous matrix			
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initial when completed	<u>DDW</u>	Date:	<u>10-13-21</u>
Tests not preserved:			
Headspace in VOA Vials:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Trip Blank Custody Seals Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Client Notification/ Resolution: _____
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____
 Contacted By: _____

A check in this box indicates that additional information has been stored in ereports.
 *PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

October 29, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30445209

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on October 13, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30445209

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30445209

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30445209001	RW01-MWI	Water	10/13/21 09:45	10/13/21 22:15
30445209002	RW01-MWS	Water	10/13/21 10:35	10/13/21 22:15
30445209003	RW02-MWI	Water	10/13/21 12:05	10/13/21 22:15
30445209004	RW02-MWS	Water	10/13/21 12:45	10/13/21 22:15
30445209005	RWF-MWI	Water	10/13/21 14:10	10/13/21 22:15
30445209006	RWF-MWS	Water	10/13/21 14:50	10/13/21 22:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30445209

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30445209001	RW01-MWI	EPA 6010D	ACH1	2	PASI-BVWV
30445209002	RW01-MWS	EPA 6010D	ACH1	2	PASI-BVWV
30445209003	RW02-MWI	EPA 6010D	ACH1	2	PASI-BVWV
30445209004	RW02-MWS	EPA 6010D	ACH1	2	PASI-BVWV
30445209005	RWF-MWI	EPA 6010D	ACH1	2	PASI-BVWV
30445209006	RWF-MWS	EPA 6010D	ACH1	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30445209

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RW01-MWI									
Lab ID: 30445209001									
Collected: 10/13/21 09:45 Received: 10/13/21 22:15 Matrix: Water									
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	322	ug/L	10.0	1.9	10	10/26/21 14:18	10/27/21 21:06	7440-43-9	
Zinc, Dissolved	24000	ug/L	200	19.7	10	10/26/21 14:18	10/27/21 21:06	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30445209

Sample: RW01-MWS		Lab ID: 30445209002		Collected: 10/13/21 10:35		Received: 10/13/21 22:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/26/21 14:18	10/27/21 21:08	7440-43-9	
Zinc, Dissolved	5560	ug/L	20.0	2.0	1	10/26/21 14:18	10/27/21 21:08	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30445209

Sample: RW02-MWI		Lab ID: 30445209003		Collected: 10/13/21 12:05	Received: 10/13/21 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/26/21 14:18	10/27/21 21:10	7440-43-9	
Zinc, Dissolved	433	ug/L	20.0	2.0	1	10/26/21 14:18	10/27/21 21:10	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30445209

Sample: RW02-MWS		Lab ID: 30445209004		Collected: 10/13/21 12:45	Received: 10/13/21 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/26/21 14:18	10/27/21 21:12	7440-43-9	
Zinc, Dissolved	3.1J	ug/L	20.0	2.0	1	10/26/21 14:18	10/27/21 21:12	7440-66-6	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30445209

Sample: RWF-MWI		Lab ID: 30445209005	Collected: 10/13/21 14:10	Received: 10/13/21 22:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	2610	ug/L	10.0	1.9	10	10/26/21 14:18	10/27/21 21:14	7440-43-9	
Zinc, Dissolved	82500	ug/L	200	19.7	10	10/26/21 14:18	10/27/21 21:14	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30445209

Sample: RWF-MWS		Lab ID: 30445209006		Collected: 10/13/21 14:50	Received: 10/13/21 22:15	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	3.4	ug/L	1.0	0.19	1	10/26/21 14:18	10/27/21 21:16	7440-43-9	
Zinc, Dissolved	25200	ug/L	20.0	2.0	1	10/26/21 14:18	10/27/21 21:16	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30445209

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling

Pace Project No.: 30445209

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30445209001	RW01-MWI	EPA 3010A	88450	EPA 6010D	88624
30445209002	RW01-MWS	EPA 3010A	88450	EPA 6010D	88624
30445209003	RW02-MWI	EPA 3010A	88450	EPA 6010D	88624
30445209004	RW02-MWS	EPA 3010A	88450	EPA 6010D	88624
30445209005	RWF-MWI	EPA 3010A	88450	EPA 6010D	88624
30445209006	RWF-MWS	EPA 3010A	88450	EPA 6010D	88624

REPORT OF LABORATORY ANALYSIS

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30445209

Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone:
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number:
Project Name: RWM GW Sampling
Project Number: 21010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
Site Location STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives							Analysis Test Y/N	Pace Project No./ Lab I.D.
		COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	DATE	TIME	DATE	TIME	DATE		
1	RW01-MWI			WTG		1									001
2	RW01-MWS			WTG		1									002
3	RW02-MWI			WTG		1									003
4	RW02-MWS			WTG		1									004
5	RWF-MWI			WTG		1									005
6	RWF-MWS			WTG		1									006
7															
8															
9															
10															
11															
12															

ADDITIONAL COMMENTS	REQUISITED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Data Package Required? (Y/N)	[Signature]	10/13/21	1557	[Signature] PACE	10/13/21	1600	
Data Validation Required? (Y/N)	[Signature] PACE	10/13/21	1800	[Signature] PACE	10/13/21	1830	Y
If data package is required, attach data package checklist:	[Signature]	10/13/21	0801	[Signature] MARIANO WANG	10/13/2021	1215	Y N Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: LISABETH
SIGNATURE of SAMPLER: [Signature]
DATE Signed (MM/DD/YYYY): 10/13/21

Received on (Y/N) _____
Cooler (Y/N) _____
Samples Intact (Y/N) _____

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint Atlantic

Project # 30445209

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label	<u>MCC</u>
LIMS Login	<u>MCC</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 11 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 3.1 °C Correction Factor: -.3 °C Final Temp: 2.8 °C

Temp should be above freezing to 6°C

pH paper Lot#	<u>6090411</u>
Date and Initials of person examining contents:	<u>MCC 10/14/2001</u>

Comments:

	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation.	/			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				
All containers meet method preservation requirements.	/			Initial when completed <u>MCC</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			/	17.
Trip Blank Present:			/	18.
Trip Blank Custody Seals Present			/	
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed: Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

November 04, 2021

Mr. Bob Tworkowski
Tradeport Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30445937

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

(Greensburg, PA) - Revision 1 - This report replaces the October, 28, 2021 report. This project was revised on November, 04, 2021 to correct sample ID RW12-MWS per client's request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30445937

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30445937

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30445937001	RW05R-MWI	Water	10/18/21 09:00	10/18/21 22:00
30445937002	RW05-MWS	Water	10/18/21 10:15	10/18/21 22:00
30445937003	RW0-MWI	Water	10/18/21 12:05	10/18/21 22:00
30445937004	RW0-MWS	Water	10/18/21 13:00	10/18/21 22:00
30445937005	RW12-MWS	Water	10/18/21 15:15	10/18/21 22:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30445937

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30445937001	RW05R-MWI	EPA 6010D	ACH1	2	PASI-BVWV
30445937002	RW05-MWS	EPA 6010D	ACH1	2	PASI-BVWV
30445937003	RW0-MWI	EPA 6010D	ACH1	2	PASI-BVWV
30445937004	RW0-MWS	EPA 6010D	ACH1	2	PASI-BVWV
30445937005	RW12-MWS	EPA 6010D	ACH1	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30445937

Sample: RW05R-MWI **Lab ID: 30445937001** Collected: 10/18/21 09:00 Received: 10/18/21 22:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	1470	ug/L	1.0	0.19	1	10/21/21 10:19	10/26/21 13:53	7440-43-9	
Zinc, Dissolved	200 U	ug/L	200	19.7	10	10/21/21 10:19	10/27/21 16:08	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30445937

Sample: RW05-MWS		Lab ID: 30445937002		Collected: 10/18/21 10:15	Received: 10/18/21 22:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/21/21 10:19	10/26/21 13:55	7440-43-9	
Zinc, Dissolved	17.8J	ug/L	20.0	2.0	1	10/21/21 10:19	10/26/21 13:55	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30445937

Sample: RW0-MWI		Lab ID: 30445937003	Collected: 10/18/21 12:05	Received: 10/18/21 22:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	31.4	ug/L	1.0	0.19	1	10/21/21 10:19	10/26/21 13:57	7440-43-9	
Zinc, Dissolved	200 U	ug/L	200	19.7	10	10/21/21 10:19	10/27/21 10:32	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30445937

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RW0-MWS Lab ID: 30445937004 Collected: 10/18/21 13:00 Received: 10/18/21 22:00 Matrix: Water									
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/21/21 10:19	10/26/21 14:03	7440-43-9	
Zinc, Dissolved	694	ug/L	20.0	2.0	1	10/21/21 10:19	10/26/21 14:03	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30445937

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RW12-MWS Lab ID: 30445937005 Collected: 10/18/21 15:15 Received: 10/18/21 22:00 Matrix: Water									
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	1.0 U	ug/L	1.0	0.19	1	10/21/21 10:19	10/26/21 14:05	7440-43-9	
Zinc, Dissolved	4960	ug/L	20.0	2.0	1	10/21/21 10:19	10/26/21 14:05	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30445937

QC Batch:	87836	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010D MET Dissolved
		Laboratory:	Pace Analytical Services - WestVirginia

Associated Lab Samples: 30445937001, 30445937002, 30445937003, 30445937004, 30445937005

METHOD BLANK: 431777 Matrix: Water
Associated Lab Samples: 30445937001, 30445937002, 30445937003, 30445937004, 30445937005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	10/25/21 21:36	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	10/25/21 21:36	

LABORATORY CONTROL SAMPLE: 431778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1040	104	80-120	
Zinc, Dissolved	ug/L	2000	2080	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 431779 431780

Parameter	Units	7393669003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	1010	1030	101	103	80-120	3	20	
Zinc, Dissolved	ug/L	0.0085J mg/L	2000	2000	2010	2070	100	103	80-120	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30445937

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30445937

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30445937001	RW05R-MWI	EPA 3010A	87836	EPA 6010D	87953
30445937002	RW05-MWS	EPA 3010A	87836	EPA 6010D	87953
30445937003	RW0-MWI	EPA 3010A	87836	EPA 6010D	87953
30445937004	RW0-MWS	EPA 3010A	87836	EPA 6010D	87953
30445937005	RW12-MWS	EPA 3010A	87836	EPA 6010D	87953

REPORT OF LABORATORY ANALYSIS

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WO#: 30445937

Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone:
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:
Project Name: RWM GW Sampling
Project Number: Z1010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:
Project Name: RWM GW Sampling
Project Number: Z1010103

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
Site Location MD
STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOLID S OIL SL WIFE WP AIR AR OTHER OT TISSUE TS	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ O ₃ Other DI Water	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No. / Lab ID.
			DATE	TIME							
1		RW05R-MWI	10/18/21	900	WTG		1			Y	001
2		RW05-MWS	10/18/21	1015	WTG		1			Y	202
3		RW0-MWI	10/18/21	1205	WTG		1			Y	003
4		RW10-MWS	10/18/21	1300	WTG		1			Y	004
5		RW12-MW	10/18/21	1515	WTG		1			Y	005
6											
7											
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS
 Data Package Required? (Y/N):
 Data Validation Required? (Y/N):
 If data package is required, attach data package checklist.

RELINQUISHED BY / AFFILIATION DATE TIME
 [Signature] 10/18/21 1545
 [Signature] 10/18/21 1836
 [Signature] 10/18/21 2000

ACCEPTED BY / AERATION DATE TIME
 [Signature] 10/18/21 2150
 [Signature] 10/18/21 1850
 [Signature] 10/18/2021 1600

Sample Conditions
 Received on Ice (Y/N) X
 Cooled Sealed (Y/N) X
 Samples Intact (Y/N) Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Lisa Perum
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed: 10/18/21
 MM/DD/YYYY:

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Tradeport Atlantic Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label MLC
LIMS Login MLC

Tracking #: N/A

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 1.5 °C Correction Factor: -3 °C Final Temp: 1.4 °C
Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents:	
	Yes	No	N/A		
Chain of Custody Present:	/			<u>W000411</u>	<u>MLC 10/19/21</u>
Chain of Custody Filled Out:	/				
Chain of Custody Relinquished:	/				
Sampler Name & Signature on COC:	/				
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	/				
Samples Arrived within Hold Time:	/				
Short Hold Time Analysis (<72hr remaining):		/			
Rush Turn Around Time Requested:		/			
Sufficient Volume:	/				
Correct Containers Used: -Pace Containers Used:	/				
Containers Intact:	/				
Orthophosphate field filtered			/		
Hex Cr Aqueous sample field filtered			/		
Organic Samples checked for dechlorination:			/		
Filtered volume received for Dissolved tests			/		
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	/				
All containers meet method preservation requirements.	/			Initial when completed <u>MLC</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			/		
Trip Blank Present:			/		
Trip Blank Custody Seals Present			/		
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____ Contacted By: _____
Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 30445937

PM: MS1 Due Date: 10/26/21
CLIENT: TRADEPOINT

WO#: 30445937

WO#: 7394064

PM: BMJ Due Date: 10/27/21
CLIENT: PACEPITT

Section A

Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To:
Phone: Fax:
Requested Due Date/TAT: 5 day

Section B

Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number:
Project Name: RWM GW Sampling
Project Number: 21010103

Section C

Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, Md 21219
Pace Quote Reference:
Pace Project Manager: Samantha Bayura
Pace Profile #:

Site Location: MD
STATE: MD

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE (see valid codes to left)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test ↓	Requested Analysis Filtered (Y/N)		Pace Project No./ Lab I.D.		
				DATE	TIME	DATE	TIME			UNPRESERVED	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Other		DI Water	Dissolved Cadmium		Dissolved Zinc	
1	RW05R-MWI	WTG	WTG	10/18/21	9:00			1														
2	RW05-MWS	WTG	WTG		10:15			1														001
3	RW0-MWI	WTG	WTG		12:05			1														002
4	RW0-MWS	WTG	WTG		13:00			1														003
5	RW12-MW	WTG	WTG		15:15			1														004
6																						005
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions
Data Package Required? (Y/N):	Shawna	10/18/21	15:45	Charmaine	10/18/21	21:50	
Data Validation Required? (Y/N):	Charmaine	10/18/21	18:35	RDS	10/18/21	18:50	
If data package is required, attach data package checklist.	RDS / ACC	10/18/21	22:00	Manuel Jimenez	10/18/21	22:00	Y N Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Lisa Perrin
SIGNATURE of SAMPLER: [Signature]
DATE Signed (MM/DD/YY): 10/18/21

Received on Ice (Y/N)
Custody Sealed Cooler (Y/N)
Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Tradeport Atlantic Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: WVA Label MLC
LIMS Login MLC

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no
 Thermometer Used _____ Type of Ice: Wet Blue None
 Cooler Temperature Observed Temp 13 °C Correction Factor: -3 °C Final Temp: 14 °C
 Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>W020411</u>	<u>MLC 10/19/21</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Includes date/time/ID Matrix: <u>W1</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Hex Cr Aqueous sample field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lot # of added preservative	
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Trip Blank Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
 *PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO# : 7394064
 PM: BMJ Due Date: 10/27/21
 CLIENT: PACEPITT

WO# : 30445937
 PM: MS1 Due Date: 10/26/21
 CLIENT: TRADEPOINT



LIMS73 Lab Sample Condition Upon Receipt (West Virgin

Client Name: _____

W0# : 7394064
PM : BMJ Due Date: 10/27/21
CLIENT : PRCEPITT

Courier: Fed Ex UPS USPS Client

Commercial Pace Other: 3rd party

Tracking #: _____

Seals intact: yes no

Custody Seal on Cooler/Box/Containers Present: yes no

Type of Ice: Dry Wet Blue None

Thermometer Used _____

Correction Factor: 0 °C Final Temp: 5 °C

Observed Temp 23

pH paper Lot# 223419 Date and Initials of person examining contents: 10-20-21

Comments:

	Yes	No	N/A
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Includes date/time/ID	Matrix: _____		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthophosphate field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hex Cr Aqueous sample field filtered:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-pH adjusted within 24 hours? (If yes, indicate acid lot #)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
exceptions: VOA, coliform, O&G, LL/Mercury, Non-aqueous matrix	_____		
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initial when completed	<u>Q</u>	Date:	<u>10-20-21</u>
Tests not preserved:	_____		
Headspace in VOA Vials:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trip Blank Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trip Blank Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initial when completed	<u>Q</u>	Date:	<u>10-20-21</u>

Client Notification/ Resolution: _____
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____ Contacted By: _____

A check in this box indicates that additional information has been stored in ereports.
*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

December 15, 2021

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30452488

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on November 29, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30452488

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30452488

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30452488001	RWG-MWI	Water	11/29/21 13:00	11/29/21 21:50
30452488002	RW07-MWS	Water	11/29/21 14:00	11/29/21 21:50
30452488003	RWI-MWS	Water	11/29/21 14:55	11/29/21 21:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling
Pace Project No.: 30452488

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30452488001	RWG-MWI	EPA 6010D	ACH1	2	PASI-BVWV
30452488002	RW07-MWS	EPA 6010D	ACH1	13	PASI-BVWV
30452488003	RWI-MWS	EPA 6010D	ACH1	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30452488

Sample: RWG-MWI		Lab ID: 30452488001	Collected: 11/29/21 13:00	Received: 11/29/21 21:50	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.8	ug/L	1.0	0.19	1	12/10/21 14:47	12/13/21 20:39	7440-43-9	
Zinc, Dissolved	319	ug/L	20.0	2.0	1	12/10/21 14:47	12/13/21 20:39	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30452488

Sample: RW07-MWS **Lab ID: 30452488002** Collected: 11/29/21 14:00 Received: 11/29/21 21:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - WestVirginia									
Barium, Dissolved	81.6	ug/L	5.0	1.0	1	12/08/21 14:30	12/09/21 15:15	7440-39-3	
Cadmium, Dissolved	1.7	ug/L	1.0	0.19	1	12/08/21 14:30	12/09/21 15:15	7440-43-9	
Chromium, Dissolved	9.6	ug/L	5.0	0.58	1	12/08/21 14:30	12/09/21 15:15	7440-47-3	
Copper, Dissolved	5.0 U	ug/L	5.0	2.8	1	12/08/21 14:30	12/09/21 15:15	7440-50-8	
Iron, Dissolved	83.9	ug/L	50.0	7.6	1	12/08/21 14:30	12/09/21 15:15	7439-89-6	
Lead, Dissolved	10.0 U	ug/L	10.0	2.5	1	12/08/21 14:30	12/09/21 15:15	7439-92-1	
Manganese, Dissolved	54.8	ug/L	5.0	0.44	1	12/08/21 14:30	12/09/21 15:15	7439-96-5	
Selenium, Dissolved	17.5J	ug/L	20.0	7.6	1	12/08/21 14:30	12/09/21 15:15	7782-49-2	B
Silver, Dissolved	5.0 U	ug/L	5.0	2.0	1	12/08/21 14:30	12/09/21 15:15	7440-22-4	
Zinc, Dissolved	298	ug/L	20.0	2.0	1	12/08/21 14:30	12/09/21 15:15	7440-66-6	
Calcium, Dissolved	392000	ug/L	500	28.8	1	12/08/21 14:30	12/09/21 15:15	7440-70-2	
Magnesium, Dissolved	82800	ug/L	500	47.5	1	12/08/21 14:30	12/09/21 15:15	7439-95-4	
Potassium, Dissolved	63000	ug/L	500	190	1	12/08/21 14:30	12/09/21 15:15	7440-09-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30452488

Sample: RWI-MWS		Lab ID: 30452488003	Collected: 11/29/21 14:55	Received: 11/29/21 21:50	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	0.76J	ug/L	1.0	0.19	1	12/08/21 14:30	12/09/21 15:34	7440-43-9	
Zinc, Dissolved	2.0J	ug/L	20.0	2.0	1	12/08/21 14:30	12/09/21 15:34	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30452488

QC Batch: 92945 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Laboratory: Pace Analytical Services - WestVirginia

Associated Lab Samples: 30452488002, 30452488003

METHOD BLANK: 461993 Matrix: Water
Associated Lab Samples: 30452488002, 30452488003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium, Dissolved	ug/L	5.0 U	5.0	1.0	12/09/21 15:11	
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	12/09/21 15:11	
Calcium, Dissolved	ug/L	500 U	500	28.8	12/09/21 15:11	
Chromium, Dissolved	ug/L	5.0 U	5.0	0.58	12/09/21 15:11	
Copper, Dissolved	ug/L	5.0 U	5.0	2.8	12/09/21 15:11	
Iron, Dissolved	ug/L	50.0 U	50.0	7.6	12/09/21 15:11	
Lead, Dissolved	ug/L	10.0 U	10.0	2.5	12/09/21 15:11	
Magnesium, Dissolved	ug/L	500 U	500	47.5	12/09/21 15:11	
Manganese, Dissolved	ug/L	5.0 U	5.0	0.44	12/09/21 15:11	
Potassium, Dissolved	ug/L	500 U	500	190	12/09/21 15:11	
Selenium, Dissolved	ug/L	8.9J	20.0	7.6	12/09/21 15:11	
Silver, Dissolved	ug/L	5.0 U	5.0	2.0	12/09/21 15:11	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	12/09/21 15:11	

LABORATORY CONTROL SAMPLE: 461994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium, Dissolved	ug/L	2000	2060	103	80-120	
Cadmium, Dissolved	ug/L	1000	959	96	80-120	
Calcium, Dissolved	ug/L	40000	40700	102	80-120	
Chromium, Dissolved	ug/L	2000	2020	101	80-120	
Copper, Dissolved	ug/L	2000	2030	101	80-120	
Iron, Dissolved	ug/L	2000	2050	103	80-120	
Lead, Dissolved	ug/L	2000	2000	100	80-120	
Magnesium, Dissolved	ug/L	20000	20100	100	80-120	
Manganese, Dissolved	ug/L	2000	2100	105	80-120	
Potassium, Dissolved	ug/L	20000	20400	102	80-120	
Selenium, Dissolved	ug/L	2000	1930	97	80-120	
Silver, Dissolved	ug/L	500	514	103	80-120	
Zinc, Dissolved	ug/L	2000	2030	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 462025 462026

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		30452488002	Spike Conc.	Spike Conc.	MS Result						
Barium, Dissolved	ug/L	81.6	2000	2000	1970	1970	95	95	80-120	0	20
Cadmium, Dissolved	ug/L	1.7	1000	1000	854	854	85	85	80-120	0	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30452488

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 462025		462026		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		30452488002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Calcium, Dissolved	ug/L	392000	40000	40000	425000	425000	83	83	80-120	0	20		
Chromium, Dissolved	ug/L	9.6	2000	2000	1890	1890	94	94	80-120	0	20		
Copper, Dissolved	ug/L	5.0 U	2000	2000	2080	2080	104	104	80-120	0	20		
Iron, Dissolved	ug/L	83.9	2000	2000	1940	1940	93	93	80-120	0	20		
Lead, Dissolved	ug/L	10.0 U	2000	2000	1810	1810	90	90	80-120	0	20		
Magnesium, Dissolved	ug/L	82800	20000	20000	102000	102000	96	96	80-120	0	20		
Manganese, Dissolved	ug/L	54.8	2000	2000	1980	1980	96	96	80-120	0	20		
Potassium, Dissolved	ug/L	63000	20000	20000	86200	86200	116	116	80-120	0	20		
Selenium, Dissolved	ug/L	17.5J	2000	2000	1870	1870	93	93	80-120	0	20		
Silver, Dissolved	ug/L	5.0 U	500	500	534	534	107	107	80-120	0	20		
Zinc, Dissolved	ug/L	298	2000	2000	2090	2090	89	89	80-120	0	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30452488

QC Batch: 93184	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET Dissolved
	Laboratory: Pace Analytical Services - WestVirginia

Associated Lab Samples: 30452488001

METHOD BLANK: 464175 Matrix: Water

Associated Lab Samples: 30452488001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	12/13/21 20:35	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	12/13/21 20:35	

LABORATORY CONTROL SAMPLE: 464176

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1040	104	80-120	
Zinc, Dissolved	ug/L	2000	2050	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 464177 464178

Parameter	Units	30452488001		464177		464178		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Cadmium, Dissolved	ug/L	1.8	1000	1000	993	983	99	98	80-120	1	20
Zinc, Dissolved	ug/L	319	2000	2000	2260	2240	97	96	80-120	1	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling

Pace Project No.: 30452488

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling

Pace Project No.: 30452488

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30452488001	RWG-MWI	EPA 3010A	93184	EPA 6010D	93362
30452488002	RW07-MWS	EPA 3010A	92945	EPA 6010D	93050
30452488003	RWI-MWS	EPA 3010A	92945	EPA 6010D	93050

REPORT OF LABORATORY ANALYSIS

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WO#: 30452488



Section A
Required Client Information:
Company: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
Company Name: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, MD 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

Section C
Invoice Information:
Attention: Matt Newman
Company Name: TradePoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, MD 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location: MD
STATE: MD

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OIL WIPE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other DI Water	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB							
1	RW06-MWI		DATE: 11/29/21	TIME: 1300	WTG		1			Y	001
2	RW07-MWS		DATE: 11/29/21	TIME: 1400	WTG		1		X	Y	002
3	RW08-MWS		DATE: 11/29/21	TIME: 1455	WTG		1		X	Y	003
4											
5											
6											
7											
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS
Data Package Required? (Y/N) Y
Data Validation Required? (Y/N) Y
If data package is required, attach data package checklist.

RELINQUISHED BY / AFFILIATION: [Signature] DATE: 11/29/21 TIME: 1600
ACCEPTED BY / AFFILIATION: [Signature] DATE: 11/29/21 TIME: 1845

RECEIVED ON: 11/29/21
ICE (Y/N): Y
COOLER (Y/N): N
SAMPLES INTACT (Y/N): Y

SAMPLER NAME AND SIGNATURE: [Signature]
PRINT Name of SAMPLER: [Signature]
SIGNATURE of SAMPLER: [Signature]
DATE SIGNED (MM/DD/YY): 11/29/21

*Important Note: By signing this form you are accepting Pace's NET-30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Trade point Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label <u>Rm</u>
LIMS Login <u>Rm</u>

Tracking #: NA

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 12 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.0 °C Correction Factor: -4 °C Final Temp: 3.6 °C
Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents: <u>Rm 11-30-21</u>	
	Yes	No	N/A		
Chain of Custody Present:	/			1.	
Chain of Custody Filled Out:	/			2.	
Chain of Custody Relinquished:	/			3.	
Sampler Name & Signature on COC:	/			4.	
Sample Labels match COC:	/			5.	
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	/			6.	
Short Hold Time Analysis (<72hr remaining):		/		7.	
Rush Turn Around Time Requested:	/			8.	
Sufficient Volume:	/			9.	
Correct Containers Used:	/			10.	
-Pace Containers Used:	/				
Containers Intact:	/			11.	
Orthophosphate field filtered			/	12.	
Hex Cr Aqueous sample field filtered			/	13.	
Organic Samples checked for dechlorination:			/	14.	
Filtered volume received for Dissolved tests			/	15.	
All containers have been checked for preservation.	/			16.	
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	/			Initial when completed <u>Rm</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			/	17.	
Trip Blank Present:			/	18.	
Trip Blank Custody Seals Present			/		
Rad Samples Screened < 0.5 mrem/hr			/	Initial when completed:	Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO#: 30452488

Due Date: 12/07/21

PM: MS1

CLIENT: TRADEPOINT

December 13, 2021

Mr. Bob Tworkowski
TradePoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: RWM GW Sampling
Pace Project No.: 30452747

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on November 30, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - WestVirginia

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RWM GW Sampling
Pace Project No.: 30452747

Pace Analytical Services Beaver

225 Industrial Park Drive, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM

North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: RWM GW Sampling
Pace Project No.: 30452747

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30452747001	RW05R-WMI	Water	11/30/21 08:45	11/30/21 21:45
30452747002	RWP-MWI	Water	11/30/21 09:30	11/30/21 21:45
30452747003	RWO-MWI	Water	11/30/21 11:50	11/30/21 21:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: RWM GW Sampling

Pace Project No.: 30452747

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30452747001	RW05R-WMI	EPA 6010D	ACH1	2	PASI-BVWV
30452747002	RWP-MWI	EPA 6010D	ACH1	2	PASI-BVWV
30452747003	RWO-MWI	EPA 6010D	ACH1	2	PASI-BVWV

PASI-BVWV = Pace Analytical Services - WestVirginia

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30452747

Sample: RW05R-WMI		Lab ID: 30452747001		Collected: 11/30/21 08:45	Received: 11/30/21 21:45	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	16.8	ug/L	1.0	0.19	1	12/08/21 14:30	12/09/21 15:48	7440-43-9	
Zinc, Dissolved	50700	ug/L	200	19.7	10	12/08/21 14:30	12/10/21 18:38	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling

Pace Project No.: 30452747

Sample: RWP-MWI		Lab ID: 30452747002		Collected: 11/30/21 09:30	Received: 11/30/21 21:45	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ICP, Dissolved, 3010A		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia							
Cadmium, Dissolved	1.9	ug/L	1.0	0.19	1	12/08/21 14:30	12/09/21 15:50	7440-43-9	
Zinc, Dissolved	526	ug/L	20.0	2.0	1	12/08/21 14:30	12/09/21 15:50	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RWM GW Sampling
Pace Project No.: 30452747

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: RWO-MWI Lab ID: 30452747003 Collected: 11/30/21 11:50 Received: 11/30/21 21:45 Matrix: Water									
6010D ICP, Dissolved, 3010A									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - WestVirginia									
Cadmium, Dissolved	10.1	ug/L	1.0	0.19	1	12/08/21 14:30	12/09/21 15:52	7440-43-9	
Zinc, Dissolved	1380	ug/L	20.0	2.0	1	12/08/21 14:30	12/09/21 15:52	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RWM GW Sampling
Pace Project No.: 30452747

QC Batch: 92945	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010D MET Dissolved
	Laboratory: Pace Analytical Services - WestVirginia

Associated Lab Samples: 30452747001, 30452747002, 30452747003

METHOD BLANK: 461993 Matrix: Water
Associated Lab Samples: 30452747001, 30452747002, 30452747003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	1.0 U	1.0	0.19	12/09/21 15:11	
Zinc, Dissolved	ug/L	20.0 U	20.0	2.0	12/09/21 15:11	

LABORATORY CONTROL SAMPLE: 461994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	959	96	80-120	
Zinc, Dissolved	ug/L	2000	2030	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 462025 462026

Parameter	Units	30452488002		462026		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Cadmium, Dissolved	ug/L	1.7	1000	1000	854	854	85	85	80-120	0	20
Zinc, Dissolved	ug/L	298	2000	2000	2090	2090	89	89	80-120	0	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: RWM GW Sampling
Pace Project No.: 30452747

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RWM GW Sampling
Pace Project No.: 30452747

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30452747001	RW05R-WMI	EPA 3010A	92945	EPA 6010D	93050
30452747002	RWP-MWI	EPA 3010A	92945	EPA 6010D	93050
30452747003	RWO-MWI	EPA 3010A	92945	EPA 6010D	93050

REPORT OF LABORATORY ANALYSIS

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30452747

Section A
Required Client Information:
Company: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: _____
Phone: _____ Fax: _____
Requested Due Date/TAT: 5 day

Section B
Required Project Information:
Report To: Matt Newman
Copy To: Stew Kabis
PO Number: _____
Project Name: RWM GW Sampling
Project Number: 2010103

Section C
Invoice Information:
Attention: Matt Newman
Company Name: Tradepoint Atlantic
Address: 1600 Sparrows Point Blvd Sparrows Point, MD 21219
Pace Quote Reference: _____
Pace Project Manager: Samantha Bayura
Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____
Site Location: _____
STATE: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER WT PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see yield codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Other DI Water	Analysis Test ↑ Dissolved Cadmium Dissolved Zinc	Requested Analysis: Filtered (Y/N)		Pace Project No./ Lab I.D.
					DATE	TIME					DATE	TIME	
1		RW05R-MWI	WTG		11/30/21	8:45		1					001
2		RWP-MWI	WTG		11/30/21	9:30		1					002
3		RWO-MWI	WTG		11/30/21	1:50		1					003
4													
5													
6													
7													
8													
9													
10													
11													
12													

ADDITIONAL COMMENTS

Data Package Required? (Y/N) Y Date: 11/30/21 Time: 16:15 Relinquished By/Affiliation: Jason Chandler
 Data Validation Required? (Y/N) Y Date: 11/30/21 Time: 16:15 Relinquished By/Affiliation: RDS Pace
 If data package is required, attach data package checklist. Date: 11/30/21 Time: 2:45 Relinquished By/Affiliation: M. Bayura

RECEIVED ON Ice (Y/N) Y **CUSTODY SEALED** Cooler (Y/N) Y **SAMPLE CONDITIONS**

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Lisa Parn
 SIGNATURE of SAMPLER: *[Signature]* DATE Signed (MM/DD/YY): 11/30/21

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: TradePoint Atlantic

Project # #30452747#

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: N/A

Label	<u>MCC</u>
LIMS Login	<u>MCC</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used 13 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 2.1 °C Correction Factor: -1 °C Final Temp: 2.0 °C
Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents
	Yes	No	N/A	
				<u>10D3801</u>
				<u>MCC 12/11/2011</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>MCC</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Initial when completed: Date: Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

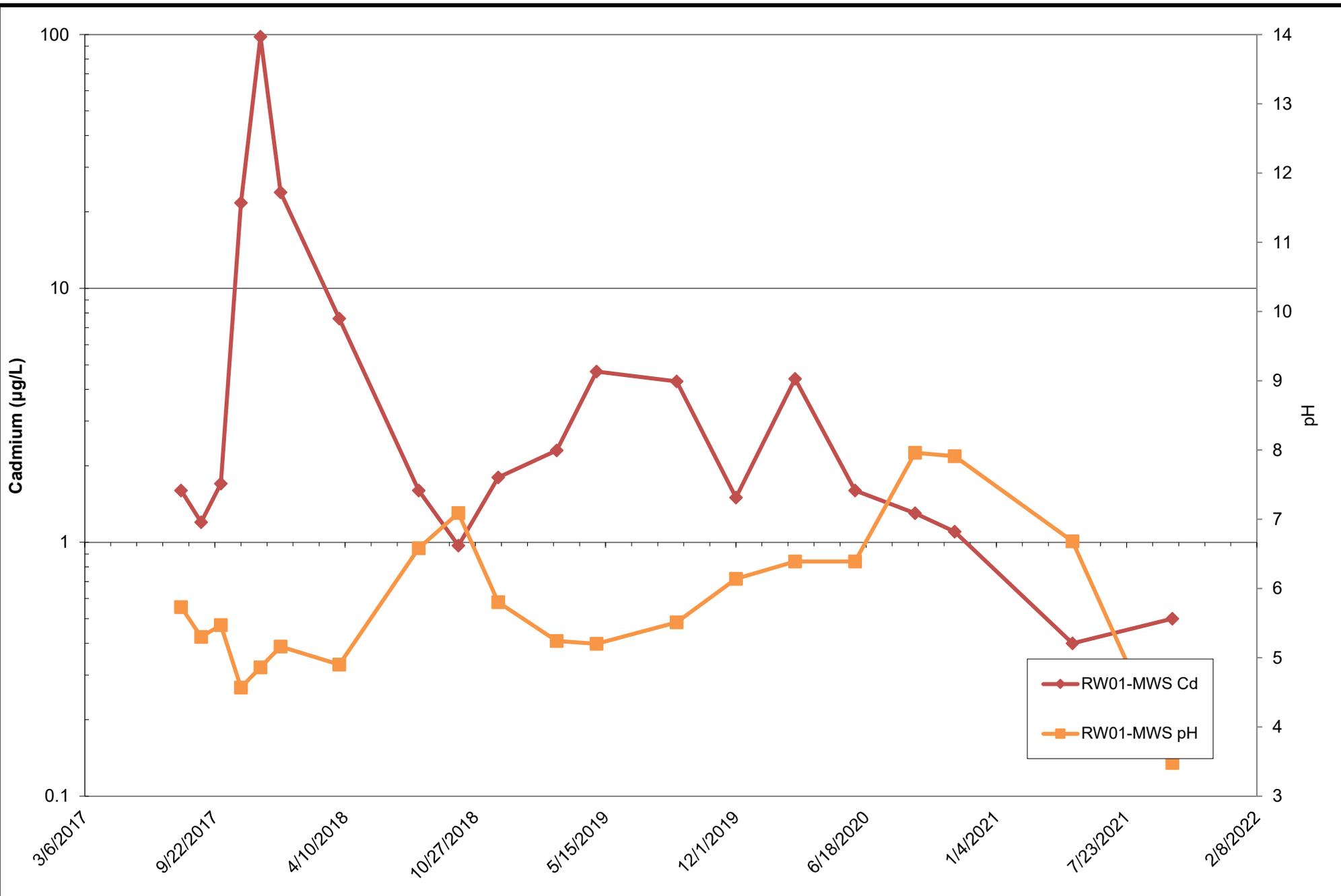
Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

APPENDIX B



ARM Group LLC
Engineers and Scientists

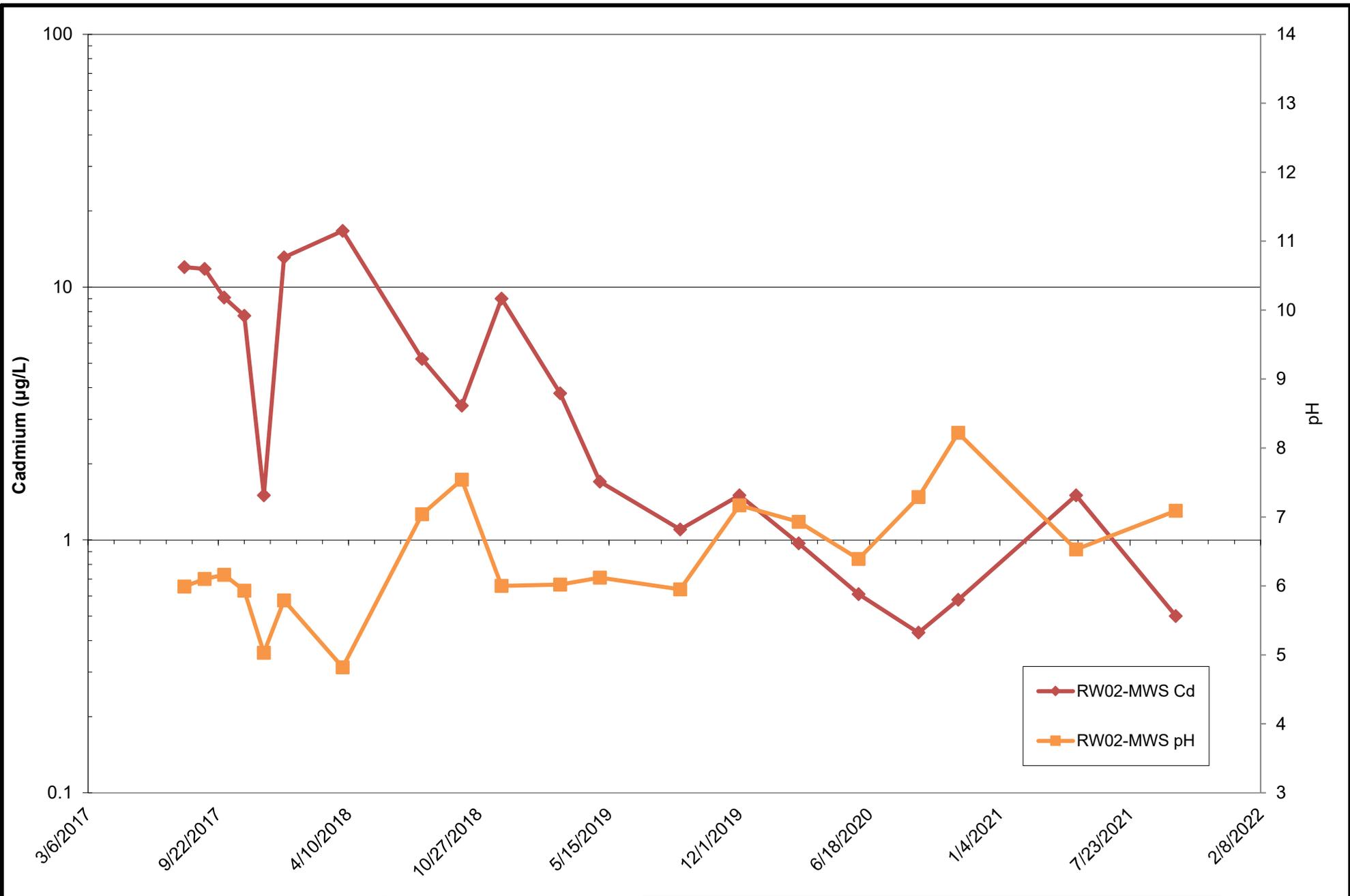
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW01-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



ARM Group LLC
Engineers and Scientists

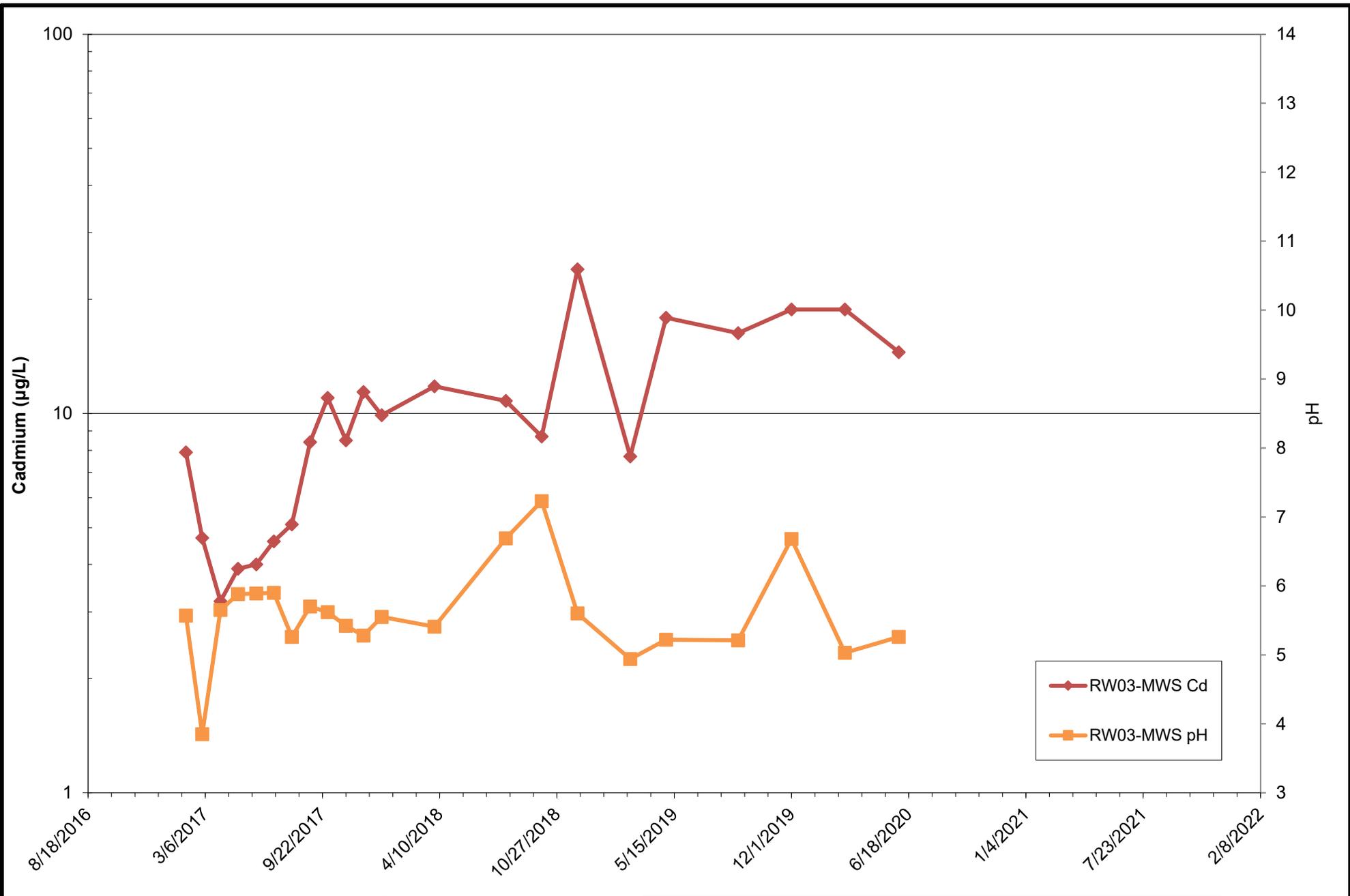
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW02-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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Engineers and Scientists

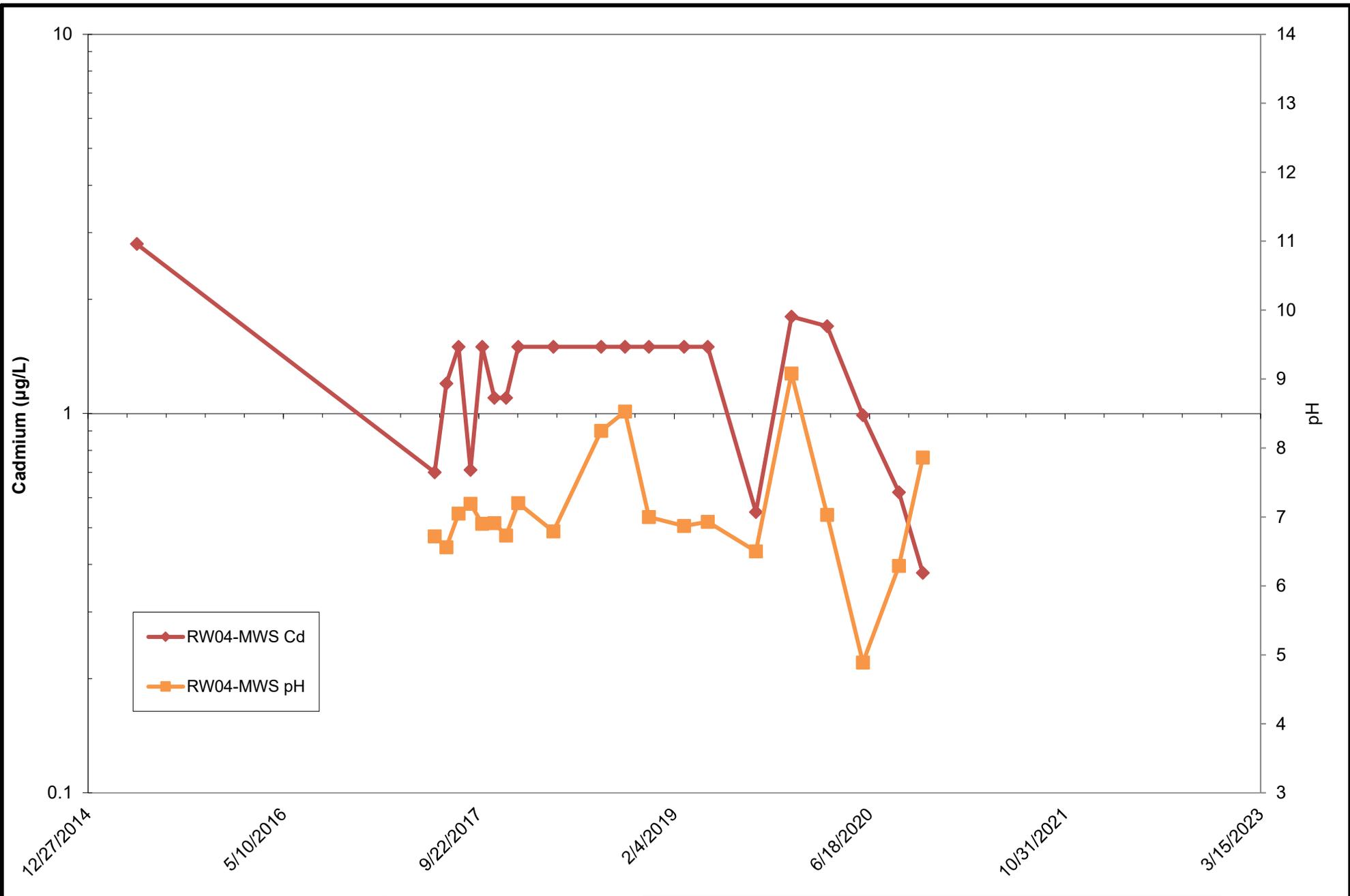
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW03-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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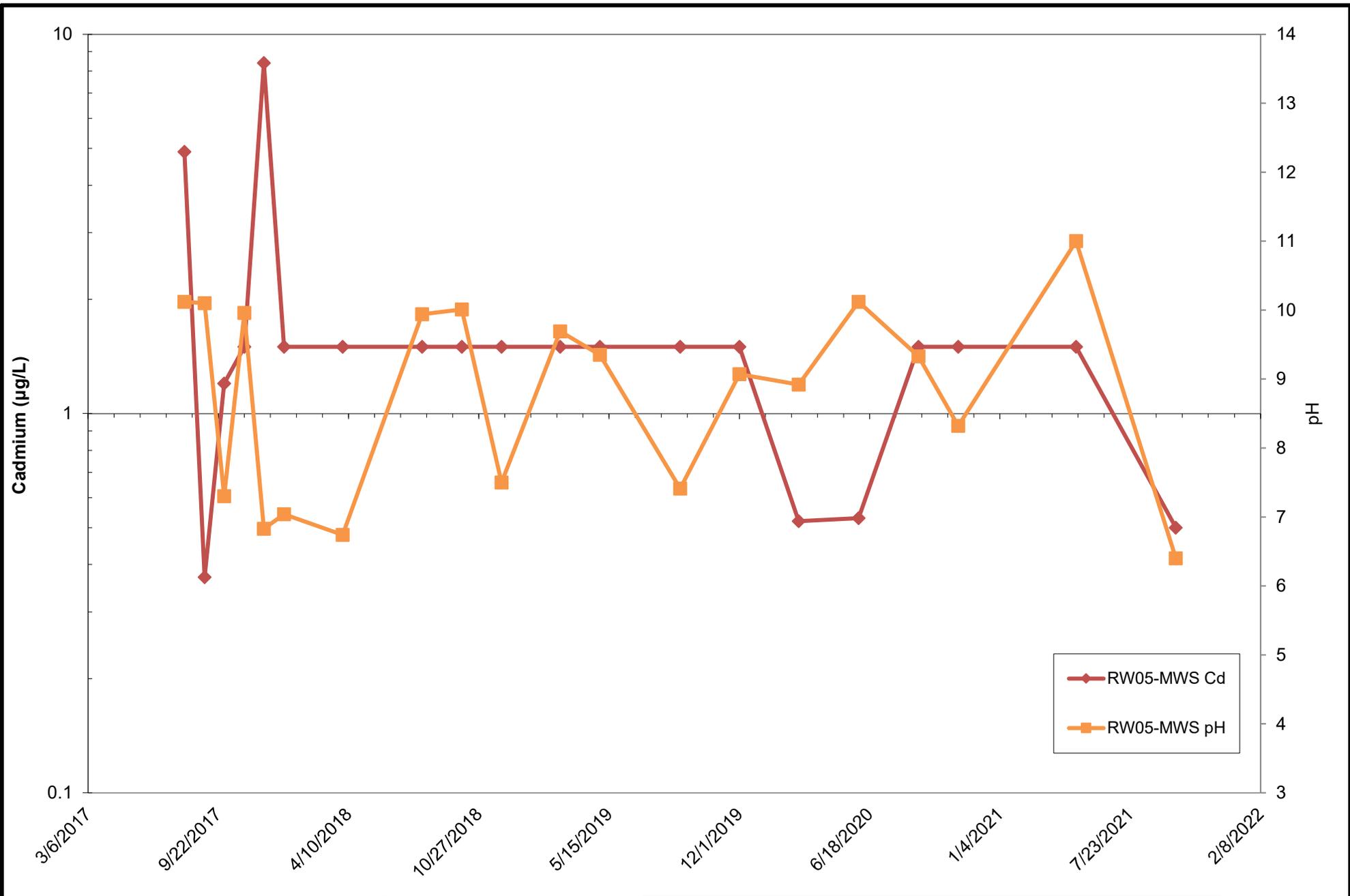
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW04-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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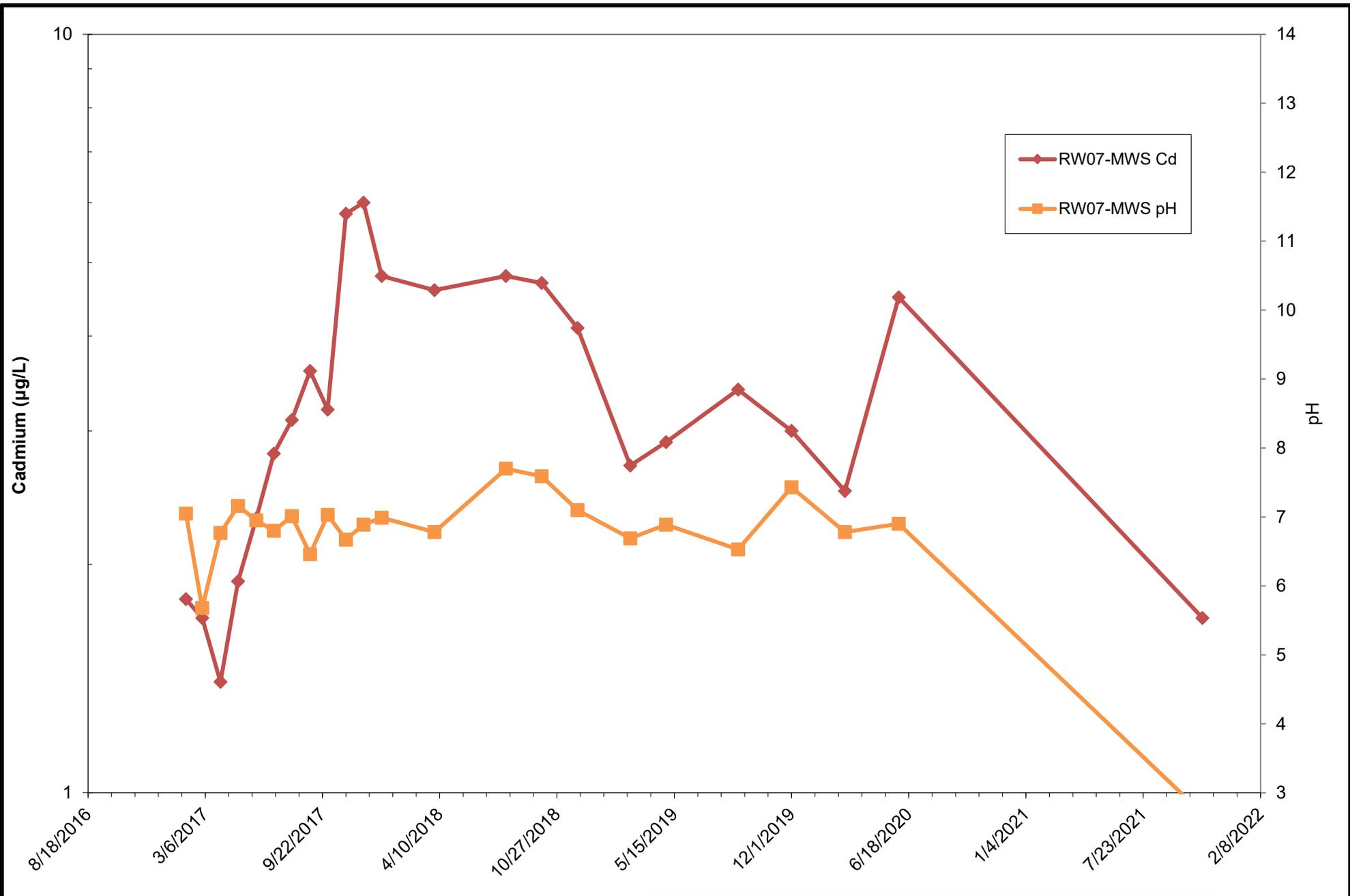
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW05-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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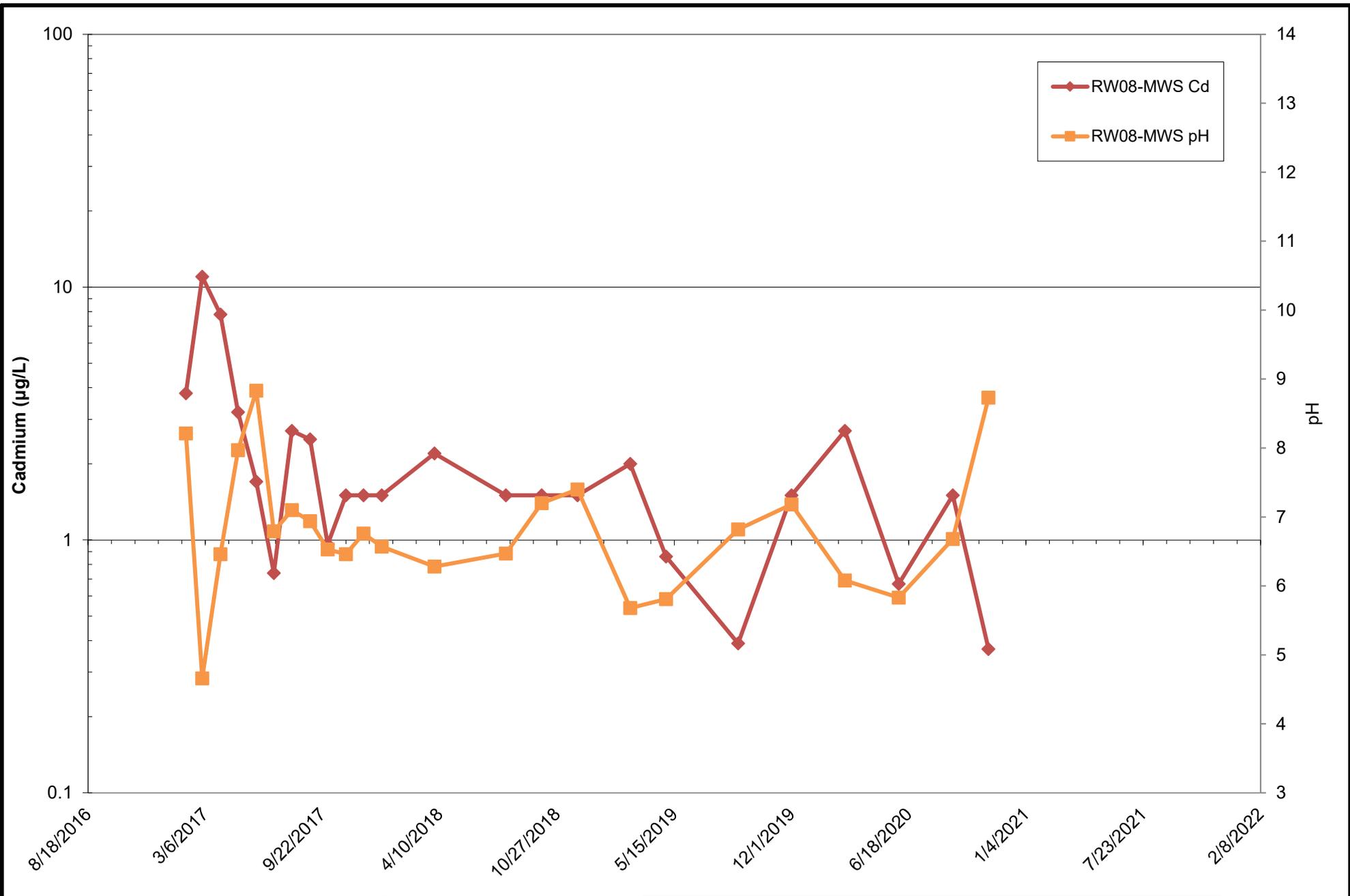
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW07-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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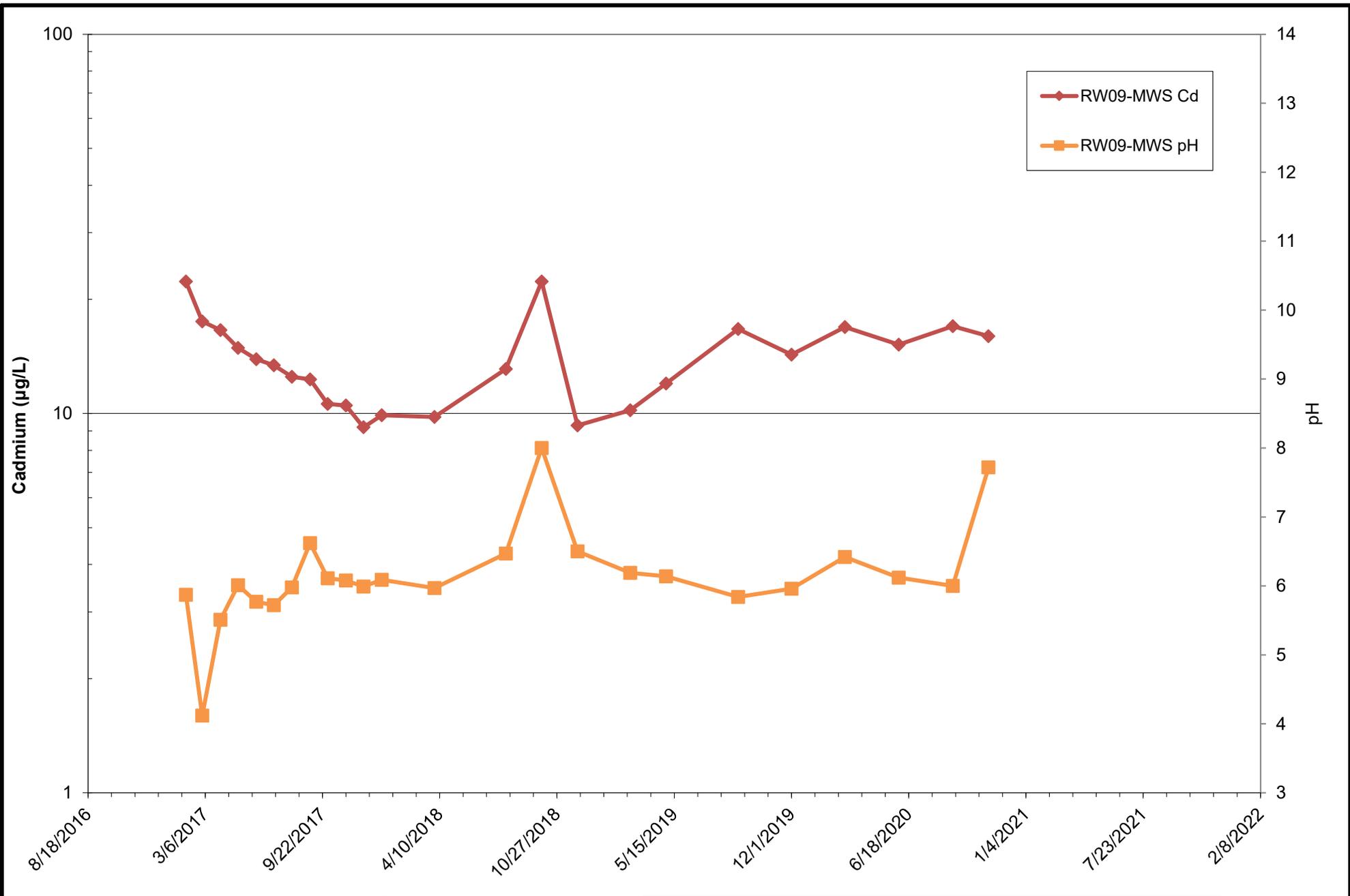
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW08-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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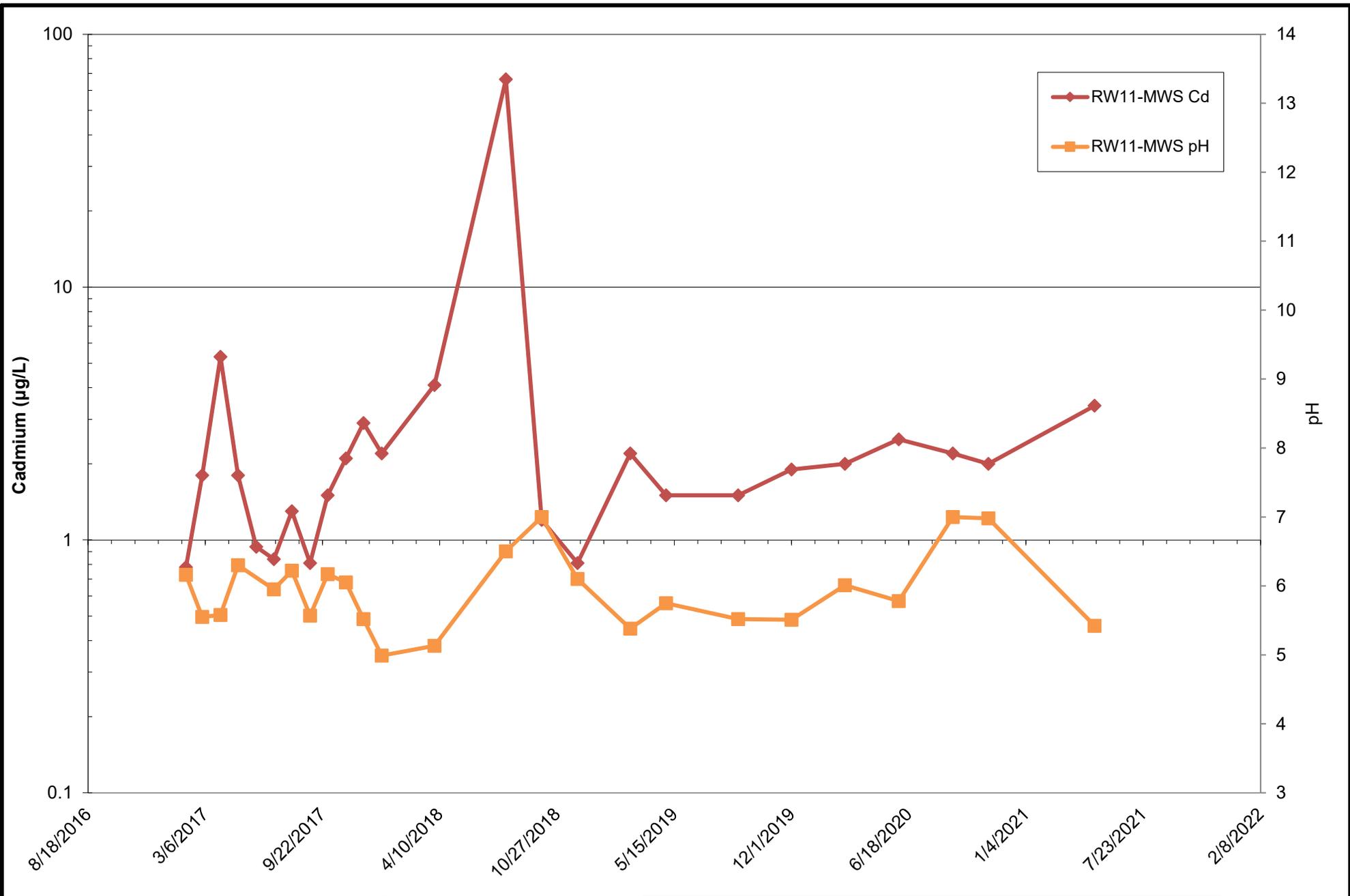
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW09-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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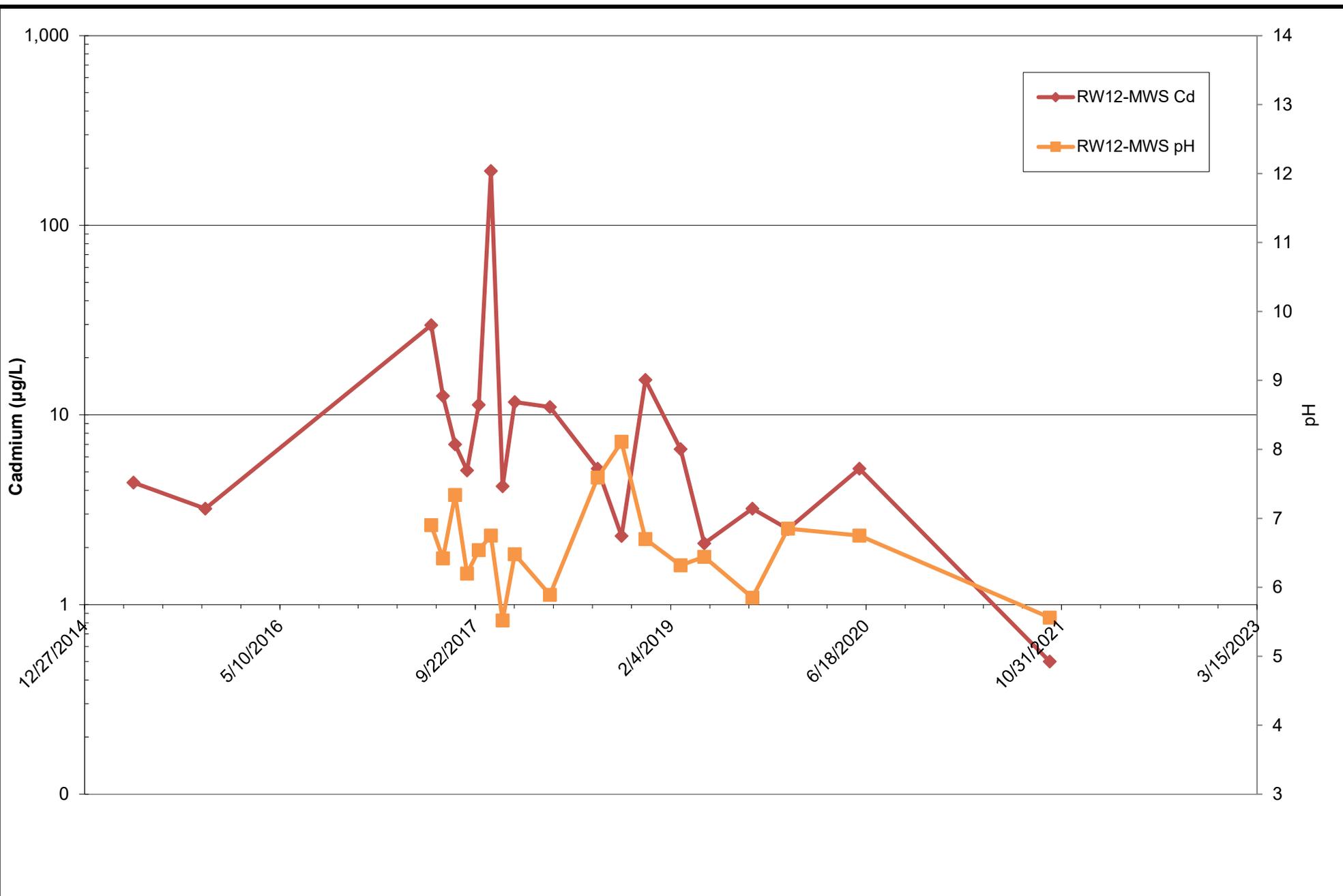
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW11-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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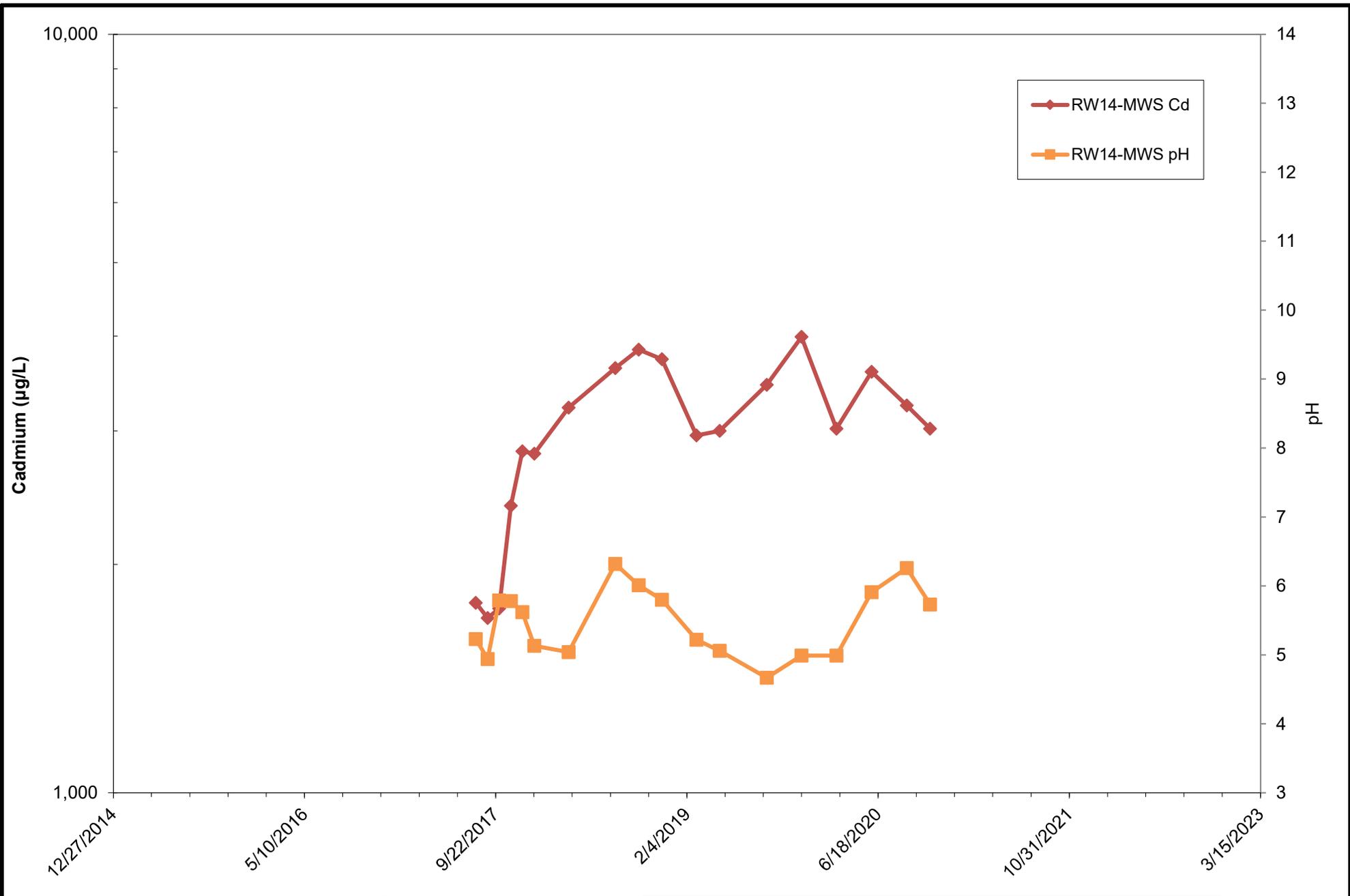
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW12-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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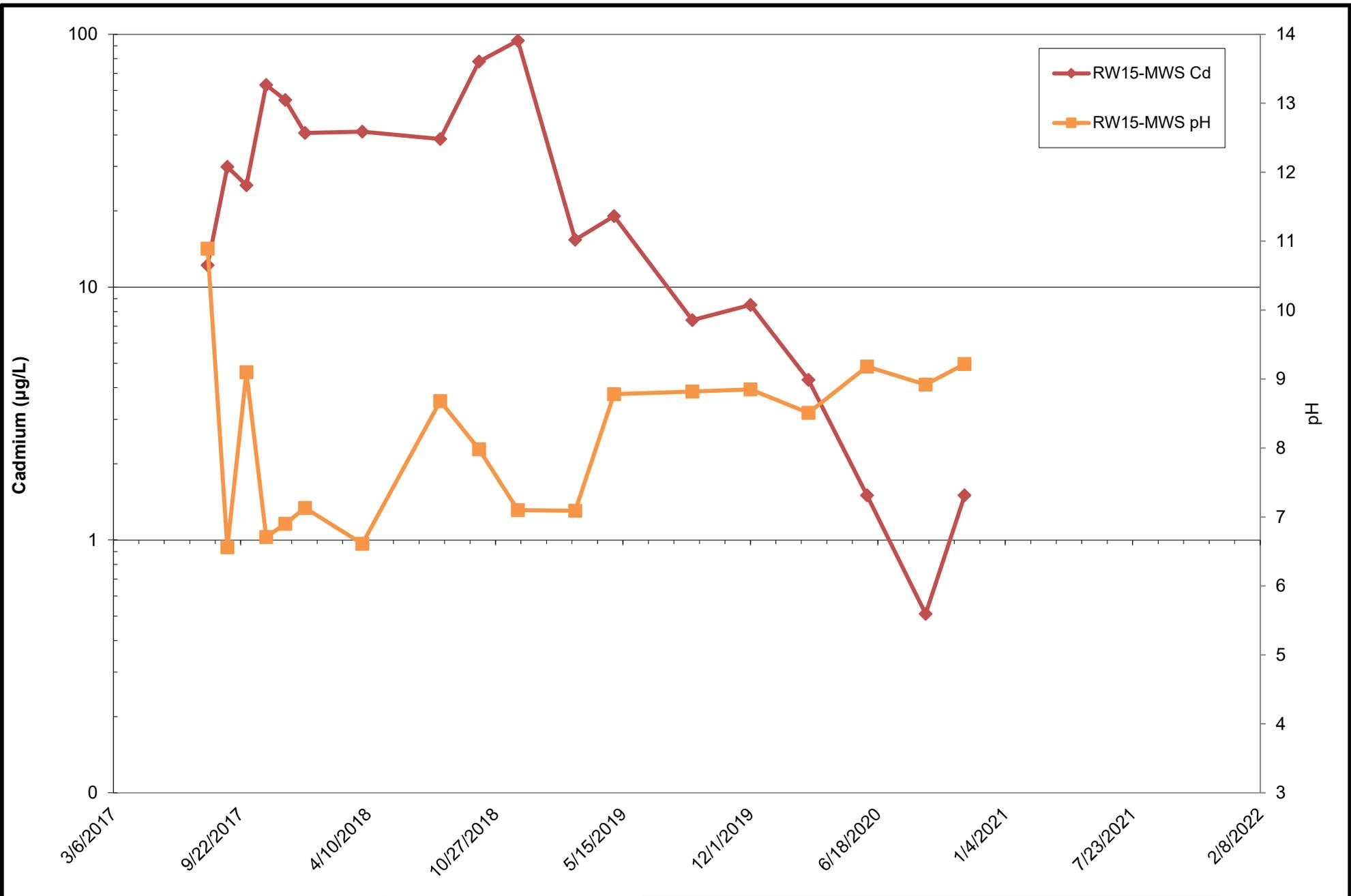
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW14-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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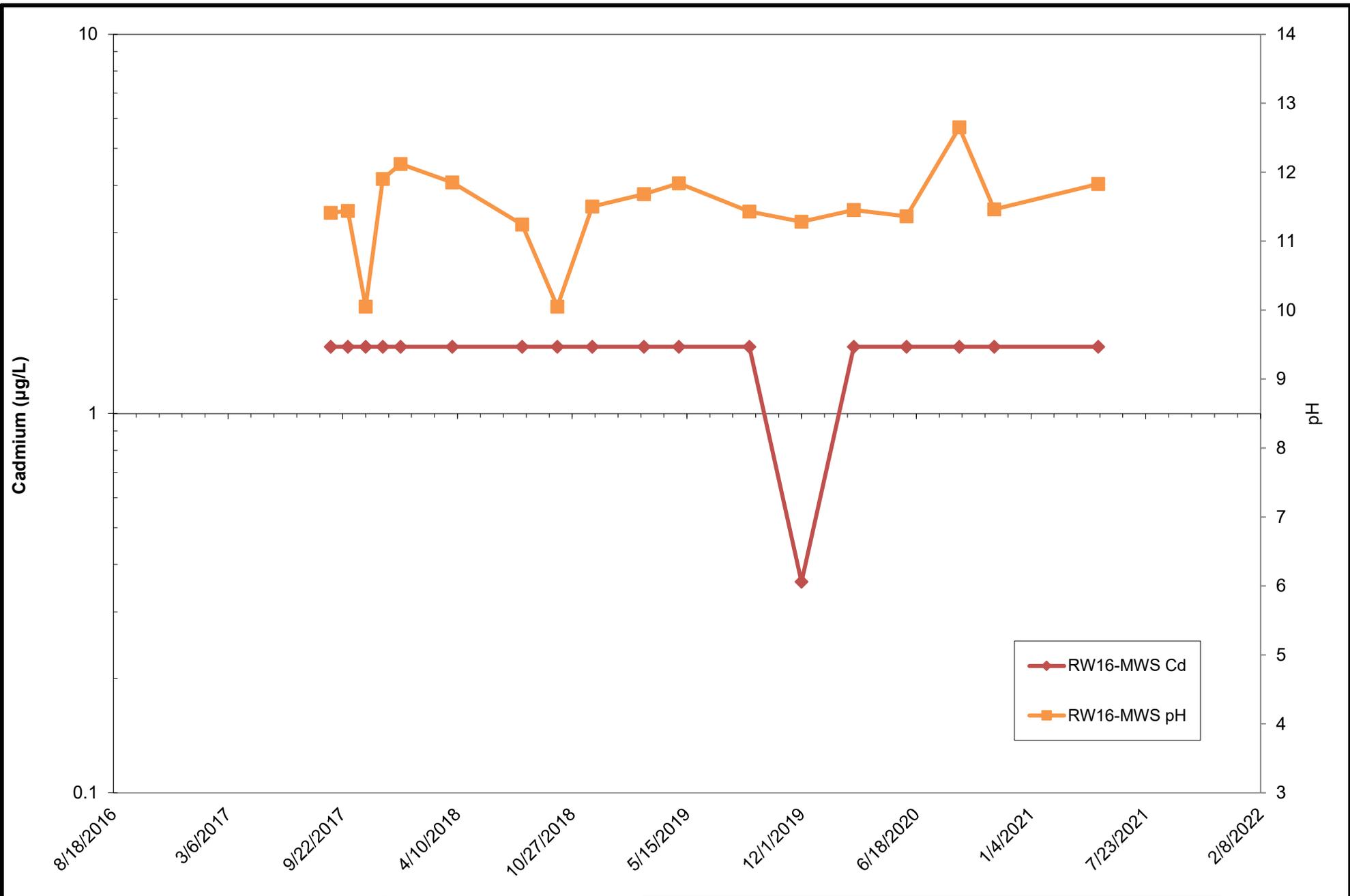
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW15-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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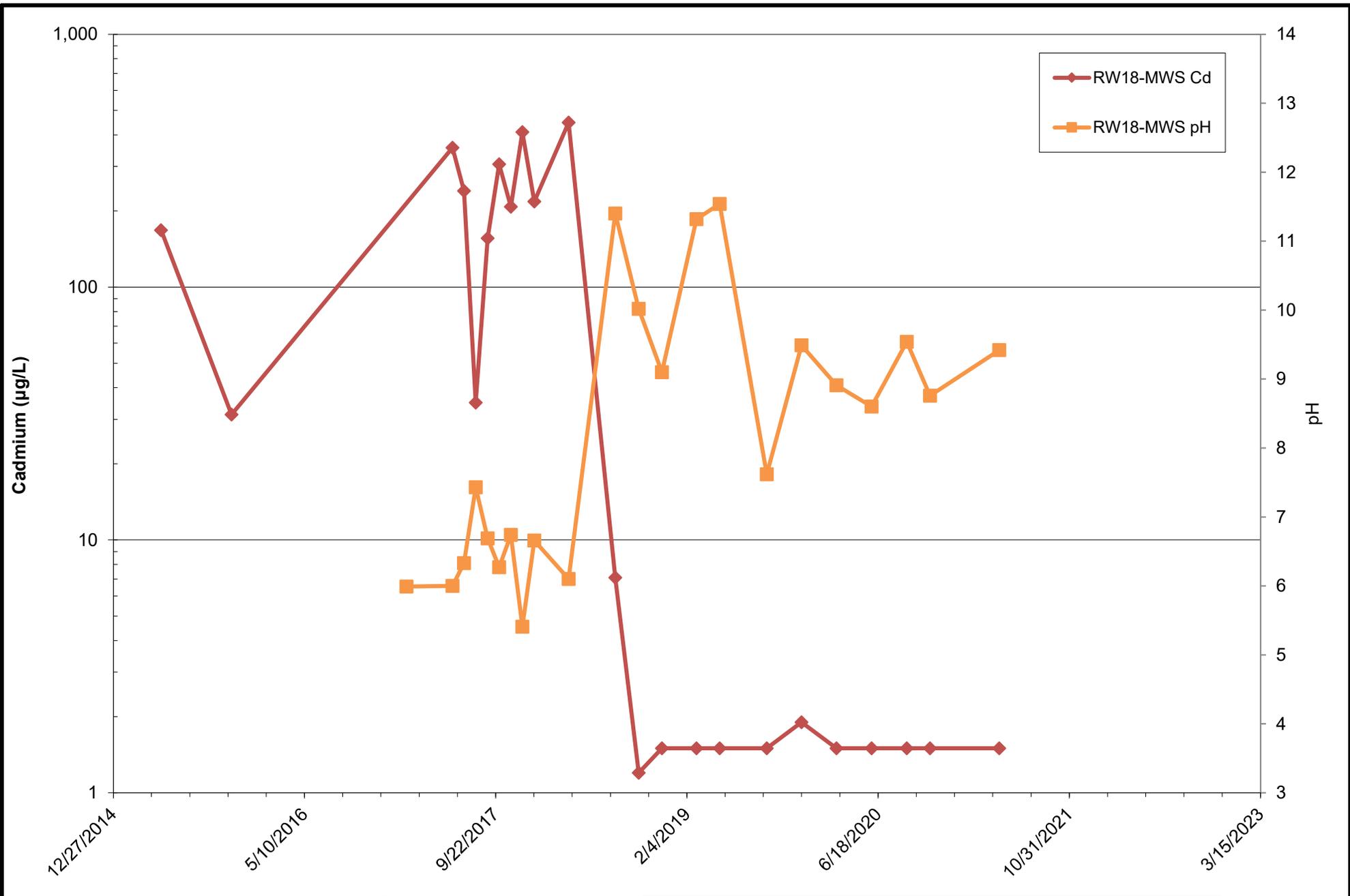
Rod and Wire Mill
Tradepoint Atlantic

