TETRA TECH Technical Revision Memorandum

To:	Peter Hays, Department of Reclamation and Mining Safety (DRMS)
Cc:	Pam Franch Hora, Tetra Tech; Julie Mikulas, Martin Marietta
From:	Chris Gutmann, P.G. | Hydrogeologist Cass Stegner | Hydrogeologist
Date:	November 15, 2024
Subject:	Windsor East Water Quality | Windsor East Mine

1.0 INTRODUCTION

Martin Marietta Materials (MMM) has conducted water quality sample collection and analysis according to the strategy presented in the M-2022-042 Mining Permit application Exhibit G – Water Information. The exhibit describes water information for the Windsor East Mine site (the WEM Site), located near the Town of Windsor, Colorado including a conceptual understanding for groundwater flow before, during and after mining. The exhibit shows the location and construction details for a set of monitoring wells at the WEM Site (Figure 1), and provides a plan for monitoring water levels and water quality to characterize the groundwater in each well during a period of five quarters. The purpose of the water quality sample collection and analysis is to document background groundwater quality before and during the initiation of mining. MMM was given prior permission by DRMS to start mining prior to the five quarters of background data collection due to already on-going mining at the Parsons Mine located immediately east of the WEM Site. MMM has requested Tetra Tech, Inc (Tetra Tech) review the groundwater quality analytical results and prepare this evaluation of the data and to determine the future plans for future sampling frequency and analytical testing. This memorandum documents the results of the prescribed water quality sampling as well as an interpretation of the results and identifies plans for conducting future water quality monitoring during mining.

2.0 BACKGROUND

Groundwater chemistry can be influenced by several factors. The principal influence which changes at the WEM Site over time is agricultural irrigation. Groundwater flow directions at the WEM Site vary depending on the seasonal influence of agricultural irrigation infiltration. During the late summer and early fall at the end of the irrigation season the groundwater beneath the WEM Site contains a higher proportion of irrigation water. By early spring, the source of water across the Site reflects the chemistry of water which originates upstream along the river valley. Other causes for variability in groundwater quality could include the influence of upgradient sources of dissolved chemical species or flow of deeper water from underlying bedrock. It is worth noting that the act of collecting groundwater samples itself can introduce variability and that anomalous sample results which are not considered to be representative of a data set can occur.

In general, the impacts of aggregate mining are not expected to affect quality of groundwater. The mining operations do not include the use of any chemical processes within the mined cells. The physical excavation and removal of aggregate does not introduce or modify groundwater chemistry and after mining, the aggregate product is conveyed for processing to a different site. Although a change in flow direction could hypothetically result in the dissolution of minerals already

Tetra Tech Inc.
1100 S. McCaslin Blvd, Suite 150
Superior, CO 80027
tetratech.com

present in the ground, or cause increased flow from a geologic unit, mining activities are unlikely to otherwise affect groundwater quality.

3.0 METHODOLOGY

MMM collected groundwater samples from the monitoring well network at the WEM Site during six sampling events during the five-quarter period (September 2022 through September 2023) . The initial two events occurred approximately one month apart during the first of the five quarters. The network includes five wells, MW-5, MW-6, MW-7, MW-10 and MW-11 as shown on Figure 1. Each sample was field filtered, if necessary, preserved on ice in a sample cooler and transported to an analytical laboratory under chain of custody protection. Each sample was submitted for analysis according to the list of analytes presented in Exhibit G of the WEM Site mining permit application. Three field duplicate samples were additionally collected and submitted for analysis during this program as well. A summary of the analytical results are presented in Table 1. The table additionally includes the Code of Colorado (CCR) Department of Public Health and Environment (CDPHE) Regulation No. 41 Basic Standards for Groundwater (Reg 41 standards) for each analyte for reference. A set of statistics (count, minimum, maximum, average and standard deviation) for the results for each of the wells is presented in Tables 2 through 6.

4.0 DATA QUALITY

Analytical results for water samples collected during the five quarters of monitoring are summarized in Table 1. This table also includes results from quality assurance/quality control (QA/QC) samples including field duplicates. The results describe water quality at the well network with a few data points which were either missing during the monitoring period or for which the concentrations appear to be inconsistent with the rest of the data set.

Missing Samples / Analyses

Six sampling events were performed by MMM at the WEM Site during the five-quarter monitoring period. Each of the five wells were successfully sampled and analyzed with the exception of MW-11, for which a sample could not be collected during the last sampling event (September 2023). MW-11 is located immediately adjacent to a dewatering pump which resulted in insufficient water in the well to permit sample collection during September 2023. Additionally, there are several analytes for which the results were not reported, including 10 Cyanide – Free analyses which were not analyzed by the lab during September or October 2022, 10 Nitrate+Nitrite (NO2+NO3) dissolved analyses, 1 Total Dissolved Solids (TDS) analysis, and 4 Chromium - Dissolved (CrVI) analyses. Analysis of pH was accidently not requested or performed for the field duplicate collected on September 21, 2023.

These missing analytical results are due to accidentally omitting to request free cyanide analysis during the initial two events (the first quarter), and only conducting Nitrate+Nitrite (NO2+NO3) analysis once during the first quarter. During the first quarter, nitrate and nitrite were analyzed separately however making the determination possible. Additionally, dissolved chromium was not requested during the second event of the first quarter for MW-5, MW-6, MW-7 or MW-10 although it was included in the first event of the quarter. Total dissolved solids was accidently omitted from the analytical list during one event for MW-5.

Anomalous Results

There are several instances where potentially anomalous results occurred, for example, a particularly high result for one sampling event preceded and followed by very low or non-detect results. These include Gross Alpha Particle Activity (MW-5 in September 2022), Nitrate (MW-7 in June 2023), Nitrate and Nitrite – dissolved (MW-7 in June 2023), and Copper – dissolved (MW-7 in March 2023). The nitrate and nitrite anomaly measured in June 2023 is likely due to the nitrate anomaly measured in the same month in the same well. These anomalies were excluded from the statistics presented in Tables 2-6. Copper – dissolved was not observed to be present in the duplicate sample collected for MW-7 in March 2023, further demonstrating that this result is anomalous.

Duplicates

Three water quality duplicate samples were collected and submitted for laboratory analysis during the five quarters. These samples were collected for MW-7 on March 7, 2023, MW-7 on June 21, 2023 and MW-5 on September 21, 2023. The sample results are presented on Table 1.

5.0 DATA INTERPRETATION

In addition to the statistics presented in tables 2-6, water quality results for the subset of analytes with consistently measured concentrations above the detection limit are presented in Figures 2-16. Anomalously high values were excluded from the statistical analysis because it is unlikely the results are representative when a particular well location consistently produces very low or non-detect values but included in Figures 2-16 to illustrate graphically their anomalous nature. The causes of the anomalies is uncertain, but may be due to sampling error, or laboratory analysis error. Variation in concentration for a majority of the analytes is likely attributed to seasonal dependency related to irrigation season (July-October) and non-irrigation season (November-June). This type of seasonal dependency is particularly prominent in the time series charts of Nitrate– dissolved, TDS and pH (Figures 2-16). Of the original list of 33 parameters, 8 parameters were never detected in any of the samples submitted for laboratory analysis. Of the remaining 25 parameters, dissolved chromium (CrVI) was only detected once (MW-5 in September 2022) during the first of five quarters of sampling and was otherwise not detected. Only 11 parameters were determined to be present at a concentration exceeding half of the water quality standard in any of the samples collected from the five wells over the five quarters of monitoring.

Chloride

Chloride concentrations from samples collected in the monitoring well network are presented in Table 1 and on Figure 2. Winter chloride concentrations are typically between 35 and 50 mg/L. Irrigation influence may be present in the samples from June through September when chloride concentrations increase to above 50 mg/L. The detected concentrations of chloride are consistently below the Reg 41 water quality standard of 250 mg/L.

Fluoride

Fluoride concentrations from samples collected in the monitoring well network are presented in Table 1 and on Figure 3. Winter fluoride concentrations are typically between 0.5 and 1.1 mg/L. Irrigation influence may be present in the samples from June through September 2023 when fluoride concentrations increase to above 2 mg/L. The detected concentrations of fluoride during the winter are consistently below the Reg 41 water quality standard of 2.0 mg/L although the summer/fall events showed that fluoride exceeds the standard at the end of irrigation season.

Nitrate

Nitrate concentrations from samples collected in the monitoring well network are presented in Table 1 and on Figure 4. With the exception of an anomalous value of 200 mg/L (MW-7 on June 21, 2023), concentrations of nitrate between 0.3 and 21.3 mg/L are observed in each of the wells. Nitrate concentrations above the Reg 41 water quality standard of 10 mg/L are likely caused by the influence of the component of groundwater flow from agricultural irrigation in which nitrogen application in the form of fertilizers is common.

Sulfate

Sulfate concentrations from samples collected in the monitoring well network are presented in Table 1 and on Figure 5. Sulfate concentrations measured in the WEM monitoring were generally in a range from 200 and 1,000 mg/L. A gradual increase trend in concentrations was measured during 2023 with the highest concentrations of sulfate being measured in MW-6 and MW-7 in September 2023 (1,160 mg/L and 1360 mg/L). The cause of this increase is unknown but may reflect influence from agricultural irrigation. Sulfate concentrations were not measured in September 2023 in MW-11 because of lack of water in the well after doing the required bailing and slow recharge. The detected background concentrations of sulfate are consistently above the Reg 41 water quality standard of 250 mg/L.

Total Dissolved Solids

TDS concentrations from samples collected in the monitoring well network are presented in Table 1 and on Figure 6. TDS represents a combined measure of all of the dissolved compounds in the groundwater. It is likely that TDS levels are driven by sulfate and balancing cations such as calcium or sodium, so the increasing trends observed in sulfate are also present in TDS. Measured TDS concentrations gradually increase relative to the first quarter throughout the spring and summer of 2023 in each of the monitored wells with the exception of MW-11 which declined from 1,670 mg/L in March 2023 to less than 1,000 mg/L in June 2023, but was then dry and not sampled during September 2023. The range of TDS concentrations measured in the well network was 900 mg/L to 2,470 mg/L The detected background concentrations of TDS are consistently above the Reg 41 water quality standard of 400 mg/L.

pH

pH was measured in water samples collected from the monitoring well network, with a range of 7.2 to 8.03. These results are presented in Table 1 and on Figure 7. Lower pH measurements correspond with the period of time from October to March (a range of 7.2 to 7.62), and increase during the June and September events, suggesting that agricultural irrigation causes the pH to rise.

Arsenic

Arsenic concentrations from samples collected in the monitoring well network are presented in Table 1 and on Figure 8. Arsenic was routinely detected in low concentrations across wells and monitoring events. The first quarter 2022 showed concentrations as high as 1.9 µg/L (MW-5 in September 2022), but decline to a stable baseline of less than 1 µg/L for quarterly sampling events 2-5. This is well below the Reg 41 water quality standard of 10 µg/L.

Barium

Barium concentrations from samples collected in the monitoring well network are presented in Table 1 and on Figure 9. Barium concentrations were never measured at concentrations above 75 µg/L. This is well below the Reg 41 water quality standard of 2,000 µg/L. The brief increase in barium during the fifth quarter event suggests that the source of the barium may be related to agricultural irrigation water.

Boron

Boron concentrations are presented in Table 1 and on Figure 10. Concentrations of boron are relatively consistent across all five quarters of groundwater sample analysis. The concentrations of boron are stable during the initial four quarters before showing a slight increase in the final quarter. All measured concentrations remained less than the Reg 41 water quality standard of 750 mg/L.

Cobalt

Cobalt concentrations are presented in Table 1 and on Figure 11. Cobalt was routinely detected in low concentrations across wells and monitoring events. The first quarter 2022 concentrations contain elevated concentrations as high as 1.4 µg/L, but they decline to a stable baseline of less than 1 µg/L for quarterly sampling events 2-5. This is well below the Reg 41 water quality standard of 50 µg/L.

Lithium

Lithium concentrations are presented in Table 1 and on Figure 12. Stable concentrations are observed ranging from 35.8µg/L to 103 µg/L which are significantly less than the Reg 41 water quality standard of 2,500 µg/L.

Manganese

Manganese concentrations are presented in Table 1 and on Figure 13. Dissolved manganese concentrations range from 0.84 to 291 mg/L in the monitoring network, however the only significant seasonal variability was observed in MW-5 which showed evidence that the influence of irrigation season includes increases in manganese (elevated during September to October 2022 sampling events and in the September 2023 sample from MW-6). Water quality samples collected during the other quarters from November to June were generally below the Reg 41 water quality standard of 50 µg/L.

Molybdenum

Molybdenum concentrations are presented in Table 1 and on Figure 14. Concentrations are generally stable at less than 15 ug/L with a possible slight increasing trend, which is still significantly less than the Reg 41 water quality standard of 210 µg/L.

Selenium

Selenium concentrations are presented in Table 1 and on Figure 15. Although selenium is consistently detected in samples collected from the WEM well network, the concentrations are below the Reg 41 water quality standard of 20 µg/L. There appears to be indication of increasing concentrations in MW-5, MW-6 and MW10 over time and gradually decreasing concentrations in MW-7 and MW-11.

Uranium

Uranium concentrations are presented in Table 1 and on Figure 16. Concentrations of uranium in groundwater likely indicate interaction with the underlying Fox Hills sandstone bedrock unit. This geologic formation represents a recognized source of uranium which in places contain economically recoverable concentrations. The monitoring wells were drilled several feet into bedrock and were constructed with screens that partially intersect the bedrock (Fox Hills Formation) at the bottom. As a result, it is likely that a component of the water in the wells reflects the influence of the chemistry of the Fox Hills Formation. The concentrations are generally consistent across wells and sample events between 20 and 50 µg/L except for as result of 88.8 µg/L measured in MW-7 in September 2023. Due to uncertainty on whether the value was anomalous, it was included as part of the statistics under the assumption that it represented possible natural variation within the aquifer.

Gross Alpha Particle Activity

Gross alpha particle activity from samples collected in the monitoring well network are presented in Table 1 and on Figure 17. Elevated gross alpha particle activity in groundwater is the result of the presence of naturally occurring radioactive materials, which most commonly are uranium and its decay products radium-226 and polonium-210, each of which emits alpha particles as it decays. The gross alpha particle activity in groundwater is therefore likely caused, at least in significant part, by the presence of dissolved uranium as described above. The activity varies from 0.1 to an anomalously high 234 pCi/L (MW-5, September 2022), but excluding this anomaly, is generally present at just under 50 pCi/L which is higher than the Reg 41 water quality standard of 15 pCi/L.

6.0 CONCLUSIONS

As specified in Exhibit G of the mine permit application, following five quarters of background sample collection and analysis, Martin Marietta will reduce the sampling frequency to twice per year for each of the five monitoring wells used for background water quality monitoring (MW-5, MW-6, MW-7, MW-10 and MW-11). The two events will occur during August or September, and during March or April with the intent of capturing the potential chemistry associated with the end of the irrigation season when agricultural contributions are at the highest concentrations and the end of winter before irrigation begins when the agricultural contributions are at their lowest.

