

Technical Memo

Date: December 8, 2025

To: Angela Bischoff and Elisabeth Luther - Baffinland Iron Mines Corporation

From: Kathryn Kuchapski, Amy Wiebe, and Noel Soogrim - Minnow Environmental Inc.

Cc: Bill Bowden and Katie Babin - Baffinland Iron Mines Corporation

RE: Water License Renewal Application No: 2AM-MRY1325 Qikiqtani Inuit Association Technical Review Comment QIA-TR-1: Compliance with Environmental Assessment Predictions Over Licensed Period – Revision 1

The Mary River Project (the Project) is owned and operated by Baffinland Iron Mines Corporation (Baffinland) and operates under Type “A” Water License Number (No.): 2AM-MRY2540, which was issued by the Nunavut Water Board (NWB) on April 28, 2025. As part of the Type “A” Water License renewal process in 2025, the Qikiqtani Inuit Association (QIA) provided an initial technical review comment (QIA-TR-1) requesting “all aquatic monitoring data collected while the Project has operated to demonstrate how actual monitoring conditions have remained within or exceeded environmental assessment predictions.” Following responses from Baffinland and additional discussion on this topic, the QIA recommended “Baffinland develop a memorandum comparing all aquatic monitoring data collected while the Project has been operating to Final Environmental Impact Statement (FEIS) predictions to demonstrate how actual monitoring conditions have remained within or exceeded environmental assessment predictions.”

Baffinland has indicated that the requested information is provided through annual data collection, analysis, and reporting components of the Aquatic Effects Monitoring Program (AEMP; which is a requirement of Water Licenses No: 2AM-MRY2540, as well as the previous water License No. 2A-MRY1325), including the Core Receiving Environment Monitoring Program (CREMP) and the Lake Sedimentation Monitoring Program (LSMP). Annual reports for these programs include temporal trend analyses (where applicable) and comparisons with area-specific environmental assessment predictions. However, to address the QIA’s concerns related to reviewer confidence in current conditions and trends relative to environmental assessment

predictions, Baffinland committed to development of a one-time memorandum including the following aquatic monitoring information:

- “Temporal plots of water quality results from lake and stream CREMP monitoring areas that include results from the baseline (2006 to 2013), construction (2014), and operations (2015 to 2024) periods for specific parameters associated with the mine site ore bodies or with blasting (i.e., [total aqueous] aluminum, arsenic, cadmium, chromium, copper, iron, lead, nickel, zinc, [and] nitrate, nitrite, Total Kjeldahl Nitrogen [TKN], and [total] ammonia). Area specific predictions from the [FEIS] (Baffinland 2012) should be included on the plots for comparison.
- Tabular summaries of seasonal averages with standard deviations for total aqueous concentrations of specific parameters associated with the mine site ore bodies or with blasting (as listed above) at each CREMP monitoring area over the mine operations period (2015 to 2024). Area-specific predictions from the FEIS and AEMP benchmarks should be included in the tables for comparison.
- A statement comparing the concentrations [of specific water quality parameters associated with the mine site ore bodies or with blasting (as listed above)] to area-specific predictions from the FEIS [over the mine-operations period (2015 to 2024)].
- Weather data correlated with sampling to the extent possible to assess the impact of wet versus dry events on the observed monitoring values.”

This memorandum presents the information outlined above.

Methods and Results

Comparisons to Guidelines, FEIS Predictions, and Benchmarks

The CREMP evaluates both short-and-long term effects of the Project on aquatic ecosystems, including water and sediment quality and biota (phytoplankton, benthic invertebrates, and fish) from lakes and streams in lake catchment systems in proximity to the Mary River Mine site (i.e., Camp Lake, Camp Lake Tributaries, Sheardown Lake Northwest (NW), Sheardown Lake Southeast (SE), Sheardown Lake Tributaries, Mary River, and Mary Lake). Monitoring, analysis, and reporting occur annually with reports including detailed descriptions of locations, methods, and results for sampling events, as well as data analysis and interpretation, including comparisons to AEMP benchmarks and FEIS predictions, and effects determinations (e.g., Minnow 2024).

In the annual CREMP report, water quality data for lakes and streams are compared to thresholds established in the FEIS for predicting the magnitude of potential effects on water quality from



non-point source emissions. Concentrations of water quality parameters are considered to conform to FEIS predictions if they are within the predicted ranges based on the 'magnitude of effect' significance ratings for residual water quality impacts¹. Specifically, water quality data are compared to FEIS predictions for the following non-point source emissions: SWSQ-2 (Site Water Management; all stations), SWSQ-4 (Explosives; CLT1 Upper and Lower Main Stems, and SDLT9 and Sheardown Lake SE), SWSQ-5 (Quarries and Borrow Areas; CLT1 Upper and Lower Main Stems), SWSQ-7 (Camps and Fuel Management; Camp Lake and Sheardown Lake systems), and SWSQ-9 (Airstrip and Airstrip Use; Camp Lake and Sheardown Lake systems). In each case, water quality data are compared to a Level II magnitude of effect rating, as predicted in the FEIS for these specific sources. The same approach for comparison to FEIS predictions has been applied in this memorandum.

The water chemistry parameters identified for this memorandum include concentrations of total ammonia, nitrate, nitrite, TKN, and total aluminum, arsenic, cadmium, chromium, copper, iron, lead, nickel, and zinc. Time-series plots were generated for each parameter to visualize temporal patterns during the baseline period (pre-mine construction and operation; 2006 to 2013), construction (2014), and operations period (2015 to 2024; Figures 1 to 8). Figures 1 to 8 present individual sample results and mean seasonal parameter concentrations for the baseline period (2006 to 2013) and for each year of mine construction and operation (2014 to 2024). Tabular summaries were generated that included seasonal mean concentrations with standard deviations of total aqueous concentrations for water quality parameters at each CREMP monitoring area over the mine operations period (2015 to 2024; Tables 1 to 8). Seasonal mean concentrations and standard deviations in Tables 1 to 8 were calculated as the mean and standard deviation of parameter concentrations of all samples collected in a given CREMP monitoring area in the season of interest over the ten year mine operations period from 2015 to 2024. The plots and tables include water quality guidelines (WQG), AEMP benchmarks, and FEIS prediction ranges for comparison to parameter concentrations. Description of the WQG selection is included in the annual CREMP report (e.g., Minnow 2024). A reference lake (Reference Lake 3) has been sampled for water quality (and other CREMP monitoring components) as part of the CREMP since 2015. Water quality results from Reference Lake 3 are included on plots (Figures 1 to 8) and in Table 9 but comparisons to AEMP benchmarks and FEIS prediction ranges do not apply to this waterbody.

¹ Significance ratings were: Negligible – concentrations of indicator(s) predicted to be less than FEIS threshold value(s); Level I - concentrations of indicator(s) predicted to be above but within an order of magnitude of threshold value(s) (1 to 10x the threshold); Level II - concentrations of indicator(s) predicted to exceed threshold value(s) by an order of magnitude or greater (10 to 100x the threshold); Level III - concentrations of indicator(s) predicted to exceed threshold value(s) by more than two orders of magnitude (greater than 100x the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2025) or site-specific criterion developed for the Mary River Mine Site Area (Knight Piésold 2011).



Based on qualitative review of Figures 1 to 8 and seasonal mean values in Tables 1 to 8, concentrations of all evaluated parameters (i.e., total ammonia, nitrate, nitrite, TKN, and total aluminum, arsenic, cadmium, chromium, copper, iron, lead, nickel, and zinc) have remained below FEIS predictions for water quality due to Aqueous Non-Point Source Emissions based on a maximum Level II magnitude of effect (i.e., concentrations 10 to 100 times the FEIS threshold) since mine operations began in 2015.

Weather Correlations

To investigate the influence of meteorological and hydrological conditions on surface water chemistry, Spearman's correlation analyses (ρ) were conducted between aqueous concentrations of nutrients and metals (i.e., total ammonia, nitrate, nitrite, TKN, and total aluminum, arsenic, cadmium, chromium, copper, iron, lead, nickel, and zinc) and precipitation (3-day and 30-day averages and maxima) and discharge (30-day averages and maxima) endpoints. Correlation analyses were completed using data collected from monitoring stations within and surrounding the Mary River Mine site from 2006 to 2024^{2,3}. This approach was designed to evaluate how short-term rainfall events and longer-term patterns in precipitation and hydrology influence surface water chemistry across both mine-proximal and reference systems, allowing for identification of spatially distinct relationships and site-specific sensitivities to meteorological and hydrological conditions within the study area.

Hydrologic processes in the Mary River region are dominated by snowmelt and shallow active-layer runoff, with minimal contribution from groundwater due to the presence of permafrost extending to depths of approximately 500 m and an active layer of only 1 to 2 m (Baffinland 2012). Streamflow typically begins early to mid-June as temperatures rise above freezing, producing a pronounced nival freshet that contributes the majority of annual runoff before gradually declining through late summer (Baffinland 2012). Baseflows during the remainder of the open-water season are sustained primarily by meltwater and shallow subsurface flow. Because infiltration, interception, and evapotranspiration are limited in this permafrost environment, even minor precipitation events can generate rapid increases in surface runoff and directly influence receiving water systems (Baffinland 2012). Accordingly, precipitation and hydrometric data collected during the open-water season (June to September), the period when runoff generation and discharge dynamics are most active, were used in the correlation analyses. Similarly, water quality data

² The datasets provided by Baffinland included precipitation data collected between 2013 and 2024, as well as discharge data collected between 2006 and 2024.

³ The precipitation monitoring equipment at the Mary River Mine site was not functioning properly (i.e., was blocked) for much of 2021; therefore, for 2021, only the precipitation results collected after August 24, 2021, were considered reliable (Baffinland 2022; EDI 2022). The unreliable data collected earlier in 2021 were excluded from the correlation analyses described herein. Additionally, it was noted that blockage of the rain gauge may have begun as early as October 2019 (EDI 2022); therefore, the 2019 and 2020 data were subjected to extra scrutiny before being included in the analyses.



collected during the open-water season were used in the analyses, to best match the chemistry data with precipitation and hydrometric conditions at the time of sample collection.

Camp Lake System

In the Camp Lake Tributaries (CLT1 and CLT2; Figure 9), which flow adjacent to the tote road and drain areas downslope of Deposit 1 (CLT1 also receives surface drainage from the northwest end of the airstrip), a relatively small proportion of the statistical comparisons between water chemistry and rainfall and discharge endpoints identified significant correlations (Tables 10 and 11; Figures 10 through 17). Additionally, strong significant correlations (Rho or $\rho \leq -0.6$ or ≥ 0.6) were limited to TKN and 3-day rainfall endpoints (negative correlations), total aluminum concentrations and 30-day maximum discharge (positive correlation), and concentrations of total nickel and 3- and 30-day discharge endpoints (negative correlations; Tables 10 and 11). Notably, total aluminum concentrations at CLT1 were moderately well-correlated ($\rho \approx 0.4$ to 0.6) with 3-day mean and maximum and 30-day mean discharge (Table 11). Reference stream stations exhibited consistently low variability in nutrient and metal concentrations relative to rainfall and discharge, with only a few weak ($\rho \approx -0.4$ to 0.4) and inconsistent correlations at $\rho \leq 0.1$. This pattern at reference stream stations mirrors that of the Camp Tributaries (CLT1 and CLT2), which also displayed low rainfall sensitivity overall. Both the reference and CLT systems appear buffered from rainfall effects, suggesting natural attenuation and limited connectivity between surface runoff and stream chemistry under undisturbed conditions.

Across the Camp Lake monitoring stations (JL0-01, JL0-02, JL0-07, JL0-09, and JL0-10; Figure 9), few statistically significant relationships ($p \leq 0.1$) between concentrations of water chemistry parameters and 3-day mean and maximum rainfall were identified (Table 10). There was a greater number of significant correlations between water quality and 30-day rainfall endpoints; however, total ammonia was the only parameter for which strong ($p \leq -0.6$ or ≥ 0.6) significant correlations were identified (Table 10; Figures 10 through 13). These results suggest that prolonged rainfall is associated with an increase in aqueous concentrations of total ammonia in Camp Lake. The presence of similar rainfall–chemistry relationships at the Camp Lake inflow (JL0-02) and outflow (JL0-09) suggests that upstream influences propagate through the lake system, reflecting cumulative effects of mine-proximal runoff and associated catchment connectivity.

Overall, the Camp Lake System results indicate that prolonged rainfall has a moderate to strong ($\rho \geq 0.4$) positive influence on total ammonia concentrations in Camp Lake, whereas concentrations of water quality parameters in the tributaries and reference streams remain comparatively stable. Camp Lake appears to be a receiver of localized runoff, with minimal influence from upstream tributaries and flow variation.



Sheardown Lake System

Sheardown Lake Tributary 1 (SDLT1), which is downstream from the MS-11 final discharge point (FDP) and flows into the northeast side of Sheardown Lake NW (Figure 9), displayed few significant water chemistry-rainfall relationships during short-term rainfall (3-day) events (Table 10). Similarly, only a small proportion of the comparisons between parameter concentrations and 30-day rainfall endpoints were significant, and these were weak to moderate ($p \approx -0.5$ to -0.3 or 0.3 to 0.5) and directionally (positive or negative) inconsistent (Table 10). Significant positive correlations for total aluminum and copper and 30-day rainfall endpoints may be indicative of event-driven mobilization from catchment soils; however, overall, the results for SDLT1 suggest chemical stability through most rainfall conditions. Aqueous concentrations of nitrate, TSS, turbidity, and total aluminum, iron, lead, and nickel were weakly to moderately well-correlated ($p \approx 0.3$ to 0.5 ; positive) with 3- and 30-day mean and maximum discharges, depending on the station (Table 11; Figures 14 and 15). These results likely reflect mobilization of fine particulate matter, such as silt, clay, and organic particles, along with their associated nutrients and metals, from the stream bed and banks under high flow conditions (e.g., Horowitz 1991; Kerr and Cooke 2017).

In Sheardown Lake NW (Figure 9), aqueous concentrations of metals and nutrients were not correlated with 3-day mean and maximum rainfall; however, concentrations of total copper and nickel at one or more stations were moderately to strongly correlated (negatively) with 30-day rainfall conditions ($p \approx -0.7$ to -0.4 ; Table 10). Concentrations of total ammonia at all sampling stations in Sheardown Lake NW were moderately to strongly ($p \geq 0.4$) positively correlated with 30-day rainfall conditions, whereas moderately strong ($p \approx -0.6$ to -0.4) negative correlations were identified for nitrate (Table 10). This suggests that the existing pool of nitrate within the lake becomes diluted during wet periods and/or the conversion of ammonia to nitrate within the lake occurs at a slower rate relative to ammonia additions to the system (e.g., Jia et al. 2021). Additionally, aqueous concentrations of total nickel at more than half of the monitoring stations in Sheardown Lake NW were moderately to strongly negatively correlated with 30-day rainfall mean and maxima (Table 10).

At Sheardown Lake SE (Figure 9), aqueous concentrations of nitrate, TKN, and total ammonia, aluminum, iron, lead, nickel were significantly ($p \leq 0.1$) correlated with 3-day and/or 30-day mean and maximum rainfall ($p \approx -0.6$ to -0.4 and 0.4 to 0.6 [moderately or strongly correlated]; Table 10). For total aluminum and lead, correlations with mean and maximum 3-day rainfall were negative, whereas correlations with mean and/or maximum 30-day rainfall were positive, at DL0-02-3 and DL0-02-4 (Figure 9; Table 10). No other discernible spatial patterns in parameter concentrations were identified within the lake (Table 10, Figures 10 through 13).



The changes in nutrient and metal concentrations in Sheardown Lake SE following rainfall events may be attributed to changes in physicochemical conditions and/or nutrients or metals that were once bound with sediment being dissolved into the water column (Horowitz 1991). Concentrations of total suspended solids (TSS) and turbidity in Sheardown Lake SE were not significantly correlated with 3-day or 30-day rainfall conditions (Table 10). However, Sheardown Lake SE is unique in that backflow of turbid water into the lake from the Mary River may occur following precipitation events and higher flows in the river (Photos 1 and 2). This means there is an additional potential source of TSS and turbidity to Sheardown Lake SE, over and above direct runoff and tributary inputs seen for other study lakes, which may explain the lack of significant correlations between TSS and turbidity and rainfall conditions.

The results for the Sheardown Lake System indicate that water quality in Sheardown Lake SE has a greater sensitivity to 3-day mean and maximum rainfall than Sheardown Lake NW. These patterns likely reflect differences in exposure and hydrological routing (e.g., contributions from SDLT1 in Sheardown Lake NW versus backflow from the Mary River in Sheardown Lake SE), as well as physicochemical conditions within the two lakes. The distinction between tributary and lake behaviour (stronger rainfall response in Sheardown Lake SE, minimal in tributary and reference streams) underscores that rainfall effects are primarily observed in lake environments.

Mary River and Mary Lake System

Within the exposed portion of the Mary River (downstream of Mary River Tributary-F [MRTF]; Figure 9), water chemistry was generally not well-correlated with 30-day rainfall conditions. Additionally, concentrations of relatively few parameters were weakly or moderately well-correlated with 30-day mean or maximum discharge, and the direction (positive or negative) of the relationships was not consistent (Table 11). However, concentrations of TSS, turbidity, and total aluminum, arsenic, iron, lead, and nickel in MRTF (Station F0-01), just upstream from the confluence with Mary River, were significantly and weakly to moderately positively correlated ($\rho \approx 0.3$ to 0.6) with 30-day mean and/or maximum rainfall (Table 10). Weakly to moderately ($\rho \approx 0.3$ to 0.6) strong positive correlations between turbidity and aqueous concentrations of total aluminum, lead, and zinc and 30-day mean discharge were identified at F0-01 on MRTF (Table 11). These relationships identified for Station F0-01 may suggest gradual mobilization of sediment-associated metals under sustained rainfall and wet ground conditions (e.g., Horowitz 1991).

Significant correlations between parameter concentrations and short-duration (3-day) rainfall conditions were relatively limited in the mine-exposed portion of the Mary River, except for at Stations G0-03 and E0-10 (Figure 9), where concentrations of TSS, turbidity, and



total aluminum, arsenic (G0-03 only), chromium, iron, and lead were negatively and weakly to moderately correlated ($p \approx -0.5$ to -0.3) with 3-day mean and/or maximum rainfall (Table 10). Significant correlations between water quality parameters and 3-day mean and maximum discharge were predominantly very weak ($p \approx -0.3$ to 0.3), except for TSS ($p \approx 0.3$ to 0.4), nitrate ($p \approx -0.7$ to -0.2), and total aluminum, chromium, copper, nickel ($p \approx -0.6$ to -0.2 ; Table 11). Overall, the results for Mary River suggest changes in water quality are more closely related to short-term changes in discharge, relative to long- or even short-term patterns in rainfall.

Reference stations within the Mary River system (upstream from MRTF; G0-09-A, G0-09, and G0-09-B; Figure 9) exhibited very few statistically significant water chemistry-rainfall relationships (Table 10). This pattern is consistent with undisturbed or chemostatic catchment behaviour, where solute concentrations remain relatively stable across a wide range of discharge conditions (Godsey et al. 2009). Such behaviour is indicative of well-buffered hydrological systems with substantial groundwater or subsurface storage, which-effectively moderates the influence of short-term precipitation events on surface water chemistry (Godsey et al. 2009). This contrast highlights the greater hydrological sensitivity of the exposed Mary River section downstream from MRTF, where mine activities within the catchment and a larger, more braided flood plain increases drainage connectivity, which may enhance rainfall-driven transport of fine particulates and total metals.

In Mary Lake's north basin (Figure 9), which is downstream from the Camp Lake System, only a few parameters had concentrations that were significantly correlated with rainfall conditions, and these were consistently positive (Table 10). Turbidity was significantly and moderately ($p \approx 0.4$ to 0.6) positively correlated with 3-day mean and maximum rainfall, suggesting a pulse-type response to short rainfall events. Only total aluminum concentrations were strongly ($p \geq 0.6$) positively correlated with rainfall conditions, and only at Station BL0-01-B (Table 10).

In the south basin of Mary Lake (Figure 9), statistically significant correlations ($p \leq 0.1$) were primarily positive, particularly between concentrations of total ammonia, copper, and lead and 30-day rainfall variables ($p \approx 0.3$ to 0.6) (Table 10). This suggests that extended rainfall periods may increase concentrations of metals in the south basin of Mary Lake, even if TSS and turbidity do not exhibit the same patterns. Similar to Sheardown Lake SE, rainfall induced changes to physicochemical conditions within the lake may promote remobilization of nutrients or metals that were once bound with sediment (Horowitz 1991). Few 3-day rainfall relationships were observed, suggesting that Mary Lake responds more to cumulative hydrological loading rather than short-term rainfall bursts.



Summary

Across the Mary River Mine study area, only a small proportion of the comparisons between concentrations of water quality parameters and rainfall and discharge endpoints resulted in identification of strong ($p \leq -0.6$ or ≥ 0.6) positive or negative relationships. Therefore, in most cases, short-term and prolonged rainfall events and changes in discharge do not appear to elicit a strong or consistent (i.e., positive or negative correlation) effect on concentrations of water quality parameters in Mine-proximal lakes, creeks, and rivers.

- Camp Lake System – Sustained rainfall was associated with elevated concentrations of total ammonia and aluminum. Spatially consistent correlations across Camp Lake indicate cumulative mine-proximal runoff influence. Tributaries (CLT1, CLT2) and reference streams showed minimal rainfall sensitivity, reflecting hydrological buffering and limited flow-chemistry coupling.
- Sheardown Lake System – Significant water chemistry-rainfall correlations were generally stronger in Sheardown Lake SE than in Sheardown Lake NW or SDLT1. At Sheardown Lake SE, aqueous concentrations of nitrate, TKN, and total ammonia, aluminum, iron, lead, nickel were significantly ($p \leq 0.1$) and moderately to strongly correlated with 3-day and/or 30-day mean and maximum rainfall. Prolonged rainfall increased aqueous concentrations of total ammonia in Sheardown Lake NW, whereas nitrate concentrations showed consistent negative relationships with rainfall. These results were considered indicative of rainfall-driven shifts in the rates of nitrogen loading versus nitrogen cycling within the lake and possible remobilization of certain parameters from sediments, given the changes in concentrations occurred without parallel increases in turbidity. Aqueous concentrations of nitrate, turbidity, and total aluminum, iron, lead, and nickel were weakly to moderately well-correlated with 3- and 30-day mean and maximum discharges in SDLT1.
- Mary River and Mary Lake Systems – The exposed reach of Mary River downstream from MRTF showed relatively few, localized significant correlations between concentrations of water quality parameters and rainfall or discharge. Upstream reference stations were largely chemostatic, reflecting stable, undisturbed catchment conditions. In Mary Lake, the north basin exhibited short-term turbidity responses to rainfall, whereas the south basin showed longer-term rainfall-driven increases in concentrations of total ammonia, copper, and lead.
- concentrations of all evaluated parameters (i.e., total ammonia, nitrate, nitrite, TKN, and total aluminum, arsenic, cadmium, chromium, copper, iron, lead, nickel, and zinc) have remained below FEIS predictions for water quality due to Aqueous Non-Point Source



Emissions based on a maximum Level II magnitude of effect (i.e., concentrations 10 to 100 times the FEIS threshold) since mine operations began in 2015.

Overall, water chemistry conditions across mine-proximal basins were generally not significantly correlated, or only poorly to weakly correlated ($\rho \approx -0.3$ to 0.3) with rainfall and discharge endpoints. Event-scale precipitation may mobilize nutrients and metals in lakes and downstream environments, whereas tributaries and reference systems remained relatively hydrologically and chemically stable.

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FIGURES



Figure 1: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 1 (CLT1) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

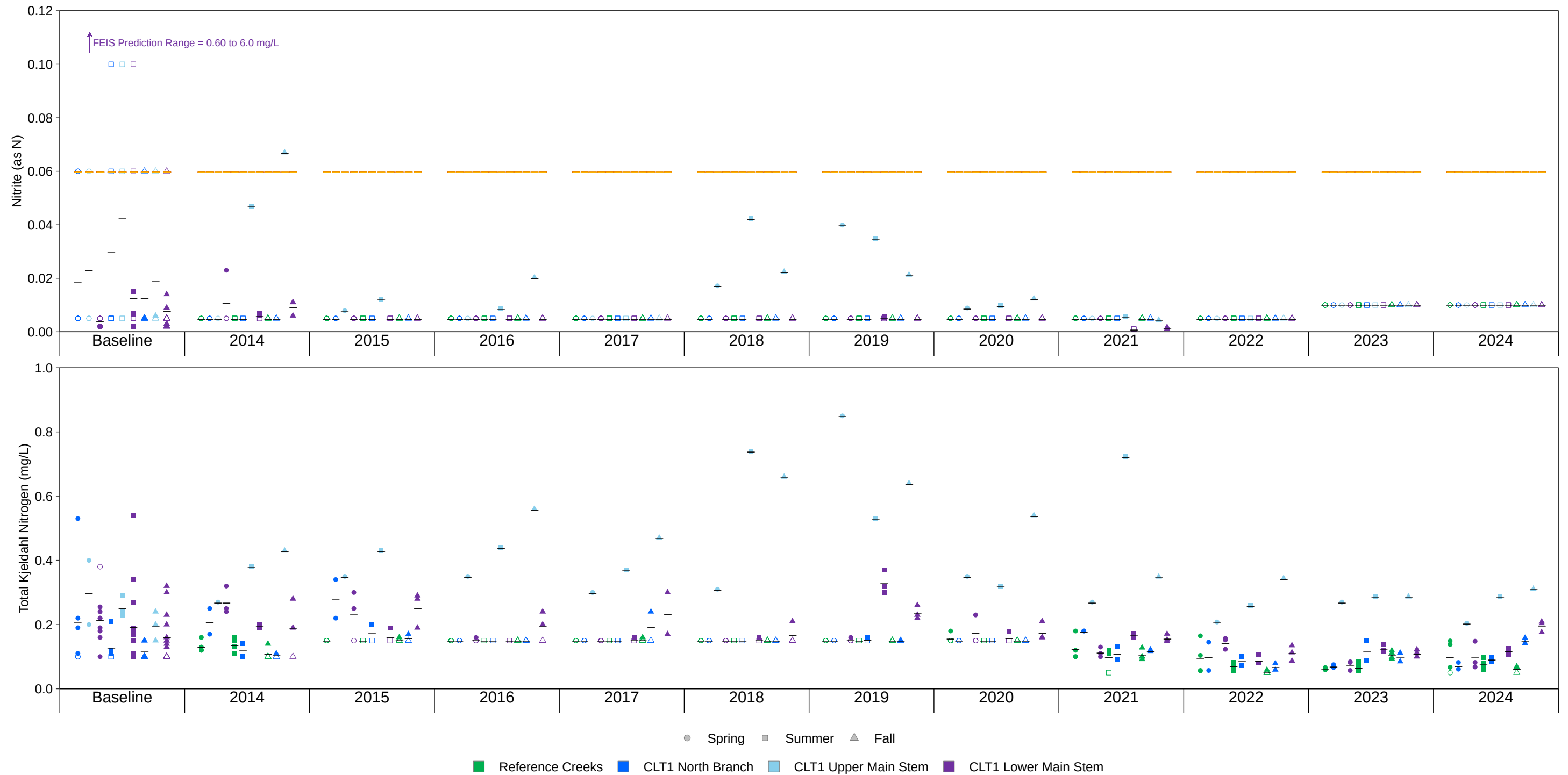


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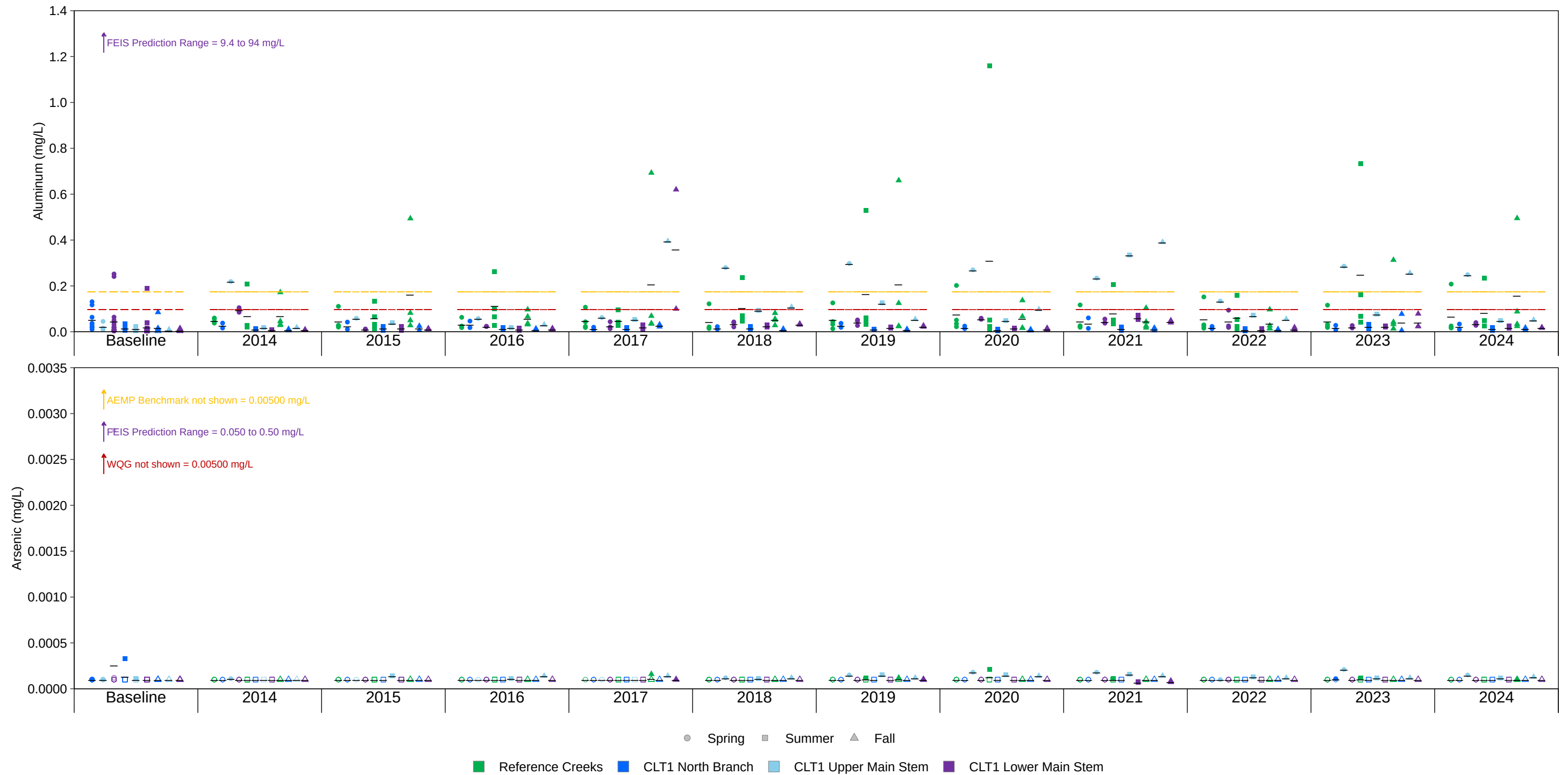


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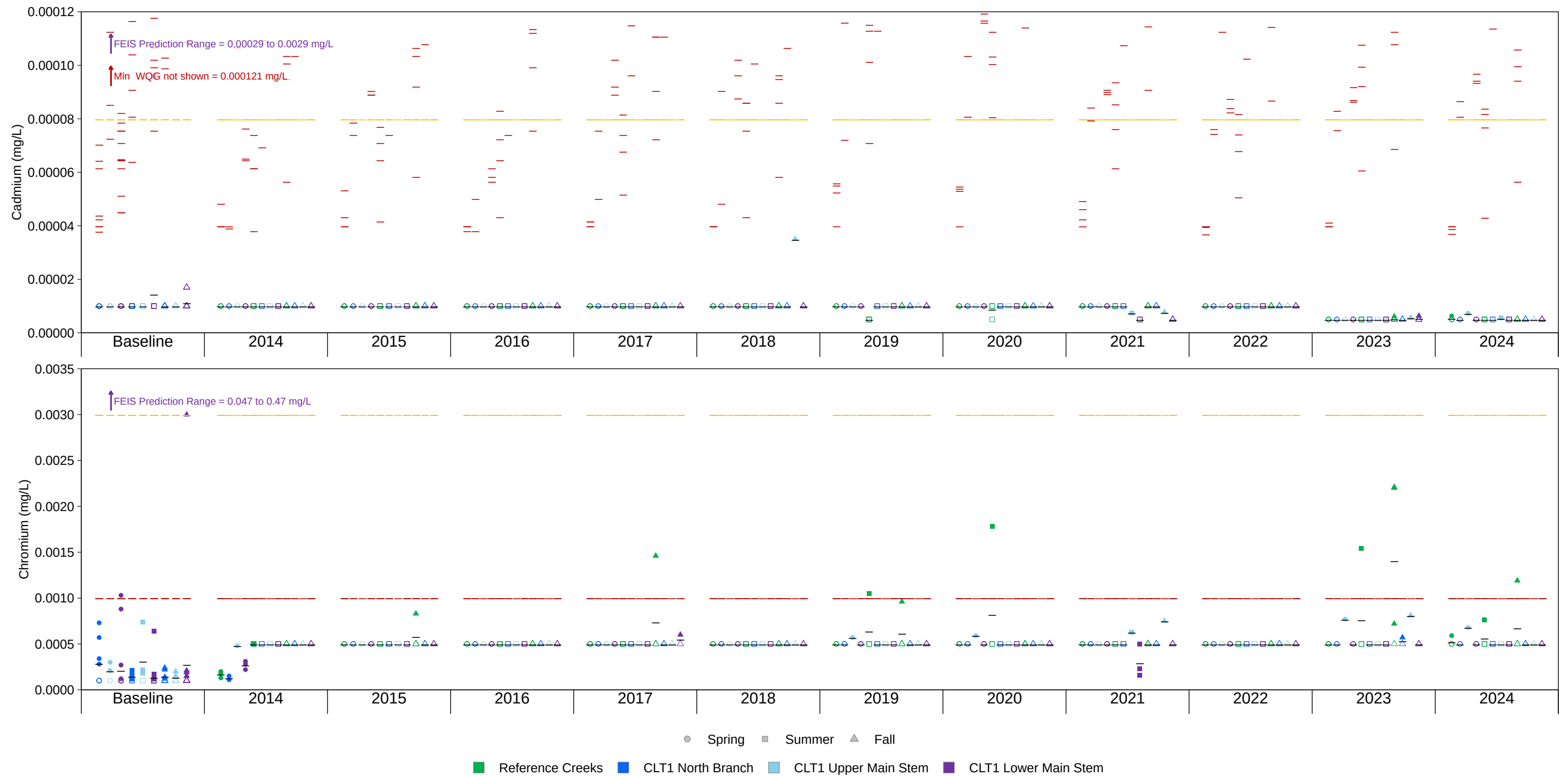


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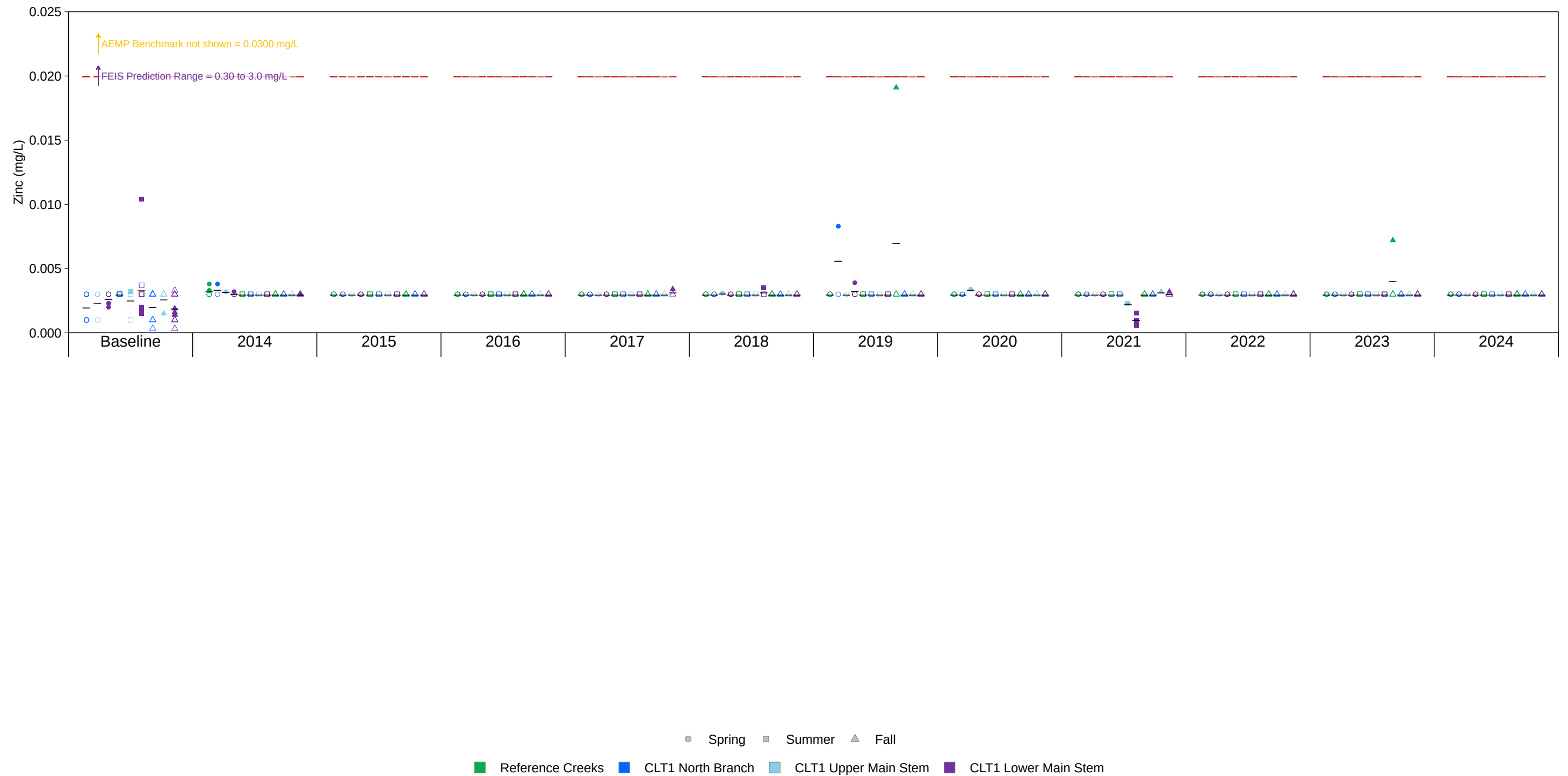


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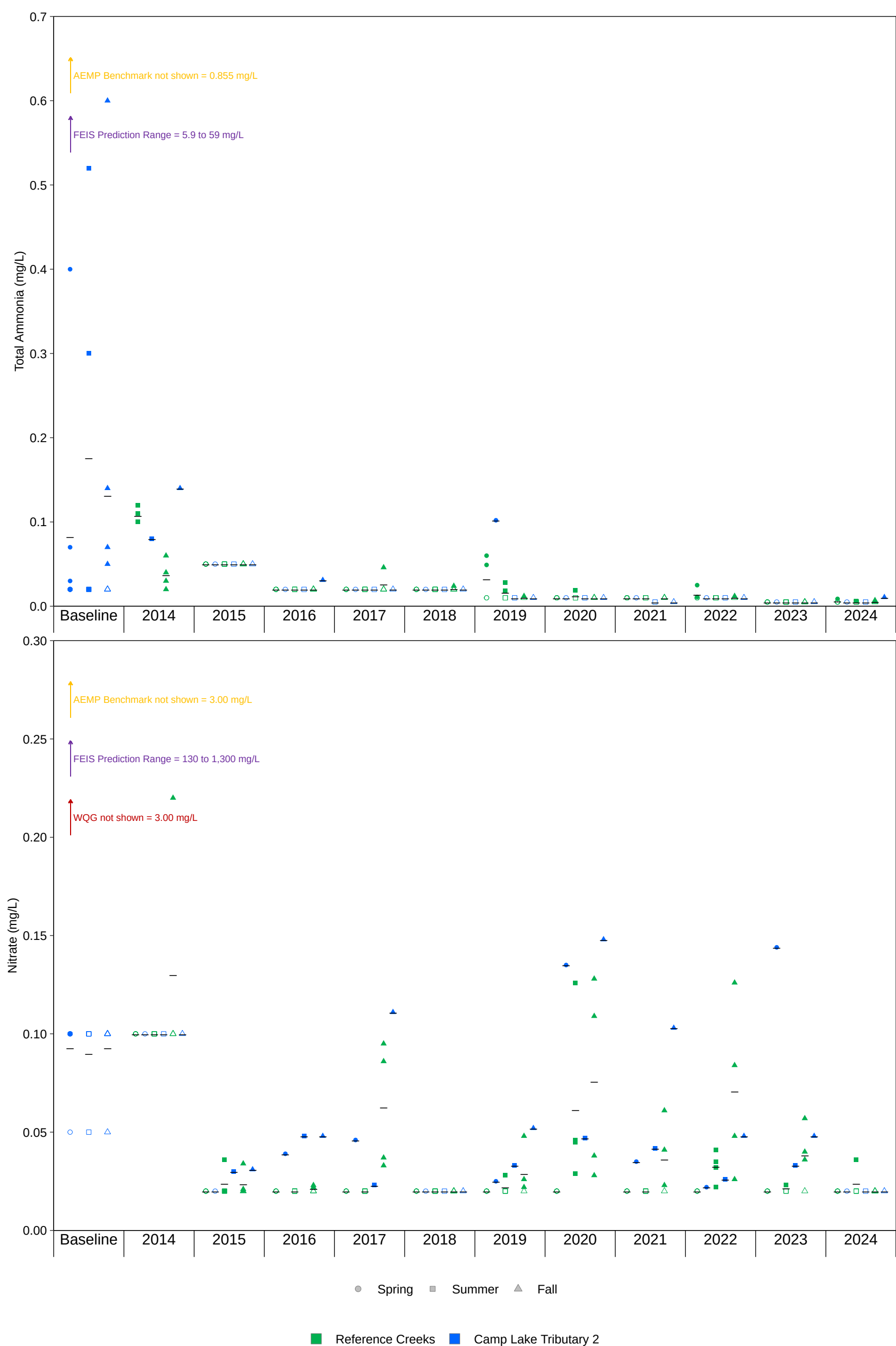


Figure 2: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 2 (CLT2) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