Sparrows Point, Maryland

**RW16-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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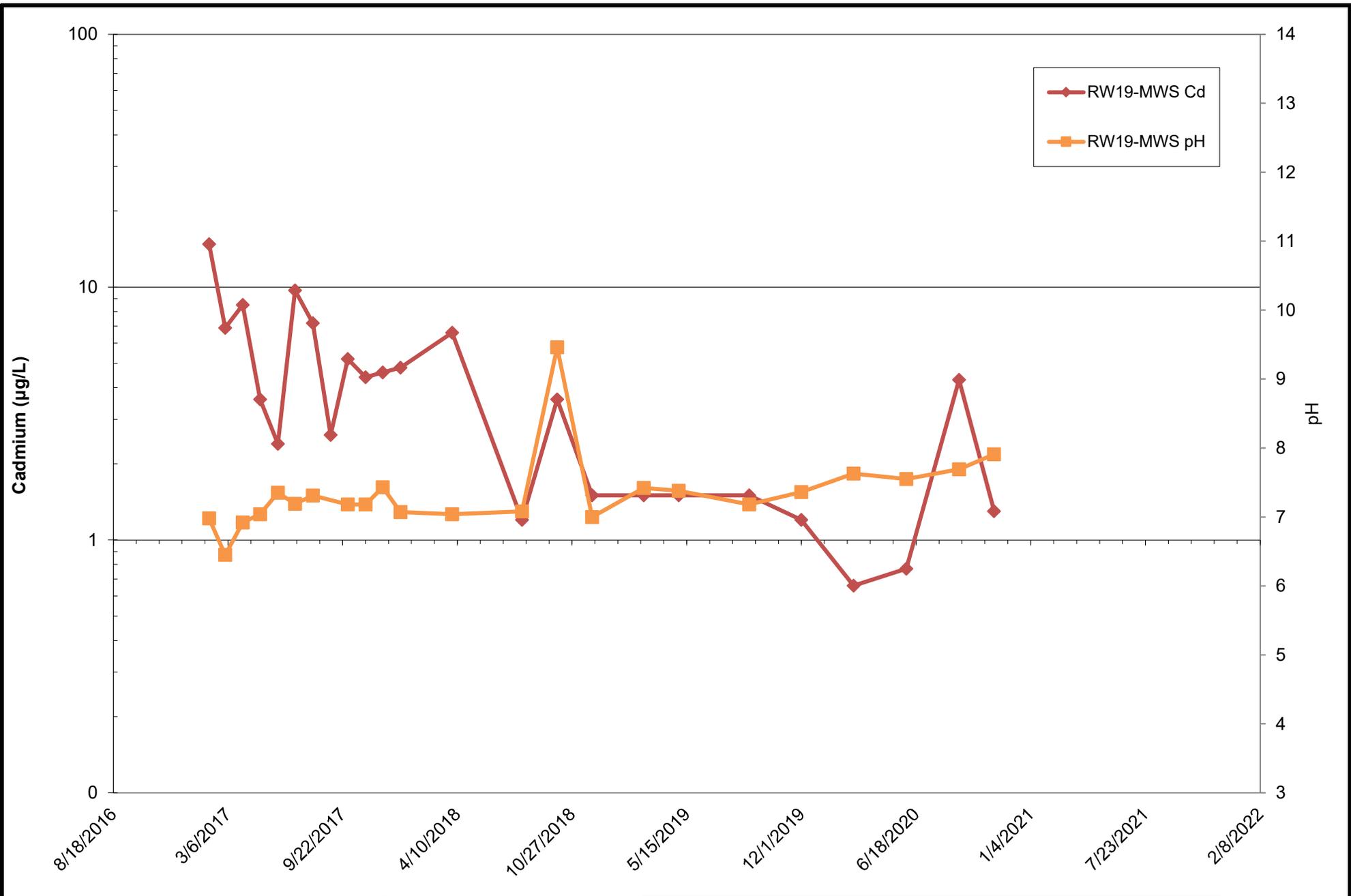
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW18-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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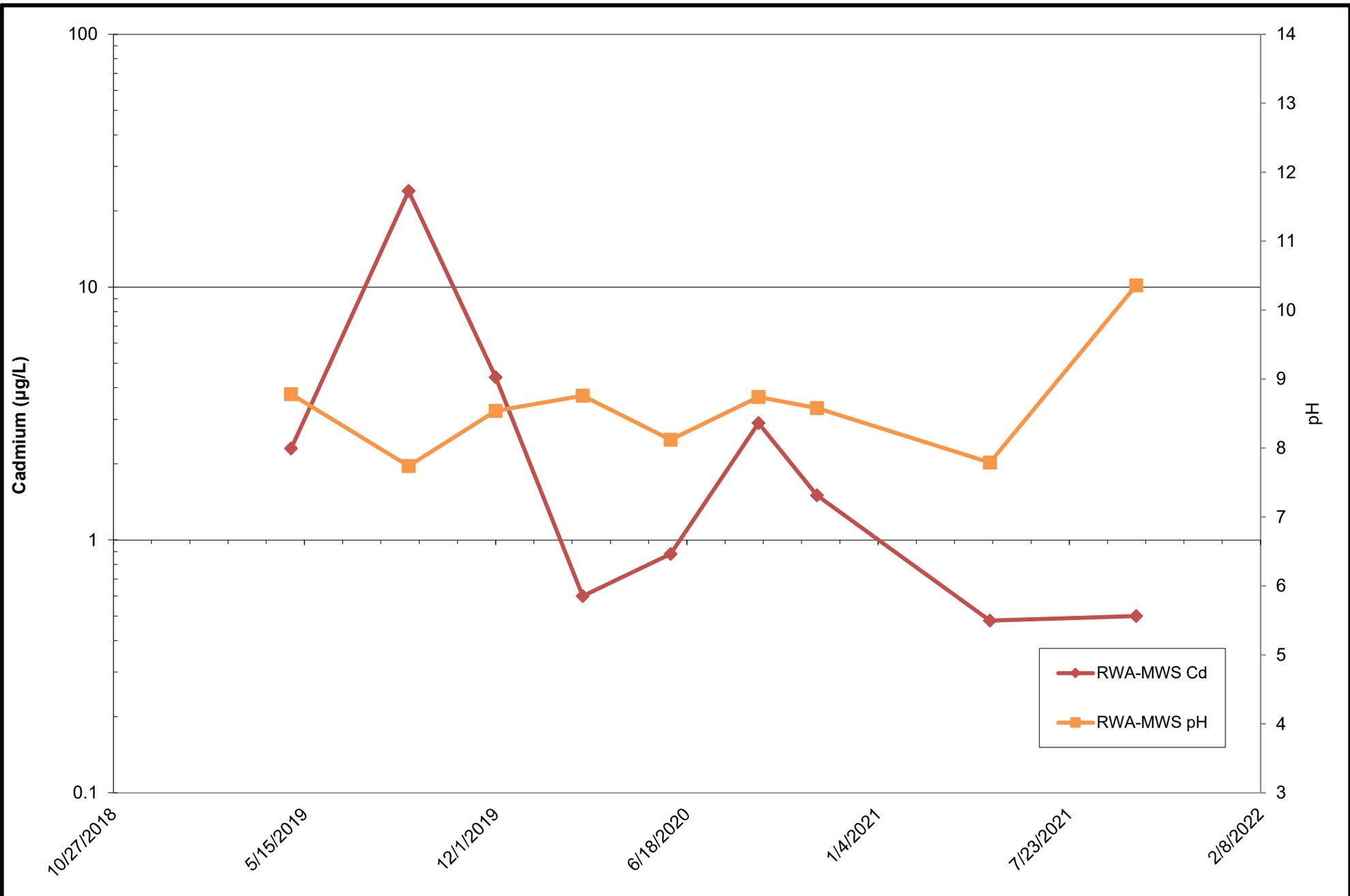
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW19-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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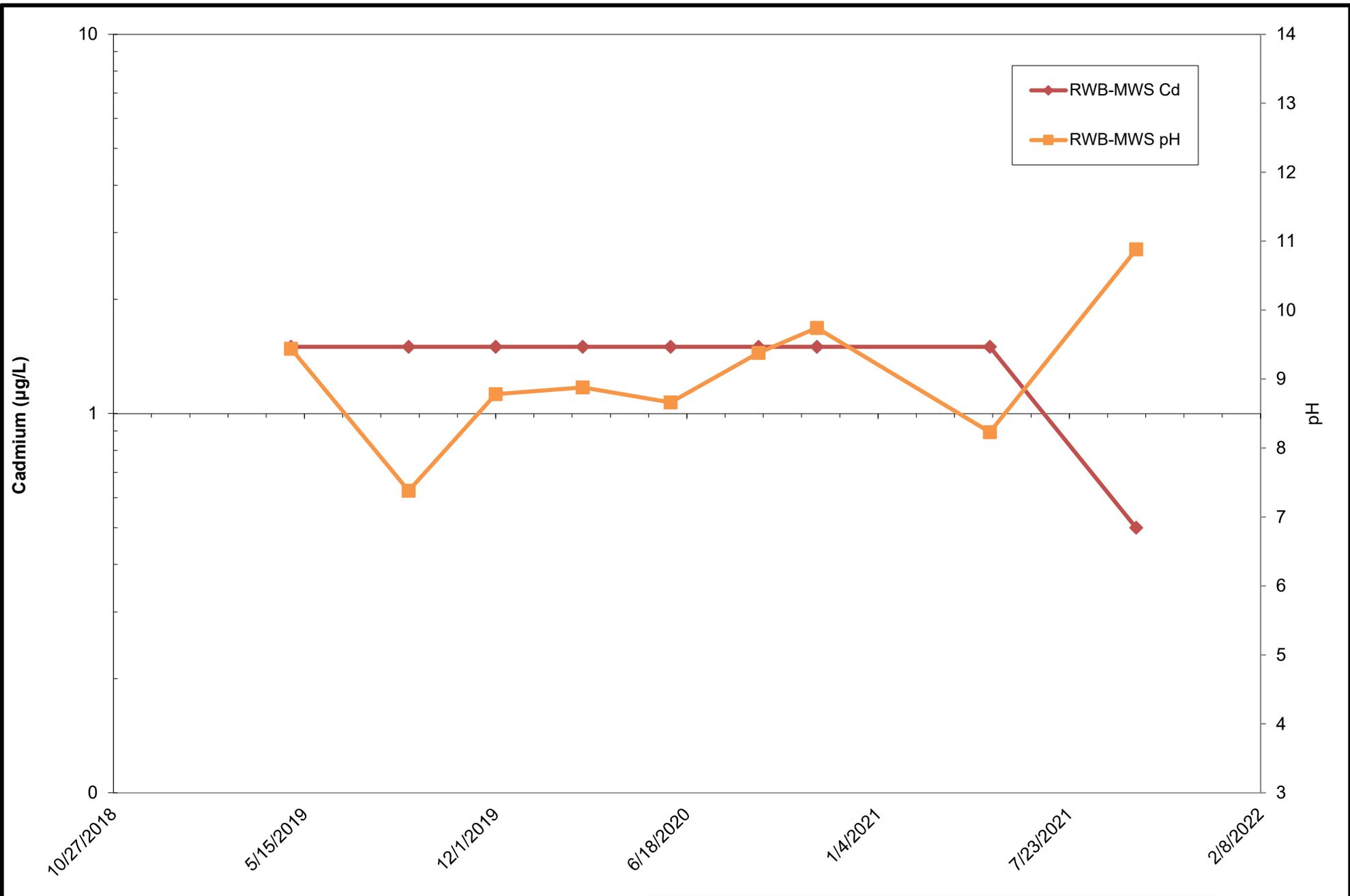
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWA-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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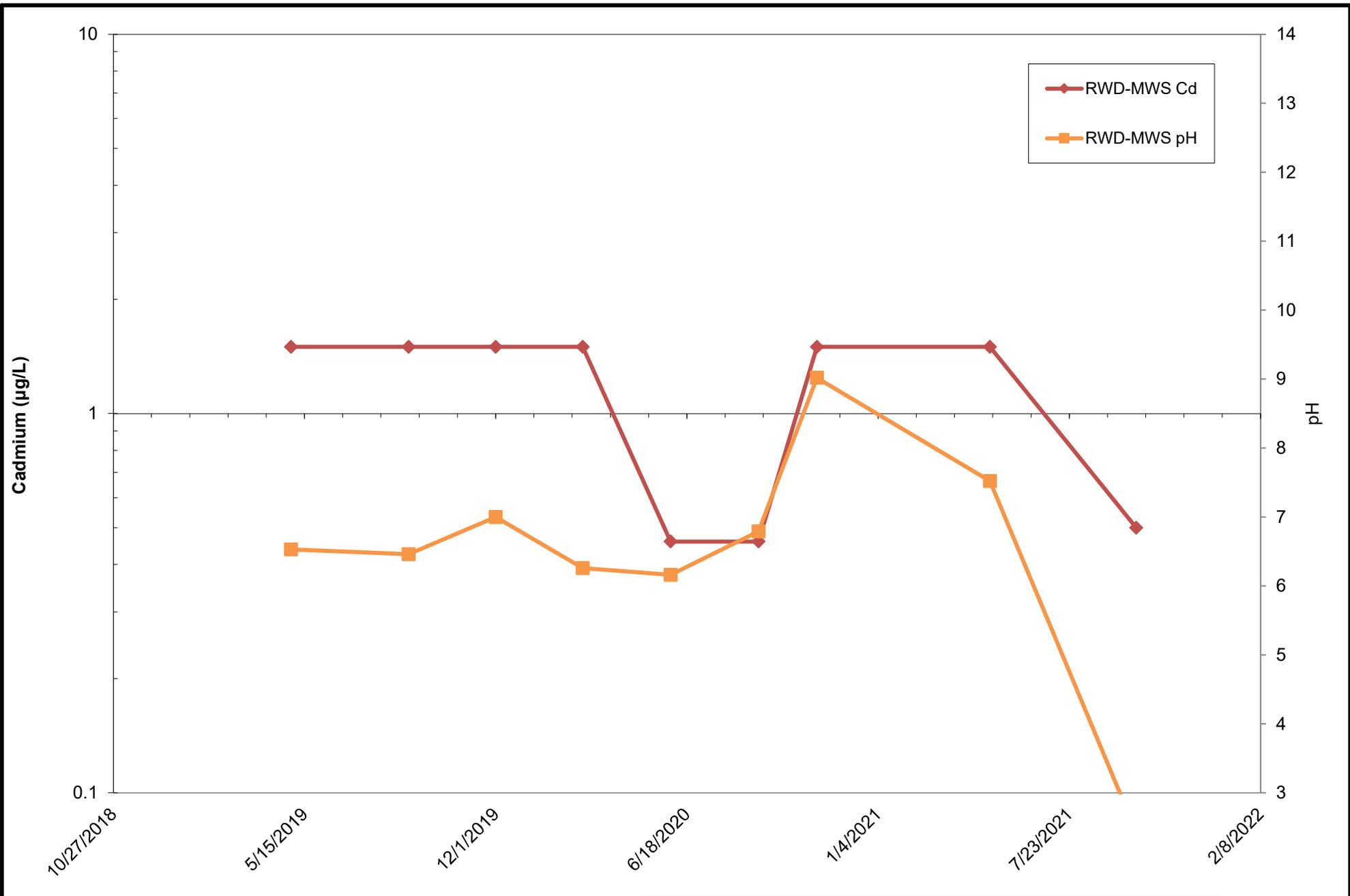
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWB-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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Engineers and Scientists

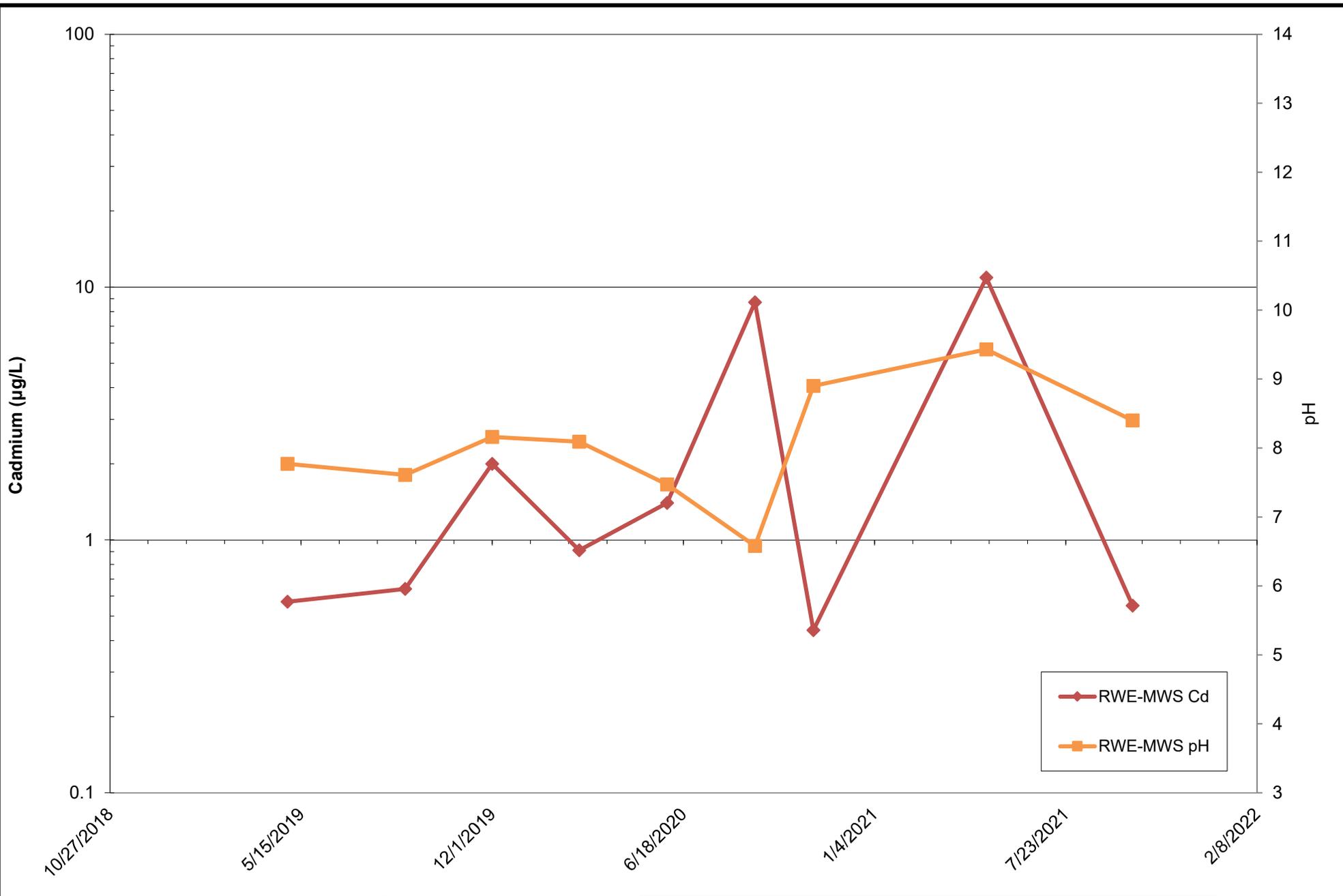
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWD-MWS pH and Cadmium
Concentrations**

February 2022

**Appx
B**



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Engineers and Scientists

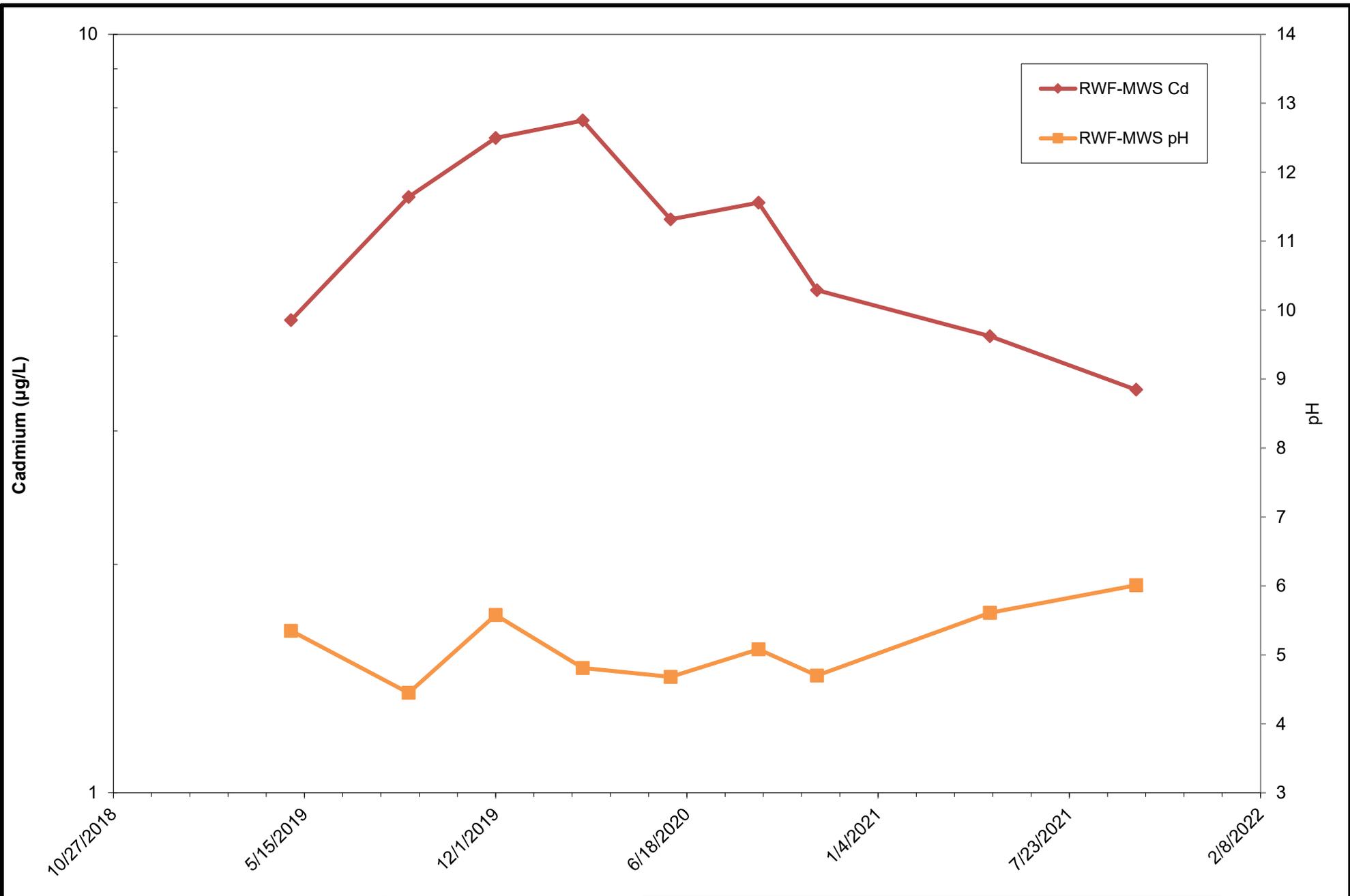
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

RWE-MWS pH and Cadmium Concentrations

February 2022

**Appx
B**



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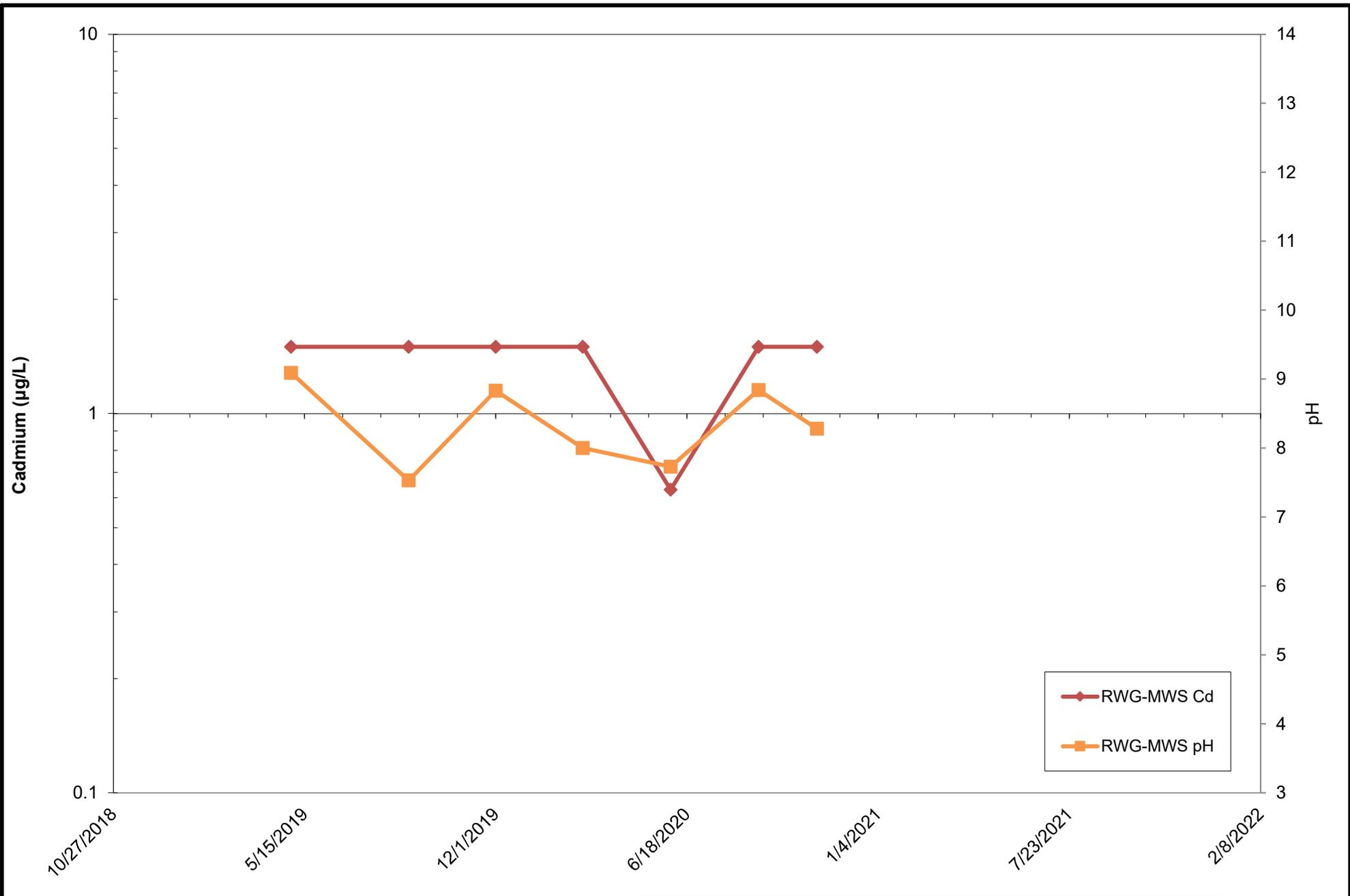
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWF-MWS pH and Cadmium
Concentrations**

February 2022

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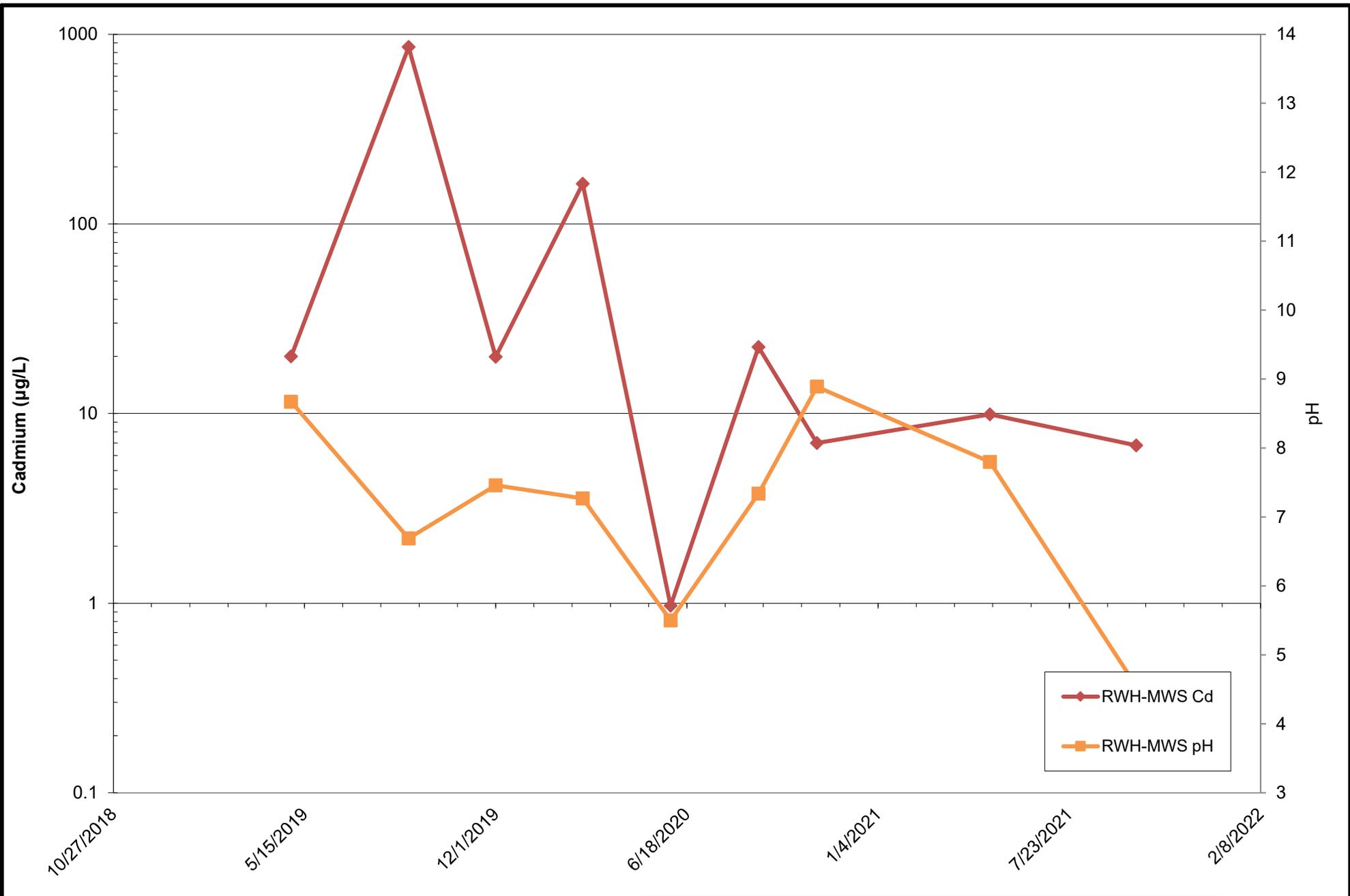
Rod and Wire Mill
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**RWG-MWS pH and Cadmium
Concentrations**

February 2022

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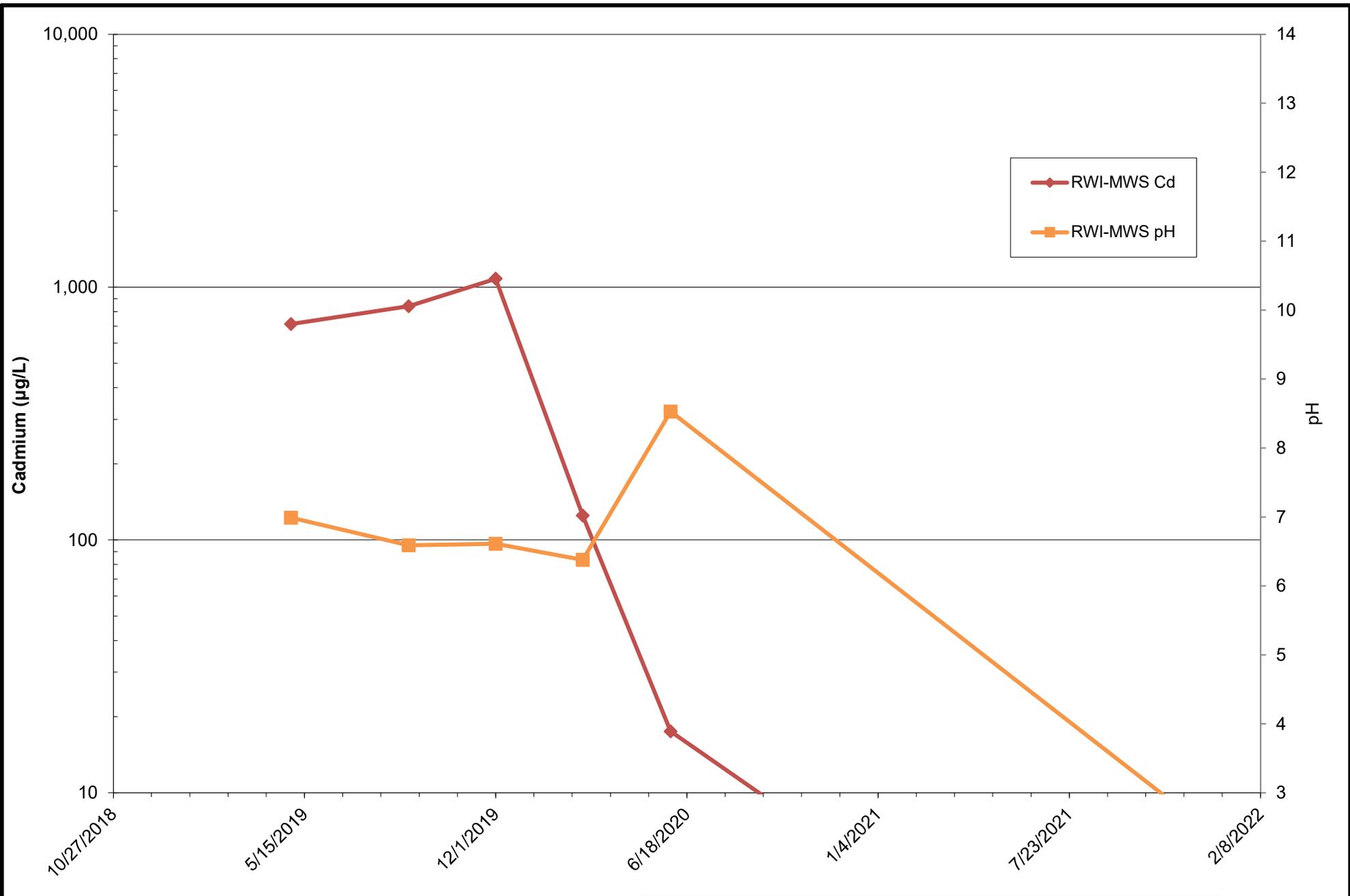
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**RWH-MWS pH and Cadmium
Concentrations**

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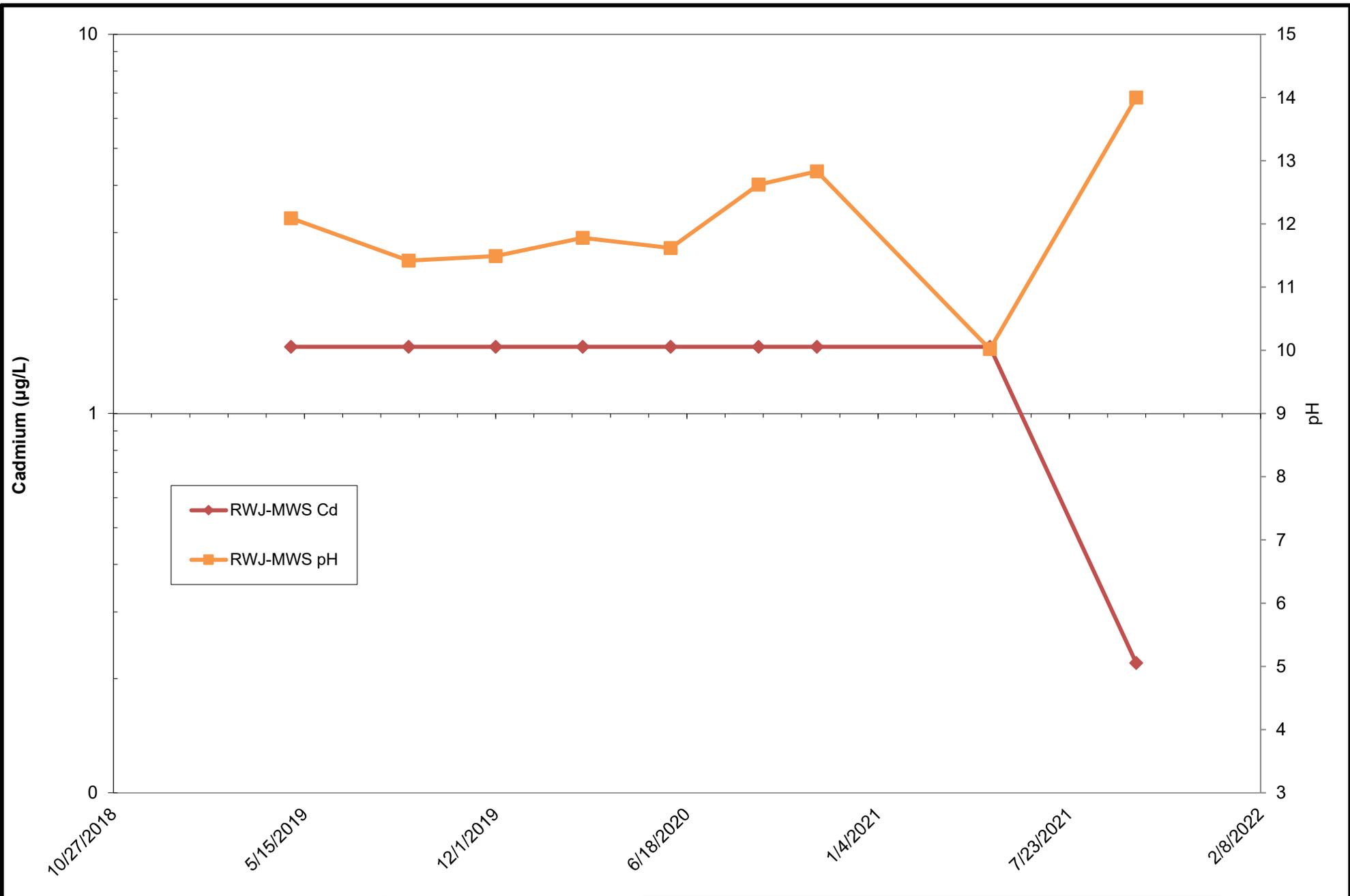
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**RWI-MWS pH and Cadmium
Concentrations**

February 2022

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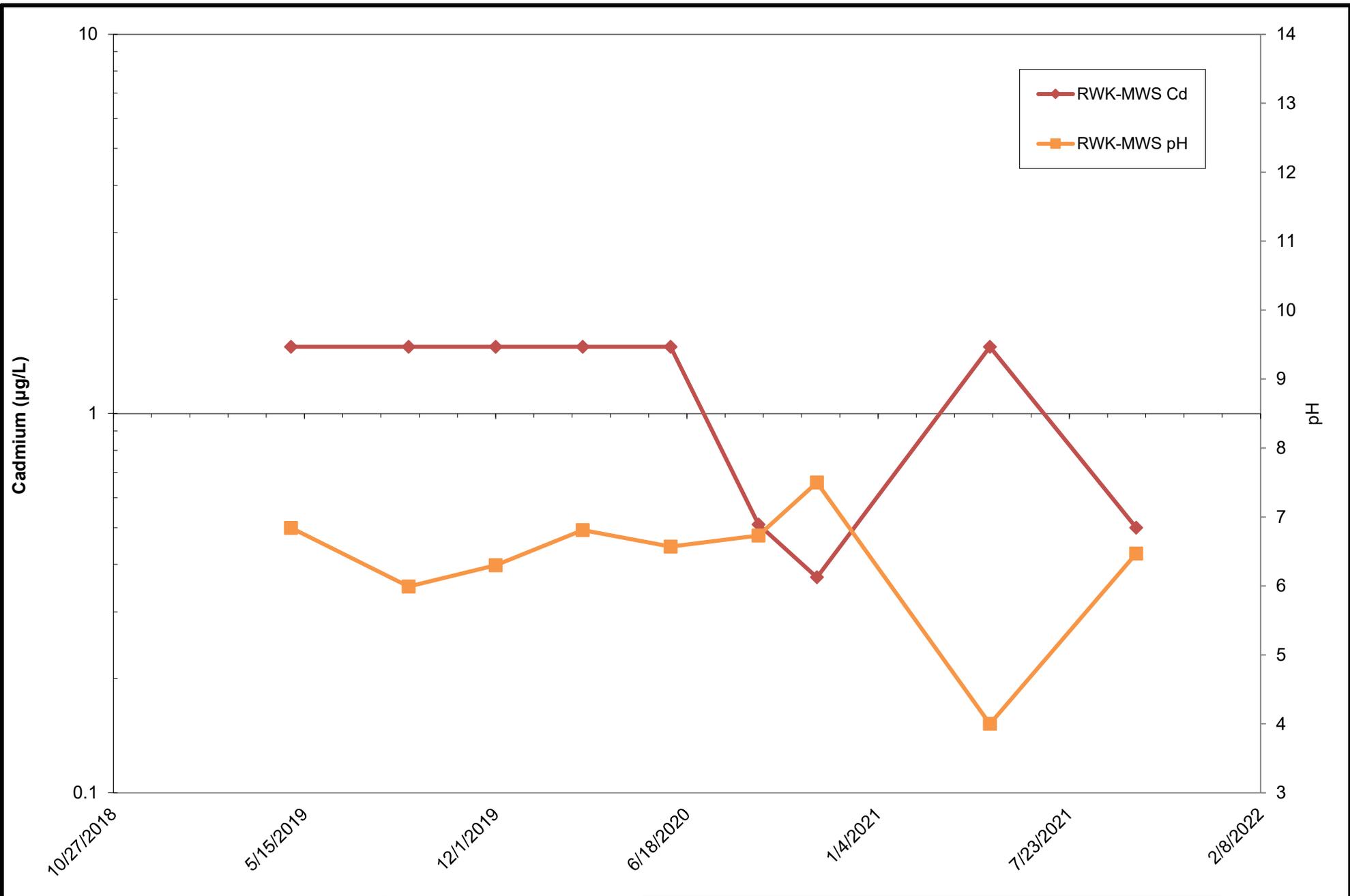
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**RWJ-MWS pH and Cadmium
Concentrations**

February 2022

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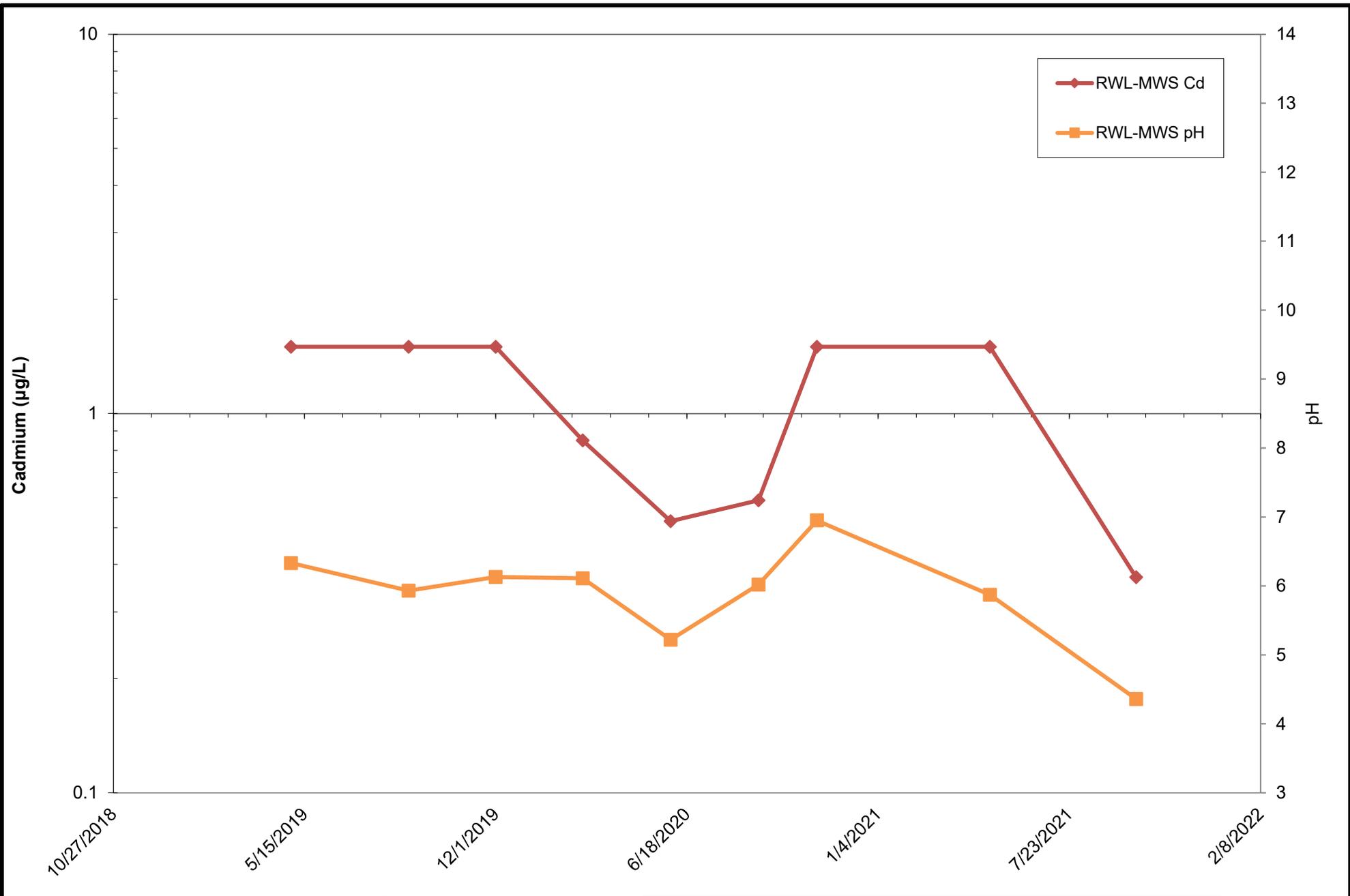
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**RWK-MWS pH and Cadmium
Concentrations**