Aggregate mining is conducted by solely using physical excavation activities and as a result poses no concern for groundwater quality changes due to the introduction of chemical compounds. Acknowledging that some degree of minor concentration may occur due to evaporation, or due to enhanced solubility of existing compounds as a result of physical disturbance, it is possible that chemistry may be minorly affected by mining activities. As a result, in cases where existing background chemistry might already be near in concentration to a water quality standard, it is conceivable that a compound concentration could be temporarily increased resulting in an exceedance. As a result, there is some justification in continuing to monitor water quality parameters which are at risk of exceeding their respective water quality standard.

Based on the data, Martin Marietta plans to discontinue sample analysis for any of the parameters which:

1. Have no potential basis for originating in the Windsor East Mine property boundary; and,

2. Have not been detected in any of the samples at concentrations above half of the regulatory standard for the compound.

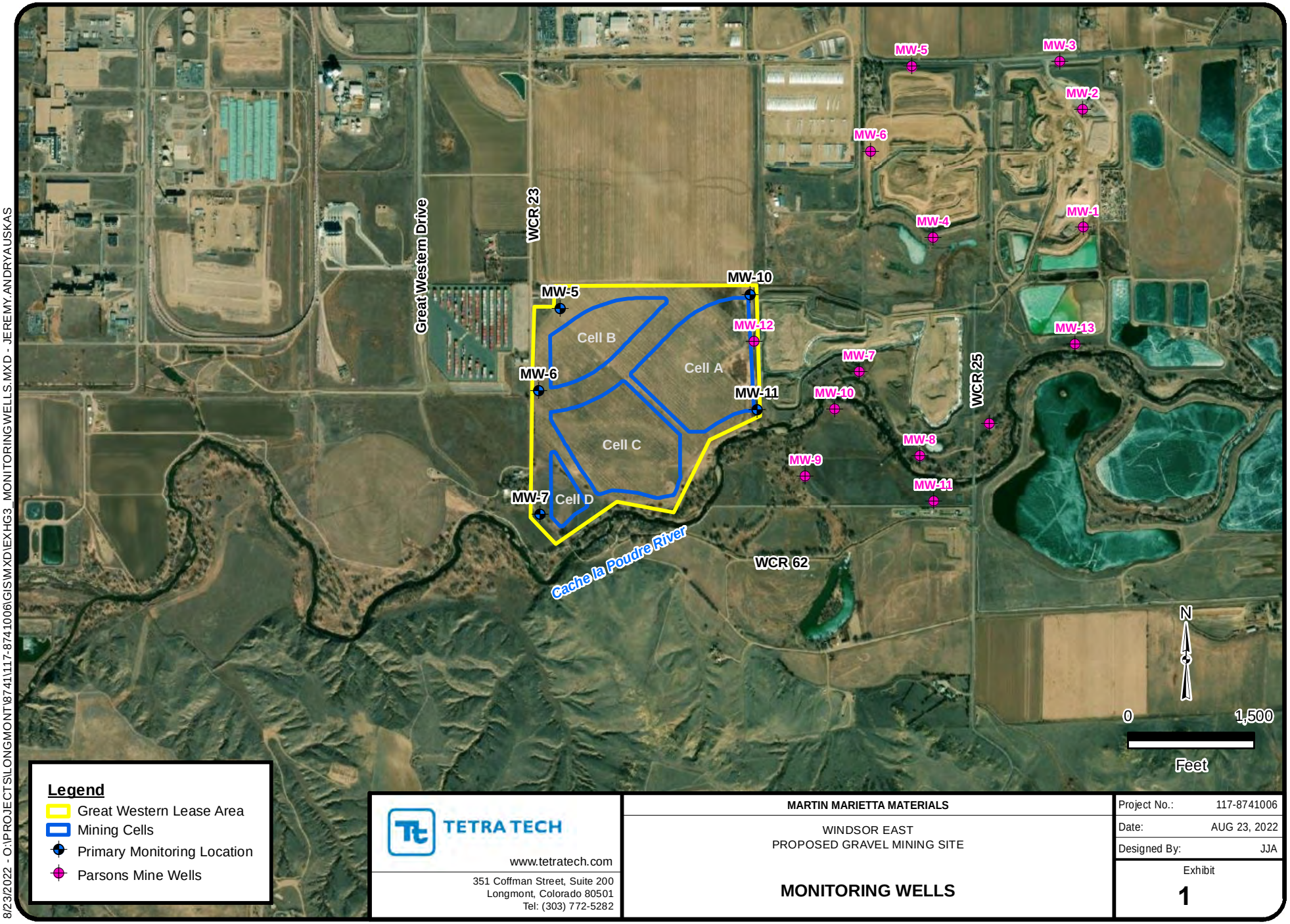
Of the 11 parameters which were determined to be present at a concentration exceeding half of the water quality standard in any of the samples collected from the five wells over the five quarters of monitoring, nitrite as a separate analyte was not measured at over 15% of the water quality standard. As a result, since the concentrations of Nitrite+Nitrate appear to be essentially only due to nitrate, Nitrite+Nitrate is considered redundant.

The remaining 10 parameters include:

- Fluoride -Total F
- Nitrate (NO_3)
- Total Dissolved Solids

- Sulfate - Total
- Chromium - Dissolved (CrVI)
- Boron - Dissolved
- Manganese – Dissolved
- Selenium - Dissolved
- Uranium – Dissolved
- Gross Alpha Particle Activity

Several of these parameters (Nitrate, sulfate, TDS, manganese, uranium and gross alpha particle activity) are consistently measured in excess of their respective Reg 41 water quality standards, and the others are routinely measured to be near or in excess of half of the standard. Table 7 presents a subset of the original analytical parameter list used for the baseline water quality evaluation, along with a conclusion for which parameters should continue to be part of the water quality monitoring program going forward. These parameters constitute the set of 10 compounds which are present in concentrations which have the potential to exceed a Reg 41 water quality standard.


MW-5
MW-3
MW-2
MW-6
MW-1
MW-4
Great Western Drive
WCR 23
MW-10
MW-5
MW-12
MW-13
Cell B
Cell A
MW-7
MW-6
MW-11
MW-10
WCR 25
Cell C
MW-8
MW-9
MW-11
MW-7
Cell D
Cache la Poudre River
WCR 62
N
0
1,500
Feet
Legend
Great Western Lease Area
Mining Cells
Primary Monitoring Location
Parsons Mine Wells
TETRA TECH
www.tetratech.com
351 Coffman Street, Suite 200
Longmont, Colorado 80501
Tel: (303) 772-5282
MARTIN MARIETTA MATERIALS
WINDSOR EAST
PROPOSED GRAVEL MINING SITE
MONITORING WELLS
Project No.: 117-8741006
Date: AUG 23, 2022
Designed By: JJA
Exhibit
1
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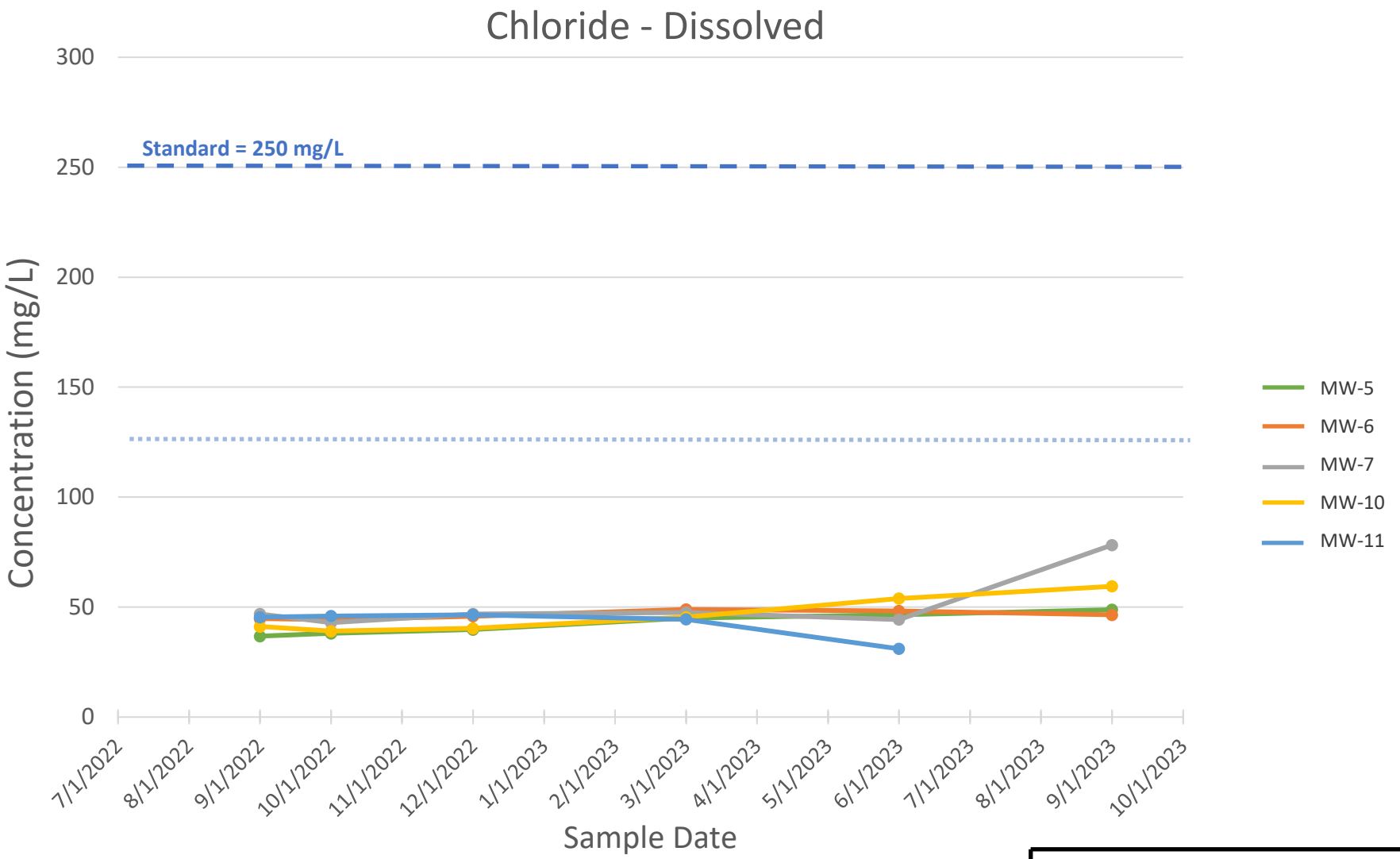
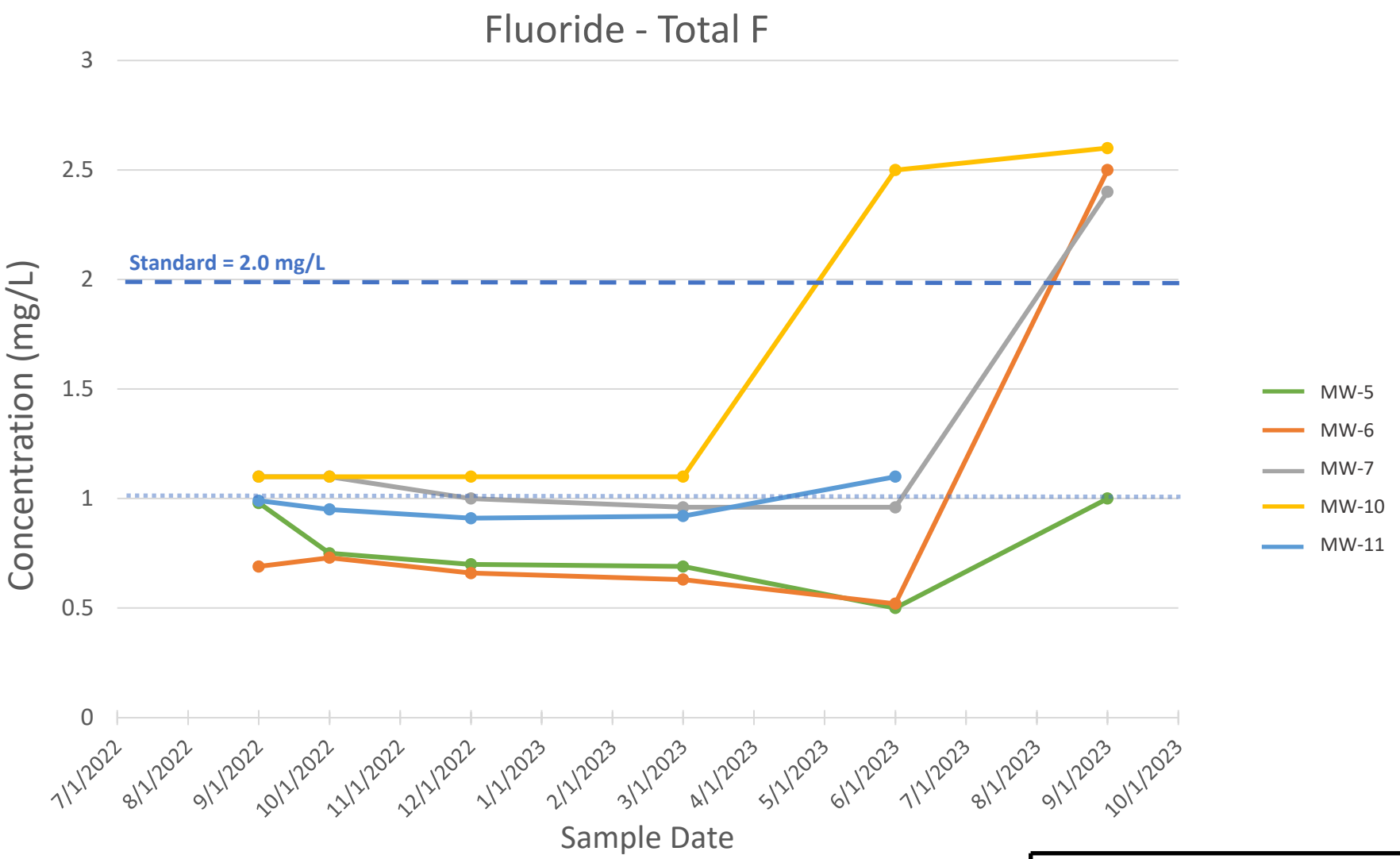