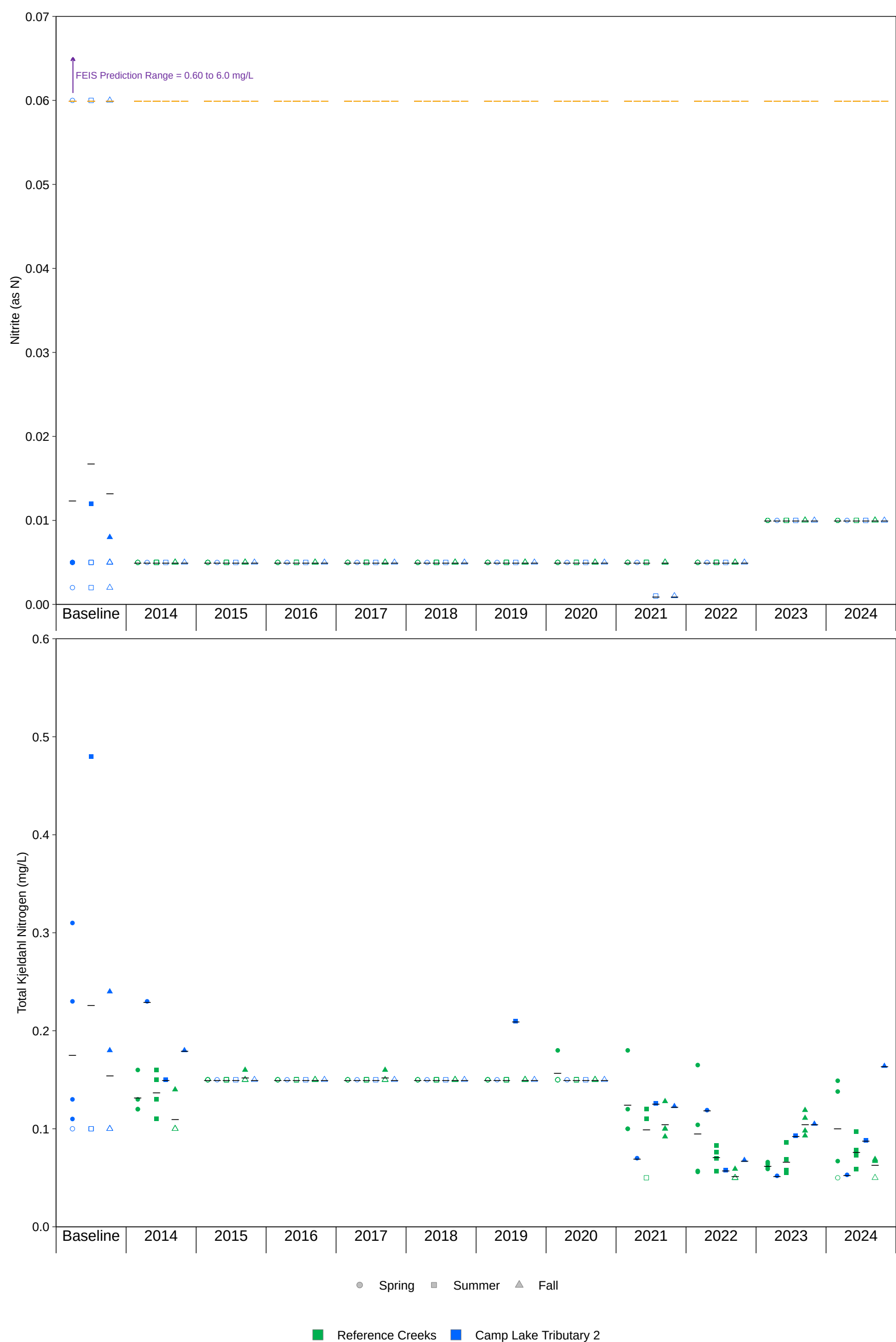


Figure 2: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 2 (CLT2) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

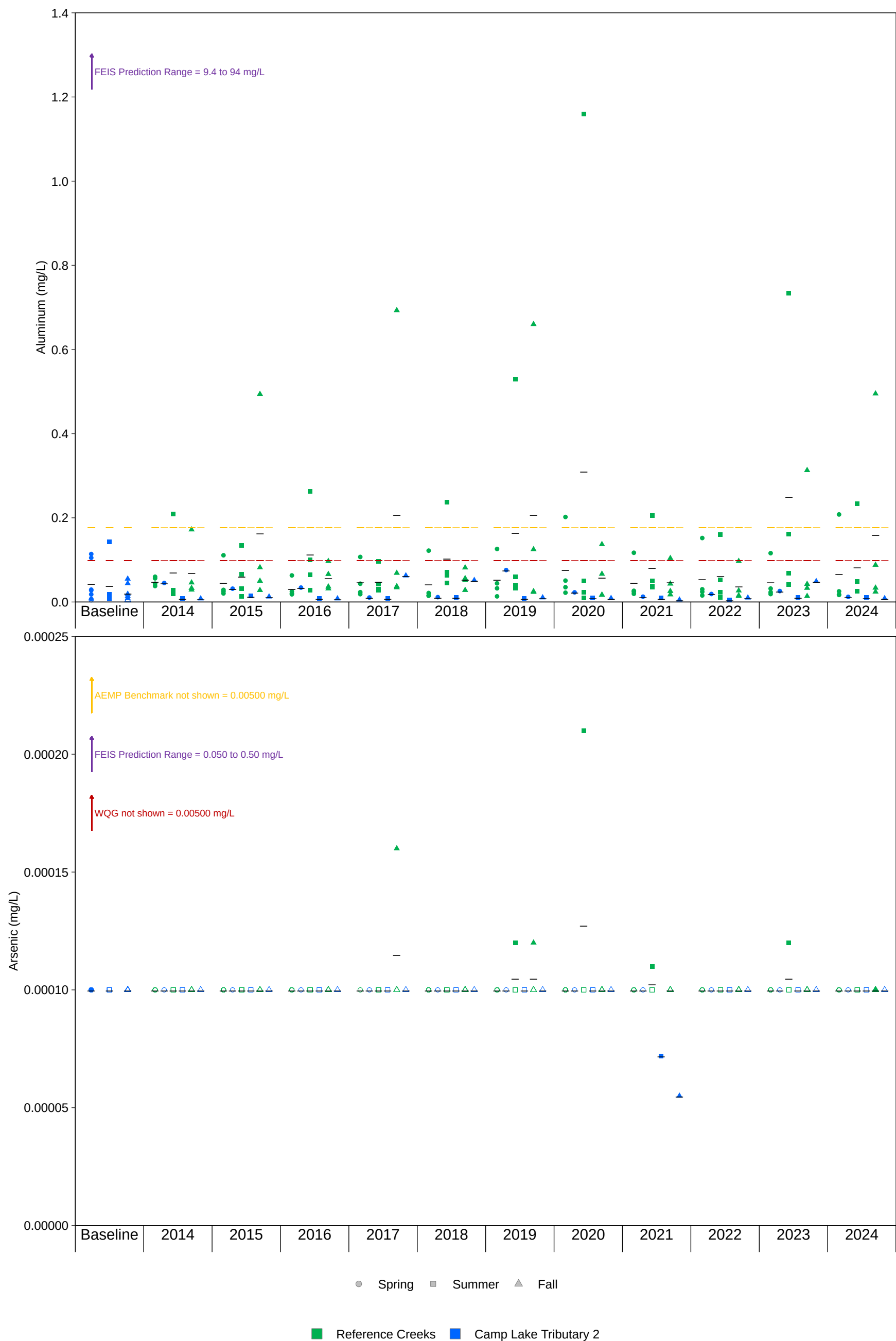


Figure 2: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 2 (CLT2) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

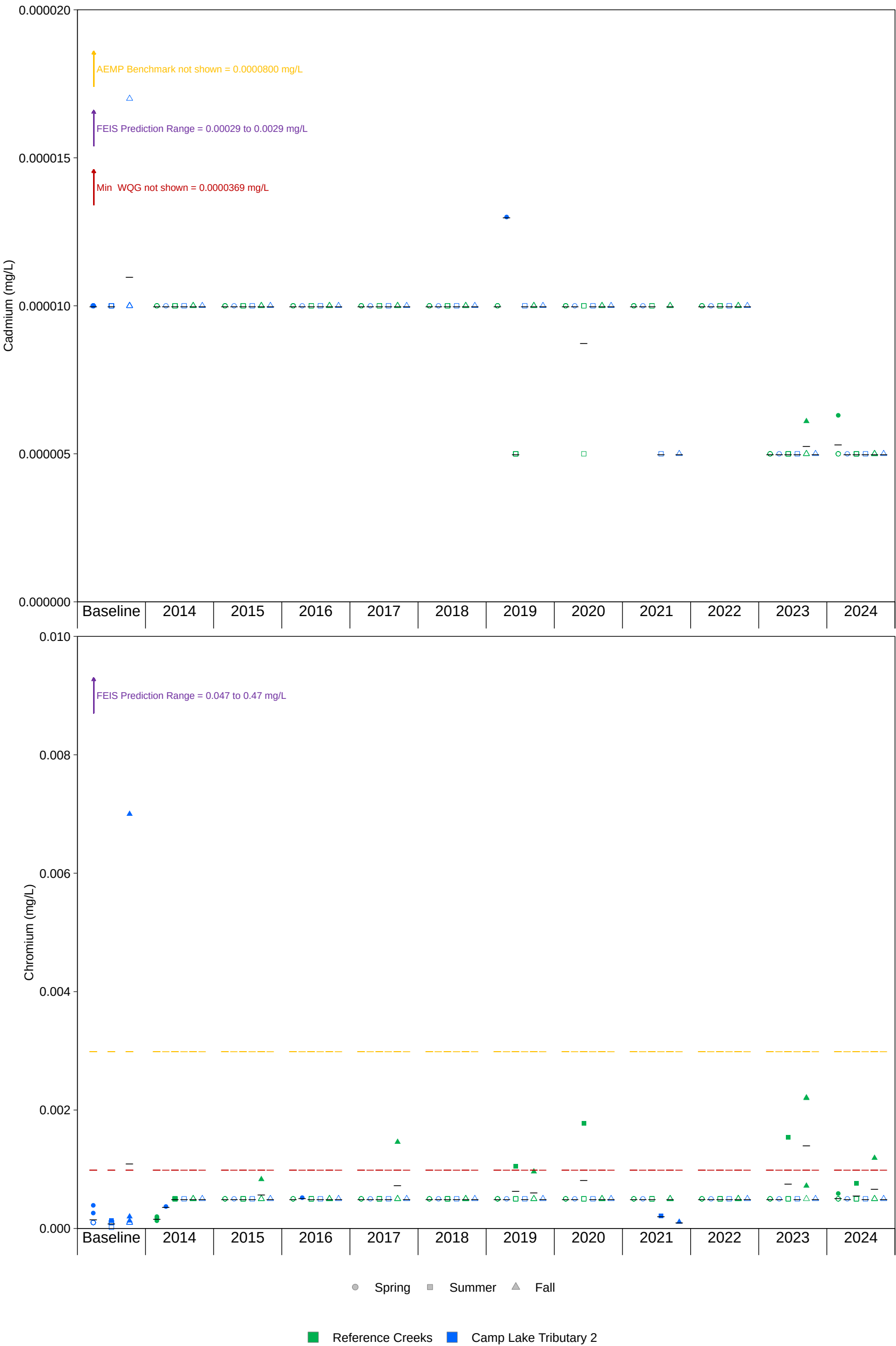


Figure 2: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 2 (CLT2) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

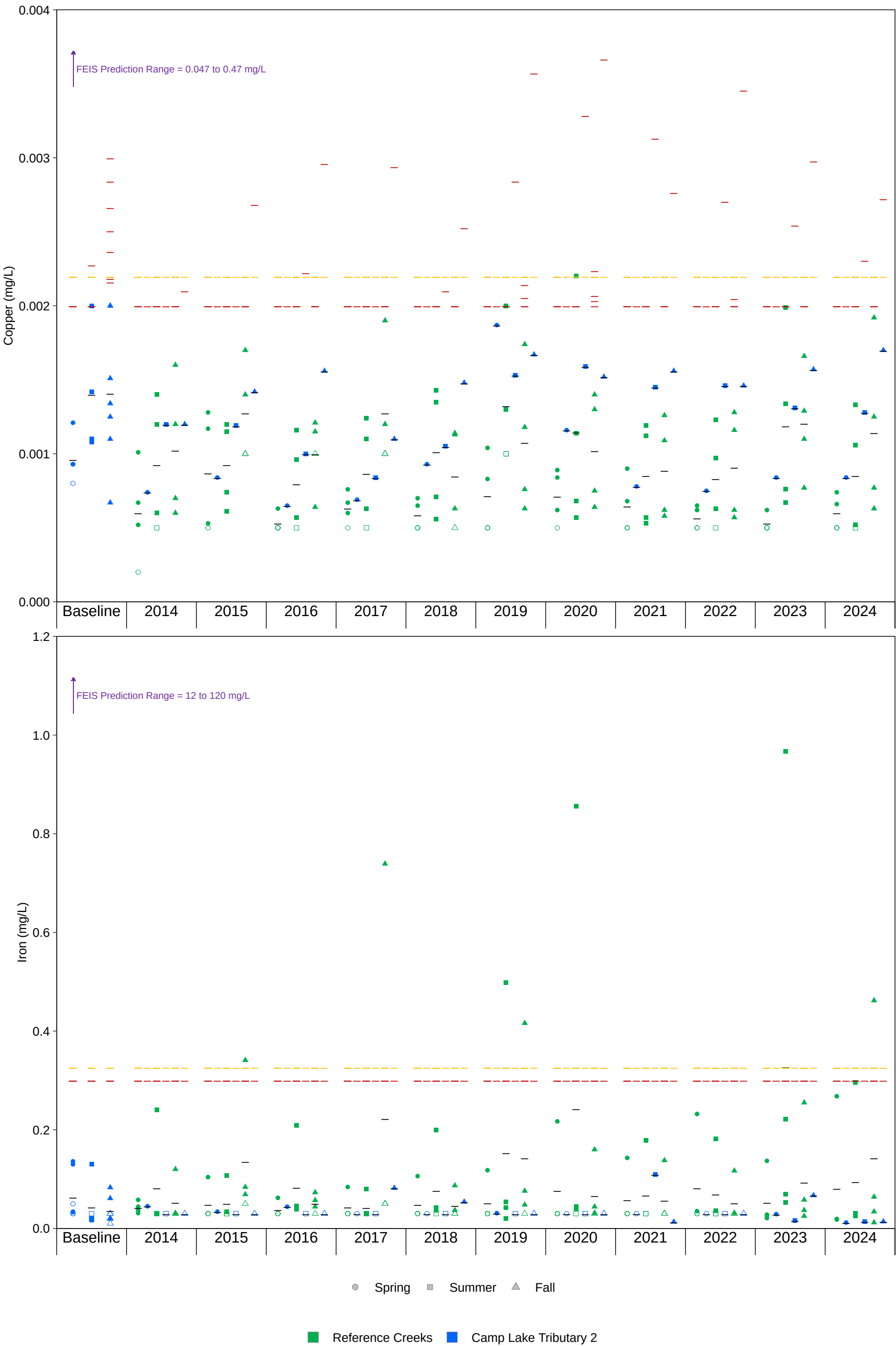


Figure 2: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 2 (CLT2) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

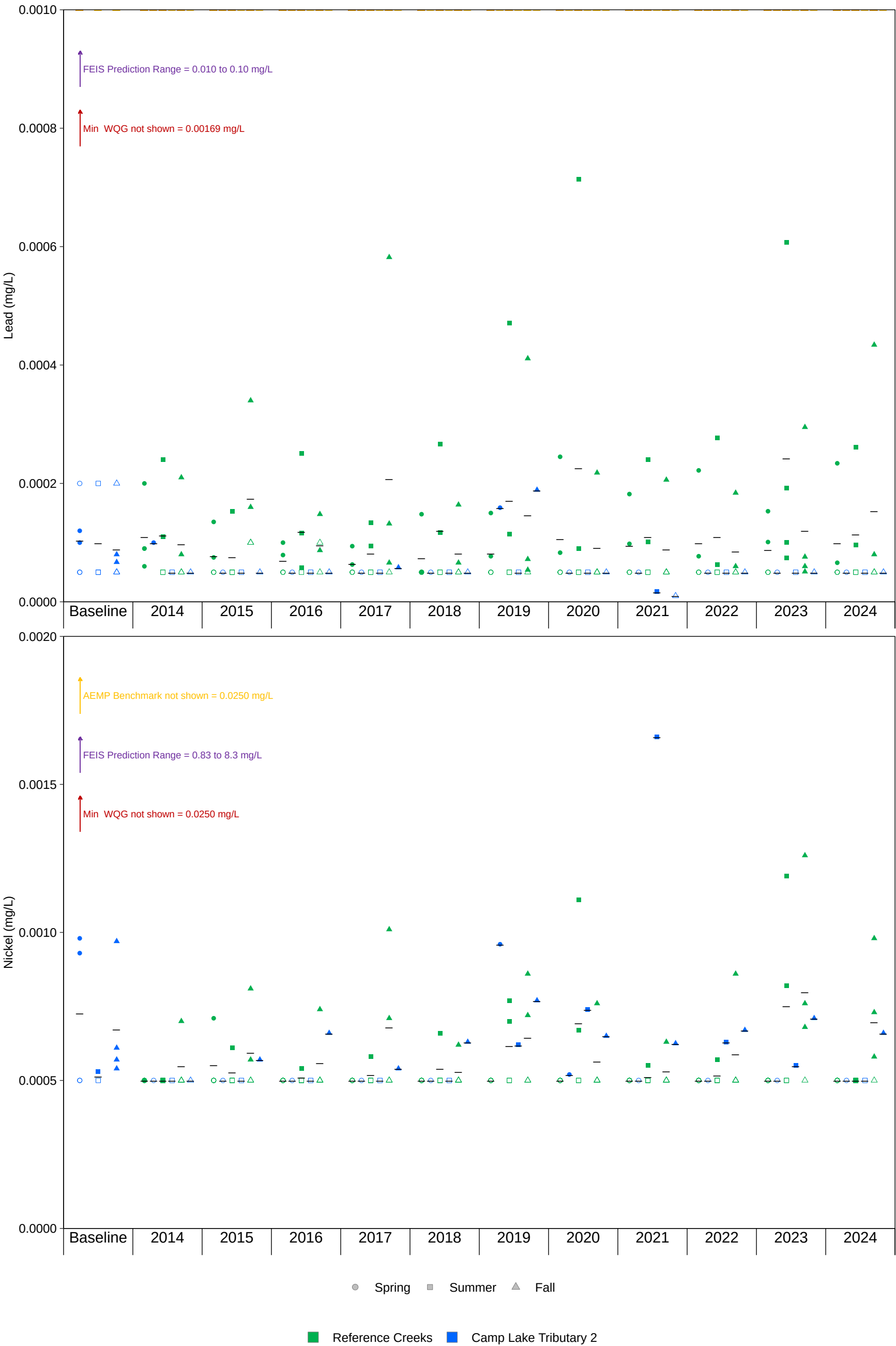


Figure 2: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 2 (CLT2) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

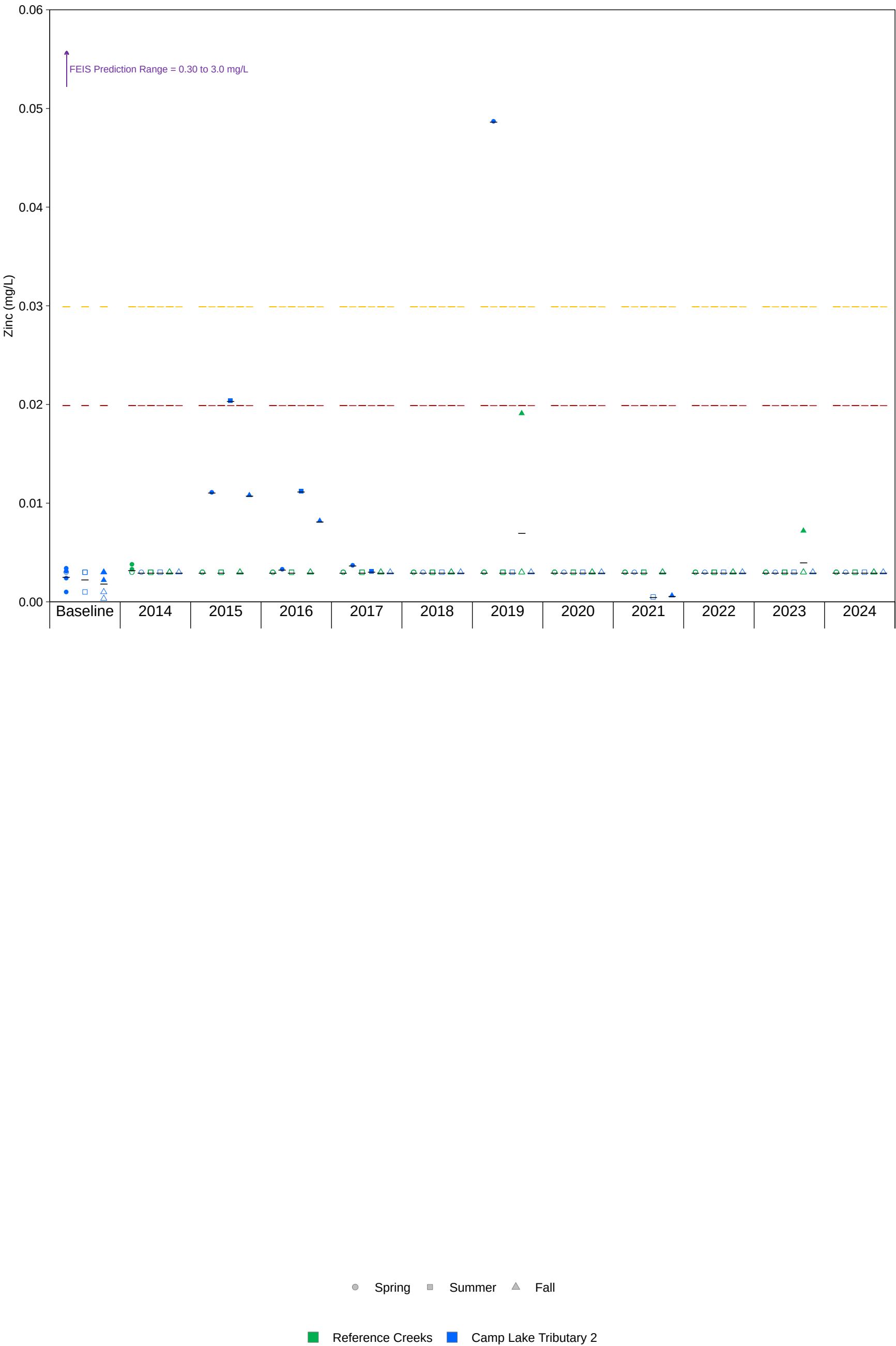


Figure 2: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake Tributary 2 (CLT2) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

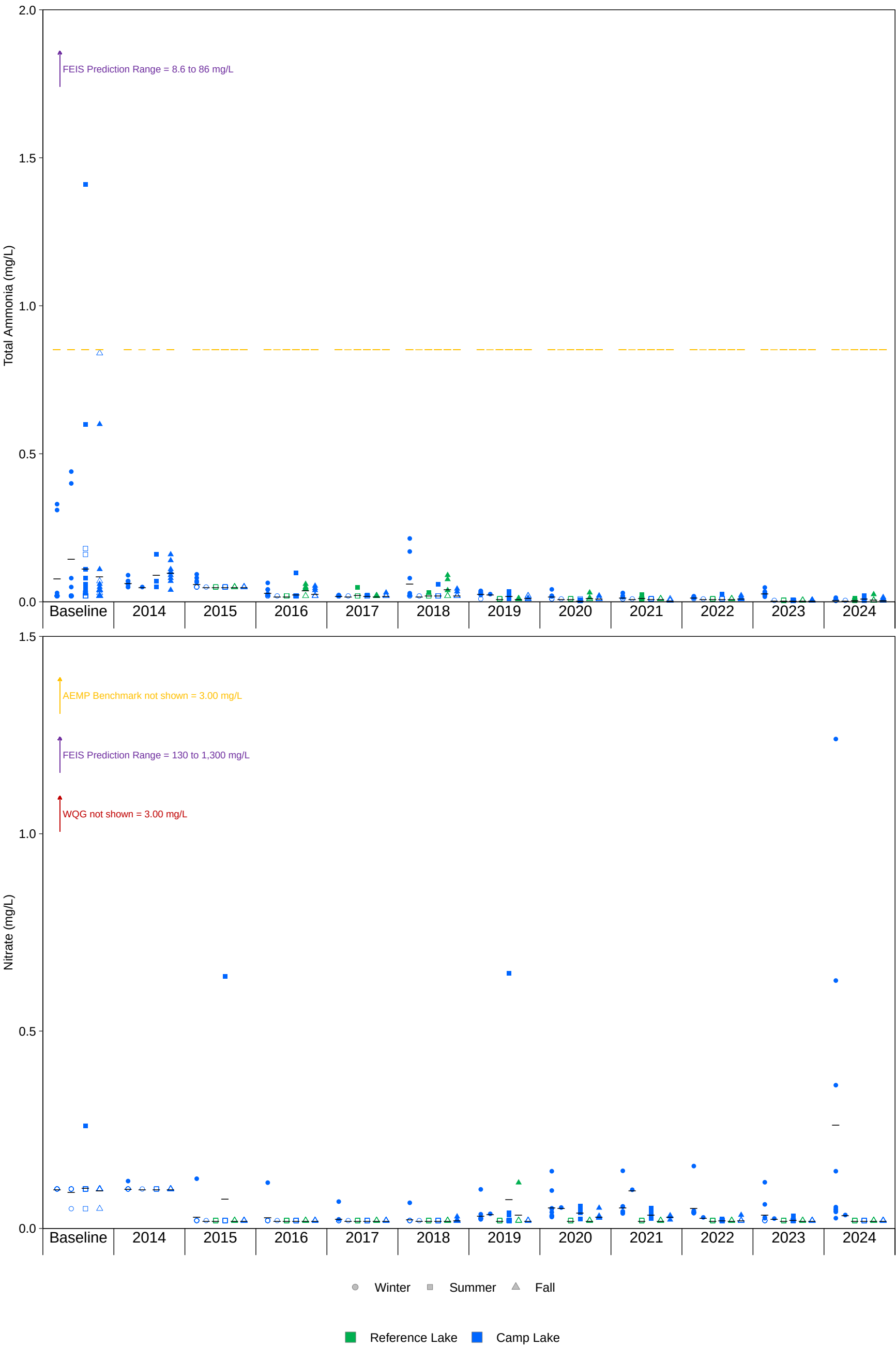


Figure 3: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake (JL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

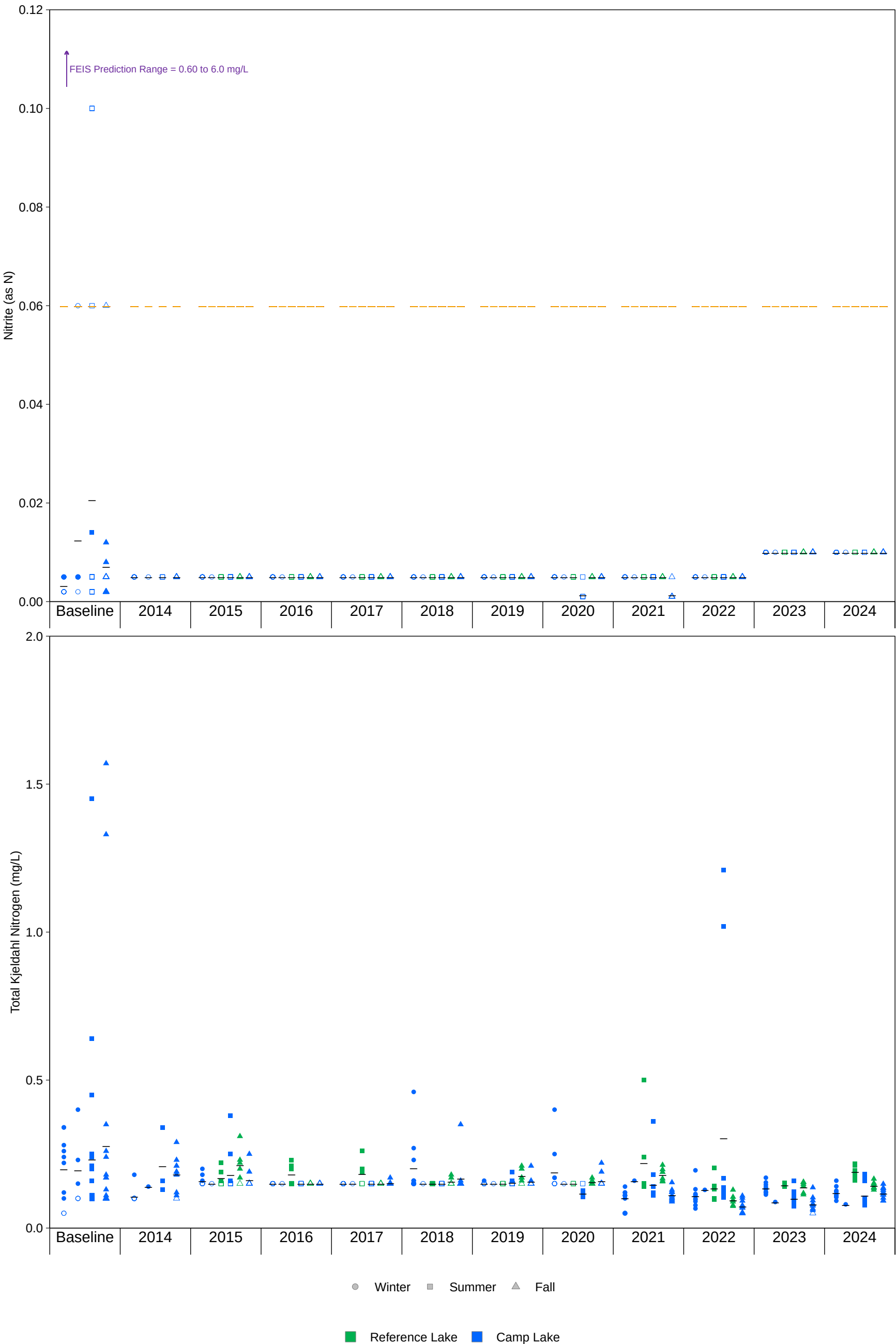


Figure 3: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake (JL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

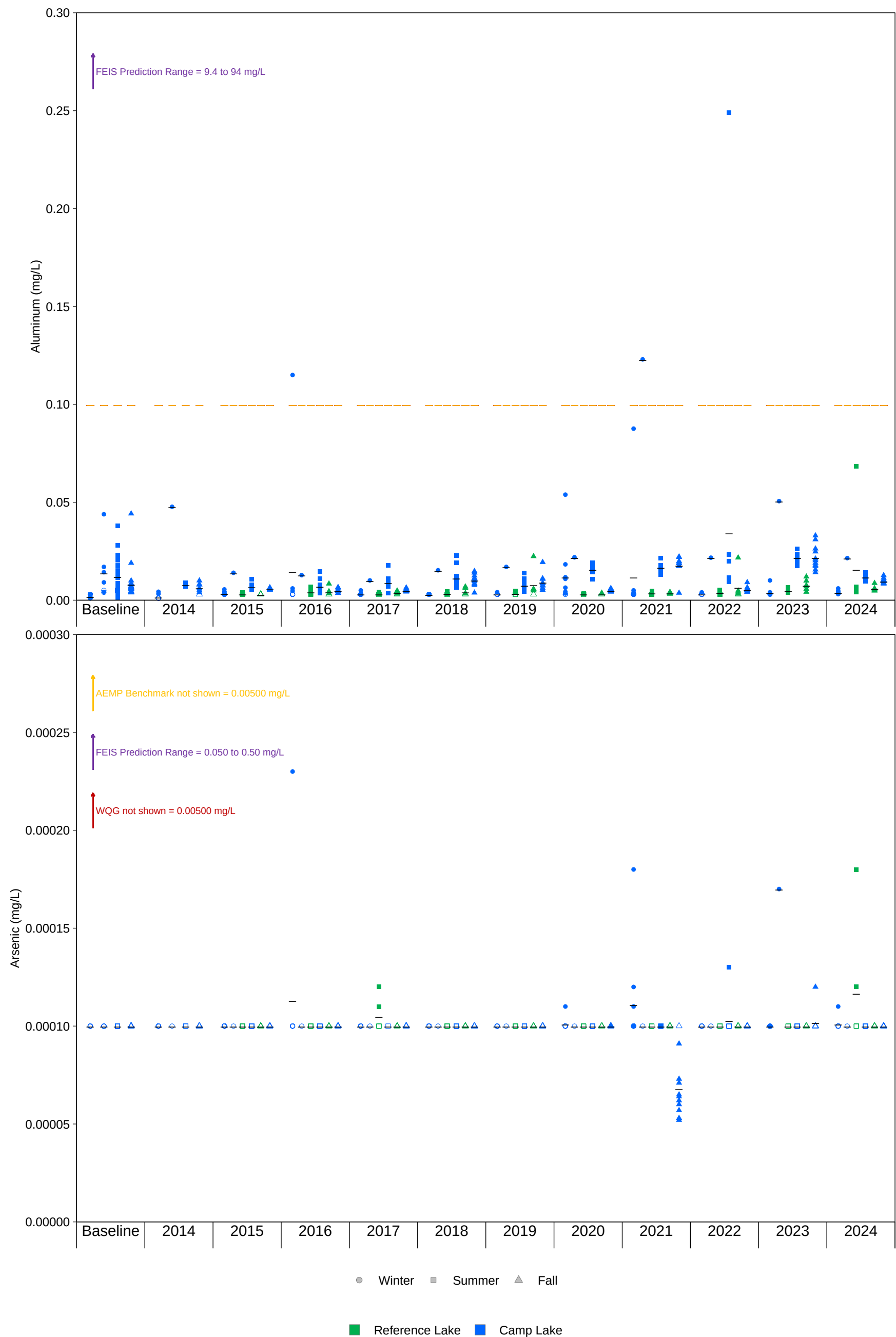


Figure 3: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake (JL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods,Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

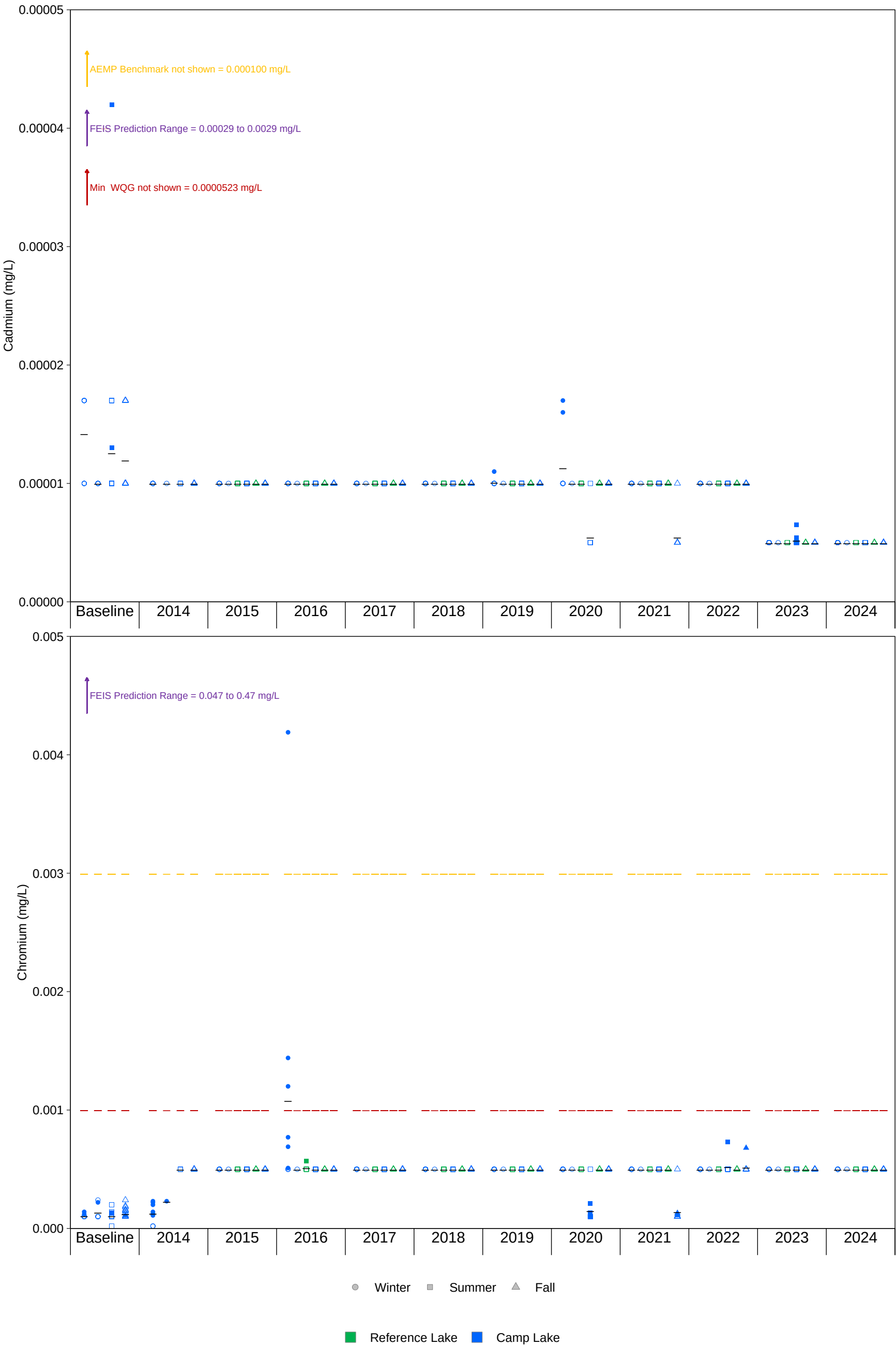


Figure 3: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake (JL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

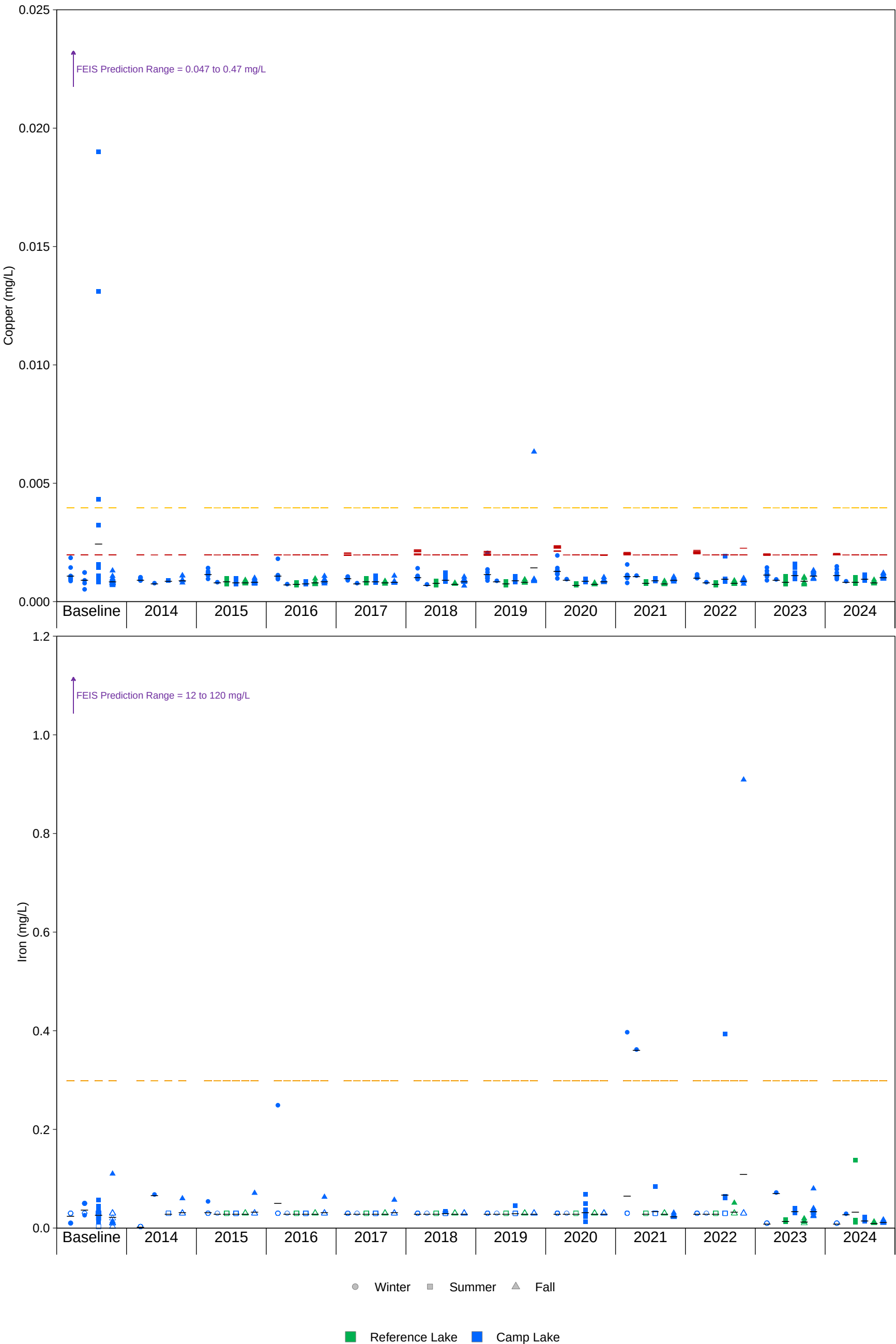


Figure 3: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake (JL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