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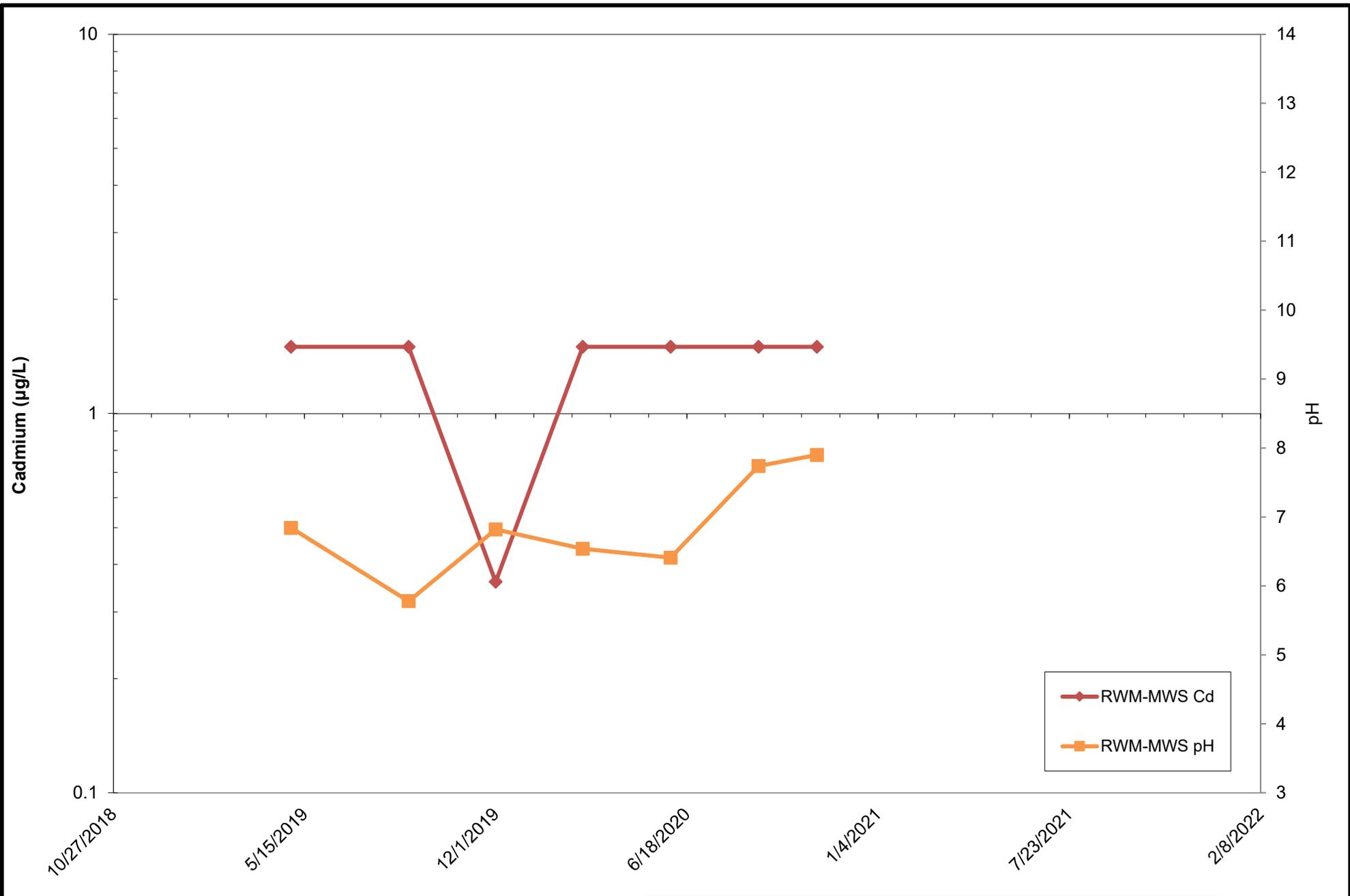
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**RWL-MWS pH and Cadmium
Concentrations**

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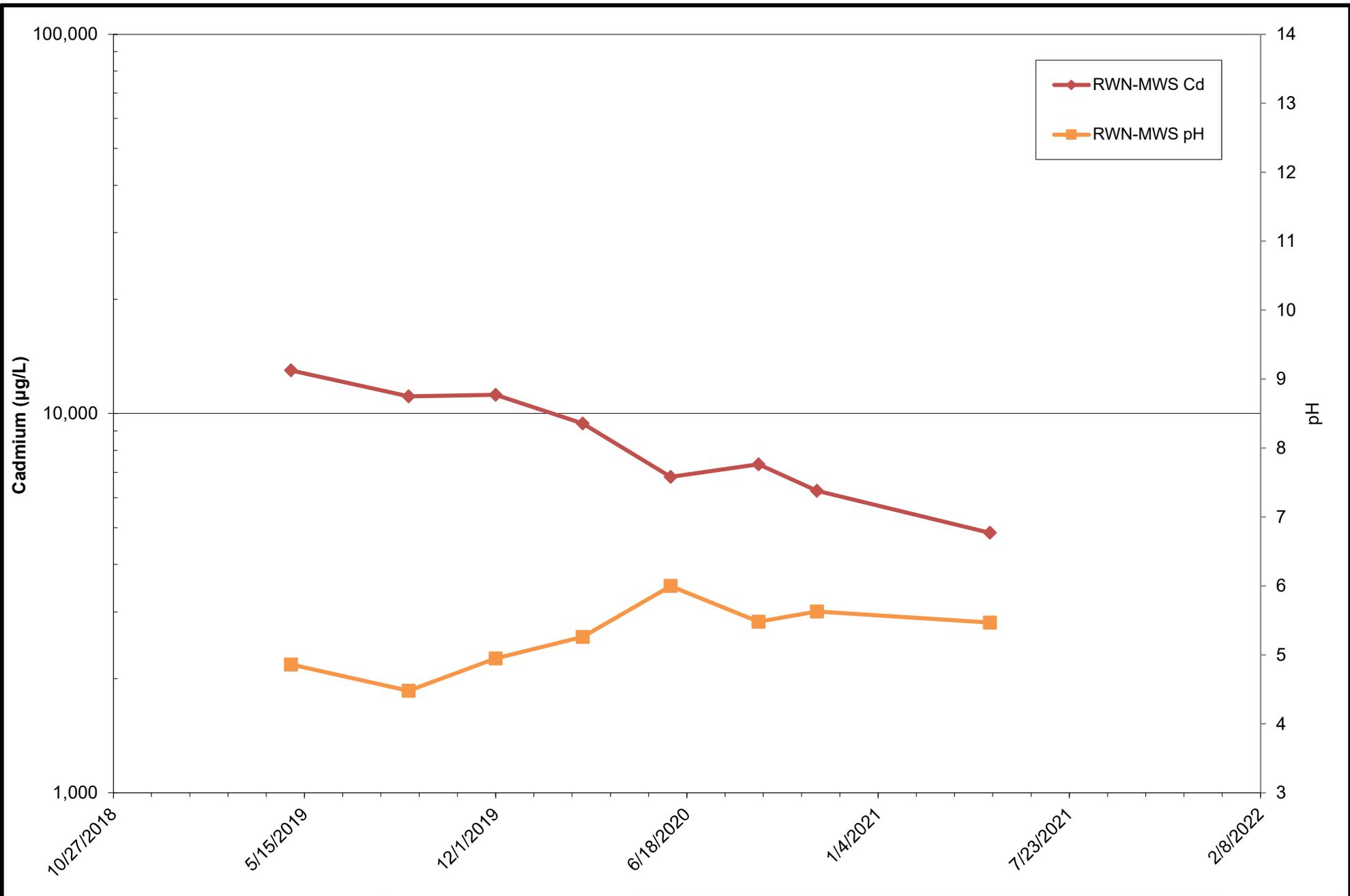
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**RWM-MWS pH and Cadmium
Concentrations**

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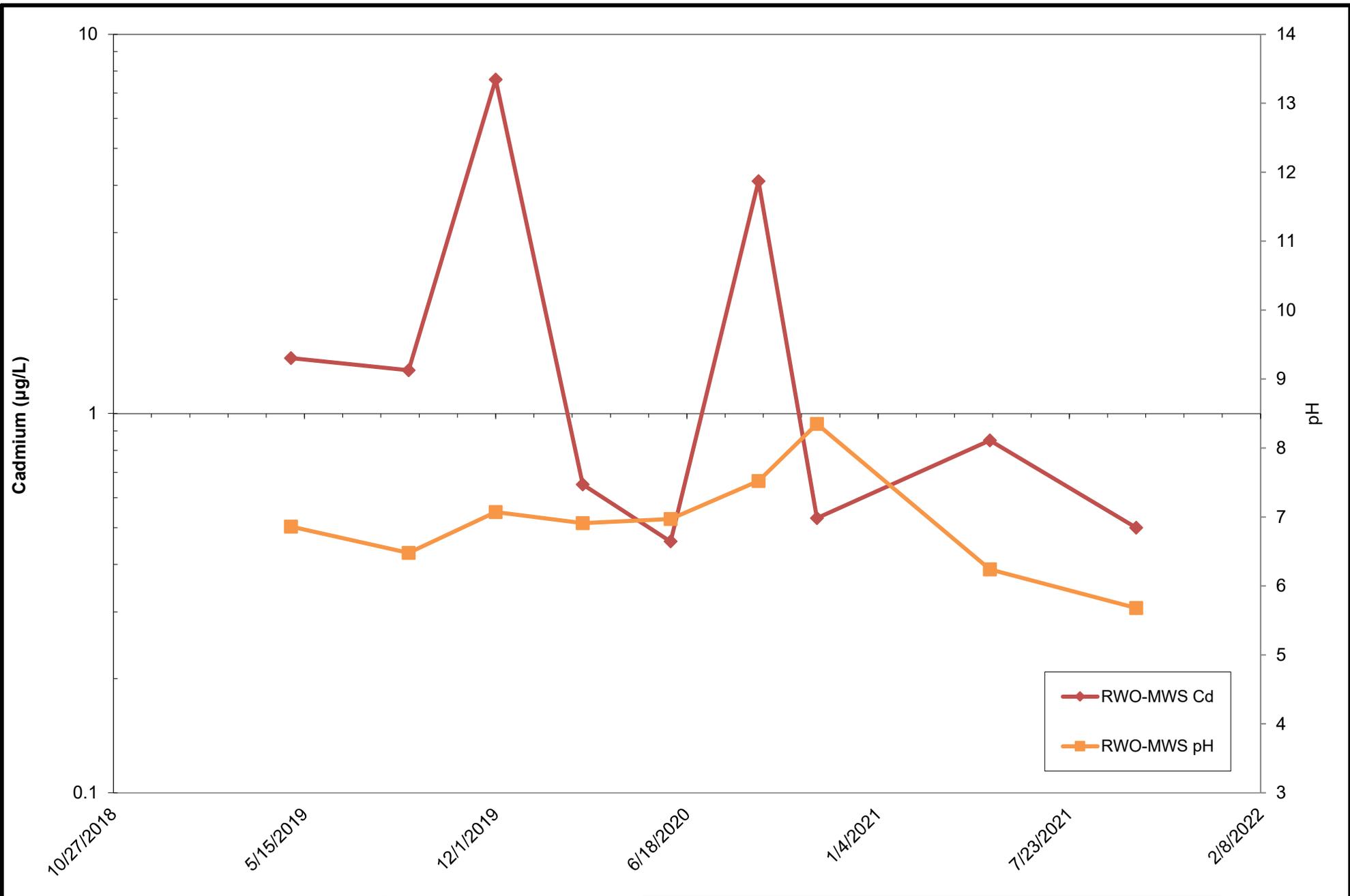
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**RWN-MWS pH and Cadmium
Concentrations**

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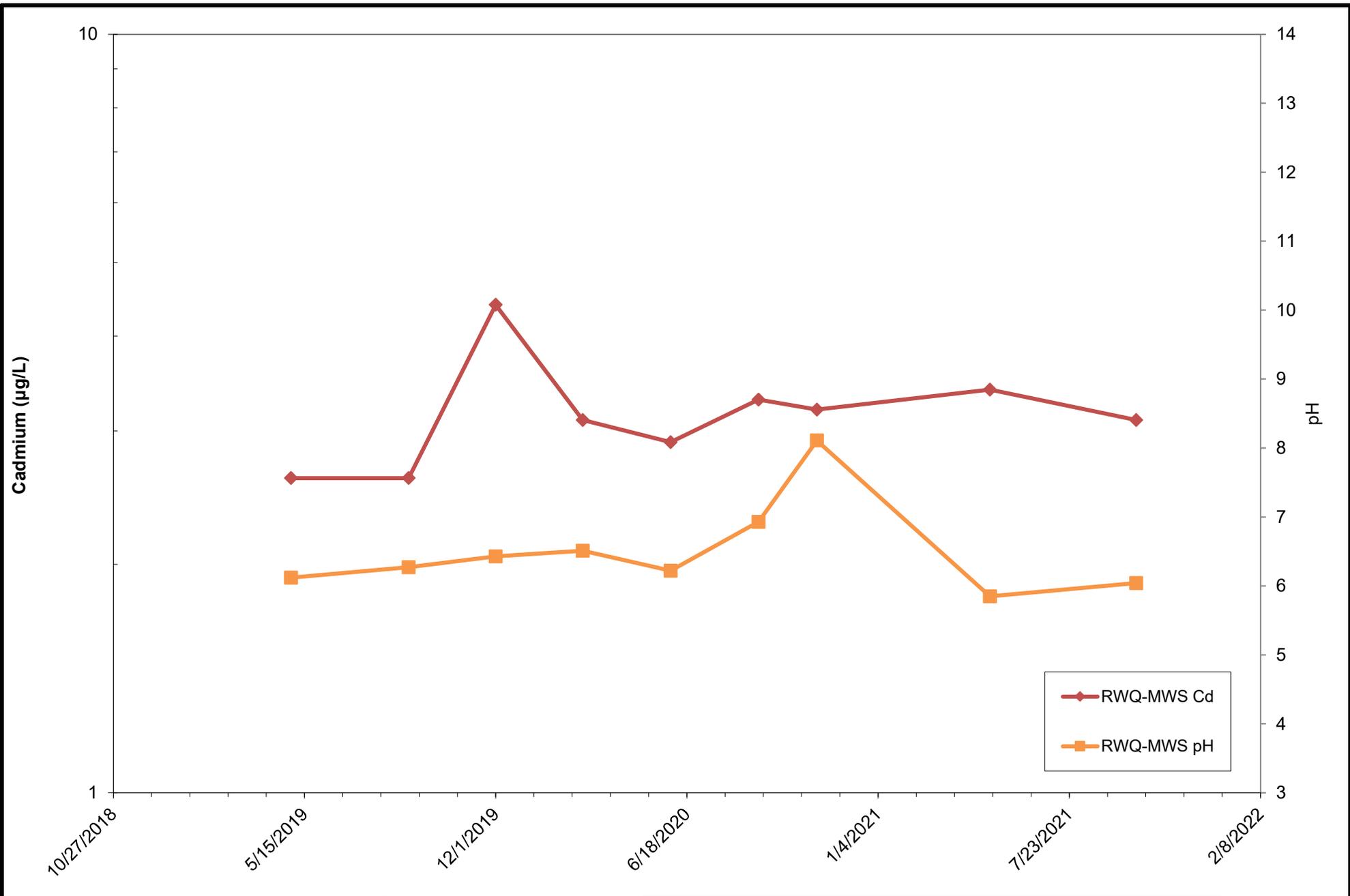
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RWO-MWS pH and Cadmium Concentrations

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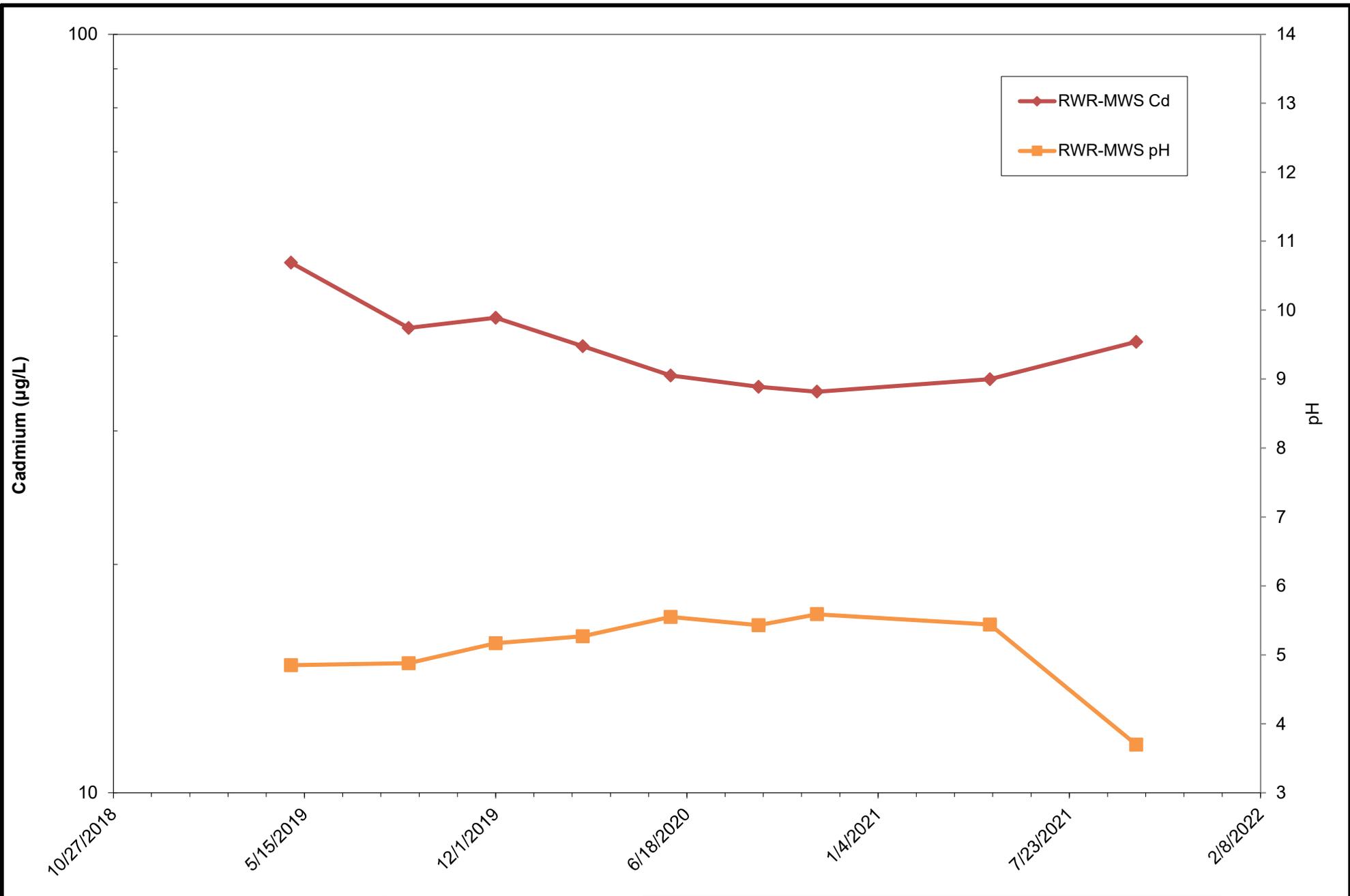
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**RWQ-MWS pH and Cadmium
Concentrations**

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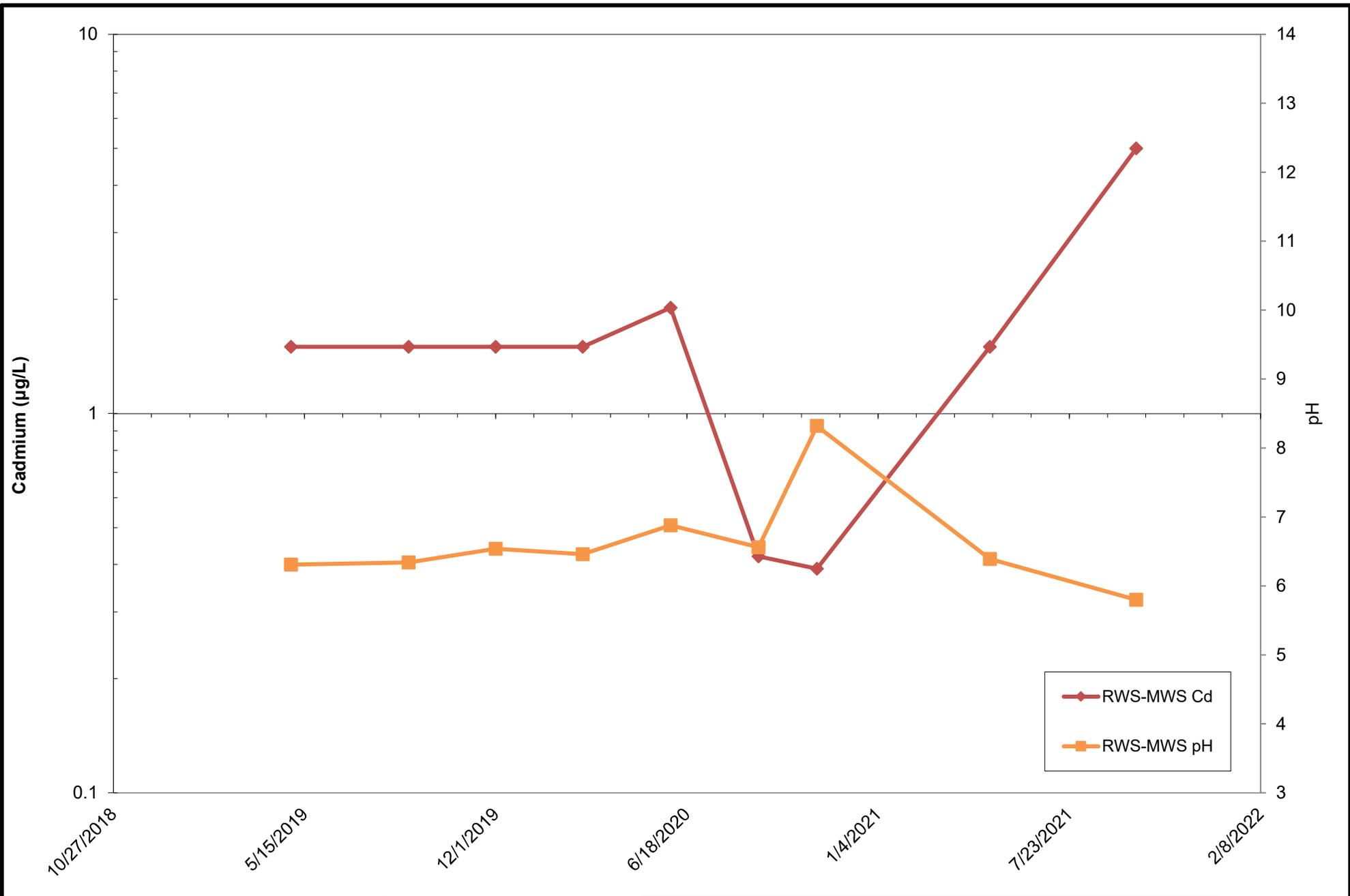
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**RWR-MWS pH and Cadmium
Concentrations**

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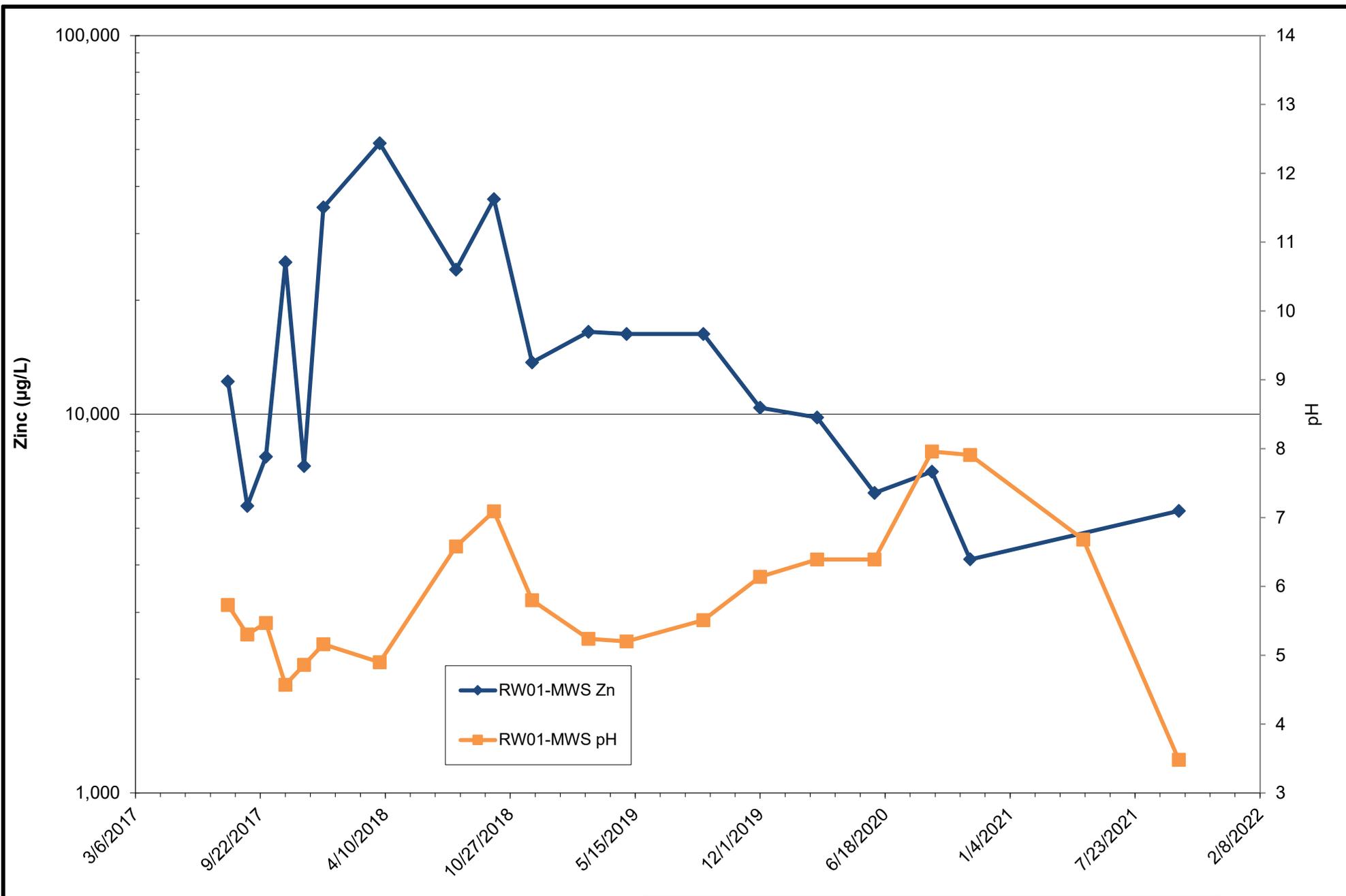
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Tradepoint Atlantic

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**RWS-MWS pH and Cadmium
Concentrations**

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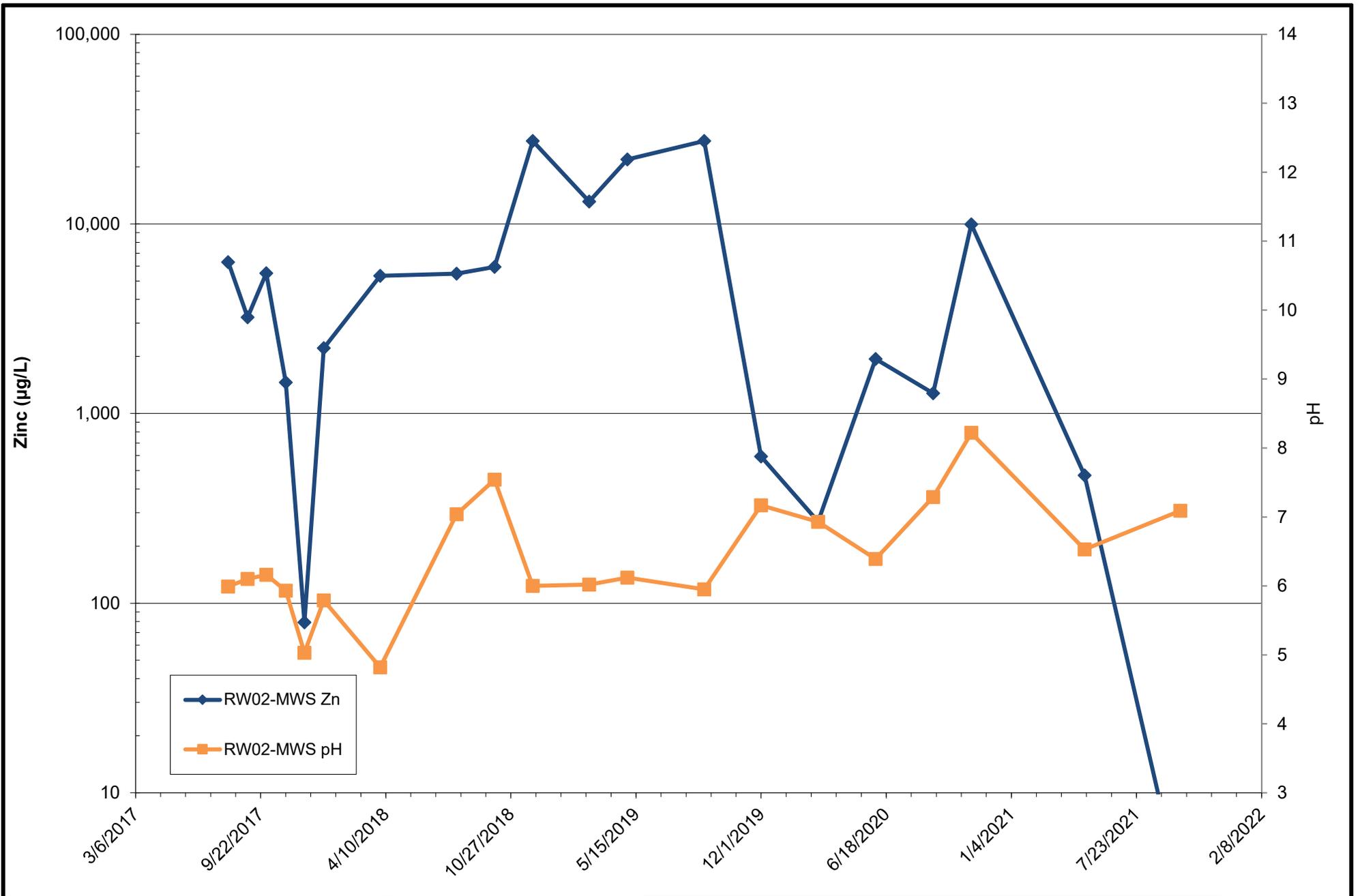
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RW01-MWS pH and Zinc Concentrations

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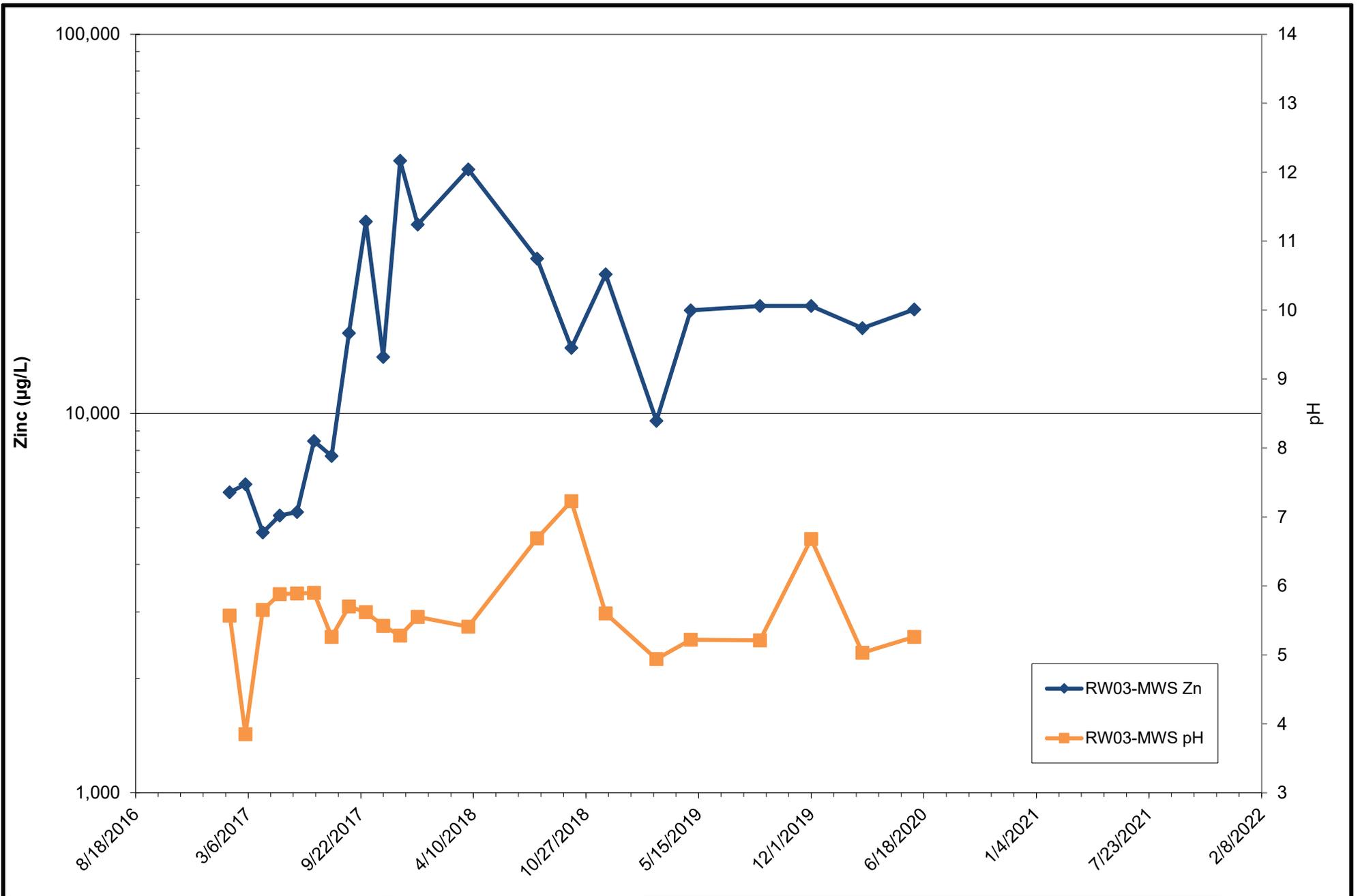
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RW02-MWS pH and Zinc Concentrations

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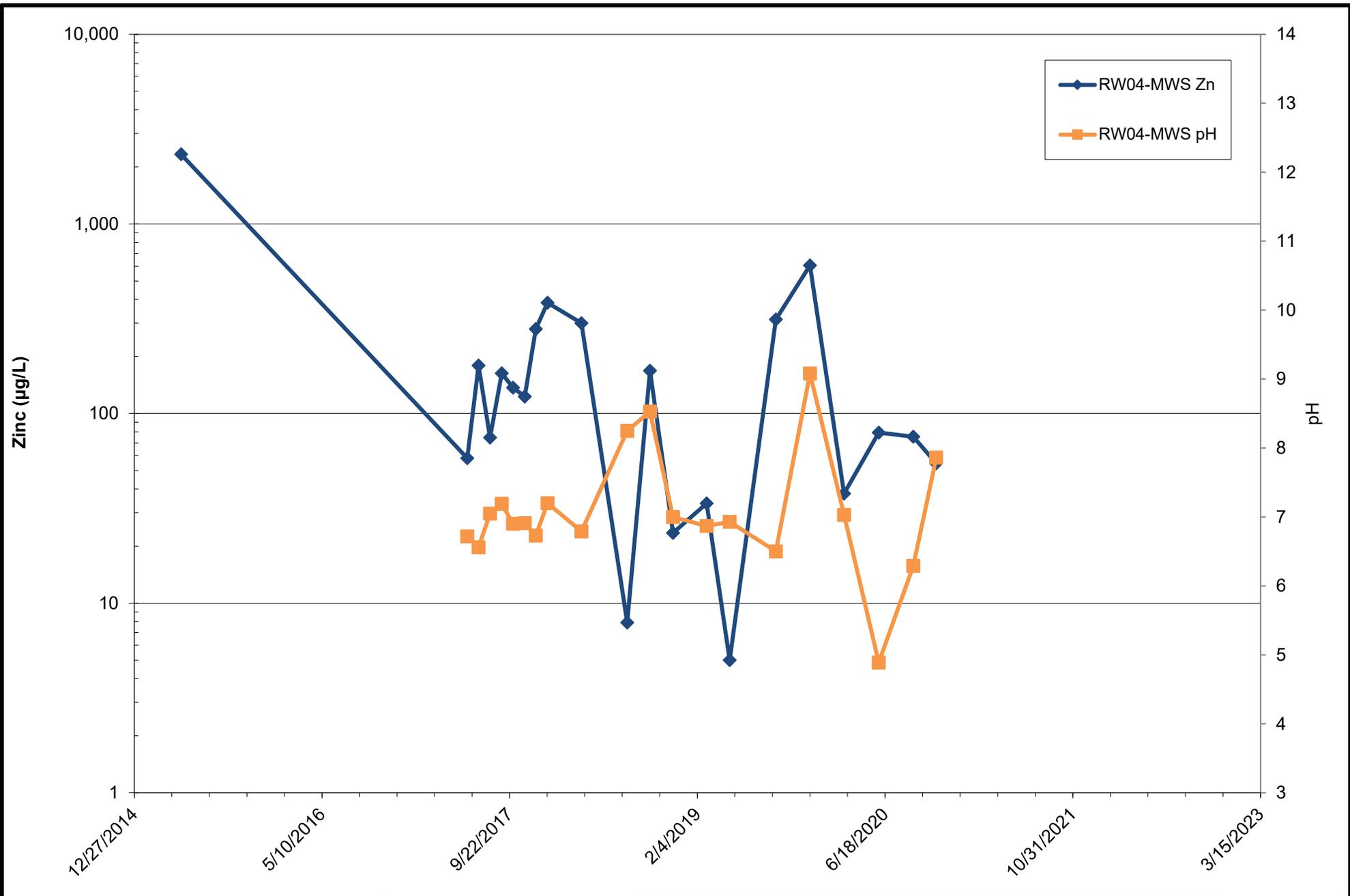
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RW03-MWS pH and Zinc Concentrations

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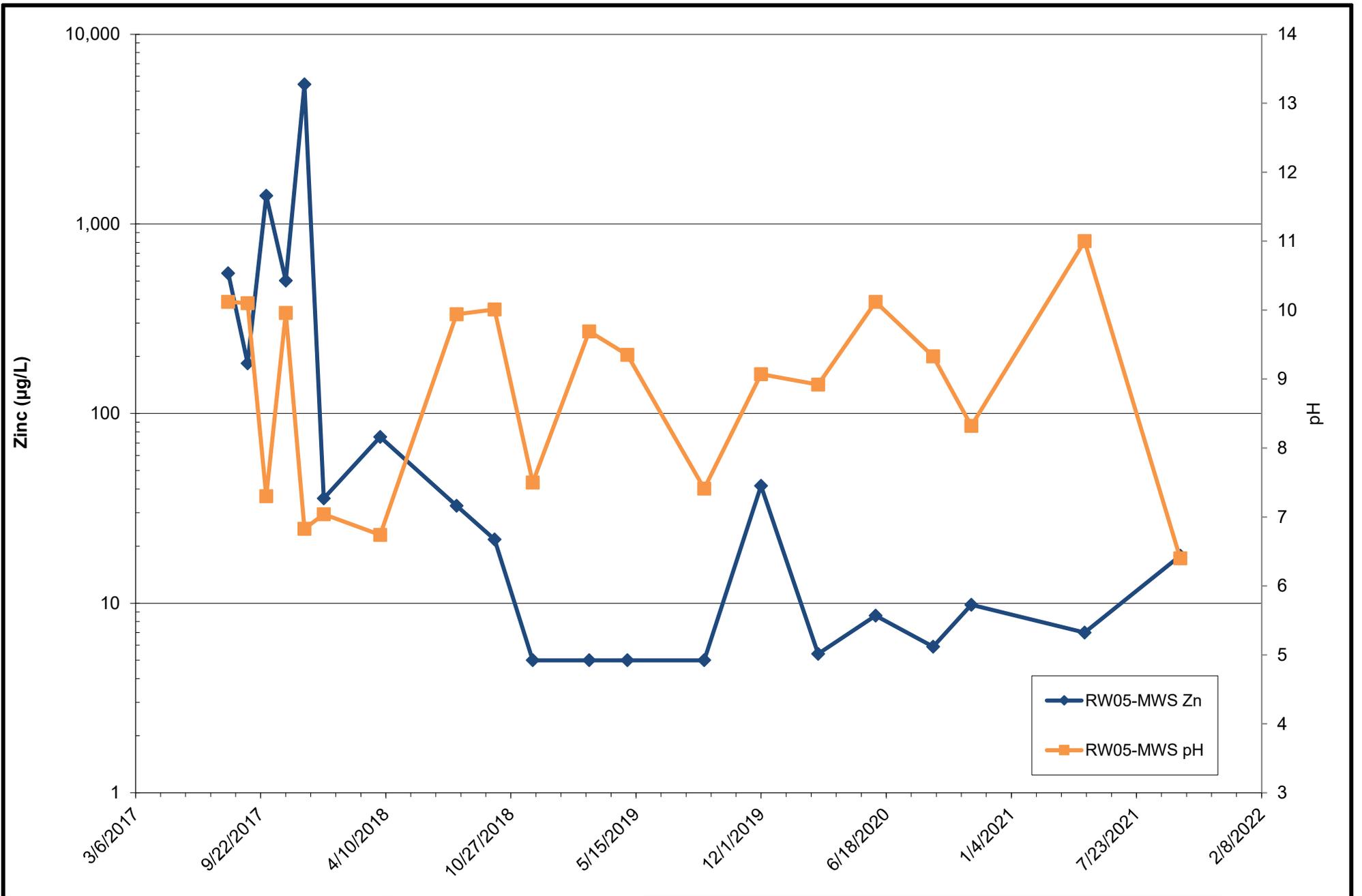
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RW04-MWS pH and Zinc Concentrations

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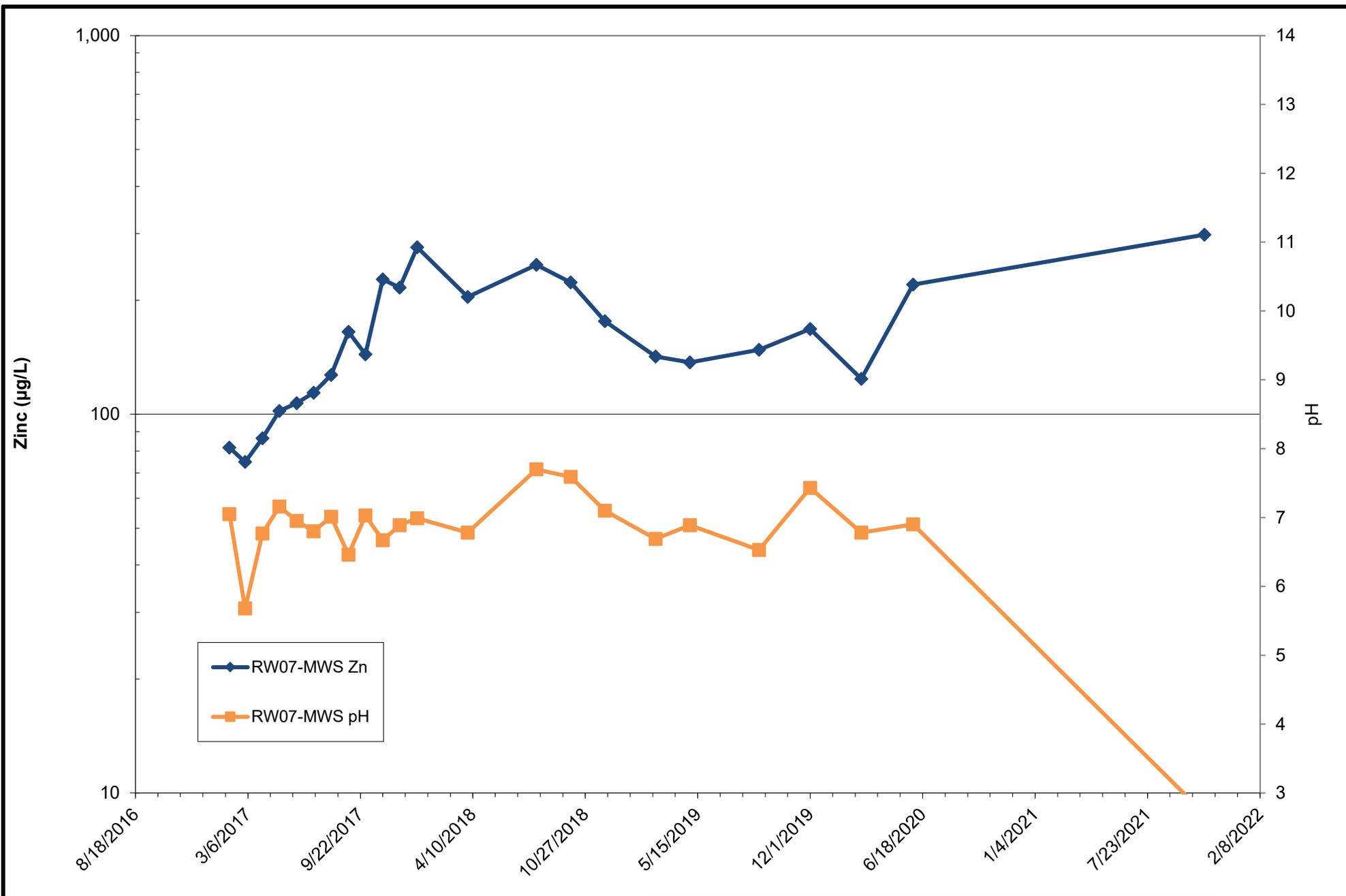
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**RW05-MWS pH and Zinc
Concentrations**

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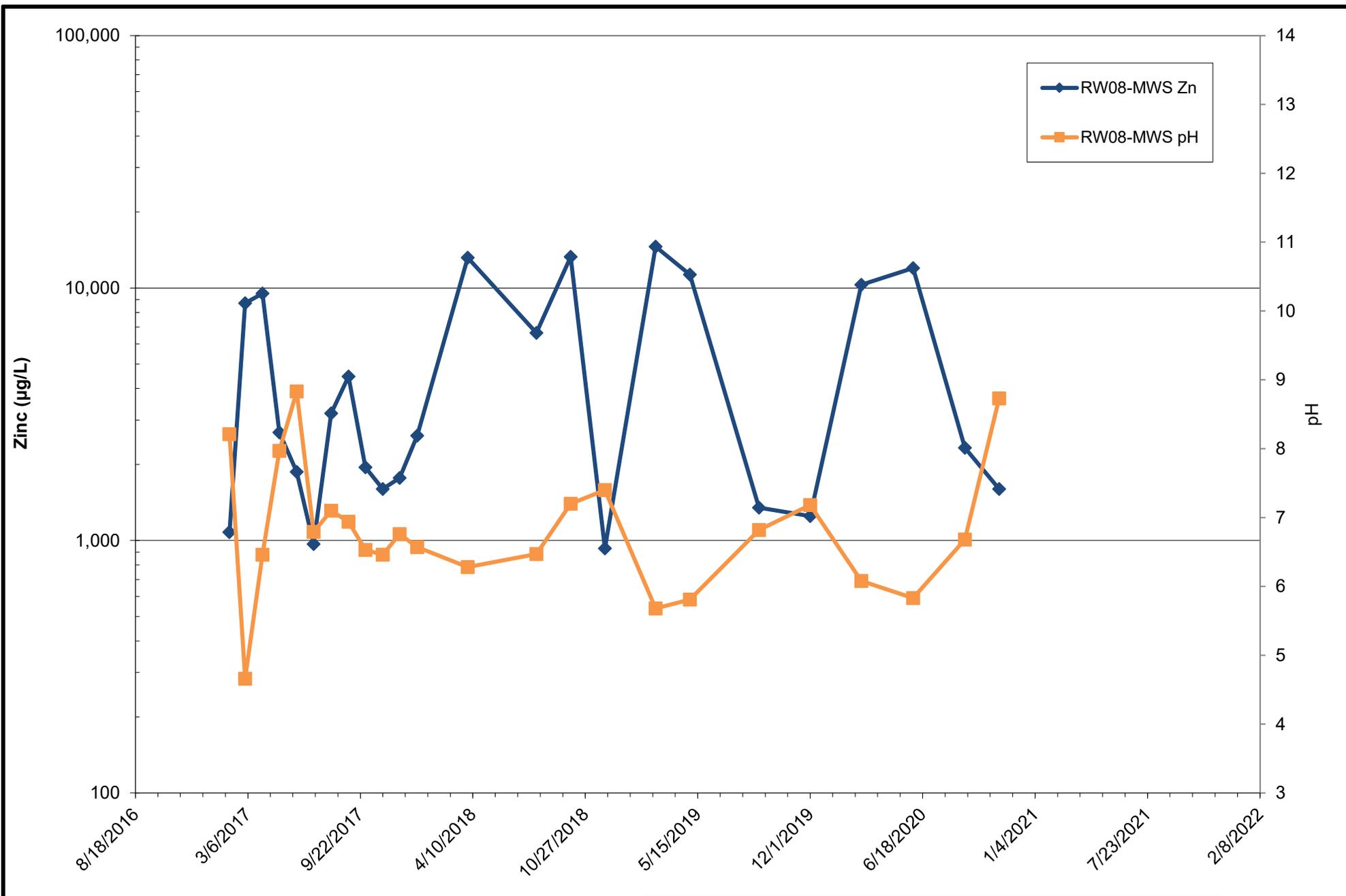
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RW07-MWS pH and Zinc Concentrations

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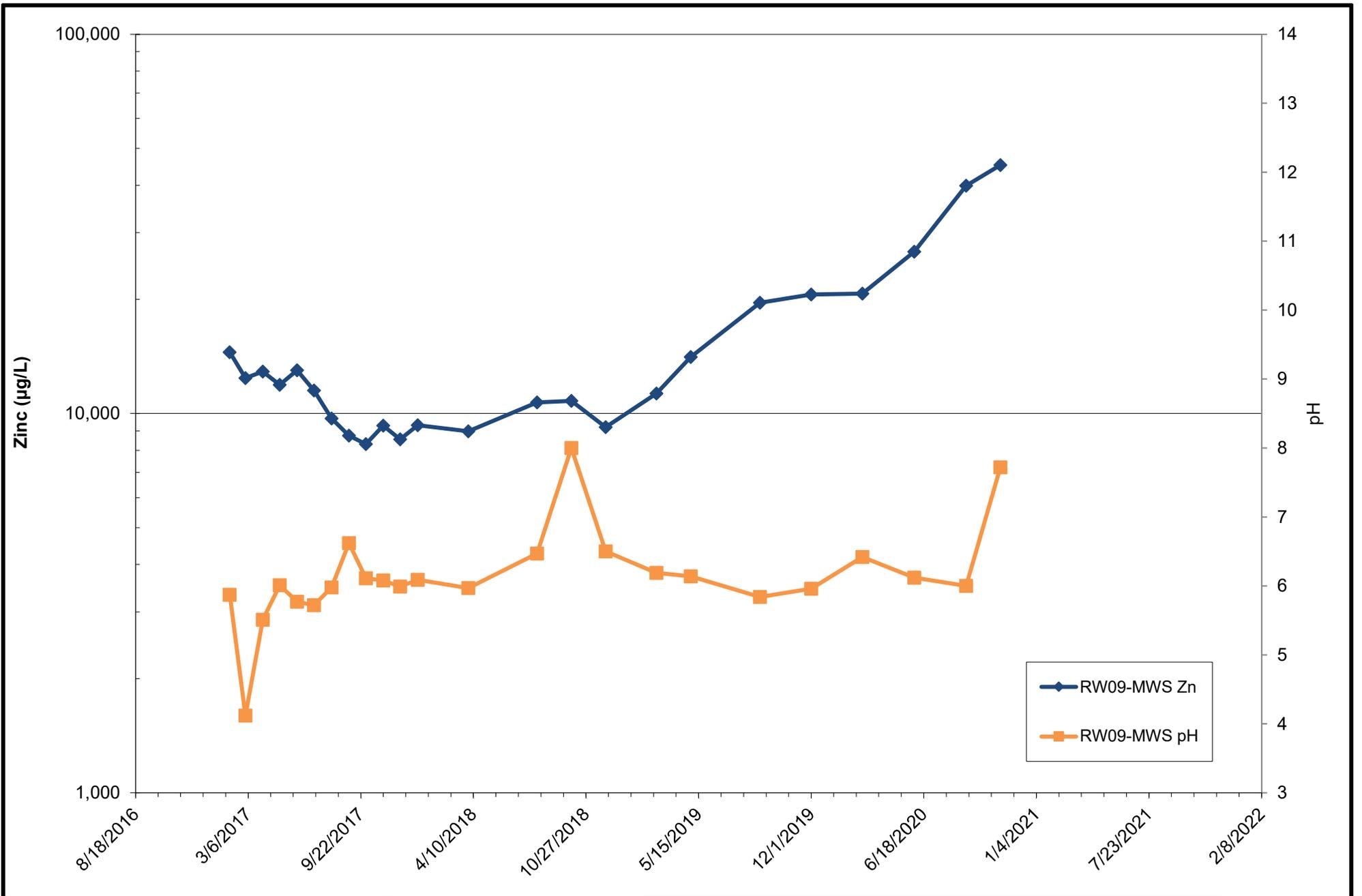
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RW08-MWS pH and Zinc Concentrations

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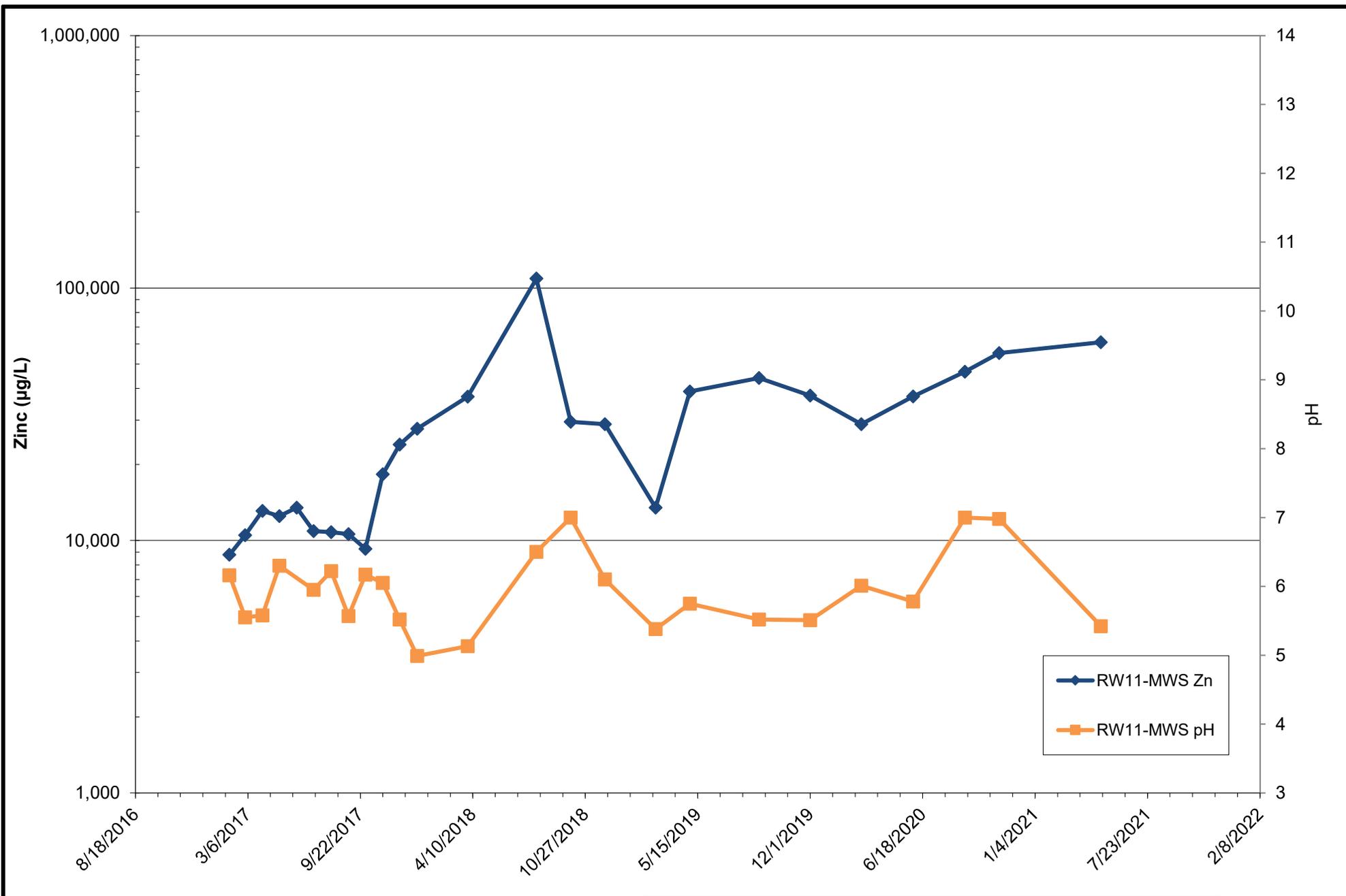
Rod and Wire Mill
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RW09-MWS pH and Zinc Concentrations

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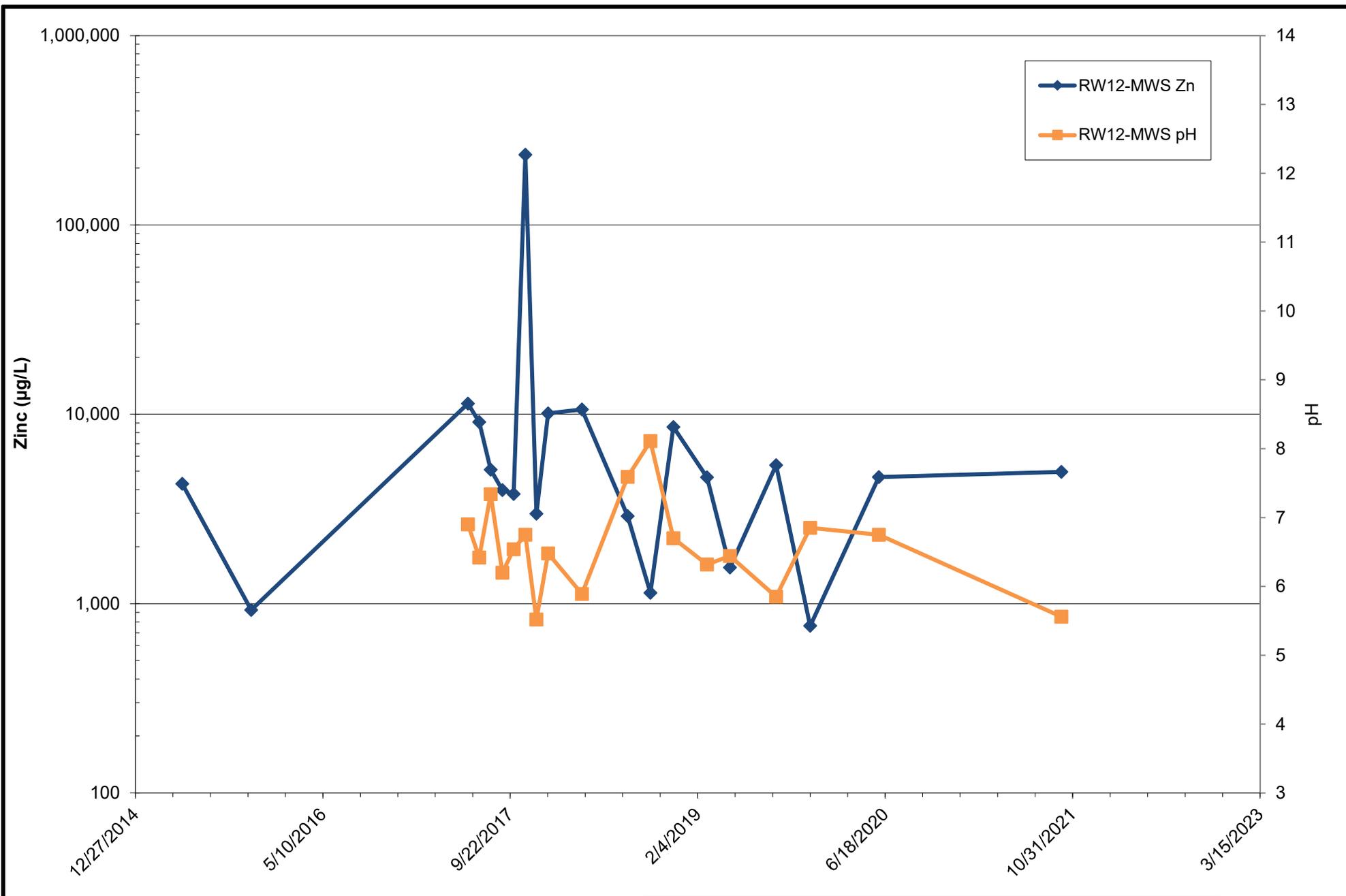
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RW11-MWS pH and Zinc Concentrations

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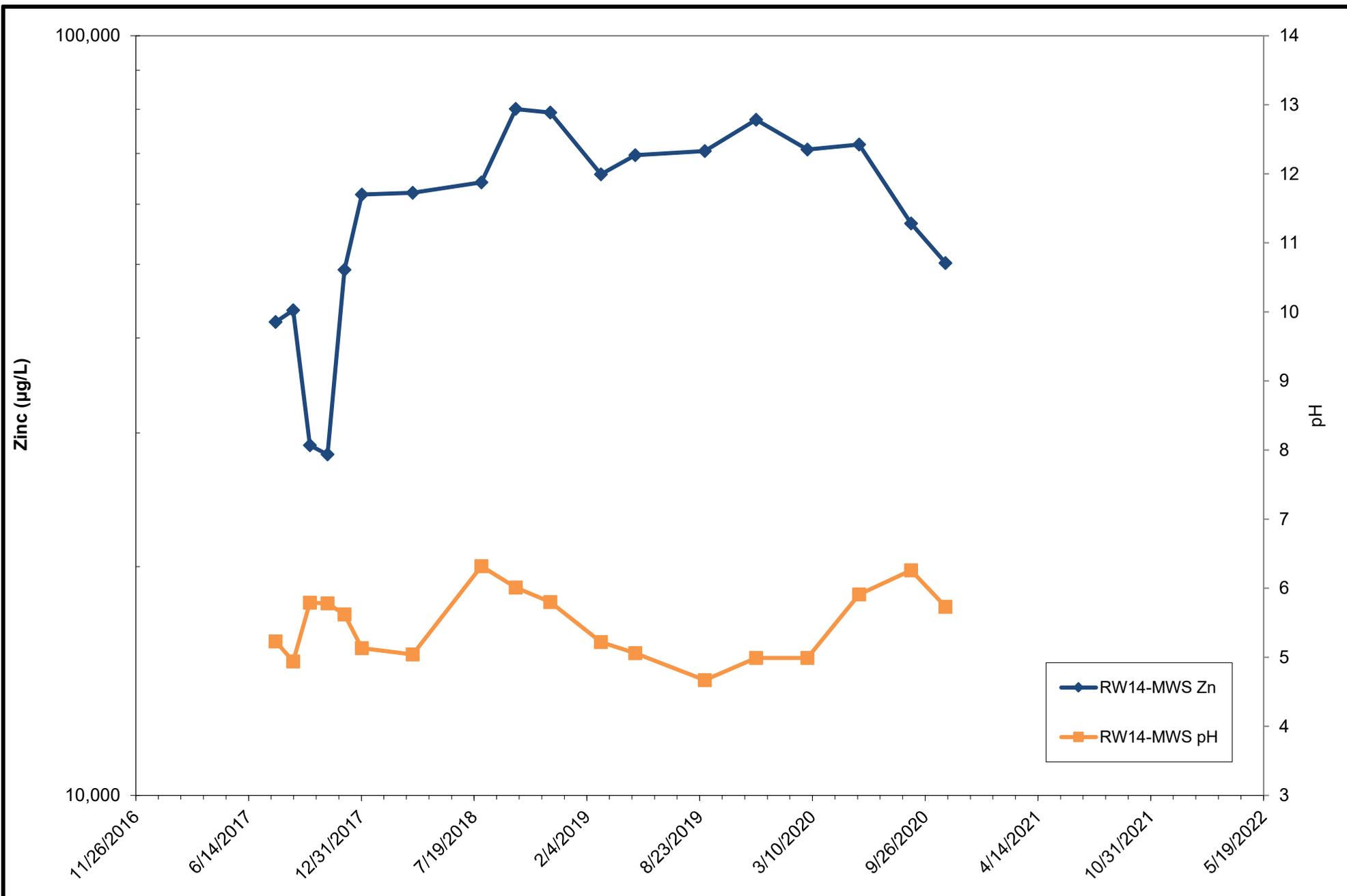
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RW12-MWS pH and Zinc Concentrations

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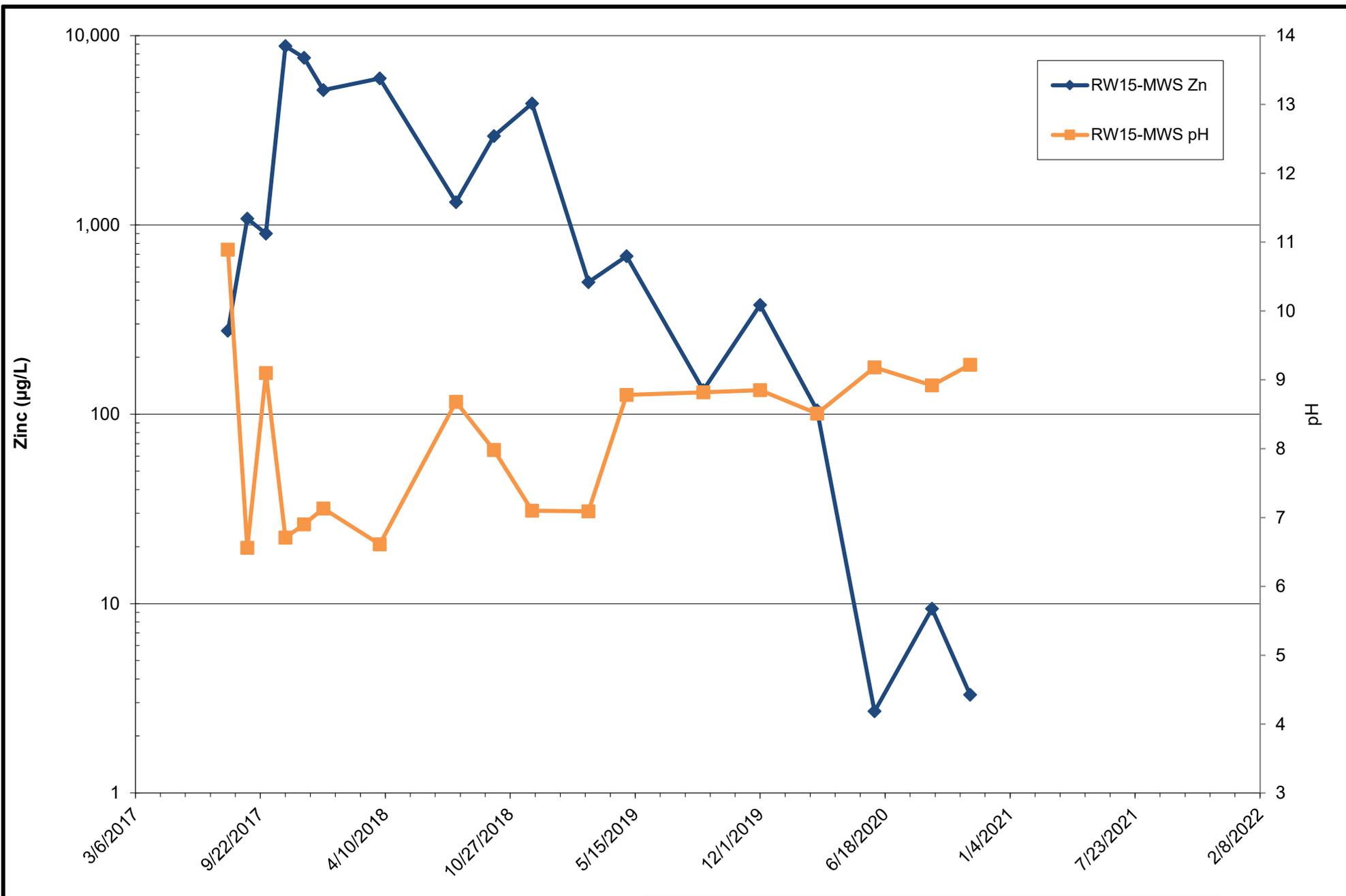
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RW14-MWS pH and Zinc Concentrations