TITLE:	**Dissolved Chloride Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG	FIGURE
DRAFTED	KG	2
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Total Fluoride Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG	FIGURE
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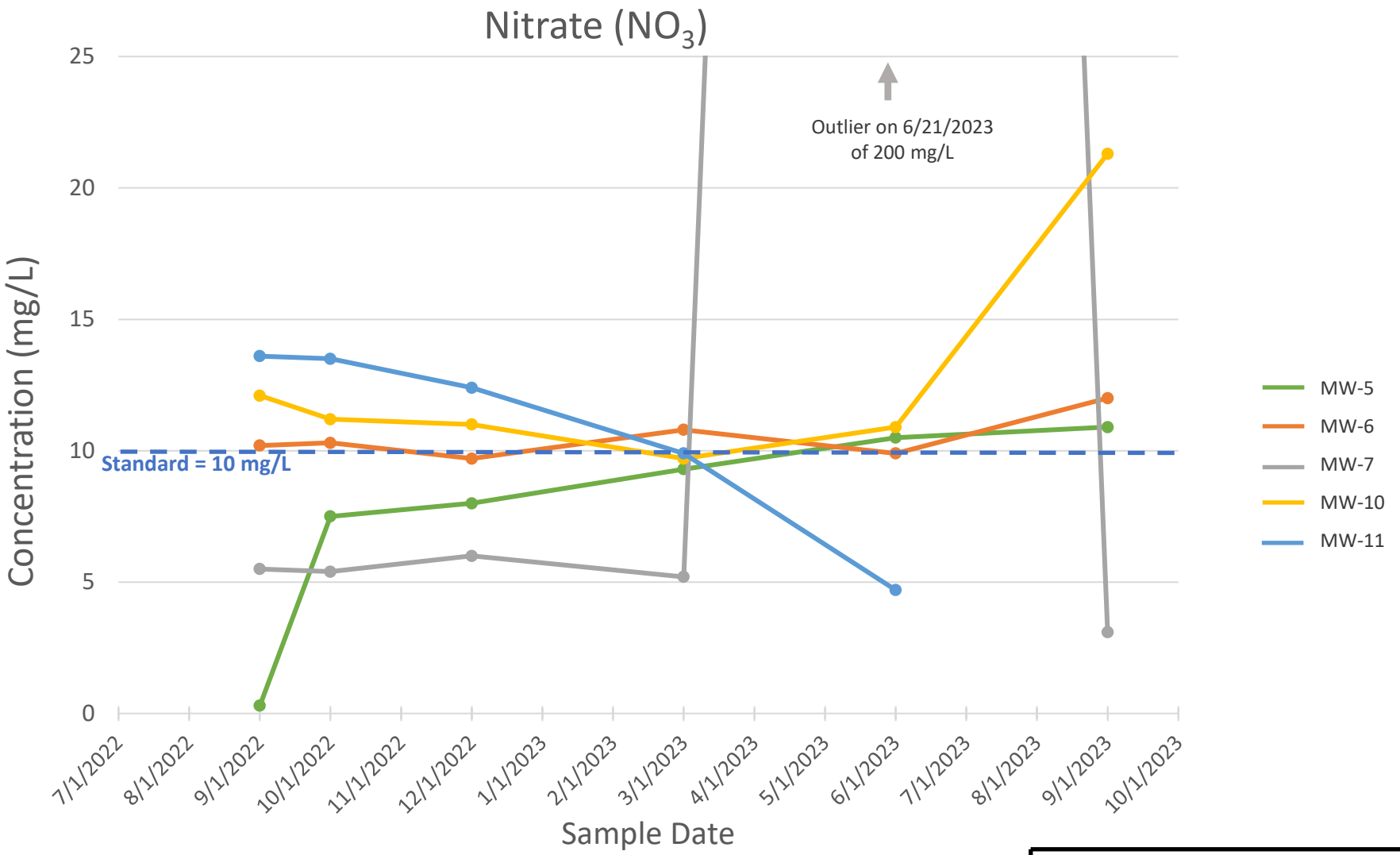
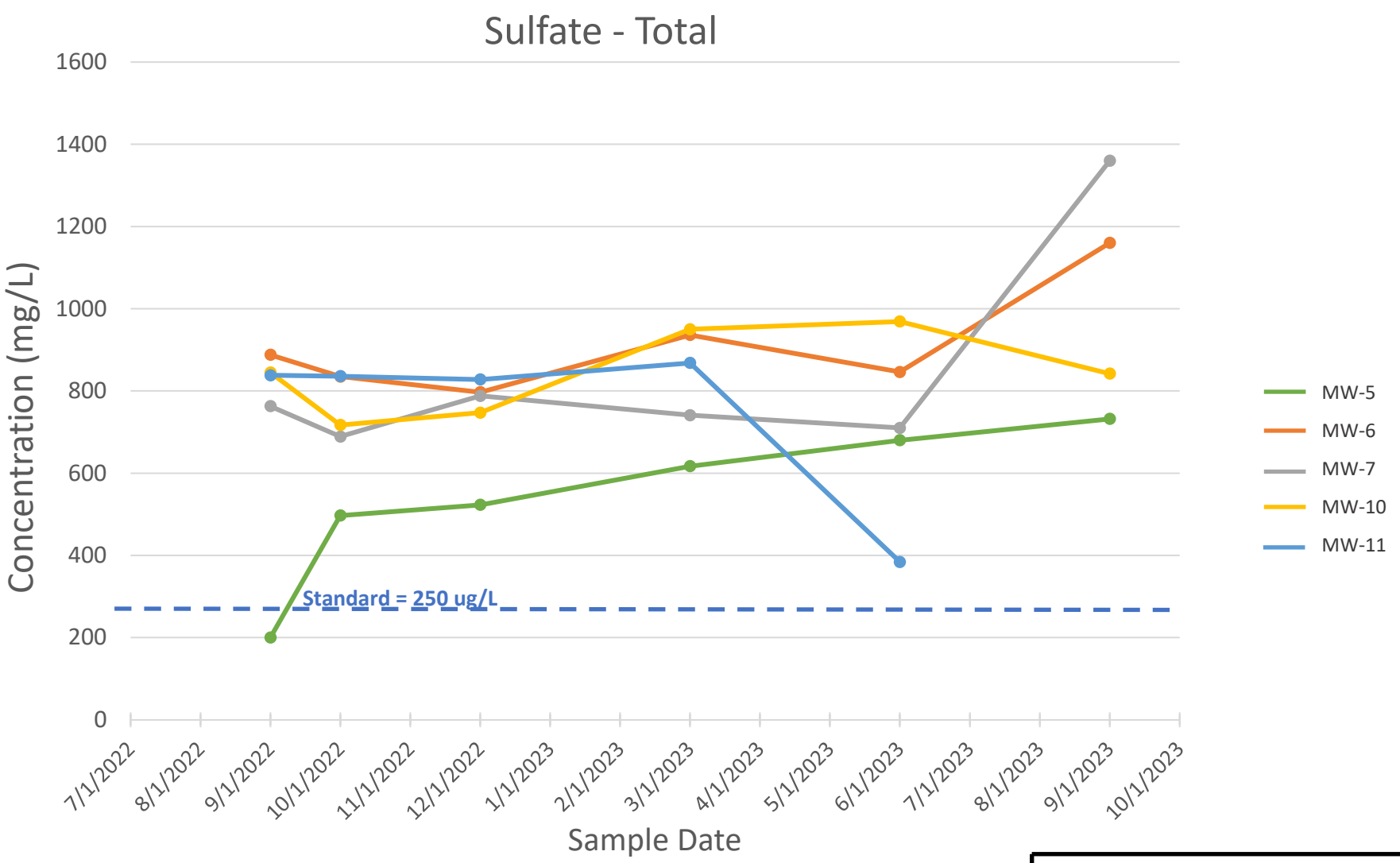
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Nitrate (NO_3) Time Series – Baseline** **MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG	FIGURE
DRAFTED	KG	4
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Total Sulfate Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG	FIGURE
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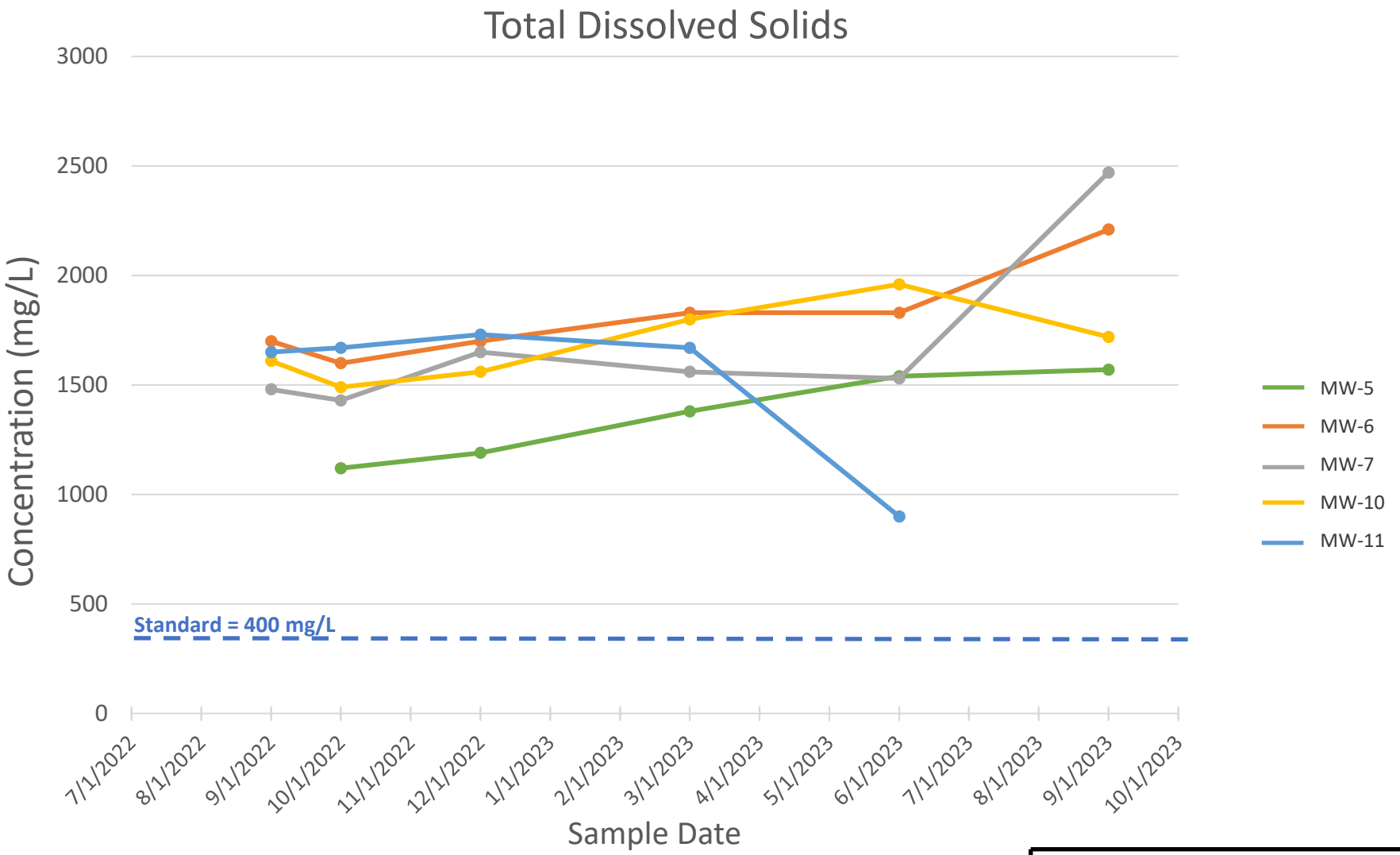
PROJECT #	117-8741006	
DATE	11/07/2024	

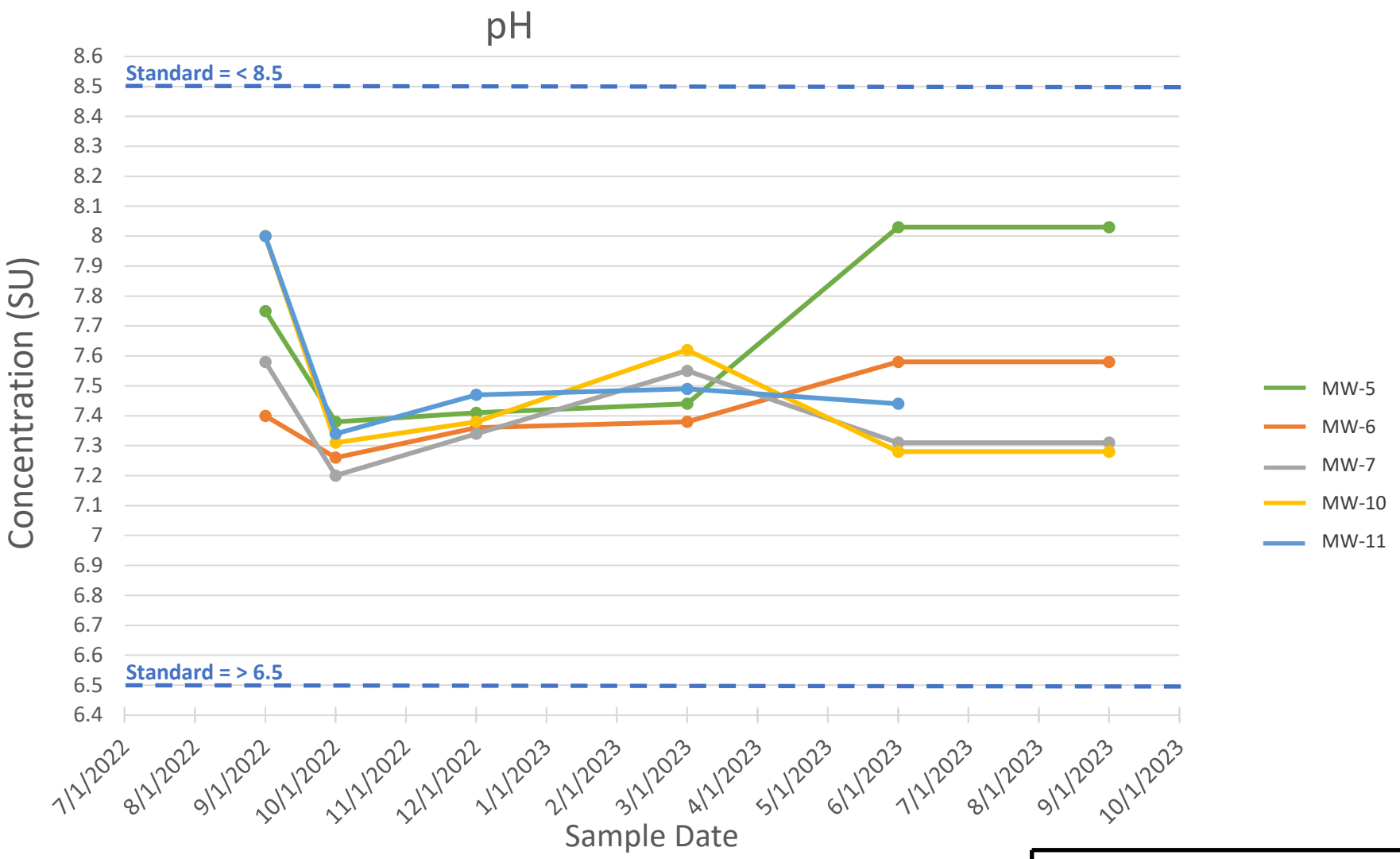


TITLE:	**Total Dissolved Solids Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG
DRAFTED	KG
PROJECT #	117-8741006
DATE	11/07/2024