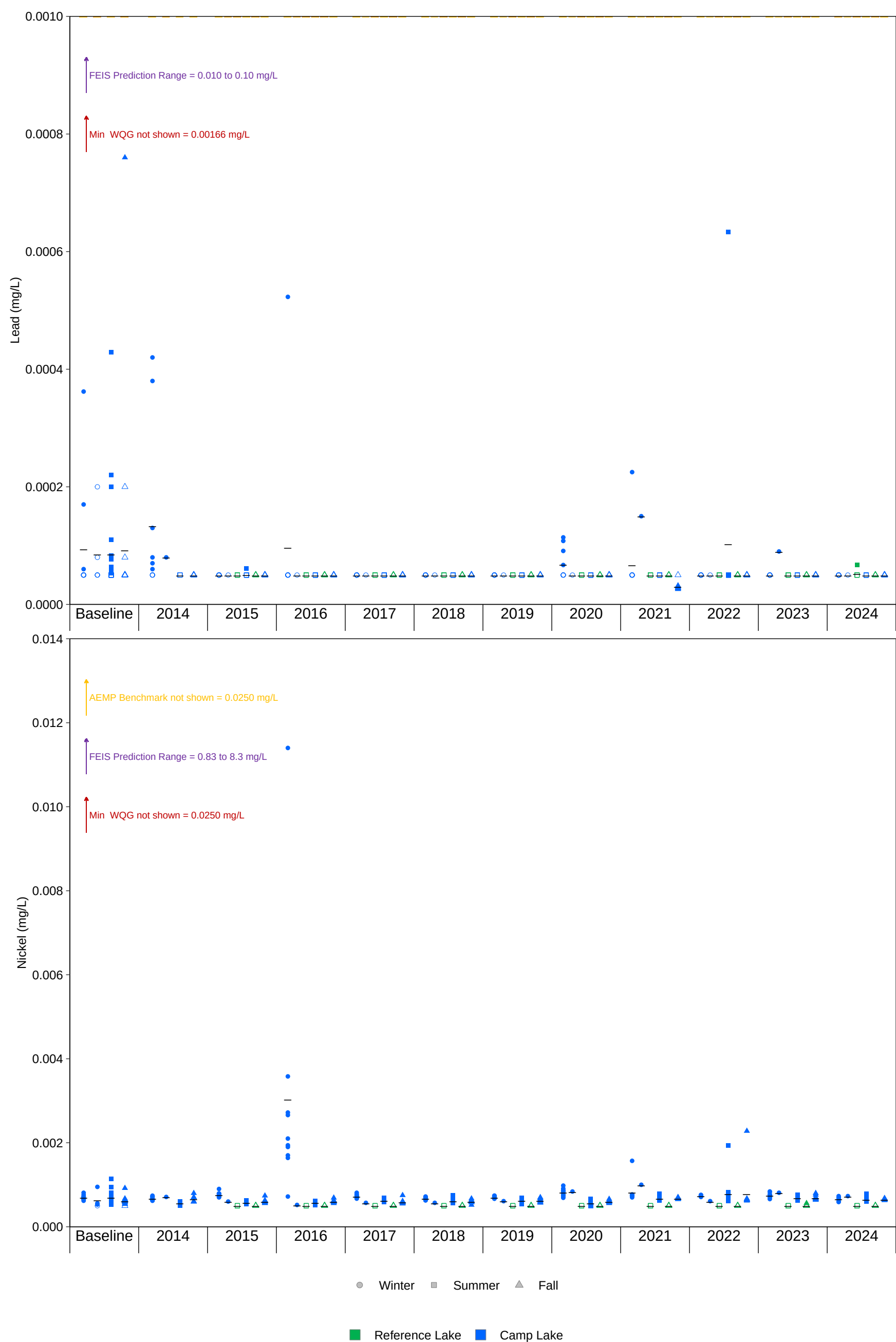


Figure 3: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake (JL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

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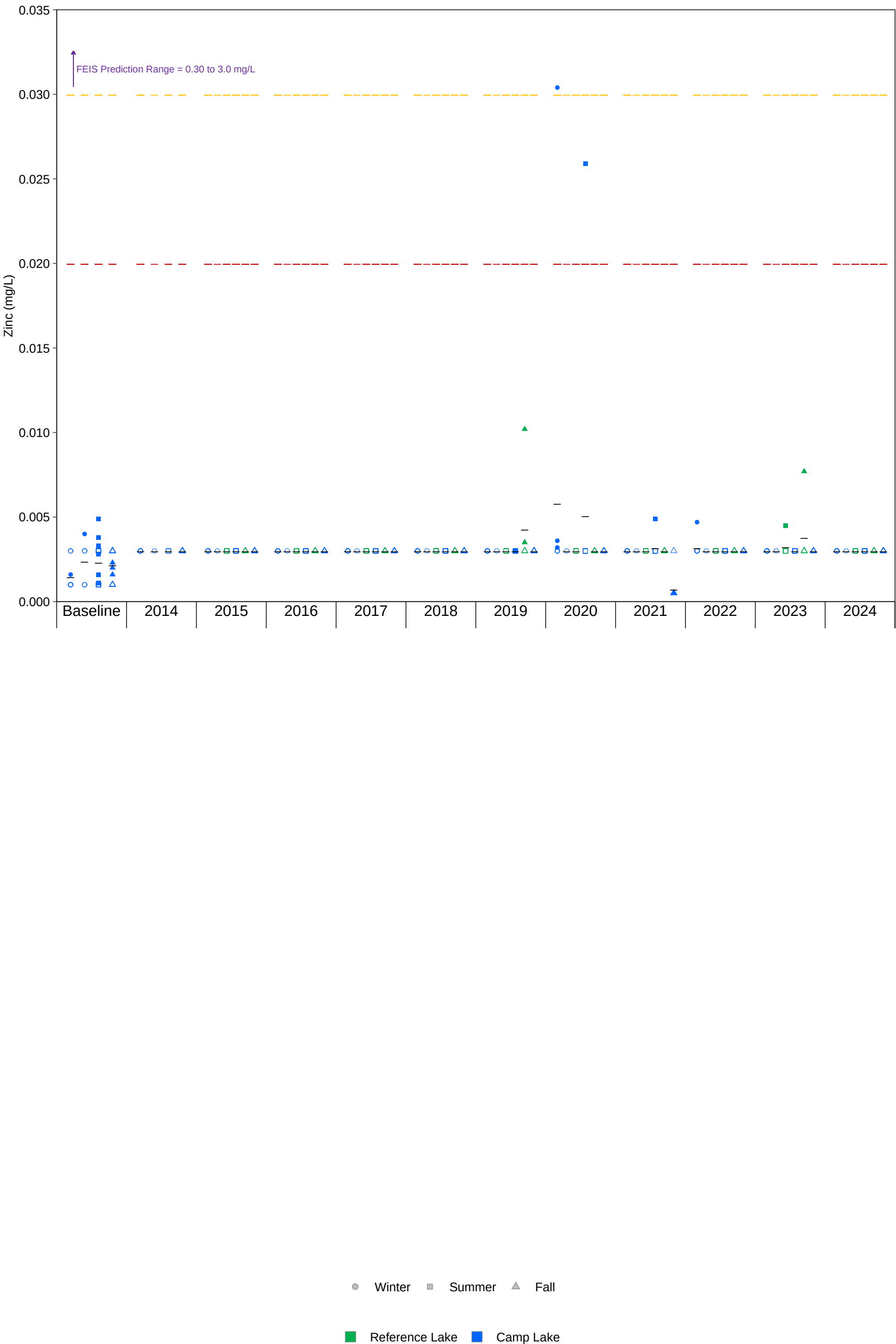


Figure 3: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Camp Lake (JL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

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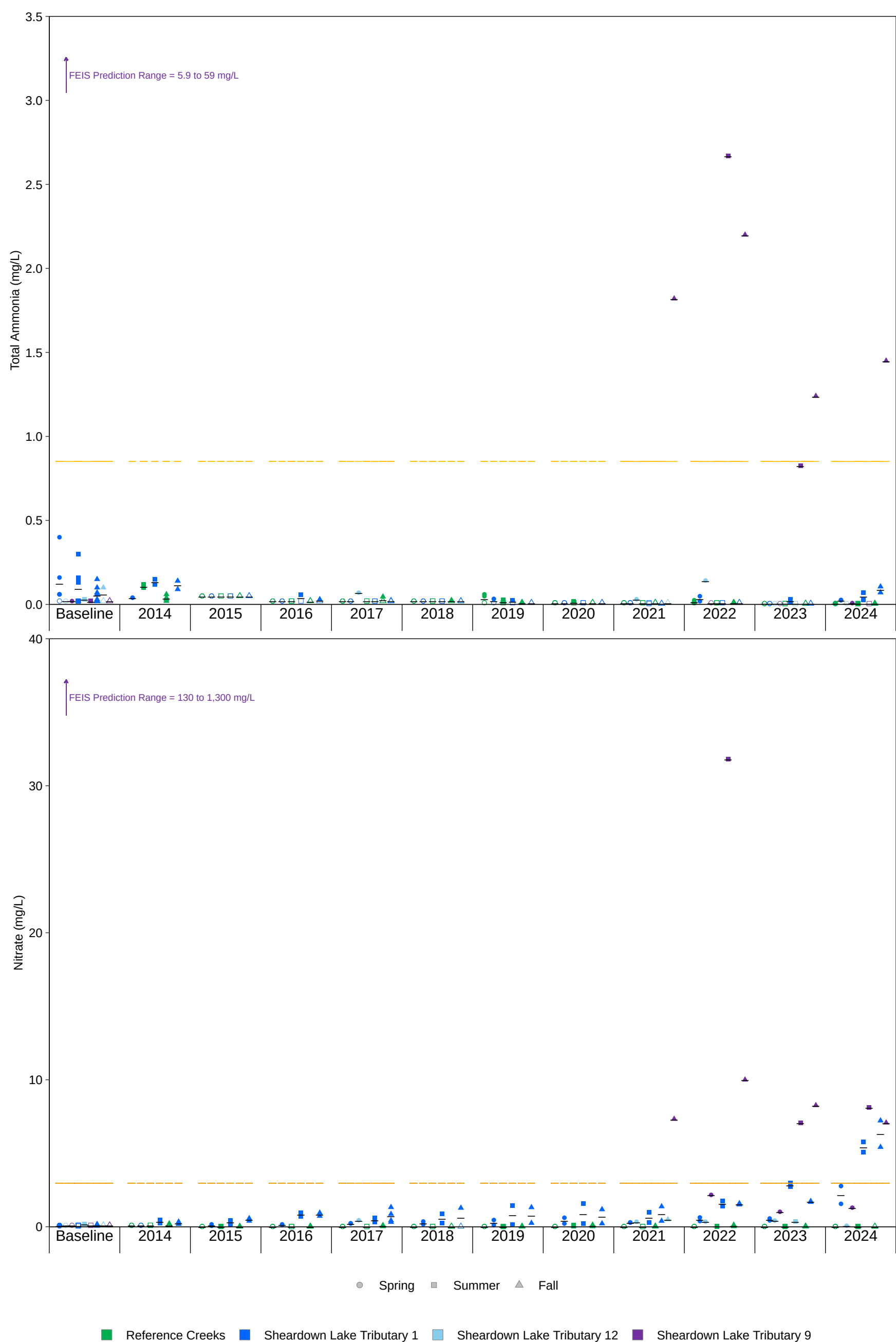


Figure 4: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at the Sheardown Lake Tributaries (SDLT1, SDLT12, SDLT9) Over Mine Baseline (2006 to 2013) and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data. Sheardown Lake Tributary 12 (SDLT12/ LDFG-OUT) and Sheardown Lake Tributary 9 (SDLT9/MS-C-G) stations were added to the CREMP in fall 2021.

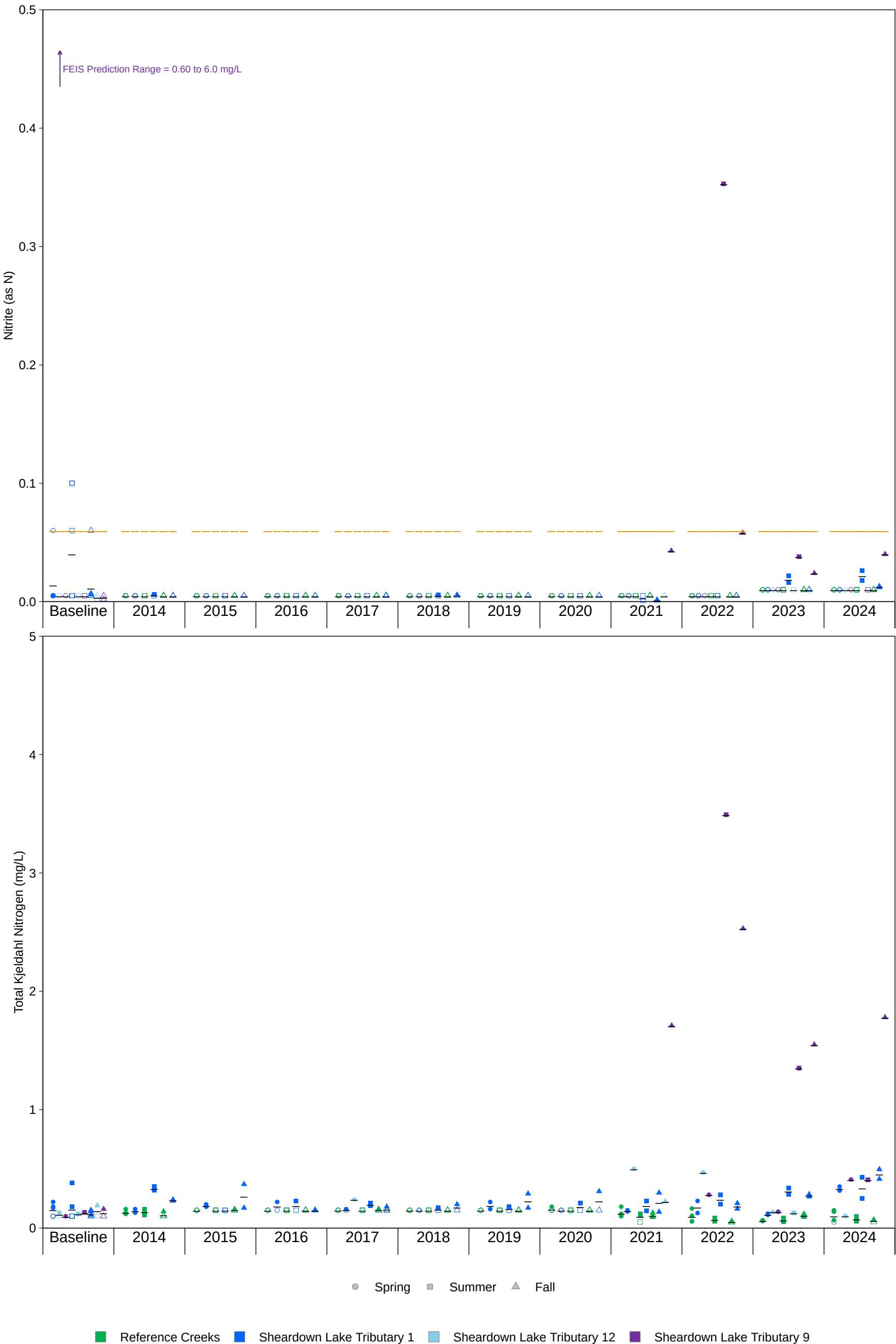


Figure 4: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at the Sheardown Lake Tributaries (SDLT1, SDLT12, SDLT9) Over Mine Baseline (2006 to 2013) and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data. Sheardown Lake Tributary 12 (SDLT12/ LDFG-OUT) and Sheardown Lake Tributary 9 (SDLT9/MS-C-G) stations were added to the CREMP in fall 2021.

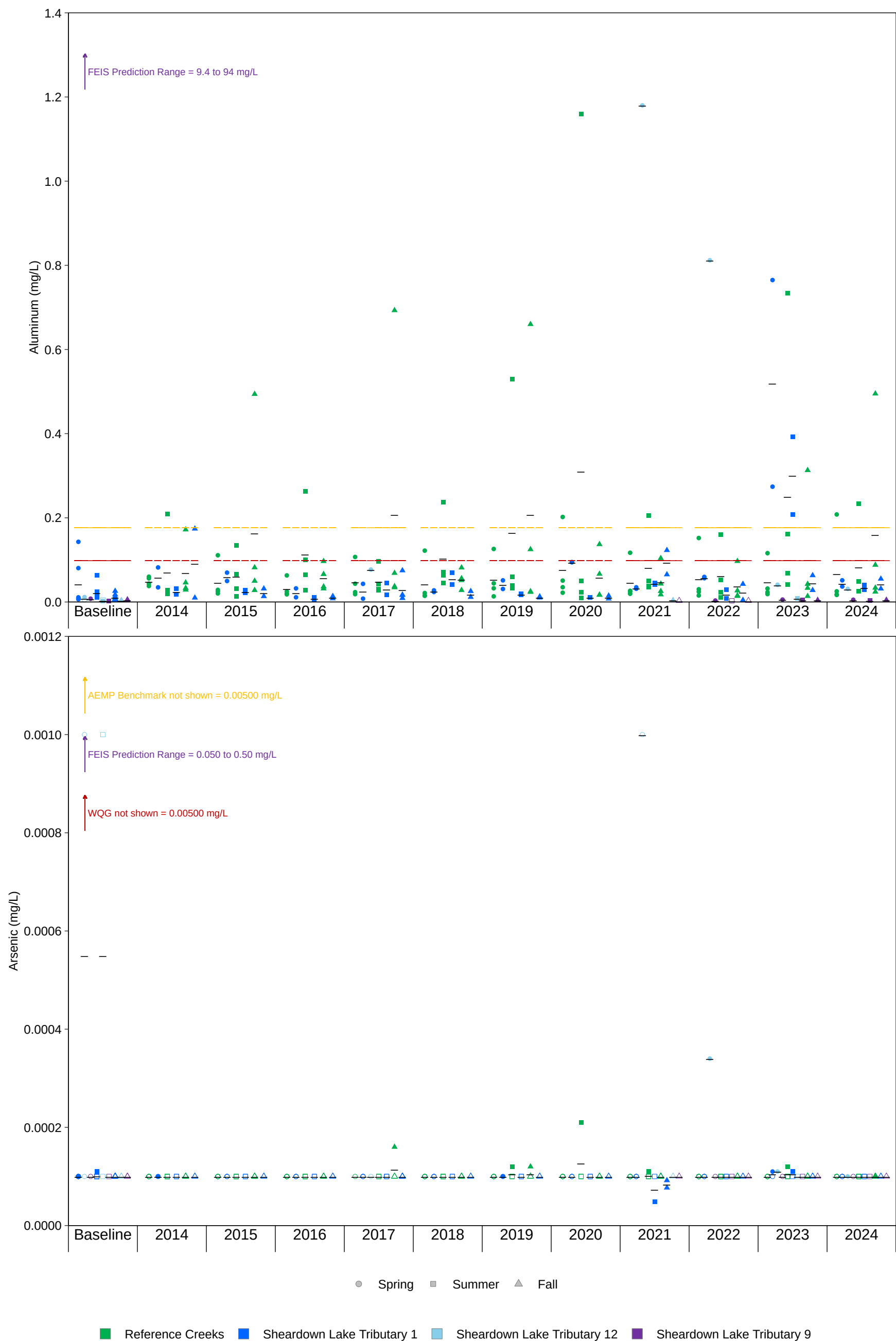


Figure 4: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at the Sheardown Lake Tributaries (SDLT1, SDLT12, SDLT9) Over Mine Baseline (2006 to 2013) and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data. Sheardown Lake Tributary 12 (SDLT12/ LDFG-OUT) and Sheardown Lake Tributary 9 (SDLT9/MS-C-G) stations were added to the CREMP in fall 2021.

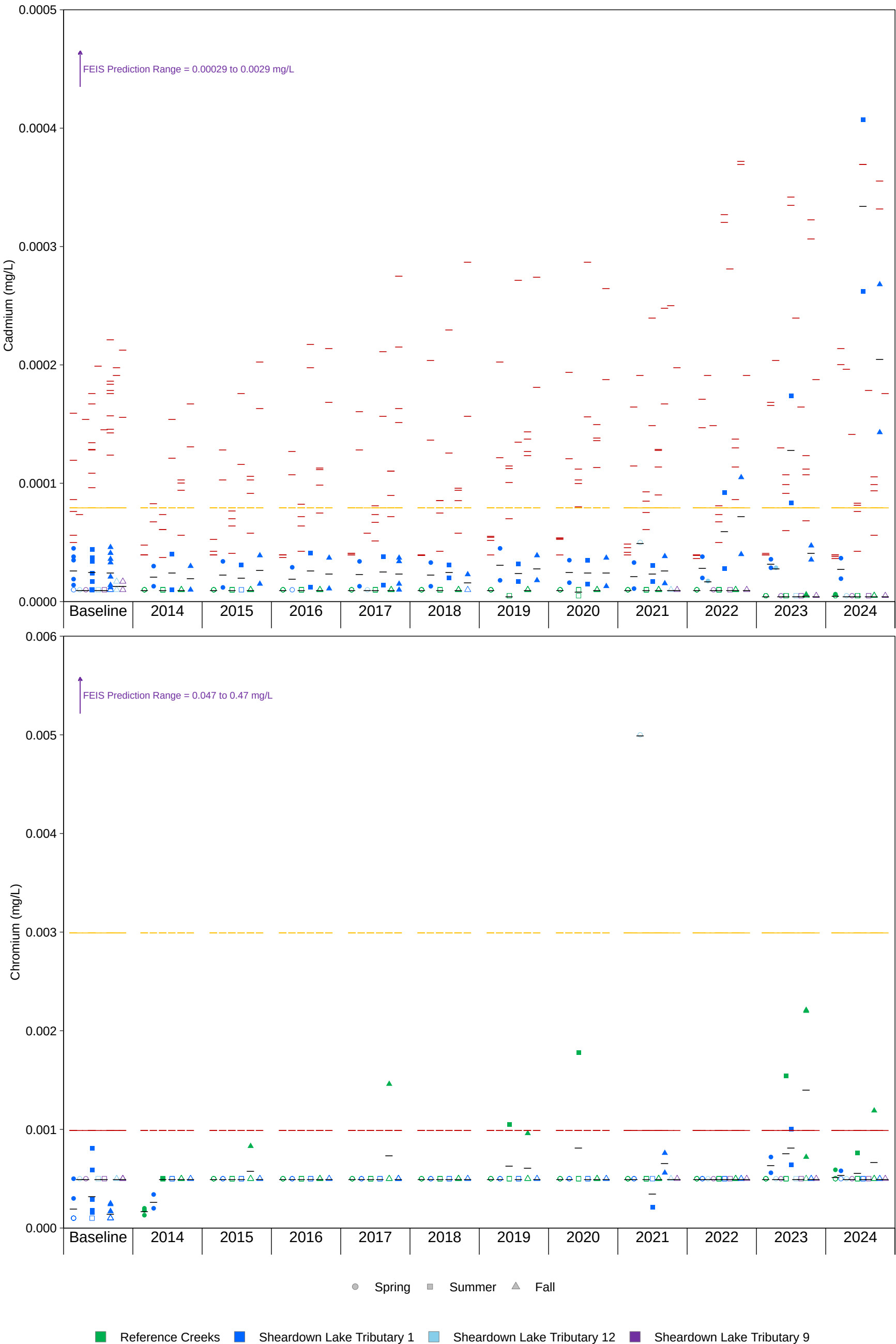


Figure 4: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at the Sheardown Lake Tributaries (SDLT1, SDLT12, SDLT9) Over Mine Baseline (2006 to 2013) and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data. Sheardown Lake Tributary 12 (SDLT12/ LDFG-OUT) and Sheardown Lake Tributary 9 (SDLT9/MS-C-G) stations were added to the CREMP in fall 2021.

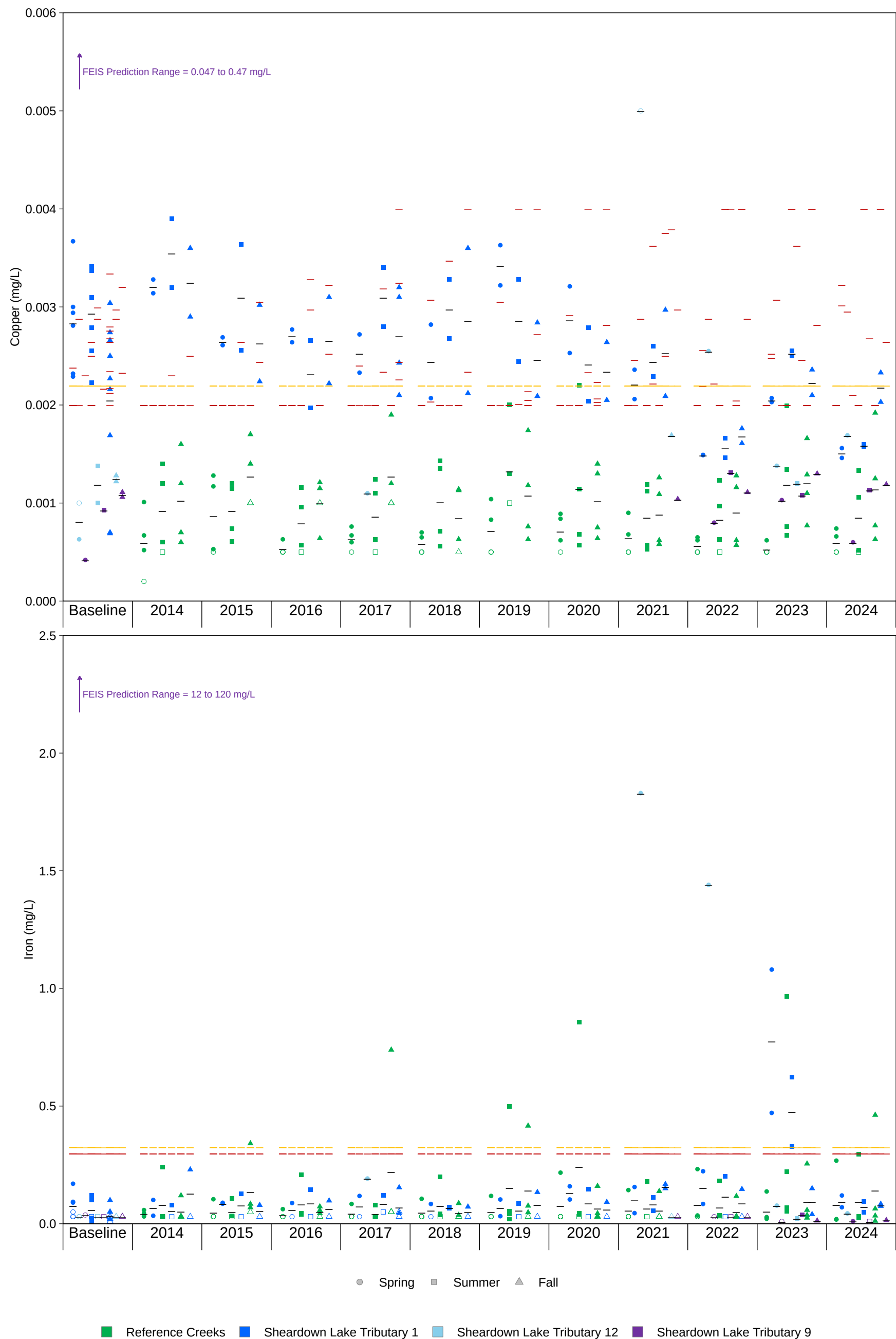


Figure 4: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at the Sheardown Lake Tributaries (SDLT1, SDLT12, SDLT9) Over Mine Baseline (2006 to 2013) and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

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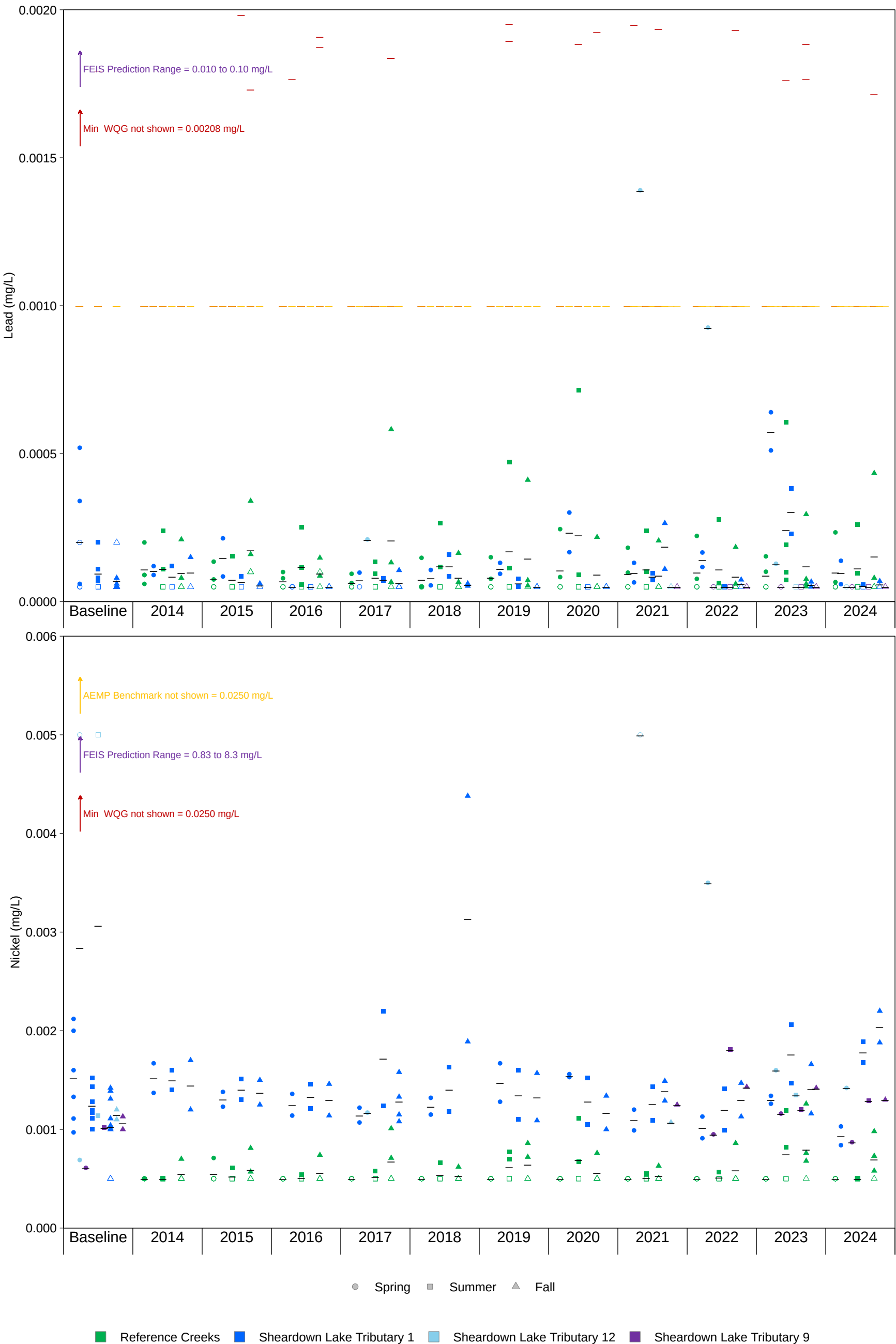


Figure 4: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at the Sheardown Lake Tributaries (SDLT1, SDLT12, SDLT9) Over Mine Baseline (2006 to 2013) and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

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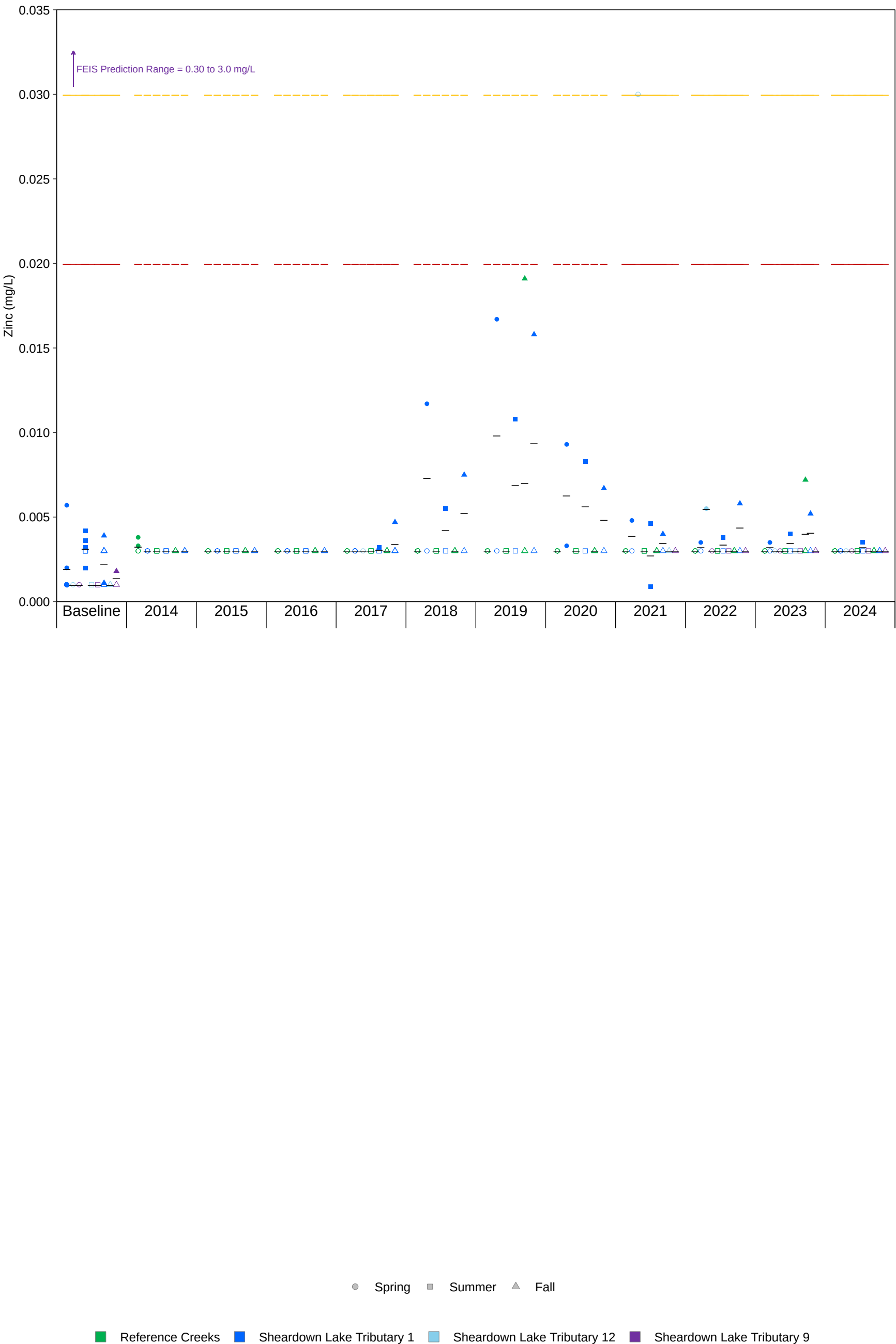


Figure 4: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at the Sheardown Lake Tributaries (SDLT1, SDLT12, SDLT9) Over Mine Baseline (2006 to 2013) and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

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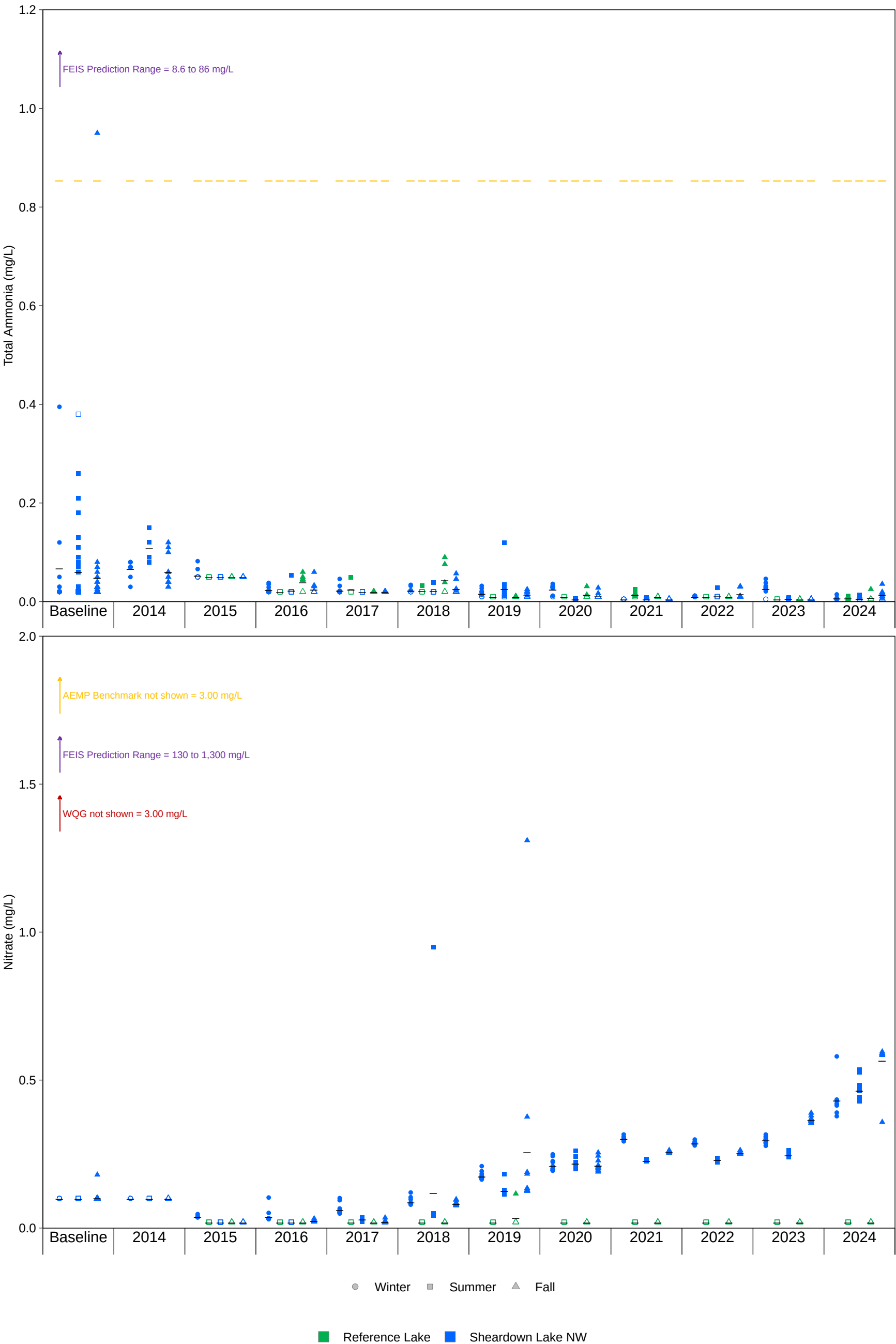


Figure 5: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake NW (DL0-01) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

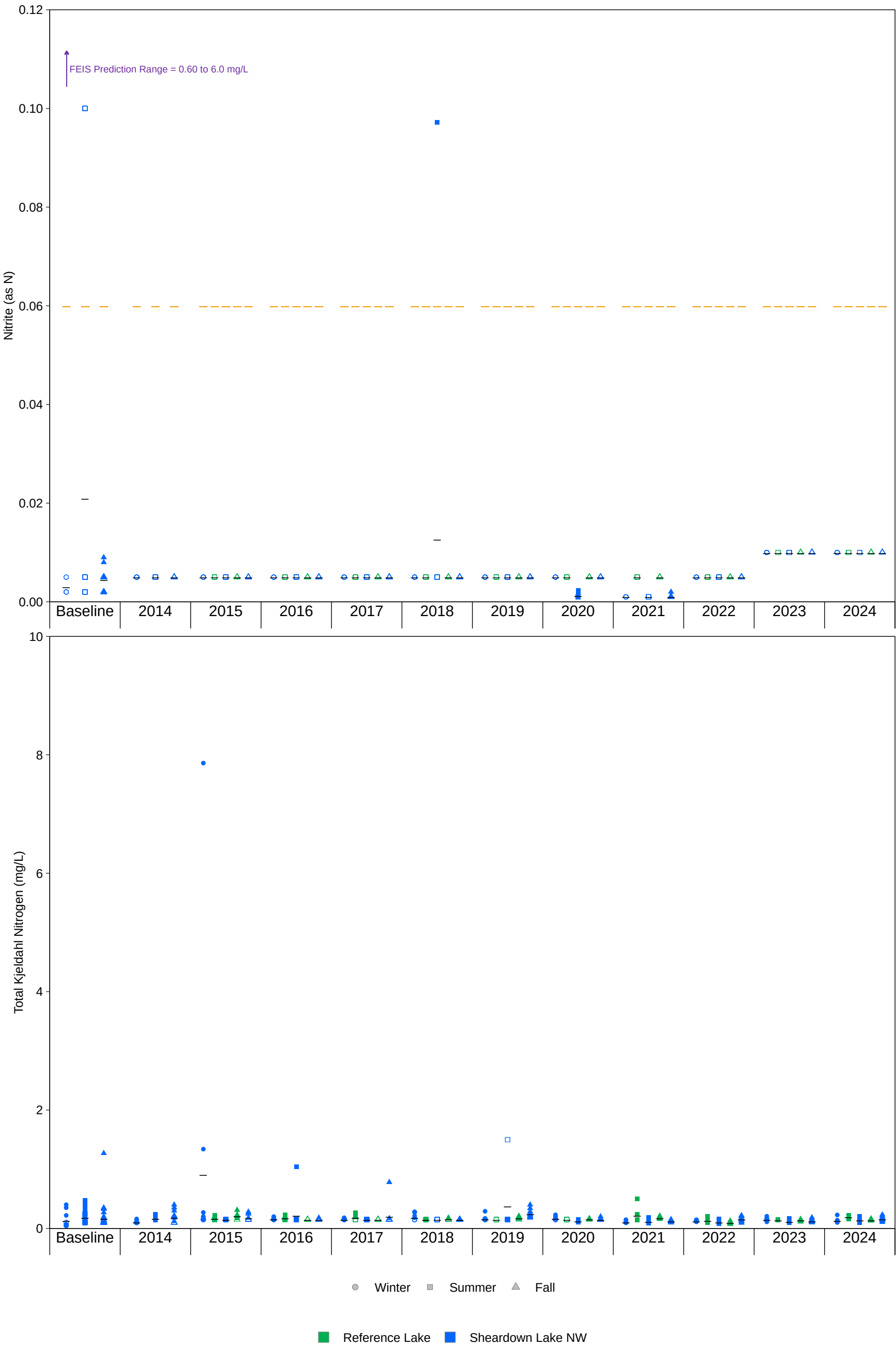


Figure 5: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake NW (DL0-01) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