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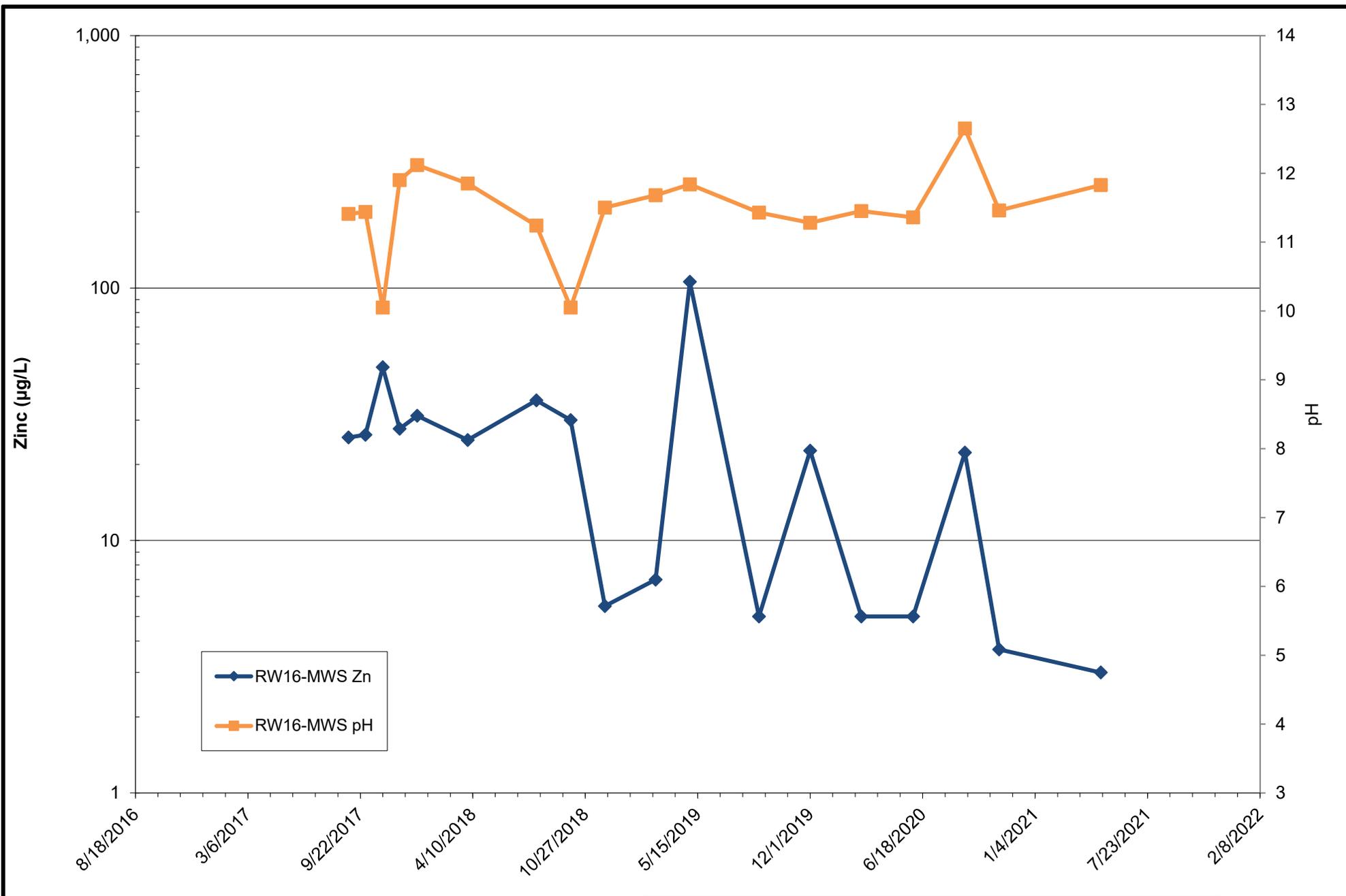
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RW15-MWS pH and Zinc Concentrations

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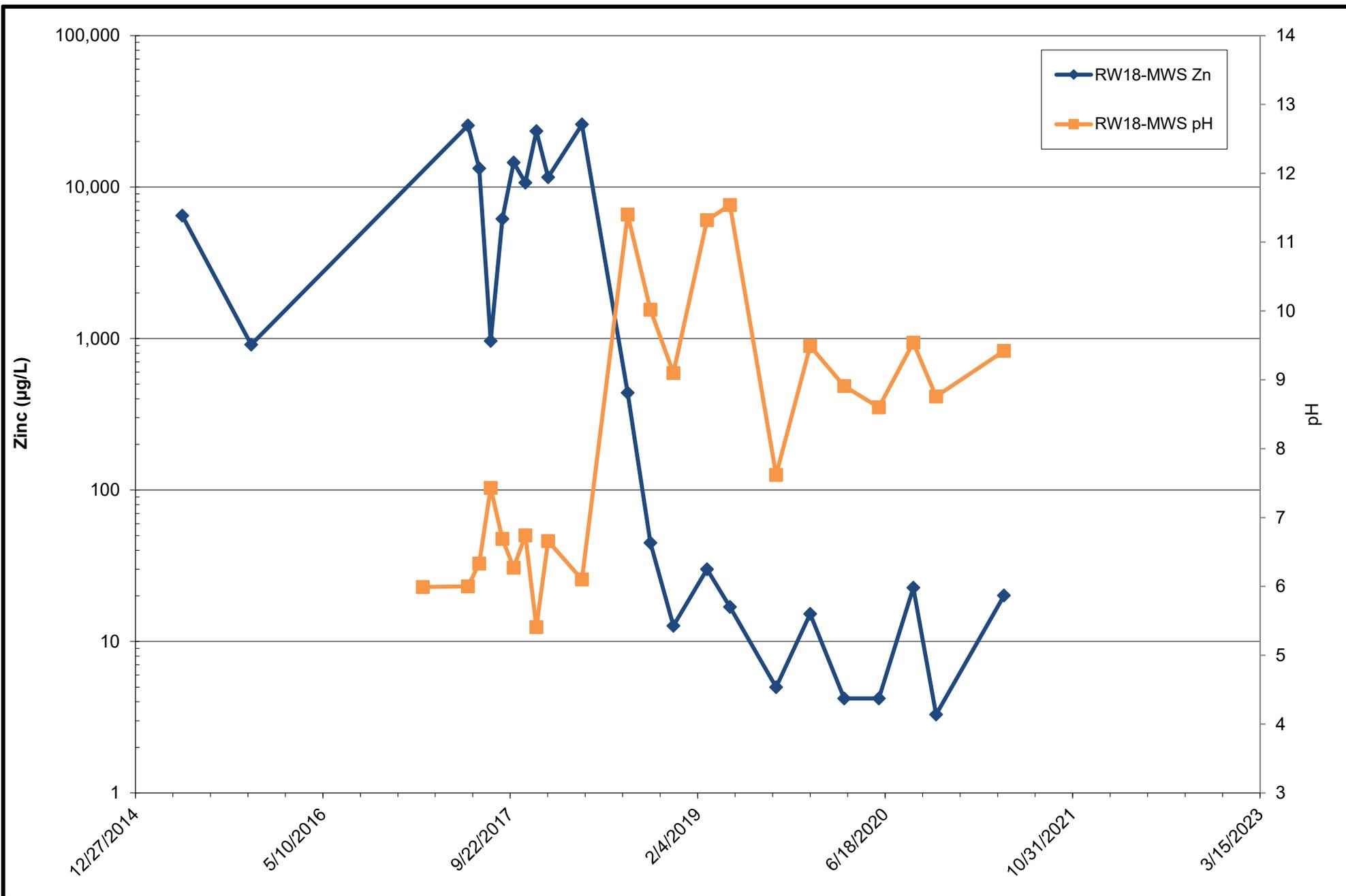
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RW16-MWS pH and Zinc Concentrations

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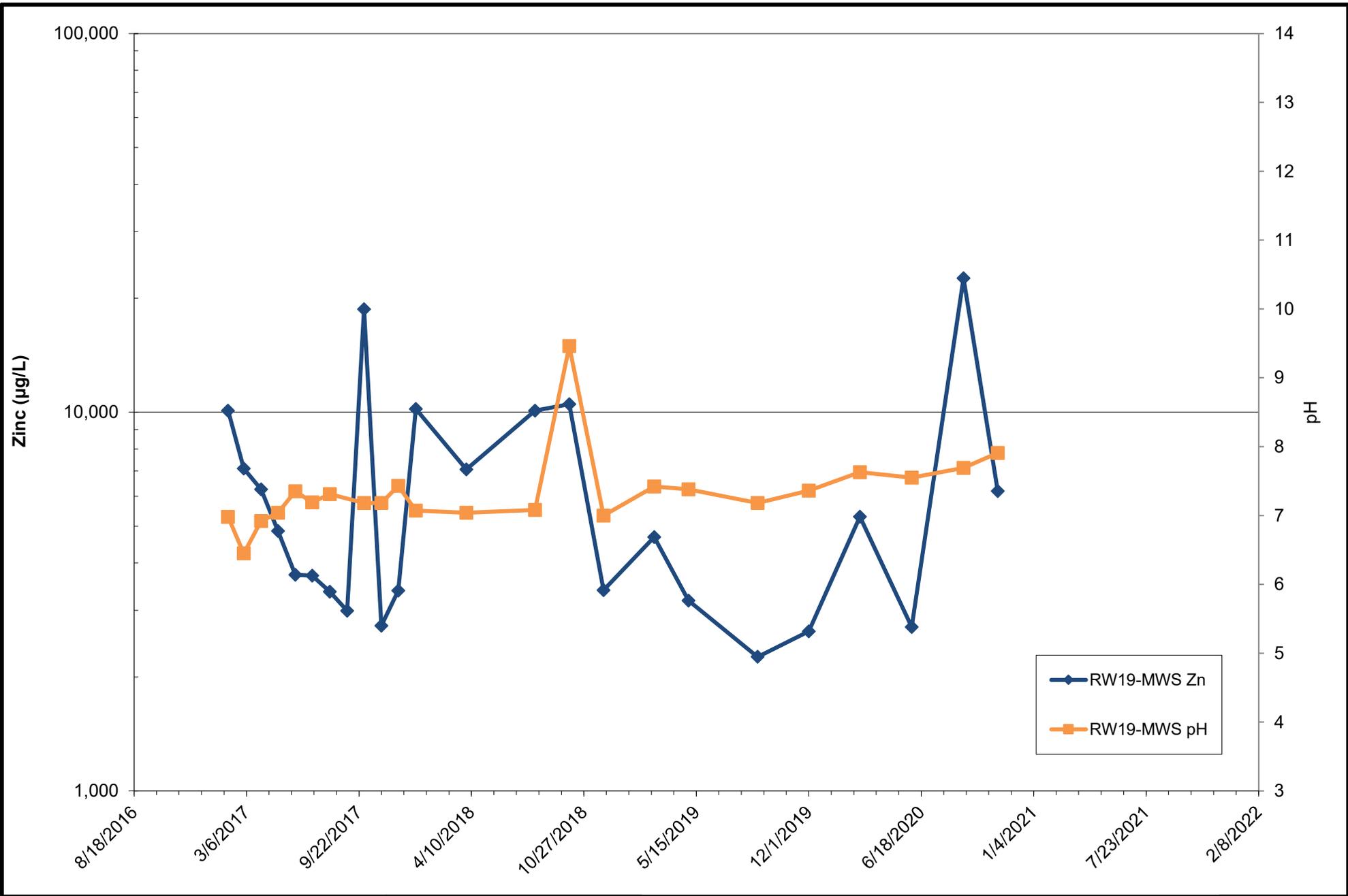
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RW18-MWS pH and Zinc Concentrations

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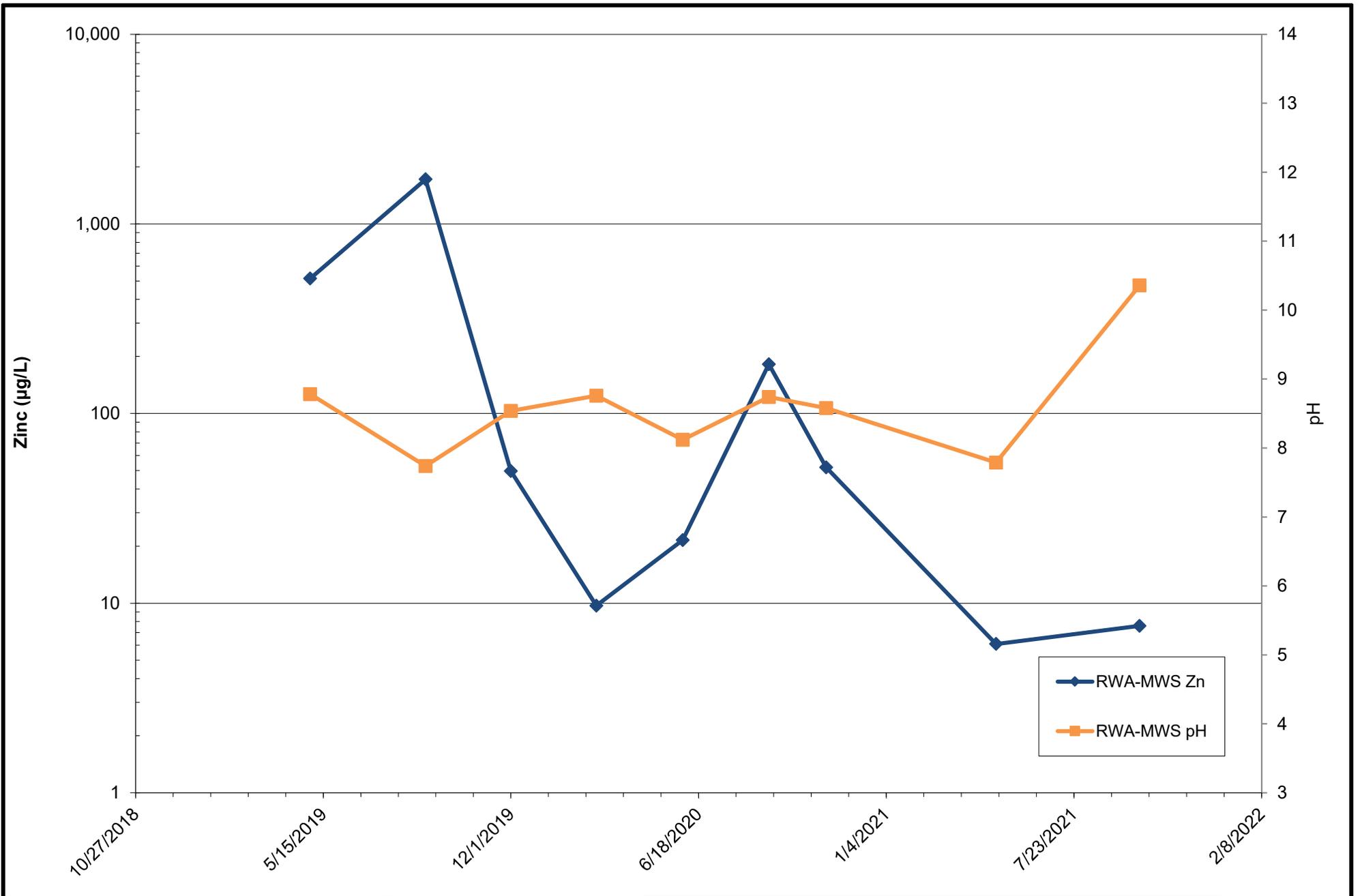
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RW19-MWS pH and Zinc Concentrations

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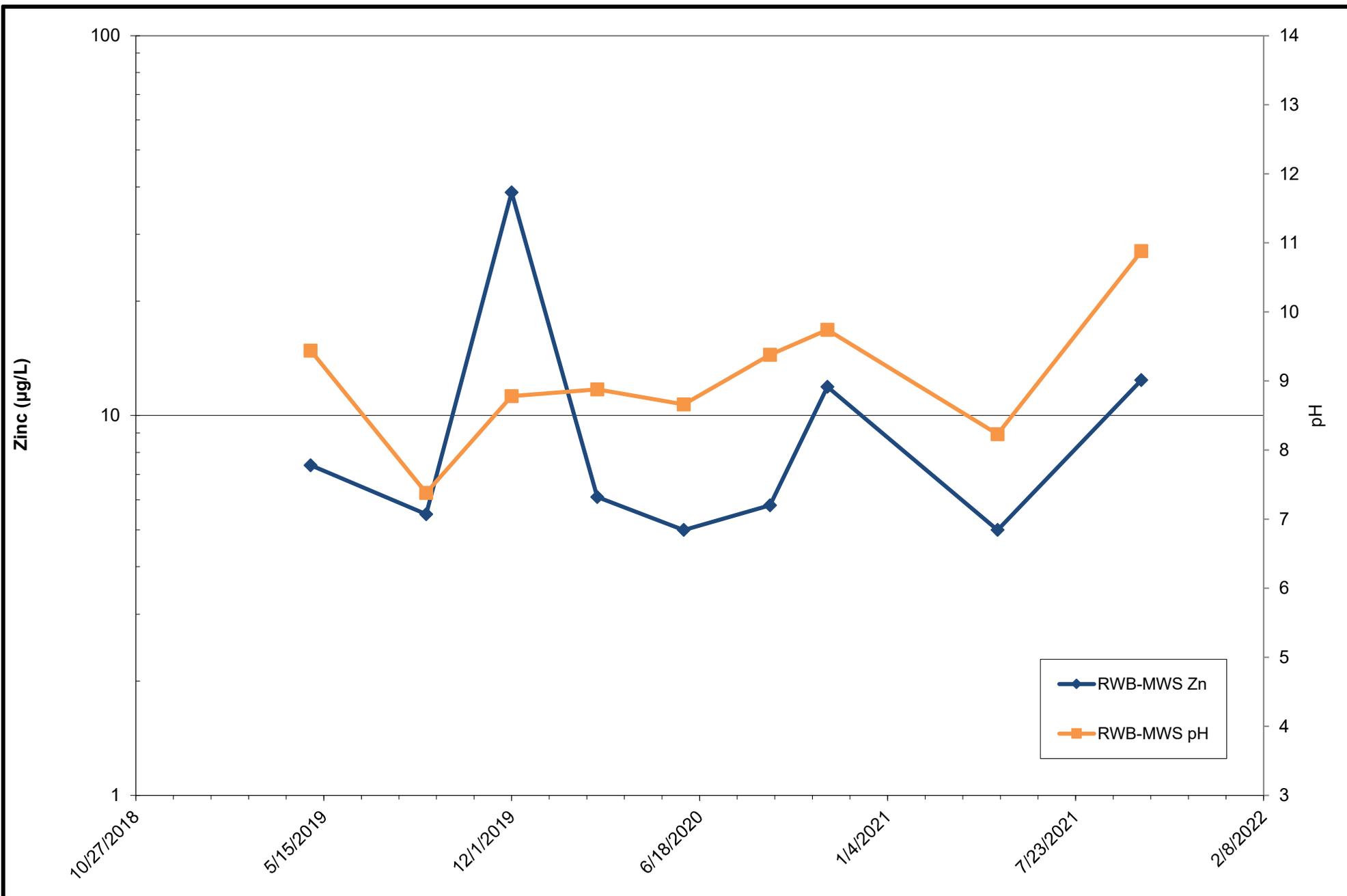
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**RWA-MWS pH and Zinc
Concentrations**

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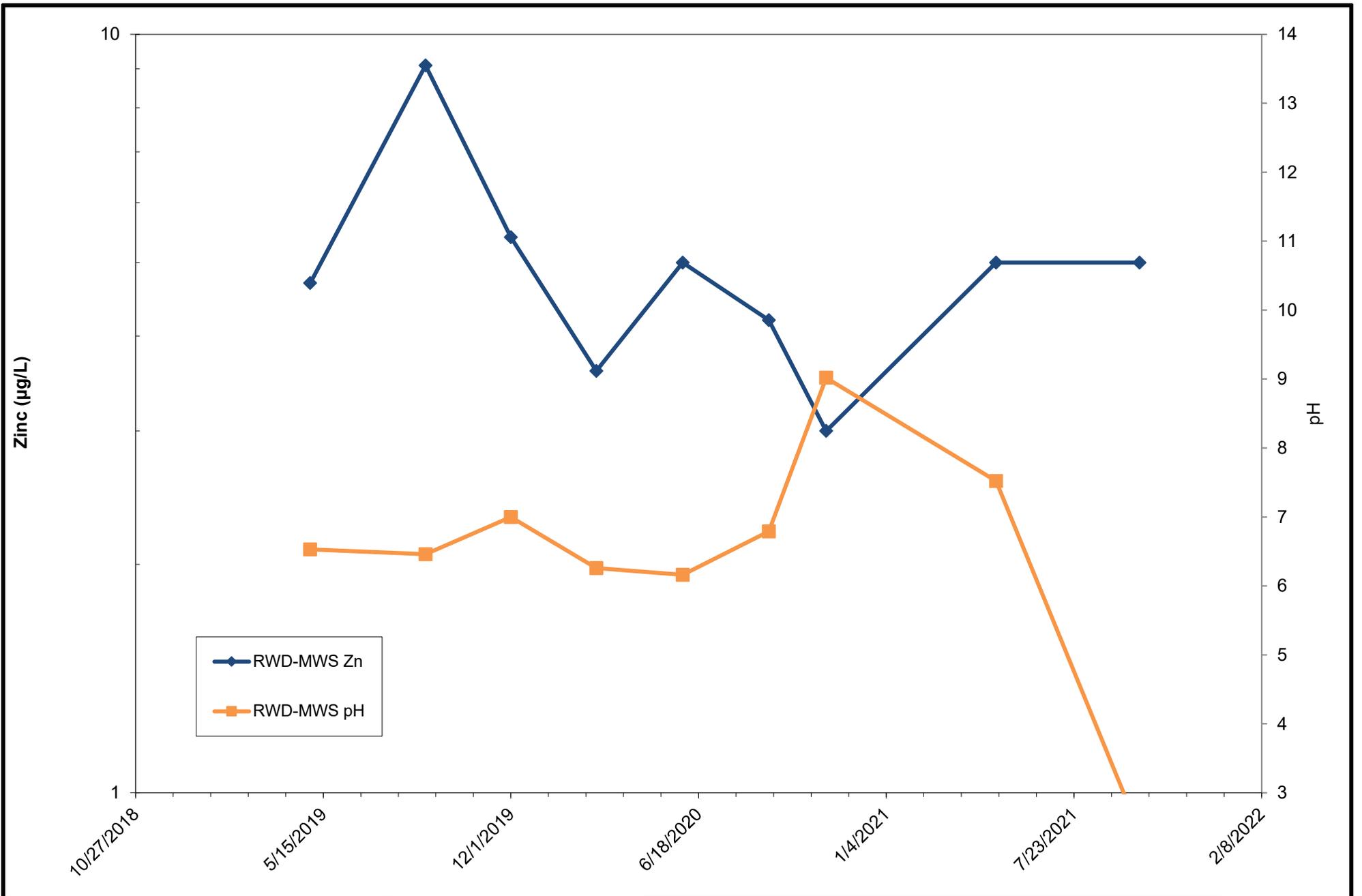
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RWB-MWS pH and Zinc Concentrations

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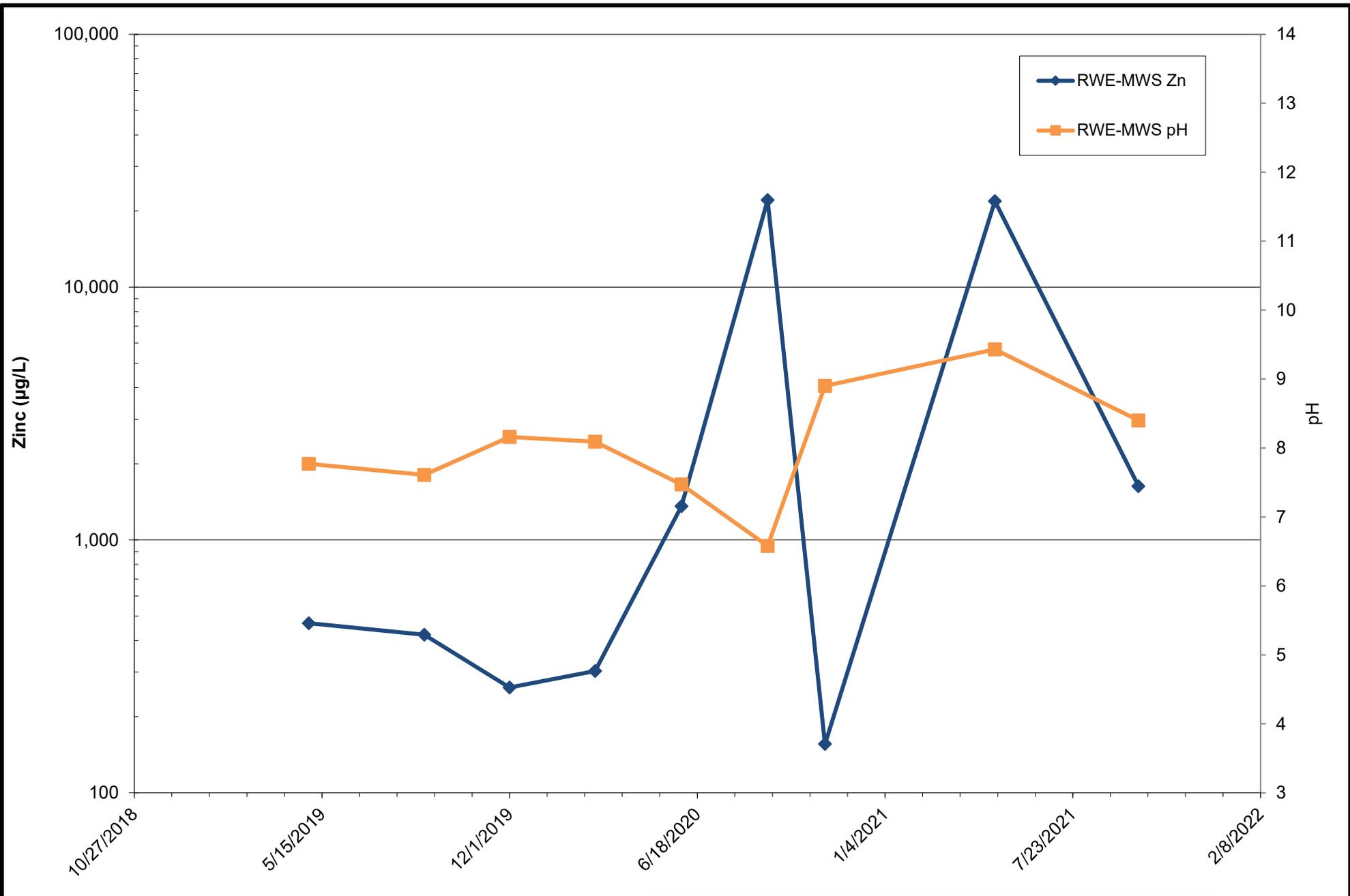
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**RWD-MWS pH and Zinc
Concentrations**

February 2022

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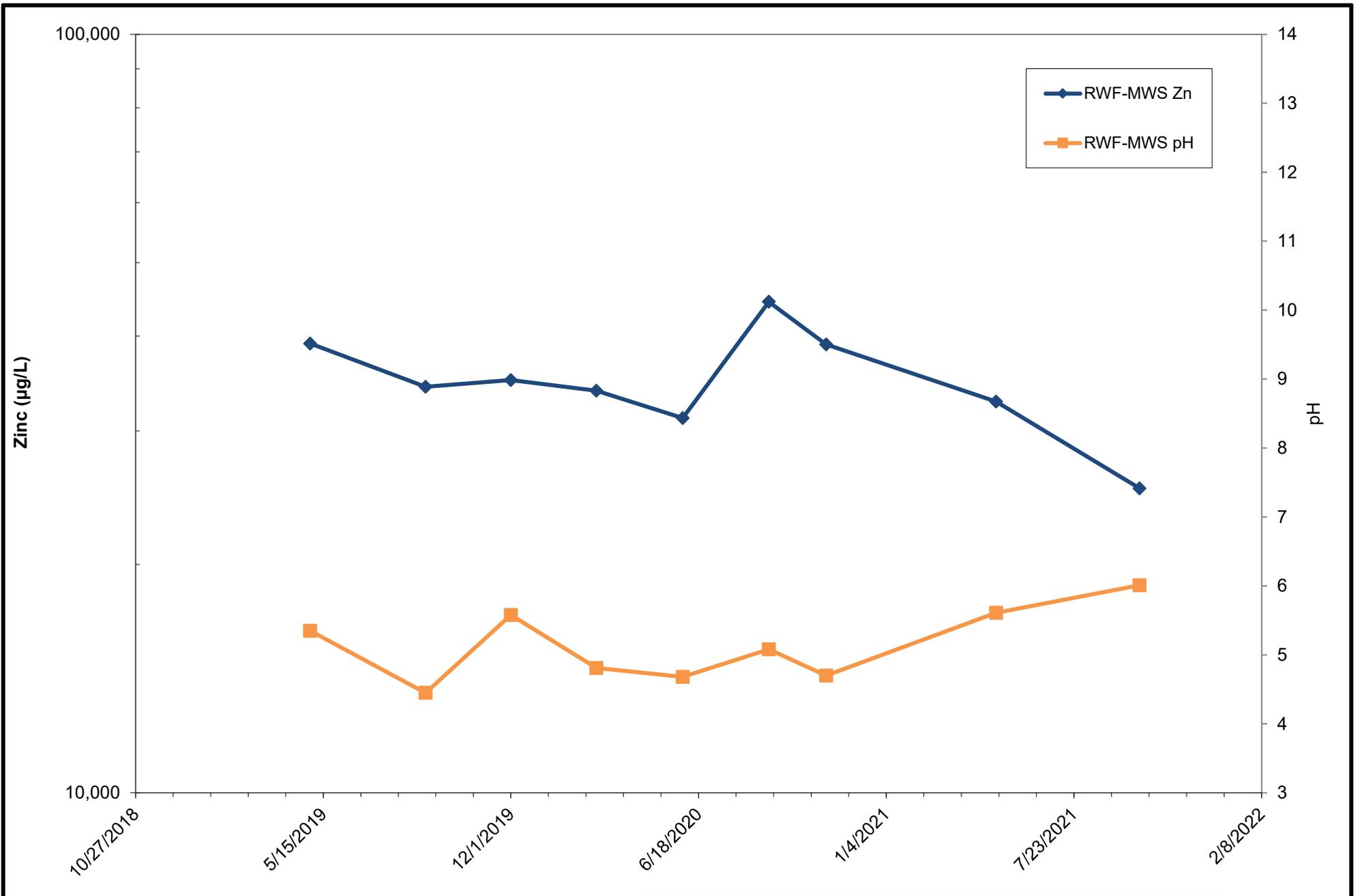
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**RWE-MWS pH and Zinc
Concentrations**

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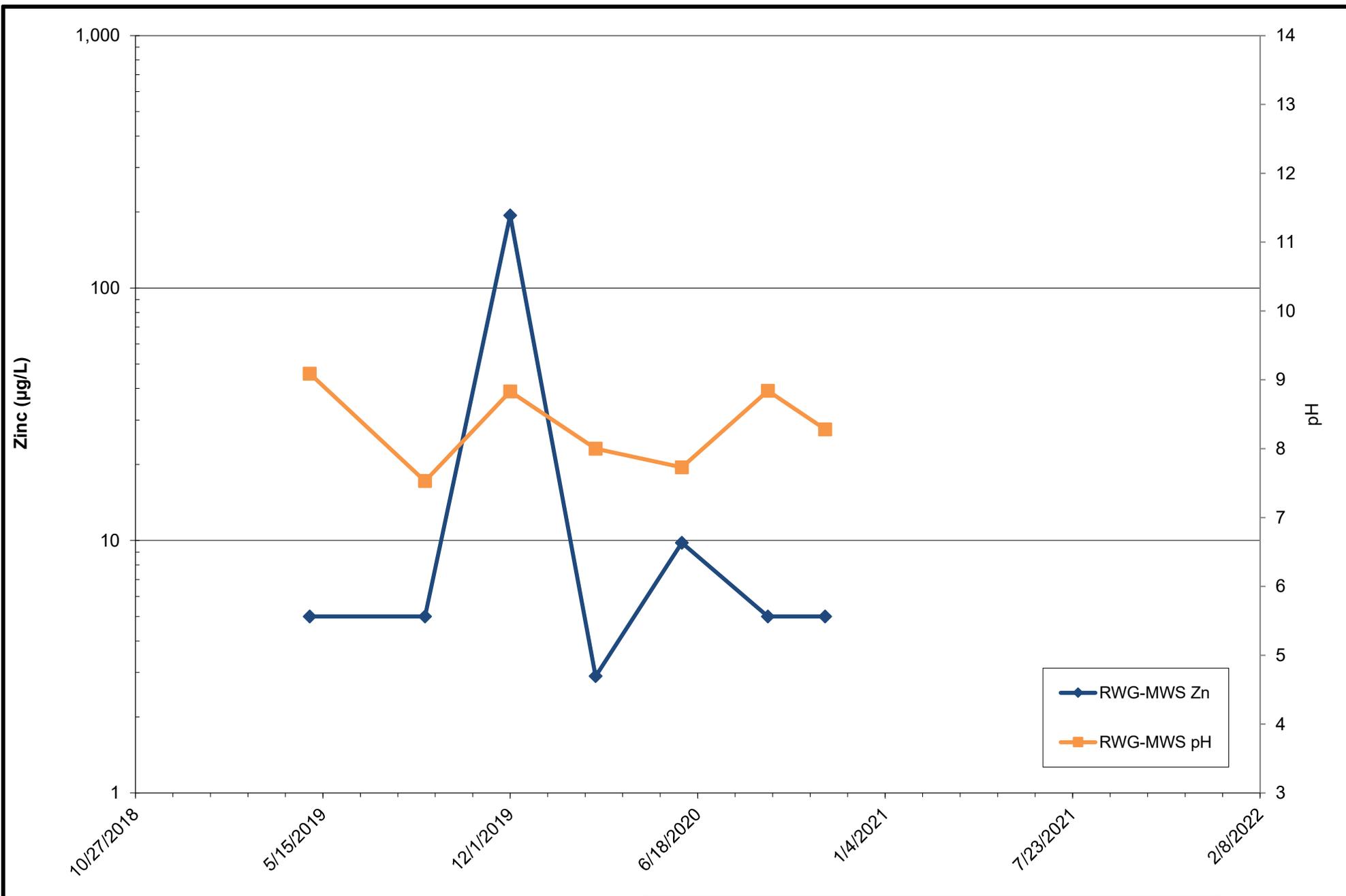
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**RWF-MWS pH and Zinc
Concentrations**

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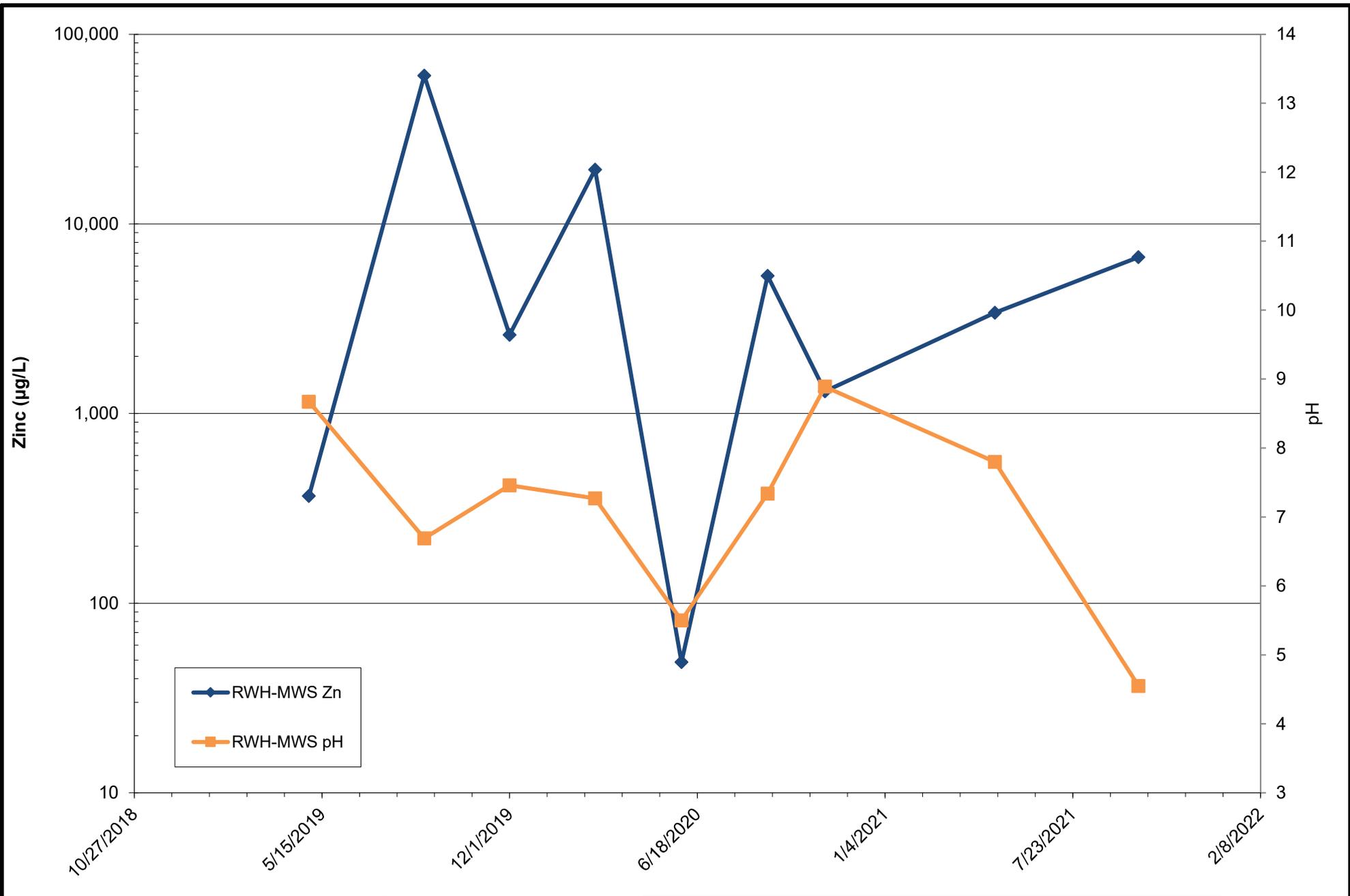
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**RWG-MWS pH and Zinc
Concentrations**

February 2022

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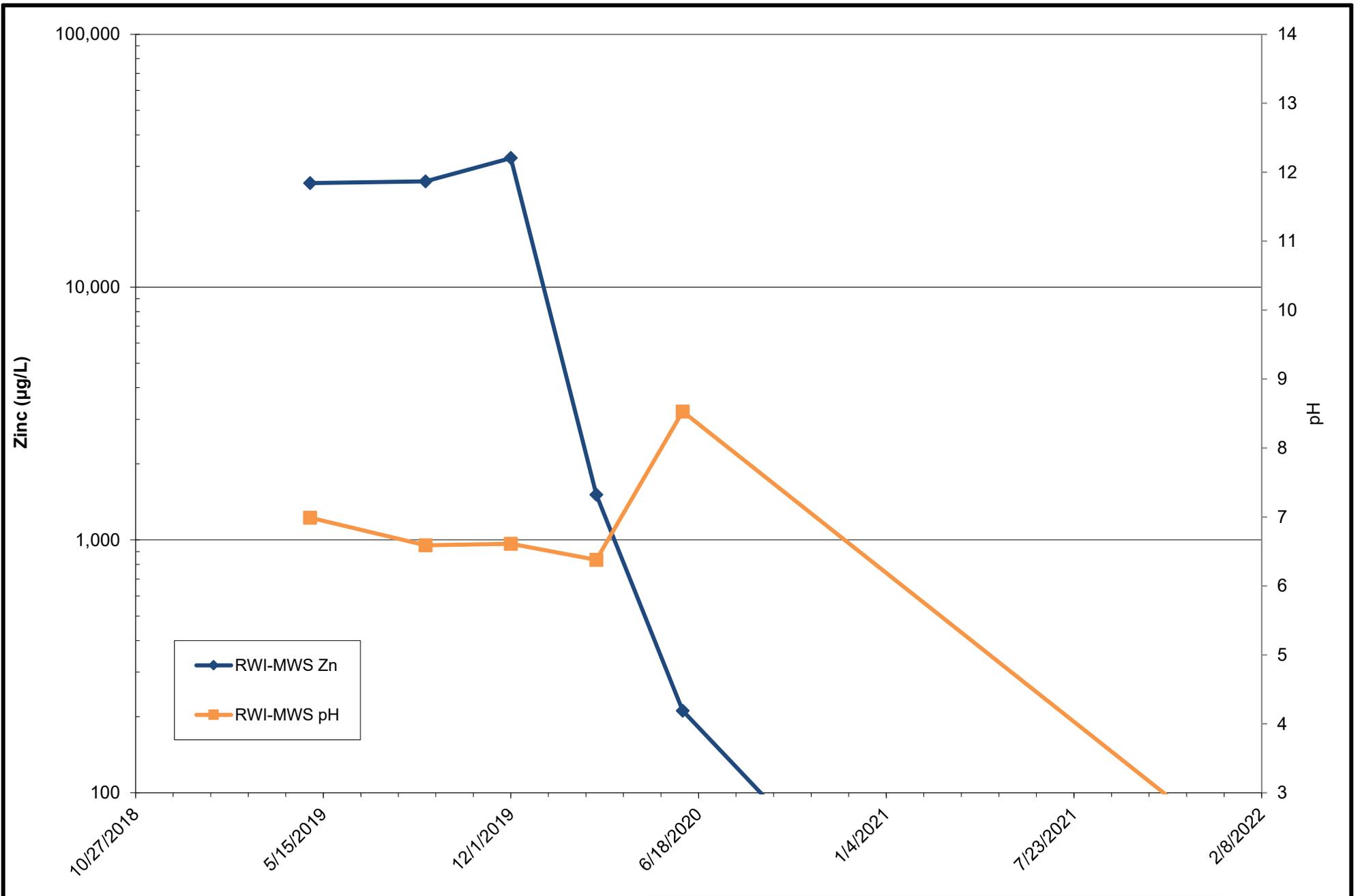
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Sparrows Point, Maryland

RWH-MWS pH and Zinc Concentrations

February 2022

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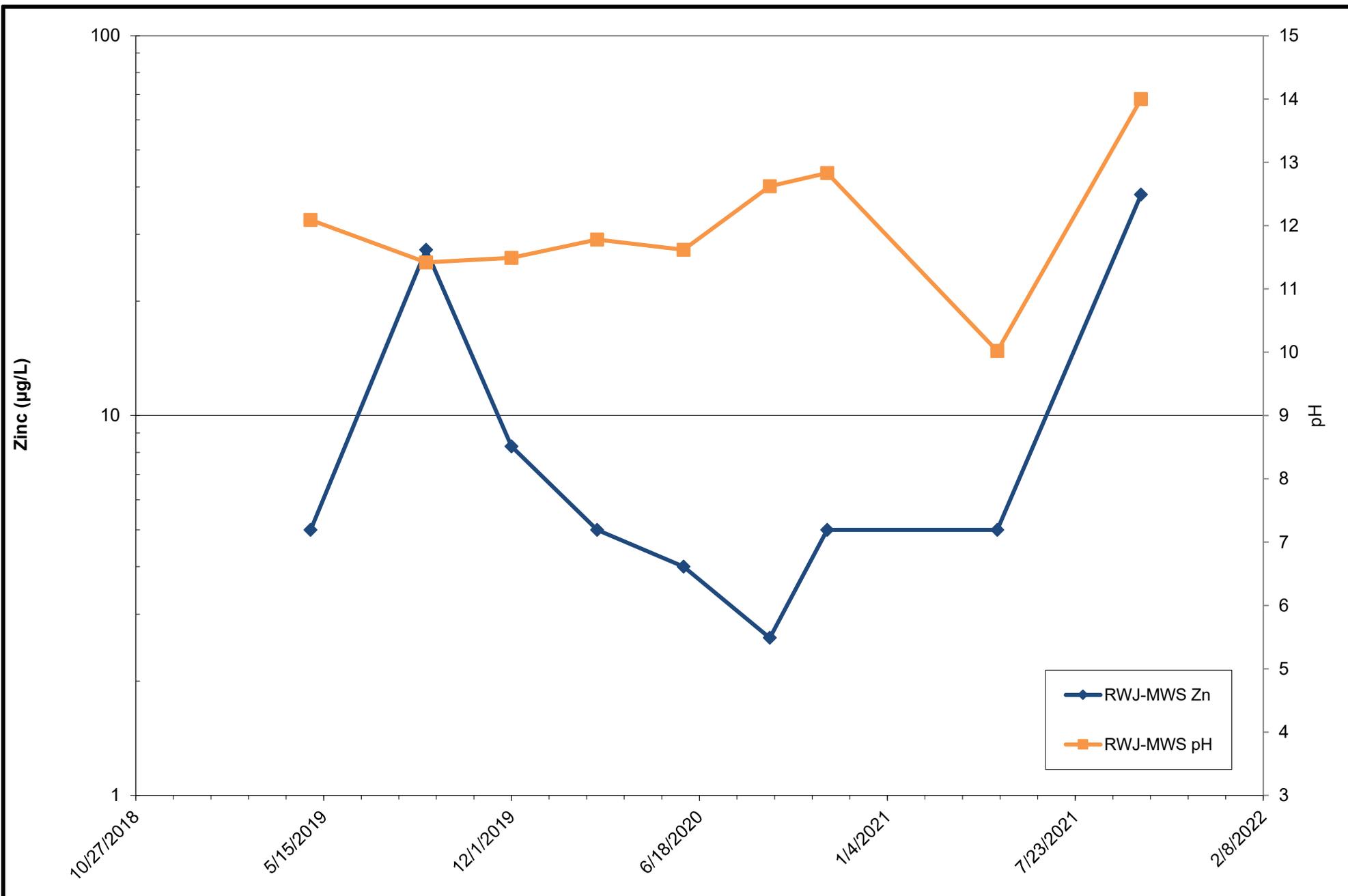
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RWI-MWS pH and Zinc Concentrations

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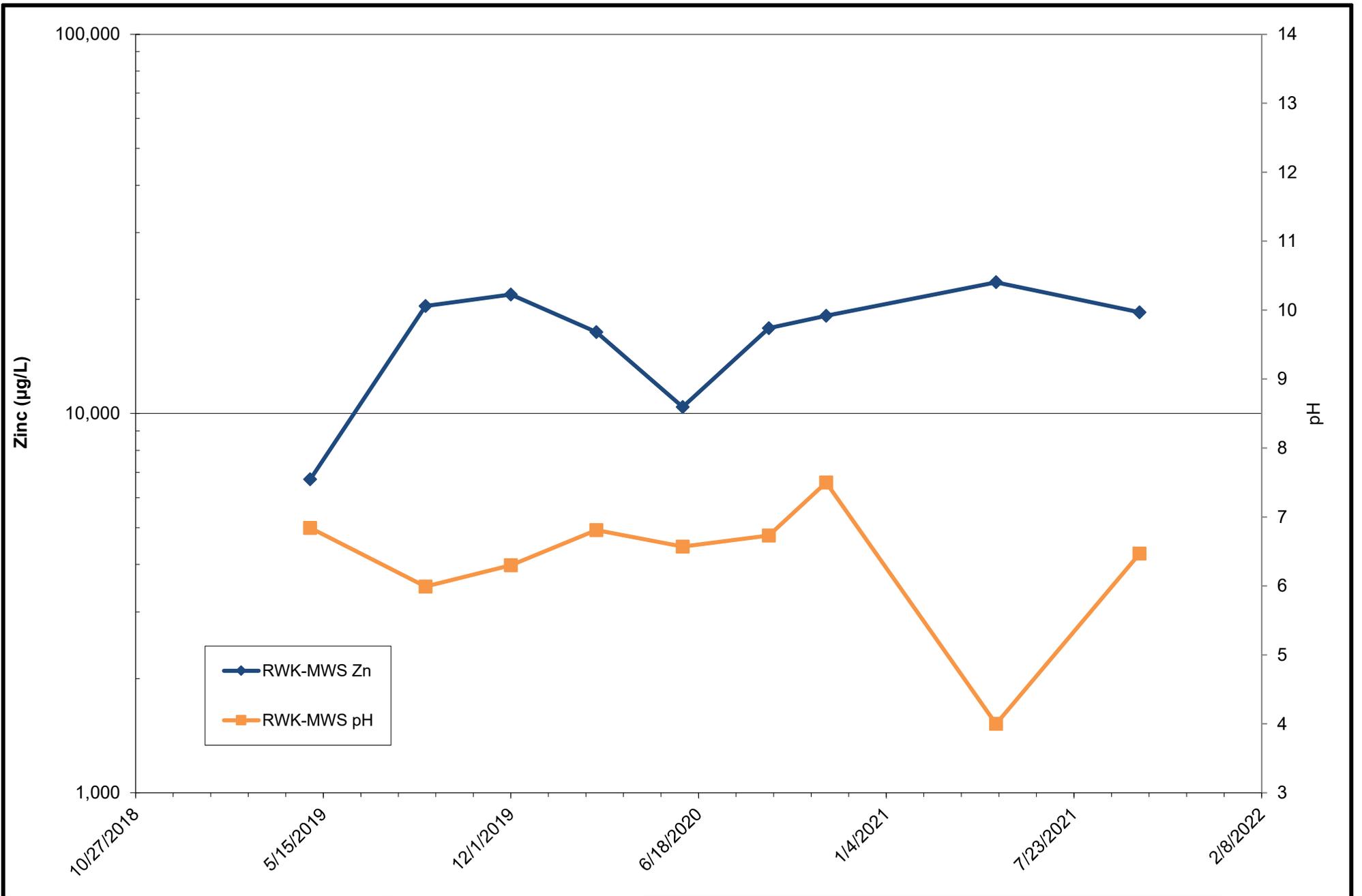
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RWJ-MWS pH and Zinc Concentrations

February 2022

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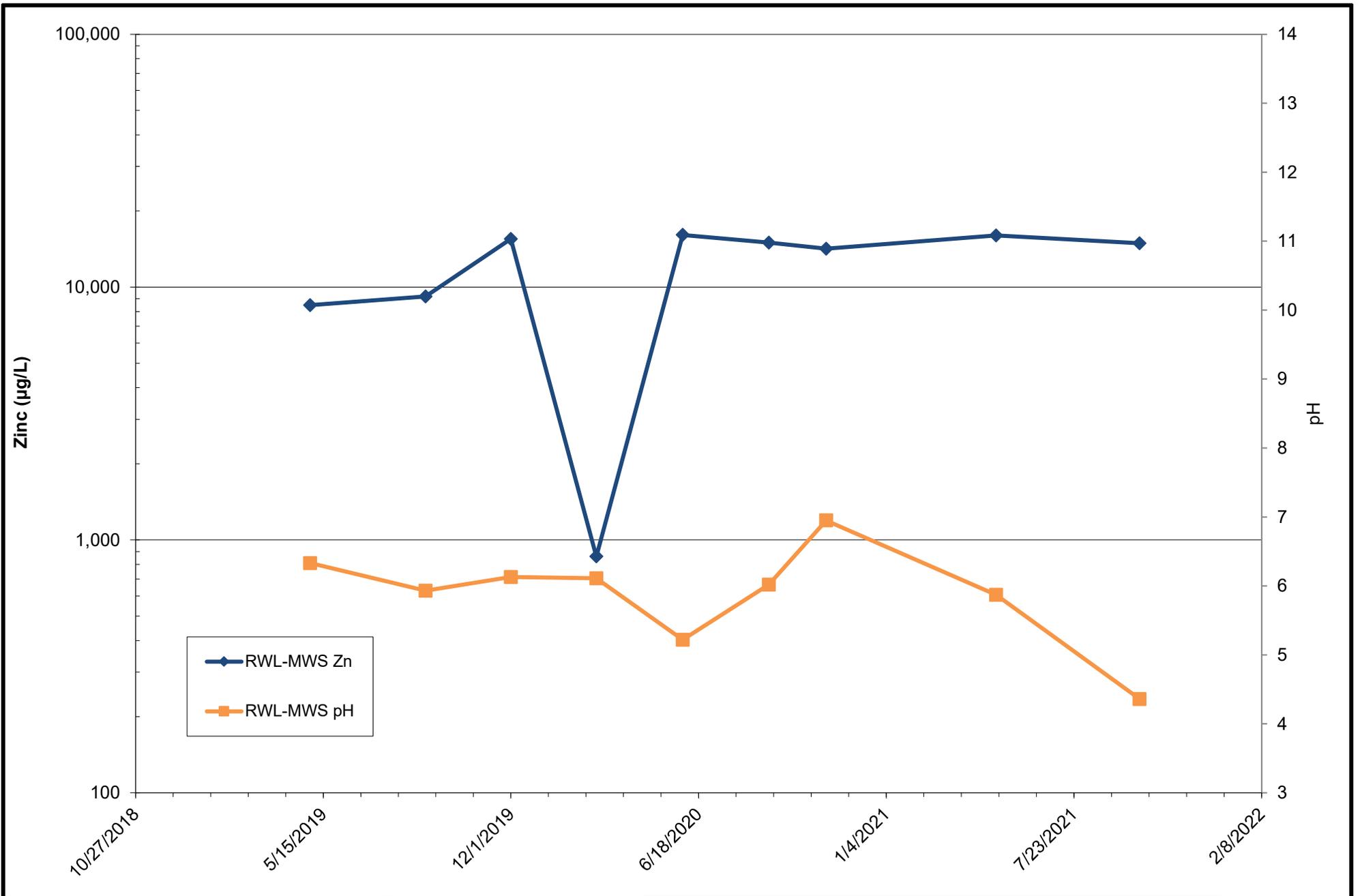
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RWK-MWS pH and Zinc Concentrations

February 2022

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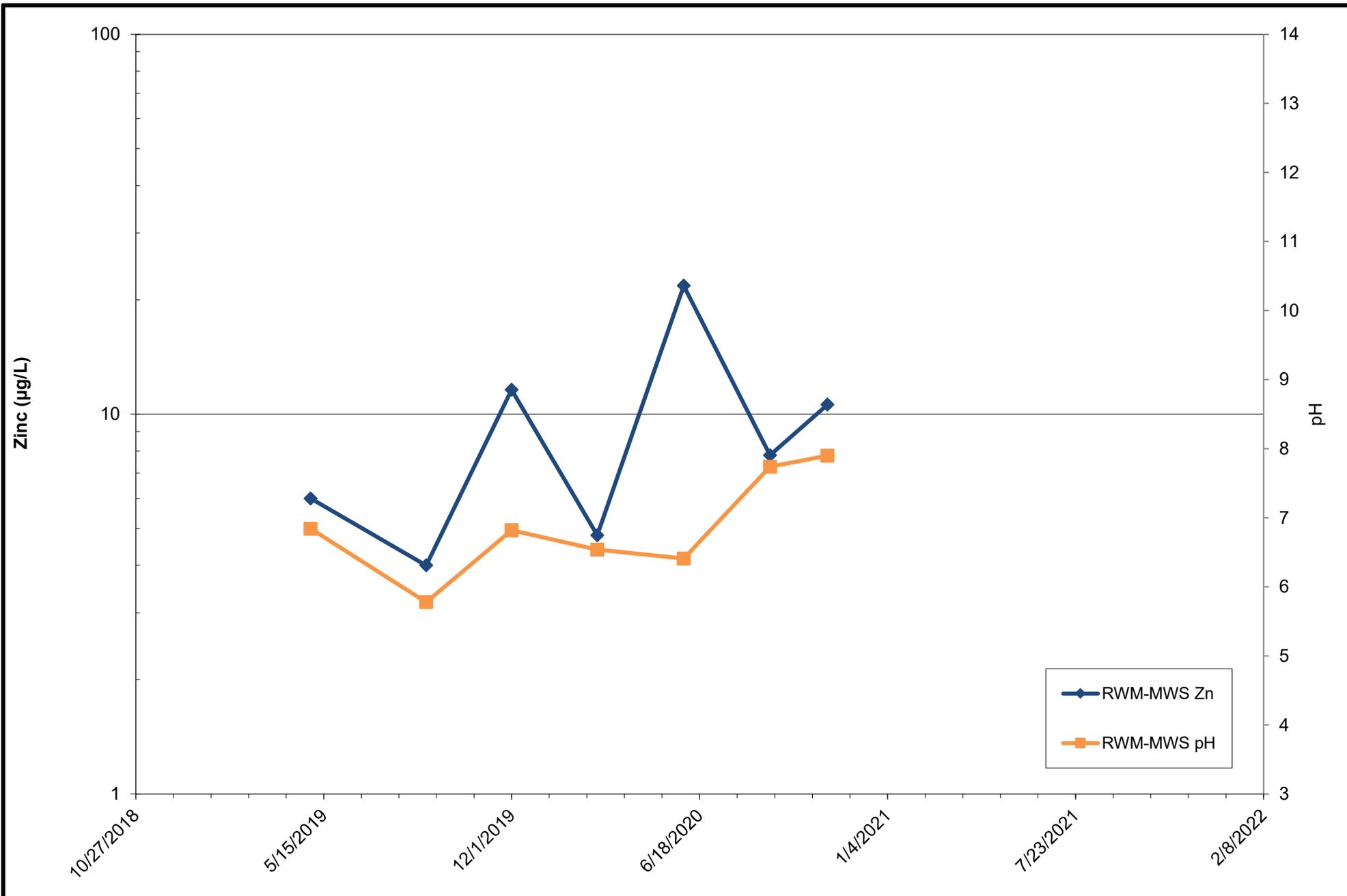
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RWL-MWS pH and Zinc Concentrations

February 2022

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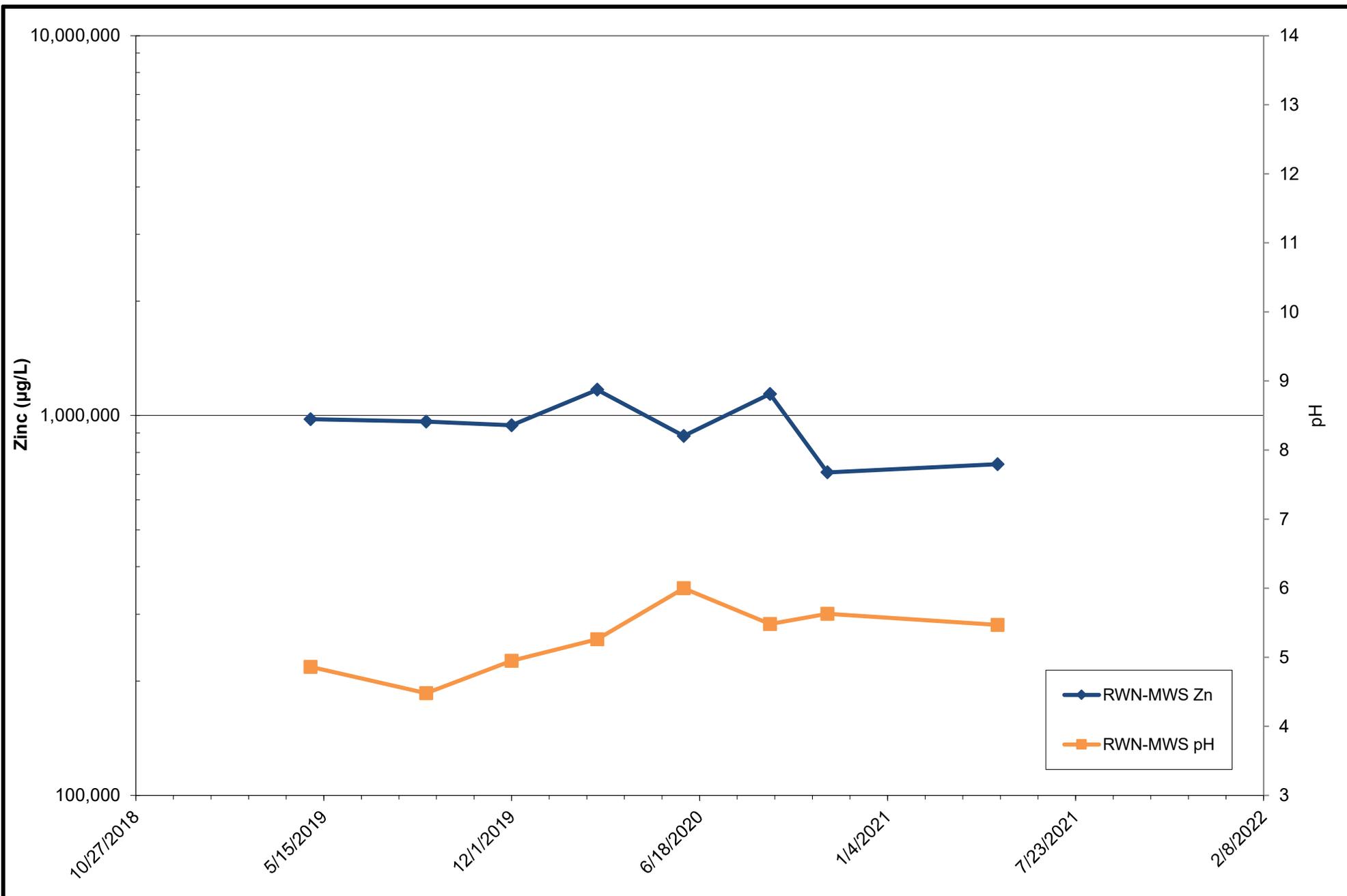
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RWM-MWS pH and Zinc Concentrations

February 2022

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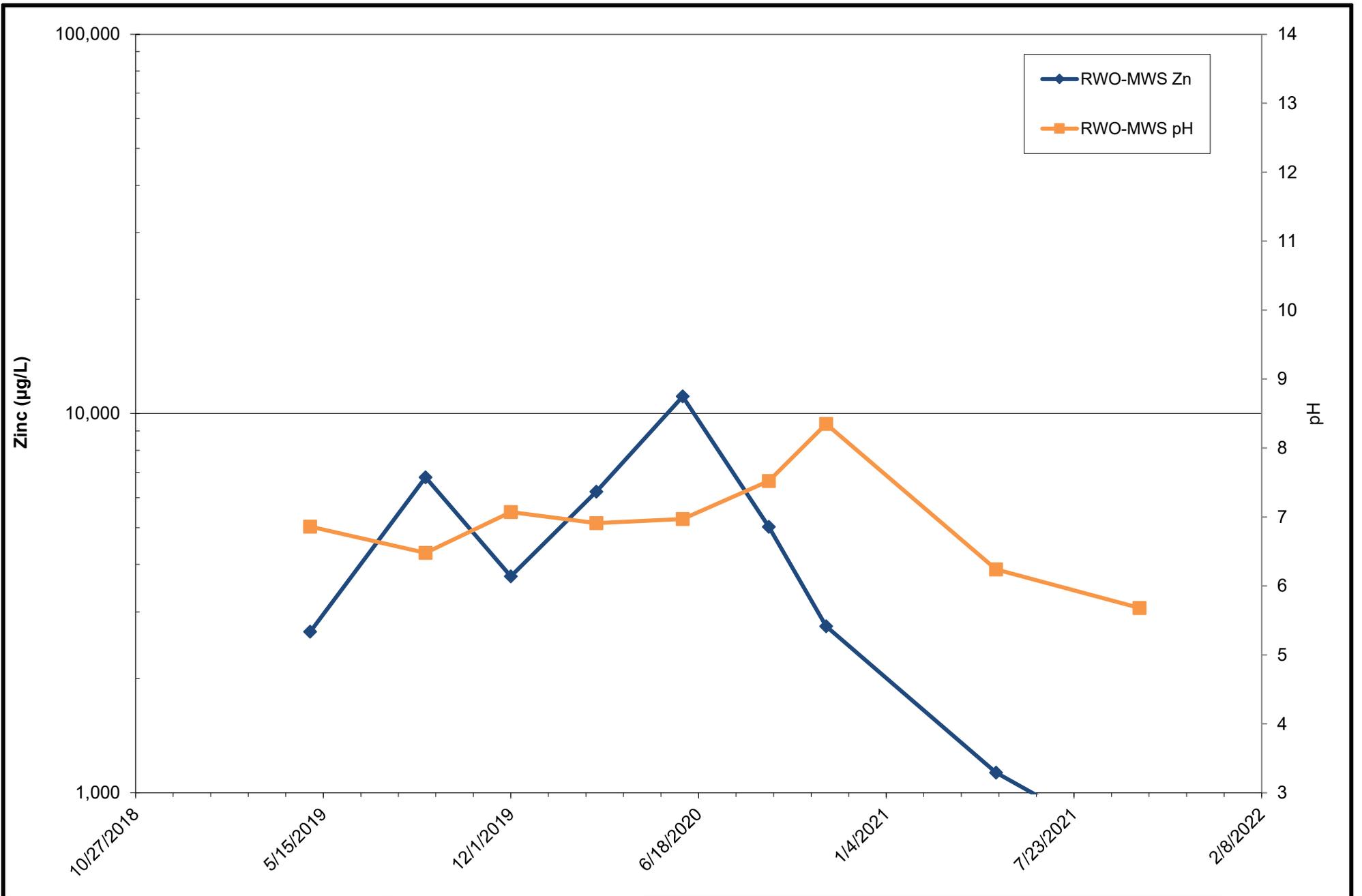
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RWN-MWS pH and Zinc Concentrations