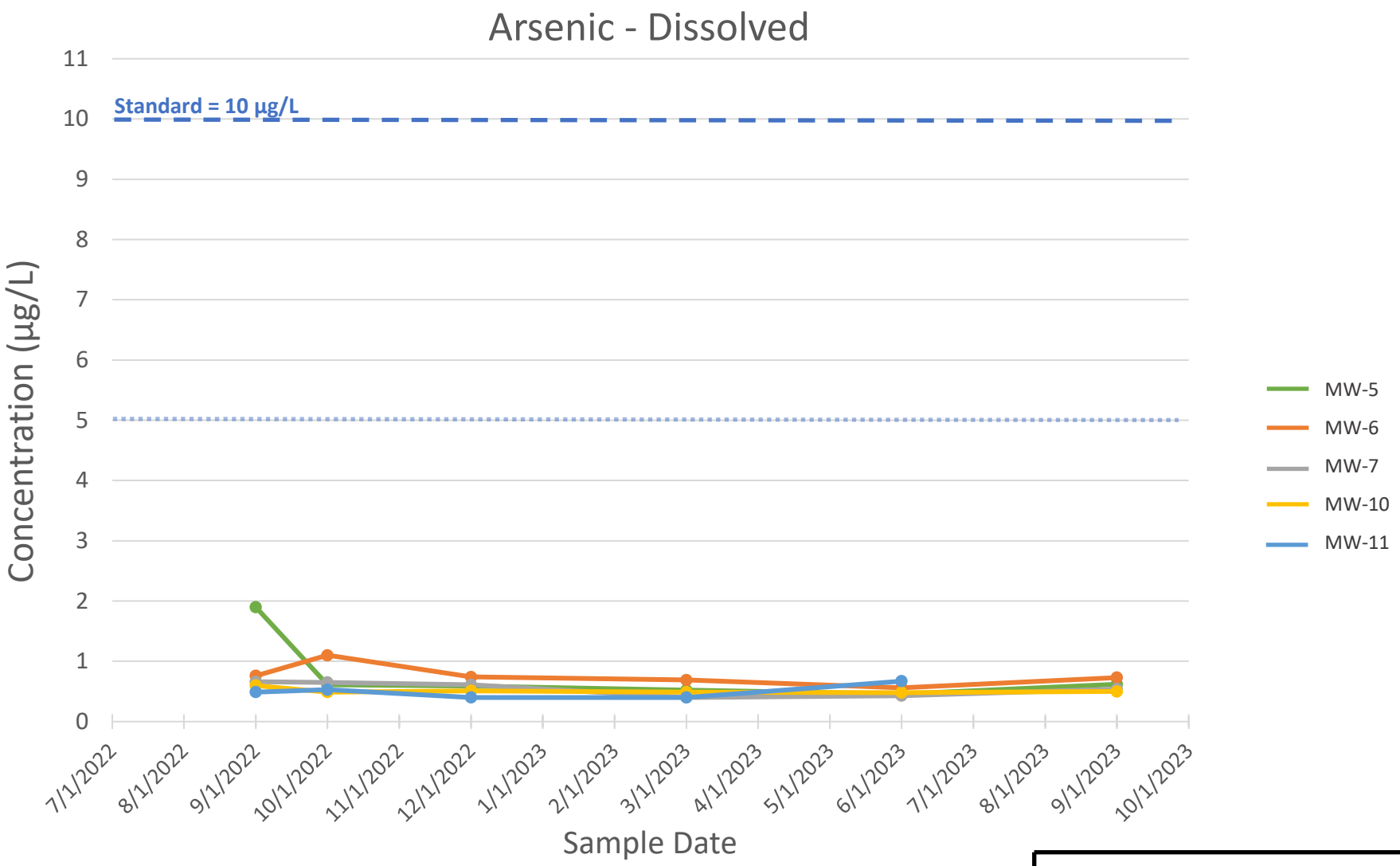
FIGURE 6



TITLE:	**pH Time Series – Baseline** **MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG	FIGURE
DRAFTED	KG	
PROJECT #	117-8741006	7
DATE	11/07/2024	



TITLE:	**Arsenic Time Series – Baseline** **MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

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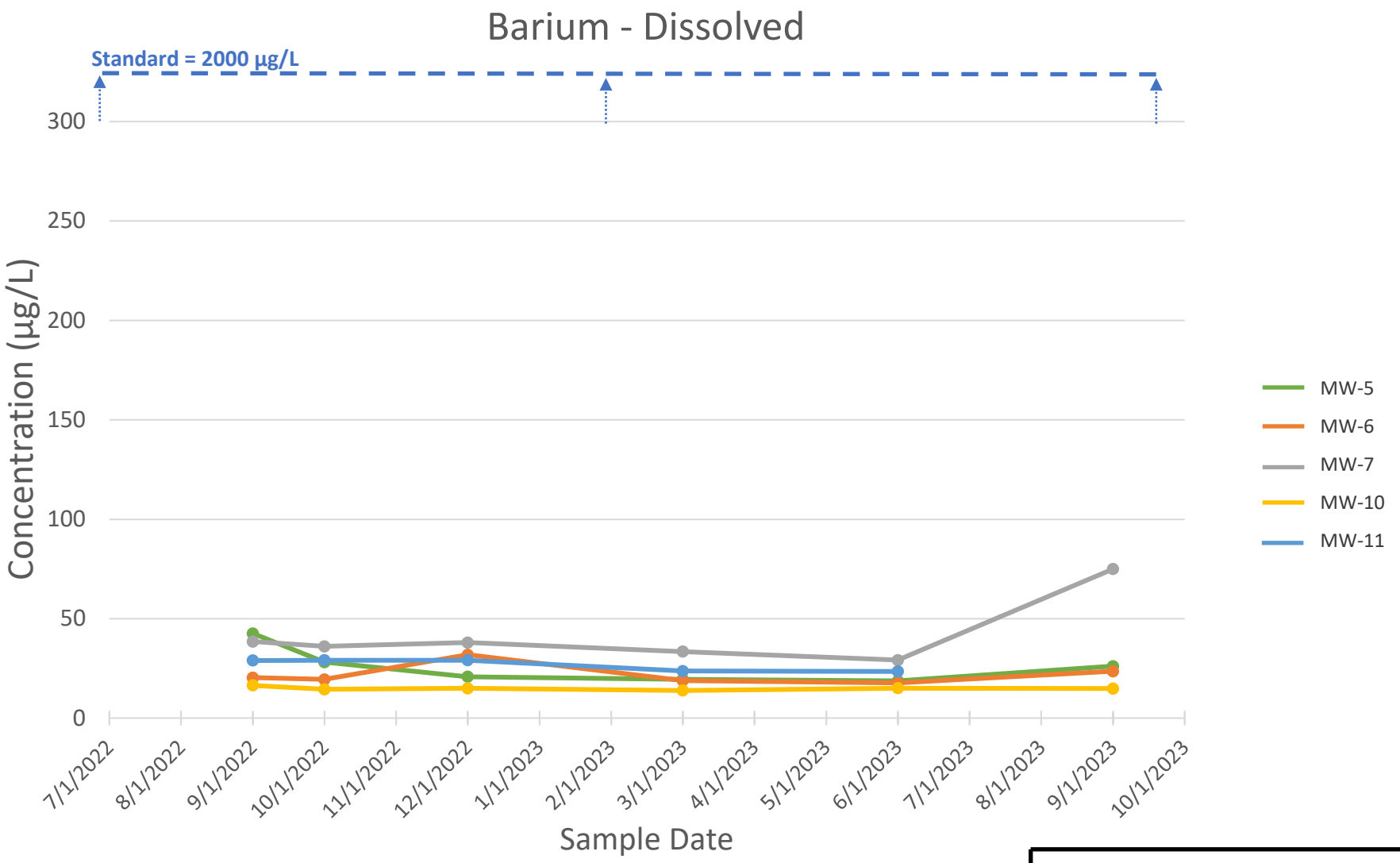
DRAFTED	KG	8
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Dissolved Barium Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

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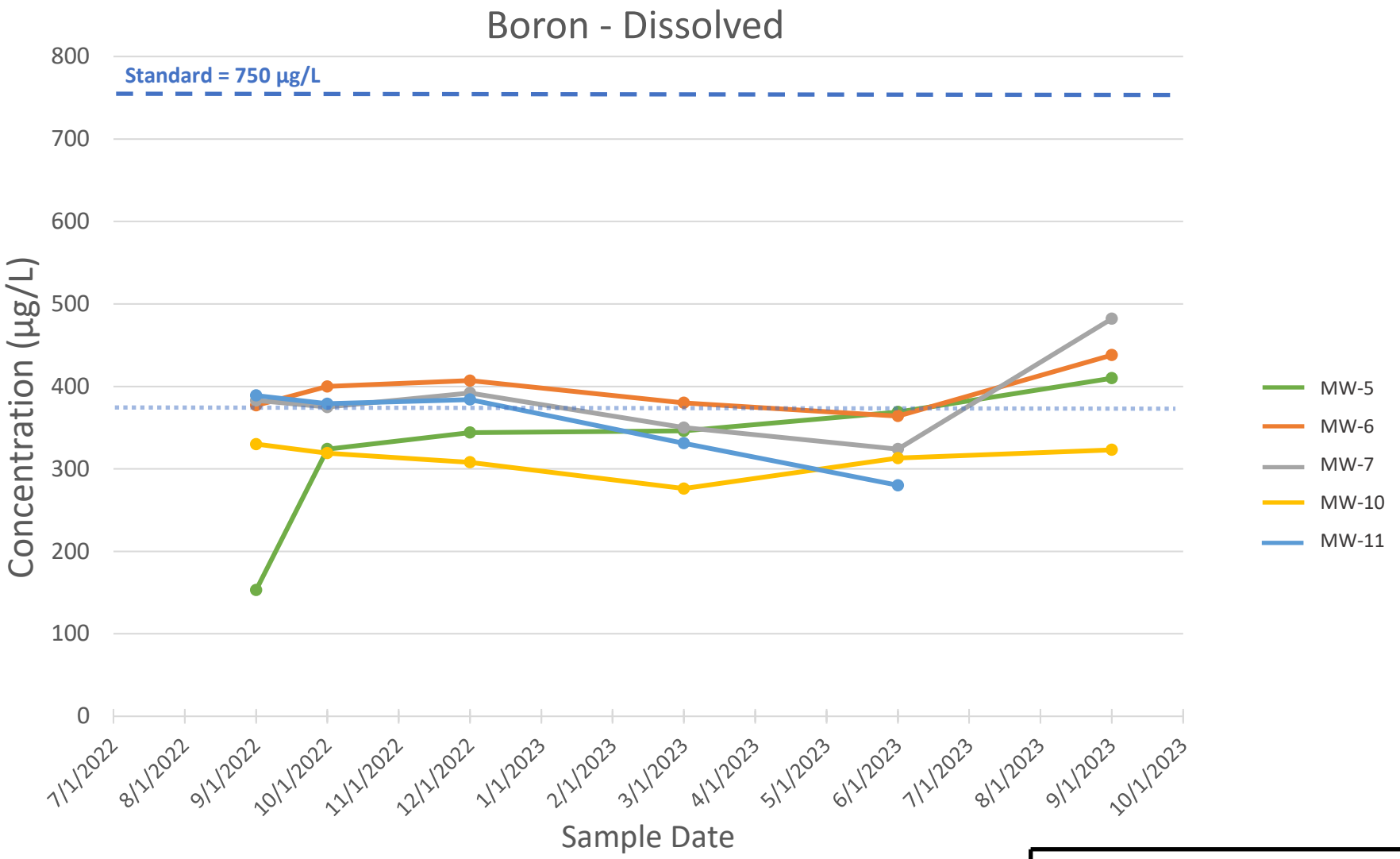
DRAFTED	KG	9
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Dissolved Boron Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