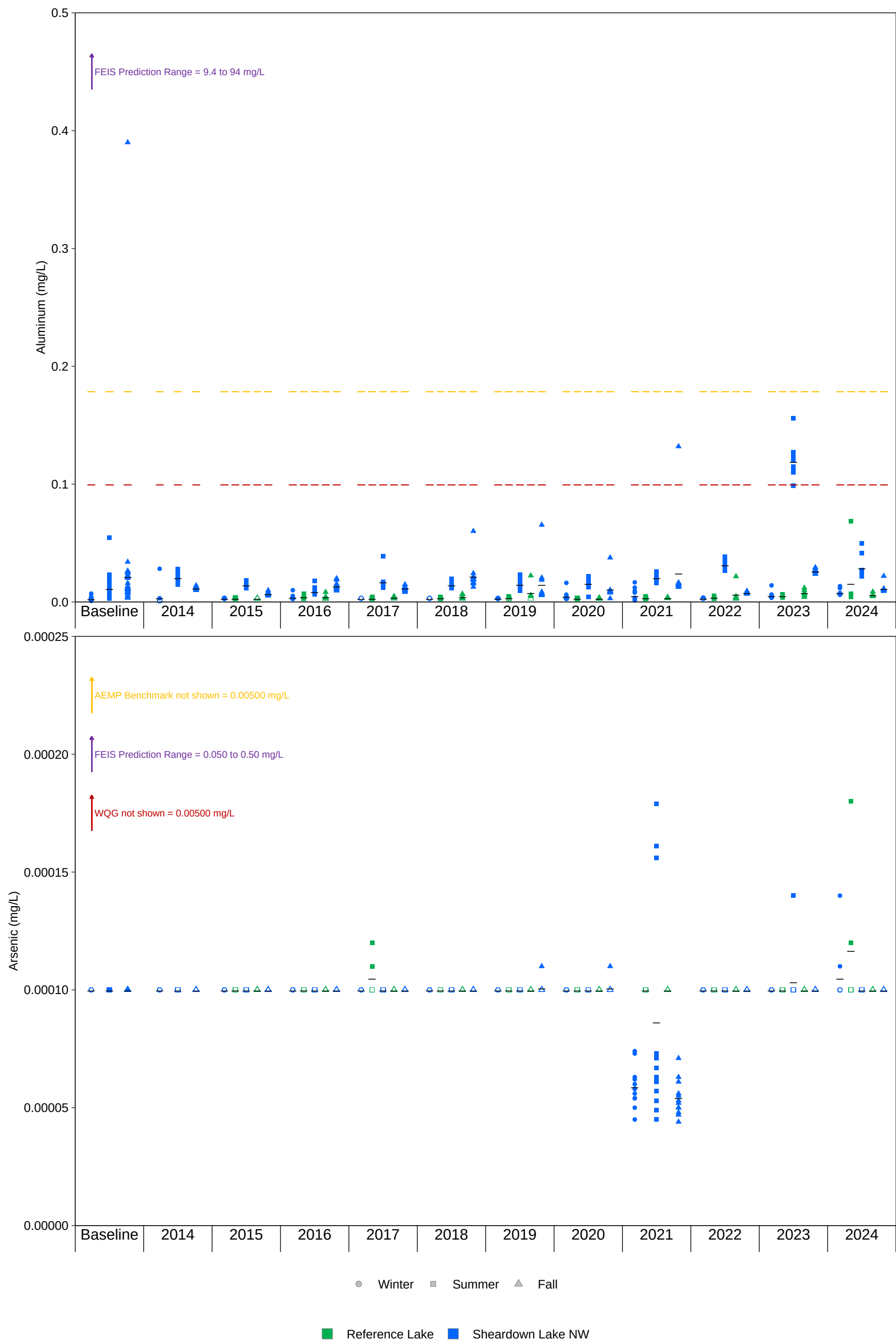


Figure 5: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake NW (DL0-01) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

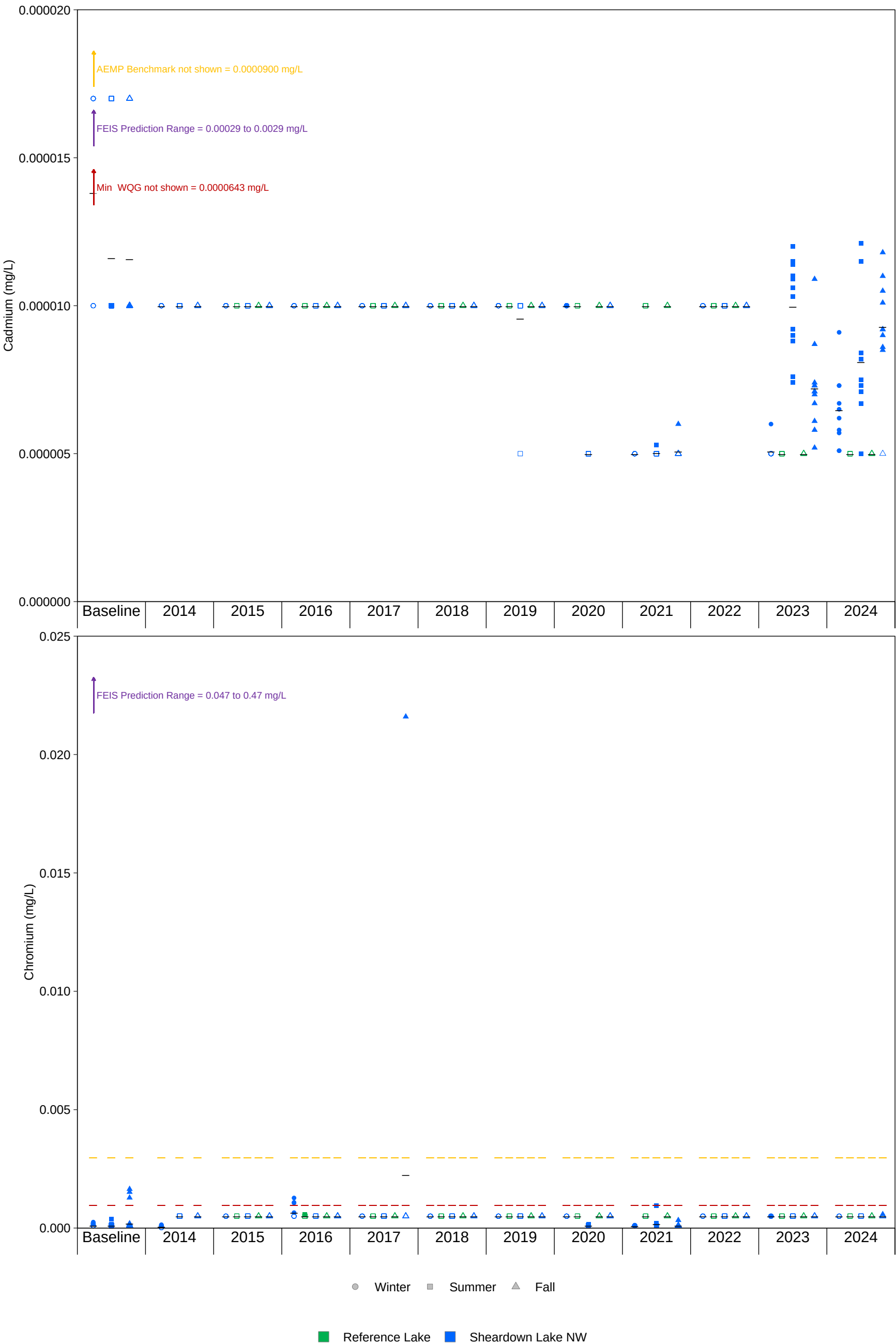


Figure 5: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake NW (DL0–01) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

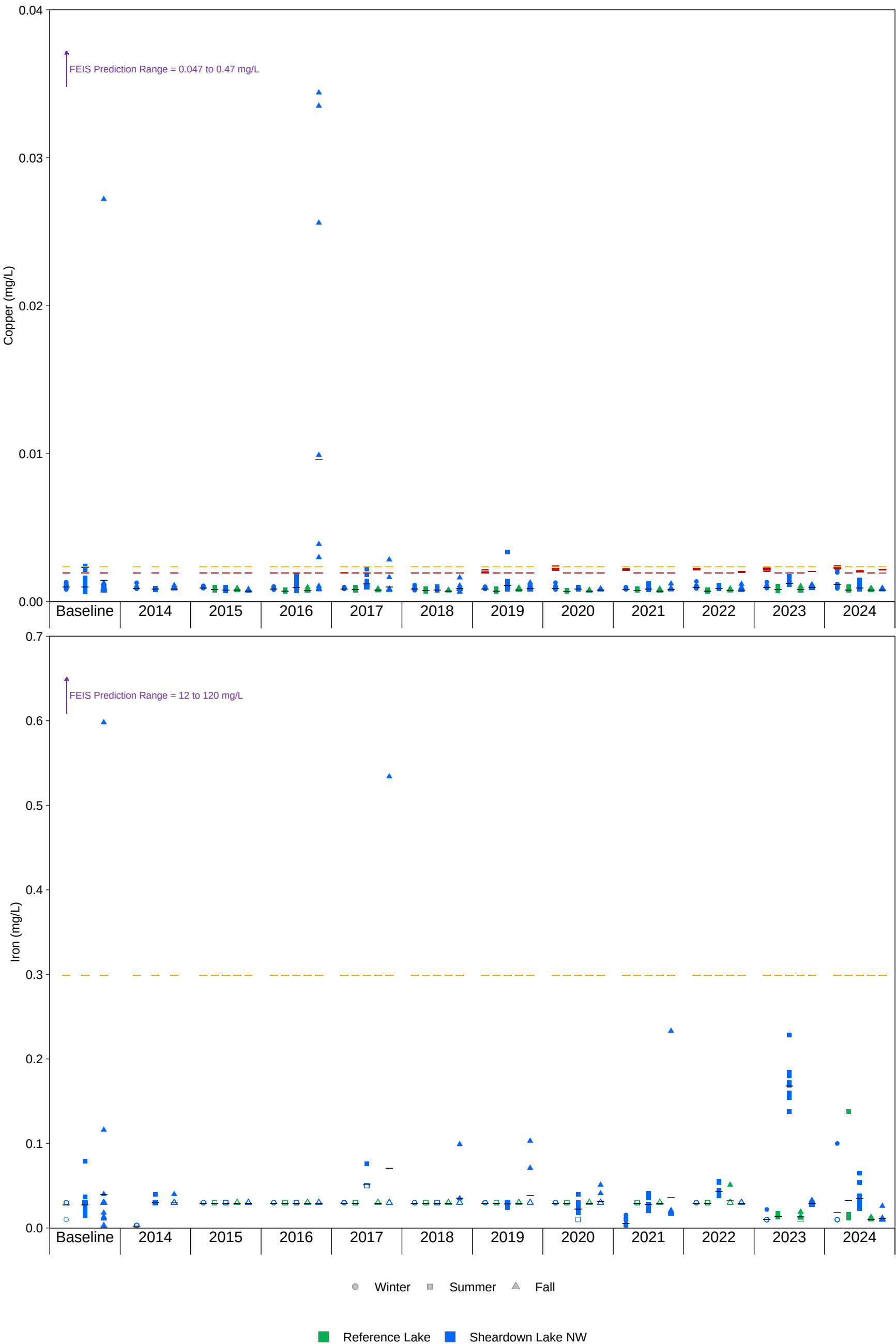


Figure 5: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake NW (DL0-01) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

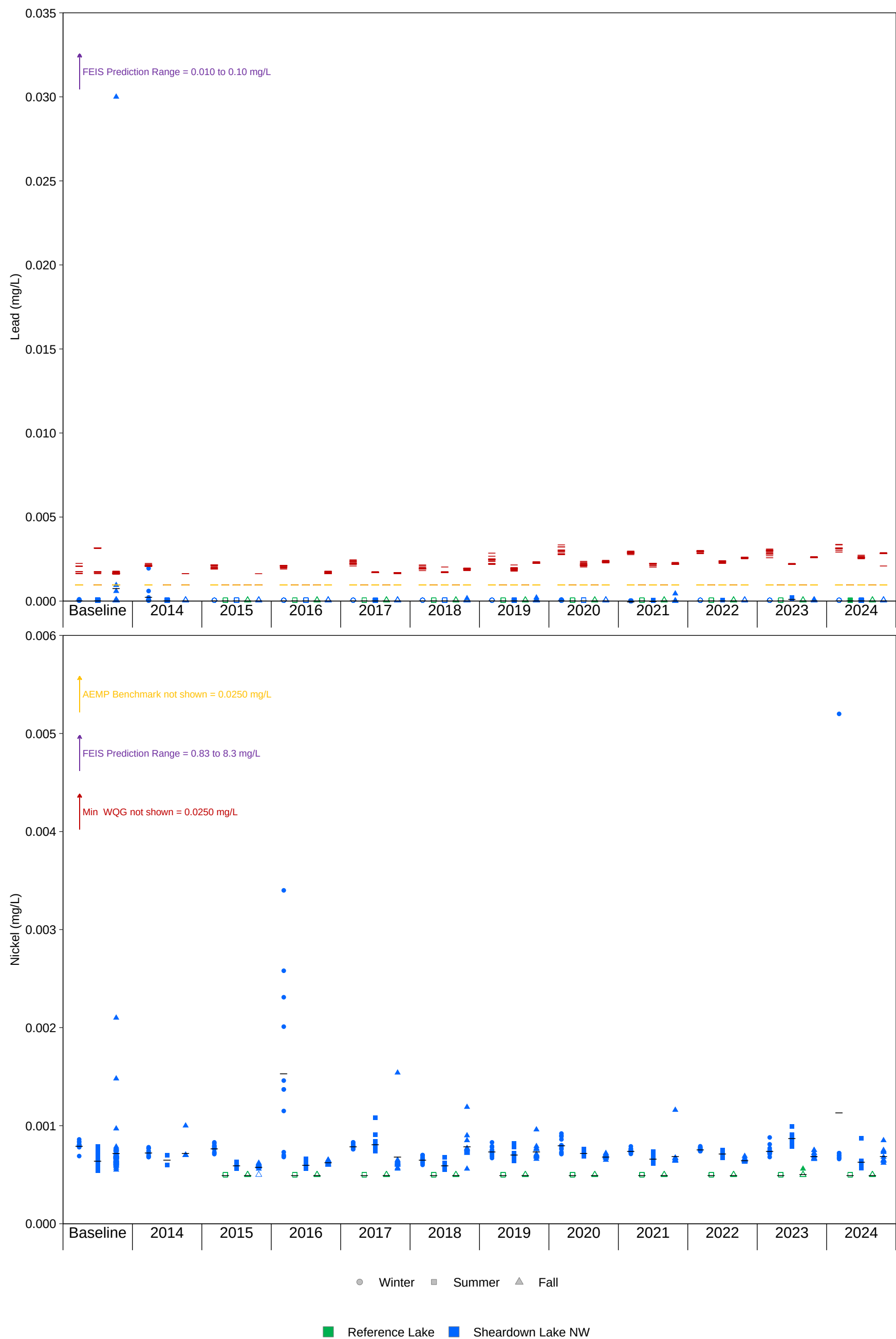


Figure 5: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake NW (DL0–01) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

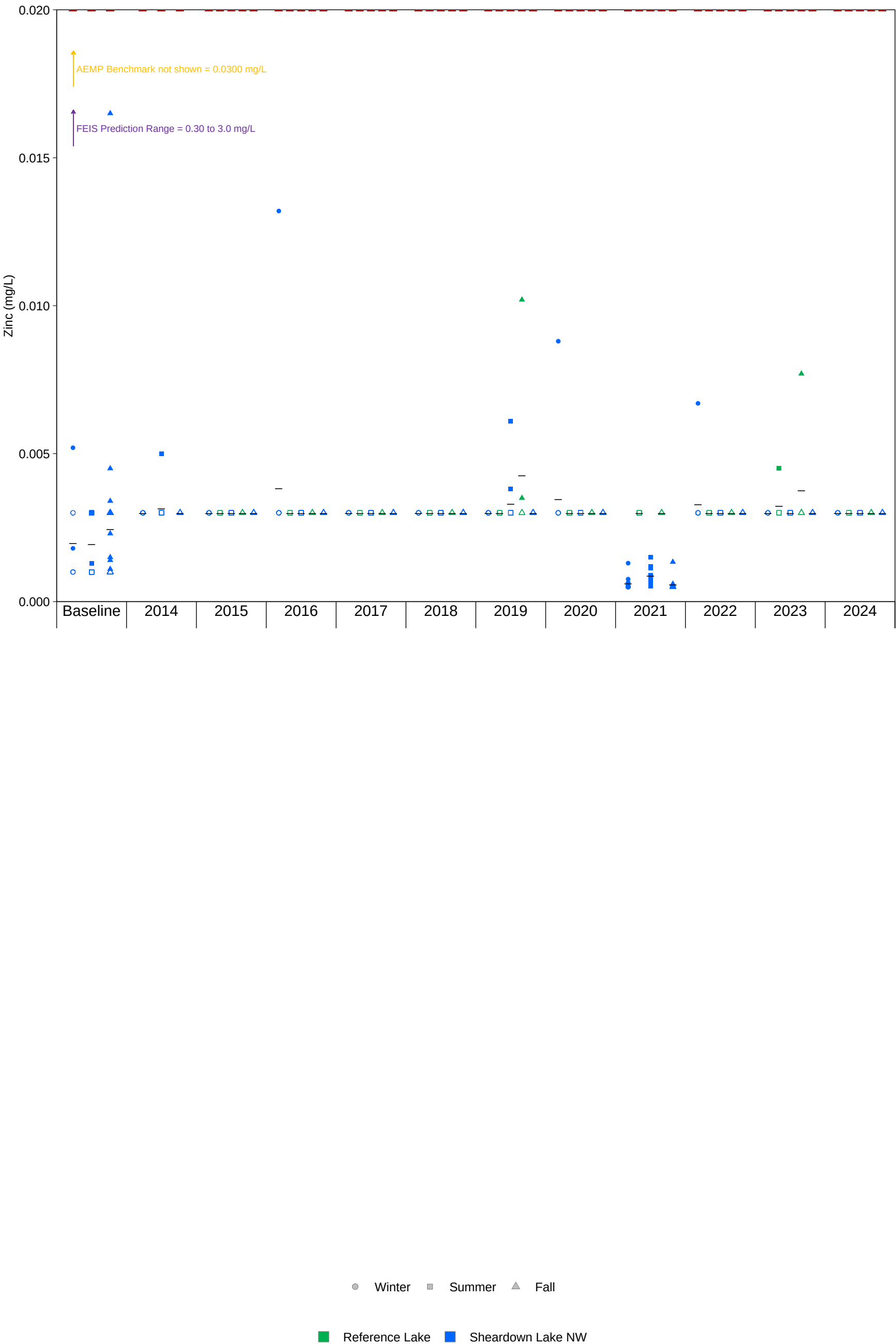


Figure 5: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake NW (DL0–01) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

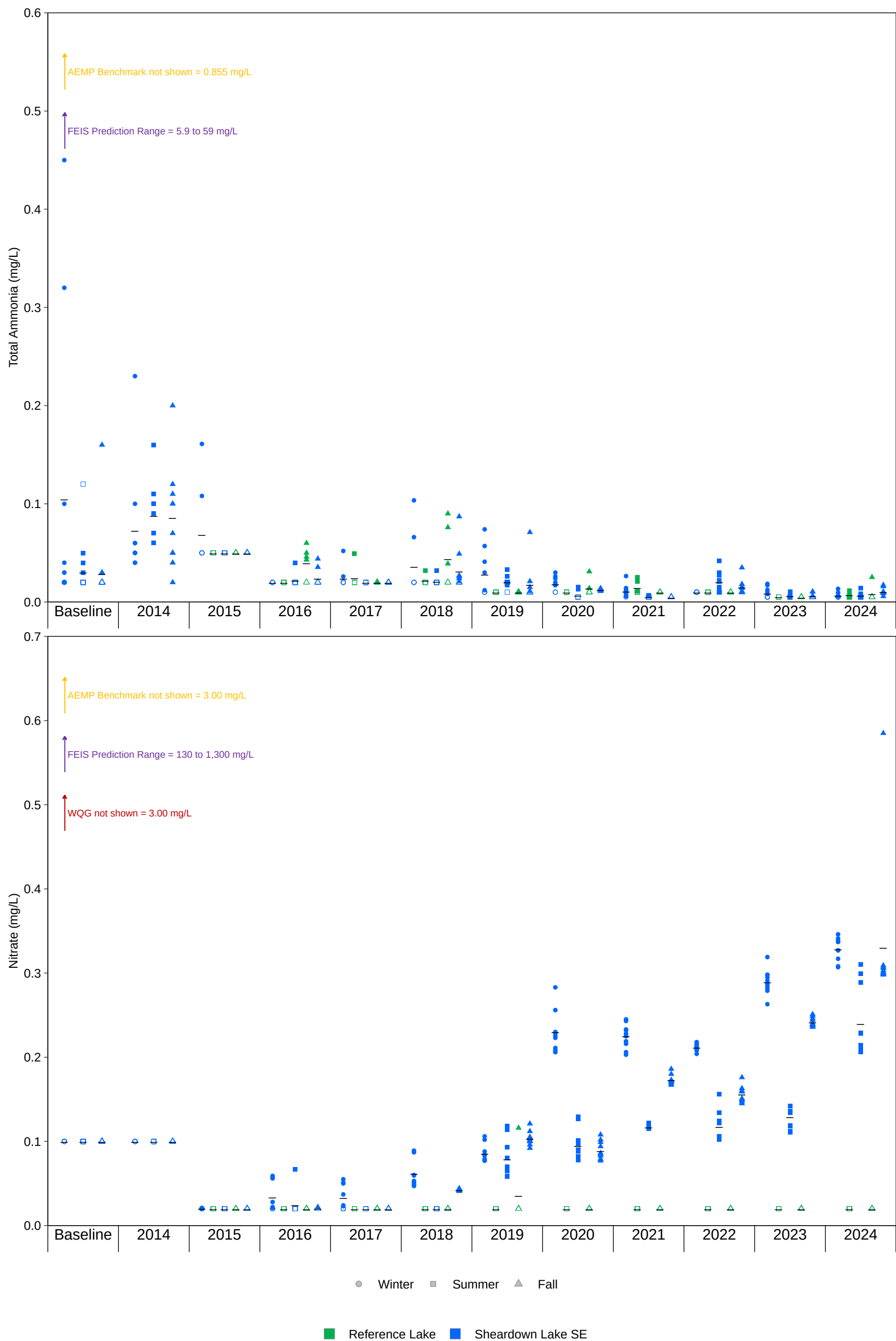


Figure 6: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake SE (DL0-02) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

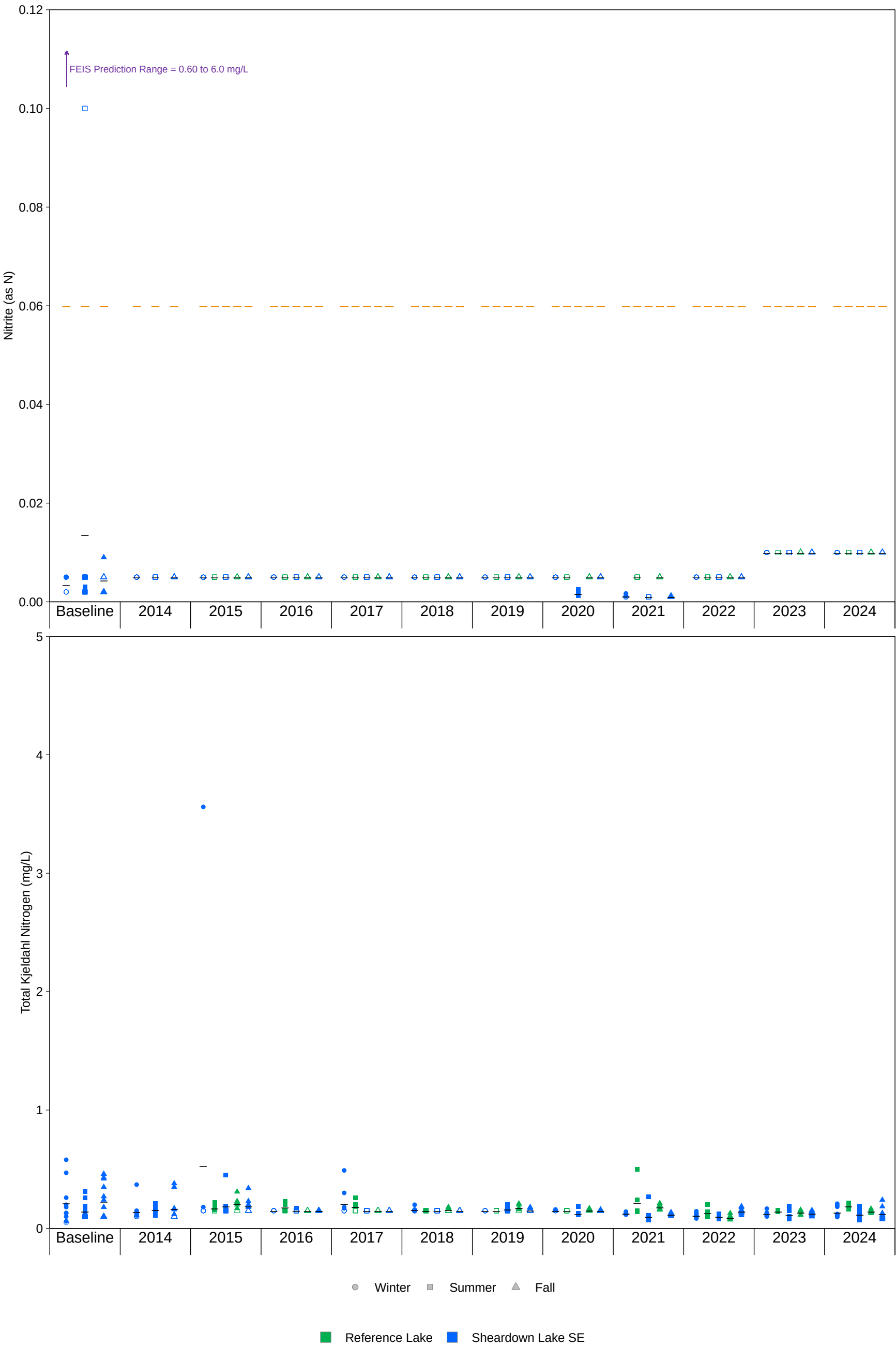


Figure 6: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake SE (DL0-02) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

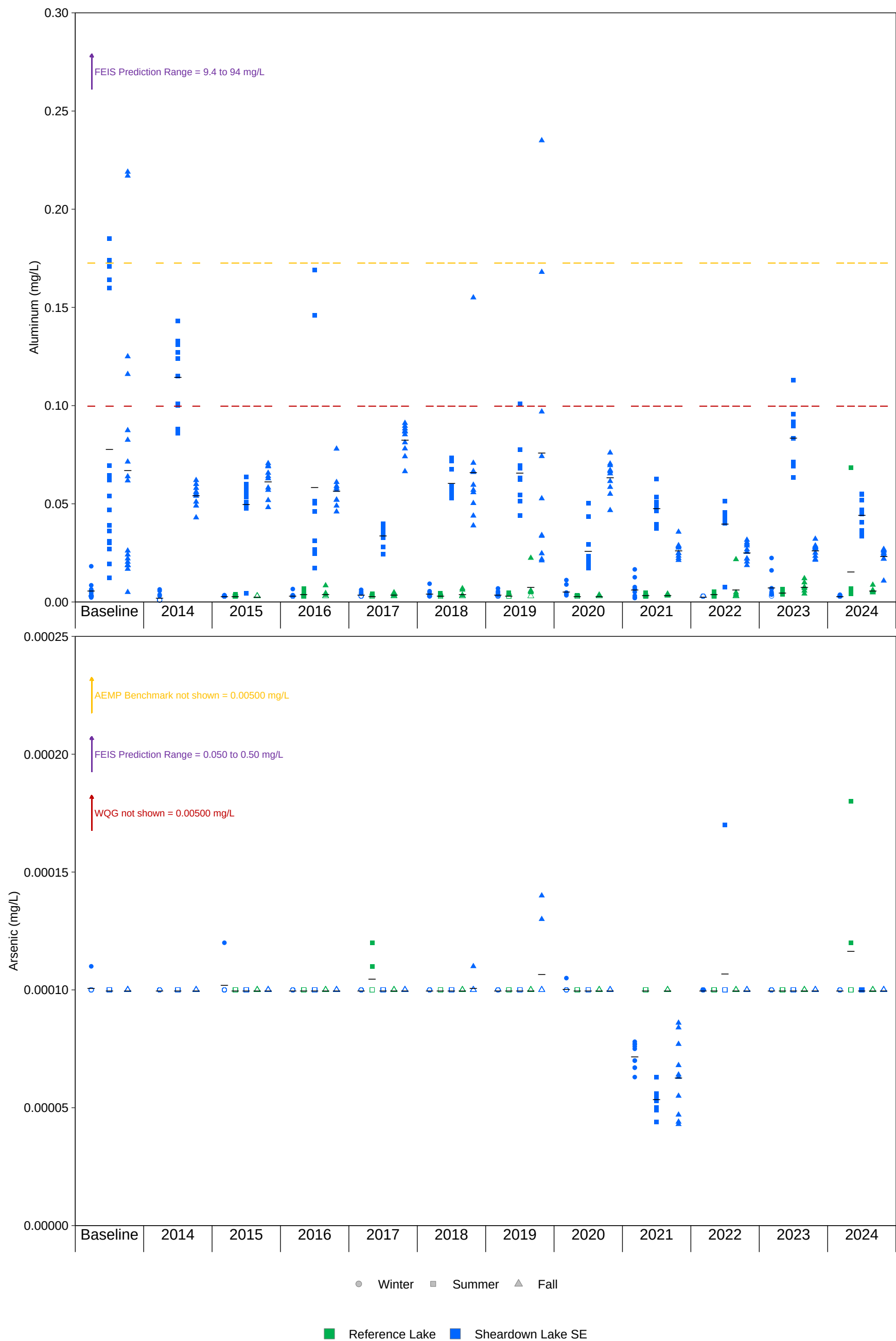


Figure 6: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake SE (DL0-02) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

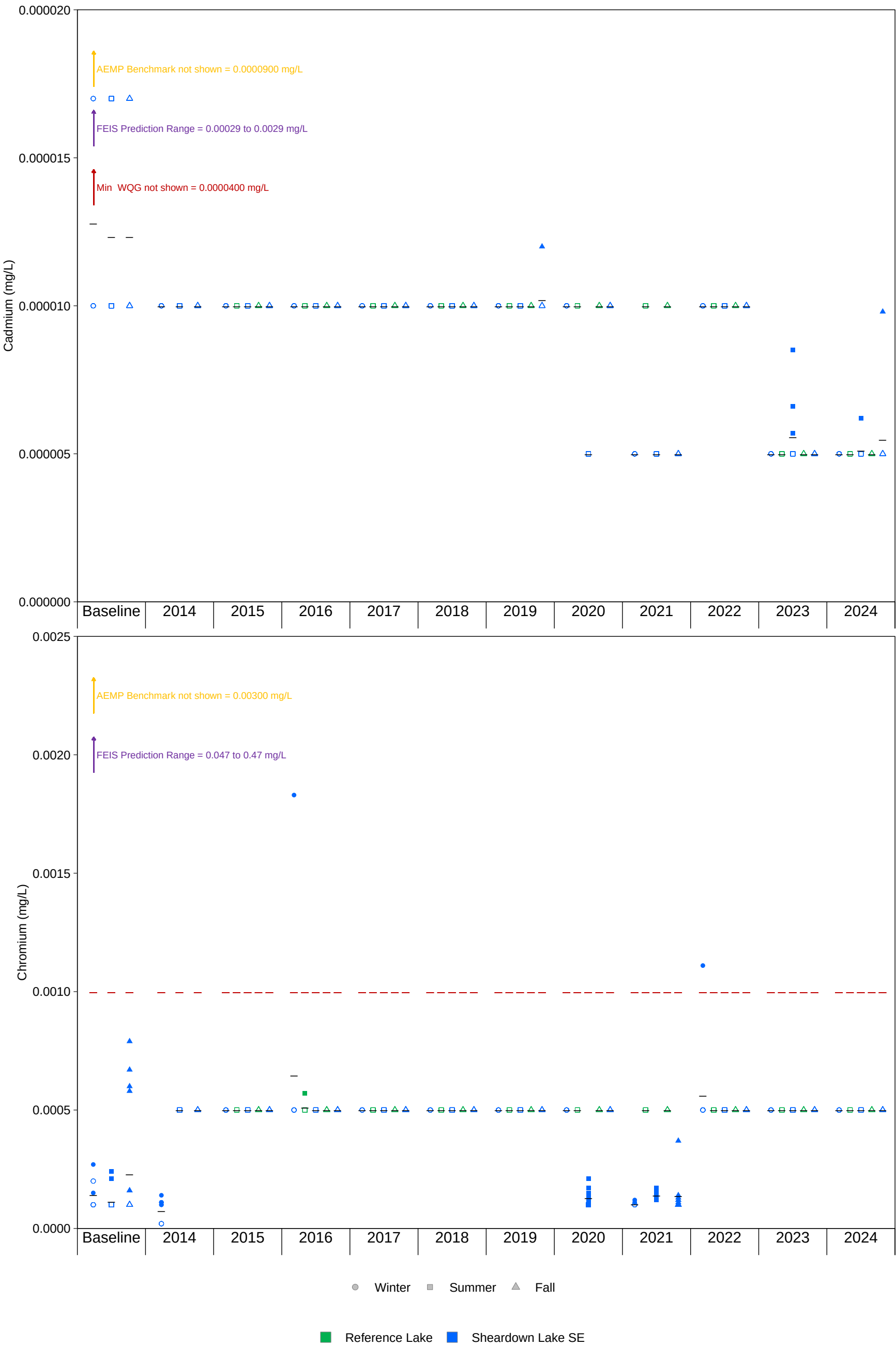


Figure 6: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake SE (DL0-02) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

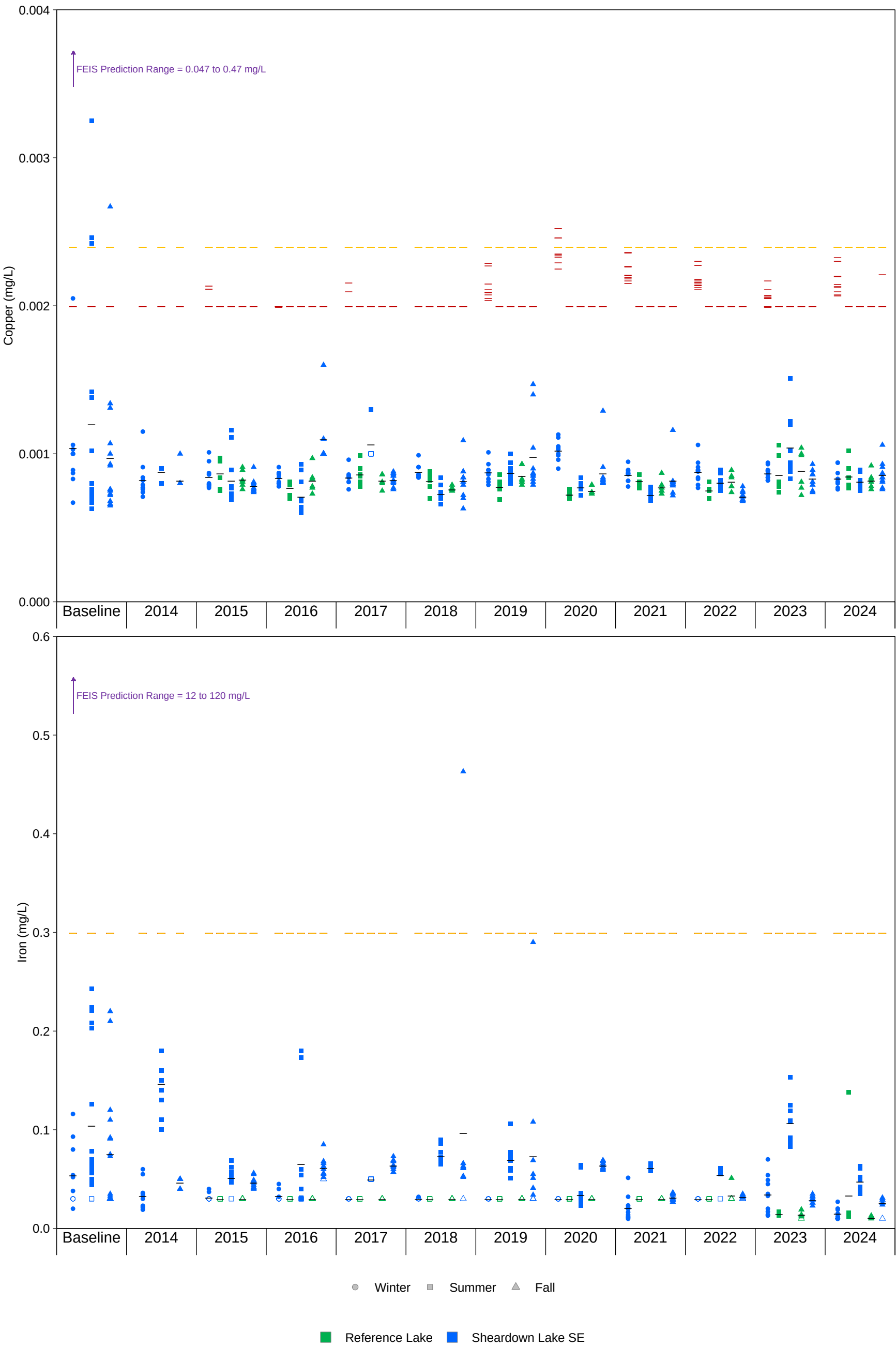


Figure 6: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake SE (DL0-02) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

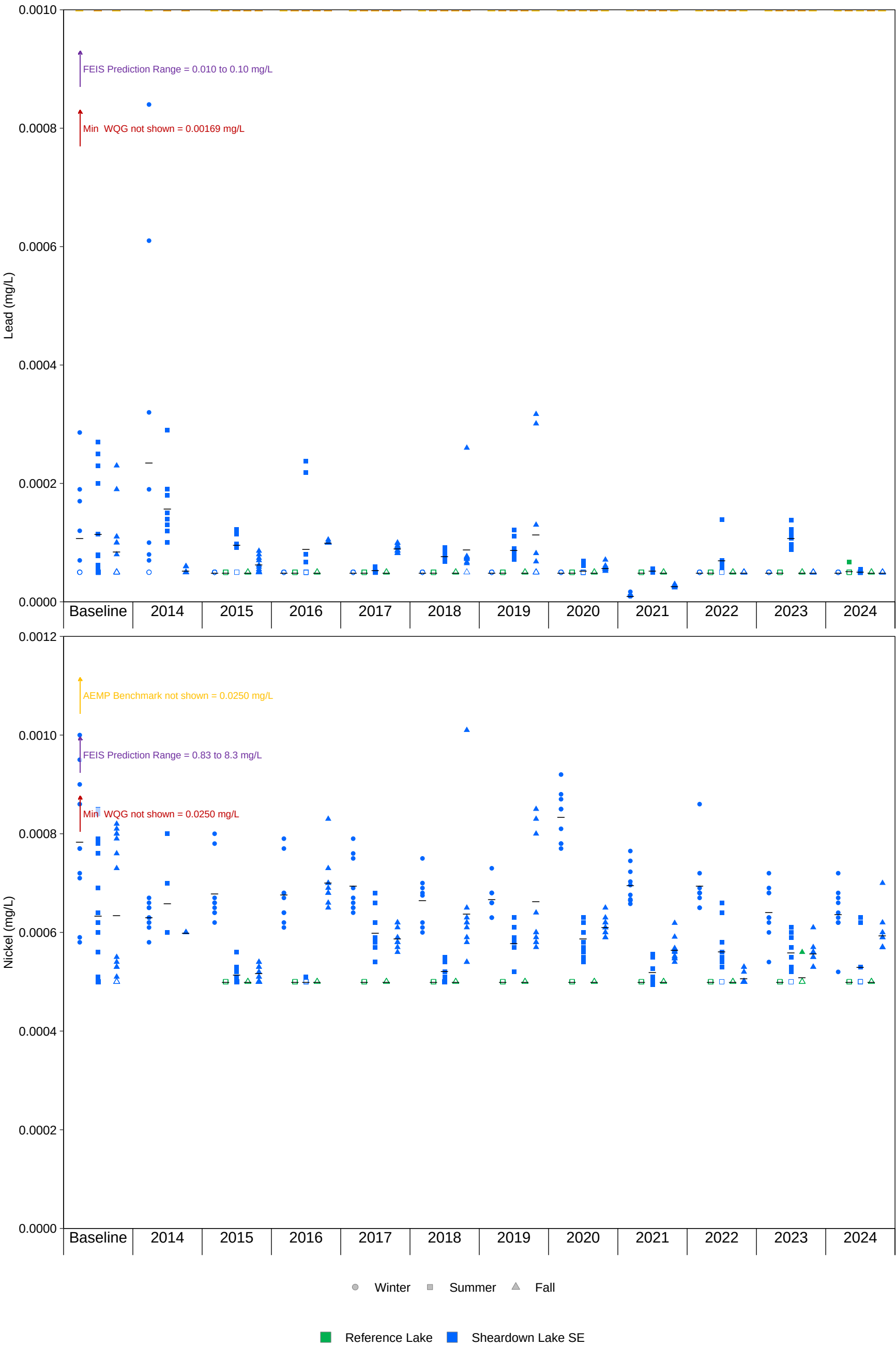


Figure 6: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake SE (DL0-02) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

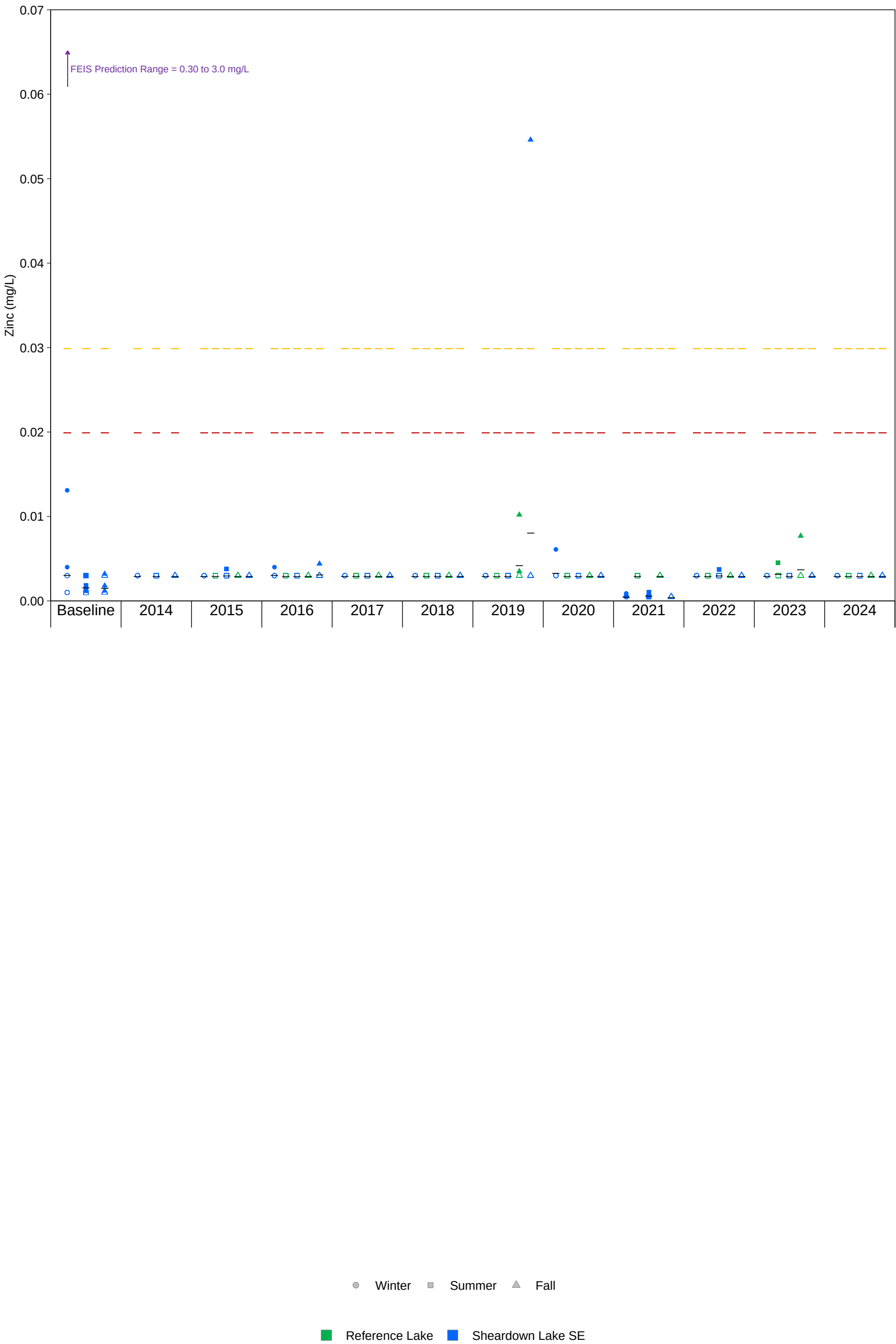


Figure 6: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Sheardown Lake SE (DL0-02) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

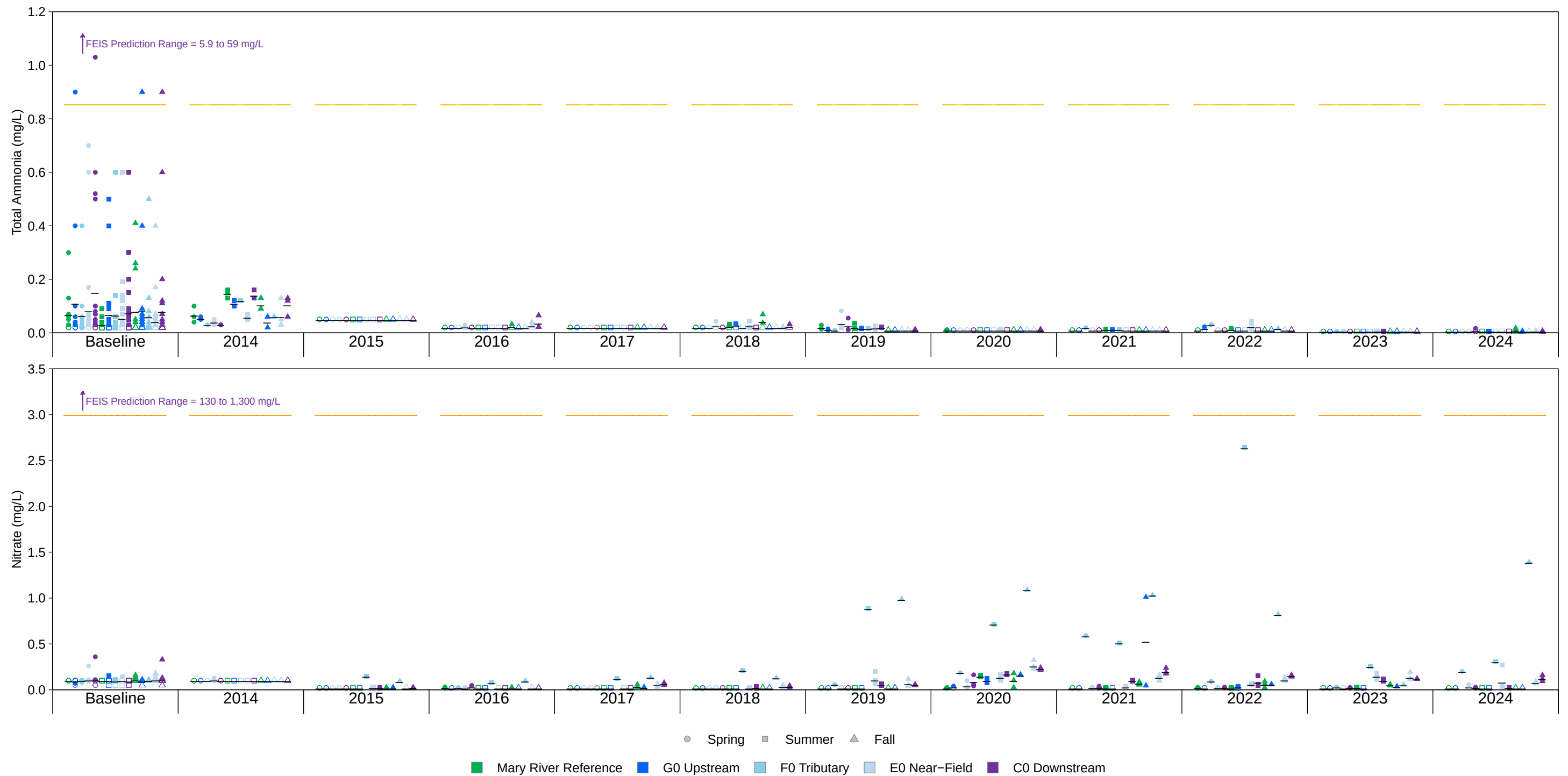


Figure 7: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary River (G0, F0, E0, and C0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.