February 2022

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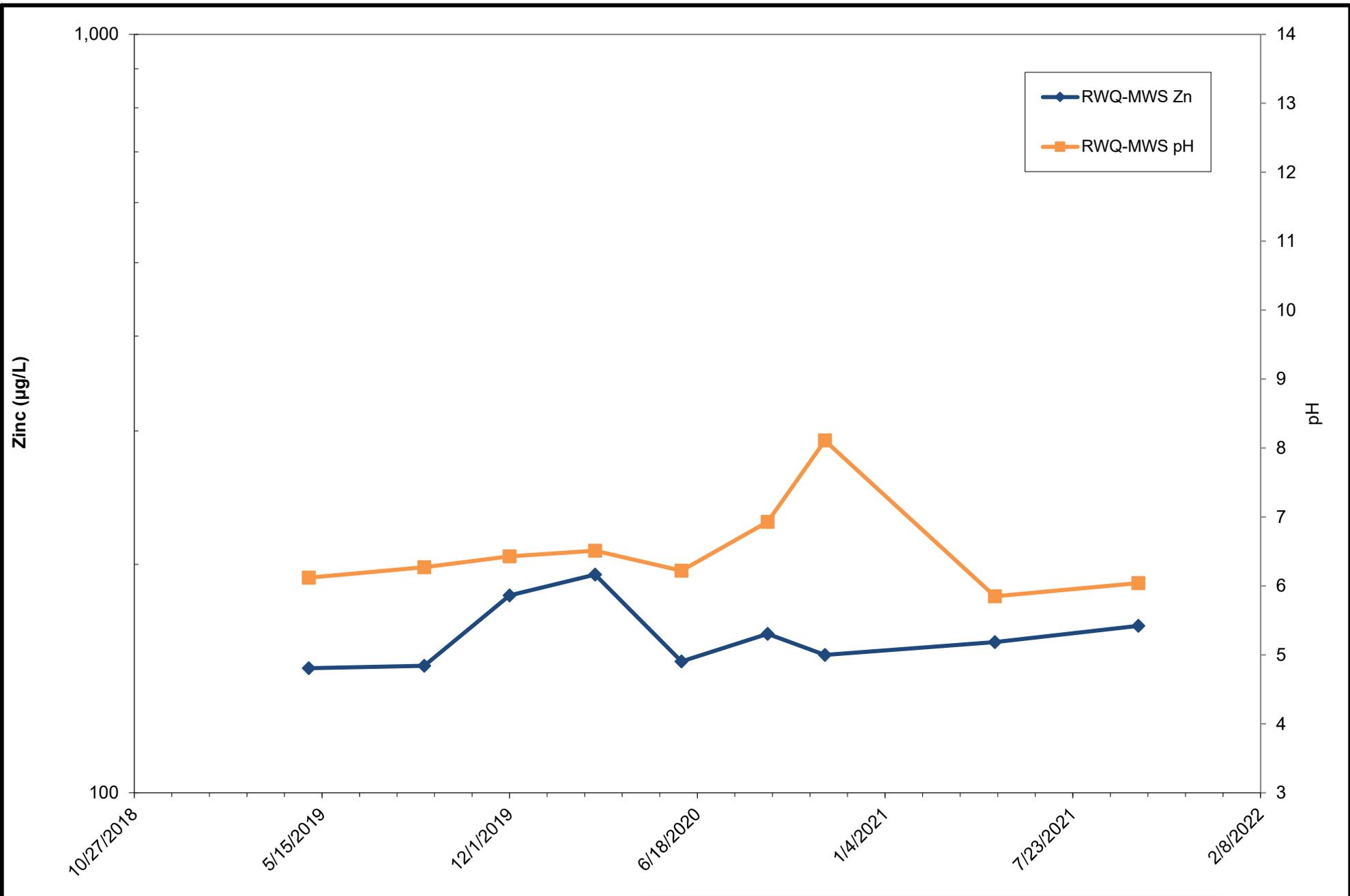
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**RWO-MWS pH and Zinc
Concentrations**

February 2022

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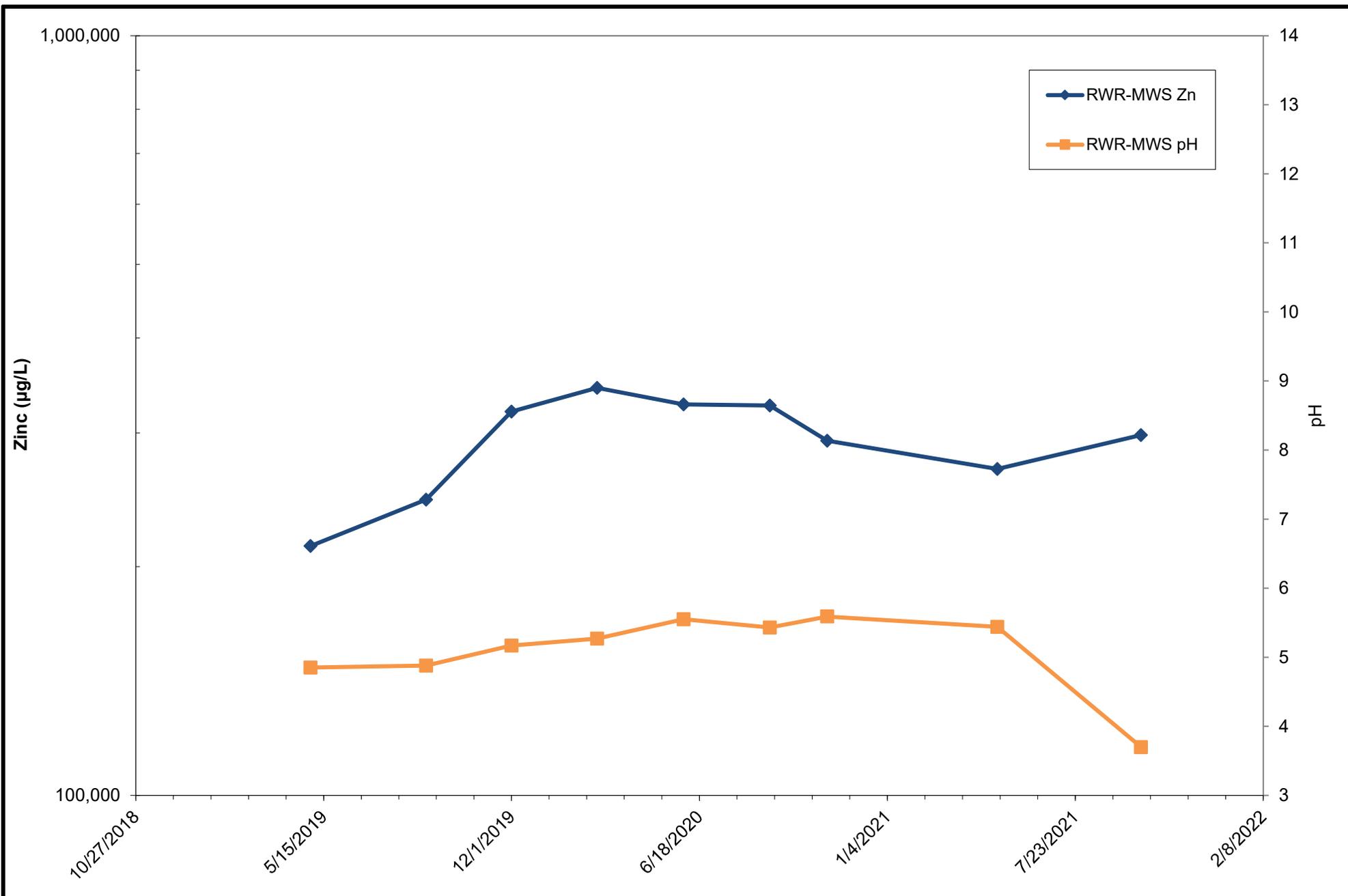
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**RWQ-MWS pH and Zinc
Concentrations**

February 2022

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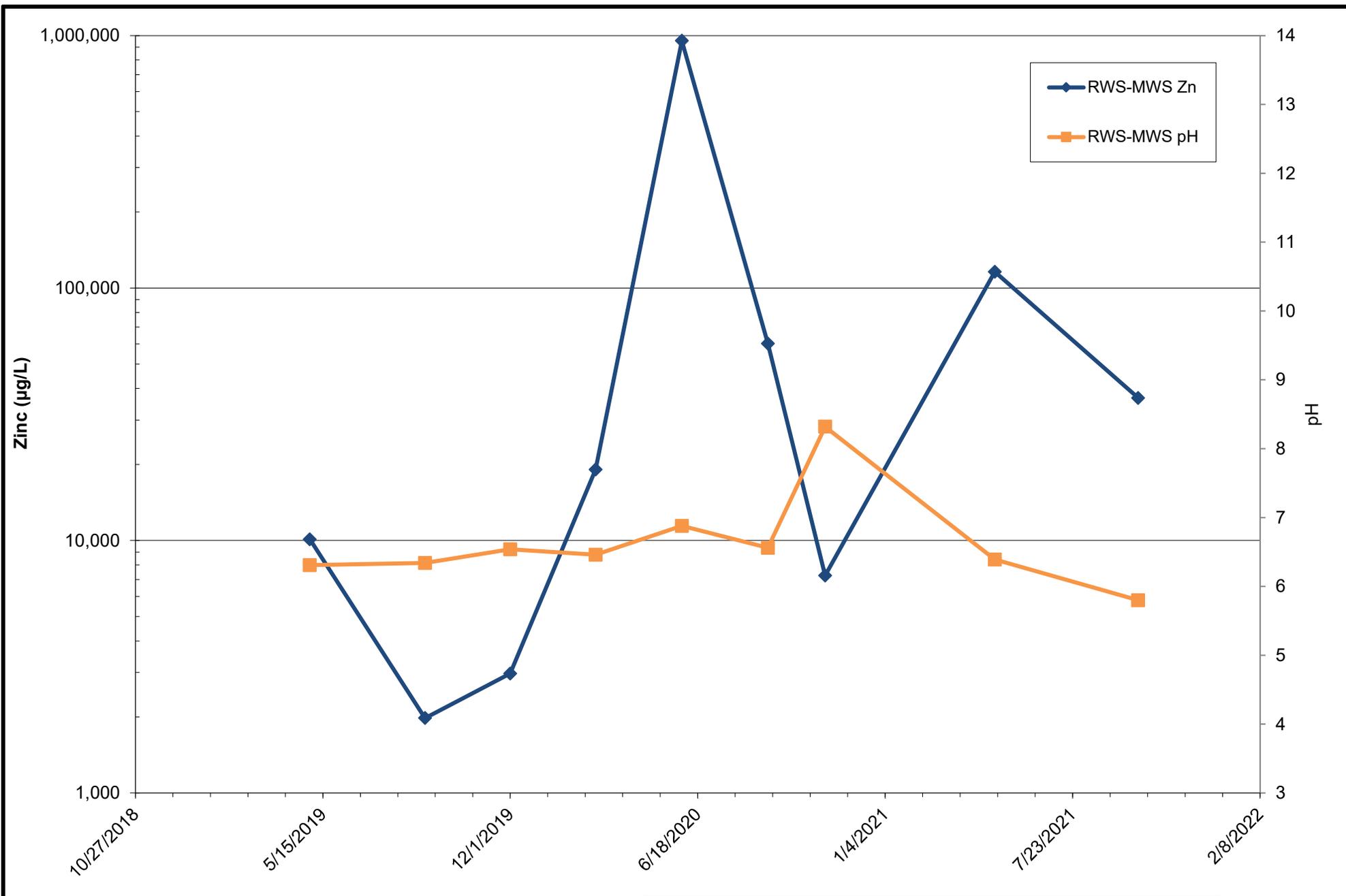
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**RWR-MWS pH and Zinc
Concentrations**

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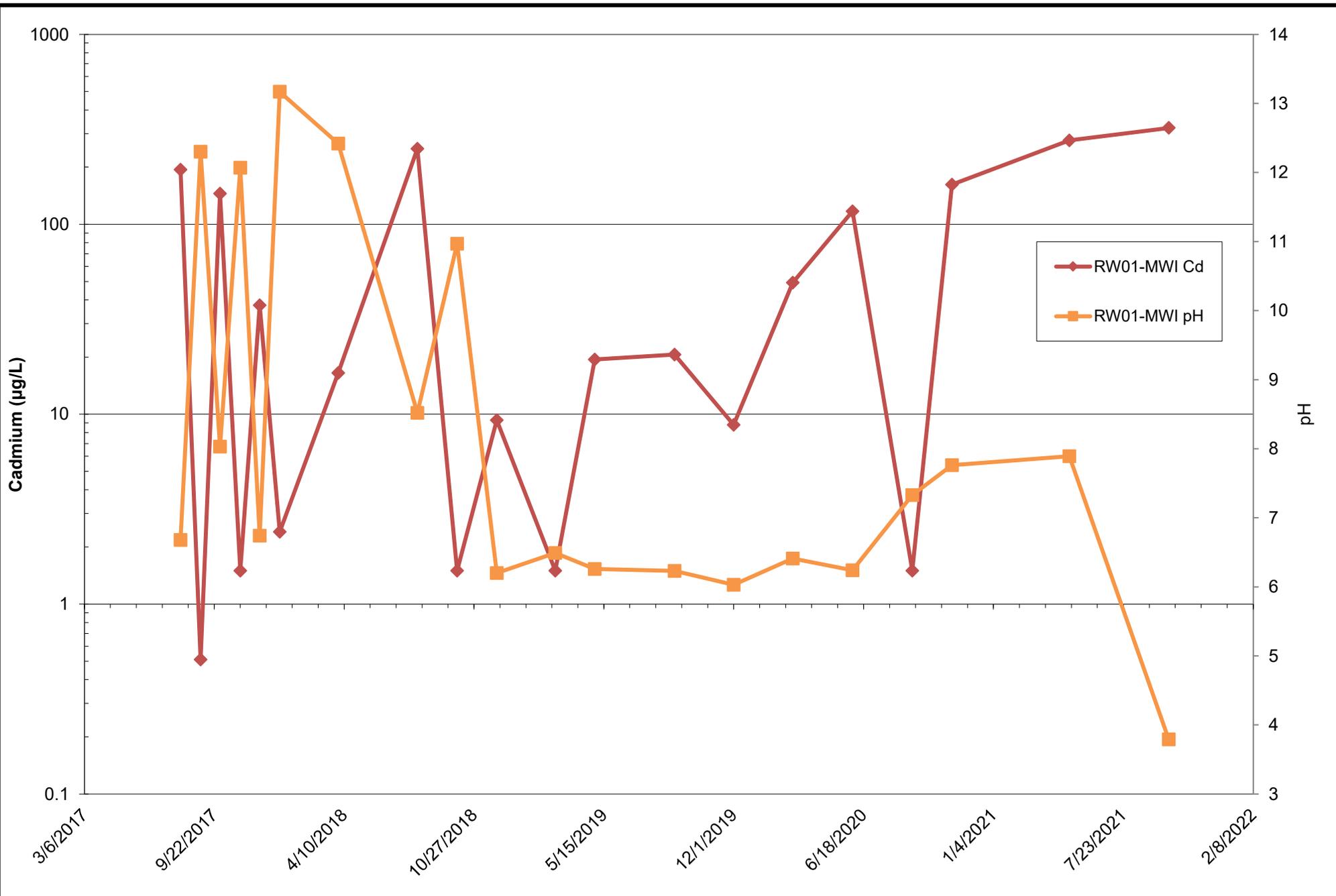
Sparrows Point, Maryland

**RWS-MWS pH and Zinc
Concentrations**

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APPENDIX C



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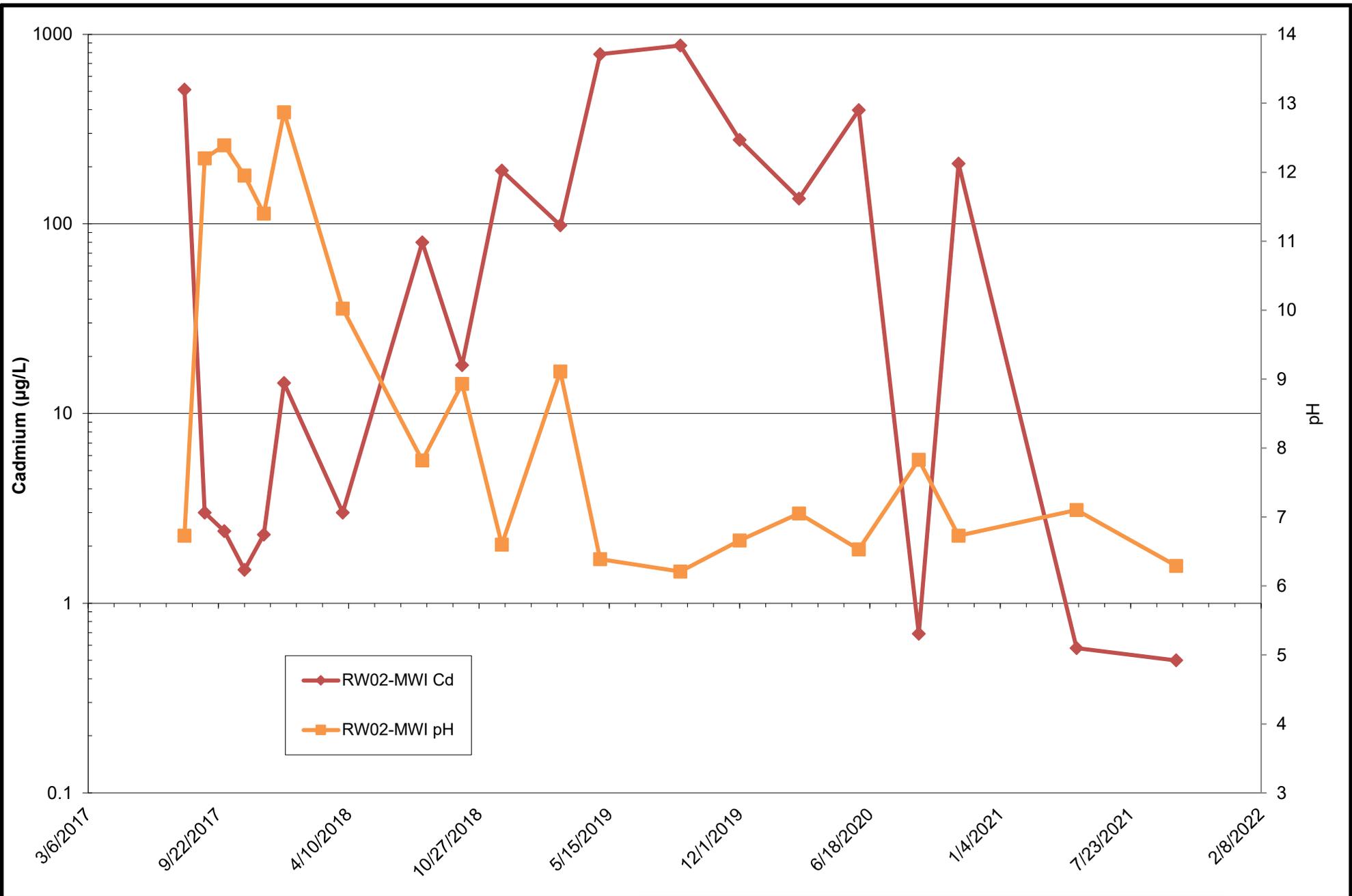
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Sparrows Point, Maryland

**RW01-MWI pH and Cadmium
Concentrations**

February 2022

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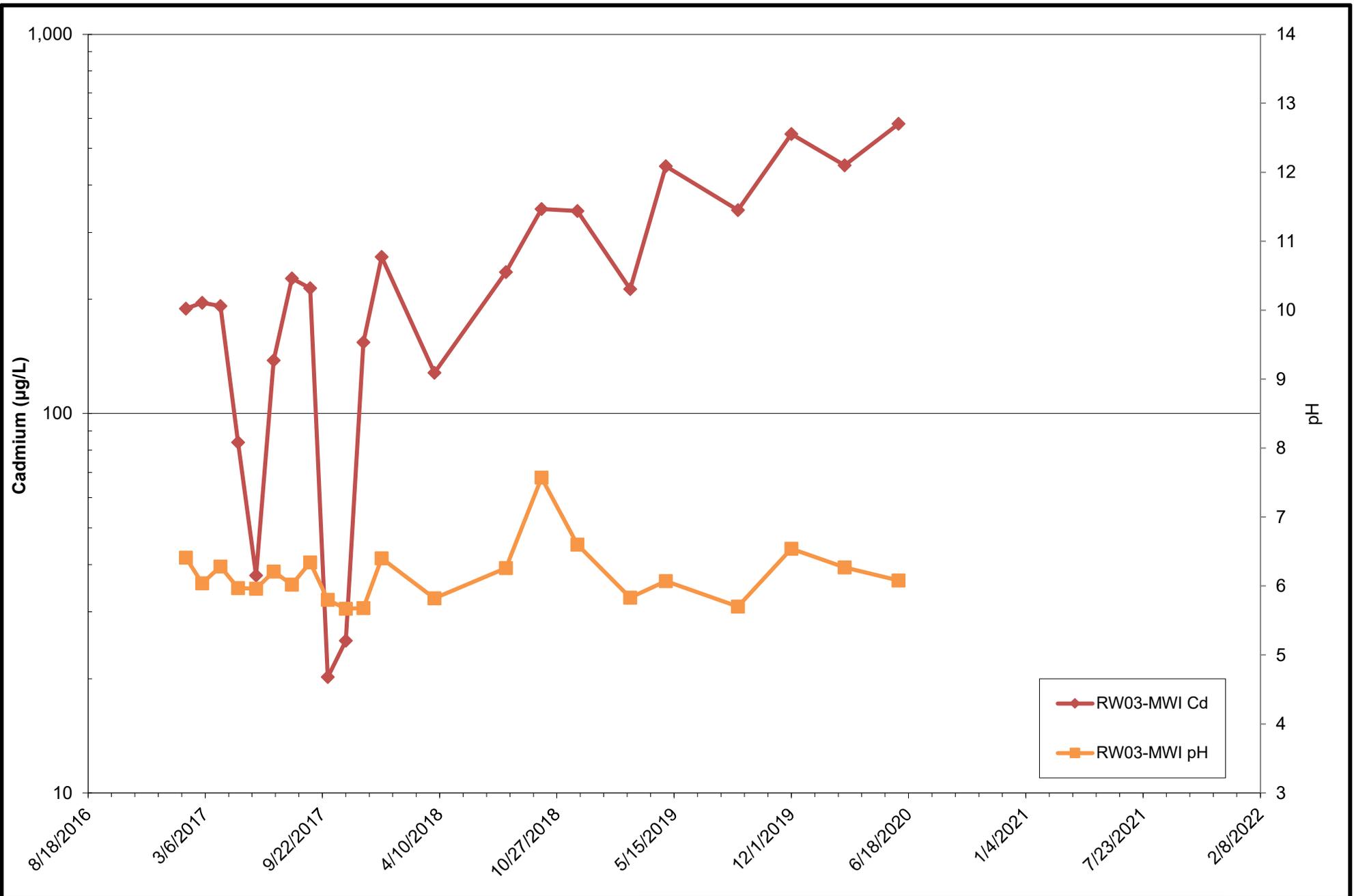
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Tradeport Atlantic

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**RW02-MWI pH and Cadmium
Concentrations**

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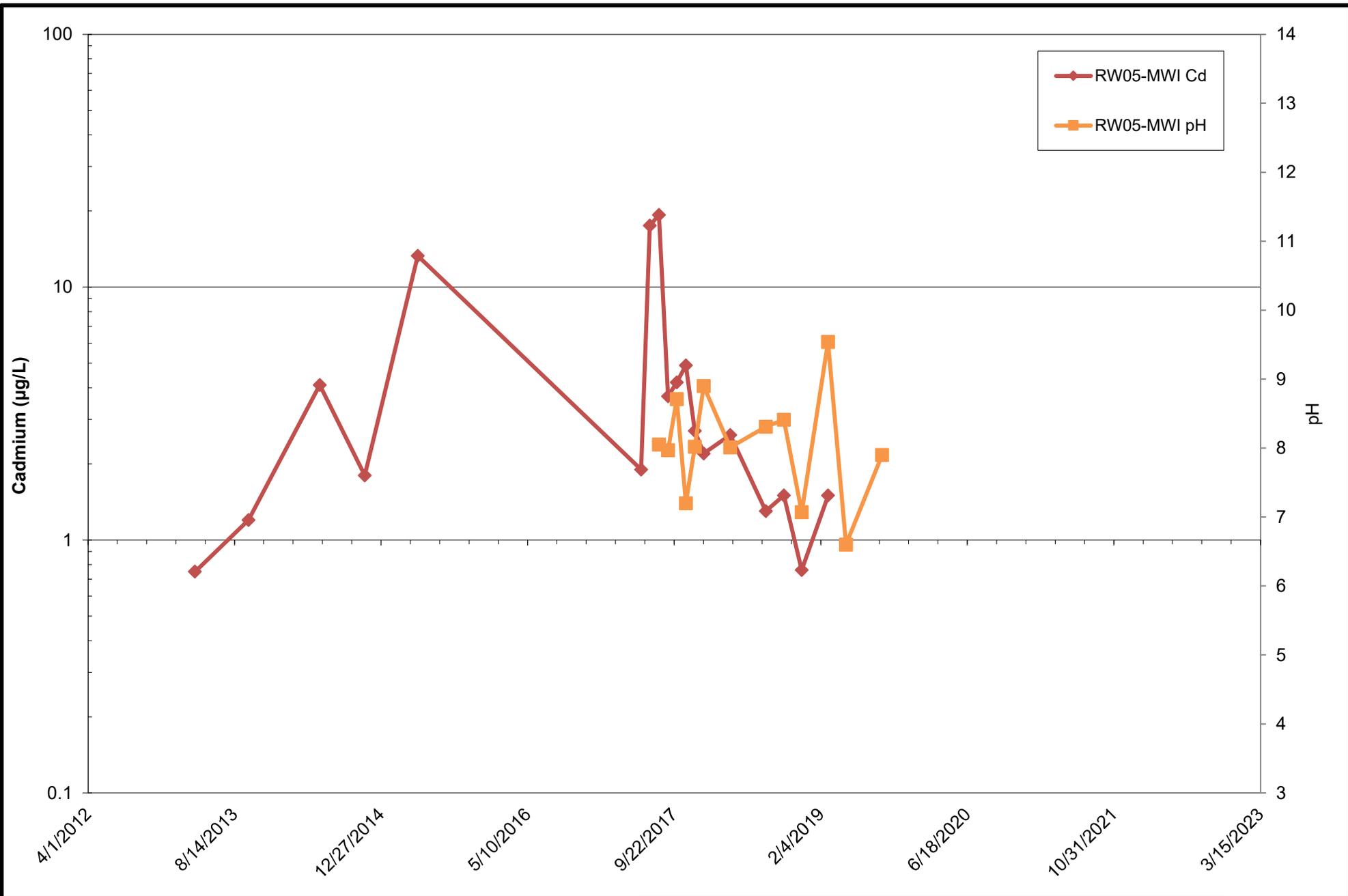
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**RW03-MWI pH and Cadmium
Concentrations**

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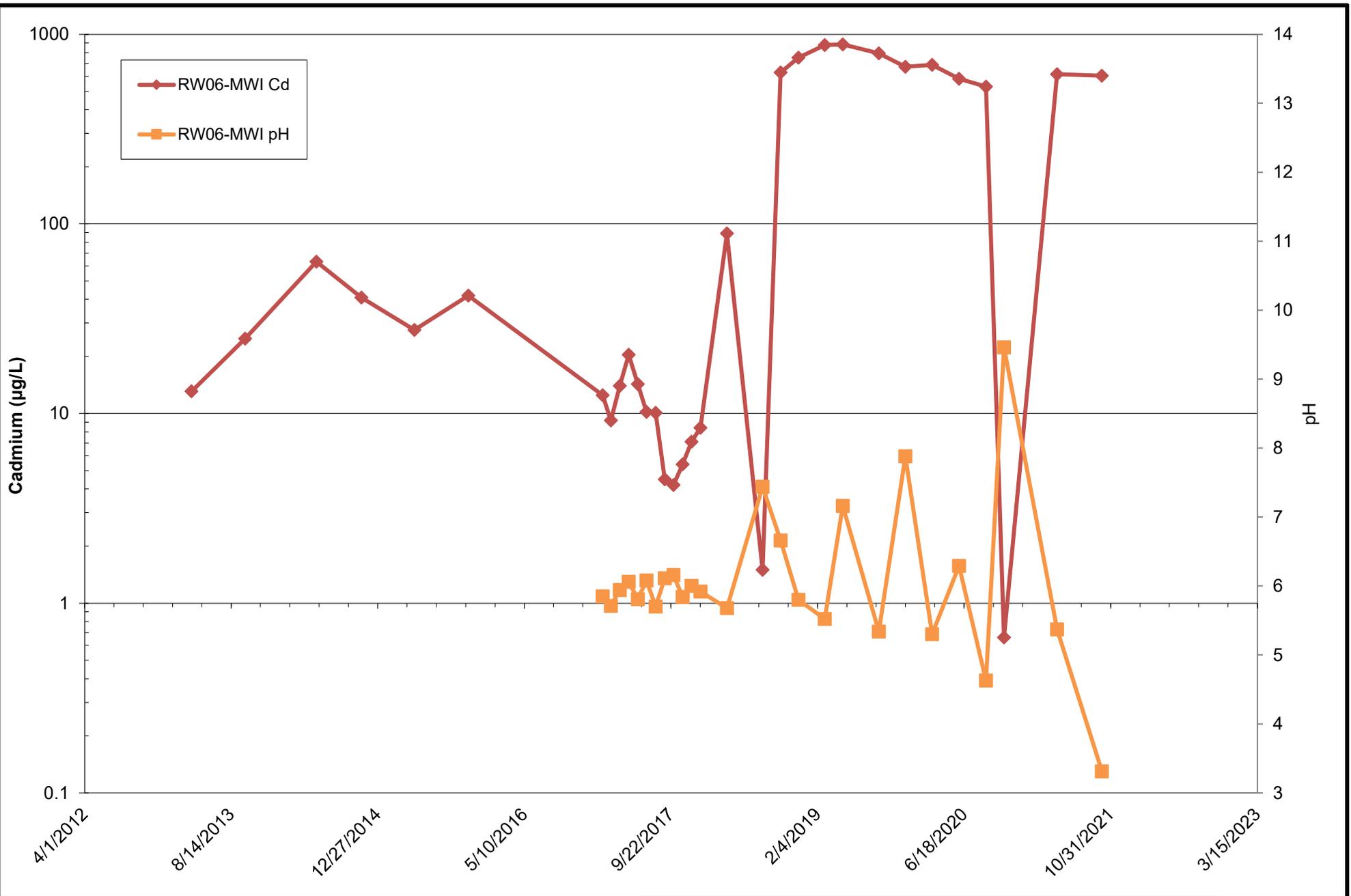
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**RW05-MWI pH and Cadmium
Concentrations**

February 2022

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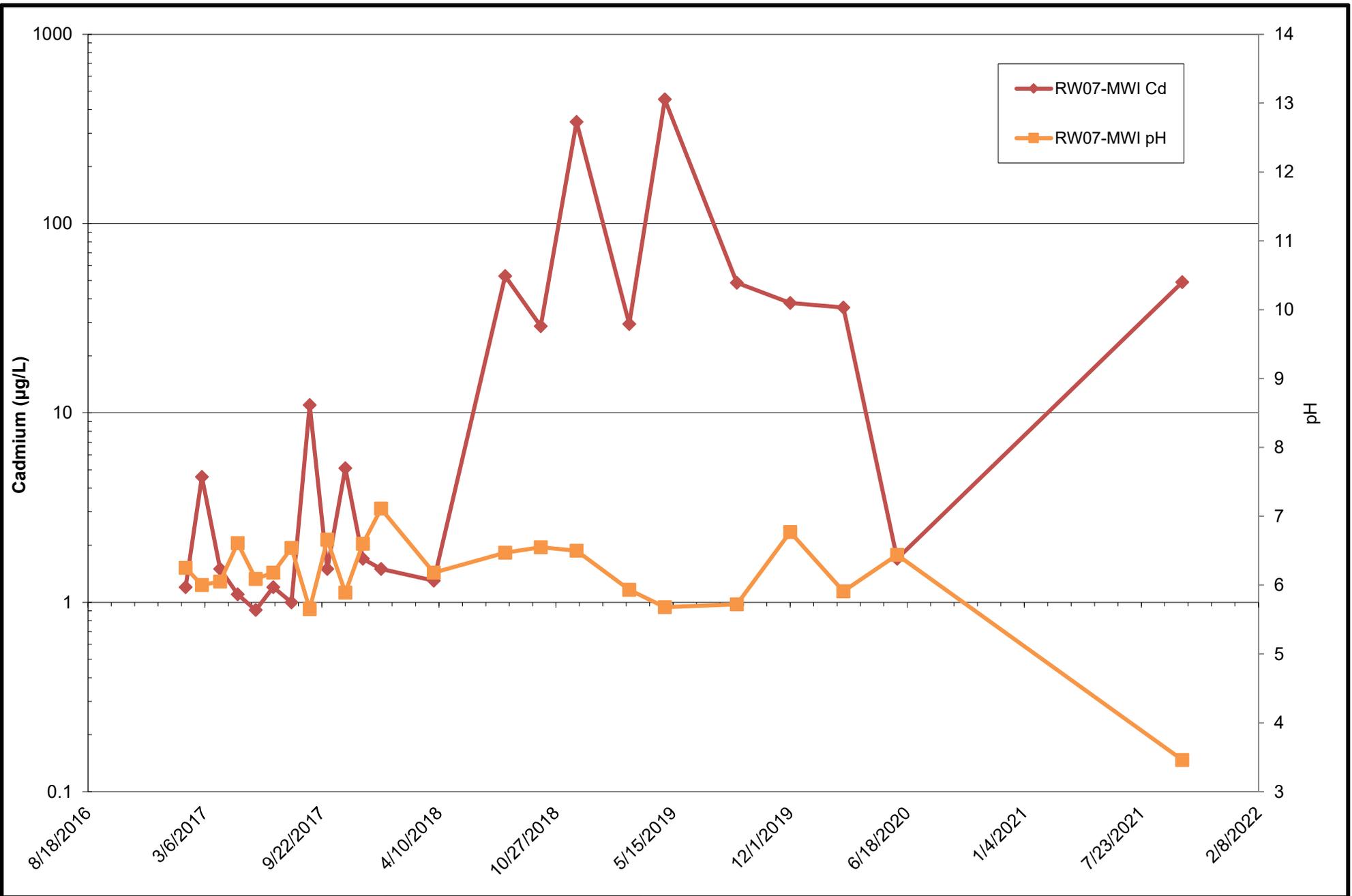
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Tradeport Atlantic

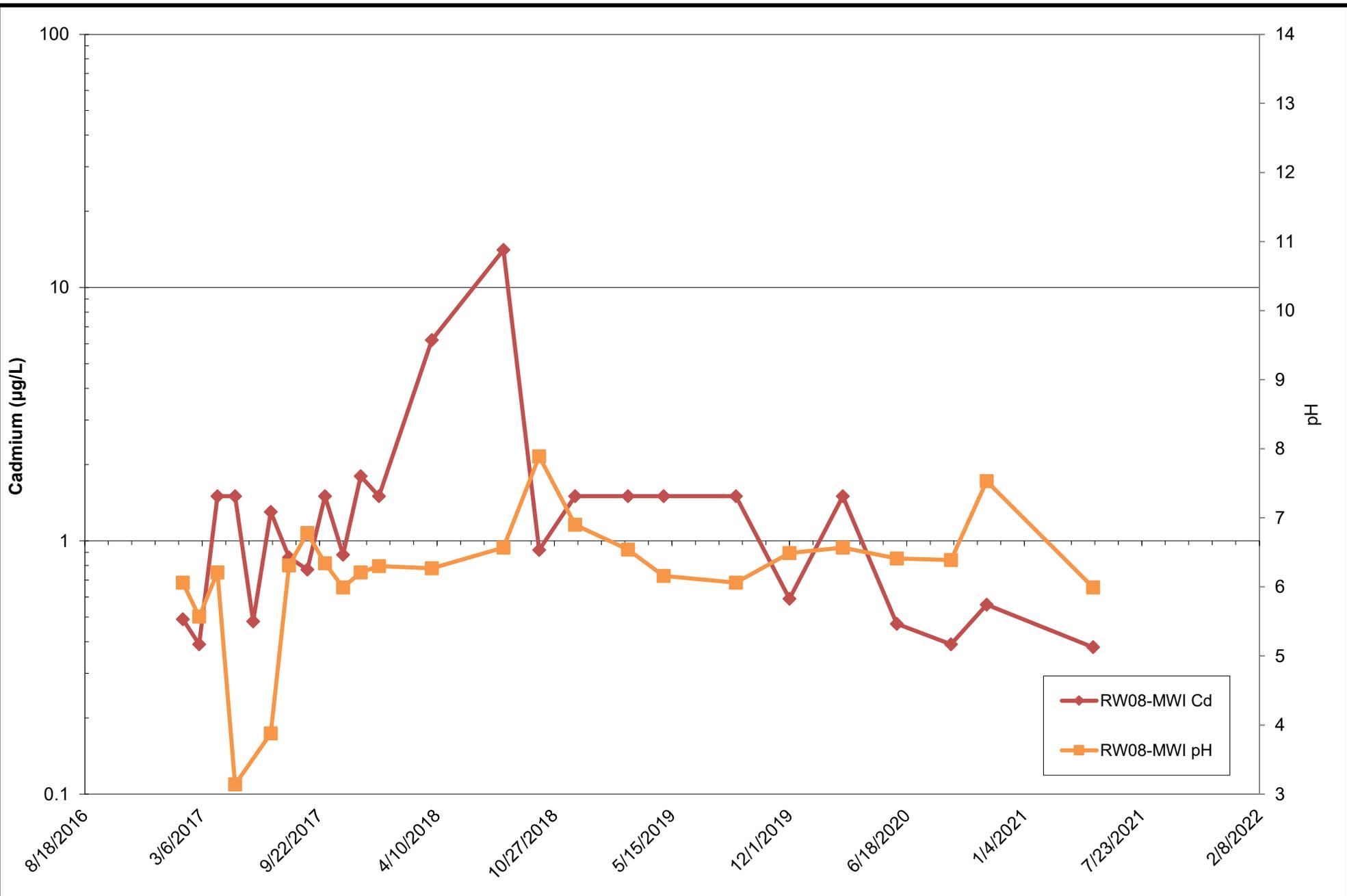
Sparrows Point, Maryland

**RW06-MWI pH and Cadmium
Concentrations**

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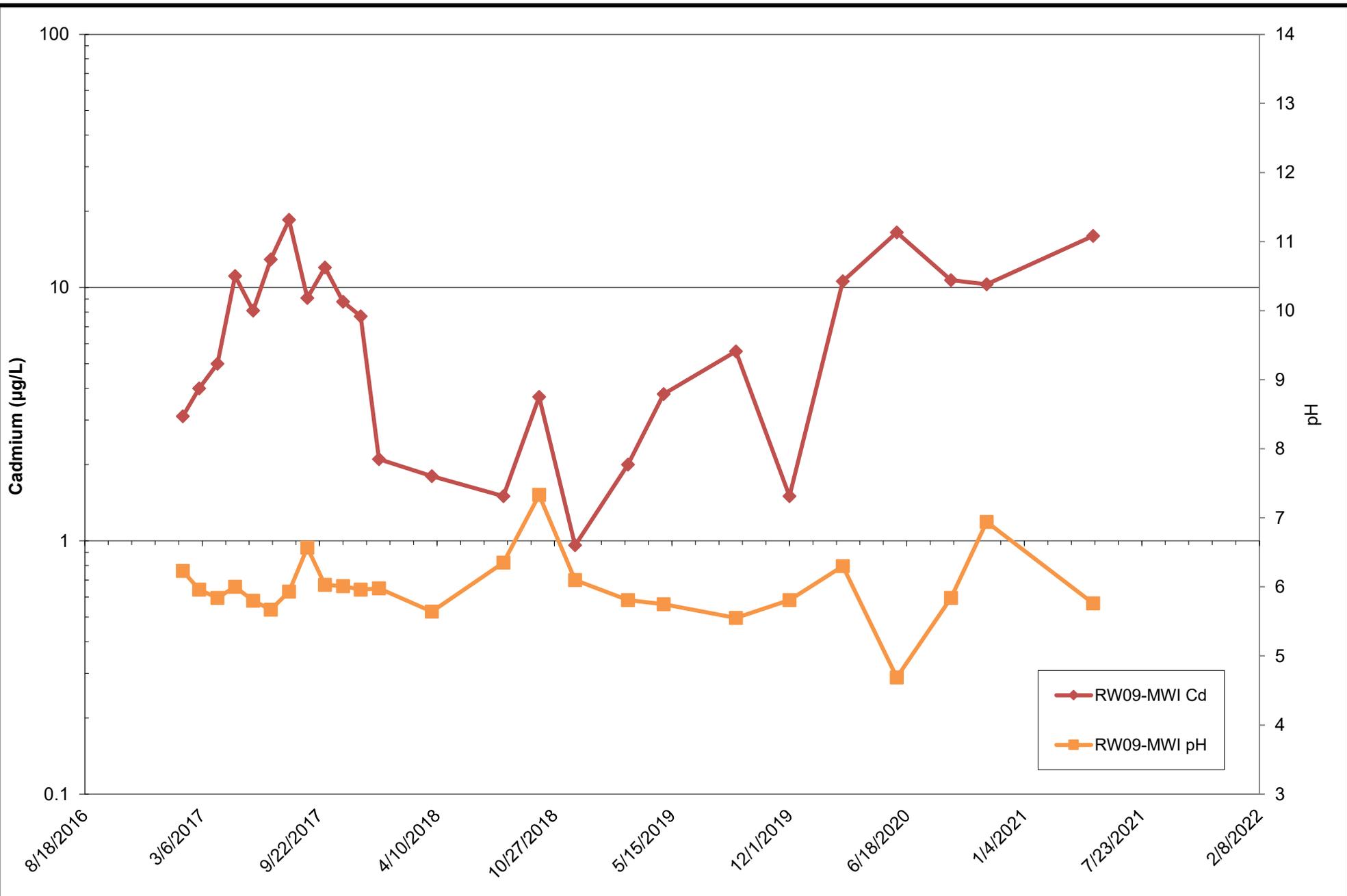
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Tradeport Atlantic

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**RW08-MWI pH and Cadmium
Concentrations**

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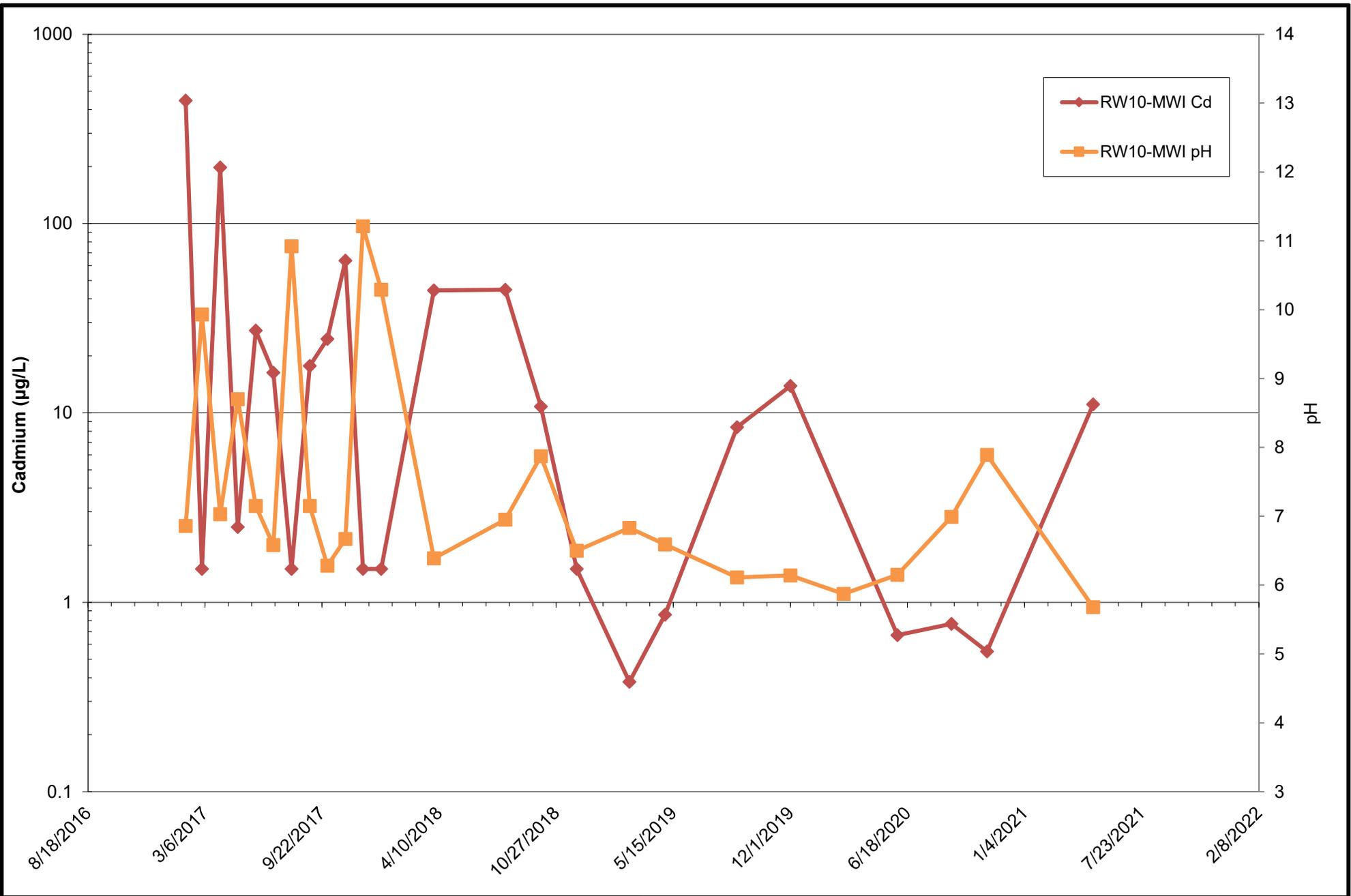
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**RW09-MWI pH and Cadmium
Concentrations**

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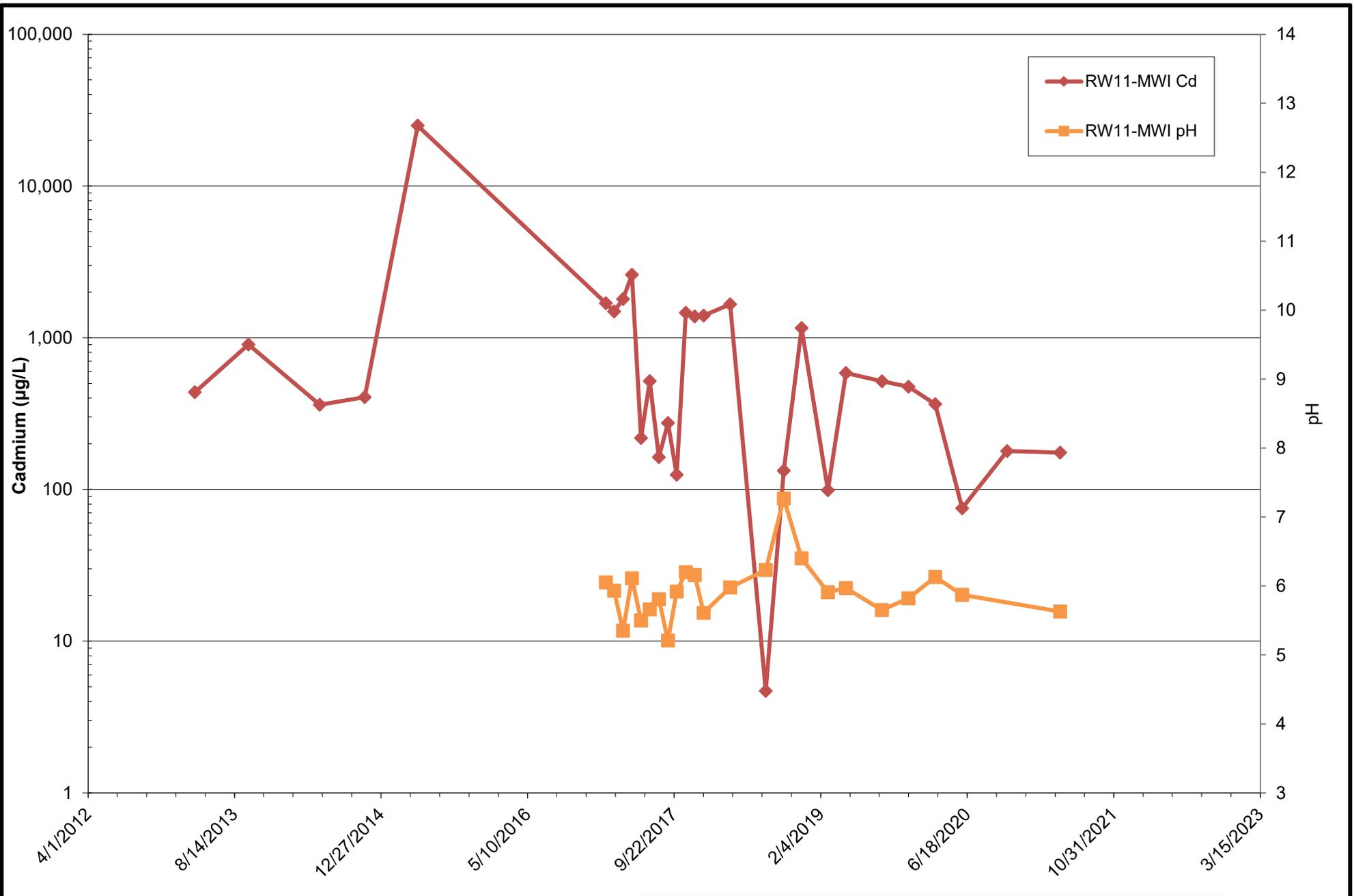
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Tradeport Atlantic

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**RW10-MWI pH and Cadmium
Concentrations**

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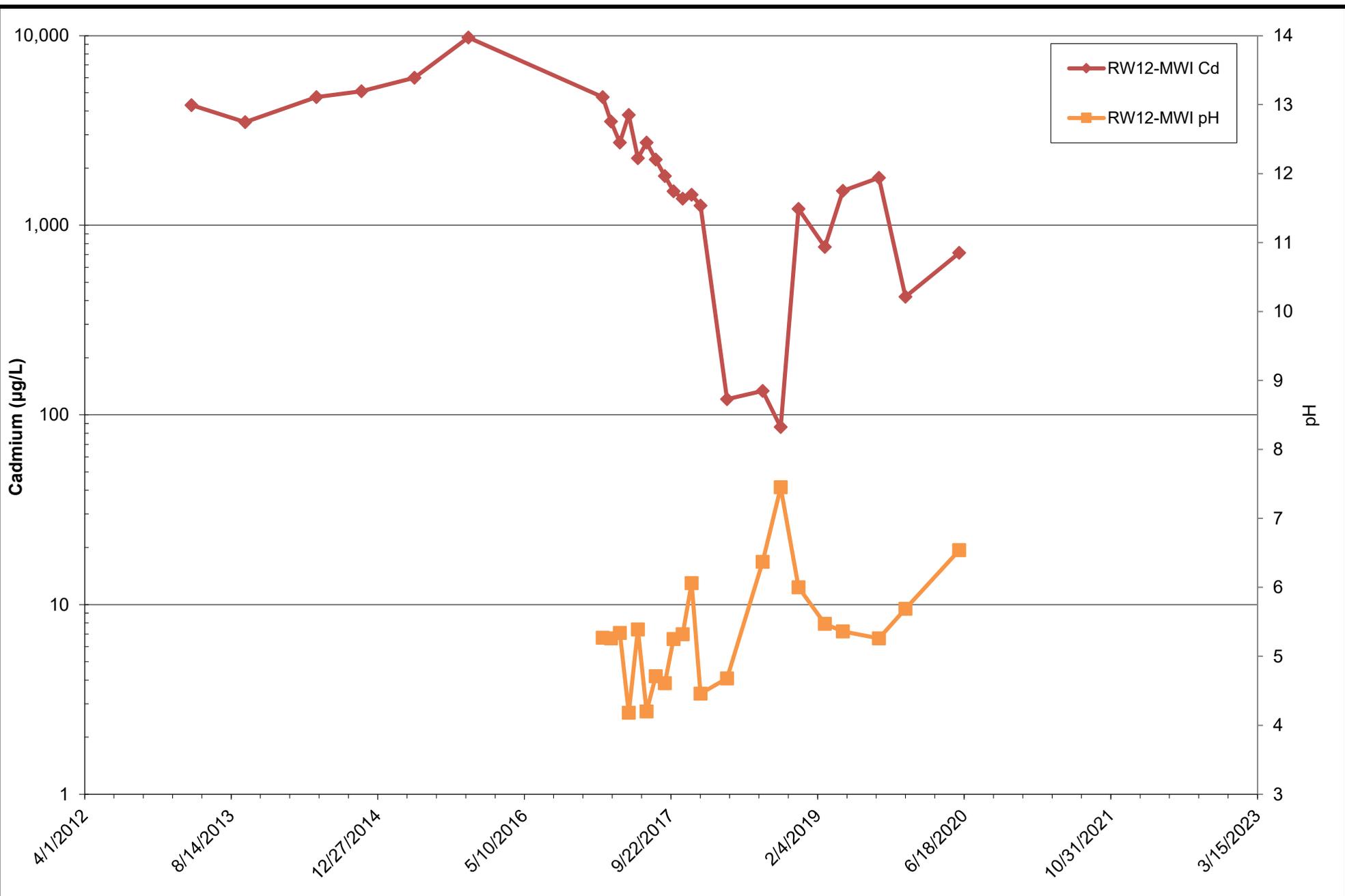
Rod and Wire Mill
Tradeport Atlantic

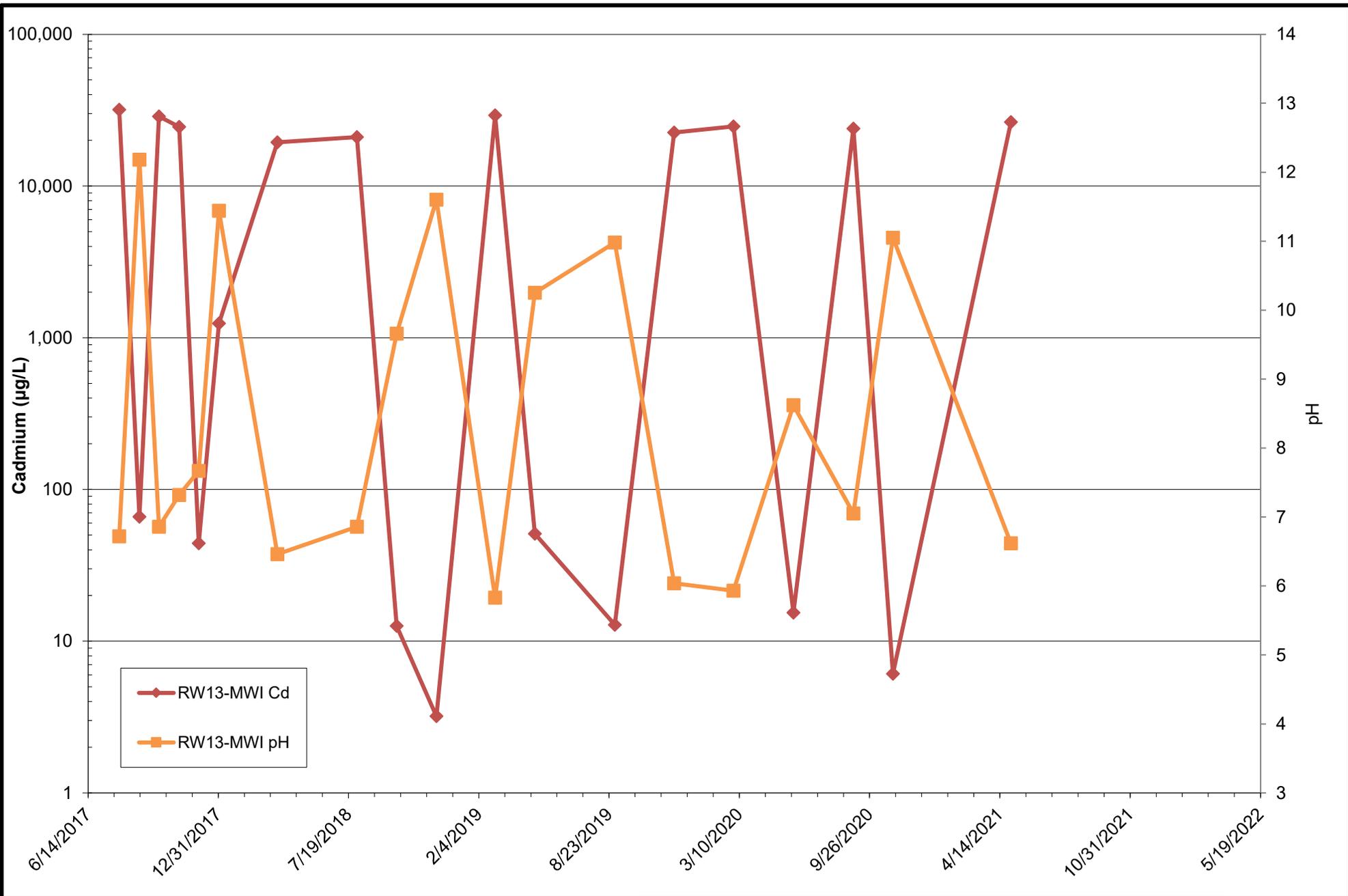
Sparrows Point, Maryland

**RW11-MWI pH and Cadmium
Concentrations**

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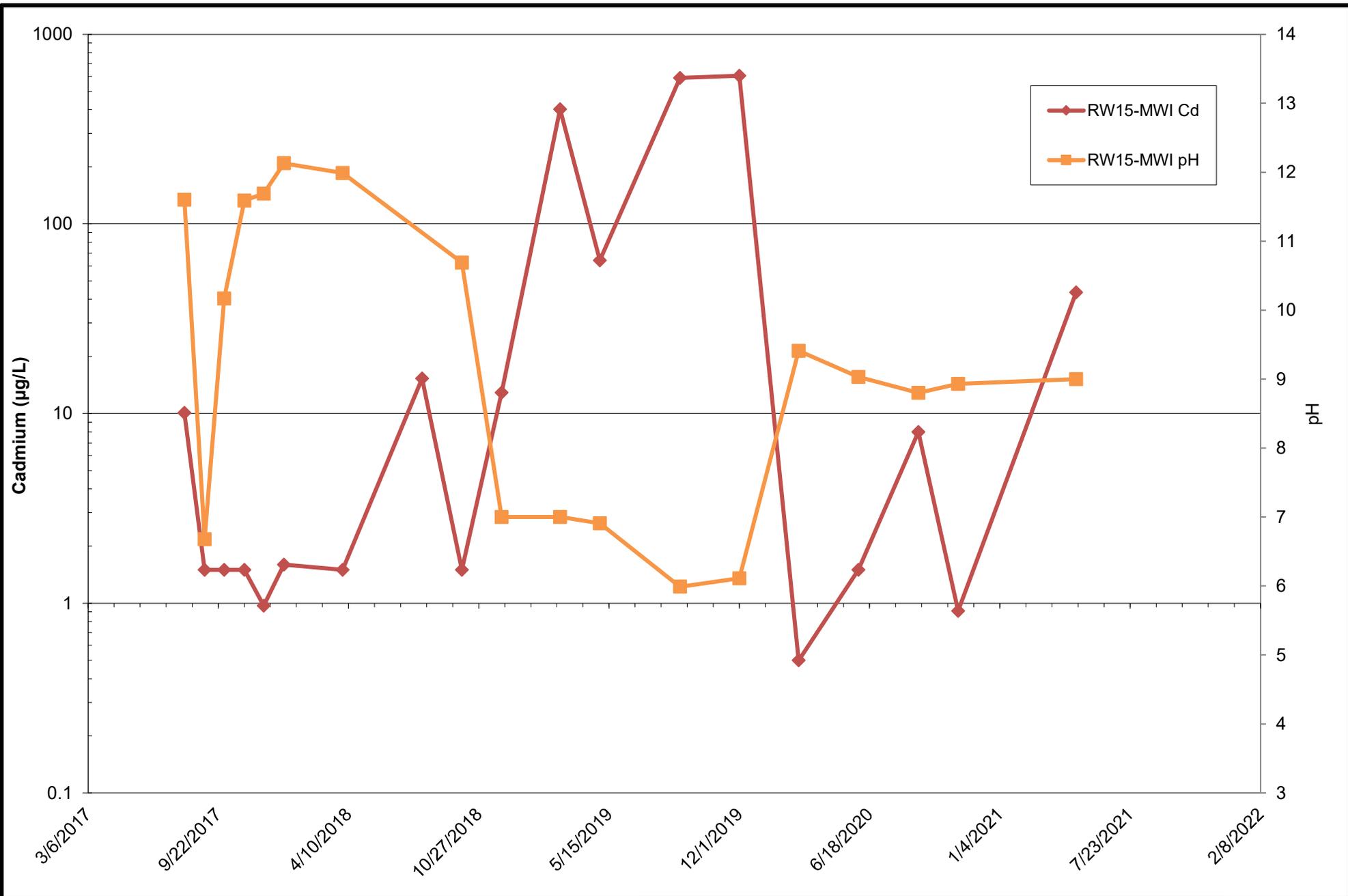
Rod and Wire Mill
Tradeport Atlantic

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**RW13-MWI pH and Cadmium
Concentrations**

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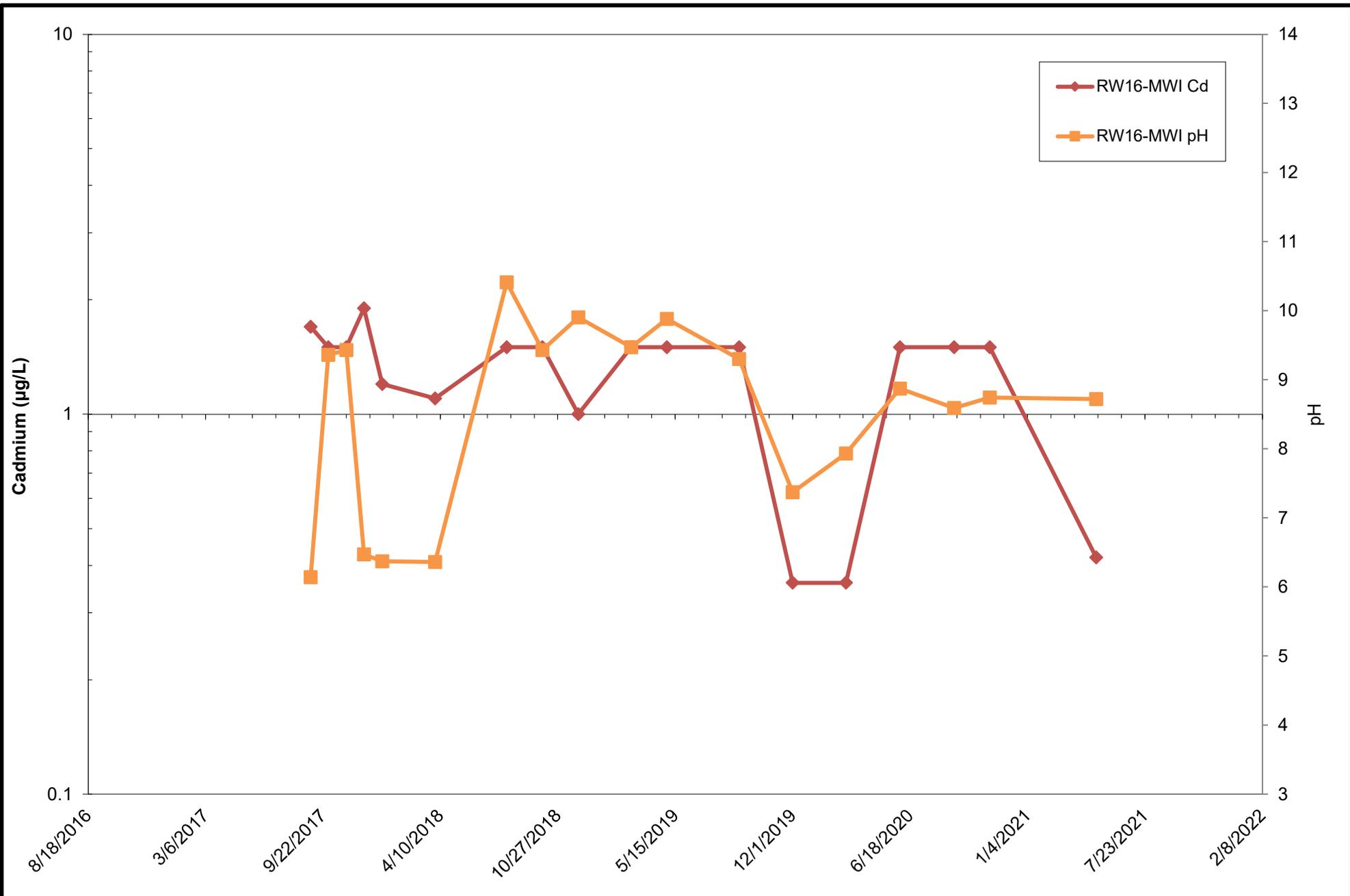
Rod and Wire Mill
Tradeport Atlantic