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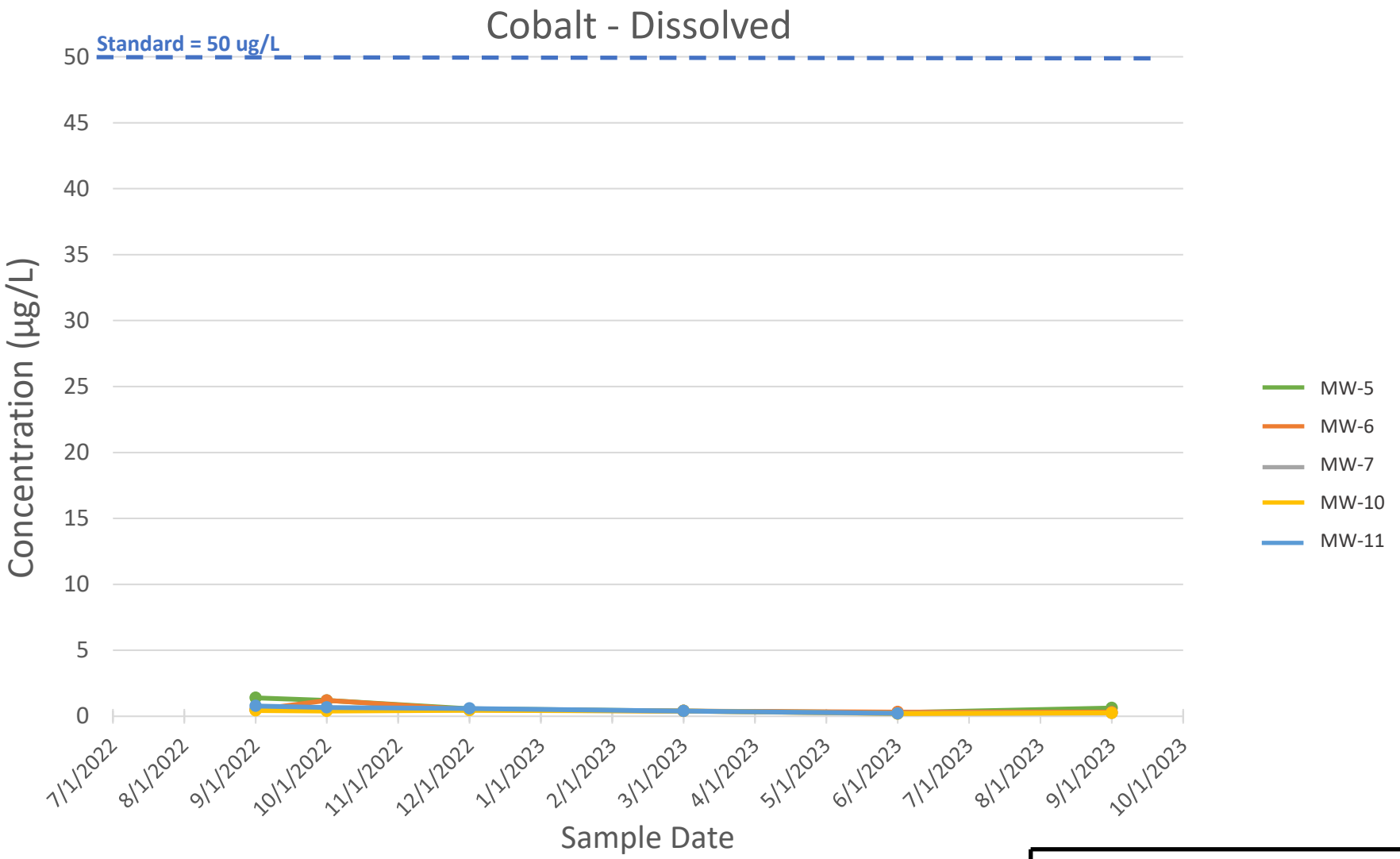
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Dissolved Cobalt Time Series – Baseline** **MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG	FIGURE
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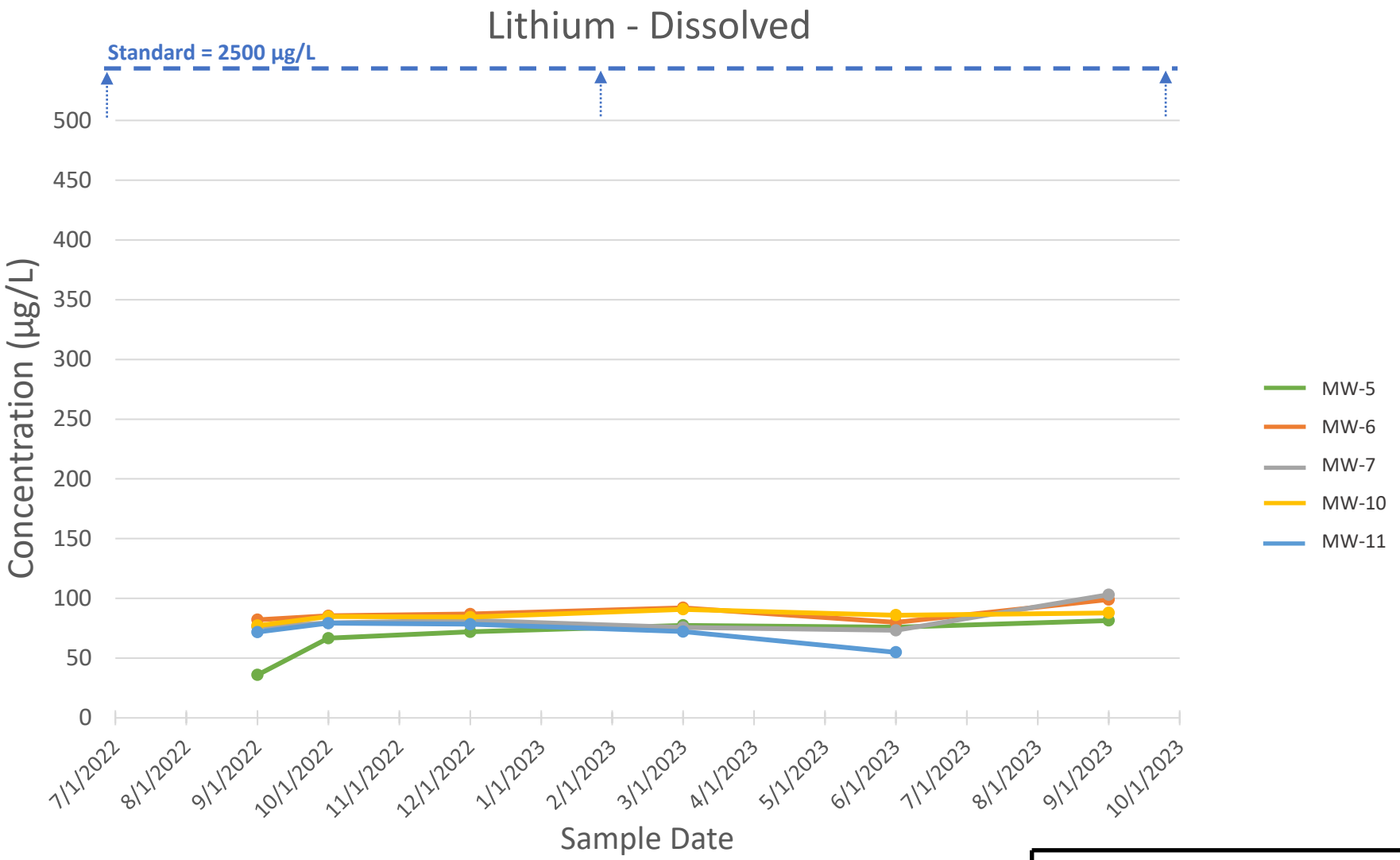
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Dissolved Lithium Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

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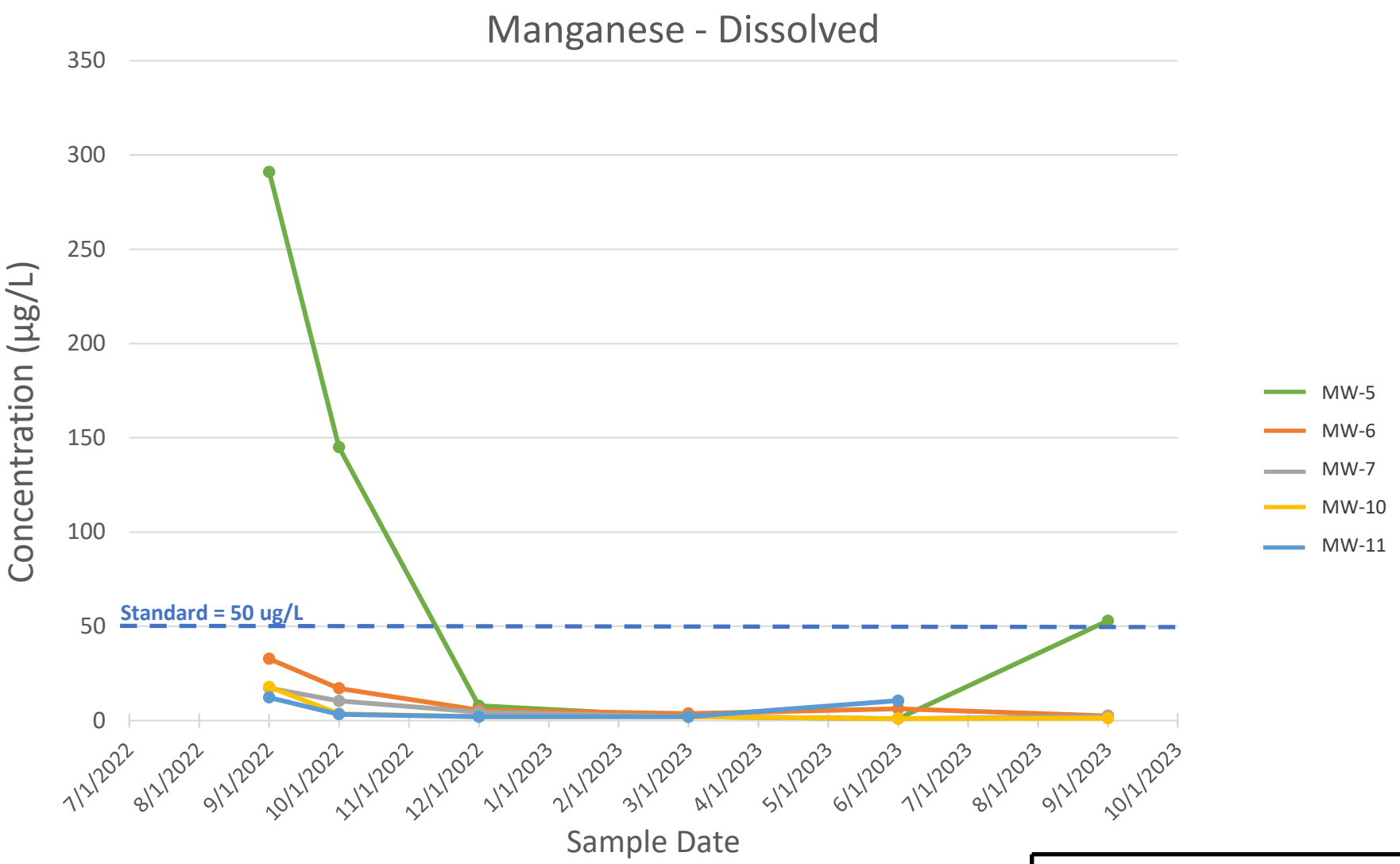
PROJECT #	117-8741006	12
DATE	11/07/2024	



TITLE:	**Dissolved Manganese Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

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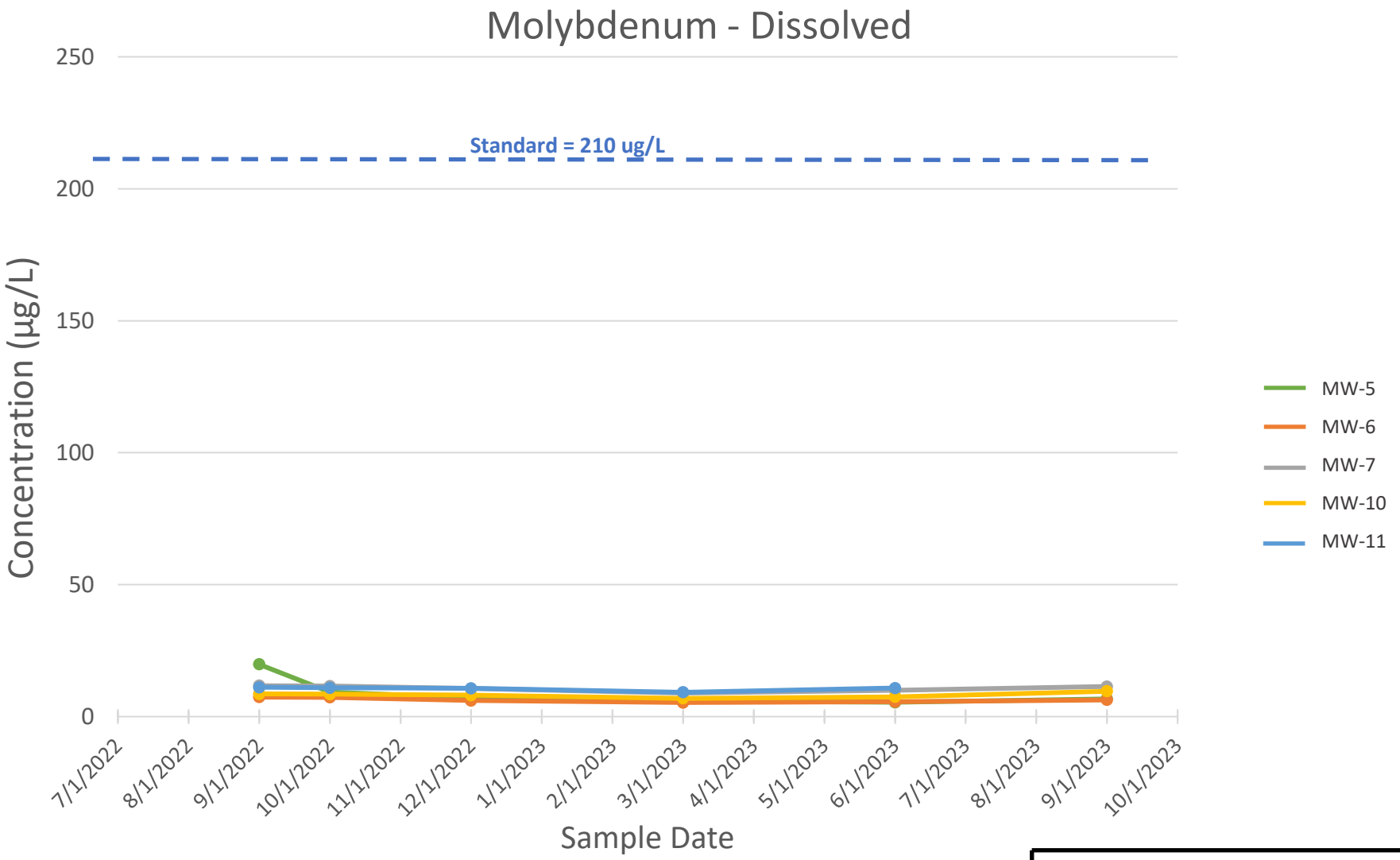
PROJECT #	117-8741006	13
DATE	11/07/2024	



TITLE:	**Dissolved Molybdenum Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

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PROJECT #	117-8741006	
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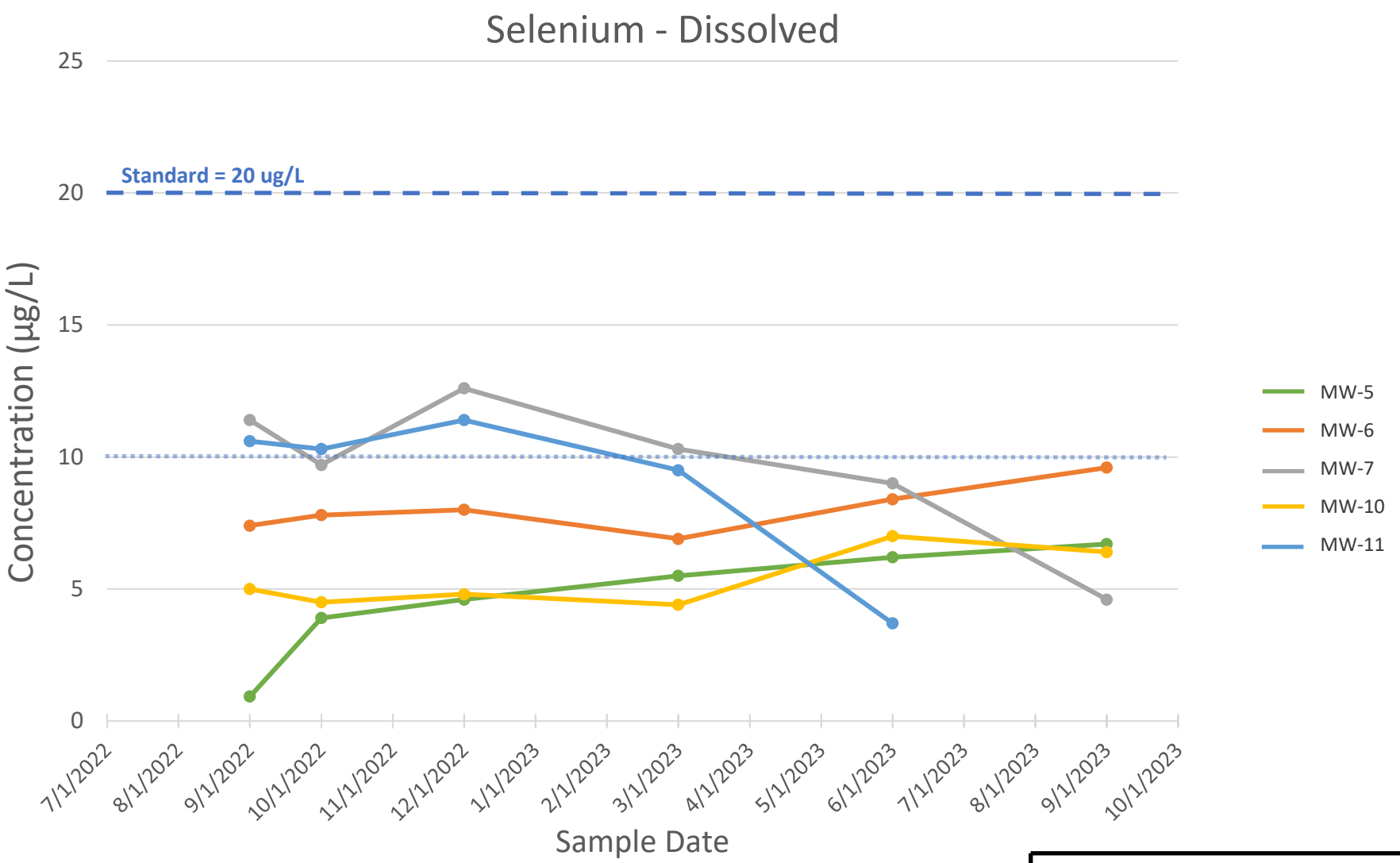