Figure 7: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary River (G0, F0, E0, and C0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

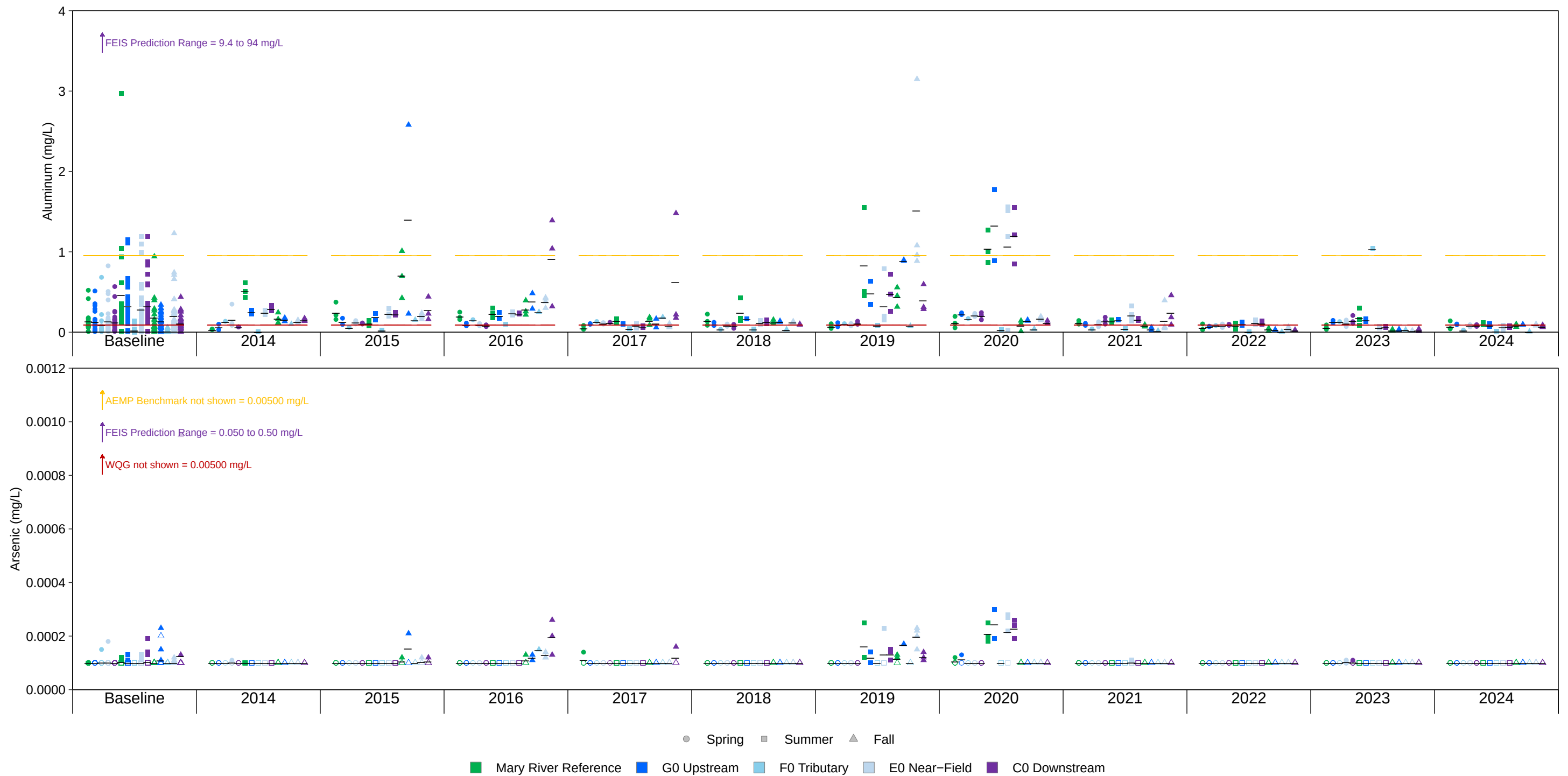


Figure 7: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary River (G0, F0, E0, and C0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

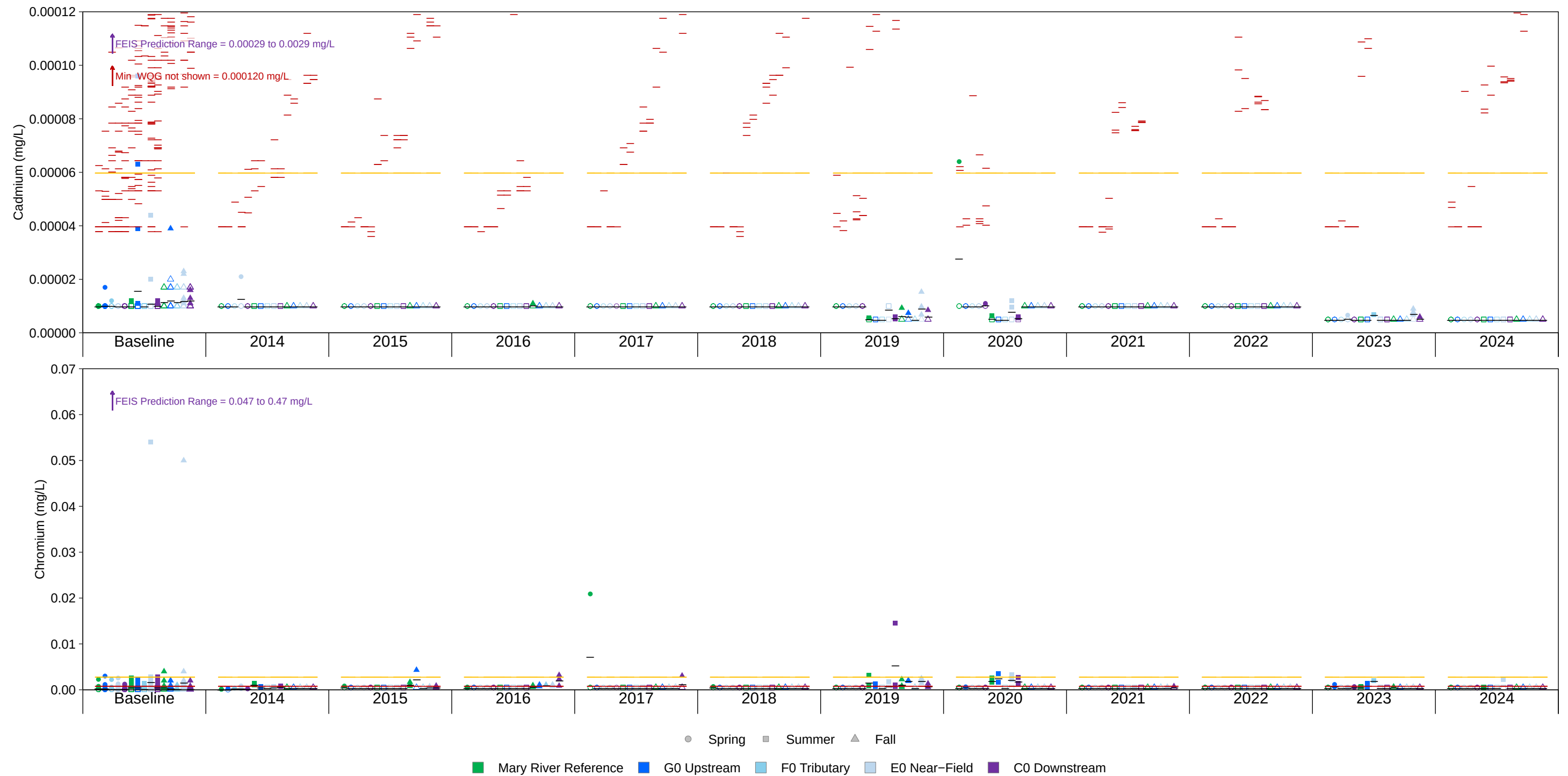


Figure 7: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary River (G0, F0, E0, and C0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

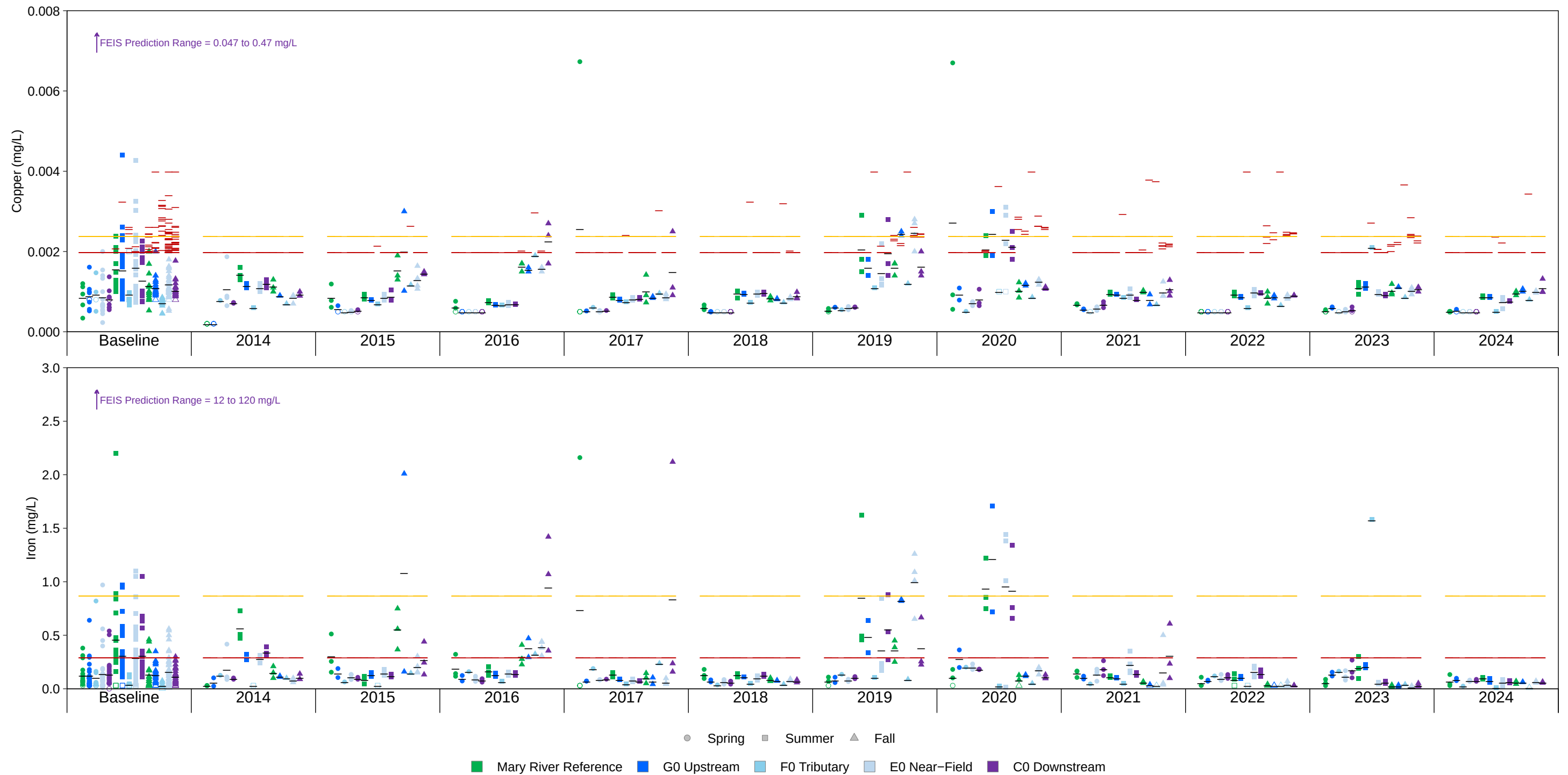


Figure 7: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary River (G0, F0, E0, and C0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

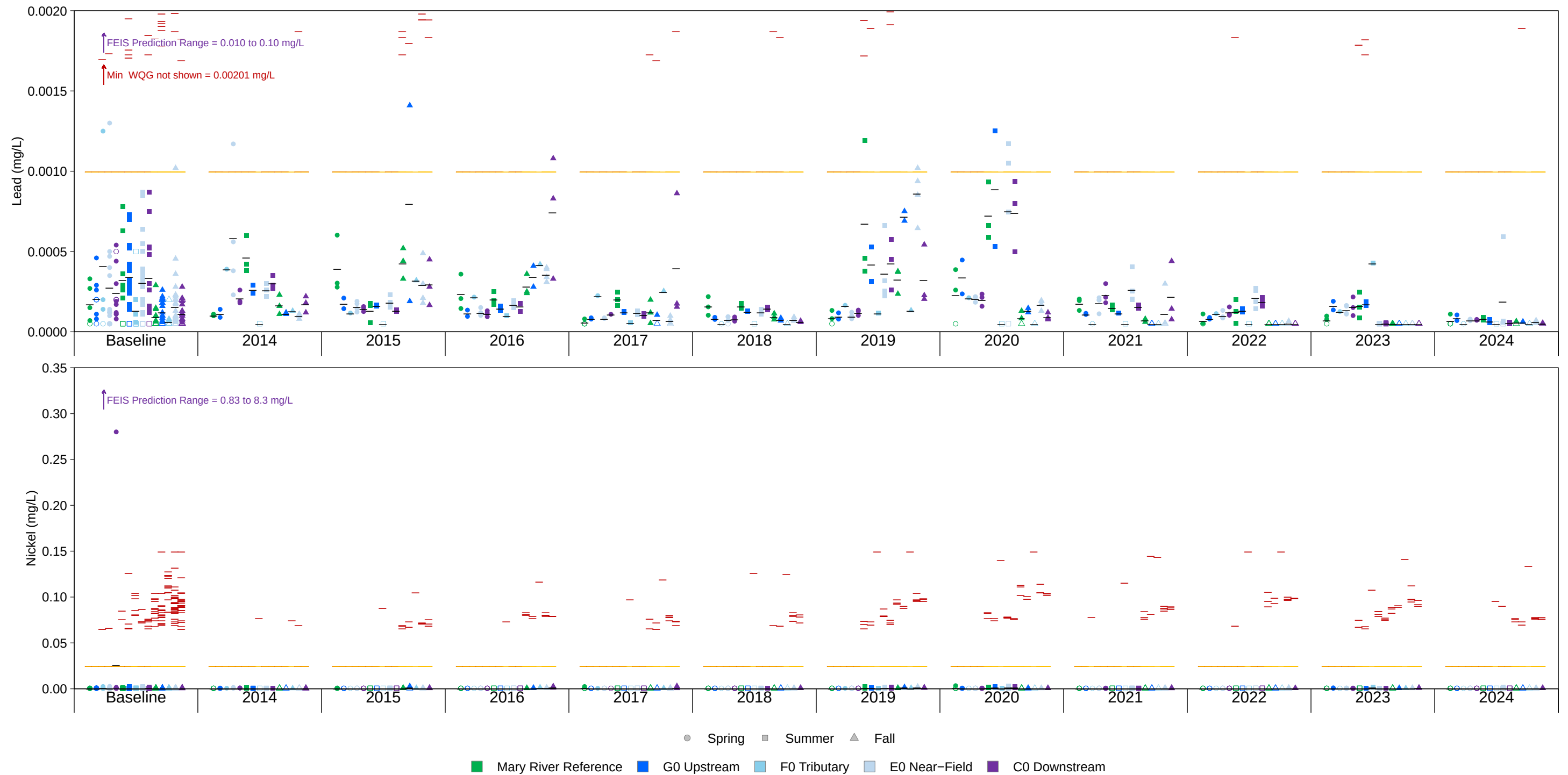


Figure 7: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary River (G0, F0, E0, and C0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.



Figure 7: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary River (G0, F0, E0, and C0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

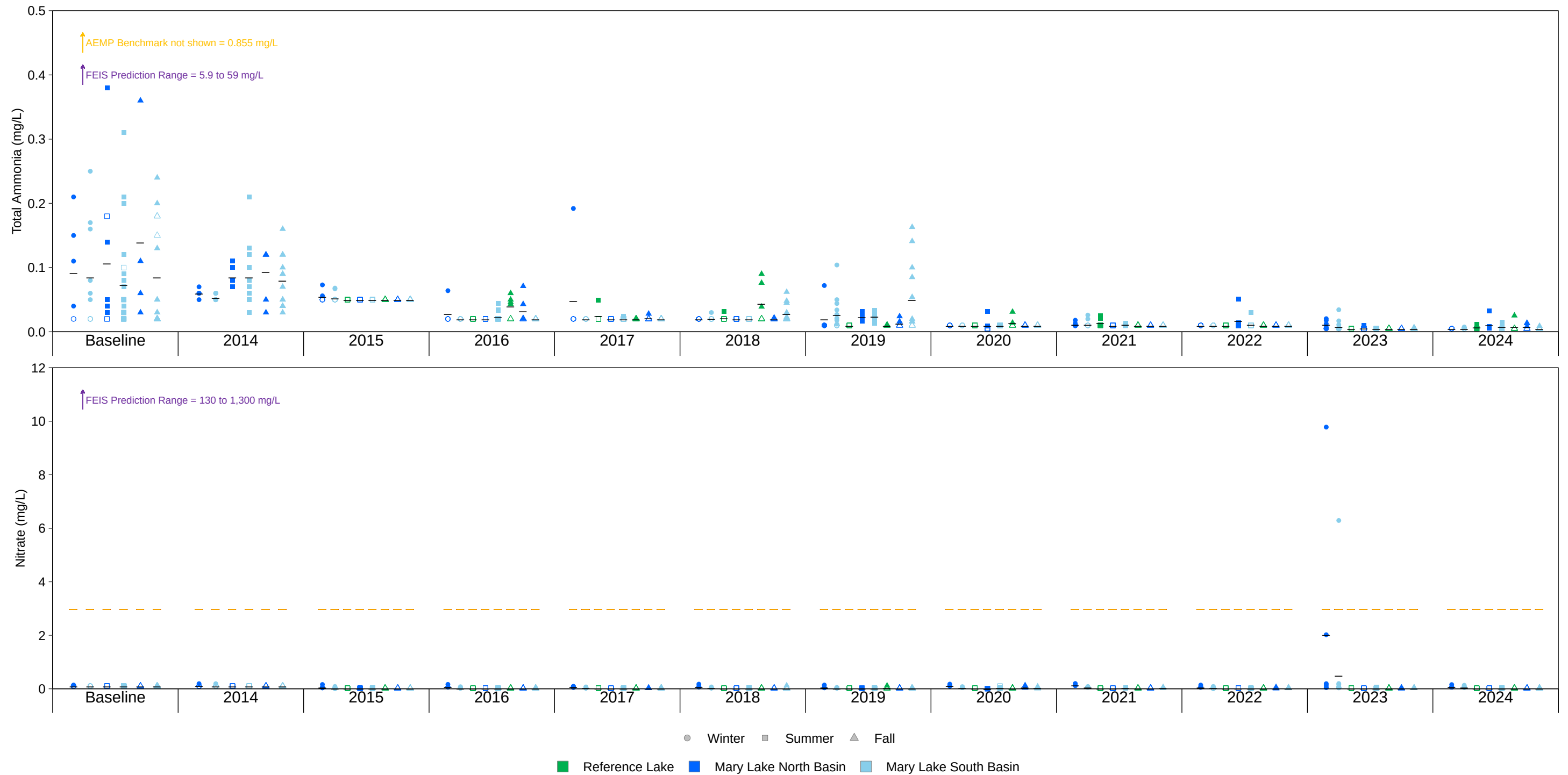


Figure 8: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary Lake (BL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1v

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.



Figure 8: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary Lake (BL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

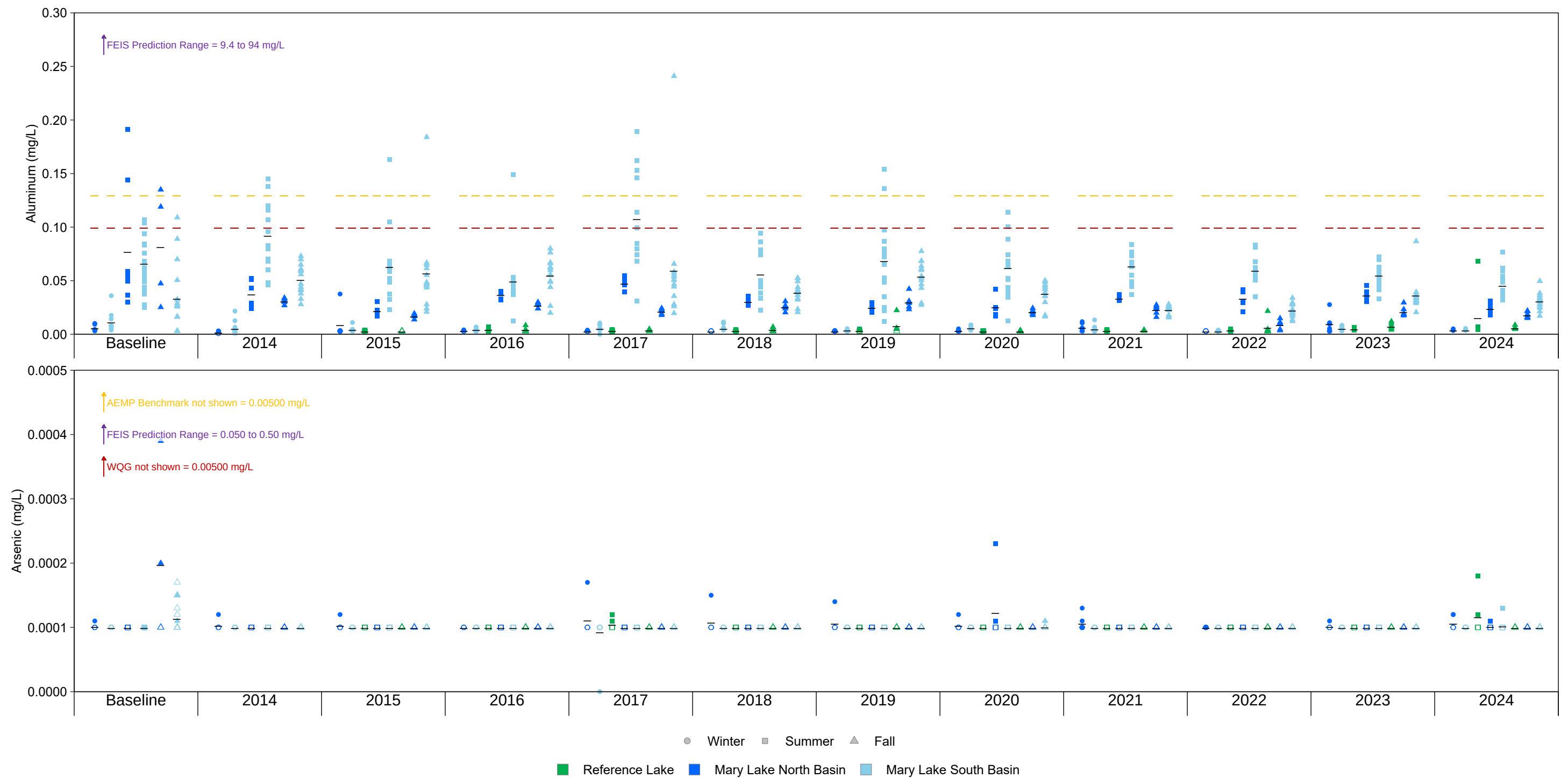


Figure 8: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary Lake (BL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

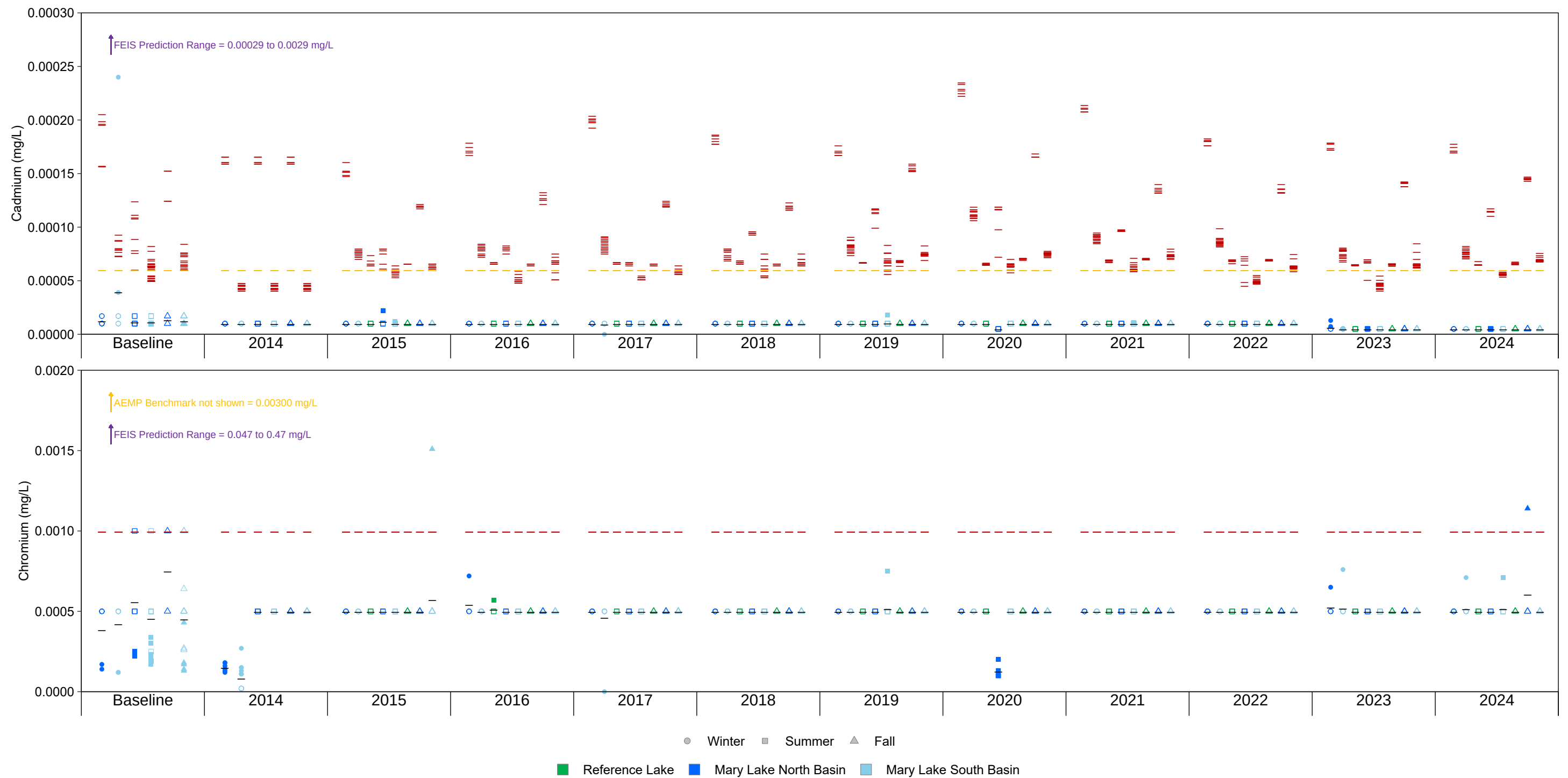


Figure 8: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary Lake (BL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

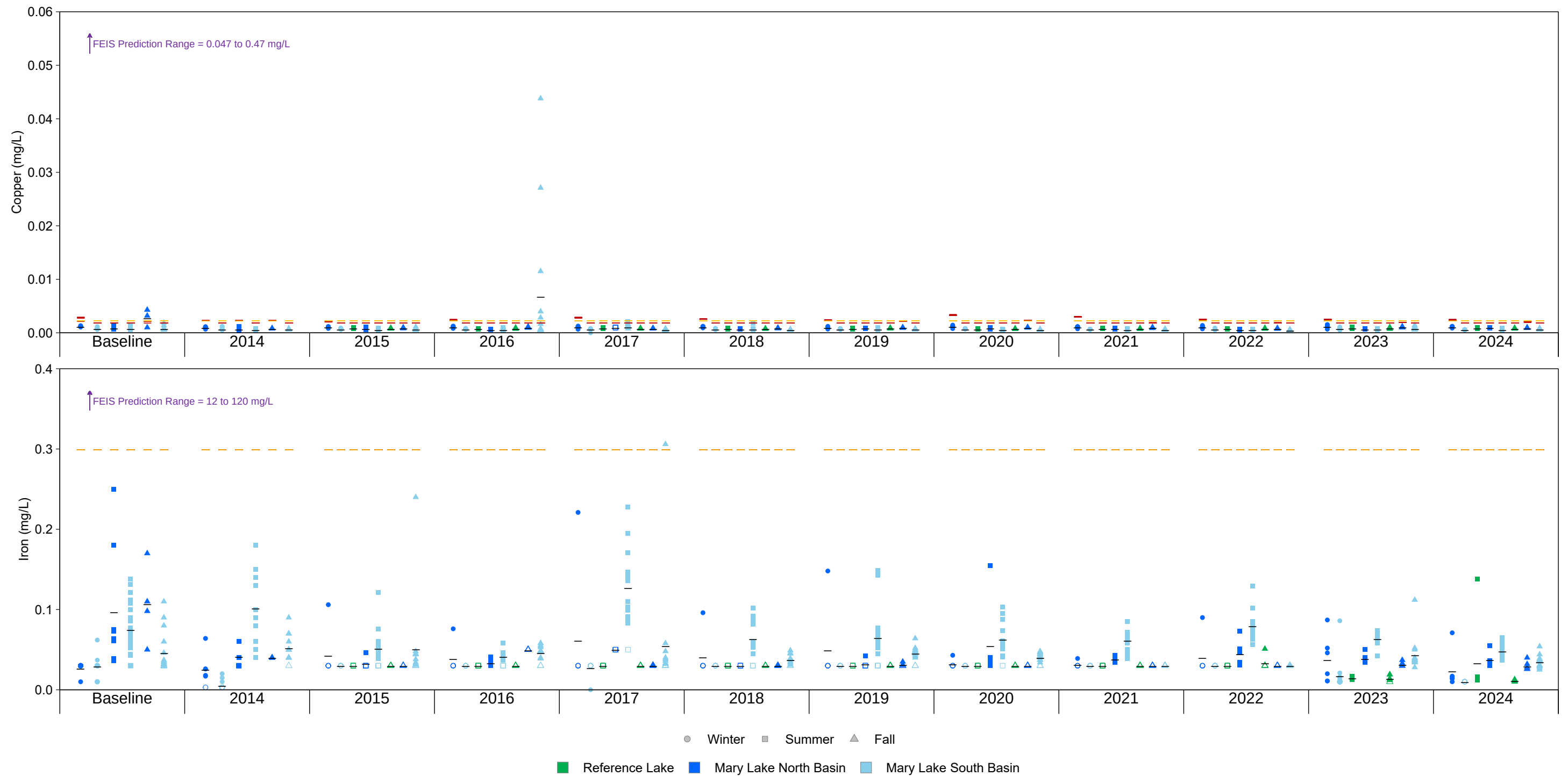


Figure 8: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary Lake (BL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

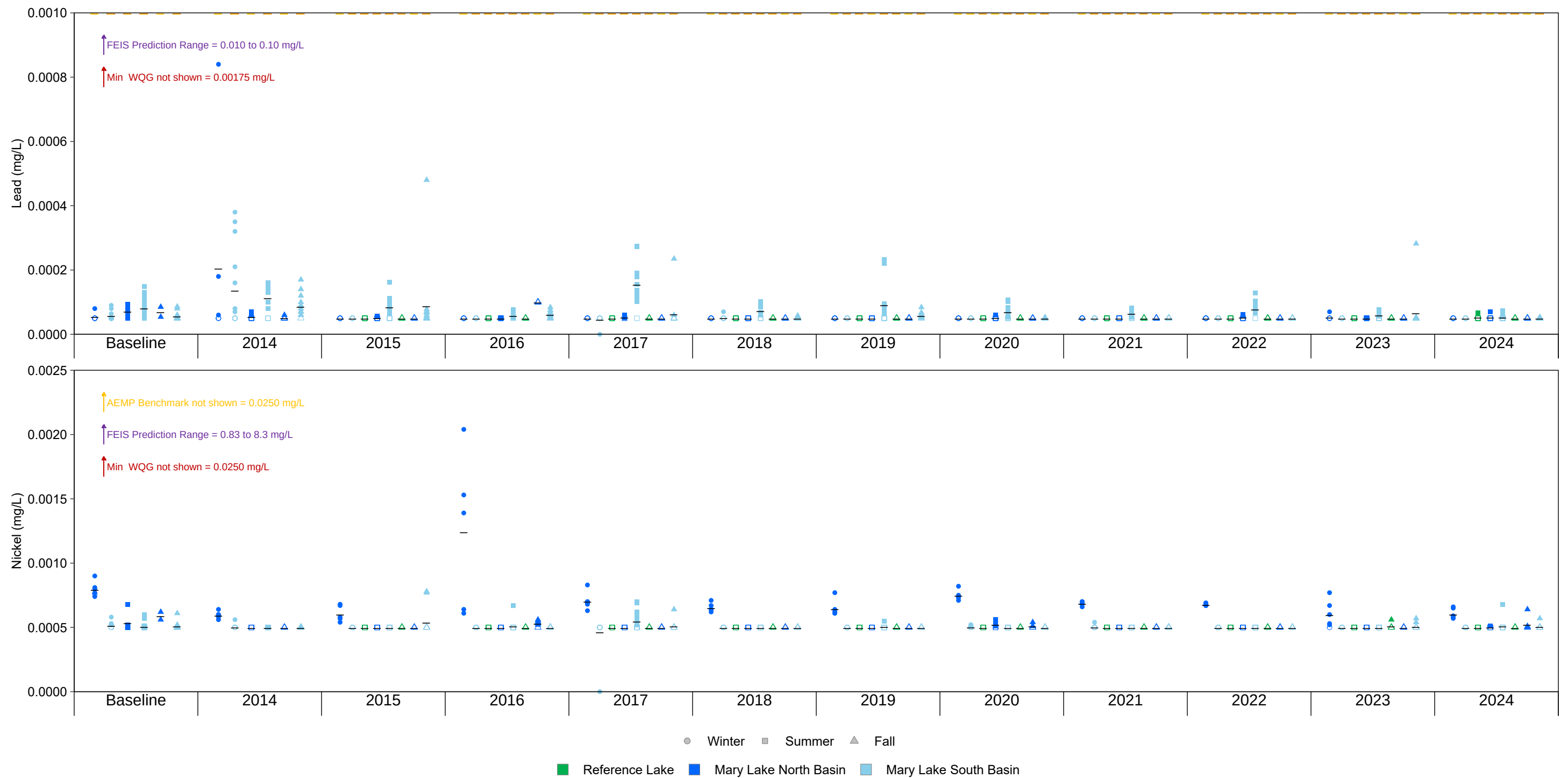


Figure 8: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary Lake (BL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

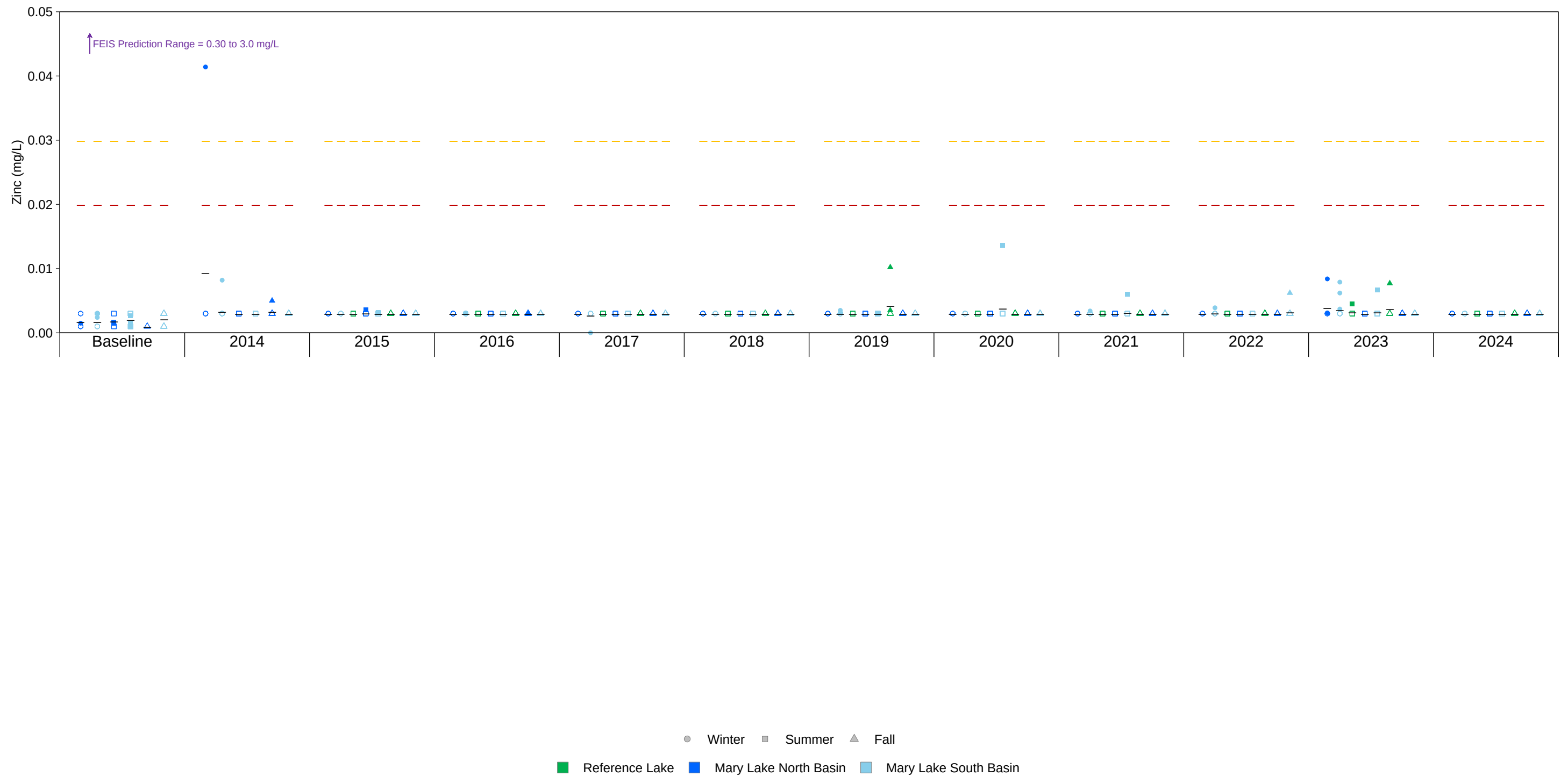
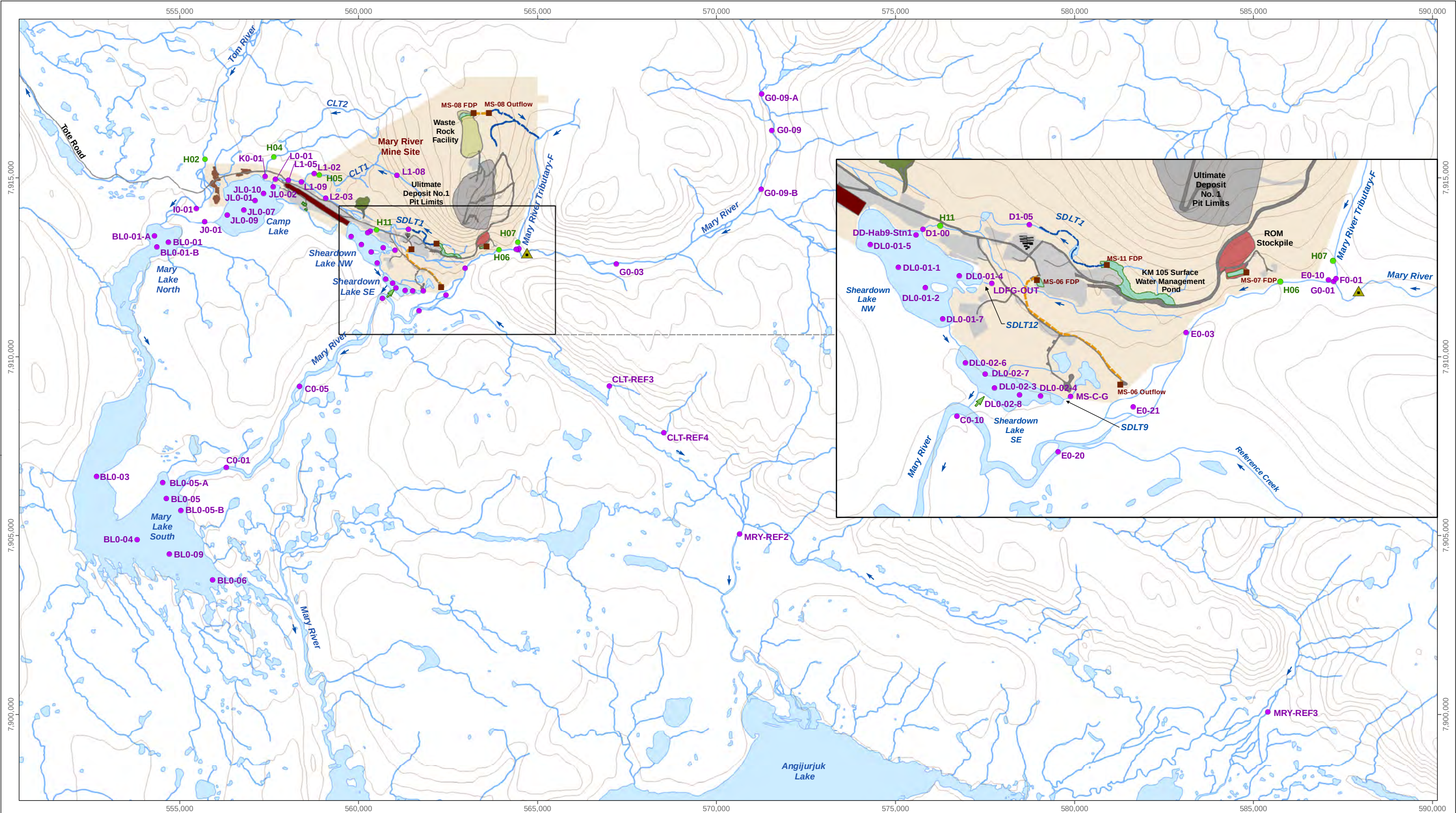


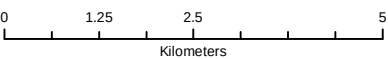
Figure 8: Temporal Comparison of Water Chemistry to Final Environmental Impact Statement Predictions at Mary Lake (BL0) Over Mine Baseline (2006 to 2013), Construction (2014), and Operations (2015 to 2024) Periods, Water License Renewal Comment QIA-TR-1

Notes: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL and the open symbol represents one or more values reported below the LRL. Red lines indicate Water Quality Guidelines, some of which are dependent on concurrent hardness values; orange lines indicate AEMP Benchmarks; purple lines indicate FEIS Prediction Range. Black bars indicate mean concentrations for the corresponding data.