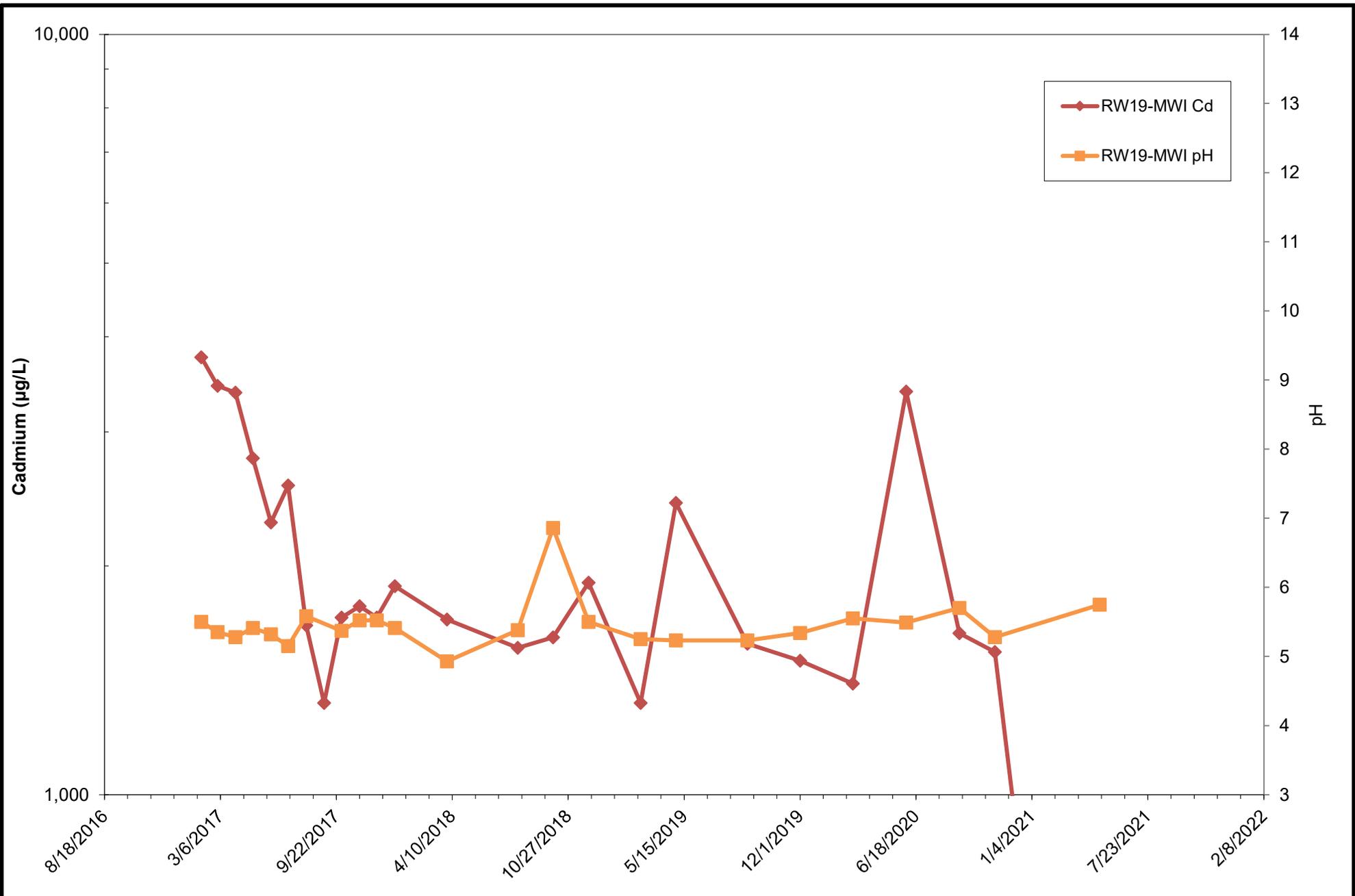
Sparrows Point, Maryland

**RW15-MWI pH and Cadmium
Concentrations**

February 2022

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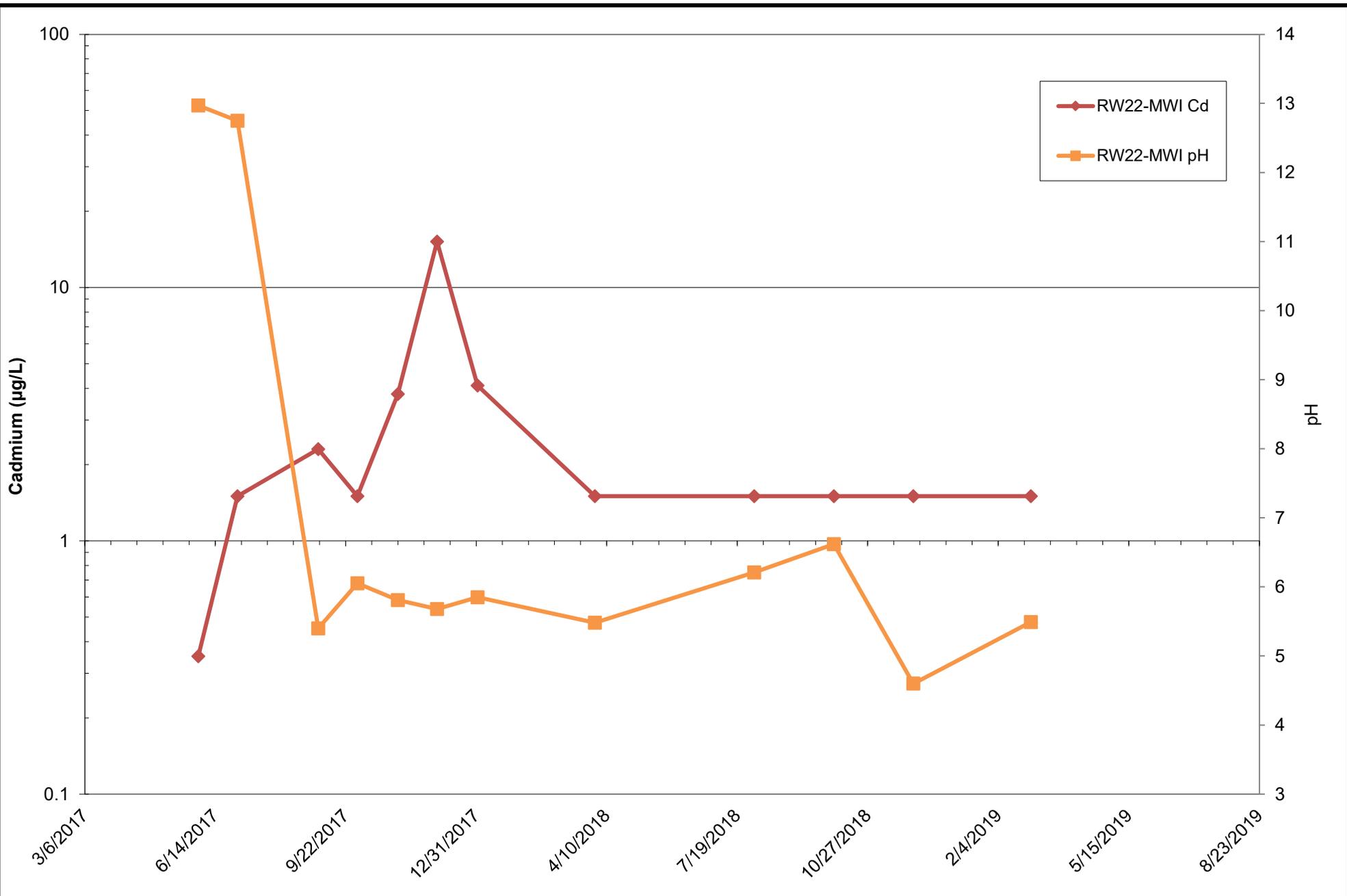
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RW19-MWI pH and Cadmium
Concentrations**

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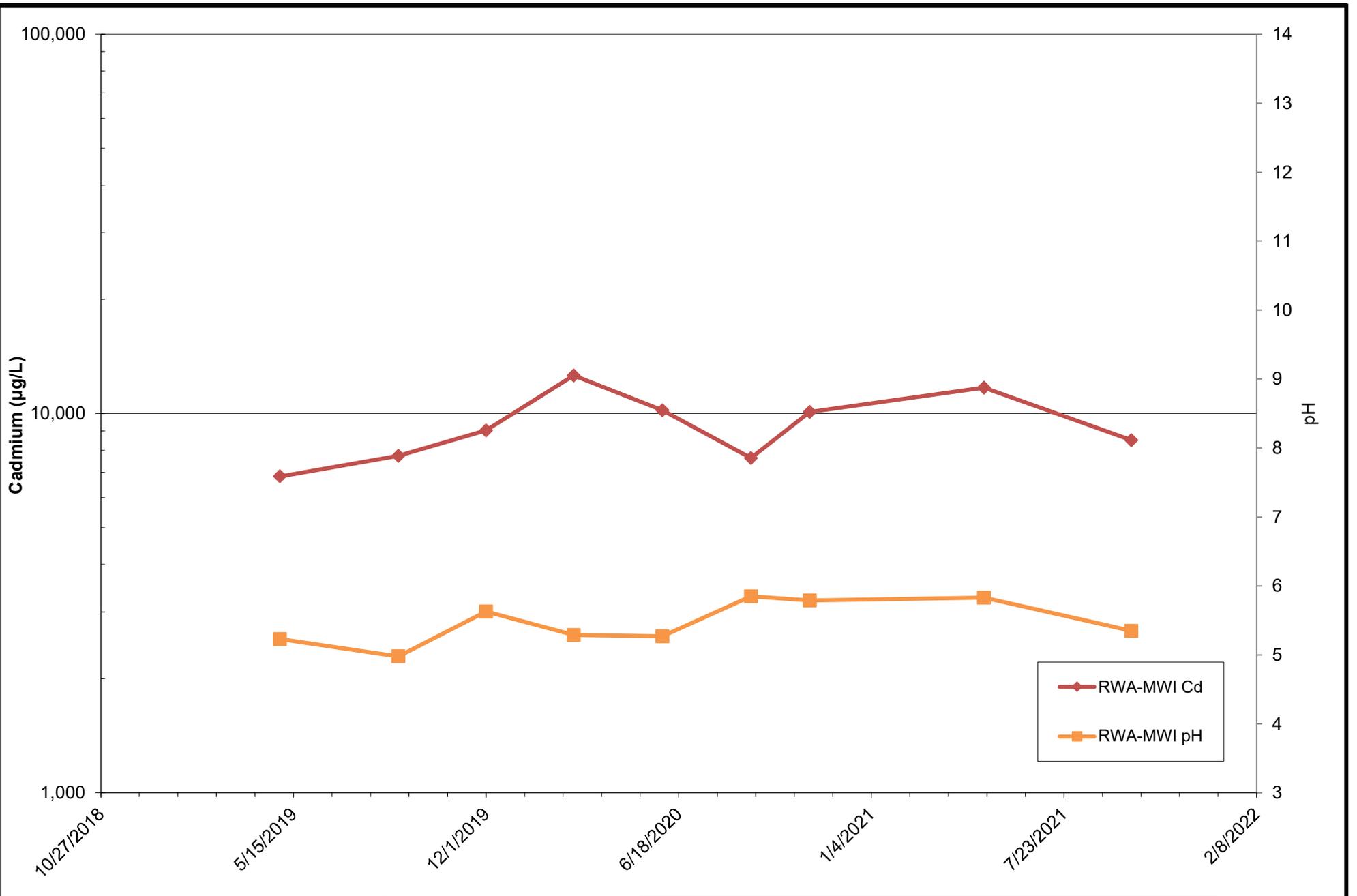
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

RW22-MWI pH and Cadmium Concentrations

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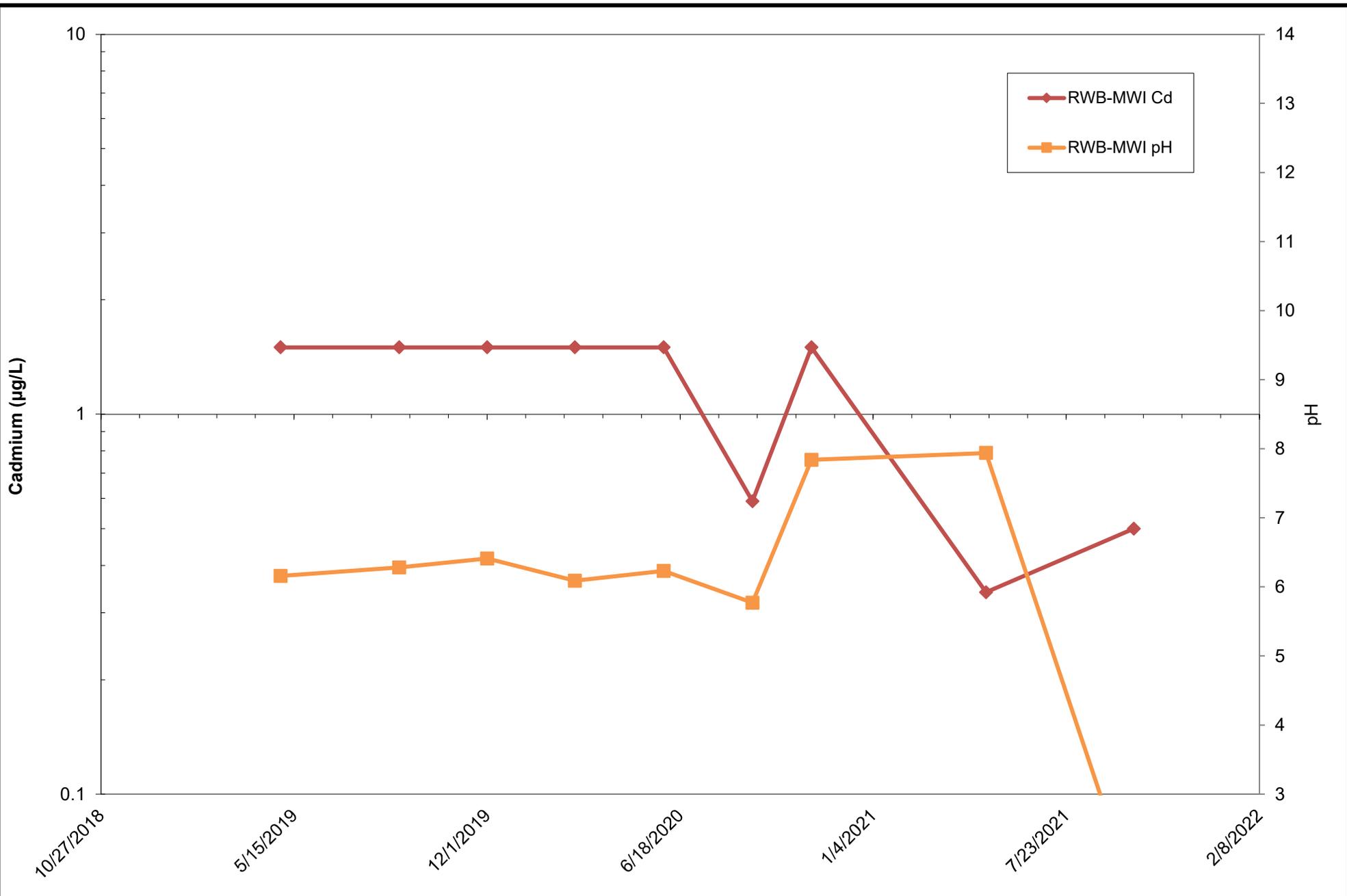
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWA-MWI pH and Cadmium
Concentrations**

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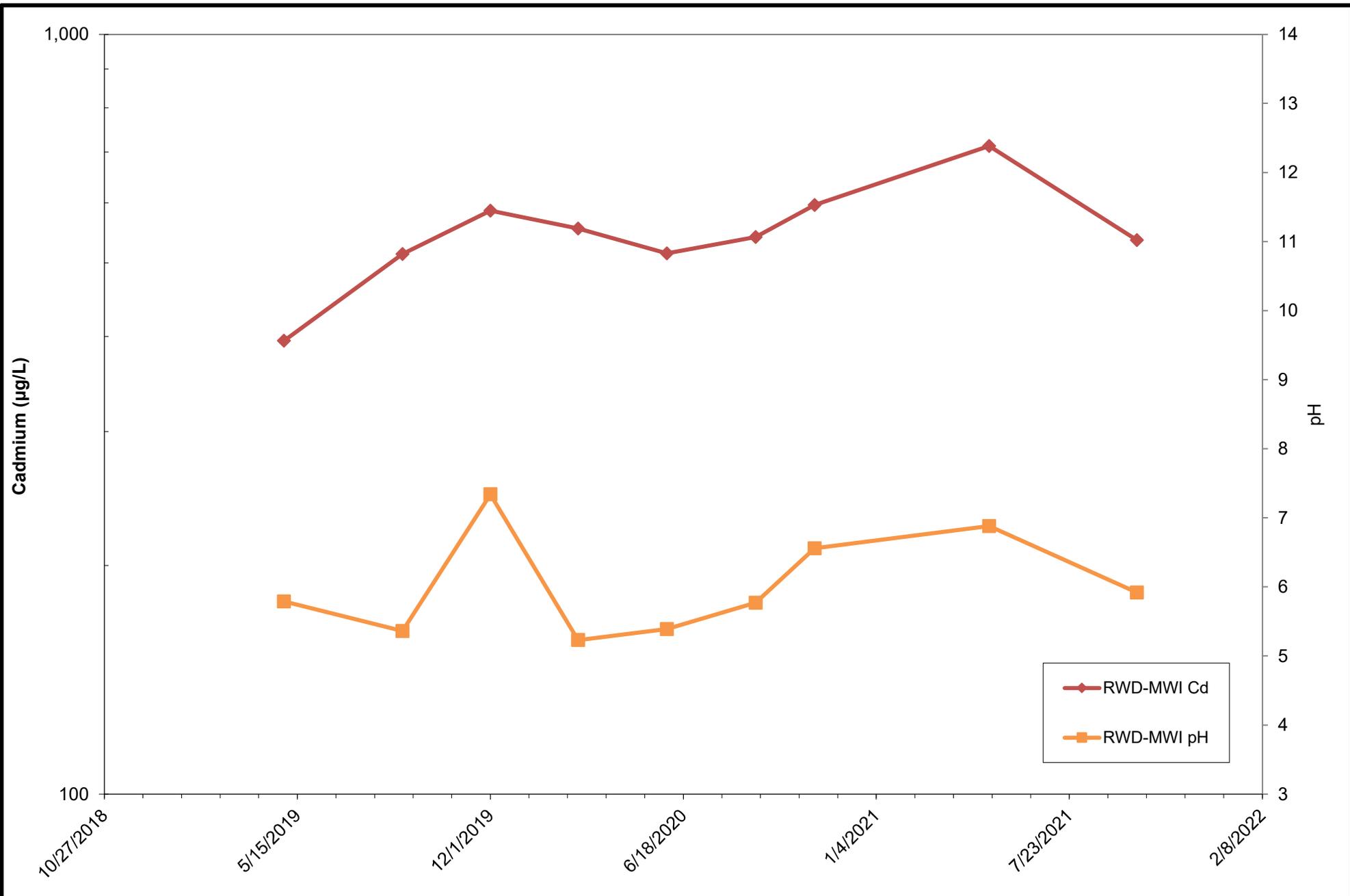
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWB-MWI pH and Cadmium
Concentrations**

February 2022

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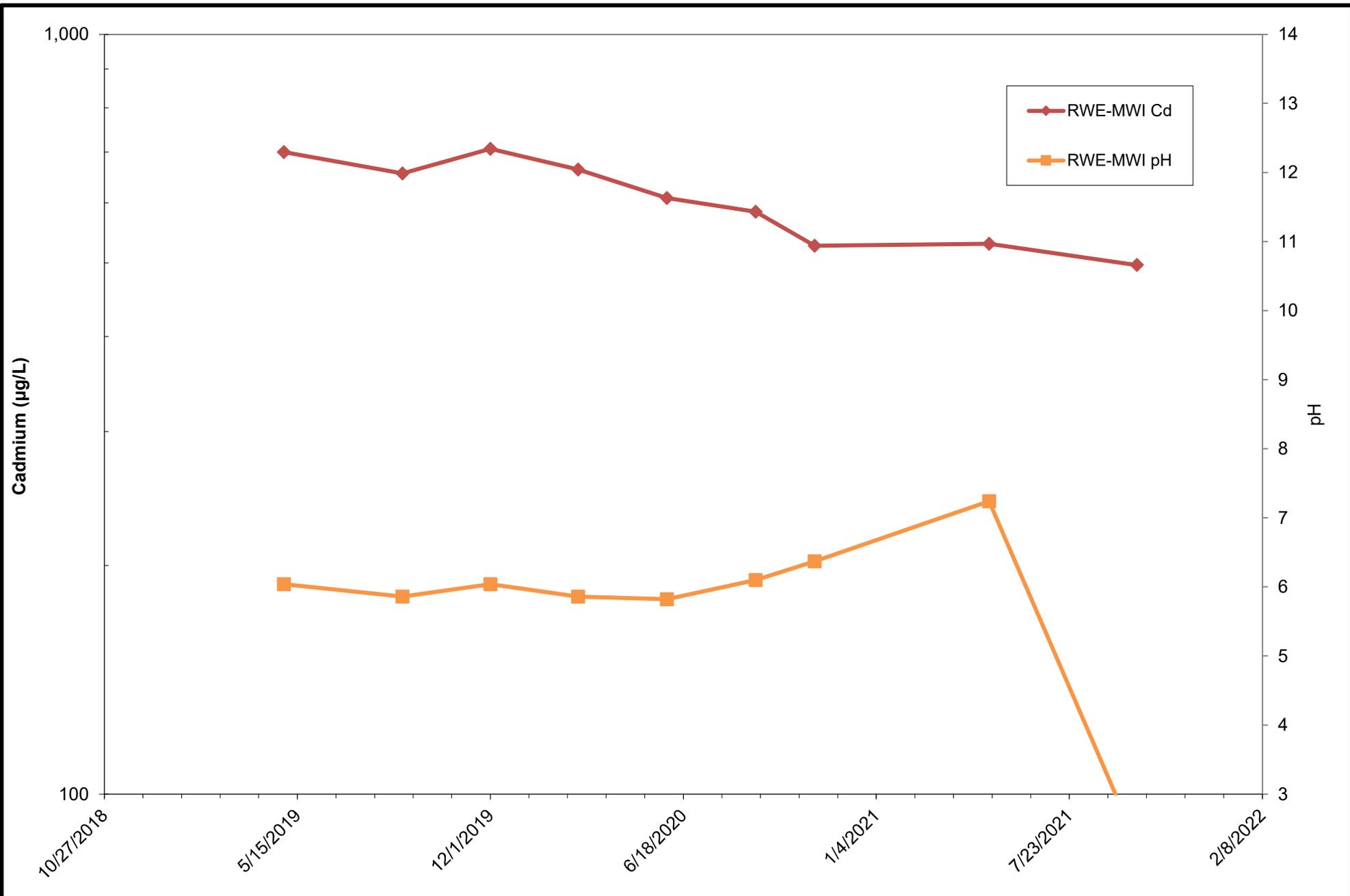
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWD-MWI pH and Cadmium
Concentrations**

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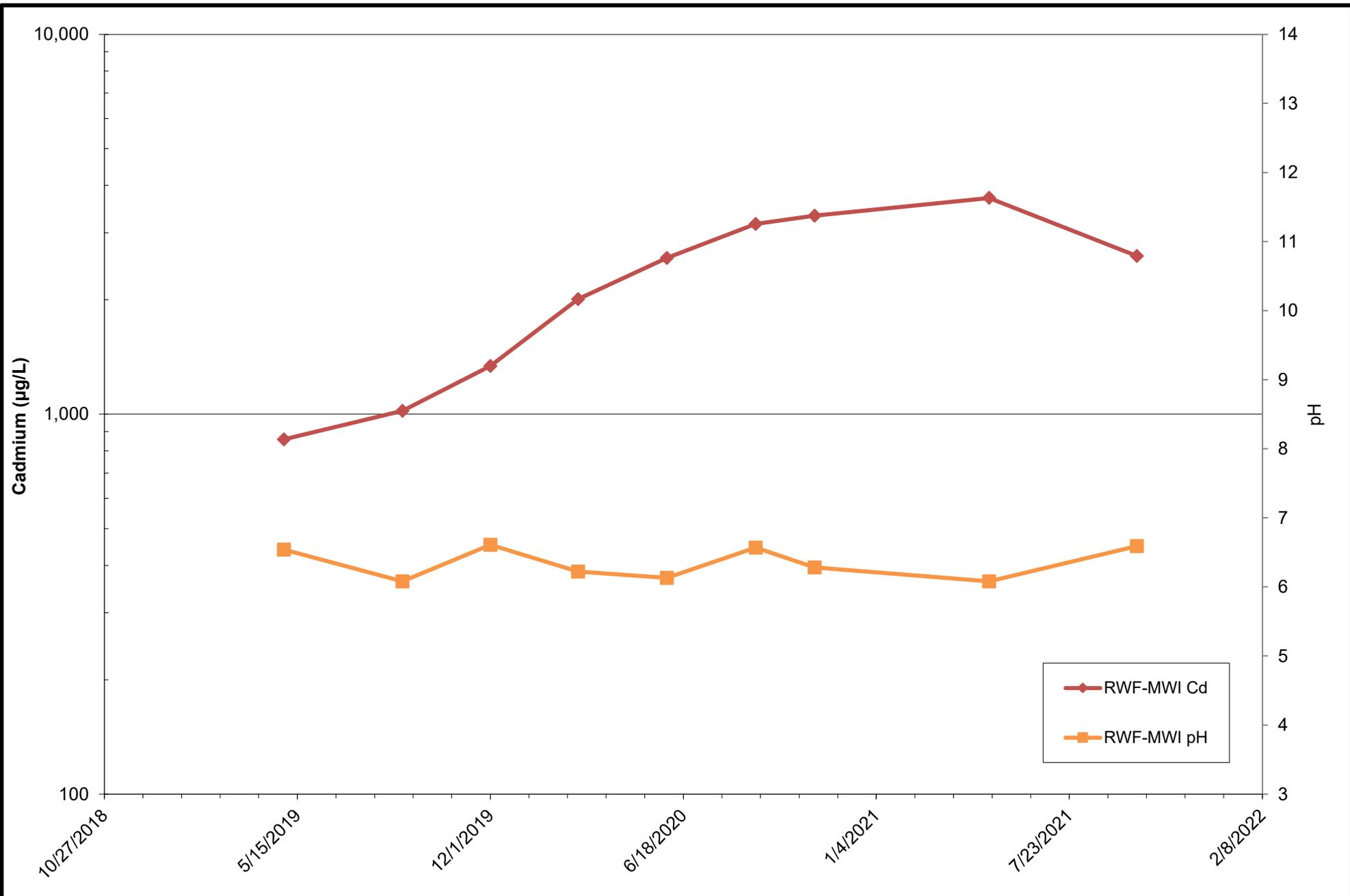
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

**RWE-MWI pH and Cadmium
Concentrations**

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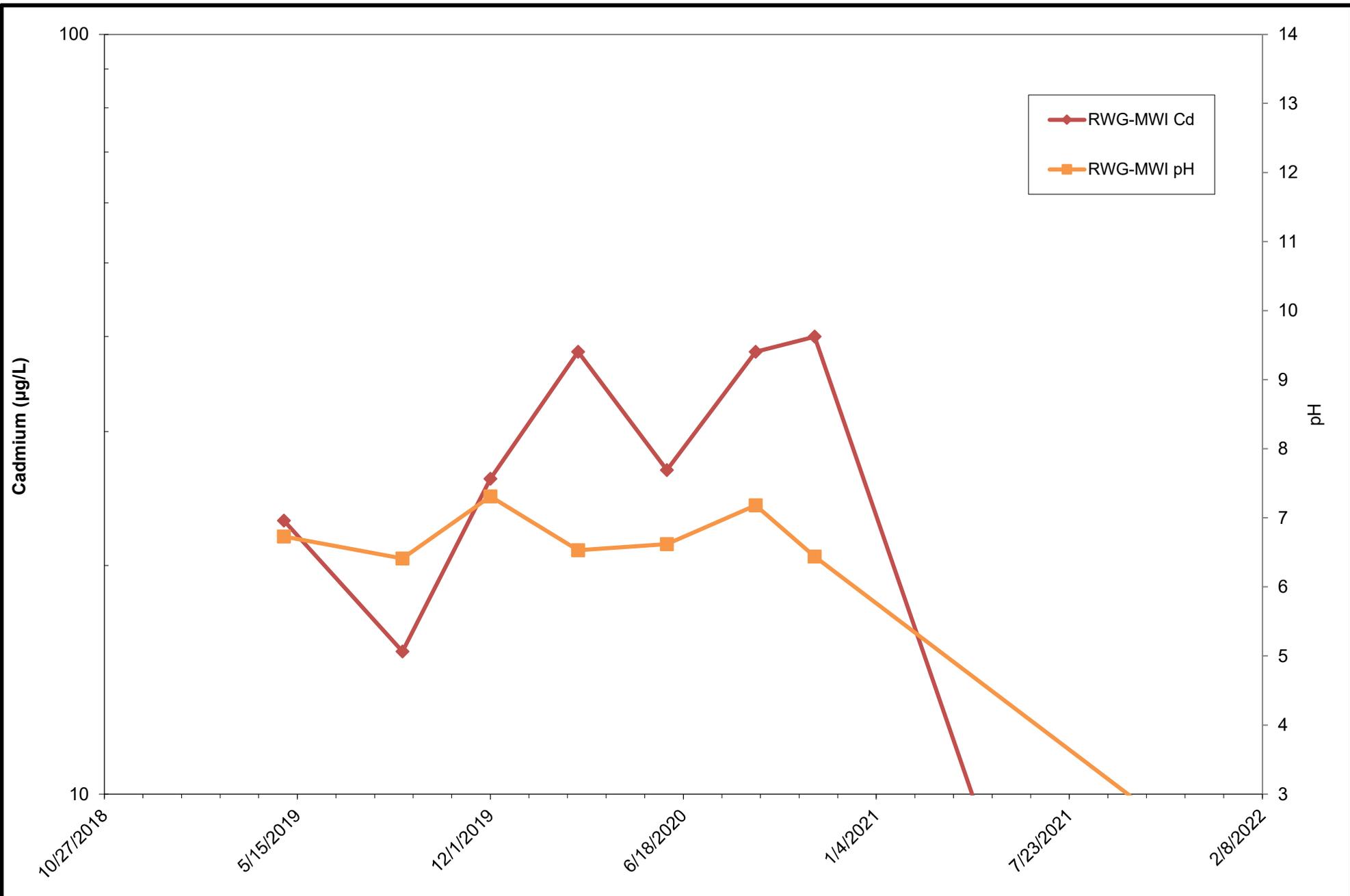
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**RWF-MWI pH and Cadmium
Concentrations**

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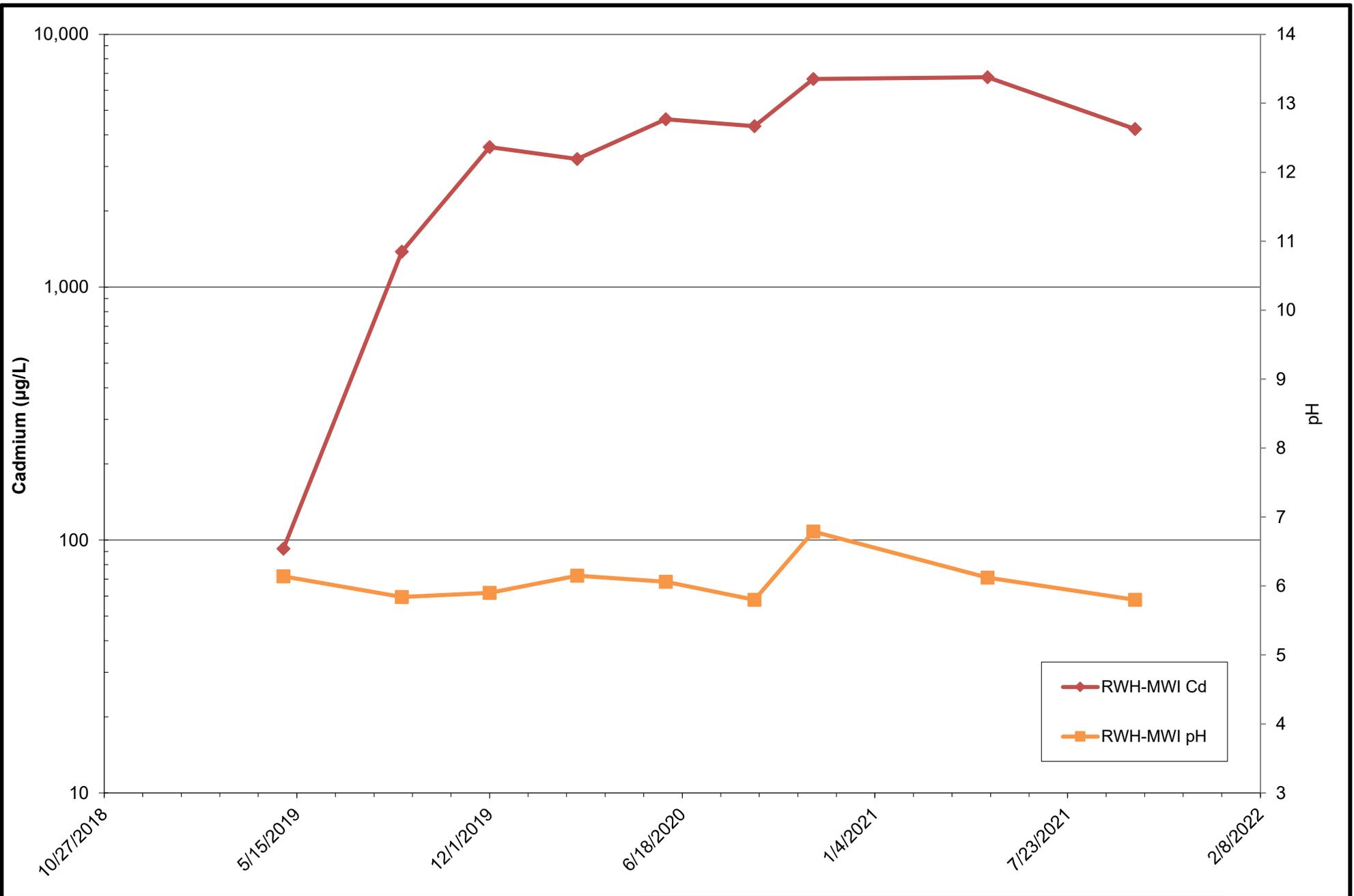
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**RWG-MWI pH and Cadmium
Concentrations**

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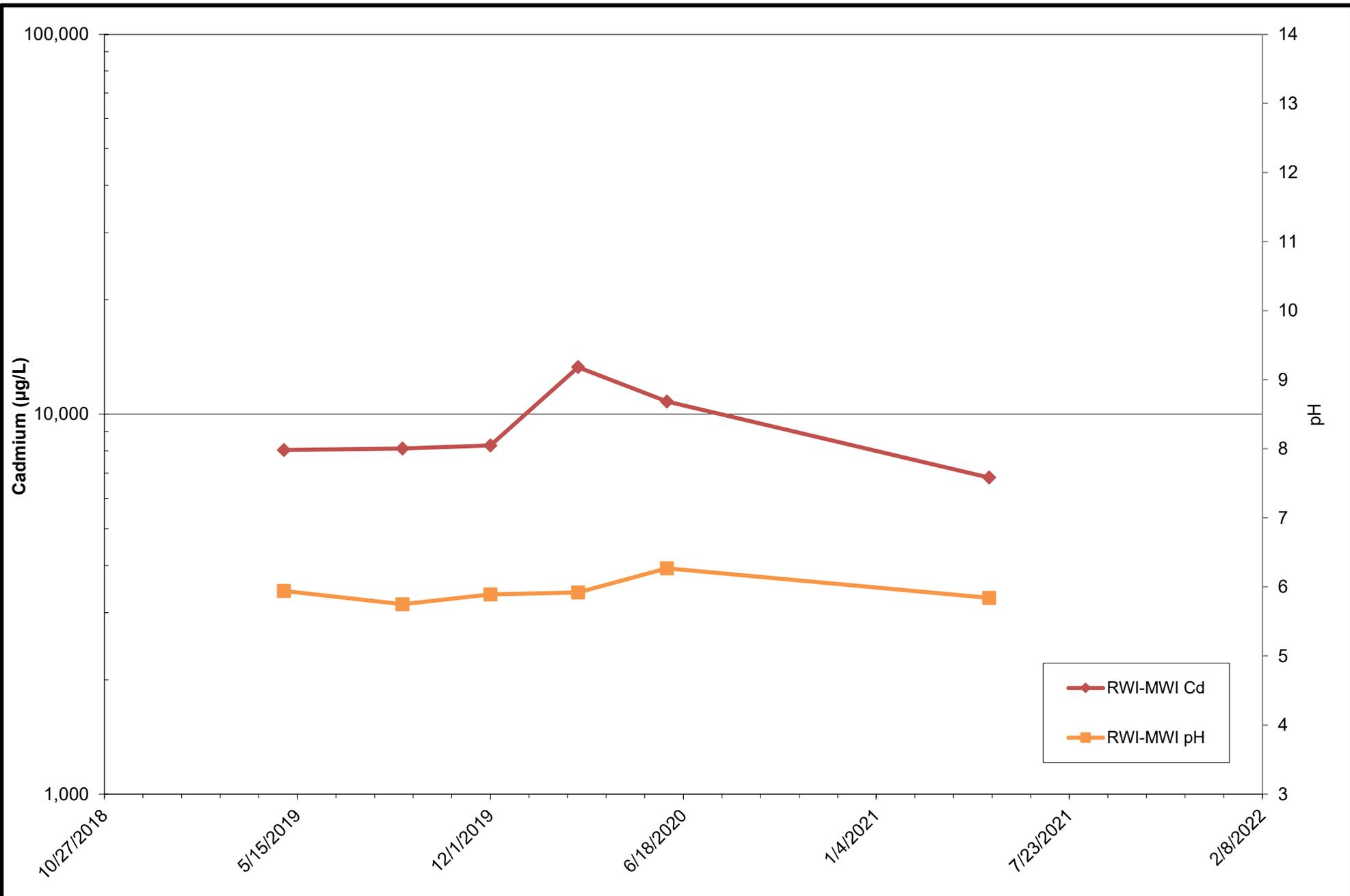
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RWH-MWI pH and Cadmium Concentrations

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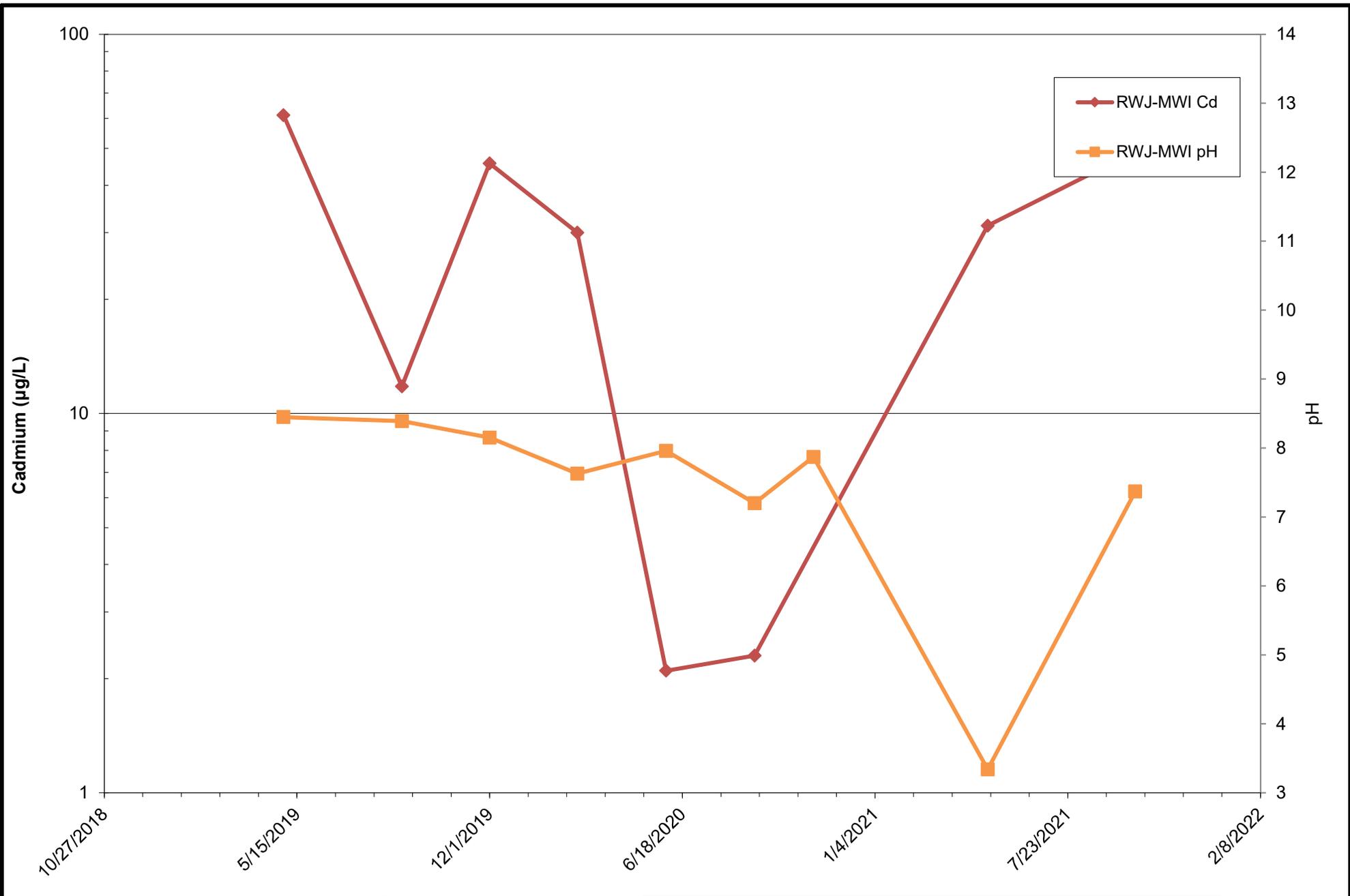
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**RWI-MWI pH and Cadmium
Concentrations**

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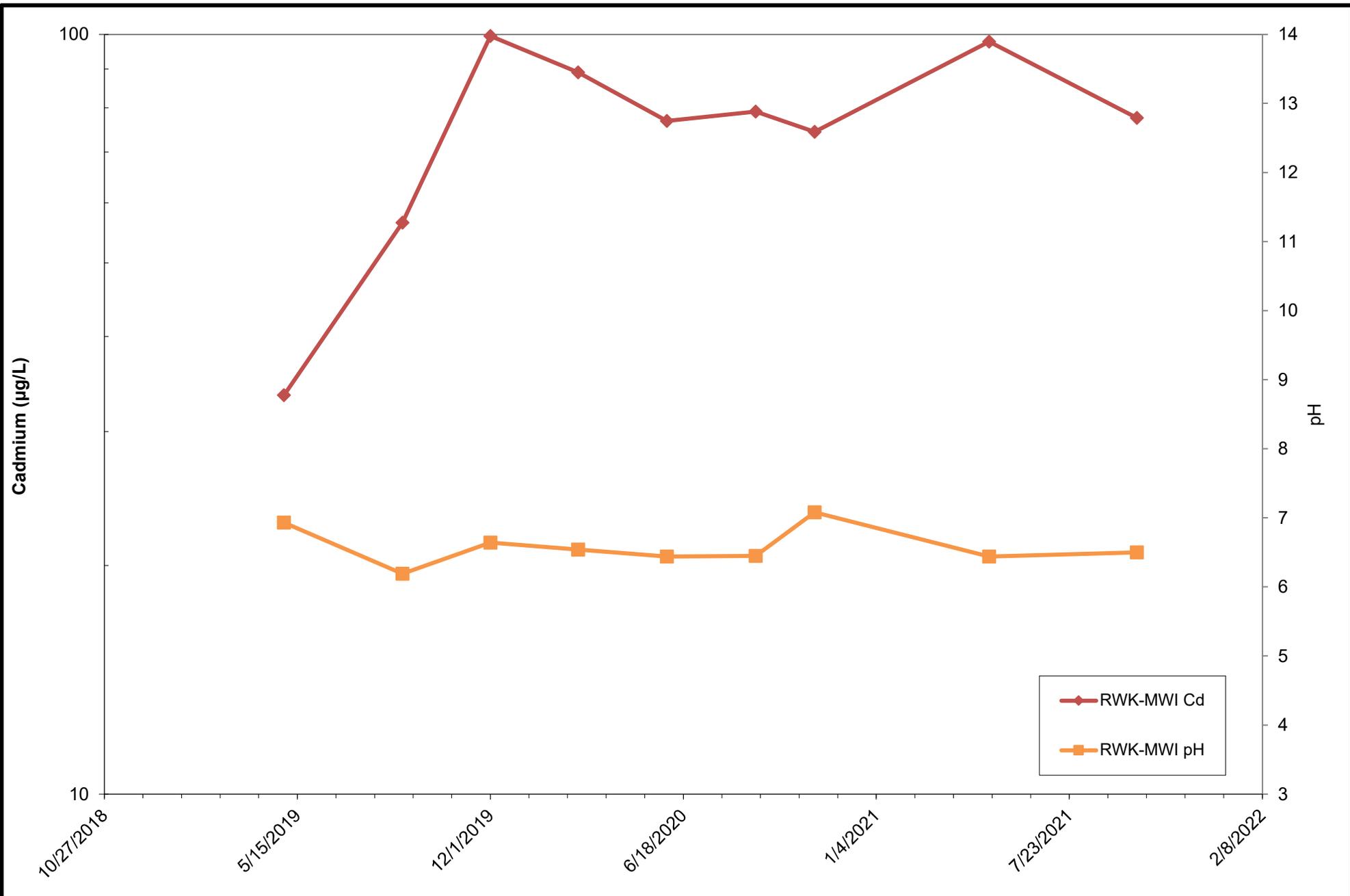
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**RWJ-MWI pH and Cadmium
Concentrations**

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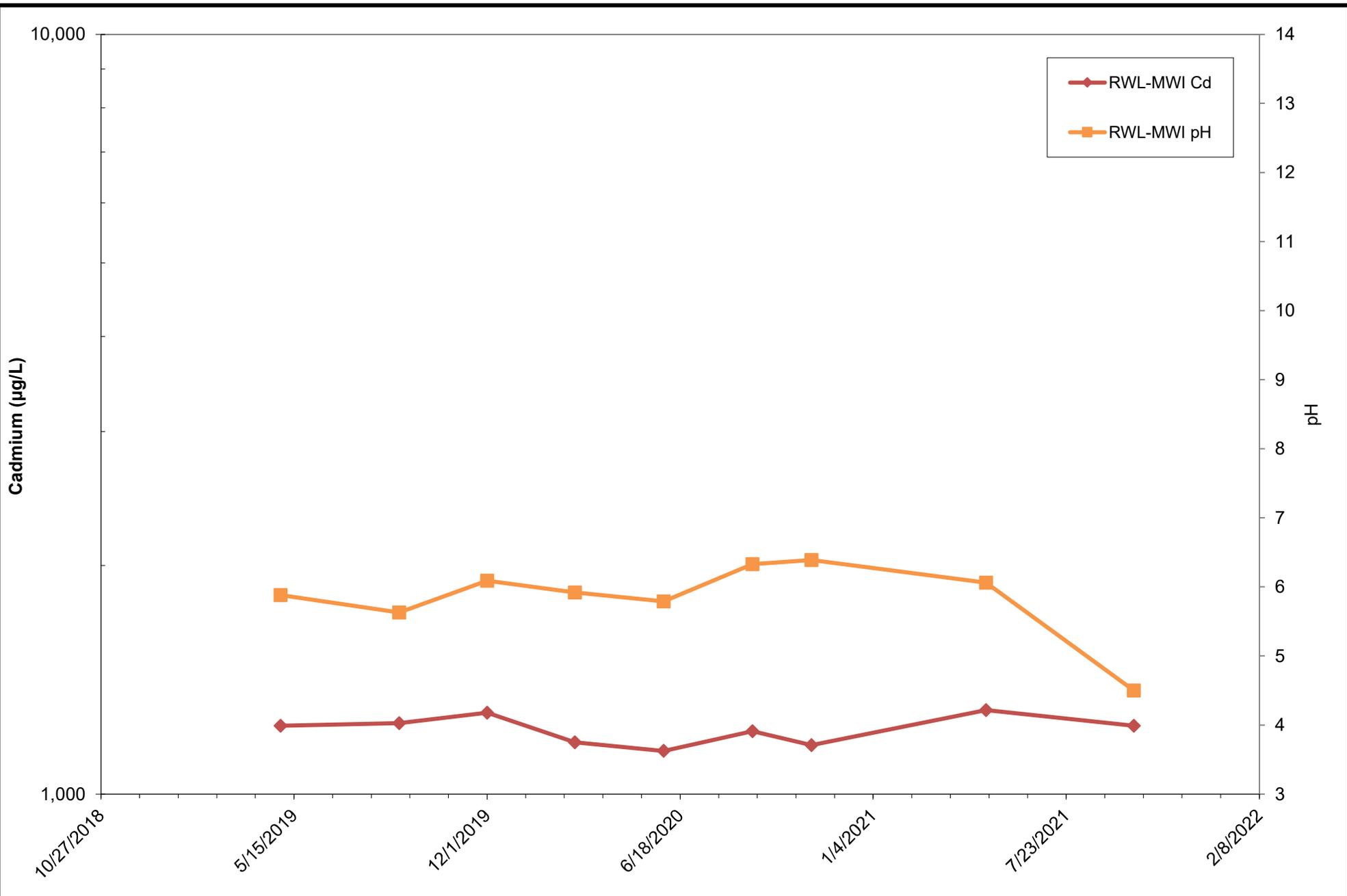
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**RWK-MWI pH and Cadmium
Concentrations**

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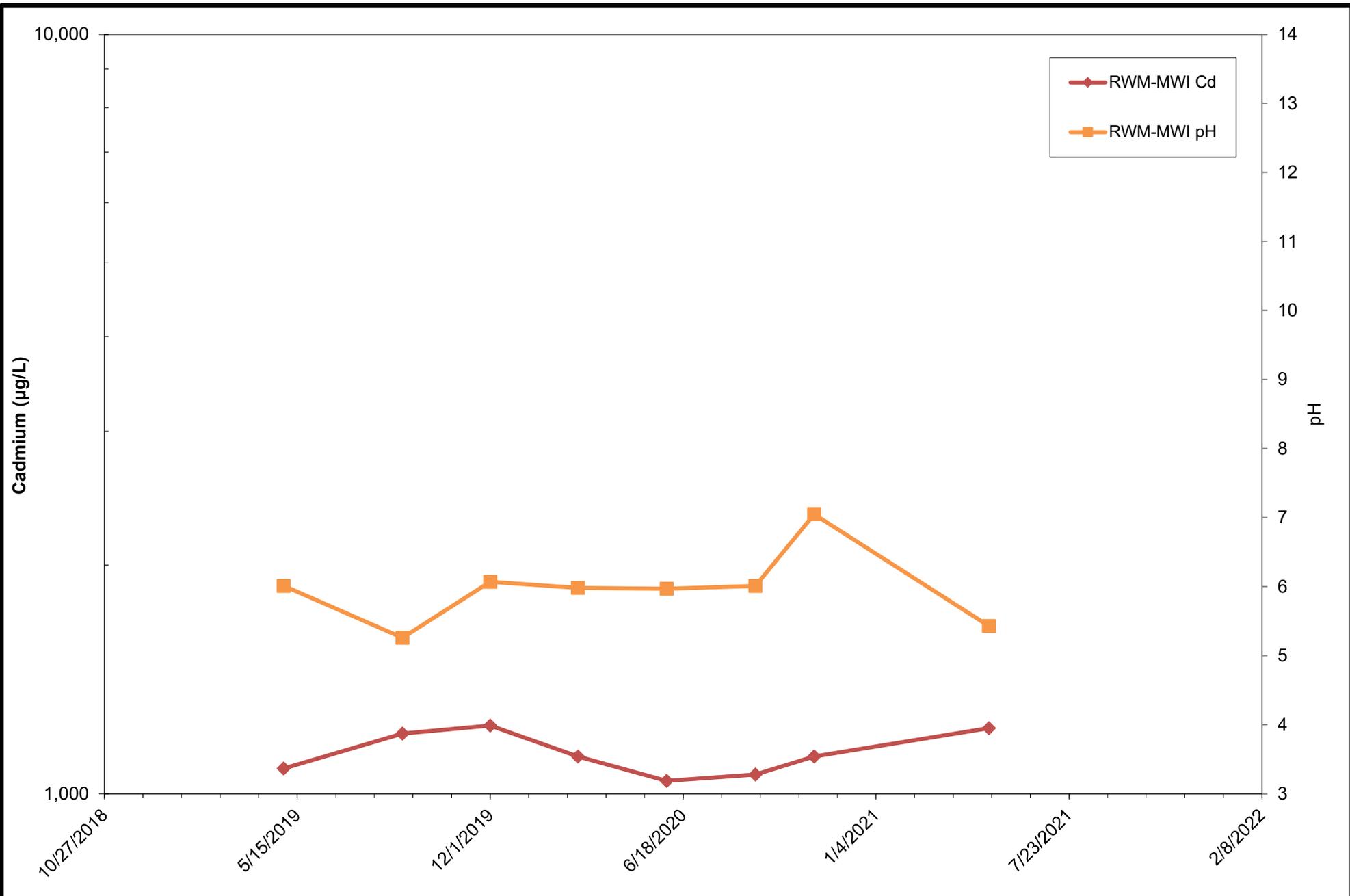
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**RWL-MWI pH and Cadmium
Concentrations**

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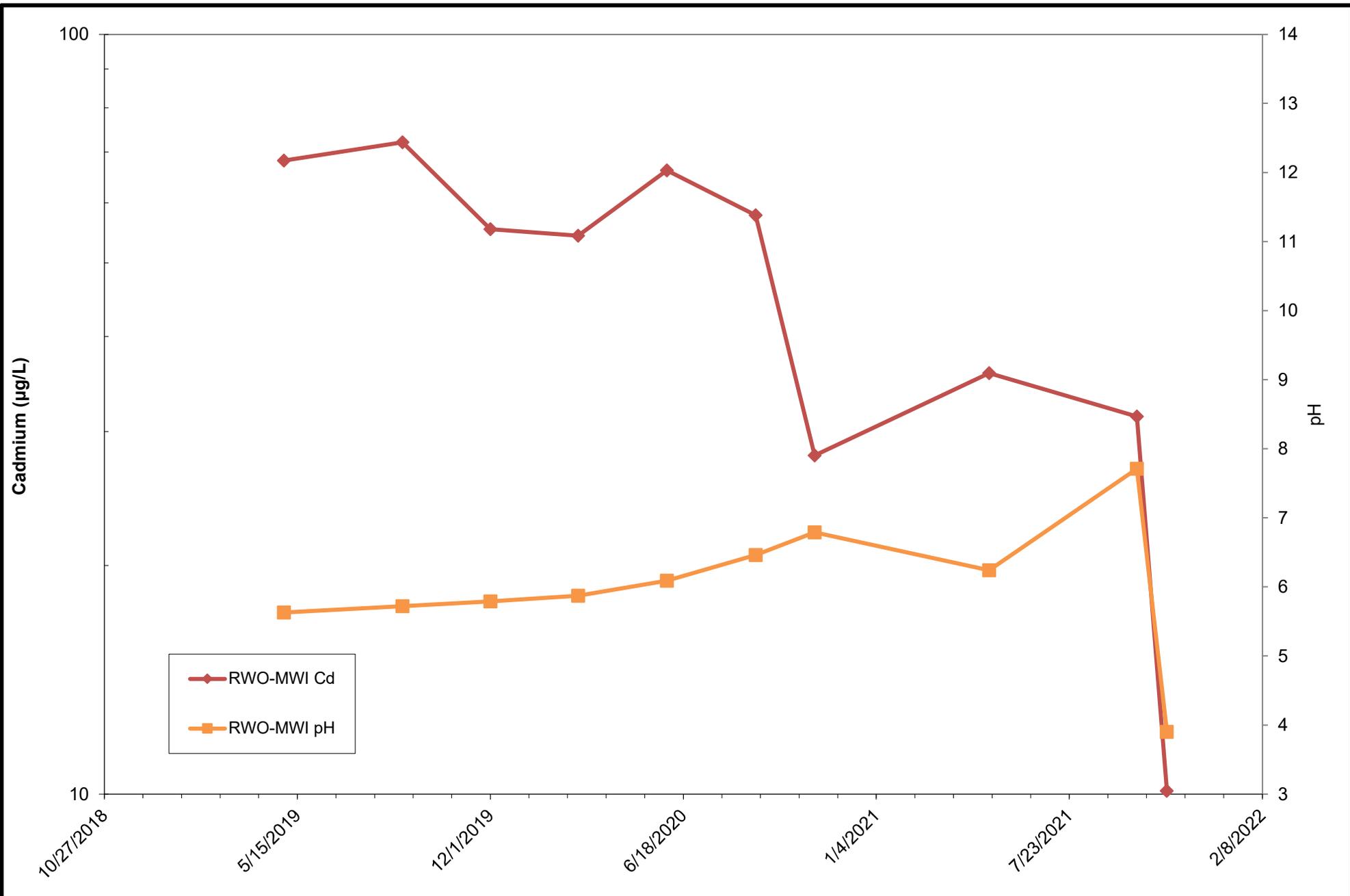
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**RWM-MWI pH and Cadmium
Concentrations**

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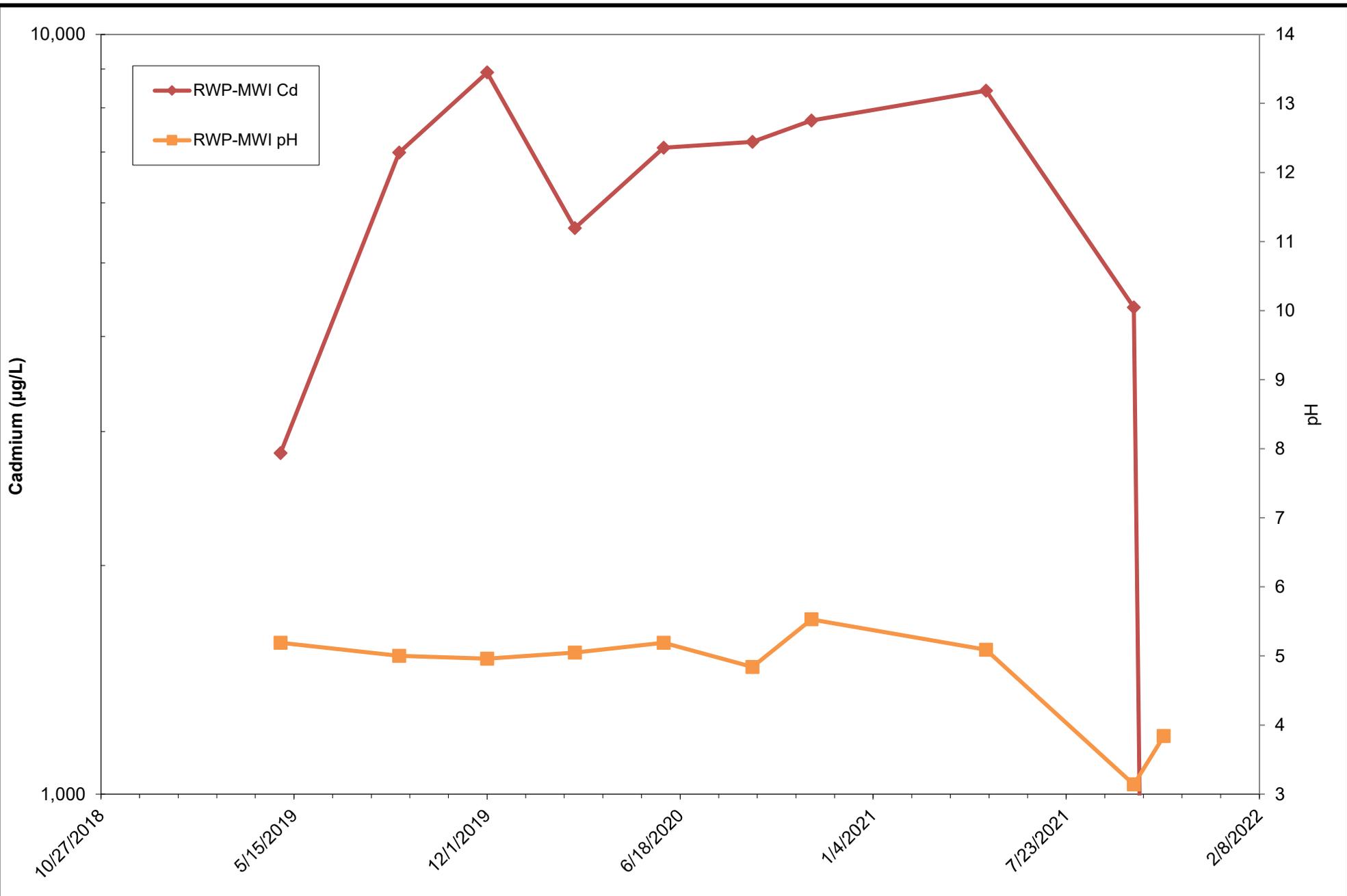
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Concentrations**

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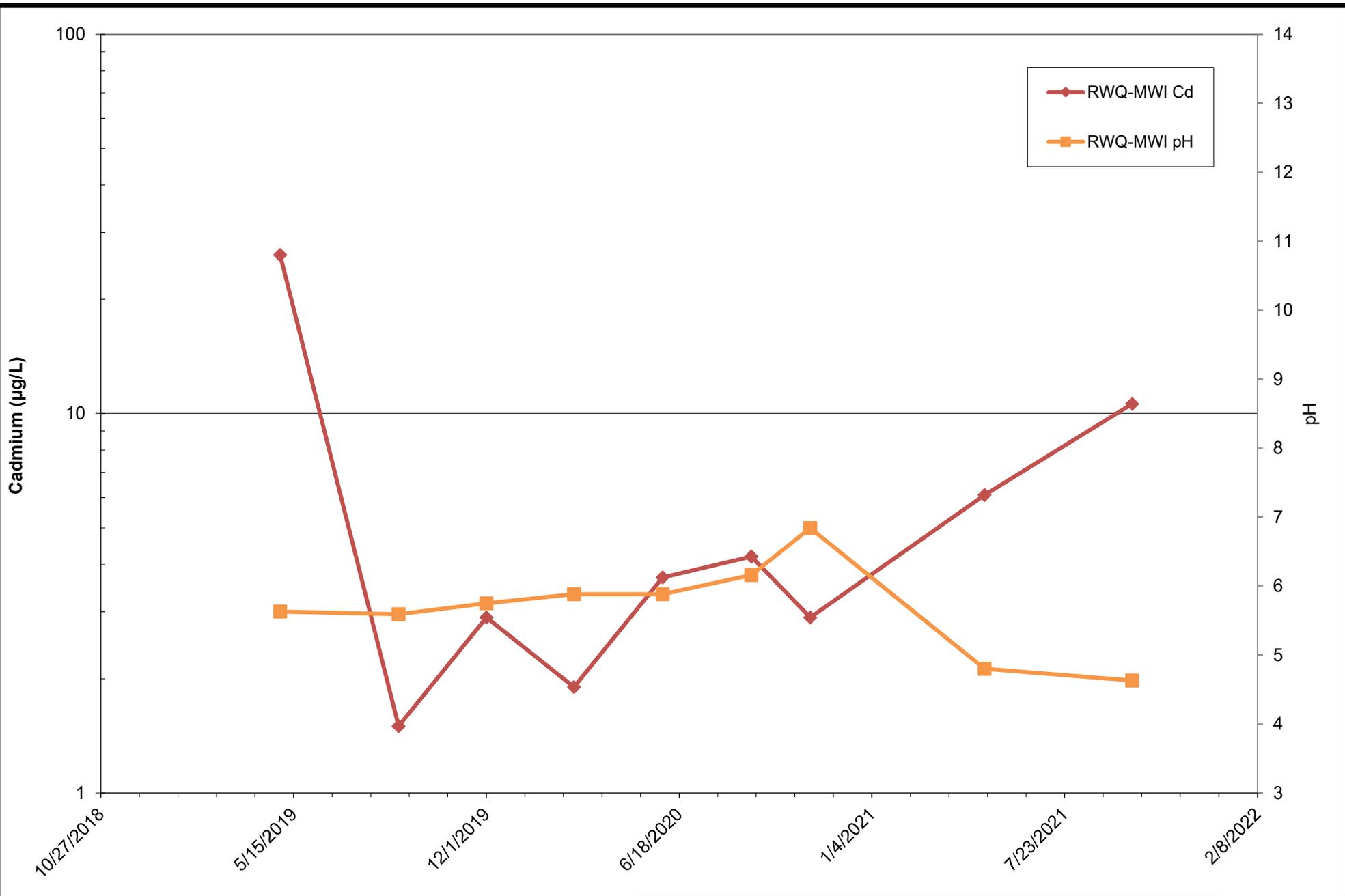
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**RWP-MWI pH and Cadmium
Concentrations**

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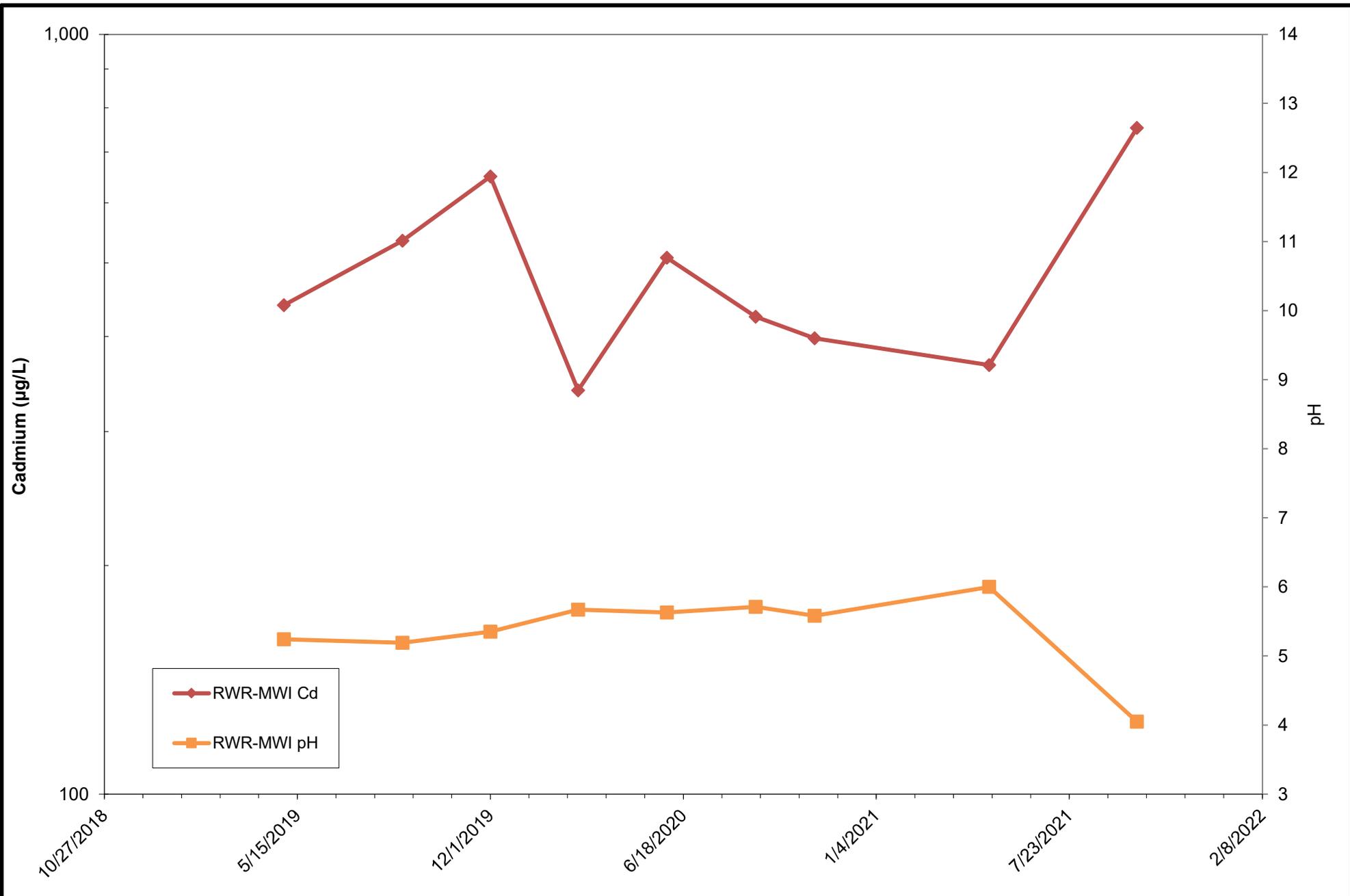
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Concentrations**