TITLE:	**Dissolved Selenium Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

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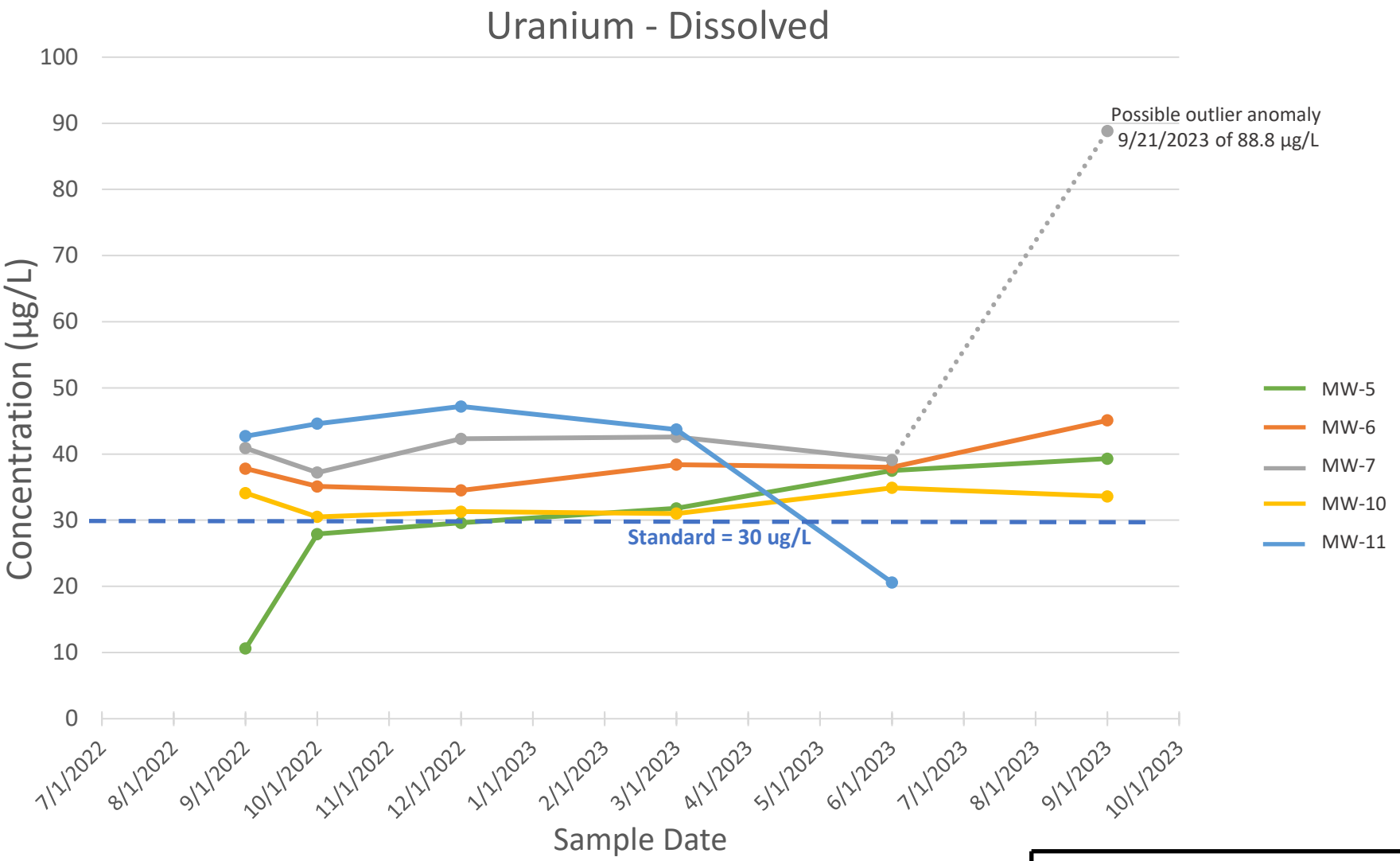
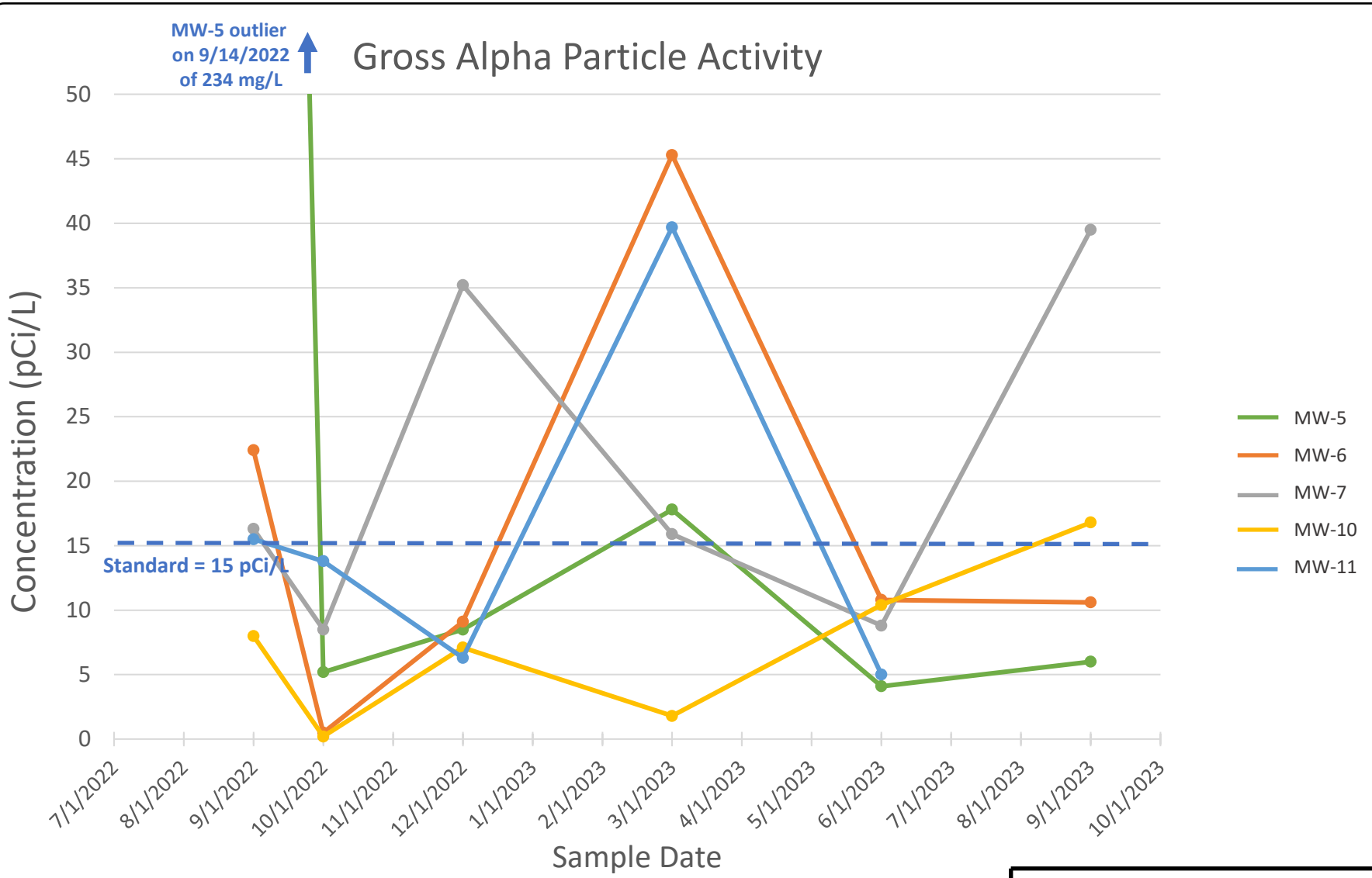
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Dissolved Uranium Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG	FIGURE
DRAFTED	KG	16
PROJECT #	117-8741006	
DATE	11/07/2024	



TITLE:	**Gross Alpha Particle Activity Time Series – Baseline MARTIN MARIETTA**
LOCATION:	**Windsor East Mine, Windsor, Colorado**

TETRA TECH

APPROVED	CG
DRAFTED	KG
PROJECT #	117-8741006
DATE	11/07/2024

FIGURE 17

Table 1. Background Water Chemistry

			MW-5						MW-6					
Parameter	**Units**	**Standard**	**9/14/2022**	**10/28/2022**	**12/5/2022**	**3/7/2023**	**6/21/2023**	**9/21/2023**	**9/14/2022**	**10/28/2022**	**12/5/2022**	**3/7/2023**	**6/21/2023**	**9/21/2023**
Chloride - Dissolved	**mg/L**	**250**	36.7	38	39.7	45	46.4	48.8	44.7	44.2	45.8	48.9	48.2	46.4
Cyanide - Free	**mg/L**	**0.2**	NA	NA	<0.0050	<0.0050	<0.0020	<0.0050	NA	NA	<0.0050	<0.0050	<0.0020	0.0059
Fluoride - Total F	**mg/L**	**2**	0.98	0.75	0.7	0.69	0.5	<1.0	0.69	0.73	0.66	0.63	0.52	<2.5
Nitrate (NO3)	**mg/L**	**10**	0.3	7.5	8	9.3	**10.5**	**10.9**	**10.2**	**10.3**	9.7	**10.8**	9.9	**12**
Nitrite (NO2)	**mg/L**	**1**	<0.0080	0.013	<0.0080	<0.0080	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate+Nitrite (NO2+NO3), dissolved	**mg/L**	**10**	NA	NA	8	9.3	**10.5**	**10.9**	NA	NA	9.7	**10.8**	9.9	**12**
TDS	**mg/L**	**400**	NA	**1120**	**1190**	**1380**	**1540**	**1570**	**1700**	**1600**	**1700**	**1830**	**1830**	**2210**
Sulfate - Total	**mg/L**	**250**	200	**497**	**523**	**617**	**680**	**732**	**888**	**835**	**797**	**936**	**846**	**1160**
pH	**su**	**6.5-8.5**	7.75	7.38	7.41	7.44	8.03	8.03	7.4	7.26	7.36	7.38	7.58	7.58
Chromium - Dissolved (CrVI)	**mg/L**	**0.1**	0.072	<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	NA	<0.010	<0.010	<0.010	<0.010
Aluminum - Dissolved	**ug/L**	**5000**	<100	<100	<100	<100	<50	<50	<100	<100	<100	<100	<50	<50
Antimony - Dissolved	**ug/L**	**6**	<0.80	<0.80	<0.80	<0.80	<.40	<.40	<0.80	<0.80	<0.80	<0.80	<0.40	<0.40
Arsenic - Dissolved	**ug/L**	**10**	1.9	0.61	0.59	0.52	0.46	0.62	0.76	1.1	0.74	0.69	0.56	0.73
Barium - Dissolved	**ug/L**	**2000**	42.6	28.2	20.8	19.5	18.7	26.1	20.4	19.5	31.9	18.9	17.7	23.6
Beryllium - Dissolved	**ug/L**	**4**	<0.40	<0.40	<0.40	<0.40	<.20	<.20	<0.40	<0.40	<0.40	<0.40	<0.20	<0.20
Boron - Dissolved	**ug/L**	**750**	153	324	344	346	369	410	377	400	407	380	364	438
Cadmium - Dissolved	**ug/L**	**5**	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10
Cobalt - Dissolved	**ug/L**	**50**	1.4	1.2	0.56	<0.40	0.28	0.63	0.49	1.2	0.51	<0.40	0.32	0.31
Copper - Dissolved	**ug/L**	**200**	<4.0	<4.0	<4.0	<4.0	2.1	<2.0	<4.0	<4.0	<4.0	<4.0	<2.0	<2.0
Iron - Dissolved	**ug/L**	**300**	<40	<40	<40	<40	<20	<20	<40	<40	<40	<40	<20	<20
Lead - Dissolved	**ug/L**	**50**	<1.0	<1.0	<1.0	<1.0	<.50	<.50	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Lithium - Dissolved	**ug/L**	**2500**	35.8	66.6	71.9	77.4	75.9	81.4	82.1	85.4	86.8	92.1	79.8	99
Manganese - Dissolved	**ug/L**	**50**	**291**	**145**	7.8	<2.0	<1.0	**52.9**	32.7	17.1	5.6	3.7	6.3	2.5
Mercury - Dissolved	**ug/L**	**2**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Molybdenum - Dissolved	**ug/L**	**210**	19.8	9.3	7.1	5.9	5.4	6.7	7.4	7.3	6.1	5.3	5.6	6.3
Nickel - Dissolved	**ug/L**	**100**	4.2	<4.0	<4.0	<4.0	<2.0	2.2	<4.0	<4.0	<4.0	<4.0	<2.0	<2.0
Selenium - Dissolved	**ug/L**	**20**	0.93	3.9	4.6	5.5	6.2	6.7	7.4	7.8	8	6.9	8.4	9.6
Silver - Dissolved	**ug/L**	**50**	<0.2	<0.2	<0.2	<0.2	<0.10	<0.10	<0.2	<0.2	<0.20	<0.20	<0.10	<0.10
Thallium - Dissolved	**ug/L**	**2**	<0.40	<0.40	<0.40	<0.40	<0.20	<0.20	<0.40	<0.40	<0.40	<0.40	<0.20	<0.20
Uranium - Dissolved	**ug/L**	**30**	10.6	27.9	29.6	**31.8**	**37.5**	**39.3**	**37.8**	**35.1**	**34.5**	**38.4**	**38**	**45.1**
Vanadium - Dissolved	**ug/L**	**100**	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	1.1	1.4
Zinc - Dissolved	**ug/L**	**200**	<20	<20	<20	<20	<10	<10	<20	<20	<20	<20	<10	<10
Gross Alpha Particle Activity	**pCi/L**	**15**	**234***	5.2	8.5	**17.8**	4.1	6	**22.4**	0.5	9.1	**45.3**	10.8	10.6