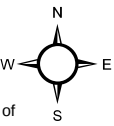


LEGEND

- | | | | |
|---|-------------------------------|---------------------|-----------------------|
| ● Hydrology Station | — Overland Surface Water Flow | ■ Airstrip | ■ Road |
| ● Water Quality Station | — HDPE Pipe | ■ Mine Site Complex | ■ Open Pit |
| ▲ Mary River Cascade Barrier | — Contour (20m) | ■ Pond | ■ Waste Rock Facility |
| ■ Final Discharge Point (FDP) | ■ Project Development Area | ■ ROM Stockpile | ■ Borrow Pit |
| ➡ Flow Direction During High Flow Periods | ■ Infrastructure | ■ Quarry | |



Map Projection: UTM Zone 17N NAD 1983
Data Source: Reproduced under licence from His Majesty the King in Rights of Canada, Department of Natural Resources Canada. All rights reserved.



Routine Water Quality and Hydrology
Monitoring Stations, Mary River Project, 2025

Date: October 2025
Project 257202.5039



Figure 9

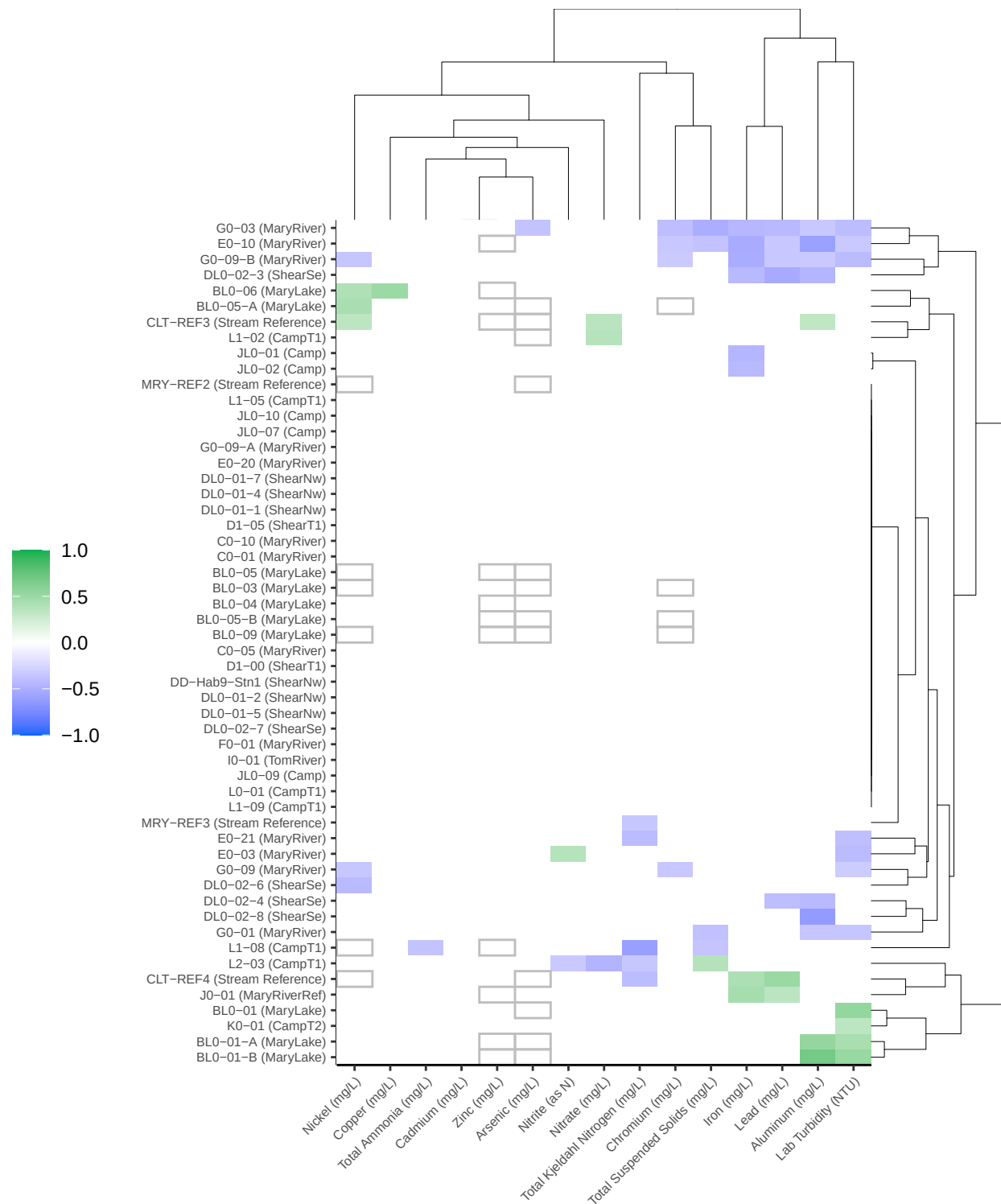


Figure 10: Heatmap of Spearman's Rank Correlation Coefficients for Select Water Quality Parameters and 3-Day Mean Rainfall (mm), Water Licence Renewal Comment QIA-TR-1, 2006 to 2024

Notes: Non-significant (p -value < 0.1) are displayed as having a correlation coefficient of 0. Comparisons that could not be completed due to inadequate data are outlined in grey. CampT1 = Camp Lake Tributary 1; CampT2 = Camp Lake Tributary 2; Camp = Camp Lake; ShearSe = Sheardown Lake Southeast; ShearNw = Sheardown Lake Northwest; ShearT1 = Sheardown Lake Tributary 1.

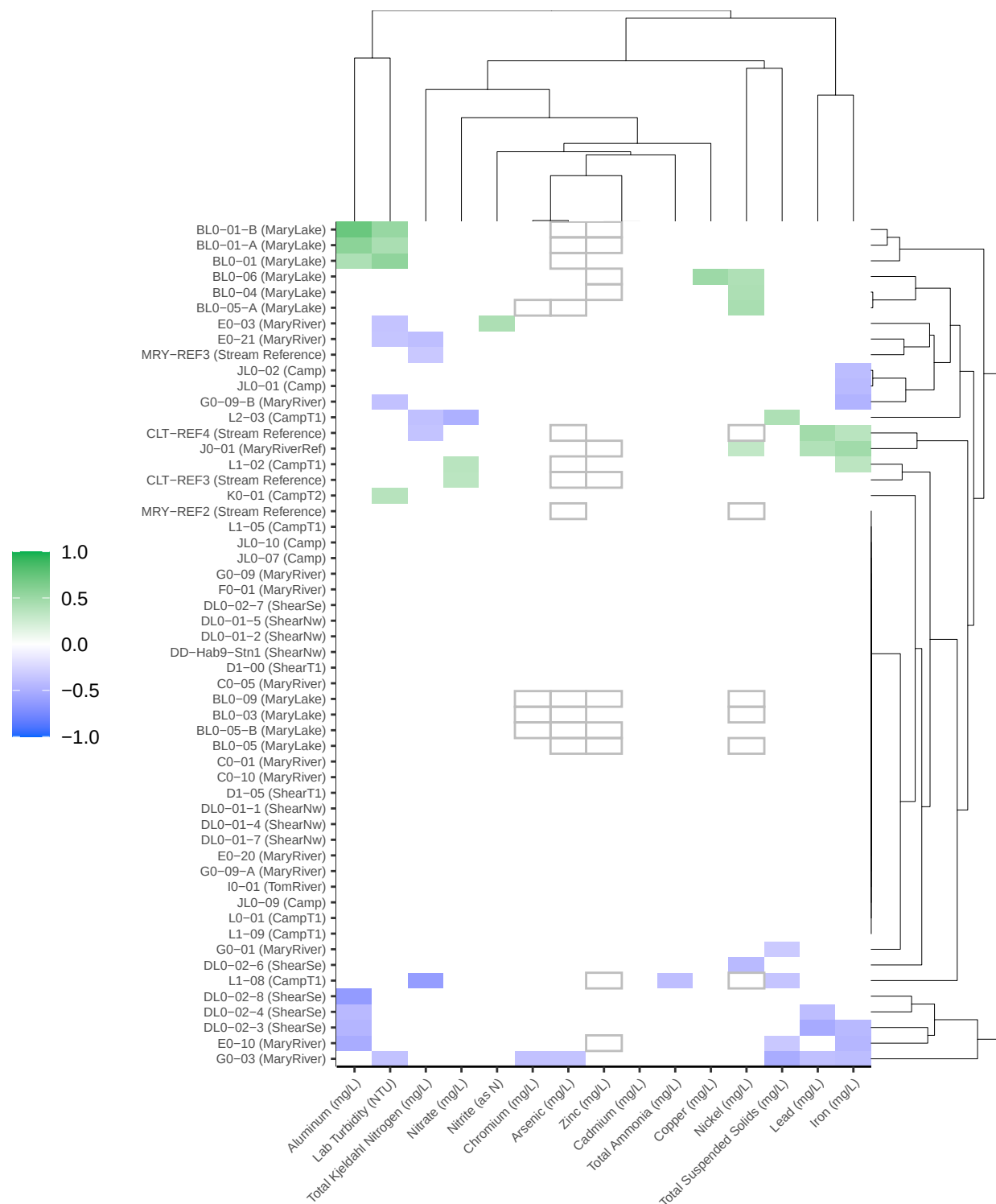


Figure 11: Heatmap of Spearman's Rank Correlation Coefficients for Select Water Quality Parameters and 3-Day Maximum Rainfall (mm), Water Licence Renewal Comment QIA-TR-1, 2006 to 2024

Notes: Non-significant (p -value < 0.1) are displayed as having a correlation coefficient of 0. Comparisons that could not be completed due to inadequate data are outlined in grey. CampT1 = Camp Lake Tributary 1; CampT2 = Camp Lake Tributary 2; Camp = Camp Lake; ShearSe = Sheardown Lake Southeast; ShearNw = Sheardown Lake Northwest; ShearT1 = Sheardown Lake Tributary 1.

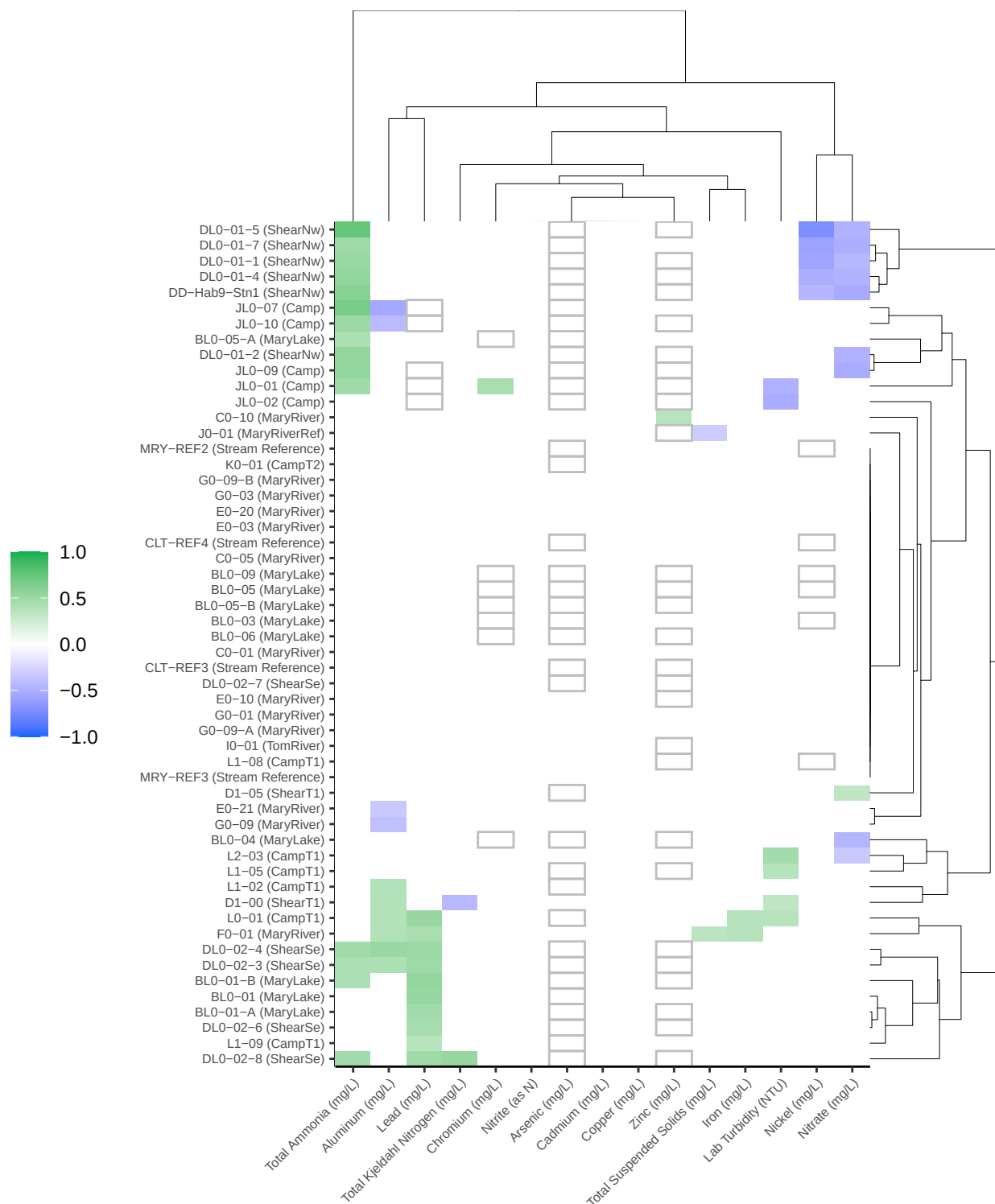


Figure 13: Heatmap of Spearman's Rank Correlation Coefficients for Select Water Quality Parameters and 30-Day Maximum Rainfall (mm), Water Licence Renewal Comment QIA-TR-1, 2006 to 2024

Notes: Non-significant (p -value < 0.1) are displayed as having a correlation coefficient of 0. Comparisons that could not be completed due to inadequate data are outlined in grey. CampT1 = Camp Lake Tributary 1; CampT2 = Camp Lake Tributary 2; Camp = Camp Lake; ShearSe = Sheardown Lake Southeast; ShearNw = Sheardown Lake Northwest; ShearT1 = Sheardown Lake Tributary 1.

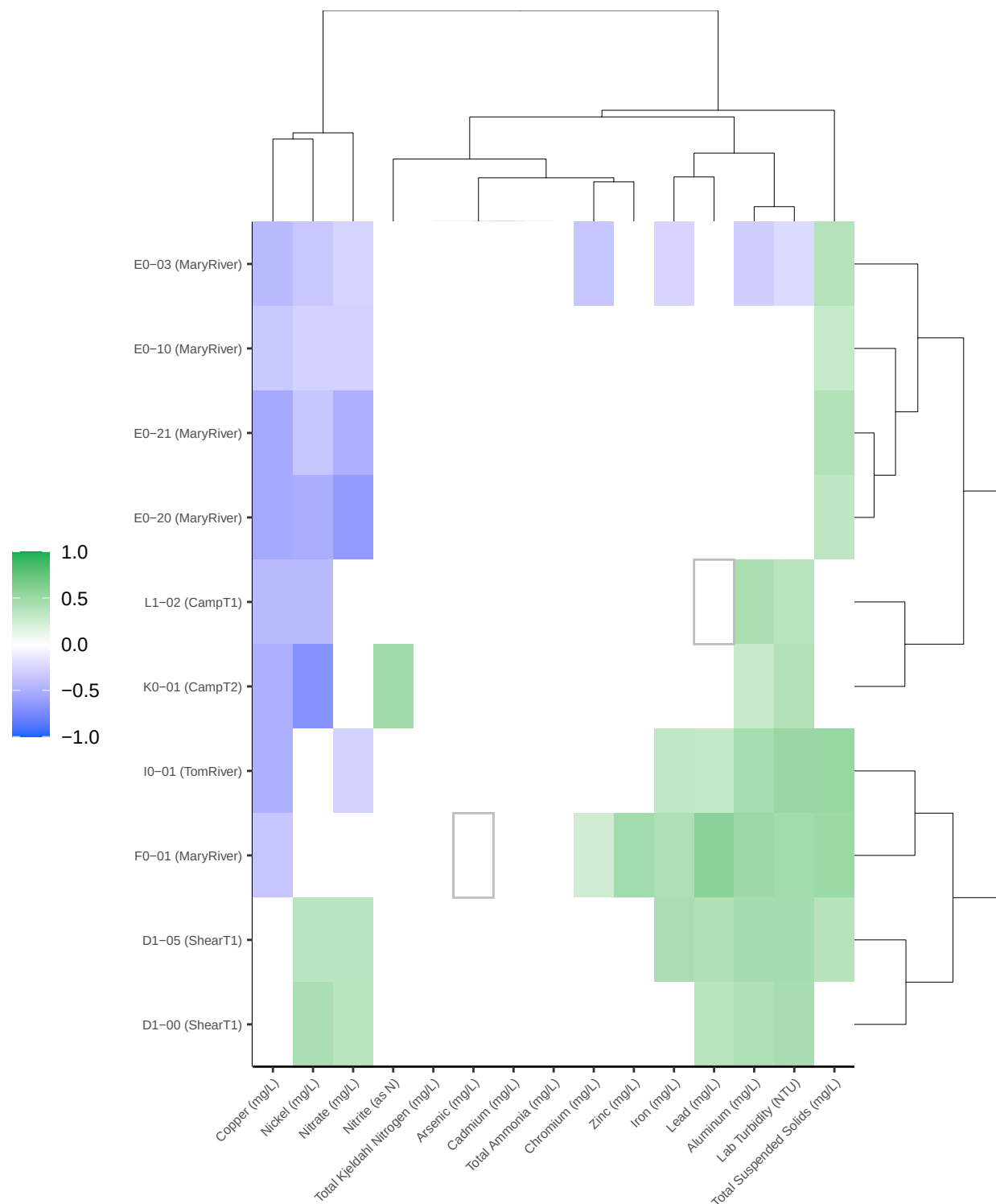


Figure 14: Heatmap of Spearman's Rank Correlation Coefficients for Select Water Quality Parameters and 3-Day Mean Discharge (m³/day), Water Licence Renewal Comment QIA-TR-1, 2006 to 2024

Notes: Non-significant (p -value < 0.1) are displayed as having a correlation coefficient of 0. Comparisons that could not be completed due to inadequate data are outlined in grey. CampT1 = Camp Lake Tributary 1; CampT2 = Camp Lake Tributary 2; Camp = Camp Lake; ShearSe = Sheardown Lake Southeast; ShearNw = Sheardown Lake Northwest; ShearT1 = Sheardown Lake Tributary 1.

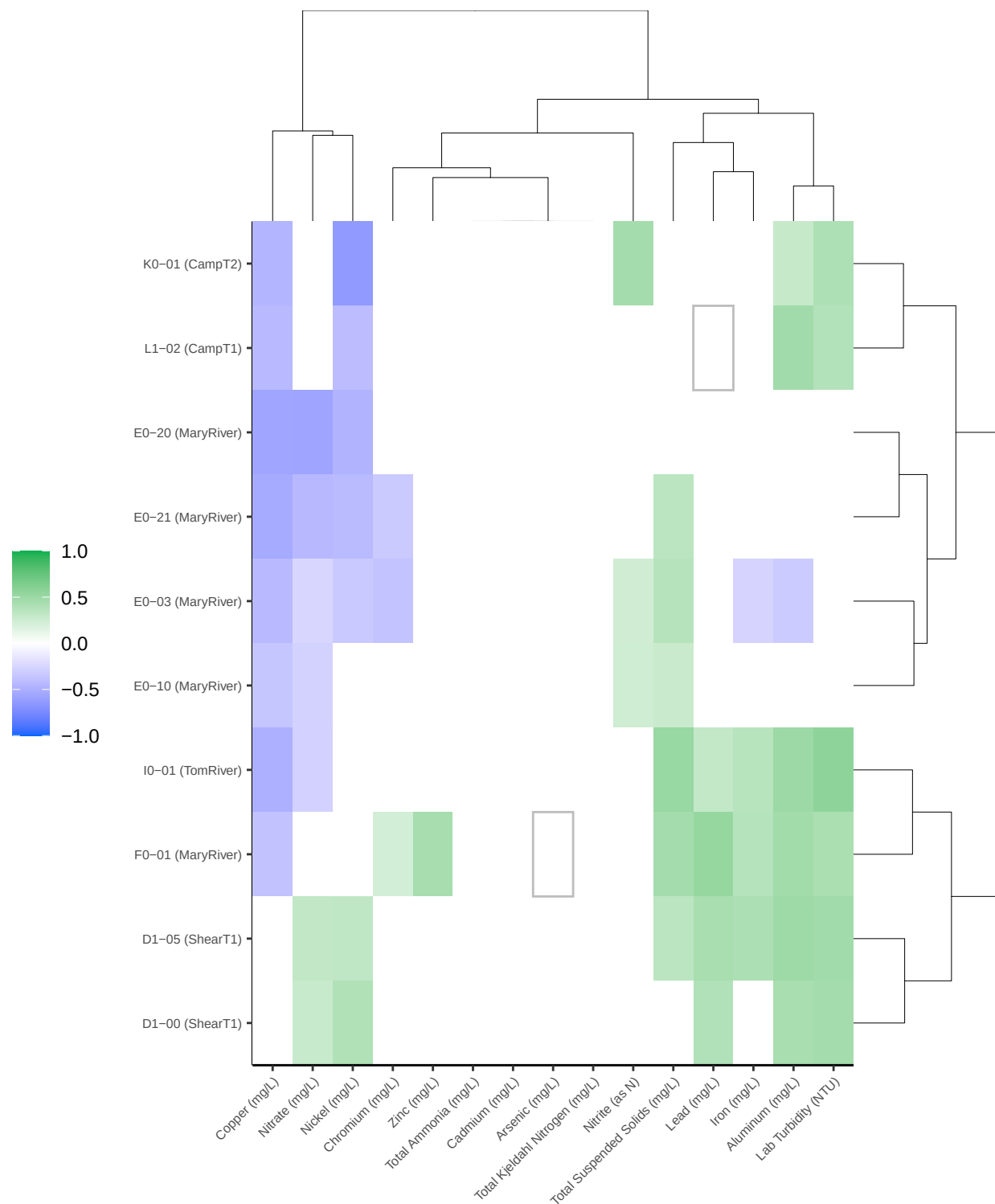


Figure 15: Heatmap of Spearman's Rank Correlation Coefficients for Select Water Quality Parameters and 3-Day Maximum Discharge (m³/day), Water Licence Renewal Comment QIA-TR-1, 2006 to 2024

Notes: Non-significant (p -value < 0.1) are displayed as having a correlation coefficient of 0. Comparisons that could not be completed due to inadequate data are outlined in grey. CampT1 = Camp Lake Tributary 1; CampT2 = Camp Lake Tributary 2; Camp = Camp Lake; ShearSe = Sheardown Lake Southeast; ShearNw = Sheardown Lake Northwest; ShearT1 = Sheardown Lake Tributary 1.

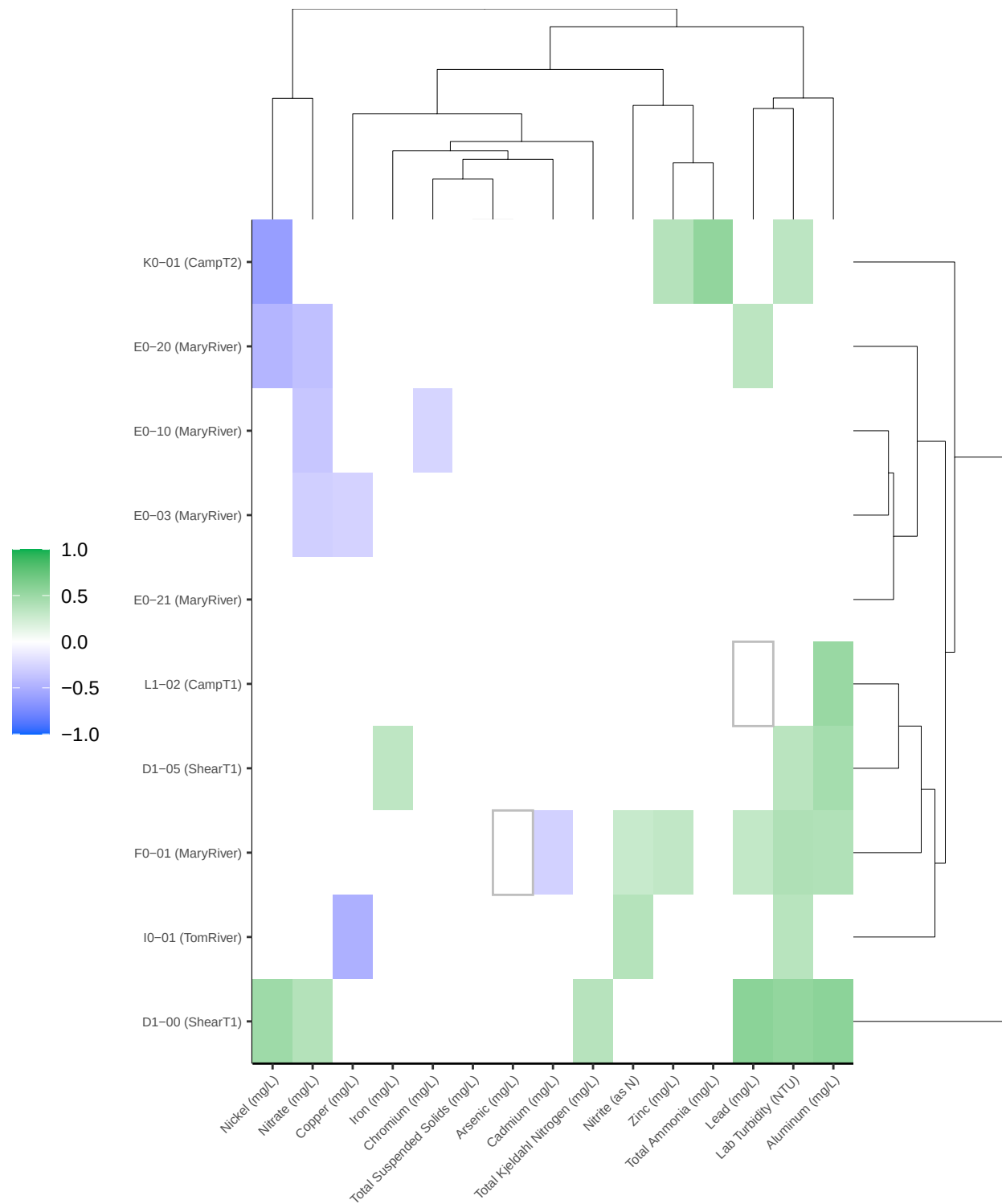


Figure 16: Heatmap of Spearman's Rank Correlation Coefficients for Select Water Quality Parameters and 30-Day Mean Discharge (m³/day), Water Licence Renewal Comment QIA-TR-1, 2006 to 2024

Notes: Non-significant (p -value < 0.1) are displayed as having a correlation coefficient of 0. Comparisons that could not be completed due to inadequate data are outlined in grey. CampT1 = Camp Lake Tributary 1; CampT2 = Camp Lake Tributary 2; Camp = Camp Lake; ShearSe = Sheardown Lake Southeast; ShearNw = Sheardown Lake Northwest; ShearT1 = Sheardown Lake Tributary 1.

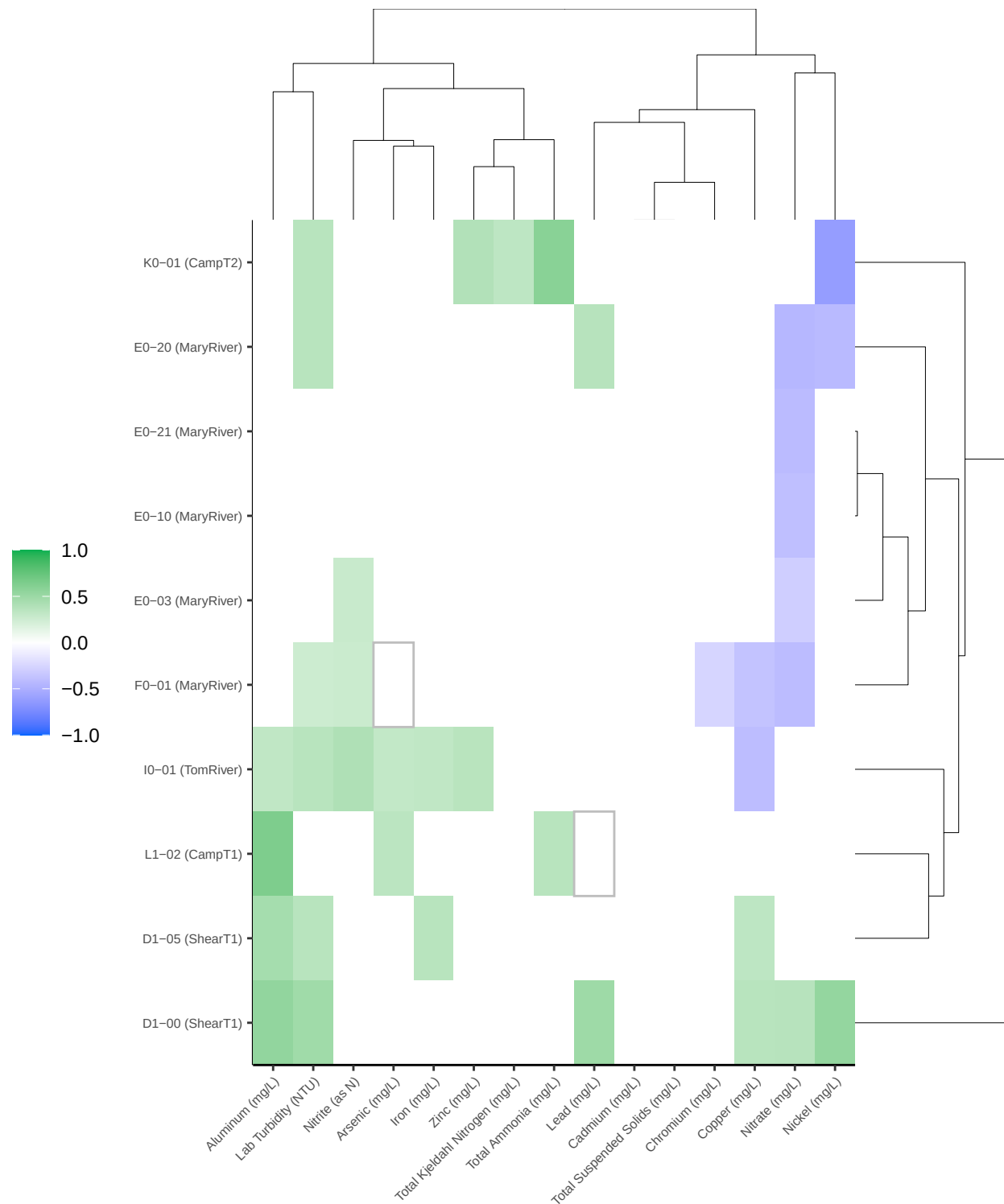


Figure 17: Heatmap of Spearman's Rank Correlation Coefficients for Select Water Quality Parameters and 30-Day Maximum Discharge (m³/day), Water Licence Renewal Comment QIA-TR-1, 2006 to 2024

Notes: Non-significant (p -value < 0.1) are displayed as having a correlation coefficient of 0. Comparisons that could not be completed due to inadequate data are outlined in grey. CampT1 = Camp Lake Tributary 1; CampT2 = Camp Lake Tributary 2; Camp = Camp Lake; ShearSe = Sheardown Lake Southeast; ShearNw = Sheardown Lake Northwest; ShearT1 = Sheardown Lake Tributary 1.