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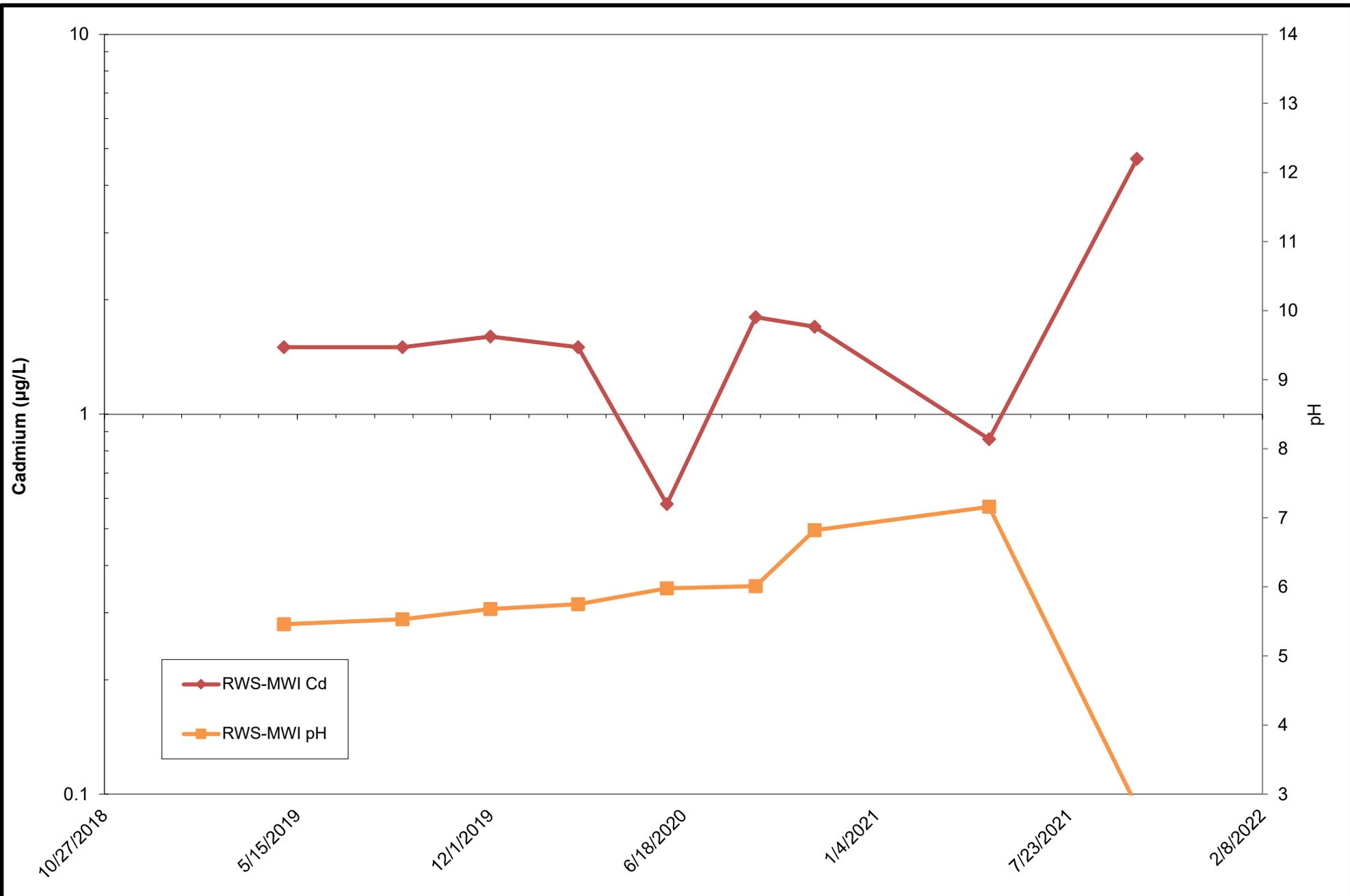
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**RWR-MWI pH and Cadmium
Concentrations**

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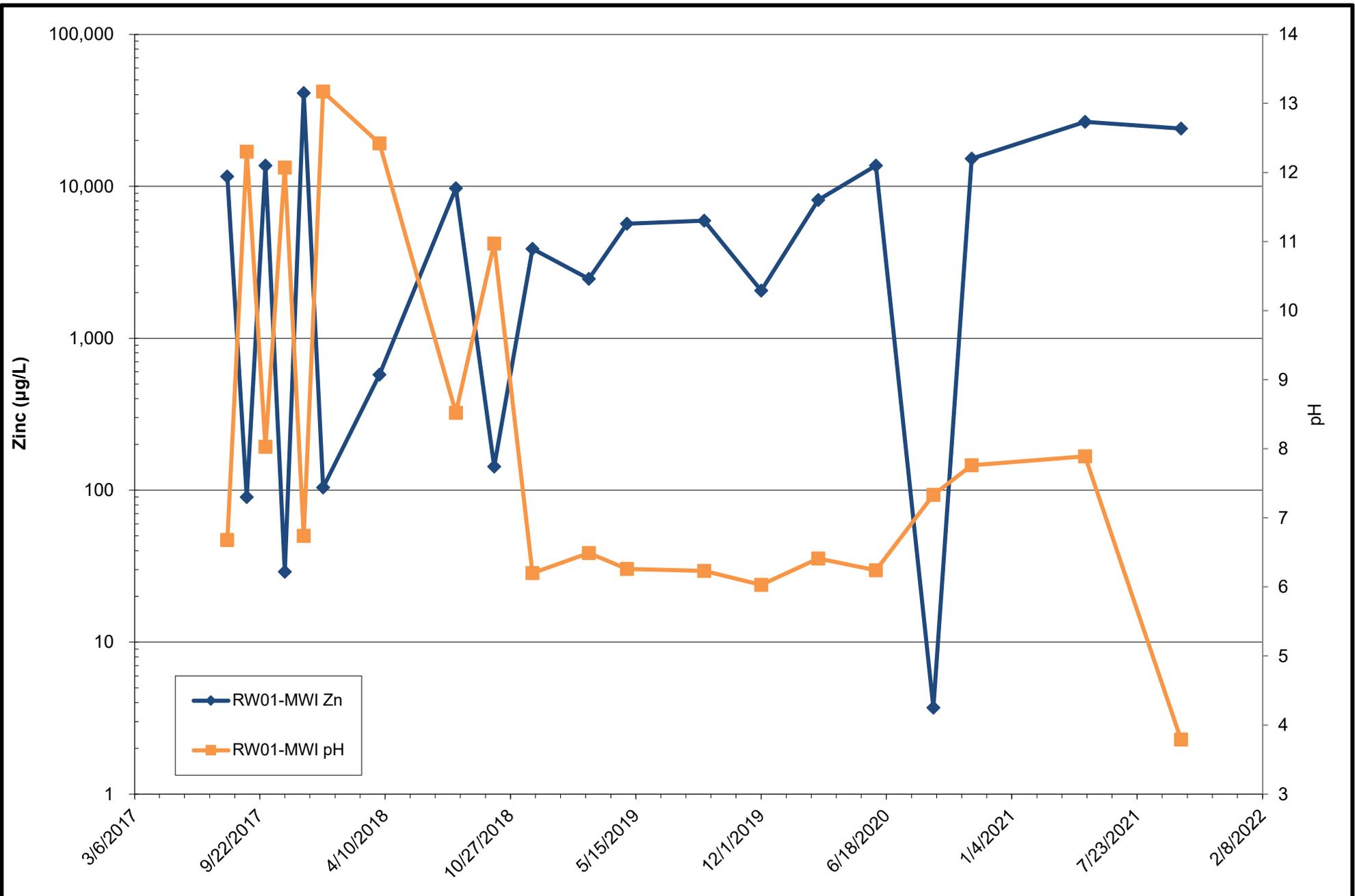
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**RWS-MWI pH and Cadmium
Concentrations**

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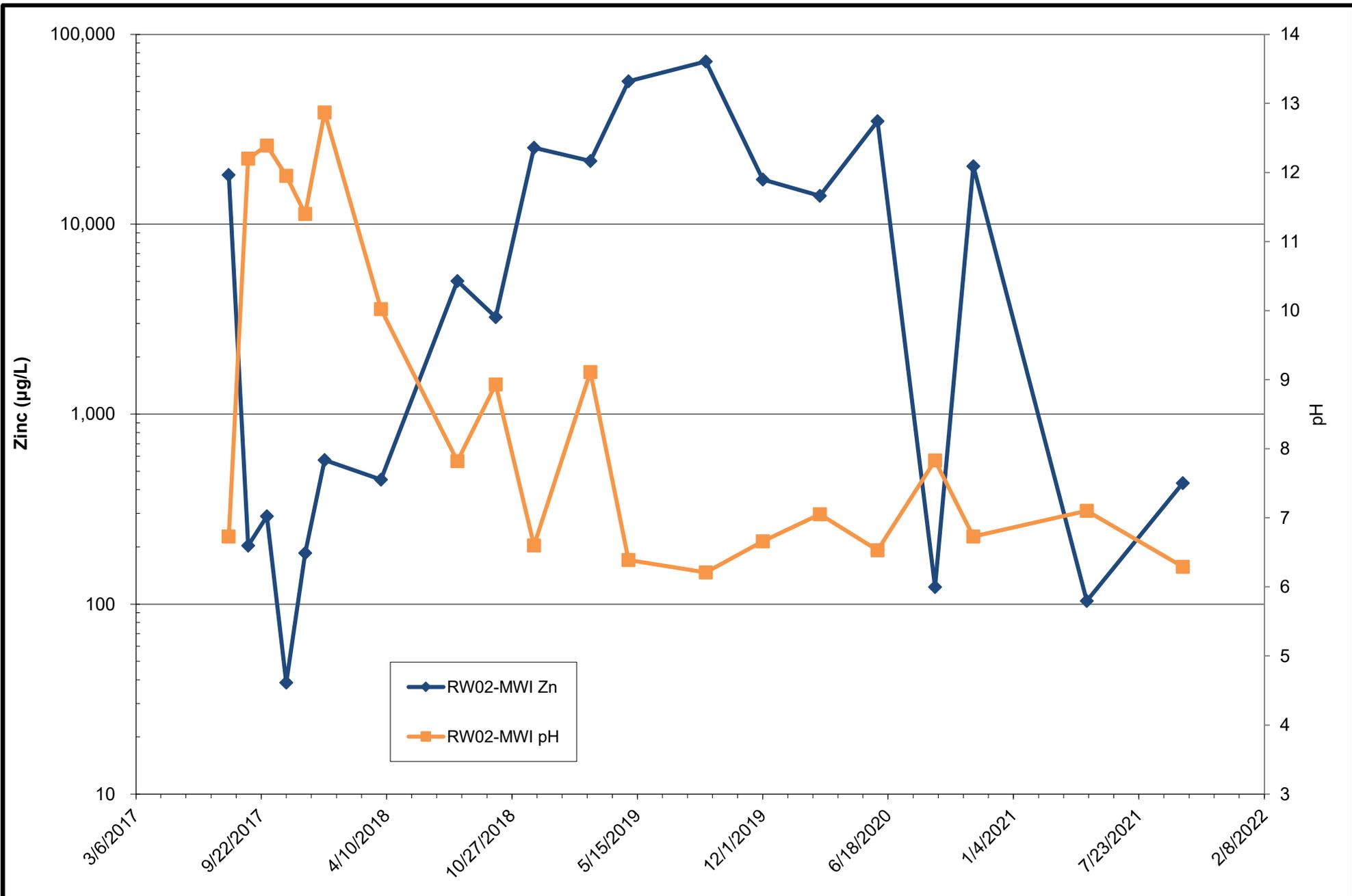
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**RW01-MWI pH and Zinc
Concentrations**

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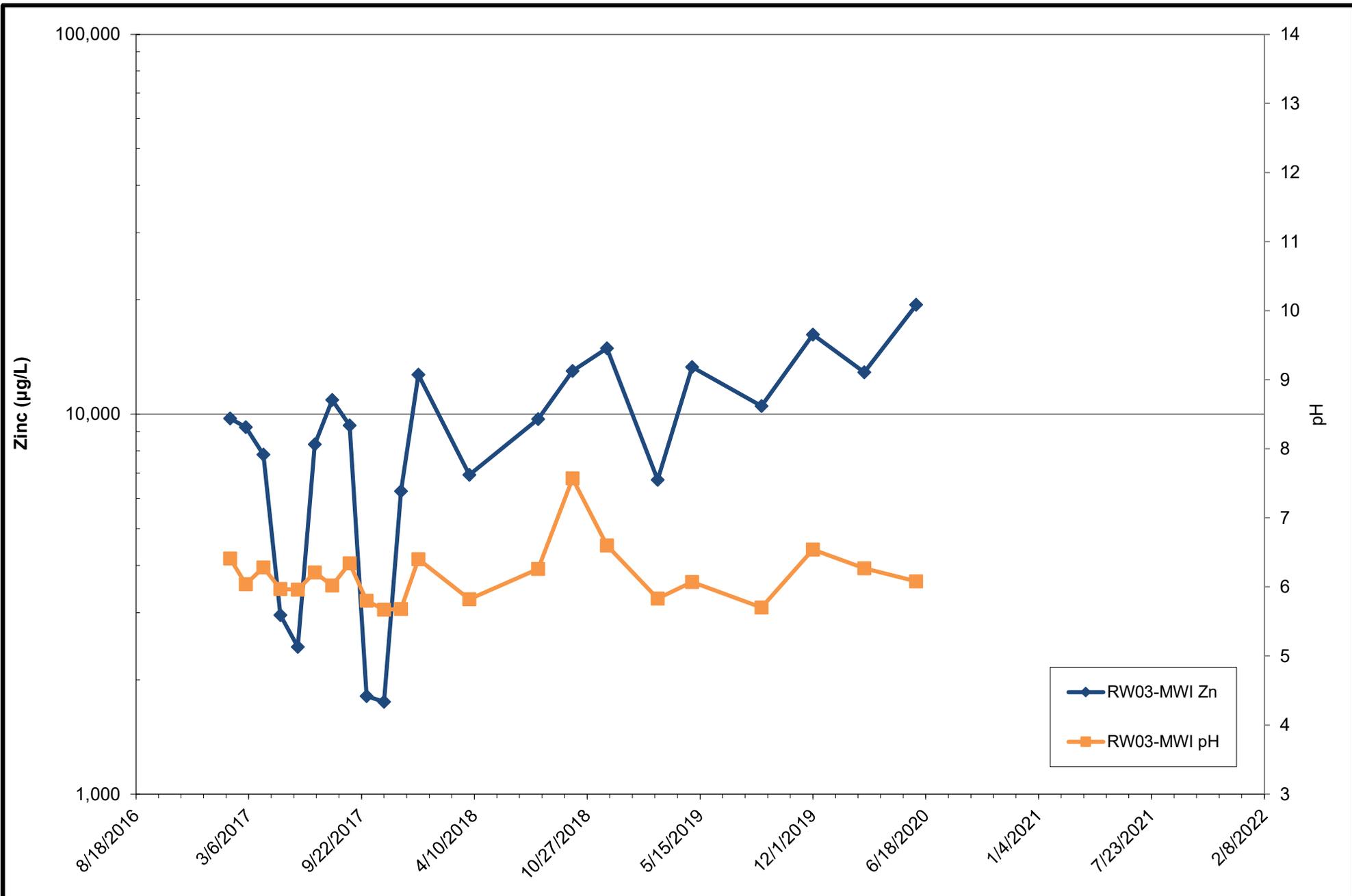
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Tradeport Atlantic

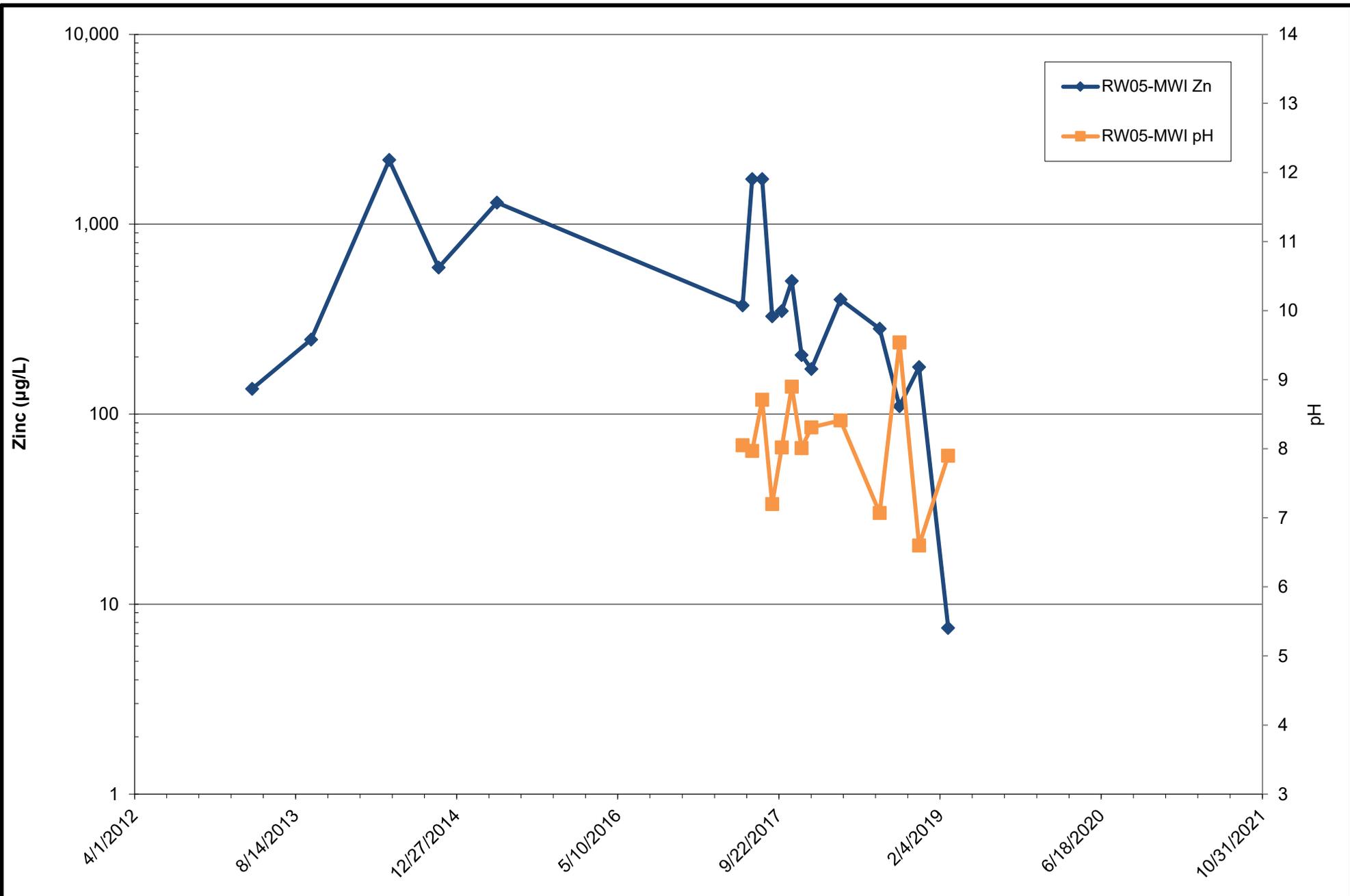
Sparrows Point, Maryland

RW02-MWI pH and Zinc Concentrations

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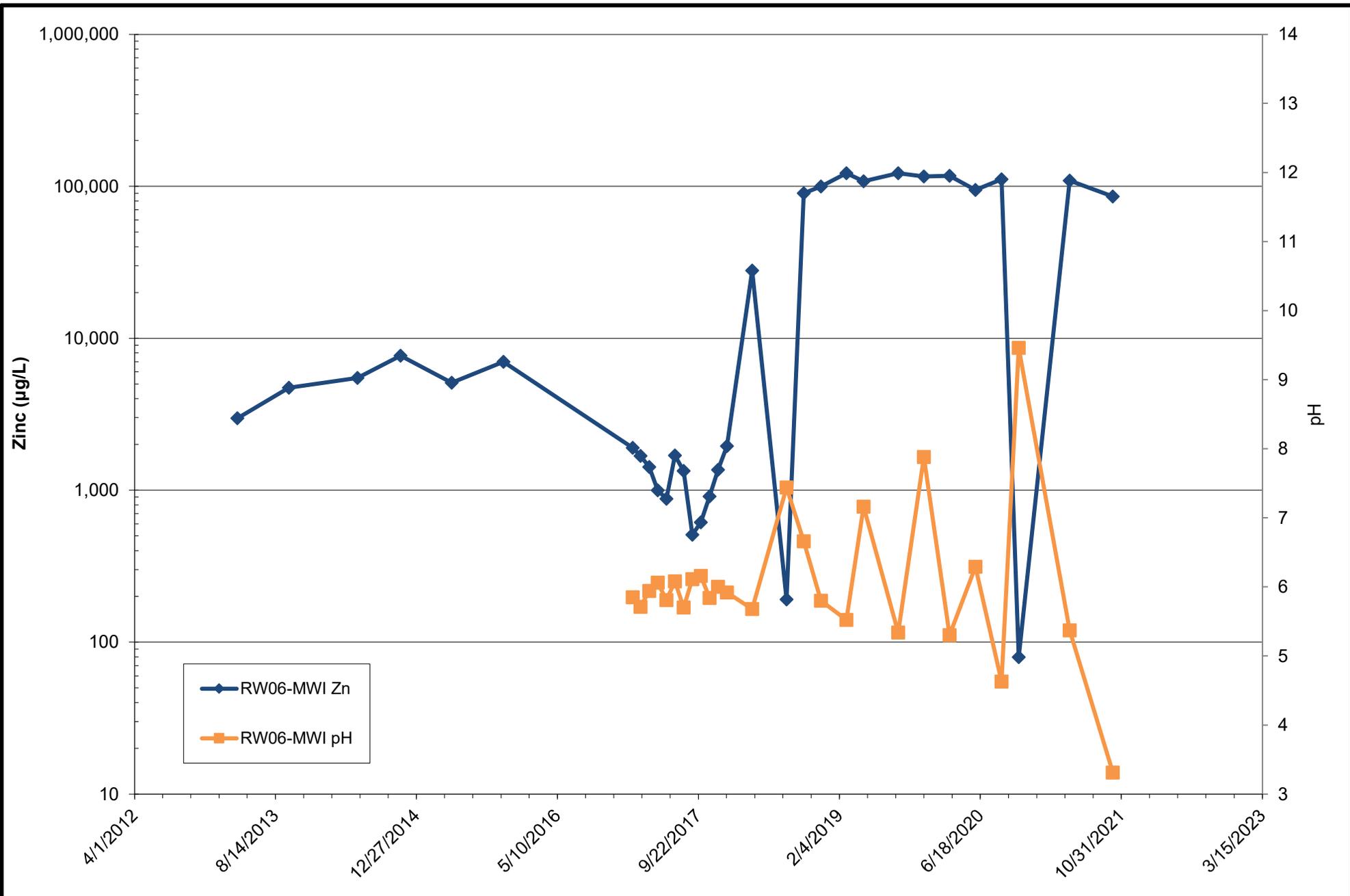
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**RW05-MWI pH and Zinc
Concentrations**

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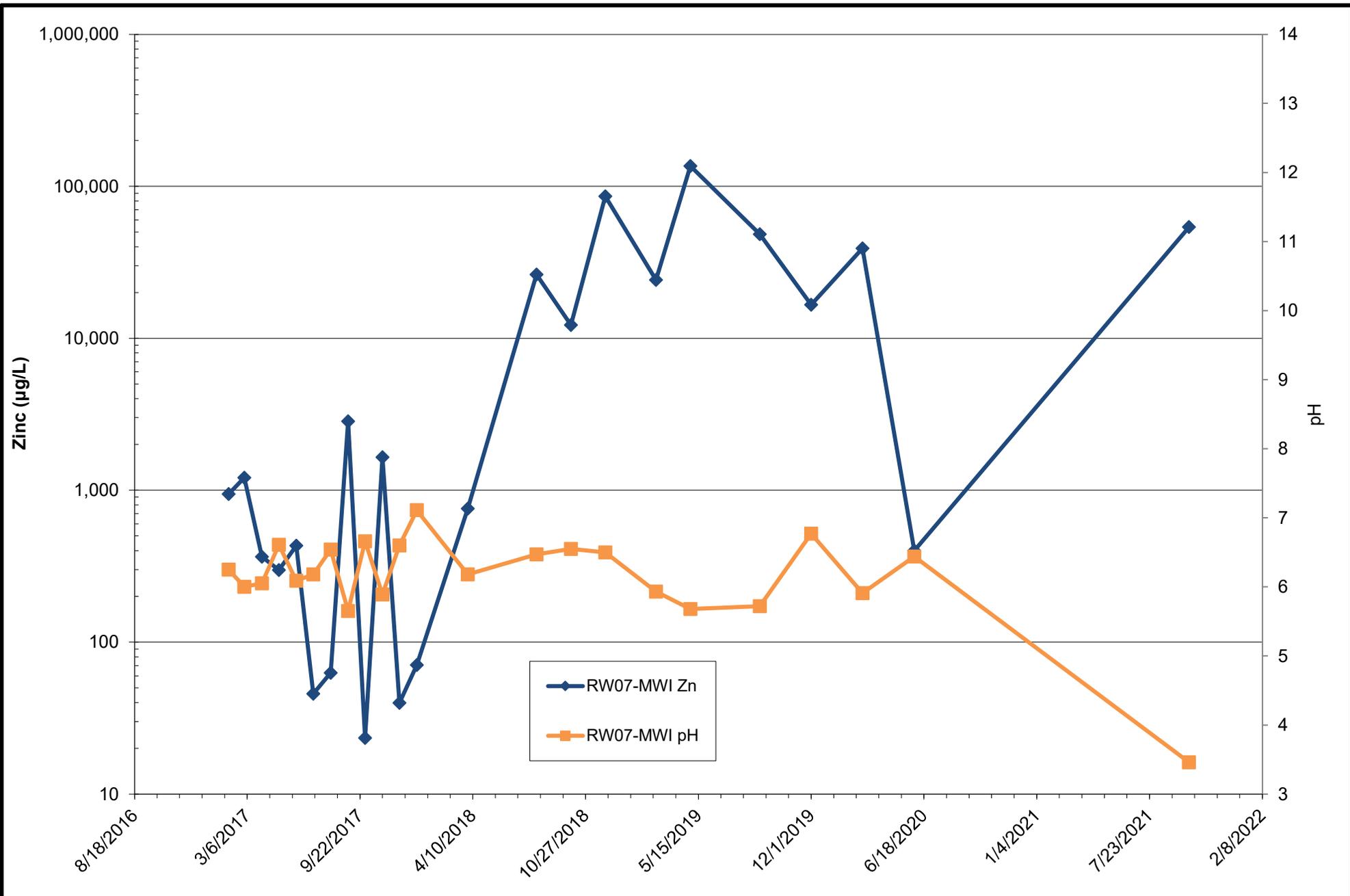
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RW06-MWI pH and Zinc Concentrations

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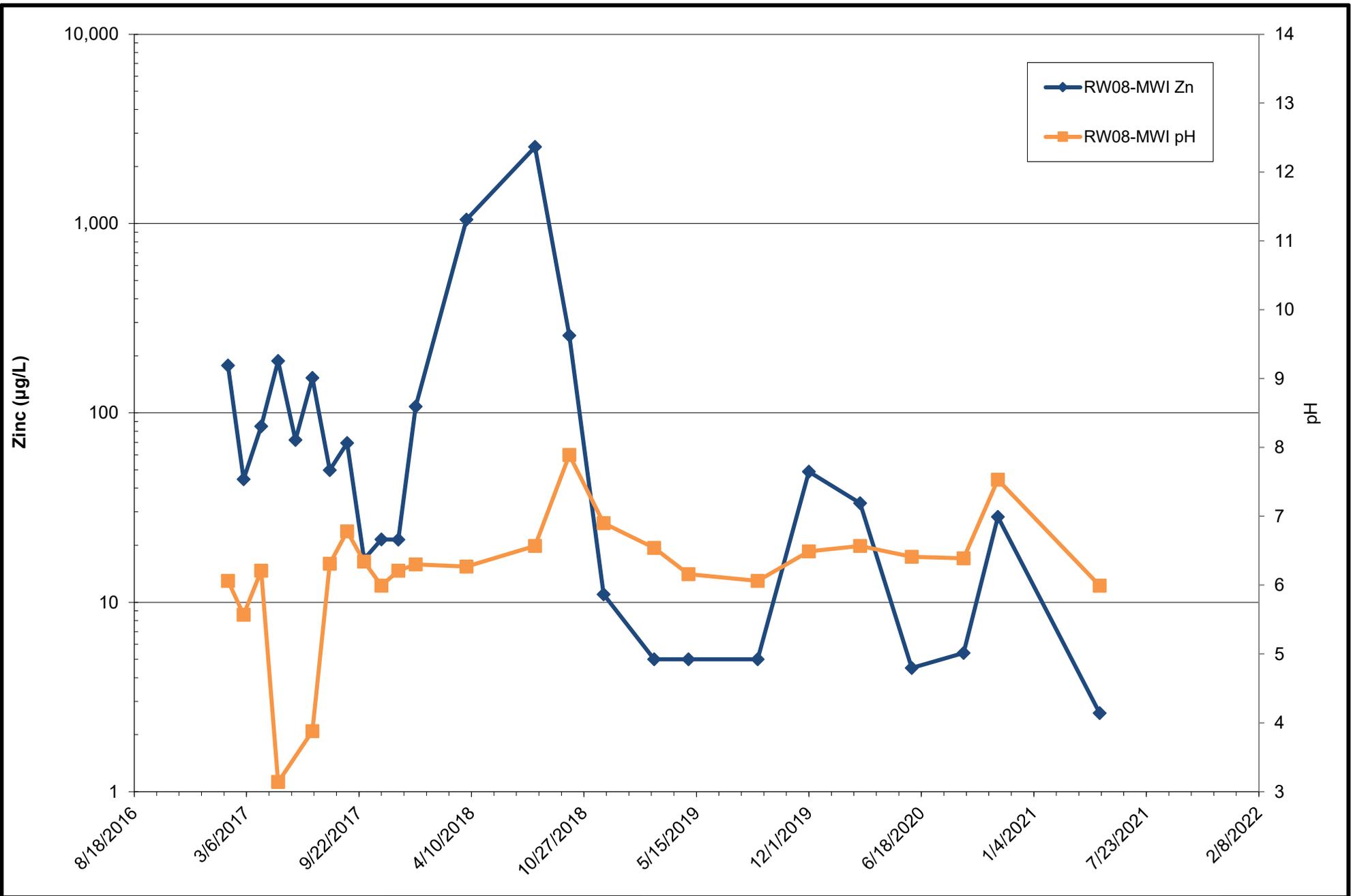
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RW07-MWI pH and Zinc Concentrations

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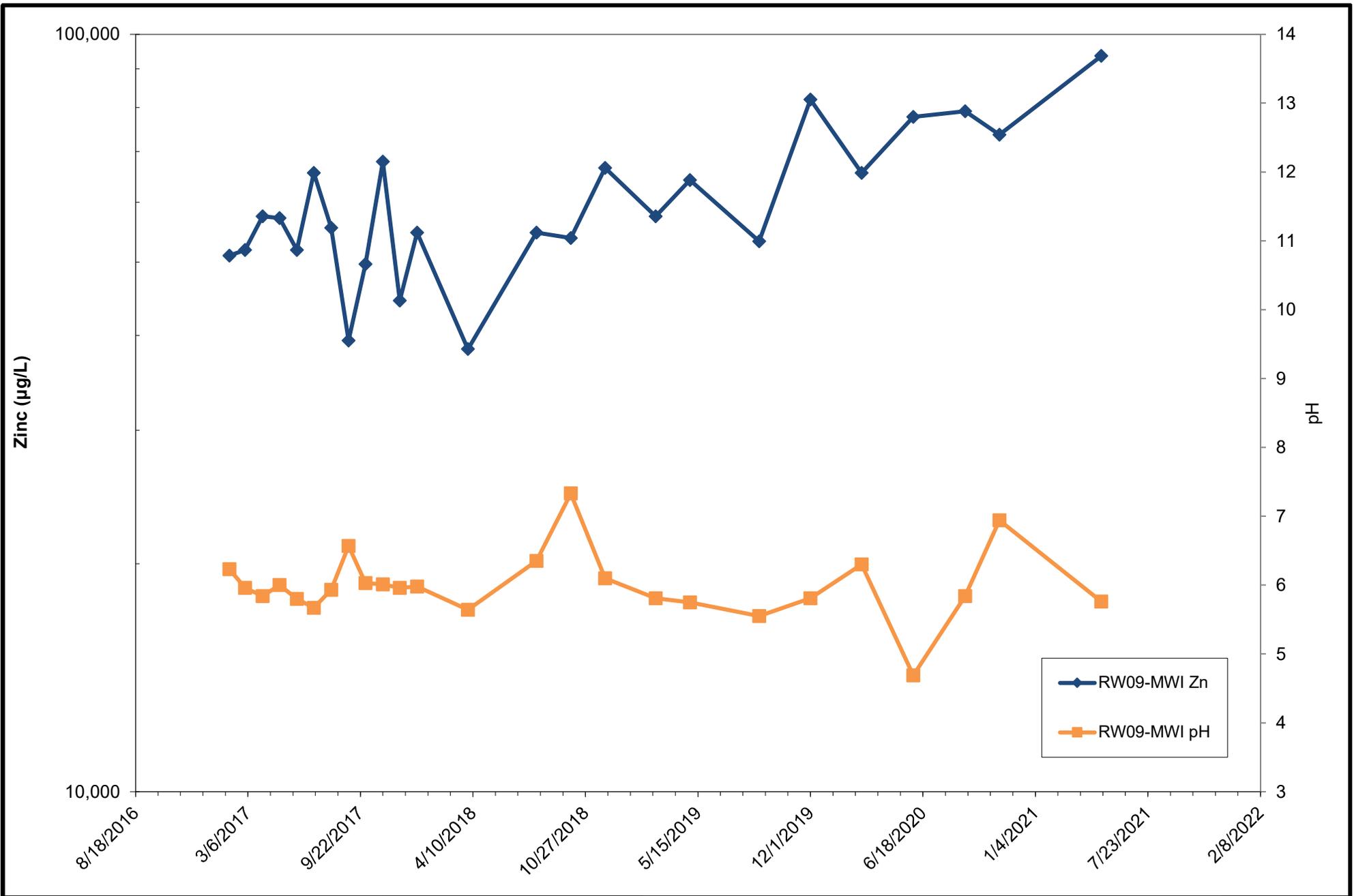
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RW08-MWI pH and Zinc Concentrations

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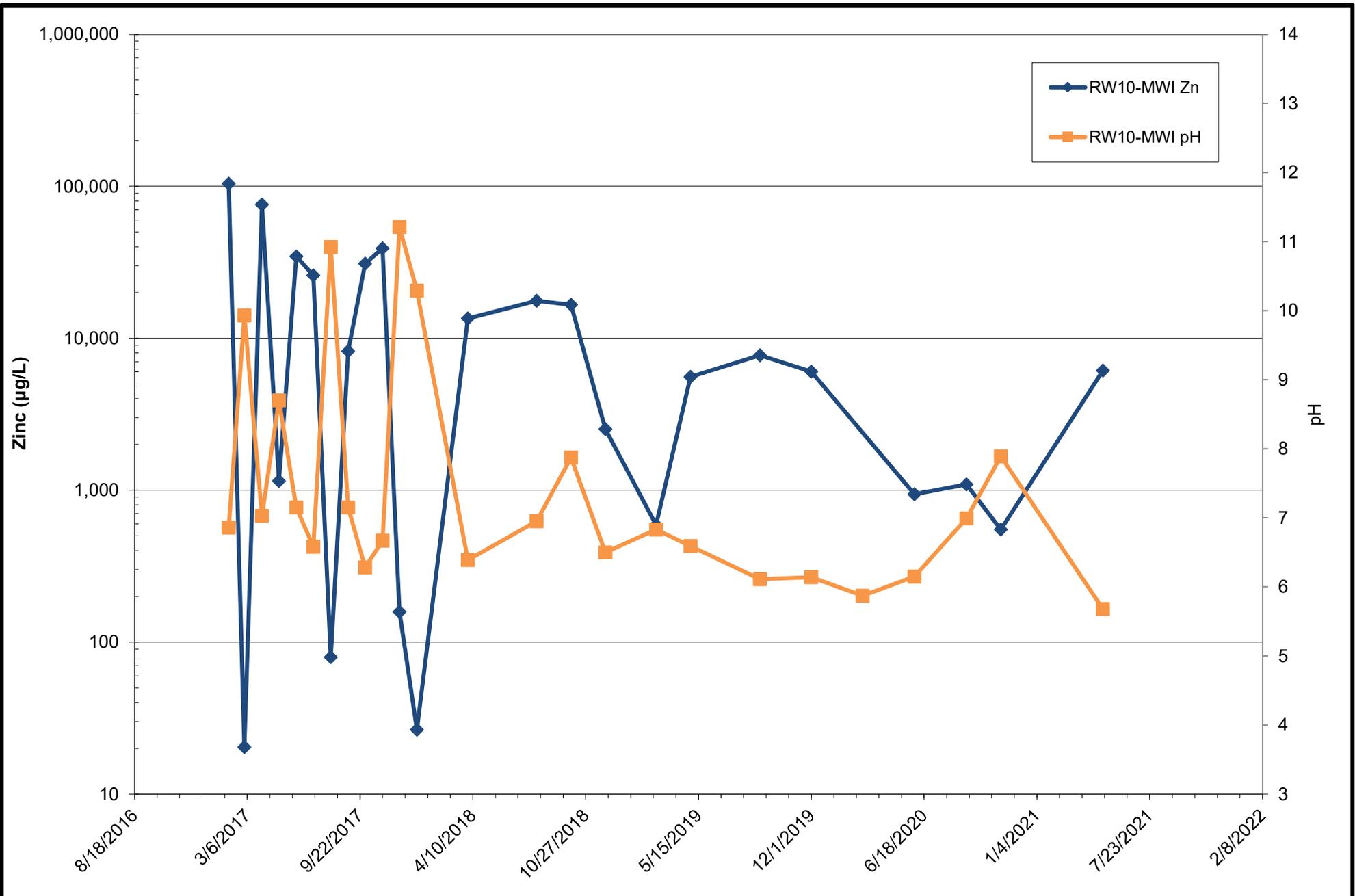
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RW09-MWI pH and Zinc Concentrations

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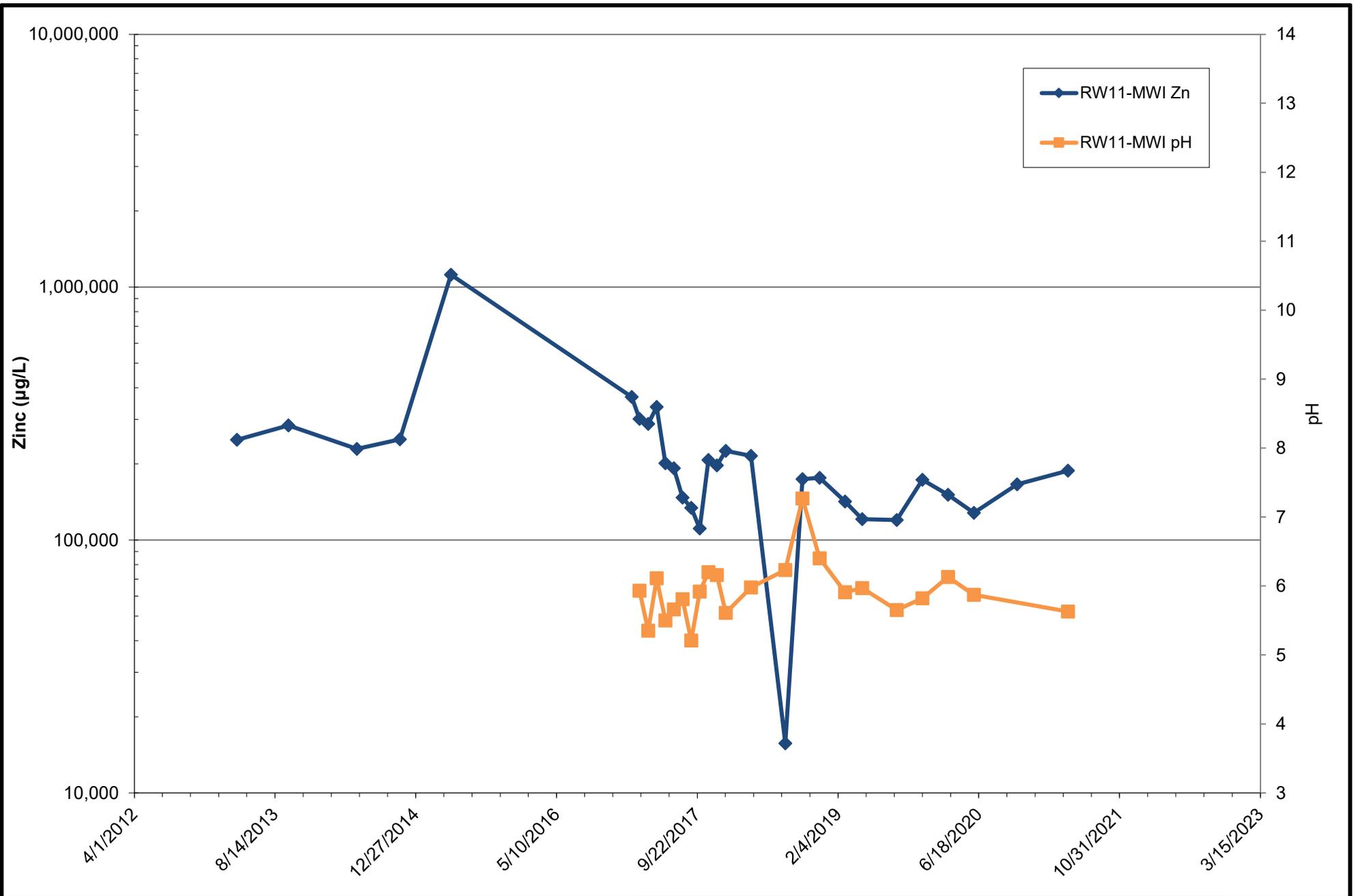
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RW10-MWI pH and Zinc Concentrations

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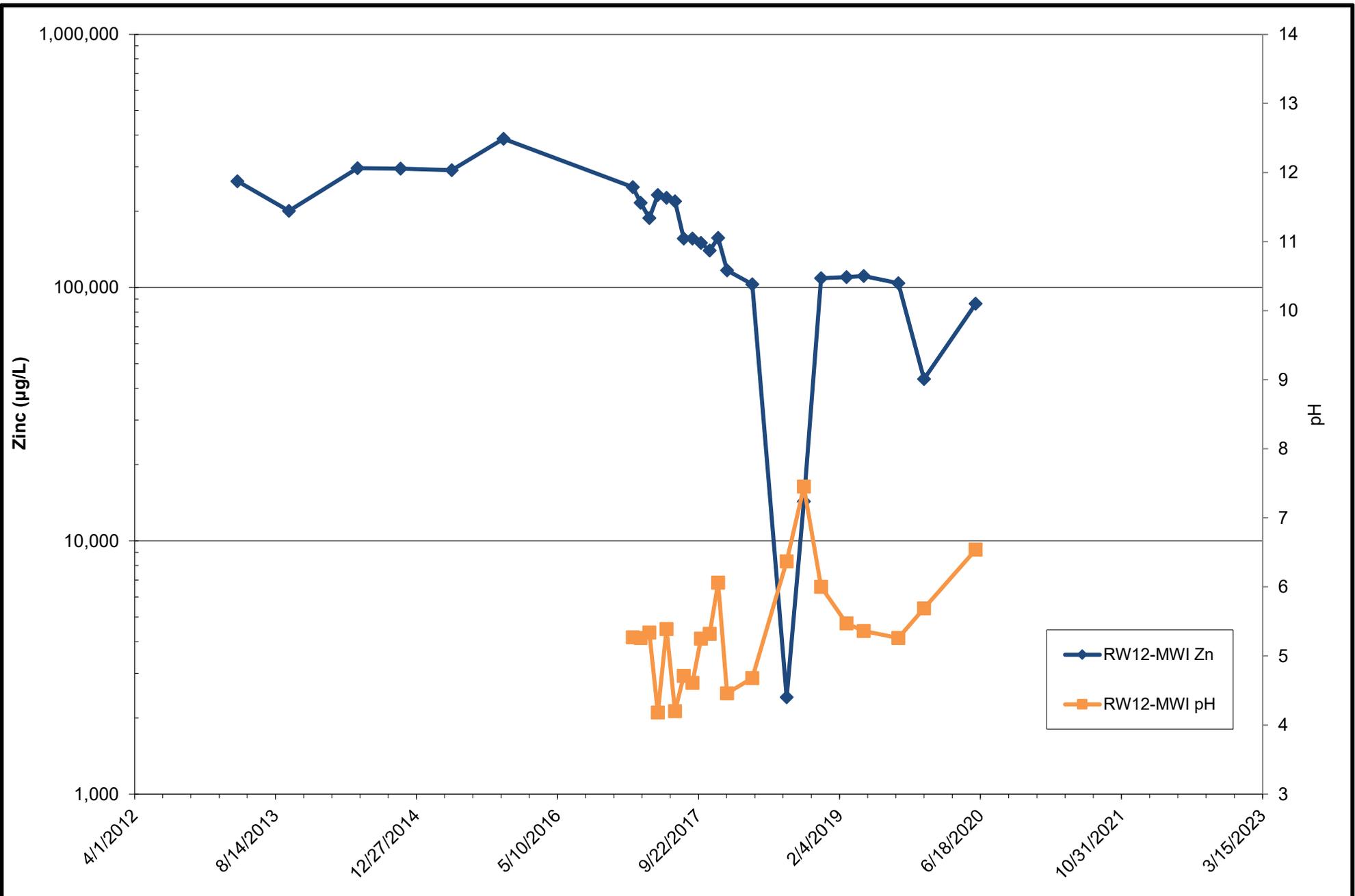
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RW11-MWI pH and Zinc Concentrations

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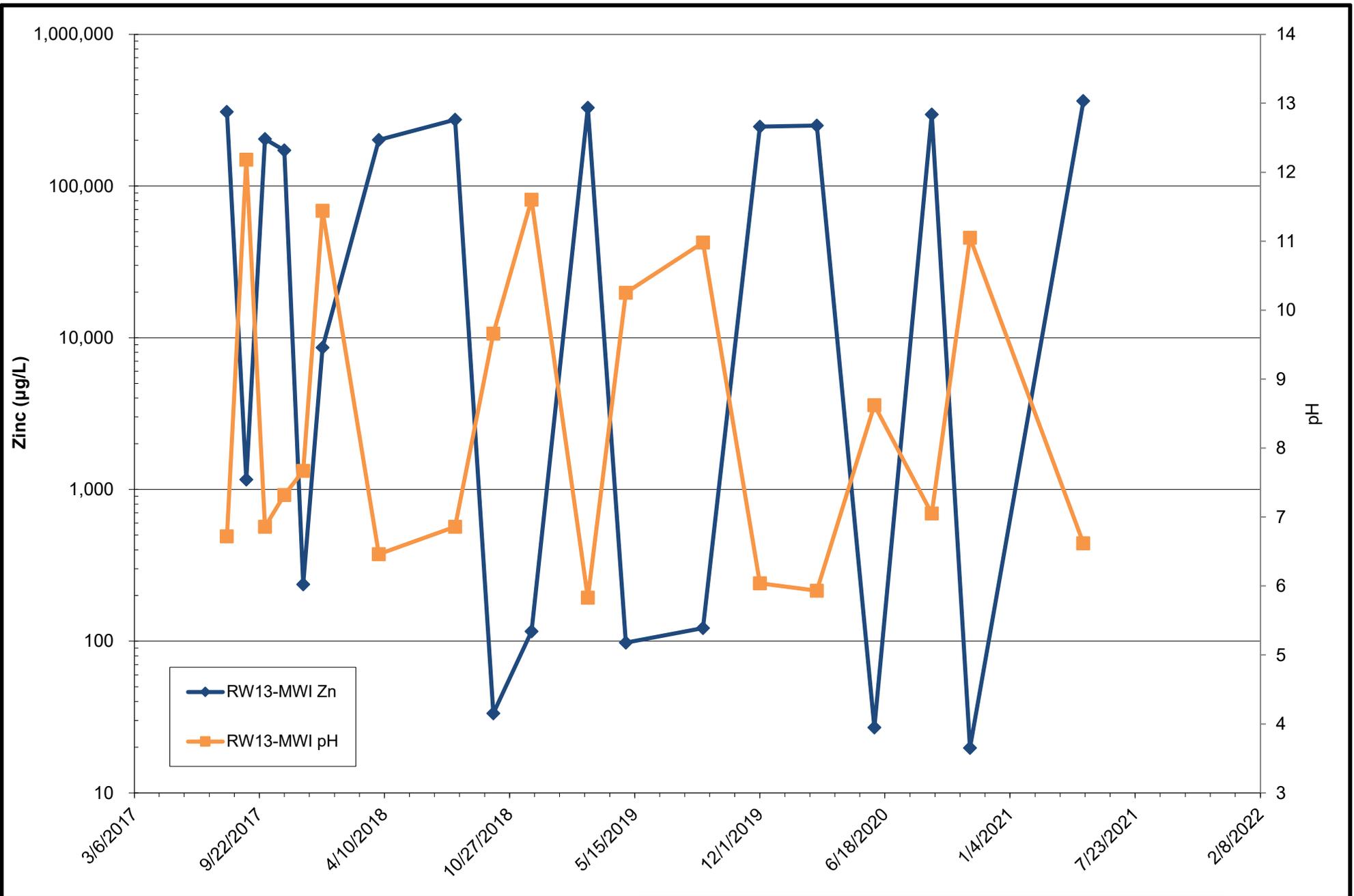
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RW12-MWI pH and Zinc Concentrations

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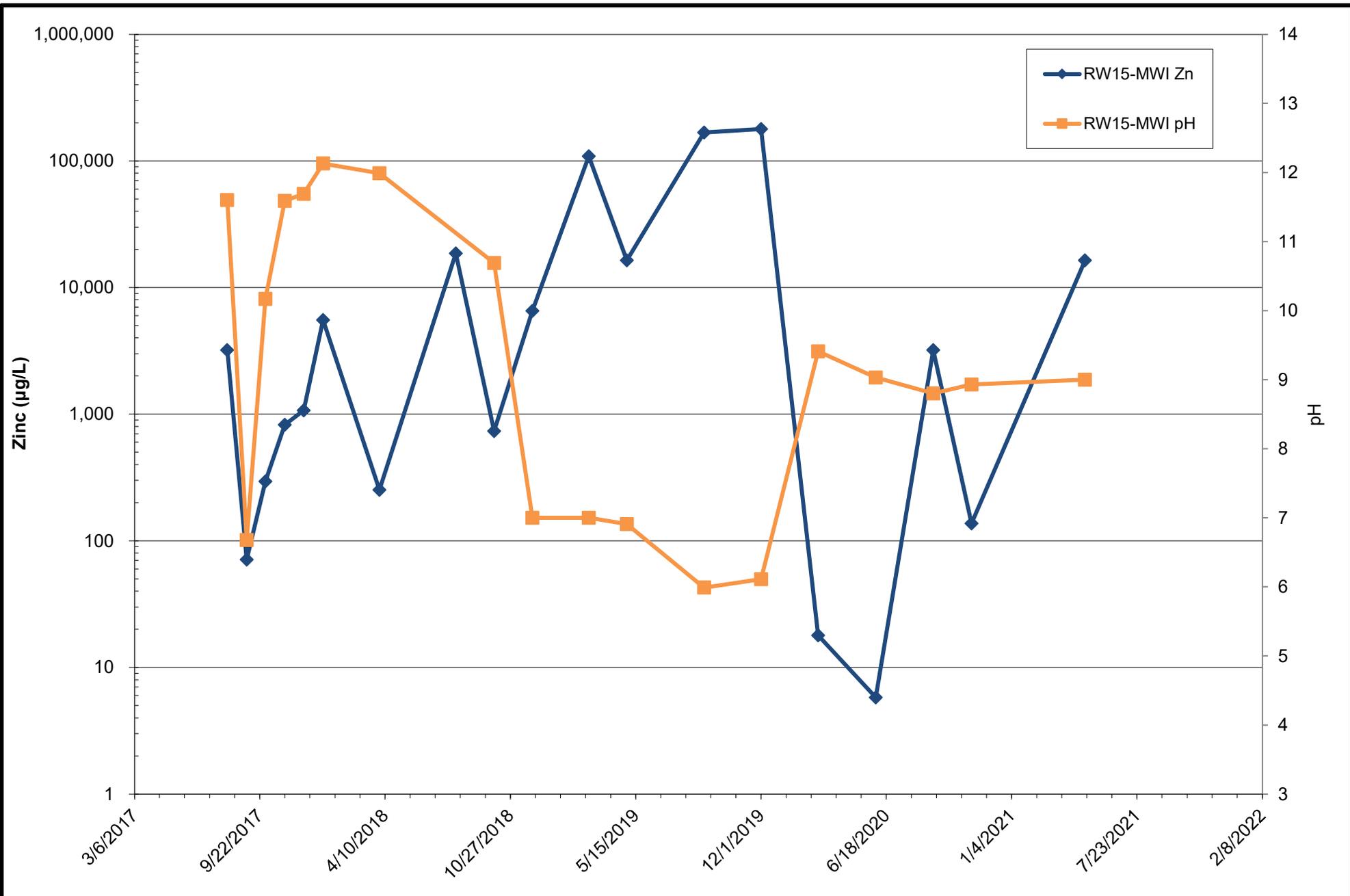
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RW13-MWI pH and Zinc Concentrations

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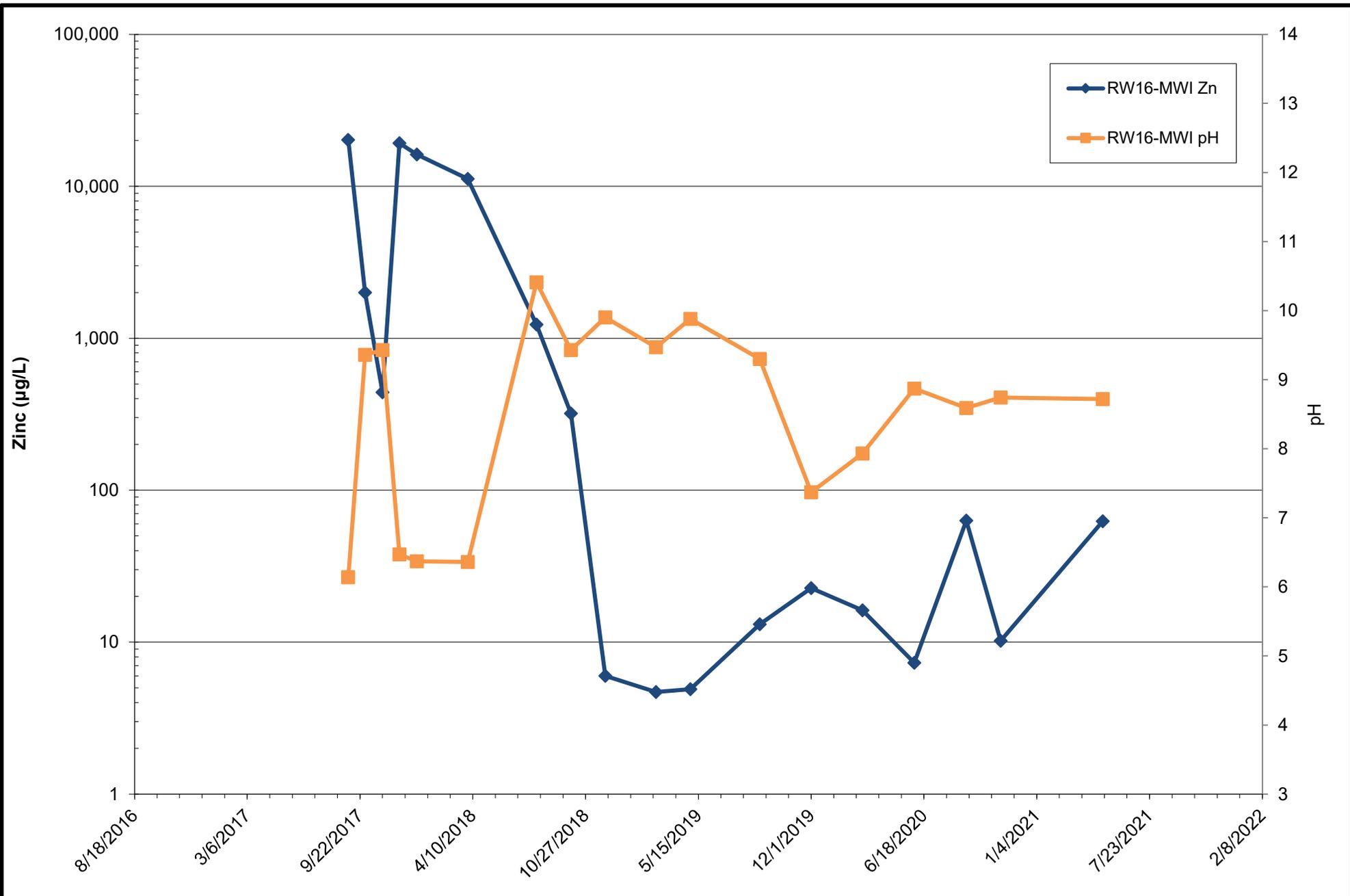
Rod and Wire Mill
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**RW15-MWI pH and Zinc
Concentrations**

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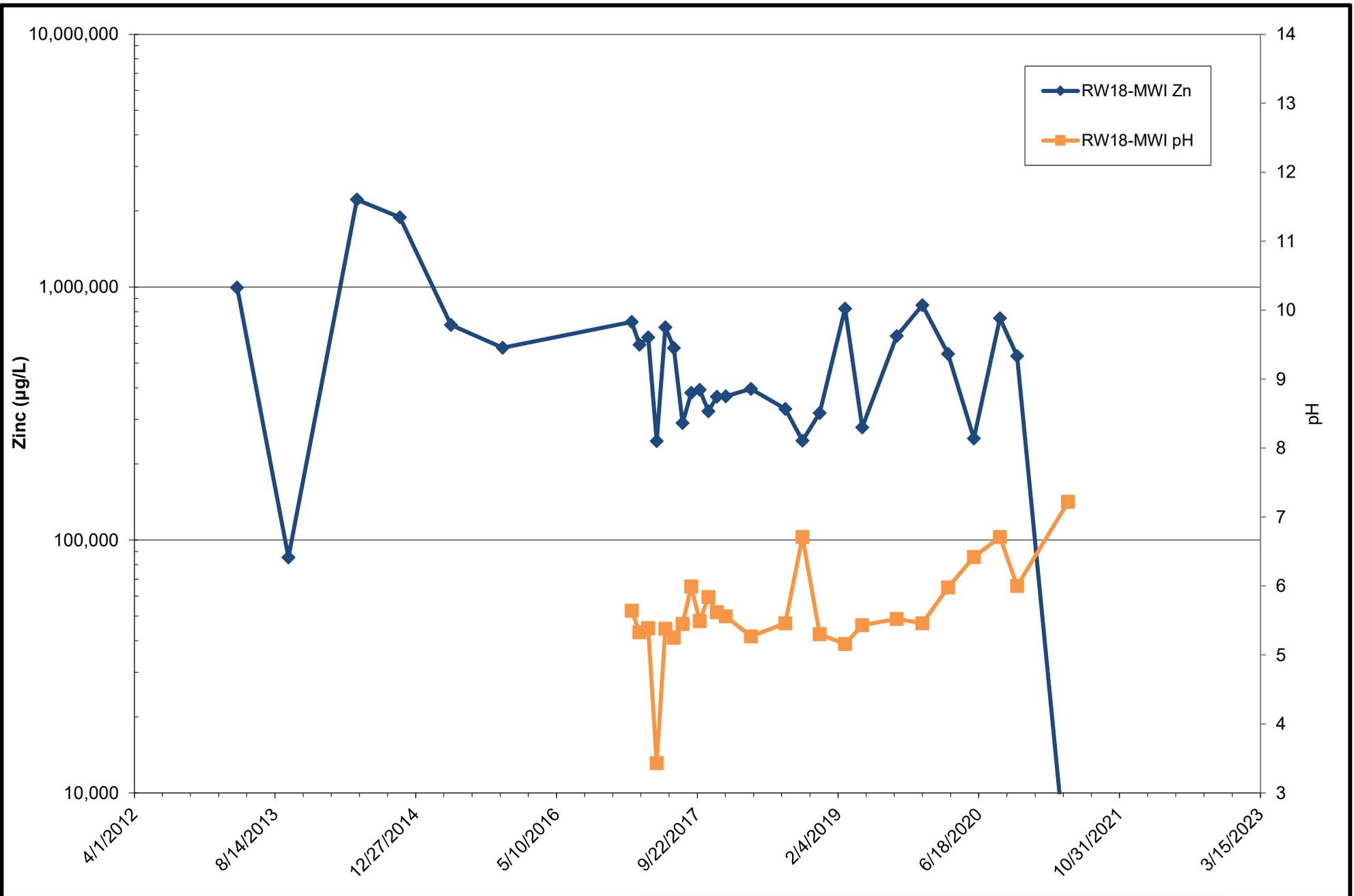
Rod and Wire Mill
Tradeport Atlantic

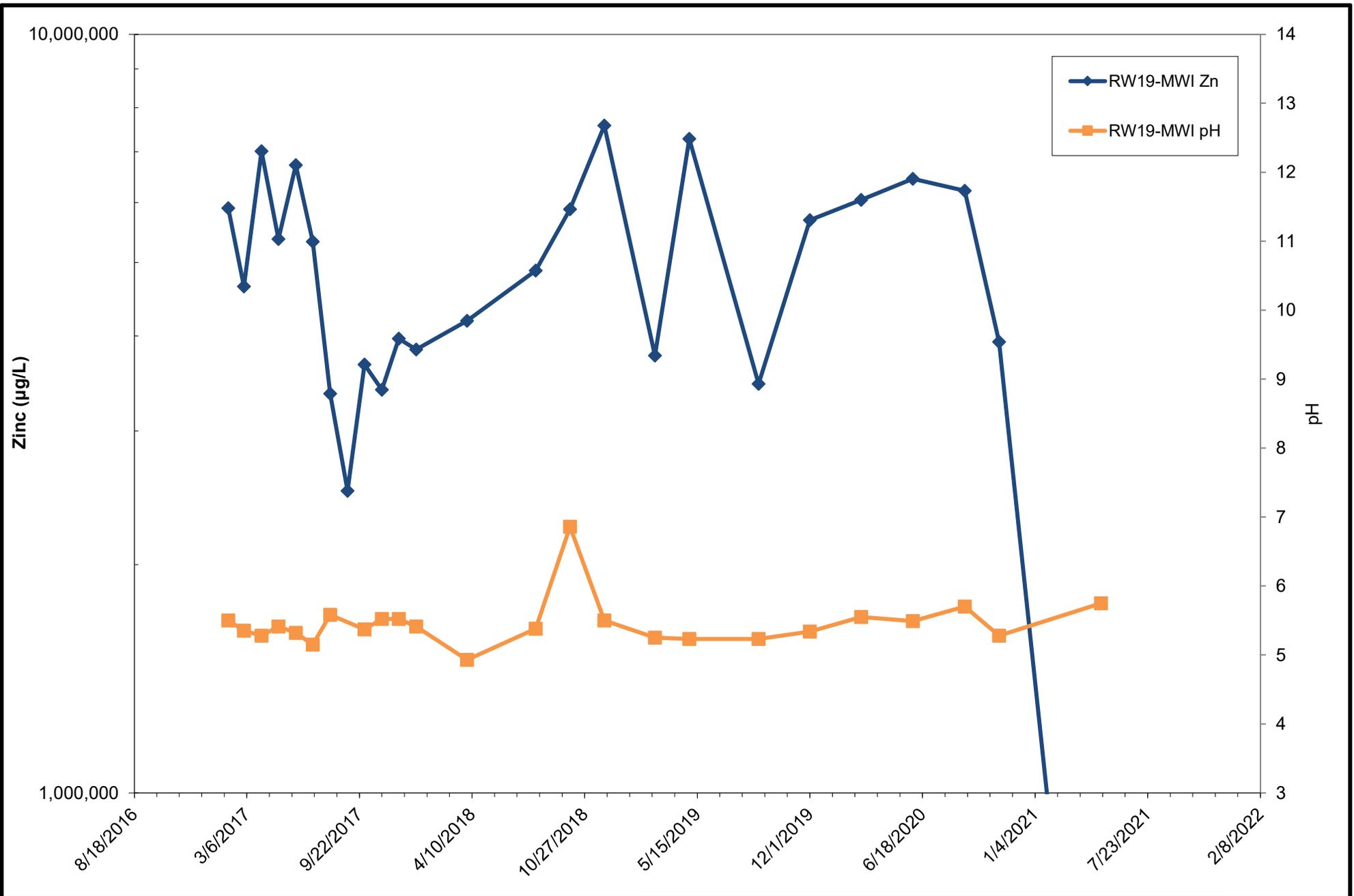
Sparrows Point, Maryland

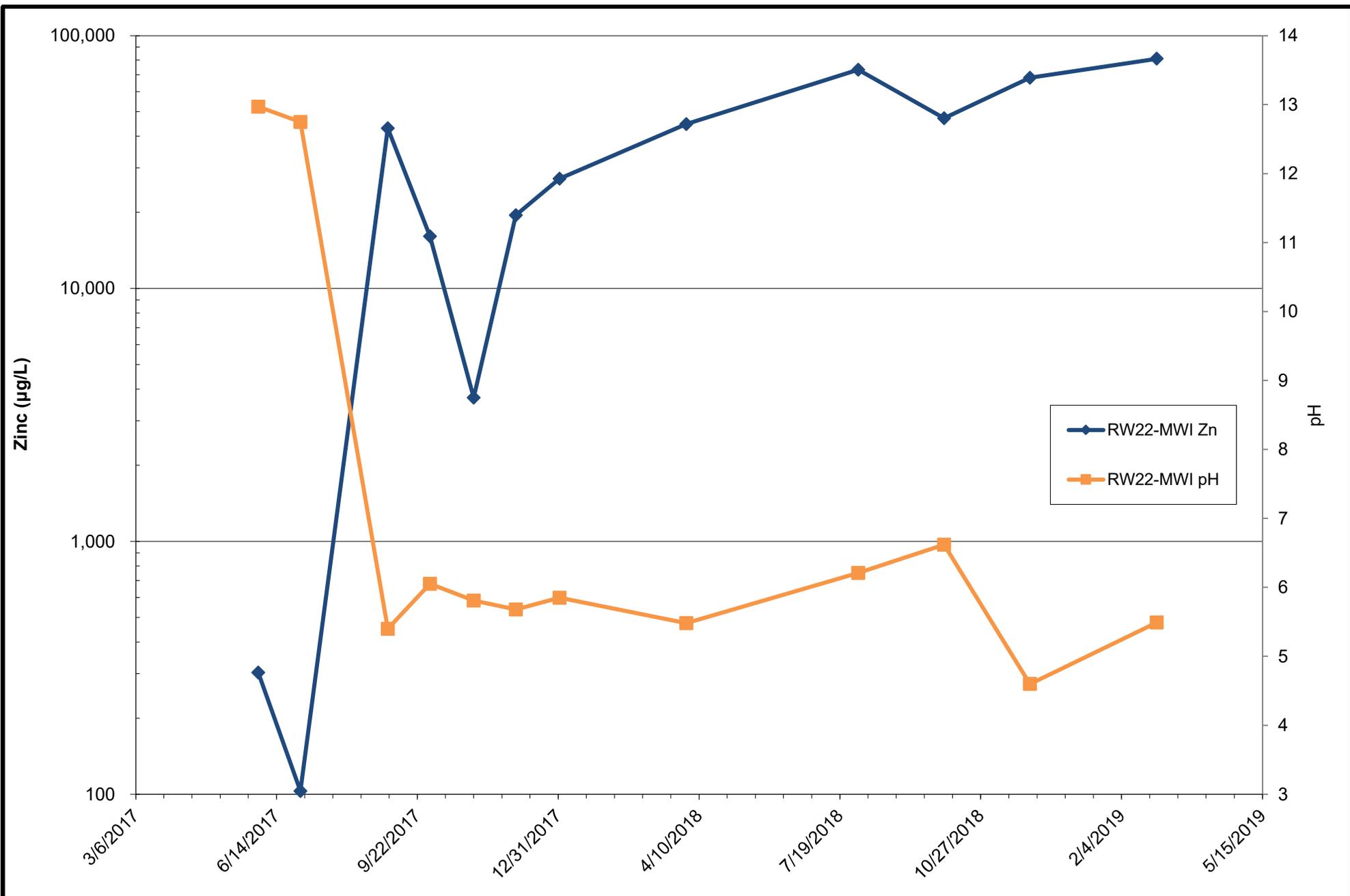
**RW16-MWI pH and Zinc
Concentrations**

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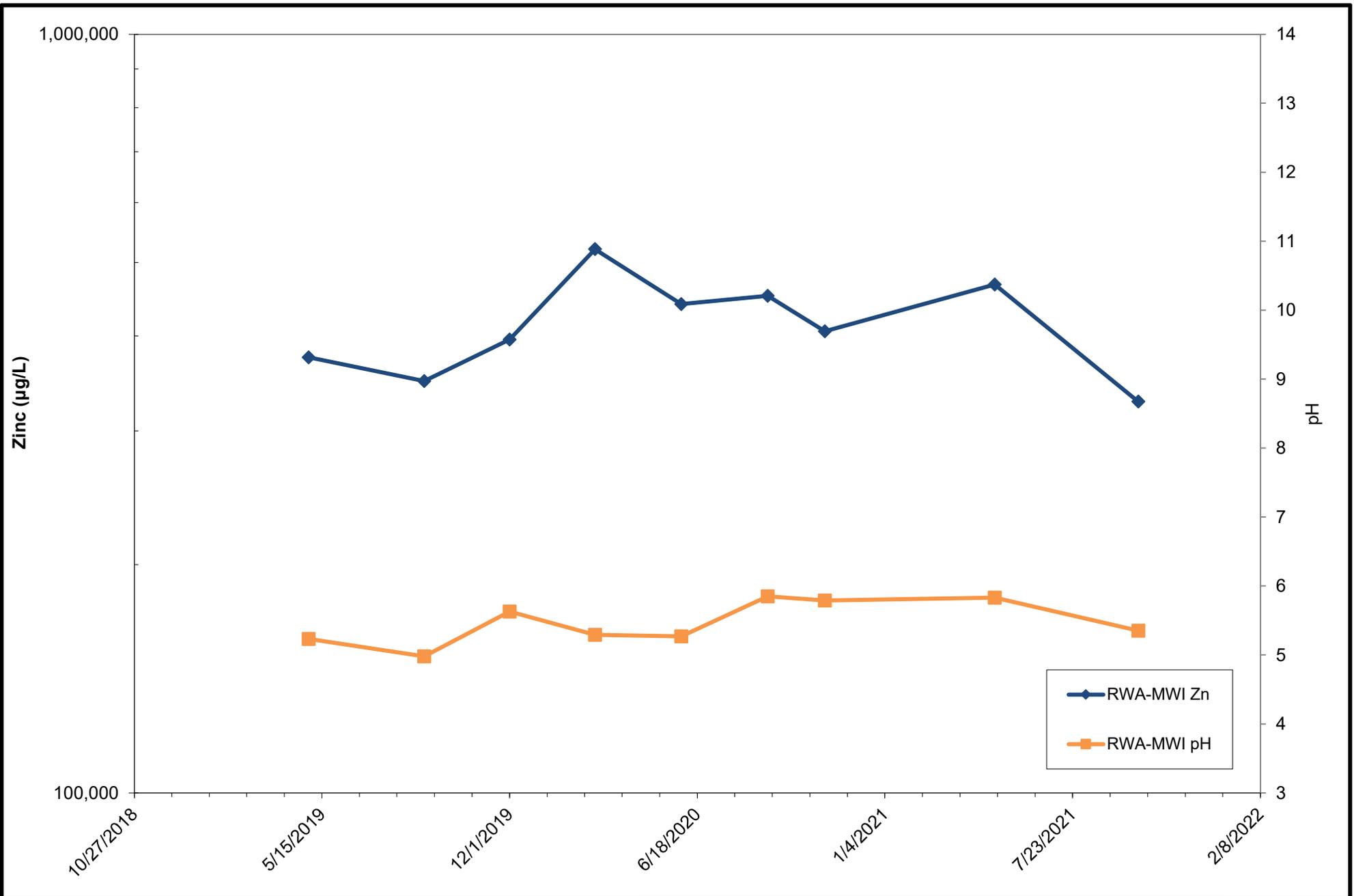
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