*Treated as an outlier

Red shading indicates standard exceedance

NA: Not Analyzed by Lab

ND: Not detected above laboratory detection limit

Table 1. Background Water Chemistry

			MW-7						MW-10					
Parameter	**Units**	**Standard**	**9/14/2022**	**10/28/2022**	**12/5/2022**	**3/7/2023**	**6/21/2023**	**9/21/2023**	**9/14/2022**	**10/28/2022**	**12/5/2022**	**3/7/2023**	**6/21/2023**	**9/21/2023**
Chloride - Dissolved	mg/L	**250**	46.8	42.9	46.8	47.5	44.3	78.2	41.1	39	40.3	45.4	53.9	59.4
Cyanide - Free	mg/L	**0.2**	NA	NA	<0.0050	<0.0050	<0.002	<0.0050	NA	NA	<0.0050	<0.0050	<0.002	0.0052
Fluoride - Total F	mg/L	**2**	1.1	1.1	1	0.96	0.96	**2.4**	1.1	1.1	1.1	1.1	<2.5	**2.6**
Nitrate (NO3)	mg/L	**10**	5.5	5.4	6	5.2	**200***	3.1	**12.1**	**11.2**	**11**	9.7	**10.9**	**21.3**
Nitrite (NO2)	mg/L	**1**	<0.10	<0.10	<0.10	<0.0080	<0.10	<0.10	<0.10	<.0080	<0.10	<0.0080	<0.10	<0.10
Nitrate+Nitrite (NO2+NO3), dissolved	mg/L	**10**	NA	NA	6	5.2	**200***	3.1	NA	NA	**11**	9.7	**10.9**	**21.3**
TDS	mg/L	**400**	**1480**	**1430**	**1650**	**1560**	**1530**	**2470**	**1610**	**1490**	**1560**	**1800**	**1960**	**1720**
Sulfate - Total	mg/L	**250**	**763**	**689**	**788**	**741**	**710**	**1360**	**845**	**717**	**747**	**950**	**969**	**842**
pH	su	**6.5-8.5**	7.58	7.2	7.34	7.55	7.31	7.31	8	7.31	7.38	7.62	7.28	7.28
Chromium - Dissolved (CrVI)	mg/L	**0.1**	<0.010	NA	<0.050	<0.010	<0.010	<0.10	<0.010	NA	<0.010	<0.010	<0.010	<0.010
Aluminum - Dissolved	ug/L	**5000**	<100	<100	<100	<100	<50	<50	<100	<100	<100	<100	<50	<50
Antimony - Dissolved	ug/L	**6**	<0.80	<0.80	<0.80	<0.80	<0.40	<0.40	<0.80	<0.80	<0.80	<0.80	<0.40	<0.40
Arsenic - Dissolved	ug/L	**10**	0.66	0.65	0.61	<0.40	0.43	0.54	0.6	0.49	0.51	0.49	0.48	0.5
Barium - Dissolved	ug/L	**2000**	38.5	36.1	38	33.5	29.2	75	16.5	14.5	15	13.9	15.1	14.9
Beryllium - Dissolved	ug/L	**4**	<0.40	<0.40	<0.40	<0.40	<0.20	<0.20	<0.40	<0.40	<0.40	<0.40	<0.20	<0.20
Boron - Dissolved	ug/L	**750**	383	375	392	350	324	482	330	319	308	276	313	323
Cadmium - Dissolved	ug/L	**5**	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10
Cobalt - Dissolved	ug/L	**50**	0.55	0.5	0.48	<0.40	0.22	0.25	0.44	<0.40	0.46	<0.40	<0.20	0.26
Copper - Dissolved	ug/L	**200**	<4.0	<4.0	<4.0	**18.2***	<2.0	<2.0	<4.0	<4.0	<4.0	<4.0	<2.0	<2.0
Iron - Dissolved	ug/L	**300**	<40	<40	<40	<40	<20	<20	<40	<40	<40	<40	<20	<20
Lead - Dissolved	ug/L	**50**	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Lithium - Dissolved	ug/L	**2500**	76.1	79.4	81.6	75.6	73.2	103	77.2	84.7	84.3	90.8	85.9	87.8
Manganese - Dissolved	ug/L	**50**	17.2	10.4	4.5	<2.0	<1.0	2.2	17.8	3.6	2	<2.0	<1.0	1.2
Mercury - Dissolved	ug/L	**2**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Molybdenum - Dissolved	ug/L	**210**	11.7	11.6	10.6	8.9	10	11.4	8.6	8.5	8.1	6.9	7.5	9.6
Nickel - Dissolved	ug/L	**100**	<4.0	<4.0	<4.0	<4.0	<2.0	<2.0	<4.0	<4.0	<4.0	<4.0	<2.0	<2.0
Selenium - Dissolved	ug/L	**20**	11.4	9.7	12.6	10.3	9	4.6	5	4.5	4.8	4.4	7	6.4
Silver - Dissolved	ug/L	**50**	<0.2	<0.2	<0.2	<0.2	<0.10	<0.10	<0.2	<0.2	<0.2	<0.2	<0.10	<0.10
Thallium - Dissolved	ug/L	**2**	<0.40	<0.40	<0.40	<0.40	<0.20	<0.20	<0.40	<0.40	<0.40	<0.40	<0.20	<0.20
Uranium - Dissolved	ug/L	**30**	**40.9**	**37.2**	**42.3**	**42.6**	**39.1**	**88.8**	**34.1**	**30.5**	**31.3**	**31**	**34.9**	**33.6**
Vanadium - Dissolved	ug/L	**100**	<2.0	<2.0	<2.0	<2.0	<0.10	<0.10	<2.0	<2.0	<2.0	<2.0	<1.0	1.1
Zinc - Dissolved	ug/L	**200**	<20	<20	<20	<20	<10	<10	<20	<20	<20	<20	<10	<10
Gross Alpha Particle Activity	pCi/L	**15**	**16.3**	8.5	**35.2**	**15.9**	8.8	**39.5**	8	0.2	7.1	1.8	10.4	**16.8**

*Treated as an outlier

Red shading indicates standard exceedance

NA: Not Analyzed by Lab

ND: Not detected above laboratory detection limit

Table 1. Background Water Chemistry

			MW-11						MW-7 FIELD DUPLICATE	MW-7 FIELD DUPLICATE	MW-5 FIELD DUPLICATE
Parameter	Units	Standard	9/14/2022	10/28/2022	12/5/2022	3/7/2023	6/21/2023	9/21/2023	3/7/2023	6/21/2023	9/21/2023
Chloride - Dissolved	mg/L	250	45.4	45.9	46.5	44.4	31		47.5	44.6	48.1
Cyanide - Free	mg/L	0.2	NA	NA	<0.0050	<0.0050	<0.0020	Not	<0.0050	NA	<0.0050
Fluoride - Total F	mg/L	2	0.99	0.95	0.91	0.92	1.1	enough	0.93	0.80	<2.5
Nitrate (NO3)	mg/L	10	13.6	13.5	12.4	9.9	4.7	water	5.2	5.1	10.7
Nitrite (NO2)	mg/L	1	<0.10	<0.10	<0.10	<0.0080	0.0071	in	<0.0080	<0.10	<0.10
Nitrate+Nitrite (NO2+NO3), dissolved	mg/L	10	NA	NA	12.4	9.9	4.7	well	5.2	5.1	10.7
TDS	mg/L	400	1650	1670	1730	1670	900	to	1570	1590	1590
Sulfate - Total	mg/L	250	838	836	828	868	384	sample	743	717	704
pH	su	6.5-8.5	8	7.34	7.47	7.49	7.44		7.46	7.27	NA
Chromium - Dissolved (CrVI)	mg/L	0.1	<0.010	<0.010	<0.010	<0.010	<0.010	pit	<0.010	<0.010	<0.010
Aluminum - Dissolved	ug/L	5000	<100	<100	<100	<100	<50	dewater	<100	<50	<50
Antimony - Dissolved	ug/L	6	<0.80	<0.80	<0.80	<0.80	<.40	pump	<0.80	<0.40	<0.40
Arsenic - Dissolved	ug/L	10	0.49	0.53	<0.40	<0.40	0.67	20 feet	0.46	0.42	0.61
Barium - Dissolved	ug/L	2000	29	29.1	29.1	23.7	23.5	away	32.8	27.2	26.1
Beryllium - Dissolved	ug/L	4	<0.40	<0.40	<0.40	<0.40	<.20		<0.40	<0.20	<0.20
Boron - Dissolved	ug/L	750	389	379	384	331	280		344	320	409
Cadmium - Dissolved	ug/L	5	<0.20	<0.20	<0.20	<0.20	<0.10		<0.20	<0.10	<0.10
Cobalt - Dissolved	ug/L	50	0.79	0.67	0.59	<0.40	0.22		<0.40	<0.20	0.72
Copper - Dissolved	ug/L	200	<4.0	<4.0	<4.0	<4.0	<2.0		<4.0	<2.0	<2.0
Iron - Dissolved	ug/L	300	<40	<40	<40	<40	<20		<40	<20	<20
Lead - Dissolved	ug/L	50	<1.0	<1.0	<1.0	<1.0	<.50		<1.0	<0.50	<0.50
Lithium - Dissolved	ug/L	2500	71.7	79.2	78.3	72.2	54.8		79	70.2	81.1
Manganese - Dissolved	ug/L	50	12.2	3.3	<2.0	<2.0	10.5		<2.0	<1.0	50.2
Mercury - Dissolved	ug/L	2	<0.10	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10
Molybdenum - Dissolved	ug/L	210	11.1	10.9	10.7	9.2	10.8		8.9	9.7	6.5
Nickel - Dissolved	ug/L	100	<4.0	<4.0	<4.0	<4.0	<2.0		<4.0	<2.0	2.2
Selenium - Dissolved	ug/L	20	10.6	10.3	11.4	9.5	3.7		10.5	8.7	7
Silver - Dissolved	ug/L	50	<0.2	<0.2	<0.2	<0.20	<0.10		<0.20	<0.10	<0.10
Thallium - Dissolved	ug/L	2	<0.40	<0.40	<0.40	<0.40	<0.20		<0.40	<0.20	<0.20
Uranium - Dissolved	ug/L	30	42.7	44.6	47.2	43.7	20.6		41.5	40.7	38.1
Vanadium - Dissolved	ug/L	100	<2.0	<2.0	<2.0	<2.0	1.2		<2.0	<1.0	<1.0
Zinc - Dissolved	ug/L	200	<20	<20	<20	<20	<10		<20	<10	<10
Gross Alpha Particle Activity	pCi/L	15	15.5	13.8	6.3	39.7	5		16.8	3.3	21.4

*Treated as an outlier

Red shading indicates standard exceedance

NA: Not Analyzed by Lab

ND: Not detected above laboratory detection limit

Table 2. MW-5 Background Water Chemistry Statistics

MW-5

Parameter	Units	Standard	Count	Outlier Excluded?	Minimum	Maximum	Average	Standard Deviation
Chloride - Dissolved	**mg/L**	**250**	6		36.7	48.8	42.43	4.52
Cyanide - Free	**mg/L**	**0.2**	4		ND (<0.002)	ND (<0.005)	ND	ND
Fluoride - Total F	**mg/L**	**2**	6		0.5	0.98	0.77	0.17
Nitrate (NO3)	**mg/L**	**10**	6		0.3	10.9	7.75	3.55
Nitrite (NO2)	**mg/L**	**1**	6		ND (<0.008)	0.013	0.04	0.04
Nitrate+Nitrite (NO2+NO3), dissolved	**mg/L**	**10**	4		8	10.9	9.68	1.13
TDS	**mg/L**	**400**	5		1120	1570	1360	180.78
Sulfate - Total	**mg/L**	**250**	6		200	732	541.50	173.26
pH	**su**	**6.5-8.5**	6		7.38	8.03	7.67	0.28
Chromium - Dissolved (CrVI)	**mg/L**	**0.1**	5		ND (<0.01)	0.072	0.02	0.02
Aluminum - Dissolved	**ug/L**	**5000**	6	Yes (1)	ND (<50)	ND (<100)	ND	ND
Antimony - Dissolved	**ug/L**	**6**	6		ND (<0.4)	ND (<0.8)	ND	ND
Arsenic - Dissolved	**ug/L**	**10**	6		0.46	1.9	0.78	0.50
Barium - Dissolved	**ug/L**	**2000**	6		18.7	42.6	25.98	8.20
Beryllium - Dissolved	**ug/L**	**4**	6		ND (<0.2)	ND (<0.4)	ND	ND
Boron - Dissolved	**ug/L**	**750**	6		153	410	324.33	81.18
Cadmium - Dissolved	**ug/L**	**5**	6		ND (<0.1)	ND (<0.2)	ND	ND
Cobalt - Dissolved	**ug/L**	**50**	6		0.28	1.4	0.75	0.41
Copper - Dissolved	**ug/L**	**200**	6		ND (<2)	2.1	3.35	0.92
Iron - Dissolved	**ug/L**	**300**	6	Yes (1)	ND (<20)	ND (<40)	ND	ND
Lead - Dissolved	**ug/L**	**50**	6		ND (<0.5)	ND (<1)	ND	ND
Lithium - Dissolved	**ug/L**	**2500**	6		35.8	81.4	68.17	15.19
Manganese - Dissolved	**ug/L**	**50**	6		ND (<1)	291	83.28	105.64
Mercury - Dissolved	**ug/L**	**2**	6		ND (<0.1)	ND (<0.1)	ND	ND
Molybdenum - Dissolved	**ug/L**	**210**	6		5.4	19.8	9.03	4.97
Nickel - Dissolved	**ug/L**	**100**	6		ND (<2)	4.2	3.4	0.9
Selenium - Dissolved	**ug/L**	**20**	6		0.93	6.7	4.64	1.9
Silver - Dissolved	**ug/L**	**50**	6		ND (<0.1)	ND (<0.2)	ND	ND
Thallium - Dissolved	**ug/L**	**2**	6		ND (<0.2)	ND (<0.4)	ND	ND
Uranium - Dissolved	**ug/L**	**30**	6		10.6	39.3	29.45	9.35
Vanadium - Dissolved	**ug/L**	**100**	6		ND (<1)	ND (<2)	ND	ND
Zinc - Dissolved	**ug/L**	**200**	6		ND (<10)	ND (<20)	ND	ND
Gross Alpha Particle Activity	**pCi/L**	**15**	5	Yes (1)	4.1	17.8	8.32	4.96

Note: Detection limits were used in place of the value in the calculation of averages and standard deviations