PHOTOS



Photo 1: Aerial photograph of Sheardown Lake Southeast depicting increased turbidity following a rainfall event likely associated with backflow influence from the adjacent Mary River, July 2025



Photo 2: Aerial photograph showing the hydrological connection between Sheardown Lake Southeast and the Mary River where suspected backflow occurs. Turbid water originating from the Mary River is visible entering Sheardown Lake Southeast, July 2025

TABLES

Table 1: Mean Water Chemistry at Camp Lake Tributary 1 (CLT1) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		North Branch					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	4.1	41.0	0.00820	0.00729	0.00743	0.00751	0.00969	0.00870
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0364	0.0227	0.0498	0.0465	0.0582	0.0356
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.111	0.0837	0.110	0.0437	0.118	0.0526
Total Metals	Aluminum (Al)	mg/L	0.100	0.179	9.4	94.0	0.0234	0.0142	0.0138	0.00730	0.0154	0.0164
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000100	-	<0.0001	-	<0.0001	-
	Cadmium (Cd)	mg/L	0.000120	0.0000800	0.00029	0.00290	<0.000005	-	<0.000005	-	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	<0.0005	-	<0.0005	-	0.000504	-
	Copper (Cu)	mg/L	0.00200	0.00220	0.0467	0.467	0.00162	0.000386	0.00212	0.000208	0.00225	0.000170
	Iron (Fe)	mg/L	0.300	0.326	12	120	0.0232	0.0205	0.0182	0.00909	0.0177	0.0280
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000577	0.0000134	0.0000500	-	0.0000525	-
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000515	0.0000374	0.000548	0.0000583	0.000584	0.0000652
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.00326	-	<0.003	-	<0.003	-

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsic (2013) using baseline water quality data specific to the Camp Lake tributary system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 1: Mean Water Chemistry at Camp Lake Tributary 1 (CLT1) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Upper Main Stem L2-03					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	4.1	41.0	0.0847	0.0898	0.104	0.105	0.121	0.161
	Nitrate	mg/L	3.00	3.00	130	1,300	0.708	0.764	1.22	1.34	1.42	1.20
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	0.0106	0.0111	0.0137	0.0139	0.0109	0.00868
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.346	0.185	0.439	0.176	0.462	0.144
Total Metals	Aluminum (Al)	mg/L	0.100	0.179	9.4	94.0	0.193	0.103	0.0909	0.0909	0.160	0.148
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000139	0.0000420	0.000129	0.0000190	0.000130	0.0000103
	Cadmium (Cd)	mg/L	0.000120	0.0000800	0.00029	0.00290	0.00000615	-	0.00000597	0.00000231	0.00000931	0.0000112
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000561	0.0000745	0.000513	-	0.000562	0.0000267
	Copper (Cu)	mg/L	0.00200	0.00220	0.0467	0.467	0.00144	0.000355	0.00129	0.000264	0.00150	0.000249
	Iron (Fe)	mg/L	0.300	0.326	12	120	0.360	0.103	0.432	0.173	0.541	0.184
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000423	0.000311	0.000170	0.000218	0.000243	0.000202
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.00176	0.00190	0.00134	0.000251	0.00145	0.000210
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.00305	0.000127	0.00231	-	0.00302	-

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsic (2013) using baseline water quality data specific to the Camp Lake tributary system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 1: Mean Water Chemistry at Camp Lake Tributary 1 (CLT1) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Lower Main Stem					
					Lower Limit	Upper Limit	Spring		Summer		Fall	
							Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	4.1	41.0	0.0119	0.0140	0.0122	0.0124	0.0259	0.0323
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0786	0.0858	0.193	0.210	0.312	0.185
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	0.00136	0.000158	0.00147	0.000999
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.122	0.0646	0.147	0.0724	0.179	0.0603
Total Metals	Aluminum (Al)	mg/L	0.100	0.179	9.4	94.0	0.0339	0.0186	0.0221	0.0148	0.0468	0.112
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	<0.0001	-	0.0000713	0.0000156	0.0000804	0.0000224
	Cadmium (Cd)	mg/L	0.000120	0.0000800	0.00029	0.00290	<0.000005	-	<0.000005	-	0.00000514	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	<0.0005	-	0.000205	0.000174	0.000503	-
	Copper (Cu)	mg/L	0.00200	0.00220	0.0467	0.467	0.00147	0.000312	0.00185	0.000141	0.00194	0.000129
	Iron (Fe)	mg/L	0.300	0.326	12	120	0.0537	0.0235	0.0693	0.0320	0.131	0.136
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000648	0.0000271	0.0000569	0.000000660	0.0000774	0.000119
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000603	0.000121	0.000824	0.000142	0.000990	0.000127
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.00303	-	0.00112	0.00149	0.00302	0.0000516

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsic (2013) using baseline water quality data specific to the Camp Lake tributary system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 2: Mean Water Chemistry at Camp Lake Tributary 2 (CLT2) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Camp Lake Tributary 2 (K0-01)					
					Lower Limit	Upper Limit	Spring		Summer		Fall	
							Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.0147	-	<0.005	-	0.00873	0.00951
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0506	0.0485	0.0322	0.00988	0.0629	0.0413
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.001	-	<0.001	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.0735	0.0497	0.103	0.0553	0.105	0.0490
Total Metals	Aluminum (Al)	mg/L	0.100	0.179	9.4	94.0	0.0257	0.0196	0.00949	0.00245	0.0227	0.0223
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	<0.0001	-	0.0000720	-	0.0000550	-
	Cadmium (Cd)	mg/L	0.000120	0.0000800	0.00029	0.00290	0.00000580	-	<0.000005	-	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000502	-	0.000210	-	0.000110	-
	Copper (Cu)	mg/L	0.00200	0.00220	0.0467	0.467	0.000935	0.000358	0.00127	0.000248	0.00150	0.000167
	Iron (Fe)	mg/L	0.300	0.326	12	120	0.0253	0.0173	0.0244	0.0346	0.0299	0.0285
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000609	-	0.0000170	-	0.0000327	0.0000556
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000548	0.000187	0.000670	0.000366	0.000648	0.0000651
	Zinc (Zn)	mg/L	0.0200 ^d	0.0300	0.3	3.00	0.00848	0.0156	0.00382	0.00671	0.00240	0.00440

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to the Camp Lake tributary system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 3: Mean Water Chemistry at Camp Lake (JL0) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Camp Lake					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	8.55	85.5	0.00733	-	0.0102	0.0124	0.00869	0.0100
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0355	0.0240	0.0356	0.0837	0.0223	0.00470
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.001	-	<0.001	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.105	0.0459	0.137	0.142	0.106	0.0522
Total Metals	Aluminum (Al)	mg/L	0.100	0.100	9.4	94.0	0.0308	0.0343	0.0141	0.0232	0.00954	0.00636
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000107	-	0.000100	0.00000420	0.0000656	0.0000375
	Cadmium (Cd)	mg/L	0.000120	0.000100	0.00029	0.00290	<0.000005	-	0.00000507	0.000000540	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	<0.0005	-	0.000123	0.000131	0.000111	0.0000669
	Copper (Cu)	mg/L	0.00200	0.00400	0.0467	0.467	0.000862	0.000112	0.000930	0.000158	0.000975	0.000531
	Iron (Fe)	mg/L	0.300	0.300	12	120	0.0666	0.122	0.0266	0.0387	0.0299	0.0870
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000640	0.0000255	0.0000554	0.0000674	0.0000286	0.00000664
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000686	0.000154	0.000639	0.000138	0.000645	0.000165
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	<0.003	-	0.00322	0.00266	0.000500	-

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to Camp Lake.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 4: Mean Water Chemistry at Sheardown Lake Tributary 1 (SDLT1), 9 (SDLT9), and 12 (SDLT12) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Sheardown Lake Tributary 1					
					Lower Limit	Upper Limit	Spring		Summer		Fall	
							Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.0127	0.00880	0.0154	0.0160	0.0138	0.0216
	Nitrate	mg/L	3.00	3.00	130	1,300	0.491	0.628	1.43	1.59	1.40	1.69
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	0.00514	0.00685	0.00250	0.00375
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.172	0.0683	0.212	0.0762	0.224	0.105
Total Metals	Aluminum (Al)	mg/L	0.100	0.179	9.4	94.0	0.0923	0.168	0.0548	0.0907	0.0309	0.0293
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000100	0.00000308	0.0000511	0.0000191	0.0000845	0.0000352
	Cadmium (Cd)	mg/L	0.000120	0.0000800	0.00029	0.00290	0.0000257	0.0000109	0.0000695	0.000101	0.0000468	0.0000586
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000518	0.0000428	0.000271	0.000235	0.000515	0.0000589
	Copper (Cu)	mg/L	0.00200	0.00220	0.0467	0.467	0.00239	0.000615	0.00249	0.000631	0.00245	0.000524
	Iron (Fe)	mg/L	0.300	0.326	12	120	0.160	0.239	0.121	0.138	0.0787	0.0477
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000161	0.000156	0.0000923	0.0000823	0.0000689	0.0000485
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.00123	0.000213	0.00145	0.000330	0.00155	0.000701
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.00459	0.00378	0.00272	0.00292	0.00430	0.00275

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsic (2013) using baseline water quality data specific to the Sheardown Lake tributary system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 4: Mean Water Chemistry at Sheardown Lake Tributary 1 (SDLT1), 9 (SDLT9), and 12 (SDLT12) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Sheardown Lake Tributary 9					
					Lower Limit	Upper Limit	Spring		Summer		Fall	
							Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.00650	-	1.17	1.23	1.68	0.423
	Nitrate	mg/L	3.00	3.00	130	1,300	1.50	0.600	15.7	14.0	8.17	1.32
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	0.134	0.210	0.0412	0.0139
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.276	0.136	1.75	1.58	1.89	0.436
Total Metals	Aluminum (Al)	mg/L	0.100	0.179	9.4	94.0	0.00480	0.00123	0.00387	0.00120	0.00388	0.000184
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	<0.0001	-	<0.0001	-	<0.0001	-
	Cadmium (Cd)	mg/L	0.000120	0.0000800	0.00029	0.00290	<0.000005	-	<0.000005	-	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	<0.0005	-	<0.0005	-	<0.0005	-
	Copper (Cu)	mg/L	0.00200	0.00220	0.0467	0.467	0.000810	0.000215	0.00117	0.000121	0.00116	0.000112
	Iron (Fe)	mg/L	0.300	0.326	12	120	0.0105	-	0.0193	-	0.0140	0.00200
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	<0.00005	-	<0.00005	-	<0.00005	-
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000993	0.000150	0.00143	0.000329	0.00135	0.0000891
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	<0.003	-	<0.003	-	<0.003	-

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to the Sheardown Lake tributary system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 4: Mean Water Chemistry at Sheardown Lake Tributary 1 (SDLT1), 9 (SDLT9), and 12 (SDLT12) Monitoring Stations During Spring, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Sheardown Lake Tributary 12					
					Lower Limit	Upper Limit	Spring		Summer		Fall	
							Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.0506	0.0529	<0.005	-	<0.01	-
	Nitrate	mg/L	3.00	3.00	130	1,300	0.323	0.148	0.358	-	0.497	-
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.01	-	<0.01	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.290	0.185	0.127	-	0.223	-
Total Metals	Aluminum (Al)	mg/L	0.100	0.179	9.4	94.0	0.428	0.535	0.00900	-	0.00430	-
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000162	0.000140	<0.0001	-	<0.0001	-
	Cadmium (Cd)	mg/L	0.000120	0.0000800	0.00029	0.00290	0.0000140	0.00000767	<0.000005	-	<0.00001	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	<0.0005	-	<0.0005	-	<0.0005	-
	Copper (Cu)	mg/L	0.00200	0.00220	0.0467	0.467	0.00168	0.000702	0.00120	-	0.00169	-
	Iron (Fe)	mg/L	0.300	0.326	12	120	0.717	0.851	0.0220	-	<0.03	-
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000541	0.000593	<0.00005	-	<0.00005	-
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.00192	0.00119	0.00135	-	0.00107	-
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.00362	-	<0.003	-	<0.003	-

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to the Sheardown Lake tributary system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 5: Mean Water Chemistry at Sheardown Lake Northwest (SDNW) Monitoring Stations During Winter, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Sheardown Lake NW					
					Lower Limit	Upper Limit	Winter		Summer		Fall	
							Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	8.55	85.5	0.0160	0.0143	0.0160	0.0127	0.0105	0.0106
	Nitrate	mg/L	3.00	3.00	130	1,300	0.193	0.130	0.193	0.154	0.207	0.200
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.001	-	<0.001	0.00980	0.00109	0.00111
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.217	0.715	0.217	0.0899	0.152	0.0788
Total Metals	Aluminum (Al)	mg/L	0.100	0.173, 0.179 ^d	9.4	94.0	0.00372	0.00318	0.00372	0.0317	0.0150	0.0141
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.0000600	0.0000276	0.0000600	0.0000385	0.0000551	0.0000248
	Cadmium (Cd)	mg/L	0.000120	0.0000900	0.00029	0.00290	0.00000555	0.00000180	0.00000555	0.00000276	0.00000675	0.00000313
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000136	0.000184	0.000136	0.0000966	0.000303	0.00226
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.000969	0.000170	0.000969	0.000323	0.00178	0.00485
	Iron (Fe)	mg/L	0.300	0.300	12	120	0.00596	0.0131	0.00596	0.0440	0.0269	0.0539
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000125	0.0000107	0.0000125	0.0000409	0.0000278	0.0000467
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000862	0.000539	0.000862	0.000102	0.000685	0.000122
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.000847	0.00168	0.000847	0.00105	0.000592	0.000783

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to Sheardown Lake Northwest.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

^d Benchmark is 0.179 mg/L and 0.173 mg/L for shallow and deep stations, respectively (Intrinsik 2013).

Table 6: Mean Water Chemistry at Sheardown Lake Southeast (SDSE) Monitoring Stations During Winter, Summer, and Fall, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Sheardown Lake SE					
					Lower Limit	Upper Limit	Winter		Summer		Fall	
							Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.0160	0.0245	0.00970	0.00931	0.0127	0.0131
	Nitrate	mg/L	3.00	3.00	130	1,300	0.158	0.113	0.0870	0.0565	0.121	0.104
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	0.00114	0.000620	0.00133	0.000694	0.00104	0.000267
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.167	0.361	0.117	0.0519	0.130	0.0423
Total Metals	Aluminum (Al)	mg/L	0.100	0.173, 0.179 ^d	9.4	94.0	0.00414	0.00340	0.0514	0.0251	0.0509	0.0331
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.0000732	0.0000168	0.0000553	0.0000225	0.0000650	0.0000493
	Cadmium (Cd)	mg/L	0.000120	0.0000900	0.00029	0.00290	<0.000005	-	0.00000518	0.000000835	0.00000523	0.000000311
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000132	0.000236	0.000136	0.0000633	0.000139	0.000266
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.000875	0.0000786	0.000820	0.000153	0.000855	0.000158
	Iron (Fe)	mg/L	0.300	0.300	12	120	0.0198	0.0136	0.0599	0.0300	0.0522	0.0514
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000107	0.00000906	0.0000747	0.0000325	0.0000568	0.0000503
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000689	0.0000725	0.000547	0.0000476	0.000594	0.0000828
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.000668	0.000789	0.000728	0.000718	0.00109	0.00710

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to Sheardown Lake Southeast.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

^d Benchmark is 0.179 mg/L and 0.173 mg/L for shallow and deep stations, respectively (Intrinsik 2013).

Table 7: Mean Water Chemistry at Mary River Monitoring Stations During Spring, Summer, and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Mary River Reference					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.00731	0.00444	0.00954	0.00662	0.0101	0.0154
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0208	0.00204	0.0333	0.0404	0.0421	0.0362
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.0724	0.0335	0.0741	0.0258	0.0964	0.0219
Total Metals	Aluminum (Al)	mg/L	0.100	0.966	9.4	94.0	0.116	0.0791	0.313	0.373	0.203	0.230
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000102	0.00000508	0.000117	0.0000392	0.000103	0.00000288
	Cadmium (Cd)	mg/L	0.000120	0.0000600	0.00029	0.00290	0.00000697	-	0.00000515	0.000000494	0.00000566	0.000000432
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.00120	0.00421	0.000770	0.000677	0.000670	0.000384
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.00101	0.00157	0.00114	0.000523	0.00115	0.000338
	Iron (Fe)	mg/L	0.300	0.874	12	120	0.188	0.387	0.281	0.368	0.167	0.186
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000156	0.000129	0.000263	0.000262	0.000158	0.000140
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000667	0.000698	0.000678	0.000352	0.000581	0.000129
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.00398	0.00729	0.00361	0.00363	<0.003	-

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to the Mary River system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 7: Mean Water Chemistry at Mary River Monitoring Stations During Spring, Summer, and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		G0 Upstream					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.00729	0.00433	0.00944	0.00851	0.00507	-
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0210	-	0.0290	0.0251	0.0910	0.226
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.0710	0.0317	0.0655	0.0338	0.0996	0.0364
Total Metals	Aluminum (Al)	mg/L	0.100	0.966	9.4	94.0	0.116	0.0469	0.299	0.400	0.327	0.590
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000102	-	0.000116	0.0000543	0.000114	0.0000303
	Cadmium (Cd)	mg/L	0.000120	0.0000600	0.00029	0.00290	<0.000005	-	<0.000005	-	0.00000540	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000544	0.000157	0.000804	0.000778	0.000882	0.000935
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.000584	0.000142	0.00111	0.000557	0.00127	0.000637
	Iron (Fe)	mg/L	0.300	0.874	12	120	0.116	0.0702	0.266	0.384	0.271	0.481
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000134	0.0000869	0.000237	0.000271	0.000237	0.000349
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000534	0.000143	0.000718	0.000548	0.000785	0.000605
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	<0.003	-	0.00312	0.000154	0.00326	0.000240

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to the Mary River system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 7: Mean Water Chemistry at Mary River Monitoring Stations During Spring, Summer, and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		F0 Tributary					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.0115	0.0112	0.00783	0.00340	0.00683	-
	Nitrate	mg/L	3.00	3.00	130	1,300	0.124	0.181	0.586	0.769	0.583	0.526
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.113	0.0780	0.148	0.0995	0.181	0.0683
Total Metals	Aluminum (Al)	mg/L	0.100	0.966	9.4	94.0	0.0945	0.0523	0.144	0.316	0.0806	0.0861
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	<0.0001	-	<0.0001	-	0.000105	-
	Cadmium (Cd)	mg/L	0.000120	0.0000600	0.00029	0.00290	<0.000005	-	0.00000545	-	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	<0.0005	-	0.000649	-	0.000558	-
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.000517	0.0000380	0.000871	0.000466	0.000982	0.000372
	Iron (Fe)	mg/L	0.300	0.874	12	120	0.114	0.0664	0.198	0.493	0.0959	0.103
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000132	0.0000497	0.000100	0.000128	0.000143	0.000113
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000504	0.00000849	0.000649	0.000431	0.000707	0.000279
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	<0.003	-	0.00302	-	<0.003	-

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsic (2013) using baseline water quality data specific to the Mary River system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 7: Mean Water Chemistry at Mary River Monitoring Stations During Spring, Summer, and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		E0 Near-Field					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.0100	0.0157	0.0108	0.0113	0.00740	0.00767
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0239	0.0143	0.0652	0.0628	0.0913	0.0736
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.0810	0.0430	0.0952	0.0372	0.112	0.0666
Total Metals	Aluminum (Al)	mg/L	0.100	0.966	9.4	94.0	0.110	0.0425	0.254	0.362	0.278	0.529
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000101	0.00000270	0.000115	0.0000478	0.000114	0.0000275
	Cadmium (Cd)	mg/L	0.000120	0.0000600	0.00029	0.00290	0.00000520	-	0.00000555	0.000000552	0.00000660	0.00000247
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000501	-	0.000752	0.000717	0.000704	0.000493
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.000545	0.0000697	0.00107	0.000554	0.00122	0.000499
	Iron (Fe)	mg/L	0.300	0.874	12	120	0.107	0.0444	0.230	0.333	0.219	0.302
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000125	0.0000484	0.000244	0.000256	0.000212	0.000253
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000513	0.0000291	0.000731	0.000548	0.000778	0.000427
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	<0.003	-	0.00311	0.000397	0.00433	0.00875

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsic (2013) using baseline water quality data specific to the Mary River system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 7: Mean Water Chemistry at Mary River Monitoring Stations During Spring, Summer, and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		C0 Downstream					
							Spring		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.00824	0.00954	0.00706	0.00694	0.00995	0.0133
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0304	0.0281	0.0624	0.0521	0.103	0.0729
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.101	0.0461	0.0869	0.0512	0.105	0.0584
Total Metals	Aluminum (Al)	mg/L	0.100	0.966	9.4	94.0	0.118	0.0459	0.275	0.355	0.281	0.380
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000100	-	0.000116	0.0000411	0.000115	0.0000340
	Cadmium (Cd)	mg/L	0.000120	0.0000600	0.00029	0.00290	0.00000521	-	0.00000528	0.000000623	0.00000550	0.00000203
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000509	0.0000438	0.00113	0.00273	0.000804	0.000760
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.000574	0.000114	0.00109	0.000541	0.00130	0.000502
	Iron (Fe)	mg/L	0.300	0.874	12	120	0.119	0.0559	0.236	0.299	0.306	0.469
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.000137	0.0000570	0.000217	0.000218	0.000230	0.000274
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000520	0.0000352	0.000743	0.000456	0.00102	0.000593
	Zinc (Zn)	mg/L	0.0200 ^a	0.0300	0.3	3.00	0.00304	-	0.00301	0.0000508	0.00312	0.000423

Notes: WQG = Water quality guideline. AEMP = Aquatic Effects Monitoring Plan. FEIS = Final Environmental Impact Statement. "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsic (2013) using baseline water quality data specific to the Mary River system.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 8: Mean Water Chemistry at Mary Lake North Basin (BL0-01) and South Basin (BL0) Monitoring Stations, During Winter, Summer, and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Mary Lake North Basin					
							Winter		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.0141	0.0292	0.0104	0.0102	0.00922	0.0106
	Nitrate	mg/L	3.00	3.00	130	1,300	0.285	1.28	0.00833	0.0180	0.0260	0.0160
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	0.00502	-	0.00121	0.00104	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.144	0.0789	0.106	0.0587	0.111	0.0409
Total Metals	Aluminum (Al)	mg/L	0.100	0.130	9.4	94.0	0.00491	0.00572	0.0316	0.00901	0.0215	0.00667
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	0.000105	0.0000138	0.000102	0.0000188	<0.0001	-
	Cadmium (Cd)	mg/L	0.000120	0.0000600	0.00029	0.00290	0.00000534	0.00000102	0.00000535	0.00000244	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000506	0.0000128	0.000127	0.000122	0.000511	-
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.00110	0.000180	0.000771	0.000147	0.000931	0.0000933
	Iron (Fe)	mg/L	0.300	0.300	12	120	0.0295	0.0394	0.0377	0.0174	0.0282	0.00400
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000503	-	0.0000514	0.00000380	<0.00005	-
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000708	0.000239	0.000502	0.00000870	0.000507	0.0000227
	Zinc (Zn)	mg/L	0.0200 ^d	0.0300	0.3	3.00	0.00309	0.000968	0.00301	-	0.00300	-

Notes: WQG = Water quality guideline, AEMP = Aquatic Effects Monitoring Plan, FEIS = Final Environmental Impact Statement, "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to Mary Lake.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 8: Mean Water Chemistry at Mary Lake North Basin (BL0-01) and South Basin (BL0) Monitoring Stations, During Winter, Summer, and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	AEMP Benchmark ^b	FEIS Prediction Range ^c		Mary Lake South Basin					
							Winter		Summer		Fall	
					Lower Limit	Upper Limit	Mean	SD	Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.855	5.88	58.8	0.00913	0.0135	0.0104	0.00885	0.0112	0.0223
	Nitrate	mg/L	3.00	3.00	130	1,300	0.0918	0.528	0.0233	0.00687	0.0271	0.0130
	Nitrite	mg/L	0.0600	0.0600	0.6	6.00	<0.005	-	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	-	-	0.534	5.18	0.119	0.454	0.0977	0.0541
Total Metals	Aluminum (Al)	mg/L	0.100	0.130	9.4	94.0	0.00486	0.00192	0.0632	0.0312	0.0416	0.0266
	Arsenic (As)	mg/L	0.00500	0.00500	0.05	0.500	<0.0001	-	0.000100	-	0.000100	-
	Cadmium (Cd)	mg/L	0.000120	0.0000600	0.00029	0.00290	0.00000501	-	0.00000519	0.000000731	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.00300	0.047	0.470	0.000503	0.00000598	0.000503	0.00000478	0.000507	-
	Copper (Cu)	mg/L	0.00200	0.00240	0.0467	0.467	0.000699	0.0000961	0.000652	0.000198	0.00127	0.00441
	Iron (Fe)	mg/L	0.300	0.300	12	120	0.0115	0.00910	0.0666	0.0323	0.0406	0.0309
	Lead (Pb)	mg/L	0.00100	0.00100	0.01	0.100	0.0000501	-	0.0000797	0.0000414	0.0000591	0.0000449
	Nickel (Ni)	mg/L	0.0250	0.0250	0.83	8.30	0.000501	0.00000312	0.000508	0.0000310	0.000506	0.0000323
	Zinc (Zn)	mg/L	0.0200 ^d	0.0300	0.3	3.00	0.00308	0.000522	0.00313	0.00109	0.00302	-

Notes: WQG = Water quality guideline, AEMP = Aquatic Effects Monitoring Plan, FEIS = Final Environmental Impact Statement, "-" = data not available/applicable.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 2024) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

^b AEMP Water Quality Benchmarks developed by Intrinsik (2013) using baseline water quality data specific to Mary Lake.

^c Predictions established in the FEIS for the magnitude of potential effects on water quality in Core Receiving Environment Monitoring Program waterbodies from non-point source emissions. The prediction range corresponds to a Level II magnitude of effect rating where indicator(s) are predicted to exceed threshold values by an order of magnitude or greater (i.e., lower limit of prediction range = 10 times the threshold and upper limit of prediction range = 100 times the threshold). FEIS threshold values are based on the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of aquatic life (CCME 2011) or site specific criterion developed for the Mary River Mine Site Area (aluminum only; Knight Piesold 2011).

Table 9: Mean Water Chemistry at Reference Lake 3 (REF-03) Monitoring Stations During Summer and Fall Sampling Events, Water License Renewal Comment QIA-TR-1, 2015 to 2024

Parameters		Units	Water Quality Guideline (WQG) ^a	Reference Lake			
				Summer		Fall	
				Mean	SD	Mean	SD
Nutrients and Organics	Total Ammonia	mg/L	-	0.00793	0.00879	0.0129	0.0176
	Nitrate	mg/L	3.00	<0.02	-	0.0216	-
	Nitrite	mg/L	0.0600	<0.005	-	<0.005	-
	Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.161	0.0608	0.146	0.0487
Total Metals	Aluminum (Al)	mg/L	0.100	0.00492	0.00844	0.00505	0.00369
	Arsenic (As)	mg/L	0.00500	0.000102	0.0000105	<0.0001	-
	Cadmium (Cd)	mg/L	0.000120	<0.000005	-	<0.000005	-
	Chromium (Cr)	mg/L	0.00100	0.000501	-	<0.0005	-
	Copper (Cu)	mg/L	0.00200	0.000812	0.0000840	0.000814	0.0000731
	Iron (Fe)	mg/L	0.300	0.0160	0.0171	0.0135	0.00862
	Lead (Pb)	mg/L	0.00100	0.0000503	-	<0.00005	-
	Nickel (Ni)	mg/L	0.0250	<0.0005	-	0.000501	-
	Zinc (Zn)	mg/L	0.02 ^a	0.00302	-	0.00321	0.00123

Note: "-" = data not available/applicable. Standard deviation.

^a Canadian Water Quality Guideline for the protection of aquatic life (CCME 1999, 2017) except those indicated by α (Ontario Provincial Water Quality Objective [PWQO]; OMOE 1994).

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Camp Lake Tributary 1 (CLT1)	Mine Exposed; CLT1 North Branch downstream of Deposit 1	L1-08	Total Ammonia (mg/L)	0.062	-0.371	26	0.044	-0.399	26	0.468	-0.149	26	0.692	-0.0815	26
			Nitrate (mg/L)	0.622	-0.101	26	0.645	-0.0948	26	0.309	-0.207	26	0.754	-0.0645	26
			Nitrite (as N)	0.107	0.323	26	0.107	0.323	26	0.066	0.366	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.001	-0.601	26	<0.001	-0.617	26	0.438	-0.159	26	0.367	-0.184	26
			Aluminum (mg/L)	0.316	-0.205	26	0.321	-0.202	26	0.493	0.141	26	0.431	0.161	26
			Arsenic (mg/L)	0.107	0.323	26	0.107	0.323	26	0.397	0.173	26	0.897	0.0267	26
			Cadmium (mg/L)	0.107	-0.323	26	0.107	-0.323	26	0.066	-0.366	26	0.542	-0.125	26
			Chromium (mg/L)	0.336	0.197	26	0.336	0.197	26	0.559	-0.120	26	0.265	-0.227	26
			Copper (mg/L)	0.676	0.0860	26	0.632	0.0986	26	0.059	0.376	26	0.690	0.0821	26
			Iron (mg/L)	0.746	-0.0668	26	0.746	-0.0668	26	0.771	0.0600	26	0.356	-0.189	26
			Lead (mg/L)	0.299	-0.212	26	0.299	-0.212	26	0.959	0.0107	26	0.556	-0.121	26
			Nickel (mg/L)	-	-	26	-	-	26	-	-	26	-	-	26
			Zinc (mg/L)	-	-	26	-	-	26	-	-	26	-	-	26
			Total Suspended Solids (mg/L)	0.071	-0.360	26	0.071	-0.360	26	0.060	-0.374	26	0.267	-0.226	26
			Lab Turbidity (NTU)	0.207	-0.246	28	0.215	-0.242	28	0.440	0.152	28	0.254	0.223	28
	Mine Exposed; CLT1 North Branch downstream of Deposit 1	L1-02	Total Ammonia (mg/L)	0.322	0.198	27	0.309	0.203	27	0.886	0.0295	26	0.449	0.155	26
			Nitrate (mg/L)	0.053	0.376	27	0.067	0.358	27	0.686	0.0831	26	0.533	0.128	26
			Nitrite (as N)	0.963	-0.00932	27	0.817	-0.0466	27	0.277	0.221	26	0.512	0.135	26
			Total Kjeldahl Nitrogen (mg/L)	0.391	0.172	27	0.249	0.230	27	0.712	0.0760	26	0.959	0.0106	26
			Aluminum (mg/L)	0.383	0.175	27	0.328	0.196	27	0.046	0.394	26	0.045	0.396	26
			Arsenic (mg/L)	-	-	27	-	-	27	-	-	26	-	-	26
			Cadmium (mg/L)	0.963	0.00932	27	0.817	0.0466	27	0.277	-0.221	26	0.512	-0.135	26
			Chromium (mg/L)	0.193	-0.258	27	0.151	-0.284	27	0.796	-0.0534	26	0.327	-0.200	26
			Copper (mg/L)	0.408	-0.166	27	0.426	-0.160	27	0.640	0.0962	26	0.755	-0.0643	26
			Iron (mg/L)	0.118	0.308	27	0.079	0.344	27	0.864	0.0354	26	0.393	0.175	26
			Lead (mg/L)	0.193	0.258	27	0.151	0.284	27	0.796	0.0534	26	0.327	0.200	26
			Nickel (mg/L)	0.820	-0.0458	27	0.855	-0.0368	27	0.483	0.144	26	0.486	0.143	26
			Zinc (mg/L)	0.940	0.0152	27	0.870	0.0331	27	0.474	0.147	26	0.666	0.0888	26
			Total Suspended Solids (mg/L)	0.755	0.0629	27	0.738	0.0674	27	0.986	-0.00354	26	0.688	-0.0827	26
			Lab Turbidity (NTU)	0.882	0.0289	29	0.845	0.0379	29	0.366	0.177	28	0.444	0.151	28
	Mine Exposed; CLT1 Upper Main Stem parallel to mine infrastructure, tote road, and airstrip	L2-03	Total Ammonia (mg/L)	0.383	-0.178	26	0.325	-0.201	26	0.585	0.115	25	0.438	-0.162	25
			Nitrate (mg/L)	0.016	-0.467	26	0.010	-0.494	26	0.988	-0.00308	25	0.095	-0.341	25
			Nitrite (as N)	0.098	-0.331	26	0.113	-0.319	26	0.336	0.201	25	0.495	-0.143	25
			Total Kjeldahl Nitrogen (mg/L)	0.082	-0.347	26	0.049	-0.390	26	0.617	0.105	25	0.293	-0.219	25
			Aluminum (mg/L)	0.350	0.191	26	0.243	0.237	26	0.243	0.242	25	0.256	0.236	25
			Arsenic (mg/L)	0.623	-0.101	26	0.815	-0.0483	26	0.245	0.241	25	0.824	0.0468	25
			Cadmium (mg/L)	0.173	-0.276	26	0.167	-0.279	26	0.037	-0.419	25	0.163	-0.288	25
			Chromium (mg/L)	0.490	-0.142	26	0.429	-0.162	26	0.200	0.265	25	1.000	0	25
			Copper (mg/L)	0.751	-0.0653	26	0.863	-0.0355	26	0.254	0.237	25	0.735	0.0712	25
			Iron (mg/L)	0.291	0.215	26	0.260	0.229	26	0.585	0.115	25	0.795	0.0546	25
			Lead (mg/L)	0.636	0.0975	26	0.480	0.145	26	0.311	0.211	25	0.243	0.243	25
			Nickel (mg/L)	0.338	-0.196	26	0.362	-0.186	26	0.326	0.205	25	0.894	-0.0281	25
			Zinc (mg/L)	0.365	0.185	26	0.332	0.198	26	0.342	0.198	25	0.110	0.328	25
			Total Suspended Solids (mg/L)	0.057	0.378	26	0.036	0.414	26	0.378	0.184	25	0.529	0.132	25
			Lab Turbidity (NTU)	0.269	0.216	28	0.164	0.271	28	0.122	0.305	27	0.015	0.465	27
	Mine Exposed; CLT1 Lower Main Stem adjacent to tote road and airstrip	L1-09	Total Ammonia (mg/L)	0.855	0.0369	27	0.839	0.0410	27	0.448	0.156	26	0.850	-0.0391	26
			Nitrate (mg/L)	0.362	-0.183	27	0.311	-0.203	27	0.351	0.191	26	0.476	-0.146	26
			Nitrite (as N)	0.902	-0.0248	27	0.862	-0.0351	27	0.058	0.377	26	0.705	0.0780	26
			Total Kjeldahl Nitrogen (mg/L)	0.851	0.0380	27	0.824	0.0450	27	0.200	0.260	26	0.596	0.109	26
			Aluminum (mg/L)	0.921	-0.0201	27	0.861	-0.0354	27	0.196	0.262	26	0.369	0.184	26
			Arsenic (mg/L)	0.440	-0.155	27	0.608	-0.103	27	-	-	26	-	-	26
			Cadmium (mg/L)	0.672	-0.0854	27	0.847	-0.0388	27	0.236	-0.241	26	0.512	-0.135	26
			Chromium (mg/L)	0.193	-0.258	27	0.151	-0.284	27	0.698	-0.0800	26	0.327	-0.200	26
			Copper (mg/L)	0.570	-0.114	27	0.550	-0.120	27	0.638	0.0967	26	0.439	-0.159	26
			Iron (mg/L)	0.679	0.0835	27	0.791	0.0535	27	0.193	0.263	26	0.514	0.134	26
			Lead (mg/L)	0.334	0.193	27	0.359	0.184	27	0.053	0.383	26	0.067	0.365	26
			Nickel (mg/L)	0.809	-0.0489	27	0.685	-0.0817	27	0.266	0.226	26	0.715	0.0752	26
			Zinc (mg/L)	0.940	0.0152	27	0.870	0.0331	27	0.420	0.165	26	0.666	0.0888	26
			Total Suspended Solids (mg/L)	0.713	0.0743	27	0.666	0.0870	27	0.717	0.0746	26	0.435	0.160	26
			Lab Turbidity (NTU)	0.594	0.103	29	0.517	0.125	29	0.753	0.0622	28	0.124	0.297	28
	Mine Exposed; CLT1 Lower Main Stem directly upstream of tote road	L1-05	Total Ammonia (mg/L)	0.785	0.0563	26	0.747	0.0666	26	0.476	0.149	25	0.450	0.158	25
			Nitrate (mg/L)	0.446	-0.156	26	0.397	-0.173	26	0.408	0.173	25	0.812	-0.0500	25
			Nitrite (as N)	0.449	0.155	26	0.439	0.159	26	0.038	0.417	25	0.271	0.229	25
			Total Kjeldahl Nitrogen (mg/L)	0.479	-0.145	26	0.425	-0.164	26	0.925	0.0200	25	0.824	0.0470	25
			Aluminum (mg/L)	0.565	-0.118	26	0.474	-0.147	26	0.355	0.193	25	0.325	0.205	25
			Arsenic (mg/L)	0.378	-0.180	26	0.543	-0.125	26	-	-	25	-	-	25
			Cadmium (mg/L)	0.542	-0.125	26	0.715	-0.0752	26	0.217	-0.256	25	0.435	-0.164	25
			Chromium (mg/L)	0.149	-0.291	26	0.112	-0.319	26	0.737	-0.0708	25	0.276	-0.226	25
			Copper (mg/L)	0.363	-0.186	26	0.311	-0.207	26	0.925	0.0199	25	0.223	-0.253	25
			Iron (mg/L)	0.906	-0.0244	26	0.833	-0.0434	26	0.217	0.256	25	0.347	0.196	25
			Lead (mg/L)	0.859	-0.0367	26	0.816	-0.0481	26	0.570	0.119	25	0.516	0.136	25
			Nickel (mg/L)	0.845	-0.0403	26	0.852	-0.0384	26	0.864	0.0361	25	0.986	0.00367	25
			Zinc (mg/L)	0.378	0.180	26	0.543	0.125	26	-	-	25	-	-	25
			Total Suspended Solids (mg/L)	0.923	-0.0200	26	1.000	0	26	0.217	-0.256	25	0.435	-0.164	25
			Lab Turbidity (NTU)	0.626	0.0962	28	0.621	0.0977	28	0.292	0.211	27	0.052	0.378	27
	Mine Exposed; CLT1 Lower Main Stem downstream of tote road closest to Camp Lake confluence	L0-01	Total Ammonia (mg/L)	0.520	0.129	27	0.464	0.147	27	0.374	0.182	26	0.651	0.0932	26
			Nitrate (mg/L)	0.414	-0.164	27	0.442	-0.155	27	0.470	0.148	26	0.552	-0.122	26
			Nitrite (as N)	0.869	0.0334	27	0.979	0.00543	27	0.083	0.347	26	0.596	0.109	26
			Total Kjeldahl Nitrogen (mg/L)	0.410	0.165	27	0.371	0.179	27	0.201	0.259				

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Camp Lake Tributary 2 (CLT2)	Mine Exposed; CLT2 downstream of tote road near confluence with Camp Lake	K0-01	Total Ammonia (mg/L)	0.719	0.0742	26	0.766	0.0613	26	0.316	0.209	25	0.567	0.120	25
			Nitrate (mg/L)	0.347	-0.188	27	0.335	-0.193	27	0.481	0.144	26	0.479	0.145	26
			Nitrite (as N)	0.617	-0.101	27	0.665	-0.0873	27	0.236	0.241	26	0.512	0.135	26
			Total Kjeldahl Nitrogen (mg/L)	0.508	0.133	27	0.476	0.143	27	0.276	0.222	26	0.715	-0.0753	26
			Aluminum (mg/L)	0.739	-0.0673	27	0.856	-0.0368	27	0.521	0.132	26	0.189	0.266	26
			Arsenic (mg/L)	0.524	-0.128	27	0.703	-0.0770	27	-	-	26	-	-	26
			Cadmium (mg/L)	0.461	-0.148	27	0.589	-0.109	27	0.588	-0.111	26	0.480	-0.145	26
			Chromium (mg/L)	0.213	-0.248	27	0.231	-0.239	27	0.443	-0.157	26	0.276	-0.222	26
			Copper (mg/L)	0.184	-0.263	27	0.198	-0.256	27	0.779	0.0579	26	0.331	-0.199	26
			Iron (mg/L)	0.492	0.138	27	0.374	0.178	27	0.593	-0.110	26	0.808	-0.0502	26
			Lead (mg/L)	0.829	-0.0436	27	0.998	0.000459	27	0.341	0.195	26	0.670	0.0876	26
			Nickel (mg/L)	0.148	-0.286	27	0.199	-0.255	27	0.877	-0.0318	26	0.443	-0.157	26
			Zinc (mg/L)	0.884	-0.0294	27	0.760	-0.0618	27	0.964	-0.00926	26	0.838	-0.0423	26
Total Suspended Solids (mg/L)	0.366	0.181	27	0.366	0.181	27	0.159	-0.285	26	0.226	-0.246	26			
Lab Turbidity (NTU)	0.068	0.343	29	0.050	0.367	29	0.689	0.0792	28	0.138	0.287	28			
Camp Lake	Mine Exposed; Camp Lake near CLT1 inflow	JL0-02	Total Ammonia (mg/L)	0.407	0.208	18	0.357	0.231	18	0.031	0.524	17	0.187	0.336	17
			Nitrate (mg/L)	1.000	0	18	0.930	-0.0224	18	0.588	-0.142	17	0.240	-0.301	17
			Nitrite (as N)	0.475	-0.180	18	0.549	-0.151	18	0.379	0.228	17	0.308	0.263	17
			Total Kjeldahl Nitrogen (mg/L)	0.205	0.314	18	0.157	0.348	18	0.434	0.203	17	0.972	-0.00907	17
			Aluminum (mg/L)	0.532	-0.158	18	0.497	-0.171	18	0.186	-0.337	17	0.148	-0.366	17
			Arsenic (mg/L)	0.206	-0.323	17	0.295	-0.270	17	-	-	16	-	-	16
			Cadmium (mg/L)	0.820	0.0578	18	0.722	0.0901	18	0.195	0.331	17	0.249	0.296	17
			Chromium (mg/L)	0.708	-0.0949	18	0.824	-0.0566	18	0.129	0.383	17	0.129	0.383	17
			Copper (mg/L)	0.331	-0.243	18	0.293	-0.262	18	0.788	0.0706	17	0.702	0.100	17
			Iron (mg/L)	0.070	-0.436	18	0.092	-0.409	18	0.239	-0.302	17	0.308	-0.263	17
			Lead (mg/L)	0.189	-0.325	18	0.270	-0.275	18	-	-	17	-	-	17
			Nickel (mg/L)	0.864	0.0434	18	0.970	0.00946	18	0.735	-0.0885	17	0.964	0.0118	17
			Zinc (mg/L)	0.189	-0.325	18	0.270	-0.275	18	-	-	17	-	-	17
			Total Suspended Solids (mg/L)	0.370	0.225	18	0.370	0.225	18	0.846	0.0511	17	1.000	0	17
			Lab Turbidity (NTU)	0.187	0.326	18	0.175	0.335	18	0.130	-0.382	17	0.036	-0.511	17
	Mine Exposed; Camp Lake near northeast shore	JL0-10	Total Ammonia (mg/L)	0.594	0.139	17	0.555	0.154	17	0.007	0.641	16	0.049	0.499	16
			Nitrate (mg/L)	0.750	0.0835	17	0.780	0.0731	17	0.456	-0.201	16	0.130	-0.395	16
			Nitrite (as N)	0.420	-0.210	17	0.493	-0.178	17	0.351	0.249	16	0.280	0.288	16
			Total Kjeldahl Nitrogen (mg/L)	0.885	0.0379	17	0.785	0.0716	17	0.733	0.0925	16	0.693	0.107	16
			Aluminum (mg/L)	0.275	0.281	17	0.298	0.268	17	0.292	-0.281	16	0.098	-0.428	16
			Arsenic (mg/L)	0.146	-0.380	16	0.224	-0.322	16	-	-	15	-	-	15
			Cadmium (mg/L)	0.800	0.0666	17	0.703	0.0999	17	0.246	0.308	16	0.318	0.267	16
			Chromium (mg/L)	0.633	-0.125	17	0.751	-0.0833	17	0.133	0.392	16	0.133	0.392	16
			Copper (mg/L)	0.957	0.0143	17	1.000	0	17	0.890	-0.0376	16	0.378	-0.237	16
			Iron (mg/L)	0.371	-0.232	17	0.445	-0.199	17	0.351	0.249	16	0.280	0.288	16
			Lead (mg/L)	0.135	-0.377	17	0.205	-0.324	17	-	-	16	-	-	16
			Nickel (mg/L)	0.785	0.0717	17	0.847	0.0507	17	0.503	0.181	16	0.862	0.0472	16
			Zinc (mg/L)	0.135	-0.377	17	0.205	-0.324	17	-	-	16	-	-	16
			Total Suspended Solids (mg/L)	0.348	0.243	17	0.348	0.243	17	0.918	0.0280	16	0.918	-0.0280	16
			Lab Turbidity (NTU)	0.847	0.0505	17	0.886	0.0376	17	0.590	-0.146	16	0.605	-0.140	16
	Mine Exposed; Camp Lake near centre of lake	JL0-01	Total Ammonia (mg/L)	0.852	-0.0490	17	0.911	-0.0294	17	0.030	0.542	16	0.057	0.484	16
			Nitrate (mg/L)	0.586	-0.142	17	0.567	-0.149	17	0.442	-0.207	16	0.164	-0.365	16
			Nitrite (as N)	0.494	-0.178	17	0.573	-0.147	17	0.351	0.249	16	0.280	0.288	16
			Total Kjeldahl Nitrogen (mg/L)	0.398	0.219	17	0.328	0.252	17	0.097	0.429	16	0.544	0.164	16
			Aluminum (mg/L)	0.683	-0.107	17	0.618	-0.130	17	0.137	-0.388	16	0.182	-0.351	16
			Arsenic (mg/L)	0.225	-0.322	16	0.324	-0.263	16	-	-	15	-	-	15
			Cadmium (mg/L)	0.763	0.0789	17	0.663	0.114	17	0.221	0.324	16	0.284	0.285	16
			Chromium (mg/L)	0.546	-0.158	17	0.623	-0.128	17	0.280	0.288	16	0.087	0.441	16
			Copper (mg/L)	0.381	0.227	17	0.381	0.227	17	0.503	0.181	16	0.911	0.0302	16
			Iron (mg/L)	0.066	-0.455	17	0.088	-0.426	17	0.221	-0.324	16	0.284	-0.285	16
			Lead (mg/L)	0.206	-0.323	17	0.295	-0.270	17	-	-	16	-	-	16
			Nickel (mg/L)	0.889	0.0366	17	0.893	0.0353	17	0.285	-0.285	16	0.172	-0.359	16
			Zinc (mg/L)	0.206	-0.323	17	0.295	-0.270	17	-	-	16	-	-	16
			Total Suspended Solids (mg/L)	1.000	0	17	1.000	0	17	0.247	0.307	16	0.391	0.230	16
			Lab Turbidity (NTU)	0.741	0.0867	17	0.748	0.0842	17	0.093	-0.434	16	0.061	-0.478	16
	Mine Exposed; Camp Lake near centre of lake closer to Mary Lake outflow	JL0-07	Total Ammonia (mg/L)	0.933	0.0222	17	0.869	0.0431	17	0.006	0.657	16	0.005	0.661	16
			Nitrate (mg/L)	0.583	-0.143	17	0.556	-0.154	17	0.387	-0.232	16	0.164	-0.365	16
			Nitrite (as N)	0.504	-0.174	17	0.582	-0.144	17	0.433	0.211	16	0.280	0.288	16
			Total Kjeldahl Nitrogen (mg/L)	0.318	0.257	17	0.271	0.283	17	0.062	0.476	16	0.576	0.151	16
			Aluminum (mg/L)	0.753	-0.0826	17	0.680	-0.108	17	0.018	-0.581	16	0.031	-0.540	16
			Arsenic (mg/L)	0.232	-0.317	16	0.332	-0.259	16	-	-	15	-	-	15
			Cadmium (mg/L)	0.617	0.131	17	0.531	0.163	17	0.186	0.349	16	0.318	0.267	16
			Chromium (mg/L)	0.959	-0.0136	17	0.931	0.0227	17	0.133	0.392	16	0.133	0.392	16
			Copper (mg/L)	0.650	-0.119	17	0.657	-0.116	17	0.477	-0.192	16	0.245	-0.308	16
			Iron (mg/L)	0.454	-0.195	17	0.533	-0.162	17	0.433	0.211	16	0.280	0.288	16
			Lead (mg/L)	0.214	-0.317	17	0.304	-0.265	17	-	-	16	-	-	16
			Nickel (mg/L)	0.658	-0.116	17	0.710	-0.0974	17	0.582	0.149	16	0.704	0.103	16
			Zinc (mg/L)	0.112	-0.399	17	0.152	-0.363	17	0.133	-0.392	16	0.133	-0.392	16
			Total Suspended Solids (mg/L)	0.305	0.265	17	0.304	0.265	17	0.757	0.0841	16	0.918	-0.0280	16
			Lab Turbidity (NTU)	0.843	-0.0521	17	0.805	-0.0648	17	0.202	-0.337	16	0.286	-0.284	16
	Mine Exposed; Camp Lake near Mary Lake outflow	JL0-09	Total Ammonia (mg/L)	0.764	0.0788	17	0.702	0.100	17	0.005	0.660	16	0.028	0.548	16
			Nitrate (mg/L)	0.845	0.0514	17	0.866	0.0442	17	0.208	-0.333	16	0.041	-0.516	16
			Nitrite (as N)	0.420	-0.210	17	0.493	-0.178	17	0.433	0.211	16	0.280	0.288	16
			Total Kjeldahl Nitrogen (mg/L)	0.515	0.170	17	0.450	0.196	17	0.528	0.170	16	0.995	-0.00162	16
			Aluminum (mg/L)	0.828	0.0570	17	0.874	0.0415	17	0.025	-0.557	16	0.131	-0.394	16
Arsenic (mg/L)			0.146	-0.380	16	0.224	-0.322	16	-	-	1				