RW22-MWI pH and Zinc Concentrations

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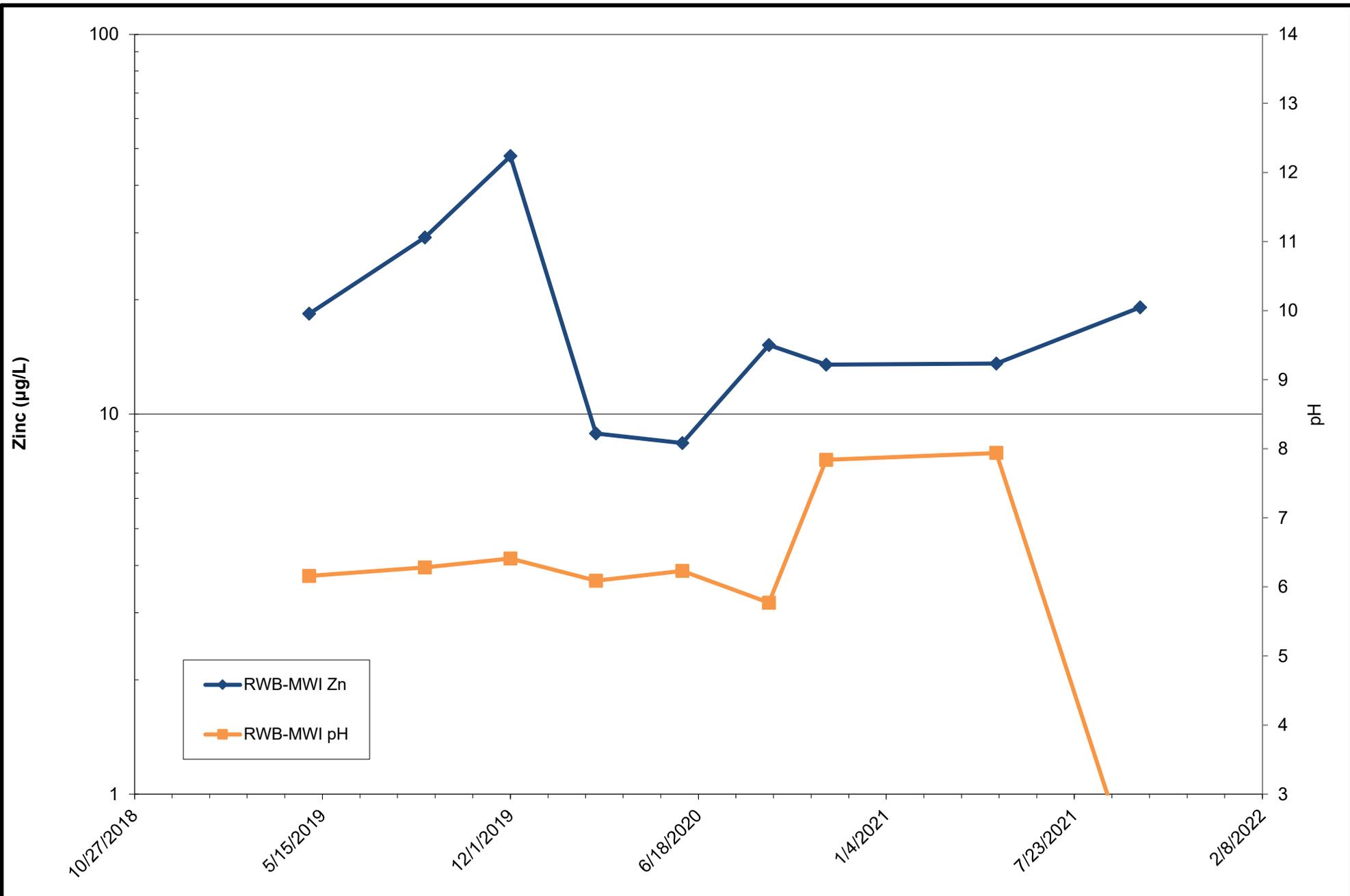
Rod and Wire Mill
Tradeport Atlantic

Sparrows Point, Maryland

RWA-MWI pH and Zinc Concentrations

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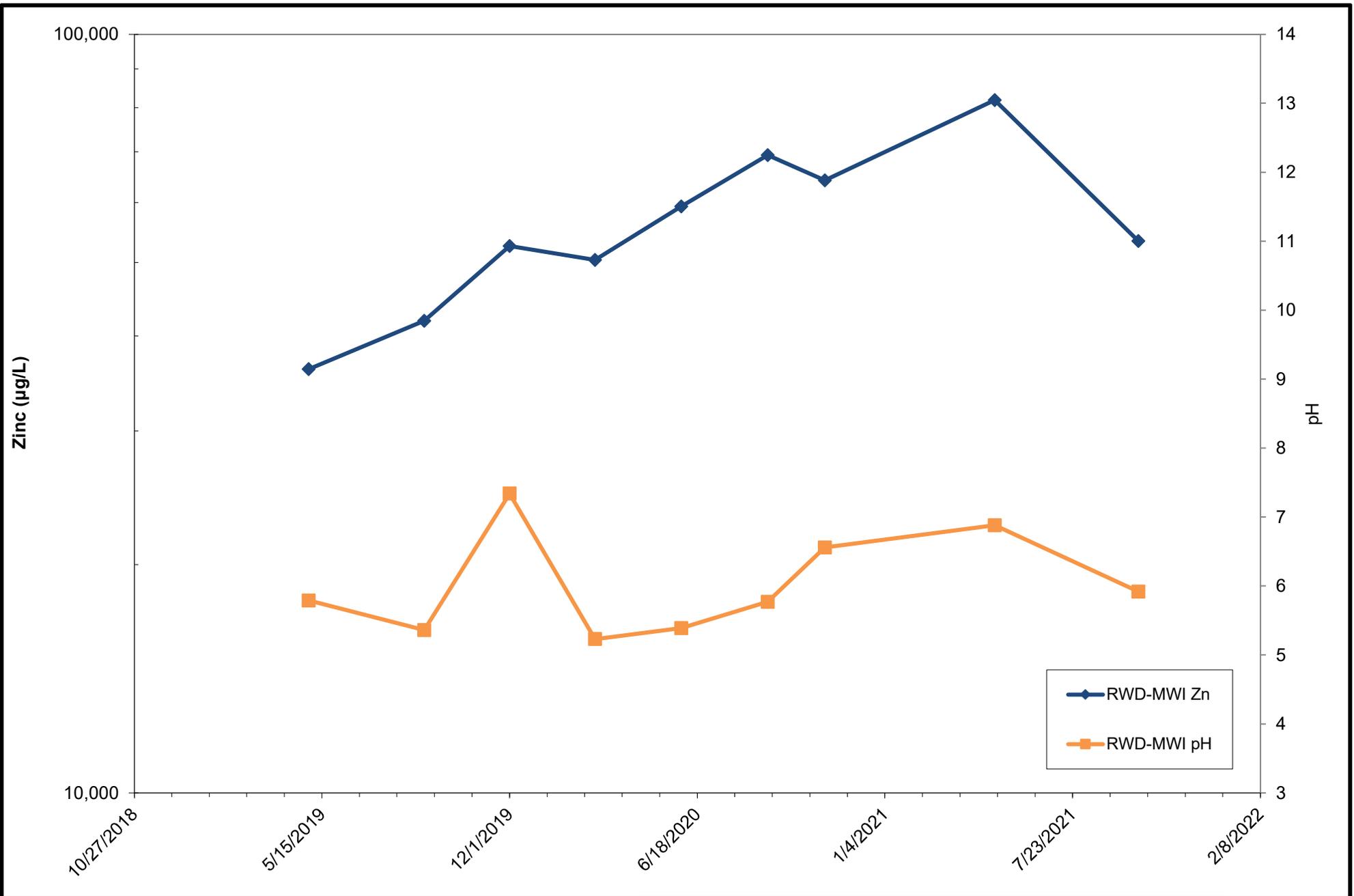
Rod and Wire Mill
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Sparrows Point, Maryland

RWB-MWI pH and Zinc Concentrations

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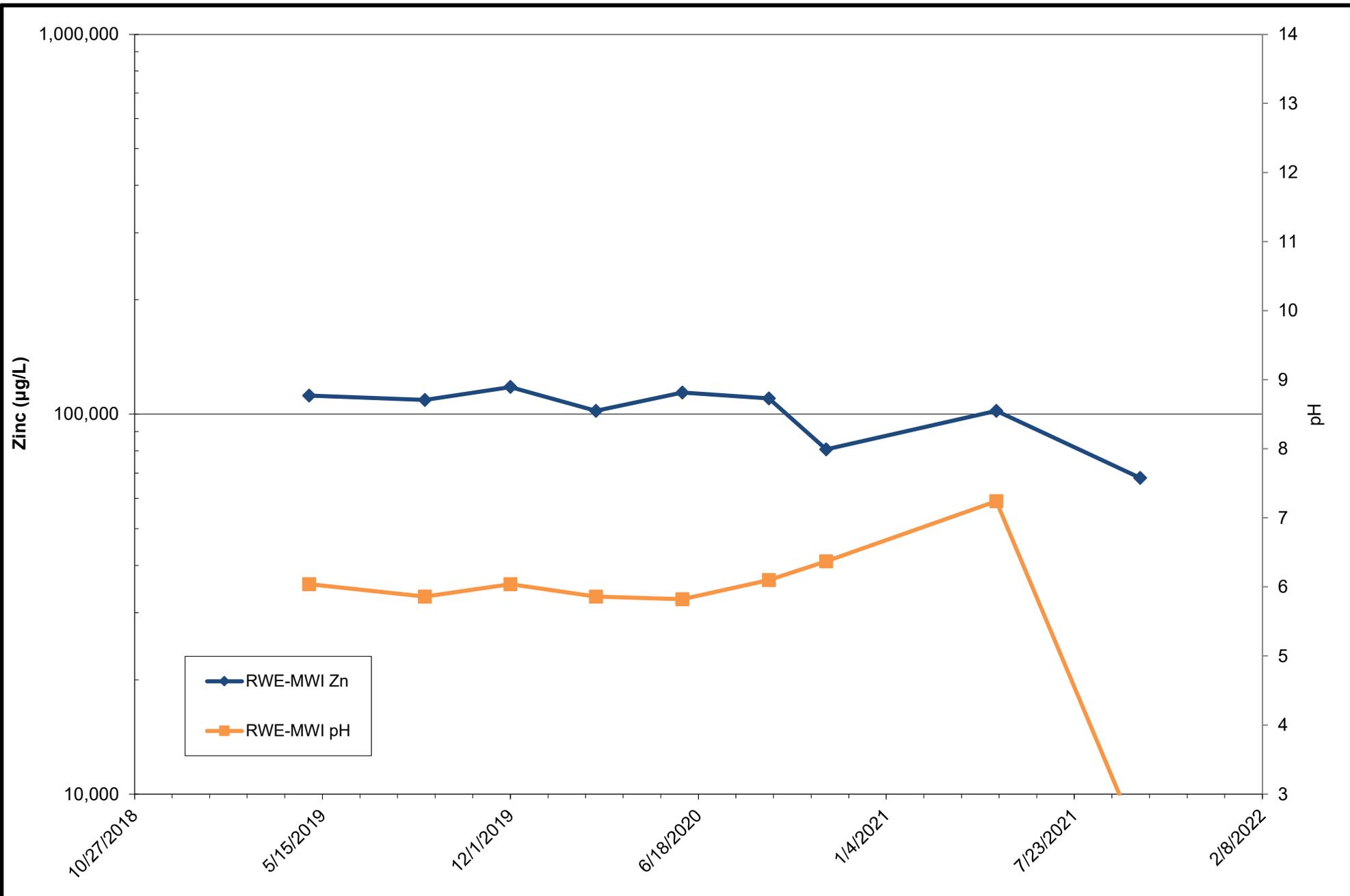
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RWD-MWI pH and Zinc Concentrations

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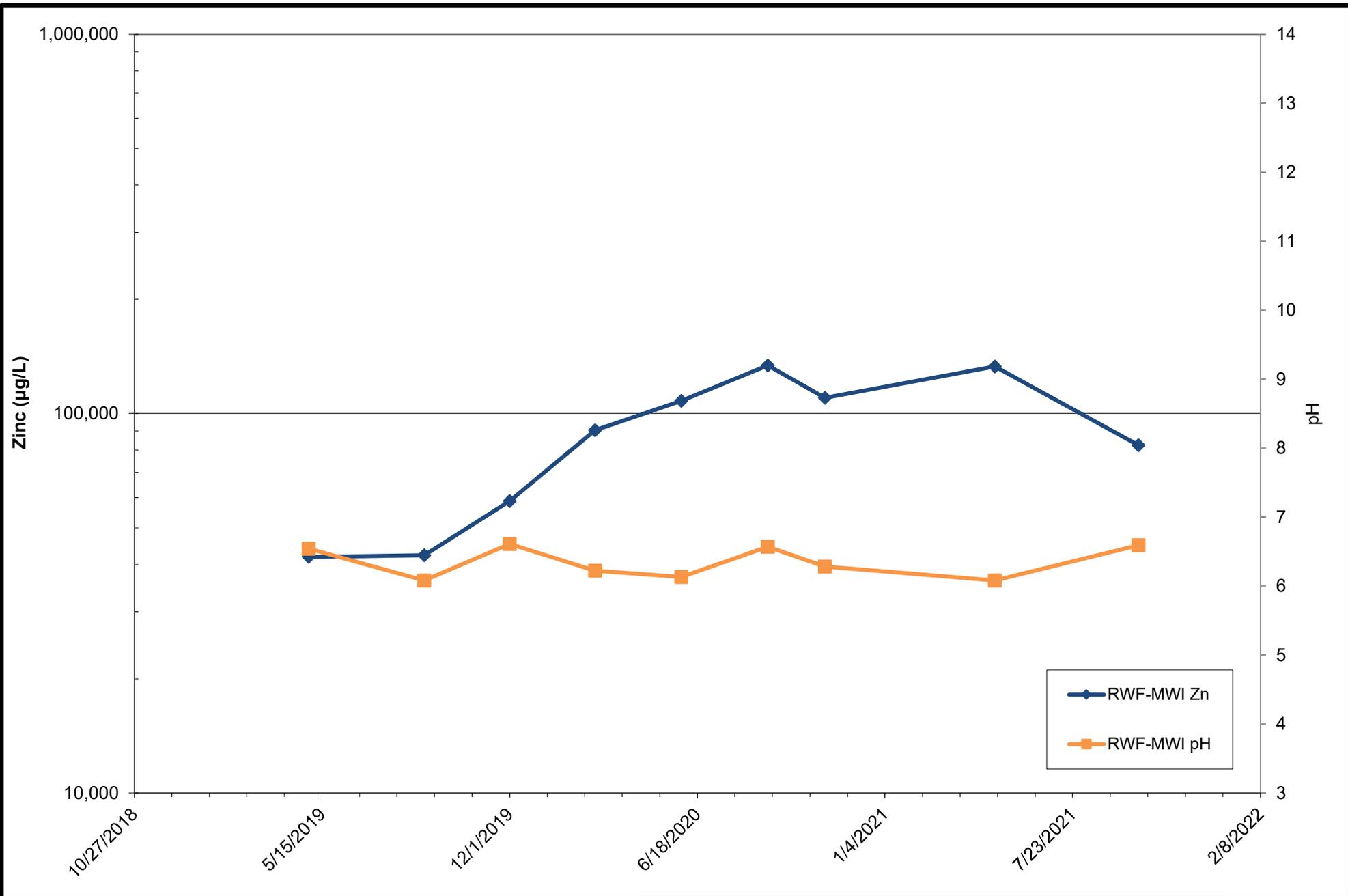
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Sparrows Point, Maryland

RWE-MWI pH and Zinc Concentrations

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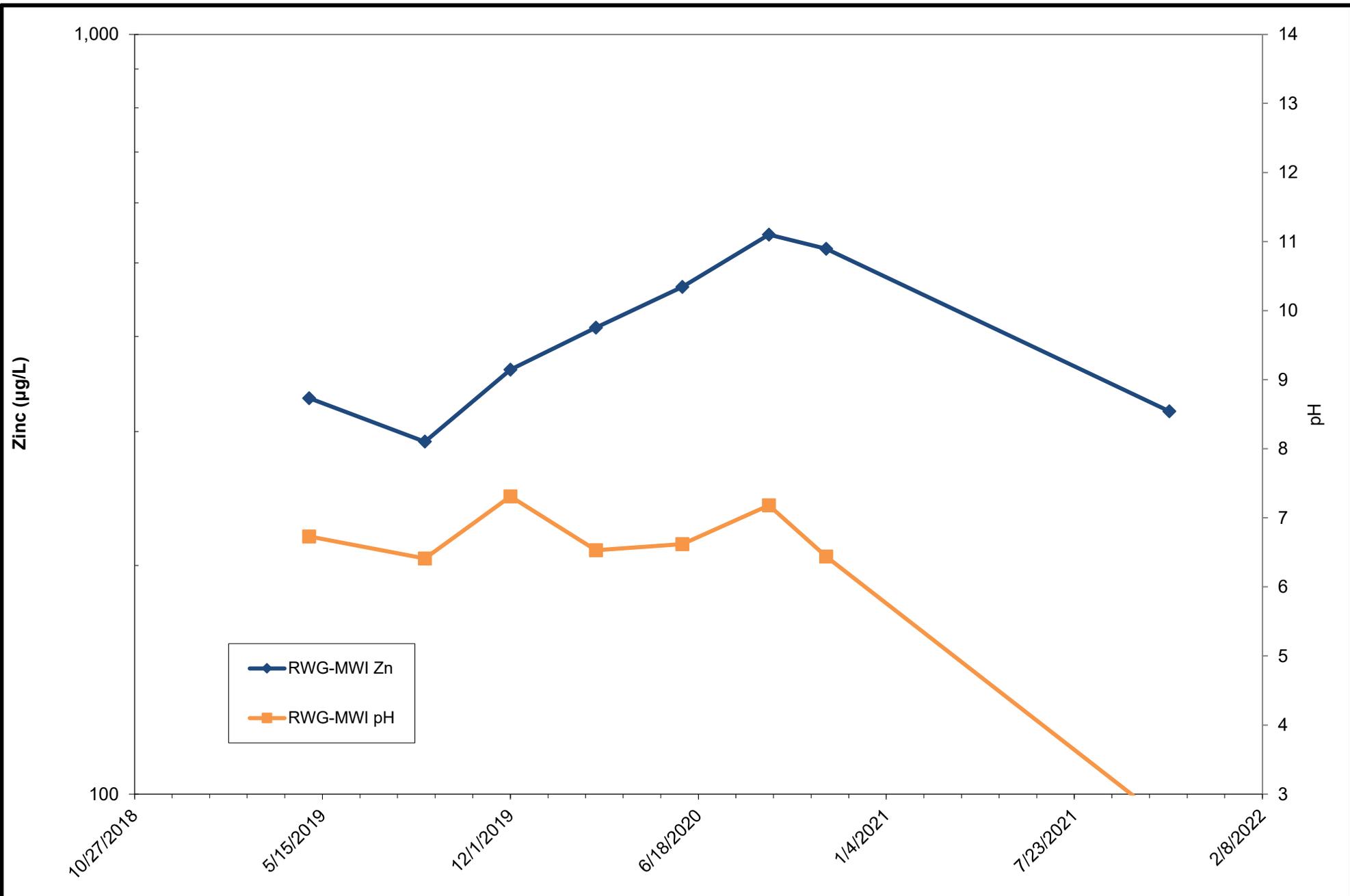
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RWF-MWI pH and Zinc Concentrations

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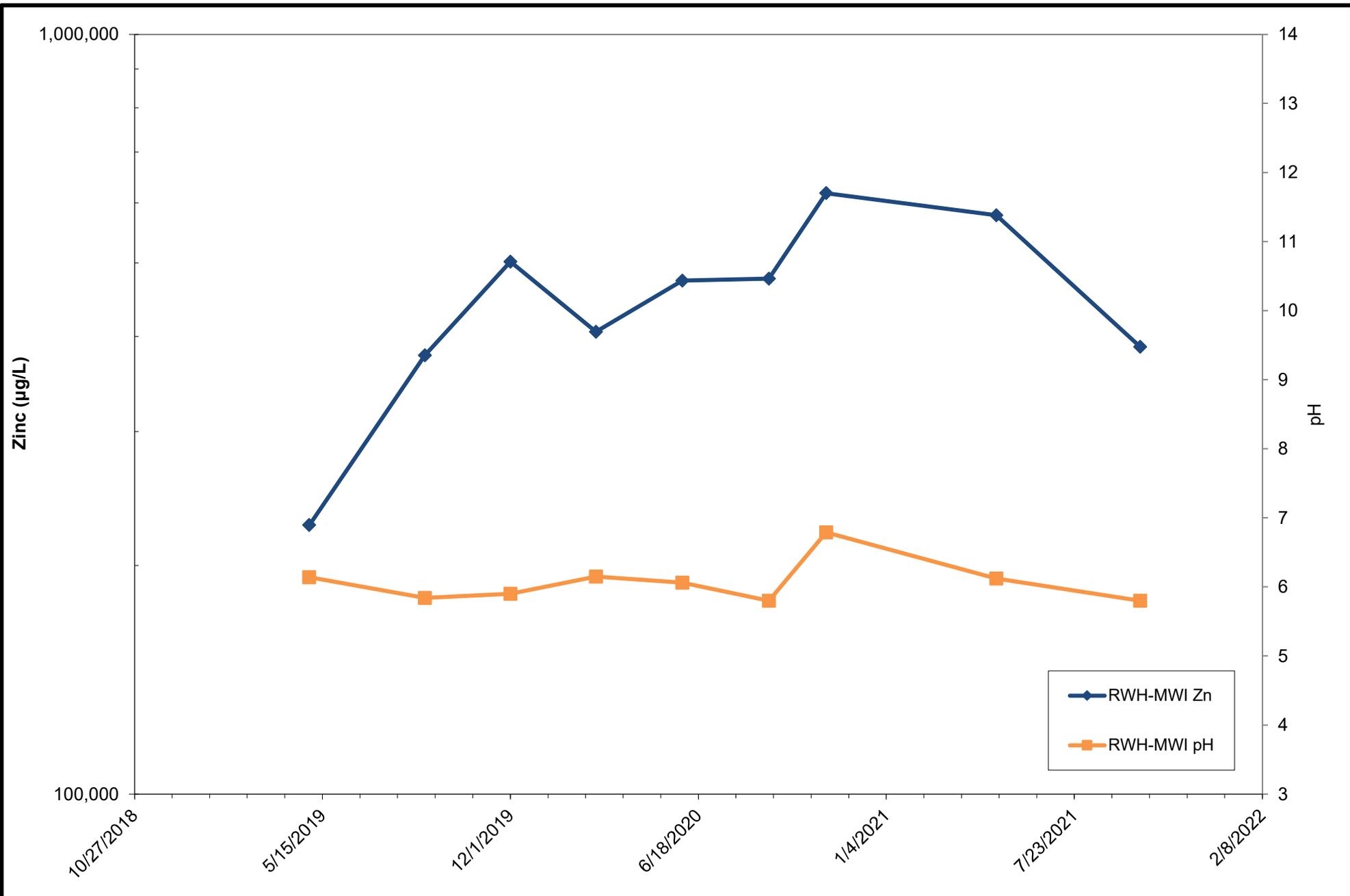
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RWG-MWI pH and Zinc Concentrations

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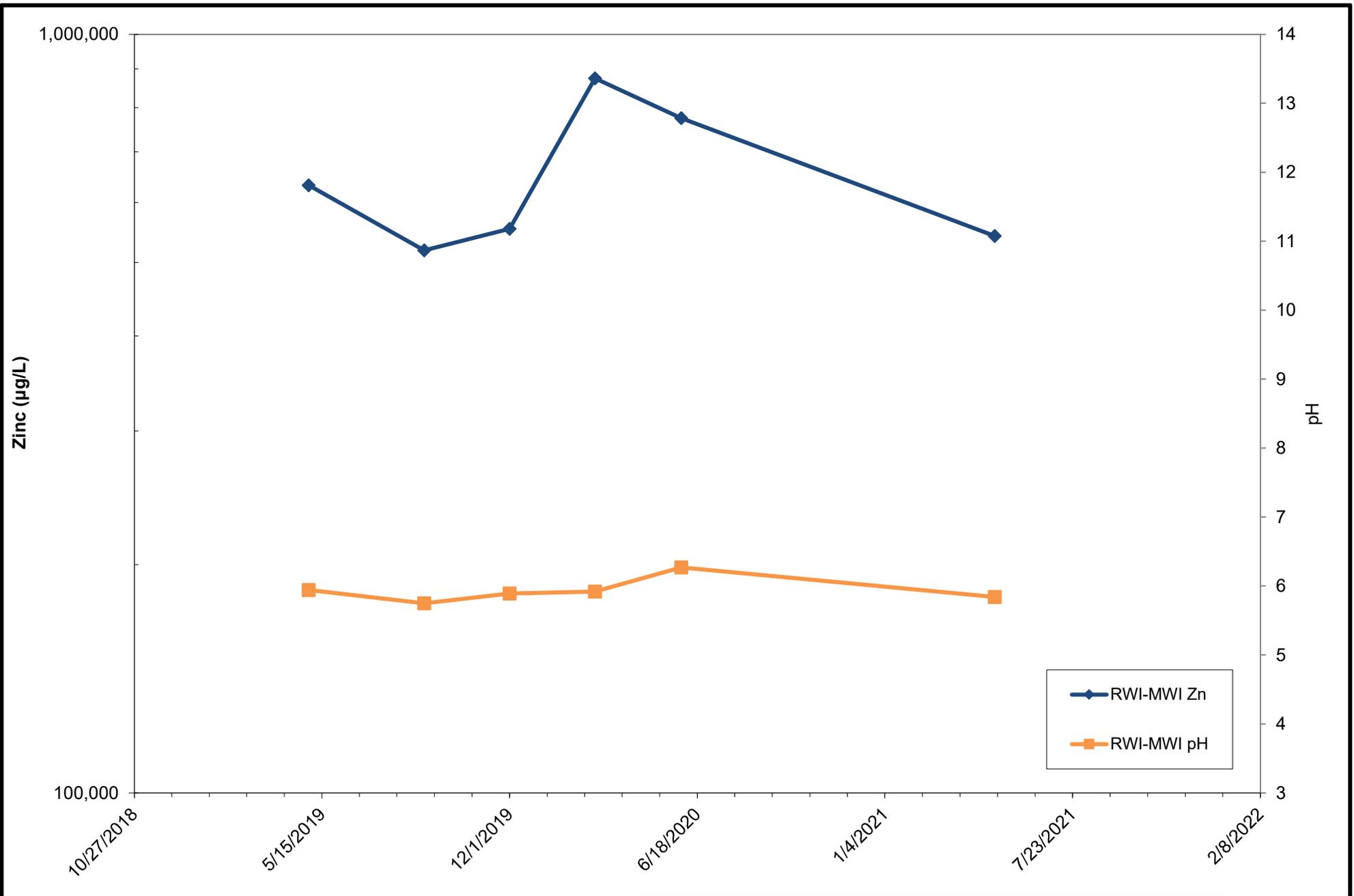
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RWH-MWI pH and Zinc Concentrations

February 2022

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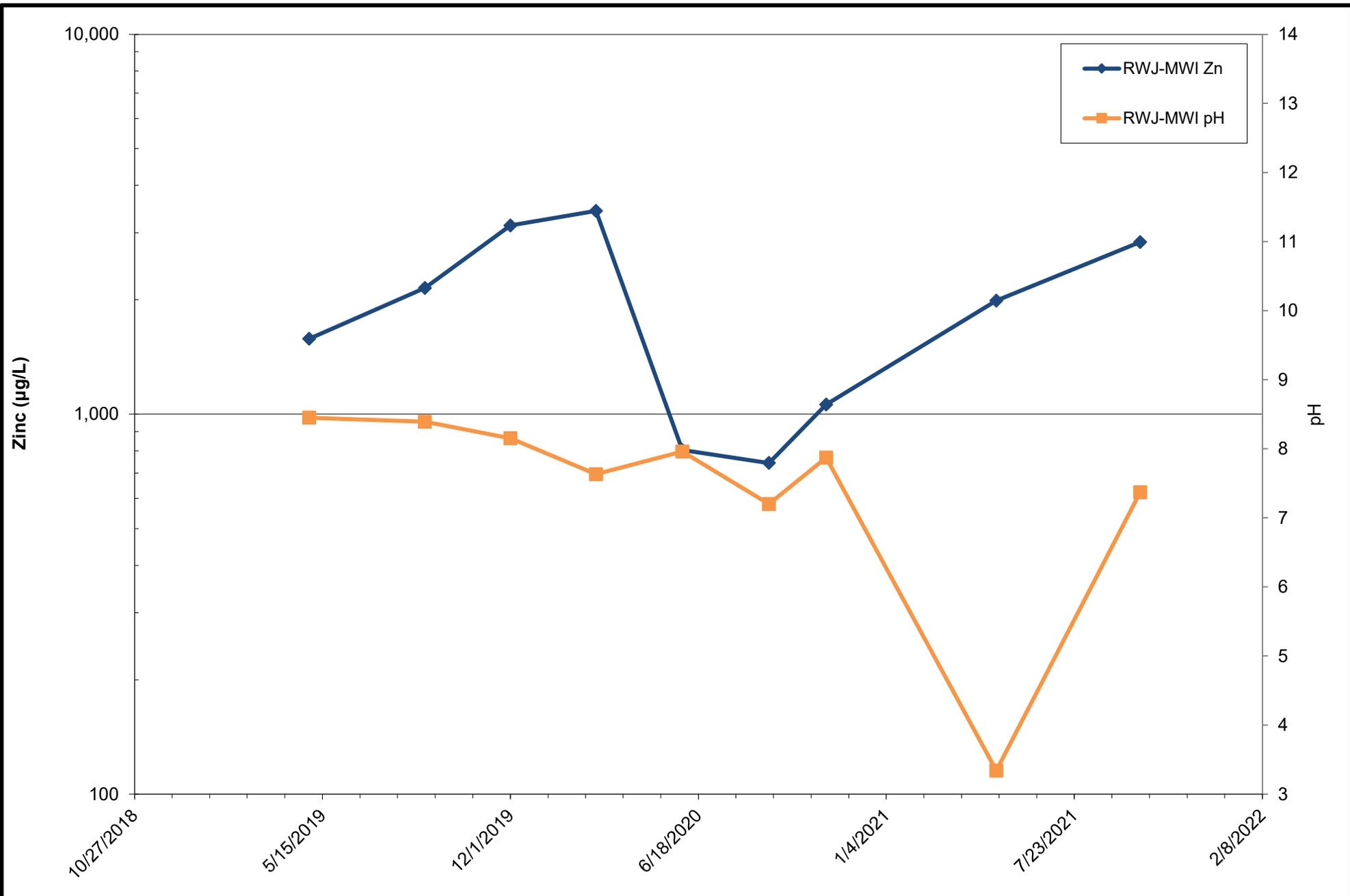
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RWI-MWI pH and Zinc Concentrations

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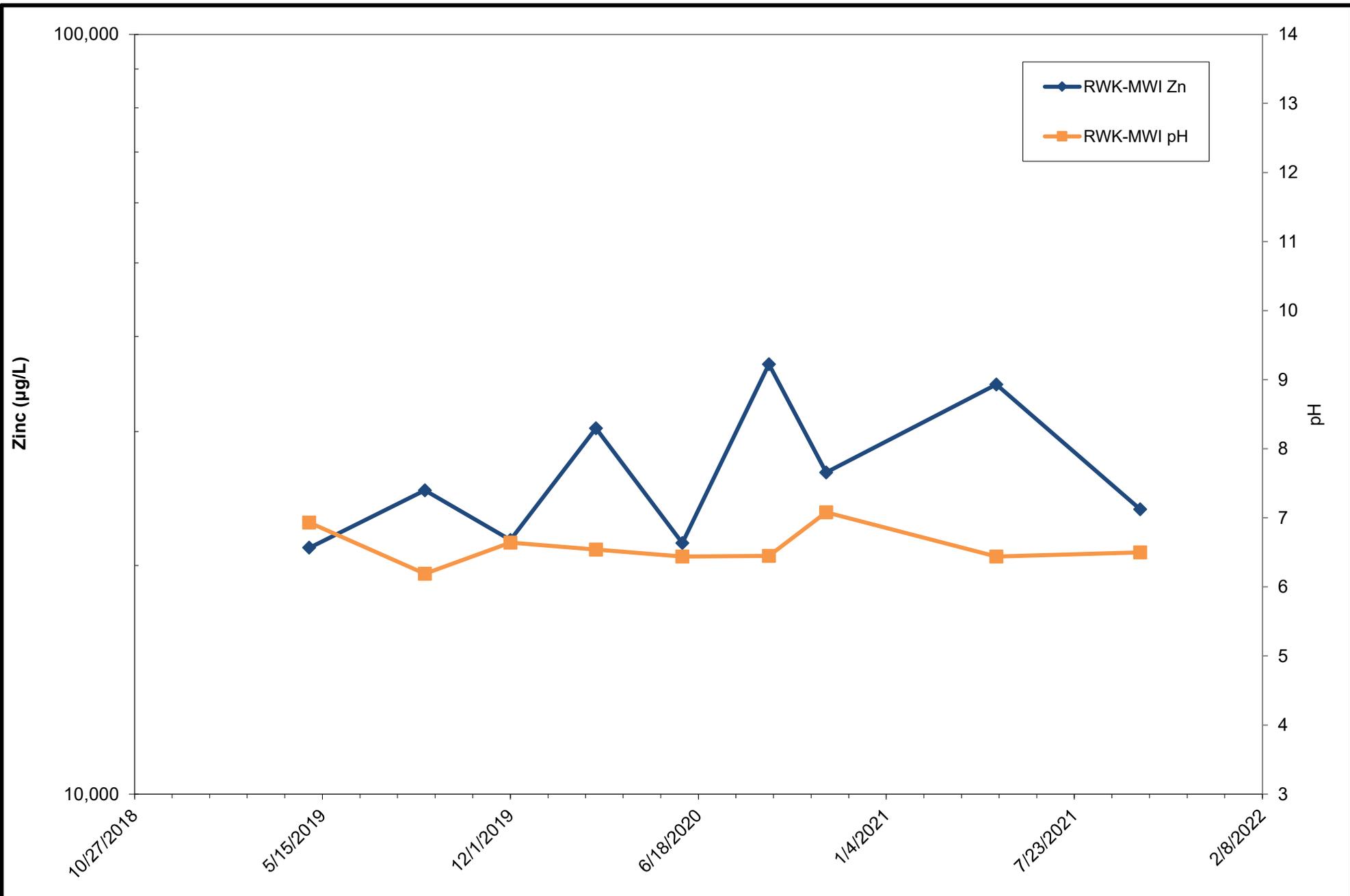
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**RWJ-MWI pH and Zinc
Concentrations**

February 2022

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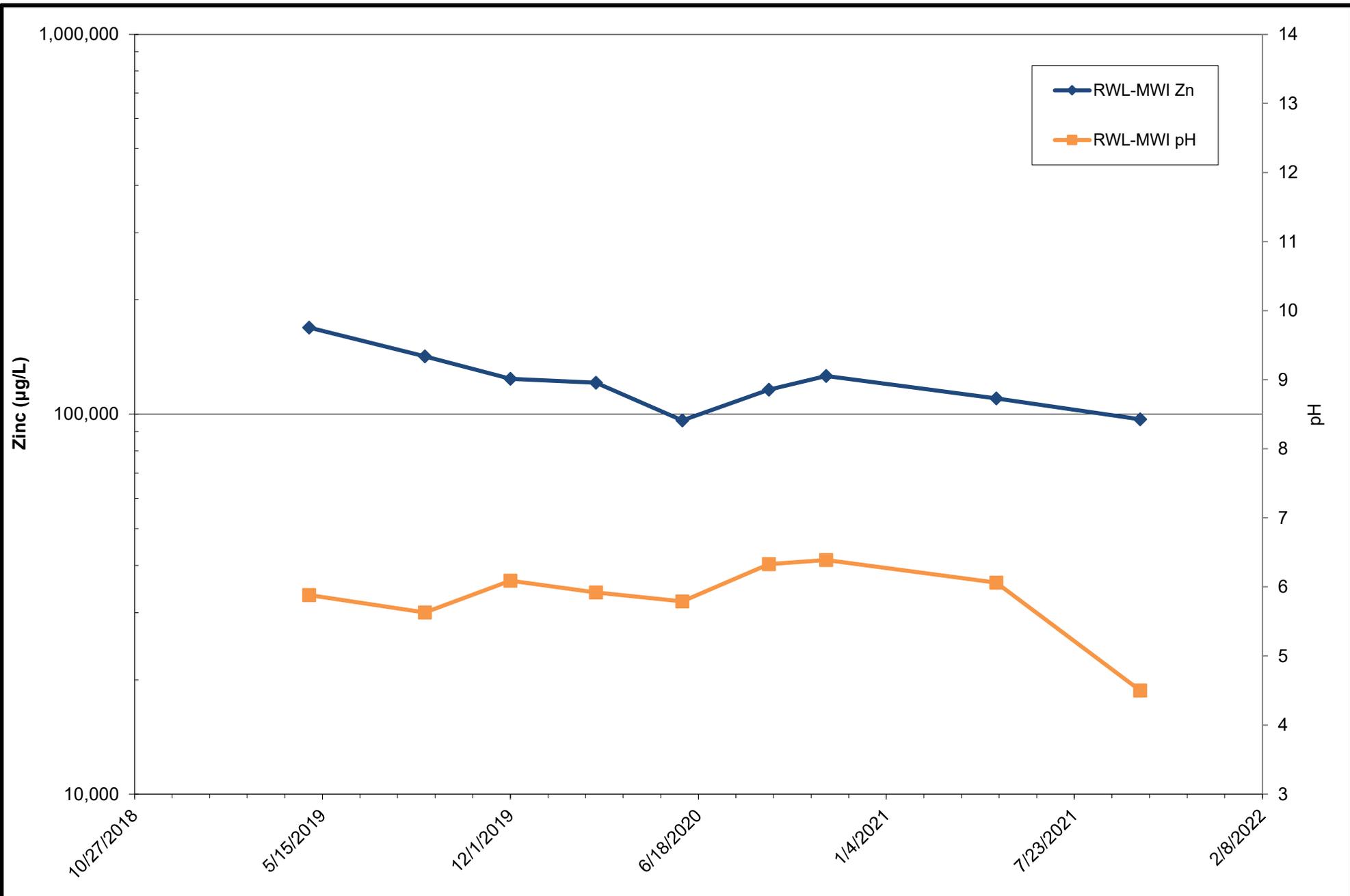
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**RWK-MWI pH and Zinc
Concentrations**

February 2022

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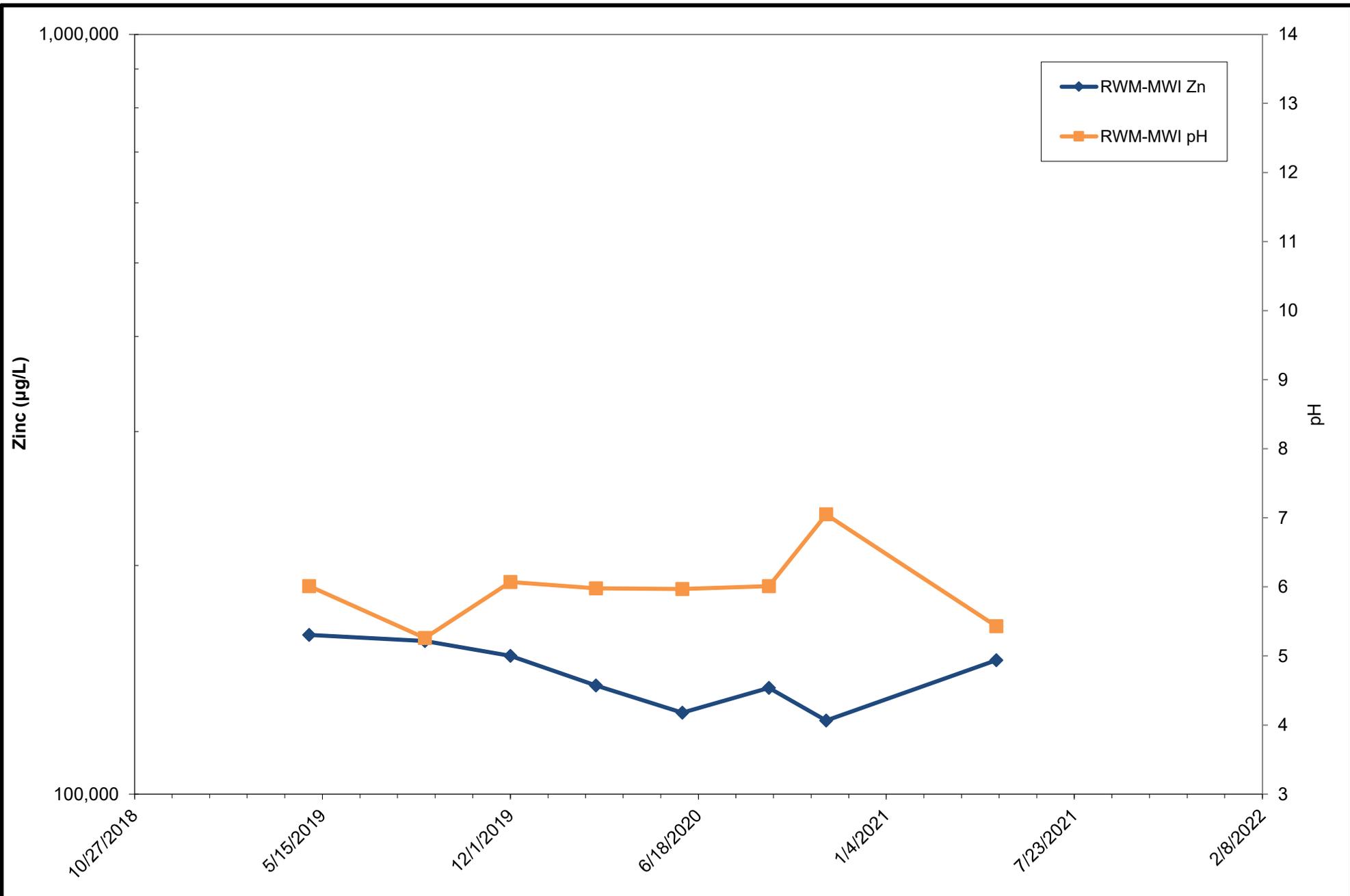
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RWL-MWI pH and Zinc Concentrations

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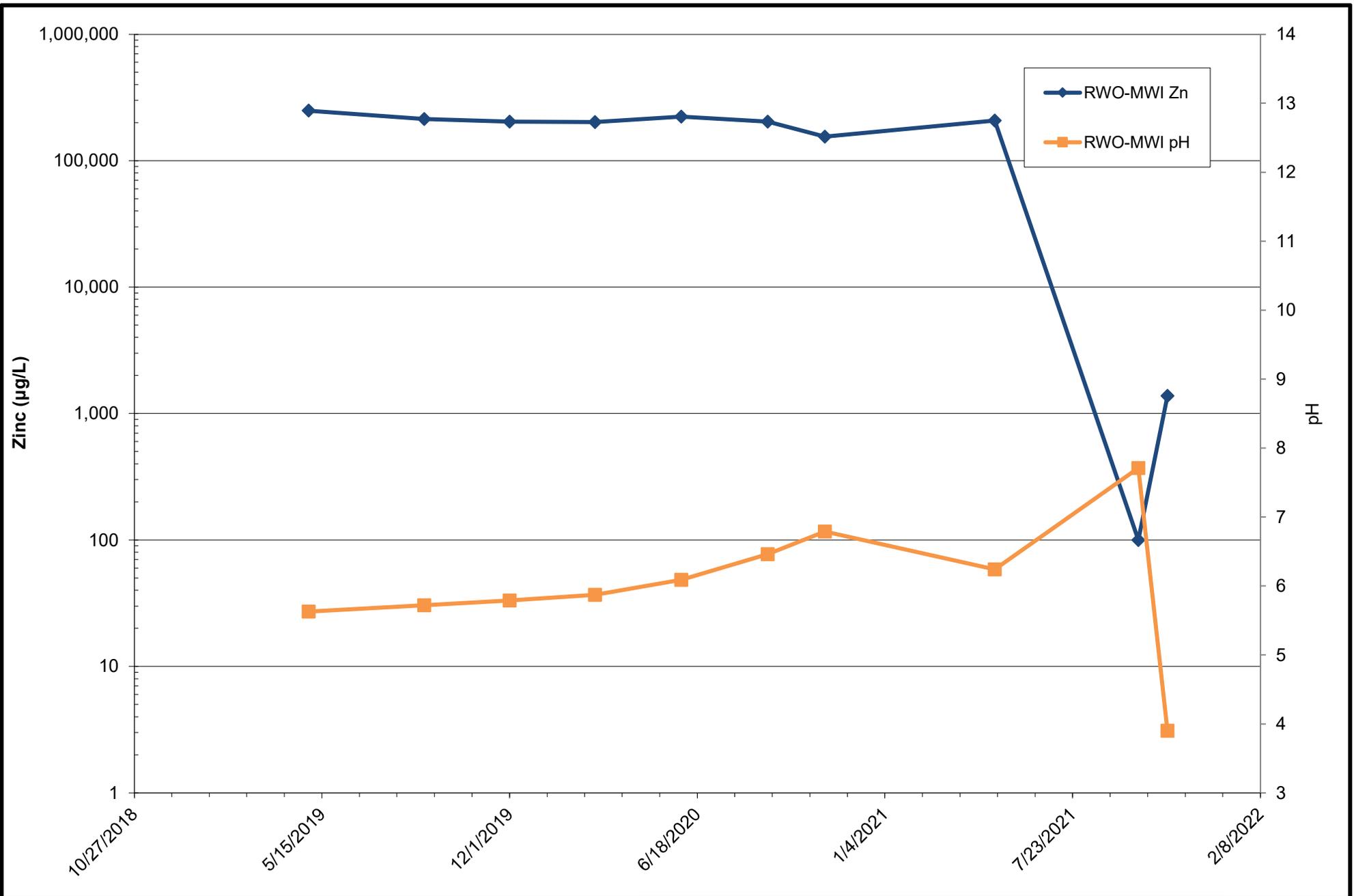
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RWM-MWI pH and Zinc Concentrations

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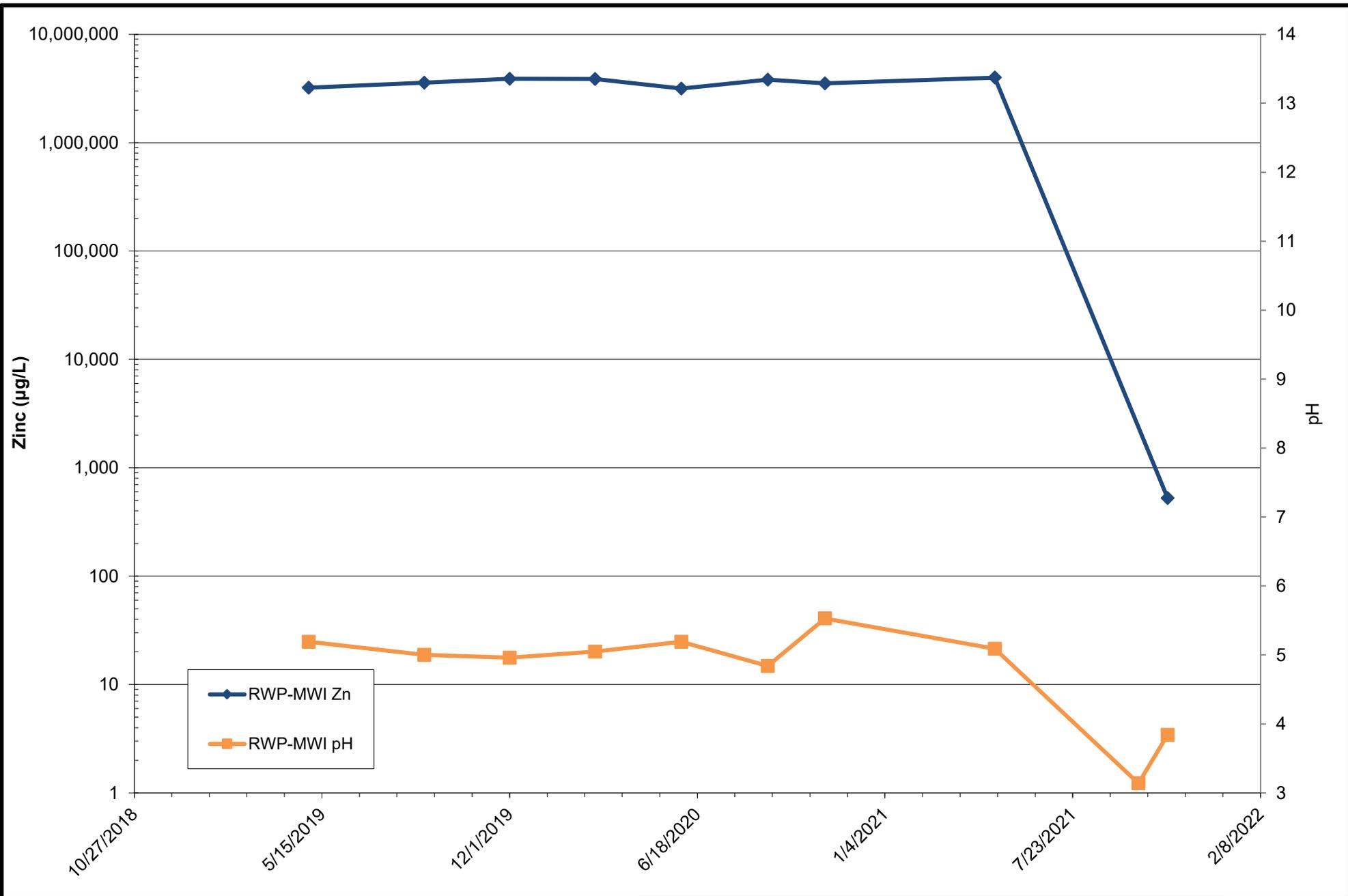
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RWO-MWI pH and Zinc Concentrations

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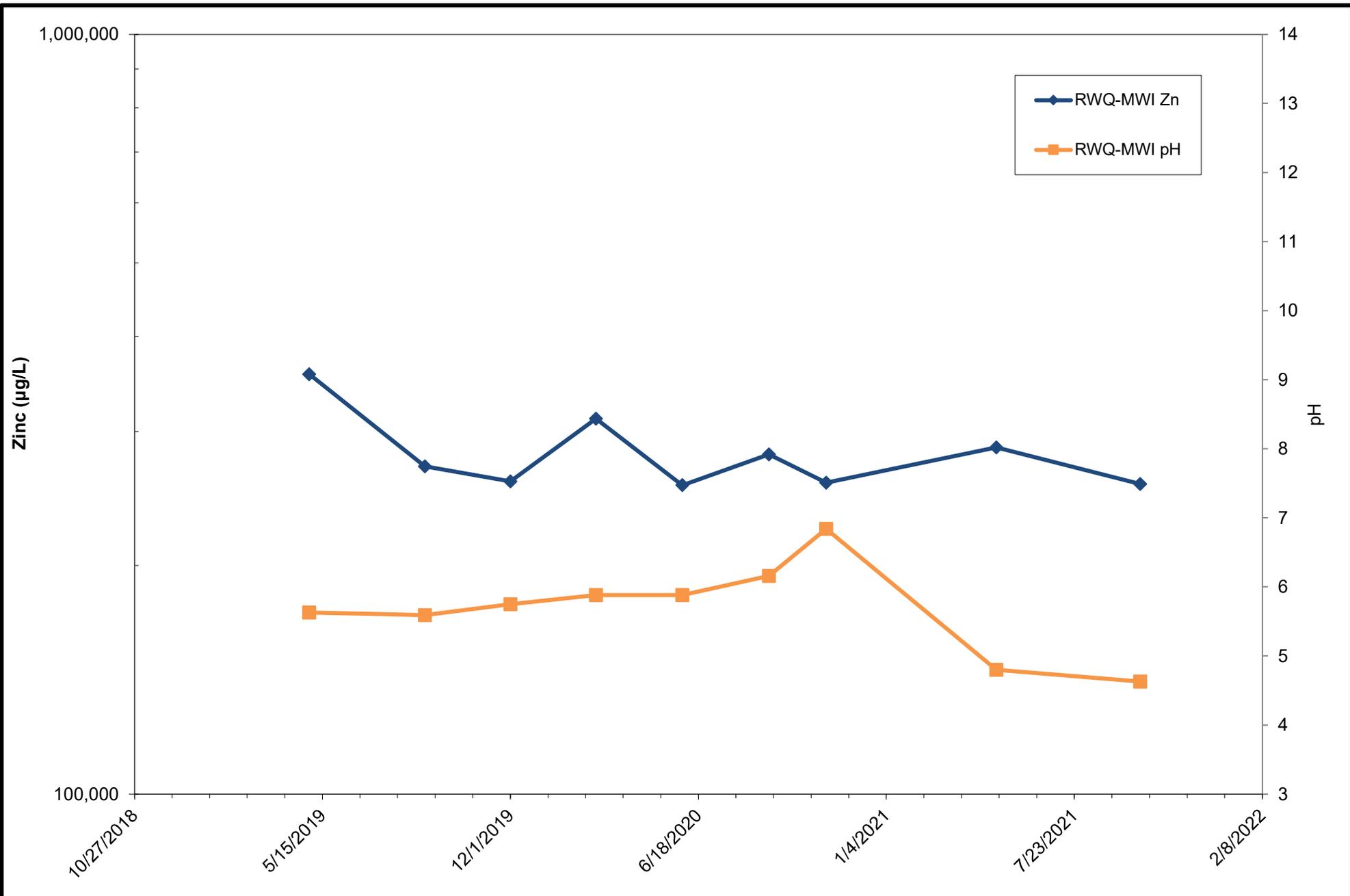
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RWP-MWI pH and Zinc Concentrations

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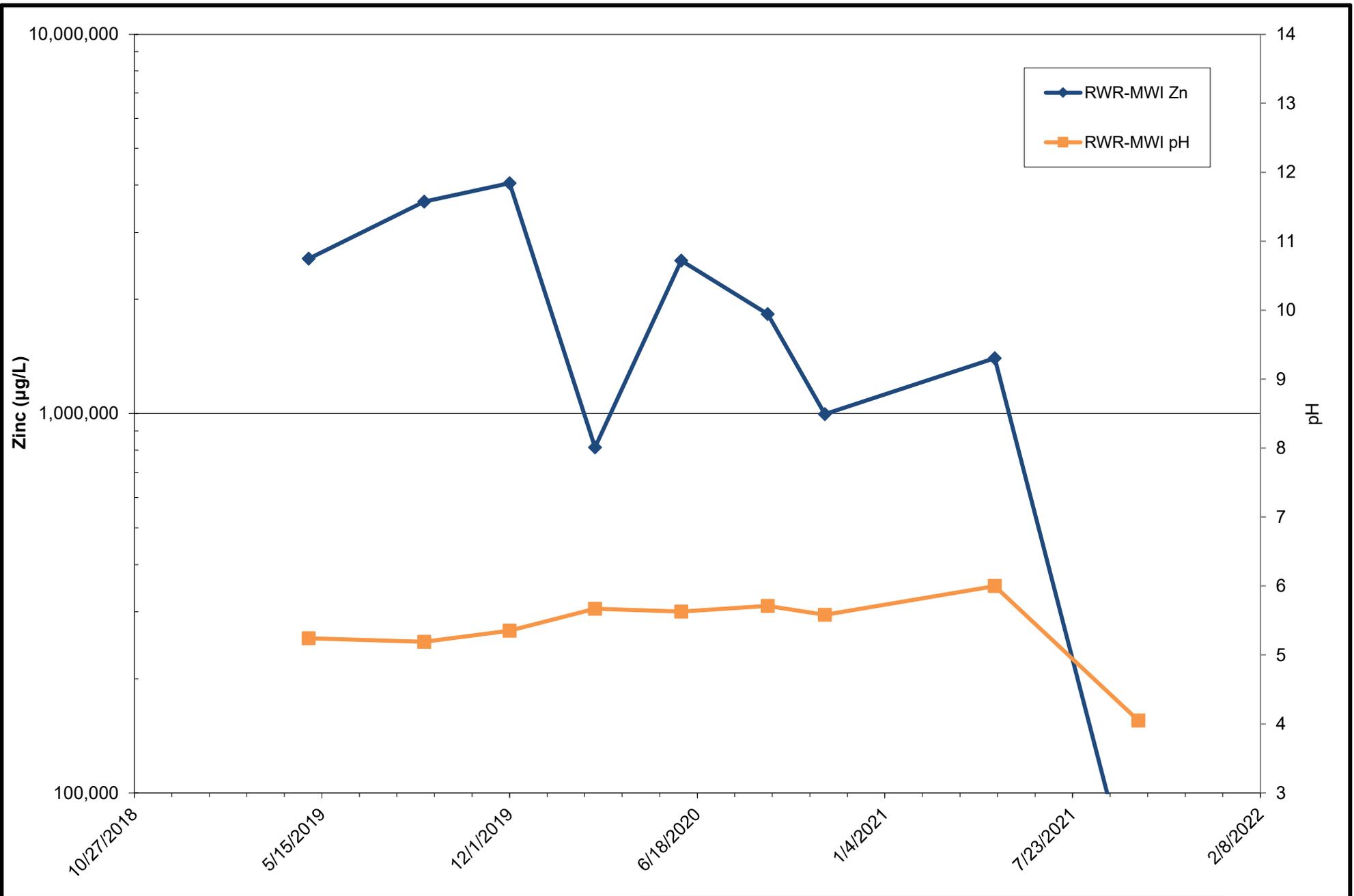
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**RWQ-MWI pH and Zinc
Concentrations**

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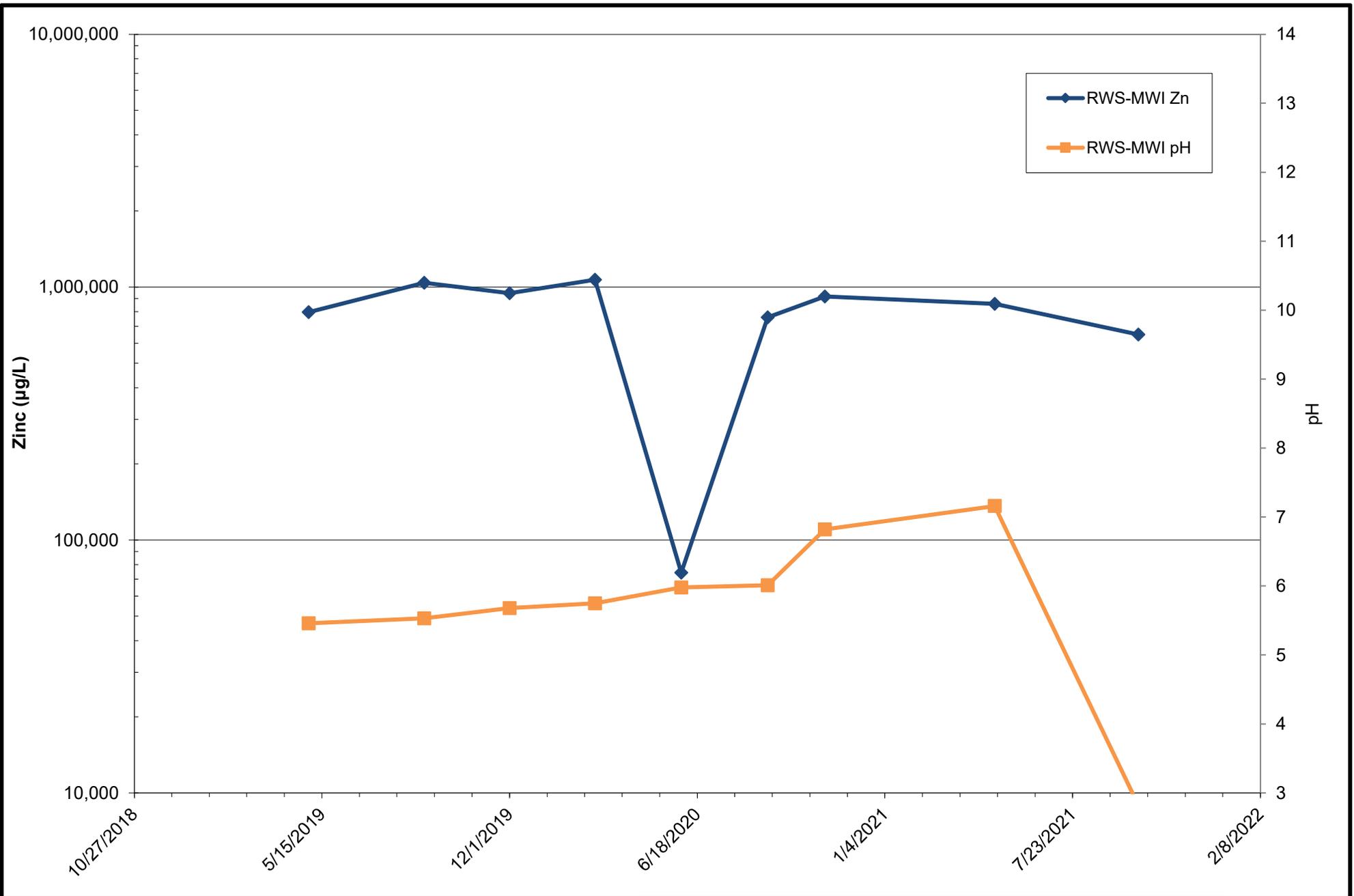
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RWR-MWI pH and Zinc Concentrations

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