Table 3. MW-6 Background Water Chemistry Statistics

MW-6

Parameter	Units	Standard	Count	Outlier Excluded?	Minimum	Maximum	Average	Standard Deviation
Chloride - Dissolved	**mg/L**	**250**	6		44.2	48.9	46.37	1.71
Cyanide - Free	**mg/L**	**0.2**	4		ND (<0.002)	0.0059	0.004	0.001
Fluoride - Total F	**mg/L**	**2**	6		0.52	0.73	0.96	0.69
Nitrate (NO3)	**mg/L**	**10**	6		9.7	12	10.48	0.76
Nitrite (NO2)	**mg/L**	**1**	6		ND (<0.1)	ND (<0.1)	ND	ND
Nitrate+Nitrite (NO2+NO3), dissolved	**mg/L**	**10**	4		9.7	10.8	10.08	0.43
TDS	**mg/L**	**400**	6		1600	2210	1811.67	195.40
Sulfate - Total	**mg/L**	**250**	6		797	1160	910	119.83
pH	**su**	**6.5-8.5**	6		7.26	7.58	7.43	0.12
Chromium - Dissolved (CrVI)	**mg/L**	**0.1**	5		ND (<0.01)	ND (<0.01)	ND	ND
Aluminum - Dissolved	**ug/L**	**5000**	6	Yes (1)	ND (<50)	ND (<100)	ND	ND
Antimony - Dissolved	**ug/L**	**6**	6		ND (<0.4)	ND (<0.8)	ND	ND
Arsenic - Dissolved	**ug/L**	**10**	6		0.56	1.1	0.76	0.2
Barium - Dissolved	**ug/L**	**2000**	6		17.7	31.9	22.00	4.79
Beryllium - Dissolved	**ug/L**	**4**	6		ND (<0.2)	ND (<0.4)	ND	ND
Boron - Dissolved	**ug/L**	**750**	6		364	438	394.33	24.24
Cadmium - Dissolved	**ug/L**	**5**	6		ND (<0.1)	ND (<0.2)	ND	ND
Cobalt - Dissolved	**ug/L**	**50**	6		0.31	1.2	0.54	0.31
Copper - Dissolved	**ug/L**	**200**	6		ND (<2)	ND (<4)	ND	ND
Iron - Dissolved	**ug/L**	**300**	6	Yes (1)	ND (<20)	ND (<40)	ND	ND
Lead - Dissolved	**ug/L**	**50**	6		ND (<0.5)	ND (<1)	ND	ND
Lithium - Dissolved	**ug/L**	**2500**	6		79.8	99	87.53	6.41
Manganese - Dissolved	**ug/L**	**50**	6	Yes (1)	2.5	32.7	11.32	10.68
Mercury - Dissolved	**ug/L**	**2**	6		ND (<0.1)	ND (<0.1)	ND	ND
Molybdenum - Dissolved	**ug/L**	**210**	6		5.3	7.4	6.33	0.79
Nickel - Dissolved	**ug/L**	**100**	6		ND (<2)	ND (<4)	ND	ND
Selenium - Dissolved	**ug/L**	**20**	6		6.9	9.6	8.02	0.85
Silver - Dissolved	**ug/L**	**50**	6		ND (<0.1)	ND (<0.2)	ND	ND
Thallium - Dissolved	**ug/L**	**2**	6		ND (<0.2)	ND (<0.4)	ND	ND
Uranium - Dissolved	**ug/L**	**30**	6		34.5	45.1	38.15	3.44
Vanadium - Dissolved	**ug/L**	**100**	6		1.1	2	1.75	0.36
Zinc - Dissolved	**ug/L**	**200**	6		ND (<10)	ND (<20)	ND	ND
Gross Alpha Particle Activity	**pCi/L**	**15**	6		0.5	45.3	16.45	14.39

Note: Detection limits were used in place of the value in the calculation of averages and standard deviations

Table 4. MW-7 Background Water Chemistry Statistics

MW-7

Parameter	Units	Standard	Count	Outlier Excluded?	Minimum	Maximum	Average	Standard Deviation
Chloride - Dissolved	**mg/L**	**250**	6		42.9	78.2	51.08	12.23
Cyanide - Free	**mg/L**	**0.2**	4		ND (<0.002)	ND (<0.005)	ND	ND
Fluoride - Total F	**mg/L**	**2**	6		0.96	2.4	1.25	0.52
Nitrate (NO3)	**mg/L**	**10**	5	Yes (1)	3.1	6	5.04	1.01
Nitrite (NO2)	**mg/L**	**1**	6		ND (<0.008)	ND (<0.1)	ND	ND
Nitrate+Nitrite (NO2+NO3), dissolved	**mg/L**	**10**	3	Yes (1)	3.1	6	4.77	1.22
TDS	**mg/L**	**400**	6		1430	2470	1686.67	356.87
Sulfate - Total	**mg/L**	**250**	6		689	1360	841.83	233.99
pH	**su**	**6.5-8.5**	6		7.2	7.58	7.38	0.14
Chromium - Dissolved (CrVI)	**mg/L**	**0.1**	5		ND (<0.01)	ND (<0.1)	ND	ND
Aluminum - Dissolved	**ug/L**	**5000**	6	Yes (1)	ND (<50)	ND (<100)	ND	ND
Antimony - Dissolved	**ug/L**	**6**	6		ND (<0.4)	ND (<0.8)	ND	ND
Arsenic - Dissolved	**ug/L**	**10**	6		ND (<0.4)	0.66	0.55	0.10
Barium - Dissolved	**ug/L**	**2000**	6		29.2	75	41.72	15.21
Beryllium - Dissolved	**ug/L**	**4**	6		ND (<0.2)	ND (<0.4)	ND	ND
Boron - Dissolved	**ug/L**	**750**	6		324	482	384.33	49.17
Cadmium - Dissolved	**ug/L**	**5**	6		ND (<0.1)	ND (<0.2)	ND	ND
Cobalt - Dissolved	**ug/L**	**50**	6		0.22	0.55	0.40	0.13
Copper - Dissolved	**ug/L**	**200**	5	Yes (1)	ND (<2)	ND (<4)	ND	ND
Iron - Dissolved	**ug/L**	**300**	6	Yes (1)	ND (<20)	ND (<40)	ND	ND
Lead - Dissolved	**ug/L**	**50**	6		ND (<0.5)	ND (<1)	ND	ND
Lithium - Dissolved	**ug/L**	**2500**	6		73.2	103	81.48	10.00
Manganese - Dissolved	**ug/L**	**50**	6		ND (<1)	17.2	6.22	5.81
Mercury - Dissolved	**ug/L**	**2**	6		ND (<0.1)	ND (<0.1)	ND	ND
Molybdenum - Dissolved	**ug/L**	**210**	6		8.9	11.7	10.70	1.00
Nickel - Dissolved	**ug/L**	**100**	6		ND (<2)	ND (<4)	ND	ND
Selenium - Dissolved	**ug/L**	**20**	6		4.6	12.6	9.60	2.52
Silver - Dissolved	**ug/L**	**50**	6		ND (<0.1)	ND (<0.2)	ND	ND
Thallium - Dissolved	**ug/L**	**2**	6		ND (<0.2)	ND (<0.4)	ND	ND
Uranium - Dissolved	**ug/L**	**30**	6		37.2	88.8	48.48	18.13
Vanadium - Dissolved	**ug/L**	**100**	6		ND (<0.1)	ND (<2)	ND	ND
Zinc - Dissolved	**ug/L**	**200**	6		ND (<10)	ND (<20)	ND	ND
Gross Alpha Particle Activity	**pCi/L**	**15**	6		8.5	39.5	20.70	12.22

Note: Detection limits were used in place of the value in the calculation of averages and standard deviations

Table 5. MW-10 Background Water Chemistry Statistics

MW-10

Parameter	Units	Standard	Count	Outlier Excluded?	Minimum	Maximum	Average	Standard Deviation
Chloride - Dissolved	**mg/L**	**250**	6		39	59.4	46.52	7.6
Cyanide - Free	**mg/L**	**0.2**	4		ND (<0.002)	0.0052	0.004	0.001
Fluoride - Total F	**mg/L**	**2**	6		1.1	2.6	1.58	0.68
Nitrate (NO3)	**mg/L**	**10**	6		9.7	21.3	12.70	3.91
Nitrite (NO2)	**mg/L**	**1**	6		ND (<0.008)	ND (<0.1)	ND	ND
Nitrate+Nitrite (NO2+NO3), dissolved	**mg/L**	**10**	4		9.7	21.3	13.23	4.69
TDS	**mg/L**	**400**	6		1490	1960	1690.00	157.69
Sulfate - Total	**mg/L**	**250**	6		717	969	845.00	93.45
pH	**su**	**6.5-8.5**	6		7.28	8	7.48	0.26
Chromium - Dissolved (CrVI)	**mg/L**	**0.1**	5		ND (<0.01)	ND (<0.1)	ND	ND
Aluminum - Dissolved	**ug/L**	**5000**	6		ND (<50)	ND (<100)	ND	ND
Antimony - Dissolved	**ug/L**	**6**	6		ND (<0.4)	ND (<0.8)	ND	ND
Arsenic - Dissolved	**ug/L**	**10**	6		0.48	0.6	0.51	0.04
Barium - Dissolved	**ug/L**	**2000**	6		13.9	16.5	14.98	0.79
Beryllium - Dissolved	**ug/L**	**4**	6		ND (<0.2)	ND (<0.4)	ND	ND
Boron - Dissolved	**ug/L**	**750**	6		276	330	311.50	17.35
Cadmium - Dissolved	**ug/L**	**5**	6		ND (<0.1)	ND (<0.2)	ND	ND
Cobalt - Dissolved	**ug/L**	**50**	6		ND (<0.2)	0.46	0.36	0.10
Copper - Dissolved	**ug/L**	**200**	6		ND (<2)	ND (<4)	ND	ND
Iron - Dissolved	**ug/L**	**300**	6		ND (<20)	ND (<40)	ND	ND
Lead - Dissolved	**ug/L**	**50**	6		ND (<0.5)	ND (<1)	ND	ND
Lithium - Dissolved	**ug/L**	**2500**	6		77.2	90.8	85.1	4.16
Manganese - Dissolved	**ug/L**	**50**	6	Yes (1)	ND (<1)	17.8	4.6	5.96
Mercury - Dissolved	**ug/L**	**2**	6		ND (<0.1)	ND (<0.1)	ND	ND
Molybdenum - Dissolved	**ug/L**	**210**	6		6.9	9.6	8.20	0.86
Nickel - Dissolved	**ug/L**	**100**	6		ND (<2)	ND (<4)	ND	ND
Selenium - Dissolved	**ug/L**	**20**	6		4.4	7	5.35	0.99
Silver - Dissolved	**ug/L**	**50**	6		ND (<0.1)	ND (<0.2)	ND	ND
Thallium - Dissolved	**ug/L**	**2**	6		ND (<0.2)	ND (<0.4)	ND	ND
Uranium - Dissolved	**ug/L**	**30**	6		30.5	34.9	32.57	1.7
Vanadium - Dissolved	**ug/L**	**100**	6		ND (<1)	1.1	1.68	0.4
Zinc - Dissolved	**ug/L**	**200**	6		ND (<10)	ND (<20)	ND	ND
Gross Alpha Particle Activity	**pCi/L**	**15**	6		0.2	16.8	7.38	5.49

Note: Detection limits were used in place of the value in the calculation of averages and standard deviations

Table 6. MW-11 Background Water Chemistry Statistics

MW-11

Parameter	Units	Standard	Count	Outlier Excluded?	Minimum	Maximum	Average	Standard Deviation
Chloride - Dissolved	**mg/L**	**250**	5		31	46.5	42.64	5.86
Cyanide - Free	**mg/L**	**0.2**	3		ND (<0.002)	ND (<0.005)	ND	ND
Fluoride - Total F	**mg/L**	**2**	5		0.91	1.1	0.97	0.07
Nitrate (NO3)	**mg/L**	**10**	5		4.7	13.6	10.82	3.34
Nitrite (NO2)	**mg/L**	**1**	5		0.0071	0.0071	0.06	0.05
Nitrate+Nitrite (NO2+NO3), dissolved	**mg/L**	**10**	3		4.7	12.4	9.0	3.21
TDS	**mg/L**	**400**	5		900	1730	1524.00	313.2
Sulfate - Total	**mg/L**	**250**	5		384	868	750.80	183.90
pH	**su**	**6.5-8.5**	5		7.34	8	7.55	0.23
Chromium - Dissolved (CrVI)	**mg/L**	**0.1**	4		ND (<0.01)	ND (<0.01)	ND	ND
Aluminum - Dissolved	**ug/L**	**5000**	5		ND (<50)	ND (<100)	ND	ND
Antimony - Dissolved	**ug/L**	**6**	5		ND (<0.4)	ND (<0.8)	ND	ND
Arsenic - Dissolved	**ug/L**	**10**	5		ND (<0.4)	0.67	0.50	0.10
Barium - Dissolved	**ug/L**	**2000**	5		23.5	29.1	26.9	2.68
Beryllium - Dissolved	**ug/L**	**4**	5		ND (<0.2)	ND (<0.4)	ND	ND
Boron - Dissolved	**ug/L**	**750**	5		280	389	352.60	41.82
Cadmium - Dissolved	**ug/L**	**5**	5		ND (<0.1)	ND (<0.2)	ND	ND
Cobalt - Dissolved	**ug/L**	**50**	5		0.22	0.79	0.53	0.20
Copper - Dissolved	**ug/L**	**200**	5		ND (<2)	ND (<4)	ND	ND
Iron - Dissolved	**ug/L**	**300**	5		ND (<20)	ND (<40)	ND	ND
Lead - Dissolved	**ug/L**	**50**	5		ND (<0.5)	ND (<1)	ND	ND
Lithium - Dissolved	**ug/L**	**2500**	5		54.8	79.2	71.24	8.77
Manganese - Dissolved	**ug/L**	**50**	5	Yes (1)	ND (<2)	12.2	6.0	4.43
Mercury - Dissolved	**ug/L**	**2**	5		ND (<0.1)	ND (<0.1)	ND	ND
Molybdenum - Dissolved	**ug/L**	**210**	5		9.2	11.1	10.54	0.68
Nickel - Dissolved	**ug/L**	**100**	5		ND (<2)	ND (<4)	ND	ND
Selenium - Dissolved	**ug/L**	**20**	5		3.7	11.4	9.10	2.77
Silver - Dissolved	**ug/L**	**50**	5		ND (<0.1)	ND (<0.2)	ND	ND
Thallium - Dissolved	**ug/L**	**2**	5		ND (<0.2)	ND (<0.4)	ND	ND
Uranium - Dissolved	**ug/L**	**30**	5		20.6	47.2	39.76	9.70
Vanadium - Dissolved	**ug/L**	**100**	5		1.2	1.2	1.84	0.3
Zinc - Dissolved	**ug/L**	**200**	5		ND (<10)	ND (<20)	ND	ND
Gross Alpha Particle Activity	**pCi/L**	**15**	5		5	39.7	16.06	12.50

Note: Detection limits were used in place of the value in the calculation of averages and standard deviations

Table 7. Proposed Analyte Sampling Summary

Parameter	Drop	Continue
Chloride - Dissolved	X	
Cyanide - Free	X	
Fluoride - Total F		X
Nitrate (NO3)		X
Nitrite (NO2)	X	
Nitrate+Nitrite (NO2+NO3), dissolved	X	
TDS		X
Sulfate - Total		X
pH	X	
Chromium - Dissolved (CrVI)		X
Aluminum - Dissolved	X	
Antimony - Dissolved	X	
Arsenic - Dissolved	X	
Barium - Dissolved	X	
Beryllium - Dissolved	X	
Boron - Dissolved		X
Cadmium - Dissolved	X	
Cobalt - Dissolved	X	
Copper - Dissolved	X	
Iron - Dissolved	X	
Lead - Dissolved	X	
Lithium - Dissolved	X	
Manganese - Dissolved		X
Mercury - Dissolved	X	
Molybdenum - Dissolved	X	
Nickel - Dissolved	X	
Selenium - Dissolved		X
Silver - Dissolved	X	
Thallium - Dissolved	X	
Uranium - Dissolved		X
Vanadium - Dissolved	X	
Zinc - Dissolved	X	
Gross Alpha Particle Activity		X