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Sheardown Tributary 1 (SDLT1)	Mine-exposed; SDLT1 downstream from MS-11 FDP	D1-05	Total Ammonia (mg/L)	0.287	0.209	28	0.288	0.208	28	0.147	0.286	27	0.120	0.306	27
			Nitrate (mg/L)	0.133	0.291	28	0.155	0.276	28	0.498	0.136	27	0.091	0.331	27
			Nitrite (as N)	0.632	-0.0946	28	0.682	-0.0810	28	0.303	0.206	27	0.580	0.112	27
			Total Kjeldahl Nitrogen (mg/L)	0.248	0.226	28	0.241	0.229	28	0.474	0.144	27	0.539	-0.124	27
			Aluminum (mg/L)	0.923	-0.0192	28	0.980	-0.00508	28	0.151	0.284	27	0.231	0.239	27
			Arsenic (mg/L)	0.417	-0.160	28	0.493	-0.135	28	-	-	27	-	-	27
			Cadmium (mg/L)	0.549	0.118	28	0.605	0.102	28	0.808	0.0491	27	0.663	0.0879	27
			Chromium (mg/L)	0.372	0.175	28	0.406	0.163	28	0.541	0.123	27	0.912	-0.0224	27
			Copper (mg/L)	0.658	-0.0874	28	0.652	-0.0893	28	0.078	0.345	27	0.771	0.0586	27
			Iron (mg/L)	0.664	0.0857	28	0.685	0.0801	28	0.161	0.278	27	0.232	0.238	27
			Lead (mg/L)	0.792	-0.0522	28	0.836	-0.0410	28	0.366	0.181	27	0.332	0.194	27
			Nickel (mg/L)	0.769	-0.0582	28	0.697	-0.0771	28	0.136	0.295	27	0.458	0.149	27
			Zinc (mg/L)	0.286	-0.209	28	0.286	-0.209	28	0.379	0.176	27	0.452	0.151	27
			Total Suspended Solids (mg/L)	0.888	-0.0278	28	0.888	-0.0278	28	0.333	0.194	27	0.598	0.106	27
			Lab Turbidity (NTU)	0.979	-0.00499	30	0.997	-0.000697	30	0.273	0.211	29	0.193	0.249	29
	Mine-exposed; SDLT1 immediately upstream from Sheardown Lake NW	D1-00	Total Ammonia (mg/L)	0.844	0.0389	28	0.837	0.0407	28	0.415	0.164	27	0.365	0.182	27
			Nitrate (mg/L)	0.105	0.313	28	0.104	0.314	28	0.935	0.0165	27	0.654	-0.0904	27
			Nitrite (as N)	0.238	-0.230	28	0.258	-0.221	28	0.964	-0.00901	27	0.973	-0.00676	27
			Total Kjeldahl Nitrogen (mg/L)	0.577	0.110	28	0.663	0.0860	28	0.076	-0.347	27	0.022	-0.440	27
			Aluminum (mg/L)	0.577	0.110	28	0.606	0.102	28	0.025	0.431	27	0.046	0.387	27
			Arsenic (mg/L)	0.625	-0.0964	28	0.676	-0.0826	28	0.318	0.200	27	0.589	0.109	27
			Cadmium (mg/L)	0.968	0.00802	28	0.989	0.00272	28	0.680	-0.0831	27	0.698	-0.0782	27
			Chromium (mg/L)	0.283	0.210	28	0.313	0.198	28	0.541	0.123	27	0.912	-0.0224	27
			Copper (mg/L)	0.188	-0.256	28	0.214	-0.242	28	0.045	0.390	27	0.655	0.0901	27
			Iron (mg/L)	0.116	0.304	28	0.127	0.296	28	0.680	0.0832	27	0.699	0.0780	27
			Lead (mg/L)	0.517	0.128	28	0.572	0.112	28	0.091	0.331	27	0.154	0.282	27
			Nickel (mg/L)	0.622	0.0973	28	0.592	0.106	28	0.137	0.294	27	0.714	-0.0741	27
			Zinc (mg/L)	0.950	0.0125	28	0.909	0.0225	28	0.671	-0.0857	27	0.192	-0.259	27
			Total Suspended Solids (mg/L)	0.546	-0.119	28	0.530	-0.124	28	0.536	0.125	27	0.870	-0.0331	27
			Lab Turbidity (NTU)	0.625	0.0930	30	0.677	0.0793	30	0.267	0.213	29	0.078	0.332	29
Sheardown Lake Northwest	Mine-exposed; Sheardown Lake NW near inflow	DD-Hab9-Stn1	Total Ammonia (mg/L)	0.952	-0.0154	18	0.952	-0.0154	18	0.006	0.637	17	0.011	0.602	17
			Nitrate (mg/L)	0.834	0.0531	18	0.834	0.0531	18	0.047	-0.488	17	0.029	-0.528	17
			Nitrite (as N)	0.478	-0.179	18	0.478	-0.179	18	0.379	0.228	17	0.308	0.263	17
			Total Kjeldahl Nitrogen (mg/L)	0.931	-0.0219	18	0.931	-0.0219	18	0.708	0.0982	17	0.751	-0.0831	17
			Aluminum (mg/L)	0.714	-0.0928	18	0.714	-0.0928	18	0.450	-0.196	17	0.599	-0.137	17
			Arsenic (mg/L)	0.239	-0.292	18	0.239	-0.292	18	-	-	17	-	-	17
			Cadmium (mg/L)	0.898	0.0326	18	0.898	0.0326	18	0.195	0.331	17	0.249	0.296	17
			Chromium (mg/L)	0.760	-0.0775	18	0.760	-0.0775	18	0.129	0.383	17	0.129	0.383	17
			Copper (mg/L)	0.890	-0.0353	18	0.890	-0.0353	18	0.259	-0.290	17	0.190	-0.334	17
			Iron (mg/L)	0.643	-0.117	18	0.643	-0.117	18	0.856	-0.0478	17	0.945	-0.0181	17
			Lead (mg/L)	0.364	-0.227	18	0.364	-0.227	18	0.279	-0.278	17	0.347	-0.243	17
			Nickel (mg/L)	0.699	0.0979	18	0.699	0.0979	18	0.115	-0.397	17	0.070	-0.450	17
			Zinc (mg/L)	0.239	-0.292	18	0.239	-0.292	18	-	-	17	-	-	17
			Total Suspended Solids (mg/L)	0.306	0.256	18	0.306	0.256	18	0.688	0.105	17	0.501	0.175	17
			Lab Turbidity (NTU)	0.501	-0.170	18	0.501	-0.170	18	0.877	0.0406	17	0.855	0.0480	17
	Mine-exposed; Sheardown Lake NW near west shore	DL0-01-5	Total Ammonia (mg/L)	0.943	0.0183	18	0.915	0.0271	18	0.004	0.653	17	<0.001	0.740	17
			Nitrate (mg/L)	0.865	-0.0433	18	0.851	-0.0476	18	0.025	-0.540	17	0.054	-0.475	17
			Nitrite (as N)	0.418	-0.204	18	0.417	-0.204	18	0.459	0.193	17	0.308	0.263	17
			Total Kjeldahl Nitrogen (mg/L)	0.520	0.162	18	0.520	0.162	18	0.466	0.189	17	0.278	0.279	17
			Aluminum (mg/L)	0.969	-0.00983	18	0.973	-0.00861	18	0.224	-0.311	17	0.282	-0.277	17
			Arsenic (mg/L)	0.140	-0.362	18	0.140	-0.362	18	-	-	17	-	-	17
			Cadmium (mg/L)	0.418	-0.204	18	0.417	-0.204	18	0.459	0.193	17	0.308	0.263	17
			Chromium (mg/L)	0.574	-0.142	18	0.574	-0.142	18	0.129	0.383	17	0.129	0.383	17
			Copper (mg/L)	0.309	0.254	18	0.312	0.253	18	0.071	-0.448	17	0.210	-0.320	17
			Iron (mg/L)	0.667	-0.109	18	0.631	-0.121	18	0.692	-0.104	17	0.945	-0.0181	17
			Lead (mg/L)	0.110	-0.390	18	0.110	-0.390	18	0.261	-0.289	17	0.418	-0.210	17
			Nickel (mg/L)	0.882	-0.0376	18	0.840	-0.0512	18	0.001	-0.717	17	0.001	-0.717	17
			Zinc (mg/L)	0.140	-0.362	18	0.140	-0.362	18	-	-	17	-	-	17
			Total Suspended Solids (mg/L)	0.508	-0.167	18	0.507	-0.167	18	0.697	-0.102	17	1.000	0	17
			Lab Turbidity (NTU)	0.880	0.0382	18	0.884	0.0370	18	0.775	0.0749	17	0.918	-0.0270	17
	Mine-exposed; Sheardown Lake NW mid- basin	DL0-01-1	Total Ammonia (mg/L)	0.297	0.260	18	0.287	0.266	18	0.016	0.575	17	0.034	0.515	17
			Nitrate (mg/L)	0.488	-0.175	18	0.477	-0.179	18	0.060	-0.465	17	0.071	-0.449	17
			Nitrite (as N)	0.673	-0.107	18	0.673	-0.107	18	0.379	0.228	17	0.308	0.263	17
			Total Kjeldahl Nitrogen (mg/L)	0.349	0.234	18	0.349	0.234	18	0.251	0.295	17	0.560	0.152	17
			Aluminum (mg/L)	0.576	-0.141	18	0.585	-0.138	18	0.743	-0.0859	17	0.881	-0.0393	17
			Arsenic (mg/L)	0.370	-0.225	18	0.370	-0.225	18	-	-	17	-	-	17
			Cadmium (mg/L)	0.629	0.122	18	0.628	0.122	18	0.195	0.331	17	0.249	0.296	17
			Chromium (mg/L)	0.943	-0.0182	18	0.943	-0.0182	18	0.129	0.383	17	0.129	0.383	17
			Copper (mg/L)	0.347	-0.235	18	0.319	-0.249	18	0.555	-0.154	17	0.270	-0.284	17
			Iron (mg/L)	0.663	-0.110	18	0.631	-0.121	18	0.856	-0.0478	17	0.945	-0.0181	17
			Lead (mg/L)	0.330	-0.244	18	0.304	-0.257	18	0.307	-0.264	17	0.377	-0.229	17
			Nickel (mg/L)	0.896	-0.0332	18	0.863	-0.0437	18	0.039	-0.504	17	0.017	-0.570	17
			Zinc (mg/L)	0.370	-0.225	18	0.370	-0.225	18	-	-	17	-	-	17
			Total Suspended Solids (mg/L)	0.857	0.0458	18	0.857	0.0458	18	0.683	-0.107	17	0.972	-0.00922	17
			Lab Turbidity (NTU)	0.679	-0.105	18	0.663	-0.110	18	0.486	-0.181	17	0.580	-0.145	17
	Mine-exposed; Sheardown Lake NW mid- basin near island	DL0-01-2	Total Ammonia (mg/L)	0.864	0.0434	18	0.864	0.0434	18	0.025	0.541	17	0.024	0.543	17
			Nitrate (mg/L)	0.989	-0.00354	18	0.989	-0.00354	18	0.057	-0.469	17	0.054	-0.475	17
			Nitrite (as N)	0.519	-0.163	18	0.519	-0.163	18	0.379	0.228	17	0.308	0.263	17
			Total Kjeldahl Nitrogen (mg/L)	0.824	-0.0564	18	0.824	-0.0564	18	0.615	0.131	17	0.331	0.251	17
Aluminum (mg/L)			0.												

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a													
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)				
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size		
Sheardown Lake Northwest	Mine-exposed; Sheardown Lake NW near SE shore	DL0-01-4	Total Ammonia (mg/L)	0.544	0.153	18	0.493	0.173	18	0.011	0.599	17	0.023	0.546	17		
			Nitrate (mg/L)	0.762	-0.0767	18	0.803	-0.0632	18	0.053	-0.477	17	0.052	-0.479	17		
			Nitrite (as N)	0.478	-0.179	18	0.477	-0.179	18	0.379	0.228	17	0.308	0.263	17		
			Total Kjeldahl Nitrogen (mg/L)	0.976	-0.00773	18	0.915	-0.0271	18	0.812	0.0625	17	0.565	0.150	17		
			Aluminum (mg/L)	0.470	-0.182	18	0.473	-0.181	18	0.859	0.0466	17	0.750	0.0834	17		
			Arsenic (mg/L)	0.239	-0.292	18	0.239	-0.293	18	-	-	17	-	-	17		
			Cadmium (mg/L)	0.898	0.0326	18	0.898	0.0326	18	0.195	0.331	17	0.249	0.296	17		
			Chromium (mg/L)	0.760	-0.0775	18	0.760	-0.0776	18	0.129	0.383	17	0.129	0.383	17		
			Copper (mg/L)	0.882	-0.0376	18	0.788	-0.0682	18	0.738	0.0878	17	0.961	0.0129	17		
			Iron (mg/L)	0.721	-0.0906	18	0.685	-0.103	18	0.777	-0.0741	17	0.945	-0.0181	17		
			Lead (mg/L)	0.183	-0.329	18	0.182	-0.329	18	0.846	-0.0511	17	1.000	0	17		
			Nickel (mg/L)	0.692	-0.100	18	0.697	-0.0987	18	0.038	-0.506	17	0.038	-0.507	17		
			Zinc (mg/L)	0.239	-0.292	18	0.239	-0.293	18	-	-	17	-	-	17		
			Total Suspended Solids (mg/L)	0.879	-0.0387	18	0.879	-0.0387	18	0.346	-0.244	17	0.659	-0.115	17		
Sheardown Lake Southeast	Mine-exposed; Sheardown Lake NW near outflow to Sheardown Lake SE	DL0-01-7	Lab Turbidity (NTU)	0.725	0.0893	18	0.820	0.0576	18	0.492	-0.179	17	0.462	-0.191	17		
			Total Ammonia (mg/L)	0.504	0.169	18	0.523	0.161	18	0.043	0.496	17	0.046	0.489	17		
			Nitrate (mg/L)	0.823	0.0569	18	0.770	0.0742	18	0.076	-0.442	17	0.042	-0.498	17		
			Nitrite (as N)	0.457	-0.187	18	0.457	-0.187	18	0.379	0.228	17	0.308	0.263	17		
			Total Kjeldahl Nitrogen (mg/L)	0.766	-0.0756	18	0.685	-0.103	18	0.857	0.0474	17	0.494	0.178	17		
			Aluminum (mg/L)	0.207	-0.312	18	0.211	-0.310	18	0.149	-0.366	17	0.153	-0.362	17		
			Arsenic (mg/L)	0.216	-0.306	18	0.216	-0.306	18	-	-	17	-	-	17		
			Cadmium (mg/L)	0.496	-0.171	18	0.496	-0.171	18	0.379	0.228	17	0.308	0.263	17		
			Chromium (mg/L)	0.634	-0.120	18	0.634	-0.120	18	0.129	0.383	17	0.129	0.383	17		
			Copper (mg/L)	0.193	0.322	18	0.196	0.319	18	0.886	0.0375	17	0.597	-0.138	17		
			Iron (mg/L)	0.421	-0.202	18	0.421	-0.202	18	0.310	-0.262	17	0.419	-0.210	17		
			Lead (mg/L)	0.621	-0.125	18	0.621	-0.125	18	0.683	-0.107	17	0.448	-0.197	17		
			Nickel (mg/L)	0.894	0.0339	18	0.848	0.0487	18	0.024	-0.545	17	0.014	-0.585	17		
			Zinc (mg/L)	0.880	0.0383	18	0.880	0.0383	18	0.557	0.153	17	0.846	-0.0511	17		
	Total Suspended Solids (mg/L)	1.000	0	18	1.000	0	18	0.501	-0.175	17	0.418	-0.210	17				
	Lab Turbidity (NTU)	0.473	-0.181	18	0.426	-0.200	18	0.370	-0.232	17	0.625	-0.128	17				
	Mine-exposed; Sheardown Lake SE, closest to inflow from Sheardown Lake NW	DL0-02-6	Total Ammonia (mg/L)	0.580	-0.140	18	0.580	-0.140	18	0.110	0.402	17	0.117	0.394	17		
			Nitrate (mg/L)	0.984	-0.00505	18	0.984	-0.00505	18	0.119	-0.393	17	0.167	-0.351	17		
			Nitrite (as N)	0.757	0.0785	18	0.757	0.0785	18	0.379	0.228	17	0.308	0.263	17		
			Total Kjeldahl Nitrogen (mg/L)	0.970	0.00967	18	0.970	0.00967	18	0.117	0.395	17	0.331	0.251	17		
			Aluminum (mg/L)	0.500	-0.170	18	0.500	-0.170	18	0.093	0.421	17	0.128	0.384	17		
			Arsenic (mg/L)	0.612	0.128	18	0.612	0.128	18	-	-	17	-	-	17		
			Cadmium (mg/L)	0.346	0.236	18	0.346	0.236	18	0.195	0.331	17	0.249	0.296	17		
			Chromium (mg/L)	0.457	0.187	18	0.457	0.187	18	0.129	0.383	17	0.129	0.383	17		
			Copper (mg/L)	0.365	-0.227	18	0.365	-0.227	18	0.630	-0.126	17	0.523	-0.167	17		
			Iron (mg/L)	0.559	-0.148	18	0.559	-0.148	18	0.306	0.264	17	0.352	0.241	17		
			Lead (mg/L)	0.249	-0.287	18	0.249	-0.287	18	0.120	0.392	17	0.071	0.448	17		
			Nickel (mg/L)	0.077	-0.427	18	0.077	-0.427	18	0.979	-0.00677	17	0.748	-0.0843	17		
			Zinc (mg/L)	0.612	0.128	18	0.612	0.128	18	-	-	17	-	-	17		
			Total Suspended Solids (mg/L)	0.757	-0.0785	18	0.757	-0.0785	18	0.787	0.0710	17	0.964	0.0120	17		
			Lab Turbidity (NTU)	0.618	-0.126	18	0.618	-0.126	18	0.260	0.289	17	0.256	0.292	17		
			Mine-exposed; Sheardown Lake SE mid-basin	DL0-02-7	Total Ammonia (mg/L)	0.627	-0.123	18	0.627	-0.123	18	0.223	0.312	17	0.387	0.224	17
					Nitrate (mg/L)	0.644	-0.117	18	0.644	-0.117	18	0.150	-0.365	17	0.228	-0.309	17
					Nitrite (as N)	0.757	0.0785	18	0.757	0.0785	18	0.379	0.228	17	0.308	0.263	17
					Total Kjeldahl Nitrogen (mg/L)	0.569	0.144	18	0.569	0.144	18	0.472	0.187	17	0.422	0.208	17
					Aluminum (mg/L)	0.272	-0.273	18	0.272	-0.273	18	0.381	0.227	17	0.279	0.278	17
					Arsenic (mg/L)	0.612	0.128	18	0.612	0.128	18	-	-	17	-	-	17
					Cadmium (mg/L)	0.344	0.237	18	0.344	0.237	18	0.215	0.317	17	0.277	0.280	17
					Chromium (mg/L)	0.458	0.187	18	0.458	0.187	18	0.129	0.383	17	0.129	0.383	17
					Copper (mg/L)	0.202	-0.316	18	0.202	-0.316	18	0.693	0.104	17	0.873	0.0419	17
					Iron (mg/L)	0.358	-0.230	18	0.358	-0.230	18	0.797	0.0675	17	0.680	0.108	17
					Lead (mg/L)	0.287	-0.266	18	0.287	-0.266	18	0.689	0.105	17	0.487	0.181	17
	Nickel (mg/L)	0.118			-0.382	18	0.118	-0.382	18	0.296	-0.269	17	0.276	-0.280	17		
	Zinc (mg/L)	0.612			0.128	18	0.612	0.128	18	-	-	17	-	-	17		
	Total Suspended Solids (mg/L)	1.000			0	18	1.000	0	18	0.592	-0.140	17	0.501	-0.175	17		
	Lab Turbidity (NTU)	0.786	-0.0688	18	0.786	-0.0688	18	0.690	0.104	17	0.659	0.115	17				
	Mine-exposed; Sheardown Lake SE mid-basin	DL0-02-3	Total Ammonia (mg/L)	0.213	-0.309	18	0.213	-0.309	18	0.073	0.446	17	0.095	0.418	17		
			Nitrate (mg/L)	0.630	0.122	18	0.630	0.122	18	0.193	-0.332	17	0.316	-0.259	17		
			Nitrite (as N)	0.457	-0.187	18	0.457	-0.187	18	0.459	0.193	17	0.308	0.263	17		
			Total Kjeldahl Nitrogen (mg/L)	0.586	0.138	18	0.586	0.138	18	0.165	0.353	17	0.115	0.397	17		
			Aluminum (mg/L)	0.057	-0.456	18	0.057	-0.456	18	0.097	0.416	17	0.097	0.416	17		
			Arsenic (mg/L)	0.216	-0.306	18	0.216	-0.306	18	-	-	17	-	-	17		
			Cadmium (mg/L)	0.946	0.0171	18	0.946	0.0171	18	0.163	0.354	17	0.277	0.280	17		
			Chromium (mg/L)	0.746	-0.0822	18	0.746	-0.0822	18	0.129	0.383	17	0.129	0.383	17		
			Copper (mg/L)	0.284	-0.267	18	0.284	-0.267	18	0.970	-0.00984	17	0.679	-0.108	17		
			Iron (mg/L)	0.072	-0.435	18	0.072	-0.435	18	0.511	0.171	17	0.564	0.150	17		
			Lead (mg/L)	0.024	-0.528	18	0.024	-0.528	18	0.136	0.376	17	0.047	0.488	17		
			Nickel (mg/L)	0.344	-0.237	18	0.344	-0.237	18	0.485	-0.182	17	0.233	-0.306	17		
			Zinc (mg/L)	0.216	-0.306	18	0.216	-0.306	18	-	-	17	-	-	17		
			Total Suspended Solids (mg/L)	0.687	-0.102	18	0.687	-0.102	18	0.861	-0.0461	17	0.861	-0.0461	17		
	Lab Turbidity (NTU)	0.223	-0.302	18	0.223	-0.302	18	0.350	0.242	17	0.330	0.251	17				
	Mine-exposed; Sheardown Lake SE mid-basin, closest to SDLT9 inflow	DL0-02-4	Total Ammonia (mg/L)	0.307	-0.255	18	0.307	-0.255	18	0.027	0.536	17	0.055	0.473	17		
			Nitrate (mg/L)	0.263	0.279	18	0.263	0.279	18	0.208	-0.322	17	0.244	-0.299	17		
			Nitrite (as N)	0.457	-0.187	18	0.457	-0.187	18	0.459	0.193	17	0.308	0.263	17		
			Total Kjeldahl Nitrogen (mg/L)	0.944	0.0177	18	0.944	0.0177	18	0.524	-0.166	17	0.437	-0.202	17		
			Aluminum (mg/L)	0.075	-0.430	18	0.075	-0.430	18	0.027	0.535	17	0.035	0.513	17		
Arsenic (mg/L)			0.216														

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Sheardown Lake Southeast	Mine-exposed; Sheardown Lake SE closest to connection with Mary River	DL0-02-8	Total Ammonia (mg/L)	0.576	-0.141	18	0.576	-0.141	18	0.013	0.587	17	0.057	0.470	17
			Nitrate (mg/L)	0.406	0.209	18	0.406	0.209	18	0.147	-0.368	17	0.252	-0.294	17
			Nitrite (as N)	0.457	-0.187	18	0.457	-0.187	18	0.459	0.193	17	0.308	0.263	17
			Total Kjeldahl Nitrogen (mg/L)	0.517	-0.163	18	0.517	-0.163	18	0.061	0.463	17	0.033	0.520	17
			Aluminum (mg/L)	0.005	-0.626	18	0.005	-0.626	18	0.286	0.275	17	0.227	0.309	17
			Arsenic (mg/L)	0.216	-0.306	18	0.216	-0.306	18	-	-	17	-	-	17
			Cadmium (mg/L)	0.946	0.0171	18	0.946	0.0171	18	0.163	0.354	17	0.277	0.280	17
			Chromium (mg/L)	0.746	-0.0822	18	0.746	-0.0822	18	0.129	0.383	17	0.129	0.383	17
			Copper (mg/L)	0.852	0.0475	18	0.852	0.0475	18	0.549	0.156	17	0.728	0.0911	17
			Iron (mg/L)	0.127	-0.373	18	0.127	-0.373	18	0.401	0.218	17	0.329	0.252	17
			Lead (mg/L)	0.105	-0.395	18	0.105	-0.395	18	0.117	0.395	17	0.049	0.484	17
			Nickel (mg/L)	0.545	-0.153	18	0.545	-0.153	18	0.796	-0.0677	17	0.358	-0.238	17
			Zinc (mg/L)	0.216	-0.306	18	0.216	-0.306	18	-	-	17	-	-	17
			Total Suspended Solids (mg/L)	0.466	0.184	18	0.466	0.184	18	0.954	-0.0152	17	0.650	-0.119	17
			Lab Turbidity (NTU)	0.223	-0.302	18	0.223	-0.302	18	0.275	0.281	17	0.222	0.313	17
Mary River	Reference; Mary River Upstream from MRTF	G0-09-A	Total Ammonia (mg/L)	0.872	-0.0325	27	0.851	-0.0380	27	0.754	0.0645	26	0.912	0.0228	26
			Nitrate (mg/L)	0.112	0.313	27	0.180	0.266	27	0.466	0.150	26	0.503	0.137	26
			Nitrite (as N)	0.621	-0.0996	27	0.511	-0.132	27	0.321	0.203	26	0.479	0.145	26
			Total Kjeldahl Nitrogen (mg/L)	0.140	-0.291	27	0.177	-0.268	27	0.467	-0.149	26	0.541	-0.126	26
			Aluminum (mg/L)	0.900	0.0253	27	0.831	0.0430	27	0.563	0.119	26	0.463	-0.150	26
			Arsenic (mg/L)	0.494	-0.138	27	0.706	-0.0762	27	0.714	0.0754	26	0.380	-0.179	26
			Cadmium (mg/L)	0.583	0.111	27	0.652	0.0910	27	0.594	-0.109	26	0.360	0.187	26
			Chromium (mg/L)	0.147	-0.287	27	0.205	-0.252	27	0.936	-0.0166	26	0.223	-0.247	26
			Copper (mg/L)	0.771	0.0588	27	0.697	0.0785	27	0.534	0.128	26	0.426	-0.163	26
			Iron (mg/L)	0.730	0.0697	27	0.676	0.0843	27	0.643	0.0954	26	0.550	-0.123	26
			Lead (mg/L)	0.766	0.0599	27	0.687	0.0813	27	0.685	0.0836	26	0.383	-0.179	26
			Nickel (mg/L)	0.124	-0.303	27	0.211	-0.249	27	0.919	-0.0210	26	0.293	-0.215	26
			Zinc (mg/L)	0.815	-0.0473	27	0.901	0.0250	27	0.689	-0.0825	26	0.130	-0.304	26
			Total Suspended Solids (mg/L)	0.653	-0.0905	27	0.839	-0.0409	27	0.294	-0.214	26	0.256	-0.231	26
			Lab Turbidity (NTU)	0.548	-0.116	29	0.607	-0.0995	29	0.781	0.0549	28	0.542	-0.120	28
		G0-09	Total Ammonia (mg/L)	0.487	0.140	27	0.416	0.163	27	0.572	0.116	26	0.895	0.0272	26
			Nitrate (mg/L)	0.685	0.0818	27	0.736	0.0680	27	0.173	-0.276	26	0.479	-0.145	26
			Nitrite (as N)	0.963	0.00932	27	0.890	-0.0280	27	0.200	0.260	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.155	-0.282	27	0.180	-0.266	27	0.435	-0.160	26	0.464	-0.150	26
			Aluminum (mg/L)	0.168	-0.273	27	0.238	-0.235	27	0.398	-0.173	26	0.051	-0.387	26
			Arsenic (mg/L)	0.372	-0.179	27	0.554	-0.119	27	0.740	-0.0684	26	0.432	-0.161	26
			Cadmium (mg/L)	0.977	0.00571	27	0.939	-0.0155	27	0.863	0.0356	26	0.101	0.328	26
			Chromium (mg/L)	0.080	-0.343	27	0.130	-0.299	27	0.835	-0.0429	26	0.364	-0.186	26
			Copper (mg/L)	0.324	-0.197	27	0.366	-0.181	27	0.938	-0.0161	26	0.395	-0.174	26
			Iron (mg/L)	0.202	-0.253	27	0.262	-0.224	27	0.768	-0.0607	26	0.143	-0.296	26
			Lead (mg/L)	0.114	-0.311	27	0.167	-0.274	27	0.720	-0.0737	26	0.325	-0.201	26
			Nickel (mg/L)	0.077	-0.346	27	0.130	-0.299	27	0.833	0.0434	26	0.953	-0.0120	26
			Zinc (mg/L)	0.108	-0.317	27	0.108	-0.317	27	0.299	-0.212	26	0.654	-0.0921	26
			Total Suspended Solids (mg/L)	0.158	-0.279	27	0.224	-0.242	27	0.418	-0.166	26	0.262	-0.228	26
			Lab Turbidity (NTU)	0.097	-0.314	29	0.128	-0.289	29	0.445	-0.150	28	0.125	-0.297	28
		G0-09-B	Total Ammonia (mg/L)	0.614	0.102	27	0.618	0.100	27	0.496	0.140	26	0.527	0.130	26
			Nitrate (mg/L)	0.397	0.170	27	0.528	0.127	27	0.885	0.0298	26	0.811	0.0492	26
			Nitrite (as N)	0.963	0.00932	27	0.890	-0.0280	27	0.200	0.260	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.206	-0.251	27	0.253	-0.228	27	0.570	-0.117	26	0.755	-0.0643	26
			Aluminum (mg/L)	0.087	-0.336	27	0.128	-0.300	27	0.761	-0.0626	26	0.231	-0.244	26
			Arsenic (mg/L)	0.137	-0.294	27	0.213	-0.248	27	0.289	-0.216	26	0.112	-0.320	26
			Cadmium (mg/L)	0.512	0.132	27	0.596	0.107	27	0.681	-0.0846	26	0.292	0.215	26
			Chromium (mg/L)	0.099	-0.324	27	0.147	-0.287	27	0.507	-0.136	26	0.386	-0.177	26
			Copper (mg/L)	0.251	-0.229	27	0.297	-0.208	27	0.726	-0.0722	26	0.259	-0.230	26
			Iron (mg/L)	0.006	-0.511	27	0.013	-0.472	27	0.242	-0.238	26	0.128	-0.307	26
			Lead (mg/L)	0.078	-0.345	27	0.135	-0.295	27	0.695	-0.0807	26	0.279	-0.221	26
			Nickel (mg/L)	0.066	-0.359	27	0.109	-0.315	27	0.628	-0.0998	26	0.434	-0.160	26
			Zinc (mg/L)	0.271	-0.220	27	0.271	-0.220	27	0.948	0.0133	26	0.397	0.173	26
			Total Suspended Solids (mg/L)	0.191	-0.259	27	0.238	-0.235	27	0.154	-0.288	26	0.182	-0.270	26
			Lab Turbidity (NTU)	0.024	-0.418	29	0.042	-0.380	29	0.478	-0.140	28	0.200	-0.249	28
	Mine-expose; Mary River upstream from MRTF	G0-03	Total Ammonia (mg/L)	0.593	0.108	27	0.599	0.106	27	0.844	0.0406	26	0.698	0.0798	26
			Nitrate (mg/L)	0.617	0.101	27	0.700	0.0777	27	0.597	-0.109	26	0.755	-0.0643	26
			Nitrite (as N)	0.963	-0.00932	27	0.890	-0.0280	27	0.218	0.250	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.122	-0.305	27	0.160	-0.278	27	0.464	-0.150	26	0.333	-0.198	26
			Aluminum (mg/L)	0.083	-0.340	27	0.122	-0.305	27	0.782	0.0571	26	0.172	-0.276	26
			Arsenic (mg/L)	0.057	-0.370	27	0.057	-0.370	27	0.935	-0.0169	26	0.776	-0.0586	26
			Cadmium (mg/L)	0.472	0.144	27	0.596	0.107	27	0.705	-0.0781	26	0.292	0.215	26
			Chromium (mg/L)	0.035	-0.408	27	0.051	-0.380	27	0.577	0.115	26	0.763	-0.0623	26
			Copper (mg/L)	0.313	-0.202	27	0.350	-0.187	27	0.723	0.0731	26	0.418	-0.166	26
			Iron (mg/L)	0.020	-0.446	27	0.033	-0.410	27	0.725	0.0725	26	0.188	-0.266	26
			Lead (mg/L)	0.023	-0.435	27	0.044	-0.391	27	0.747	0.0664	26	0.332	-0.198	26
			Nickel (mg/L)	0.210	-0.249	27	0.278	-0.217	27	0.328	0.200	26	0.893	-0.0278	26
			Zinc (mg/L)	0.135	-0.295	27	0.135	-0.295	27	0.213	-0.253	26	0.157	-0.286	26
			Total Suspended Solids (mg/L)	0.007	-0.508	27	0.006	-0.514	27	0.499	-0.139	26	0.471	-0.148	26
			Lab Turbidity (NTU)	0.027	-0.411	29	0.043	-0.378	29	0.940	0.0148	28	0.344	-0.186	28
	Mine-exposed; MRTF downstream from MS-08 outflow and immediately upstream from Mary River	F0-01	Total Ammonia (mg/L)	0.828	0.0438	27	0.900	0.0255	27	0.575	0.115	26	0.149	0.291	26
			Nitrate (mg/L)	0.240	0.234	27	0.255	0.227	27	0.671	-0.0873	26	0.296	-0.213	26
			Nitrite (as N)	0.890	0.0280	27	0.963	0.00932	27	0.256	0.231	26	0.640	0.0962	26
			Total Kjeldahl Nitrogen (mg/L)	0.822	-0.0465	26	0.952	0.0124	26	0.074	-0.364	25	0.335	-0.201	2

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Mary River	Mine-exposed; Mary River immediately downstream from MRTF	G0-01	Total Ammonia (mg/L)	0.884	-0.0295	27	0.908	-0.0234	27	0.750	0.0656	26	0.143	0.295	26
			Nitrate (mg/L)	0.253	0.228	27	0.404	0.168	27	0.570	-0.117	26	0.588	-0.111	26
			Nitrite (as N)	0.852	0.0376	27	0.926	0.0188	27	0.256	0.231	26	0.640	0.0962	26
			Total Kjeldahl Nitrogen (mg/L)	0.878	-0.0317	26	0.926	-0.0191	26	0.902	-0.0260	25	0.612	-0.107	25
			Aluminum (mg/L)	0.069	-0.355	27	0.154	-0.282	27	0.735	-0.0698	26	0.216	-0.251	26
			Arsenic (mg/L)	0.439	-0.155	27	0.612	-0.102	27	0.879	0.0313	26	0.319	-0.203	26
			Cadmium (mg/L)	0.767	0.0599	27	0.919	0.0206	27	0.712	-0.0761	26	0.272	0.224	26
			Chromium (mg/L)	0.190	-0.260	27	0.248	-0.230	27	0.602	0.107	26	0.405	-0.170	26
			Copper (mg/L)	0.745	-0.0655	27	0.772	-0.0584	27	0.760	0.0630	26	0.390	-0.176	26
			Iron (mg/L)	0.168	-0.273	27	0.302	-0.206	27	0.662	0.0899	26	0.481	-0.145	26
			Lead (mg/L)	0.138	-0.293	27	0.265	-0.222	27	0.669	0.0879	26	0.543	-0.125	26
			Nickel (mg/L)	0.432	-0.158	27	0.557	-0.118	27	0.768	0.0608	26	0.459	-0.152	26
			Zinc (mg/L)	0.956	-0.0111	27	0.762	0.0612	27	0.672	0.0873	26	0.293	-0.215	26
			Total Suspended Solids (mg/L)	0.047	-0.385	27	0.099	-0.324	27	0.446	-0.156	26	0.531	-0.129	26
			Lab Turbidity (NTU)	0.060	-0.353	29	0.119	-0.296	29	0.933	0.0167	28	0.422	-0.158	28
	Mine-exposed; Mary River downstream from MRTF	E0-10	Total Ammonia (mg/L)	0.930	-0.0185	25	0.932	0.0179	25	0.551	-0.125	25	0.997	0.000781	25
			Nitrate (mg/L)	0.914	0.0227	25	0.981	-0.00495	25	0.758	-0.0648	25	0.224	-0.252	25
			Nitrite (as N)	0.265	-0.232	25	0.265	-0.232	25	0.165	0.286	25	0.697	0.0818	25
			Total Kjeldahl Nitrogen (mg/L)	0.762	0.0652	24	0.941	0.0159	24	0.948	-0.0140	24	0.974	0.00700	24
			Aluminum (mg/L)	0.002	-0.590	25	0.008	-0.516	25	0.413	-0.171	25	0.153	-0.294	25
			Arsenic (mg/L)	0.476	-0.149	25	0.585	-0.115	25	0.839	0.0428	25	0.373	-0.186	25
			Cadmium (mg/L)	0.253	0.237	25	0.325	0.205	25	0.619	-0.104	25	0.264	0.232	25
			Chromium (mg/L)	0.092	-0.344	25	0.123	-0.316	25	0.977	0.00616	25	0.249	-0.239	25
			Copper (mg/L)	0.339	-0.200	25	0.327	-0.204	25	0.854	0.0388	25	0.565	-0.121	25
			Iron (mg/L)	0.008	-0.521	25	0.023	-0.453	25	0.421	-0.168	25	0.474	-0.150	25
			Lead (mg/L)	0.092	-0.344	25	0.192	-0.270	25	0.726	-0.0739	25	0.734	-0.0716	25
			Nickel (mg/L)	0.649	-0.0957	25	0.761	-0.0641	25	0.671	0.0894	25	0.467	-0.153	25
			Zinc (mg/L)	-	-	25	-	-	25	-	-	25	-	-	25
			Total Suspended Solids (mg/L)	0.067	-0.373	25	0.100	-0.337	25	0.401	-0.176	25	0.440	-0.162	25
			Lab Turbidity (NTU)	0.091	-0.331	27	0.176	-0.268	27	0.348	-0.188	27	0.393	-0.171	27
	Mine-exposed; Mary River downstream from MS-07 FDP	E0-03	Total Ammonia (mg/L)	0.895	-0.0272	26	0.899	-0.0261	26	0.575	0.115	26	0.463	0.151	26
			Nitrate (mg/L)	0.550	0.123	26	0.665	0.0891	26	0.818	-0.0474	26	0.411	-0.168	26
			Nitrite (as N)	0.058	0.376	26	0.034	0.416	26	0.119	0.313	26	0.326	0.201	26
			Total Kjeldahl Nitrogen (mg/L)	0.583	-0.115	25	0.579	-0.116	25	0.745	-0.0685	25	0.924	-0.0201	25
			Aluminum (mg/L)	0.119	-0.313	26	0.186	-0.268	26	0.517	-0.133	26	0.351	-0.191	26
			Arsenic (mg/L)	0.925	-0.0194	26	0.984	0.00409	26	1.000	0	26	0.847	-0.0398	26
			Cadmium (mg/L)	0.857	0.0373	26	0.854	0.0379	26	0.195	-0.263	26	0.954	-0.0119	26
			Chromium (mg/L)	0.343	-0.194	26	0.377	-0.181	26	0.758	-0.0636	26	0.874	-0.0328	26
			Copper (mg/L)	0.825	0.0457	26	0.827	0.0450	26	0.734	0.0699	26	0.751	-0.0654	26
			Iron (mg/L)	0.245	-0.237	26	0.357	-0.188	26	0.691	-0.0817	26	0.475	-0.147	26
			Lead (mg/L)	0.309	-0.207	26	0.457	-0.153	26	0.841	-0.0414	26	0.564	-0.119	26
			Nickel (mg/L)	0.551	-0.123	26	0.642	-0.0956	26	0.727	-0.0718	26	0.450	-0.155	26
			Zinc (mg/L)	0.579	-0.114	26	0.630	-0.0990	26	0.069	-0.362	26	0.153	-0.288	26
			Total Suspended Solids (mg/L)	0.239	-0.239	26	0.274	-0.223	26	0.160	-0.284	26	0.281	-0.220	26
			Lab Turbidity (NTU)	0.027	-0.418	28	0.055	-0.367	28	0.302	-0.202	28	0.233	-0.233	28
	Mine-exposed; Mary River downstream from MS-06 Outflow	E0-21	Total Ammonia (mg/L)	0.730	-0.0712	26	0.841	-0.0413	26	0.812	0.0490	26	0.755	0.0644	26
			Nitrate (mg/L)	0.580	0.114	26	0.655	0.0921	26	0.963	0.00951	26	0.248	-0.235	26
			Nitrite (as N)	0.246	0.236	26	0.193	0.264	26	0.103	0.327	26	0.640	0.0962	26
			Total Kjeldahl Nitrogen (mg/L)	0.037	-0.419	25	0.049	-0.398	25	0.115	-0.323	25	0.153	-0.295	25
			Aluminum (mg/L)	0.123	-0.310	26	0.222	-0.248	26	0.307	-0.208	26	0.089	-0.340	26
			Arsenic (mg/L)	0.717	-0.0748	26	0.716	-0.0748	26	0.972	0.00735	26	0.953	-0.0123	26
			Cadmium (mg/L)	0.490	-0.142	26	0.440	-0.158	26	0.513	-0.134	26	0.944	-0.0144	26
			Chromium (mg/L)	0.215	-0.252	26	0.196	-0.262	26	0.919	-0.0211	26	0.740	-0.0683	26
			Copper (mg/L)	0.922	0.0201	26	0.922	0.0203	26	0.903	0.0250	26	0.484	-0.144	26
			Iron (mg/L)	0.198	-0.261	26	0.335	-0.197	26	0.307	-0.208	26	0.191	-0.265	26
			Lead (mg/L)	0.579	-0.114	26	0.806	-0.0505	26	0.546	-0.124	26	0.395	-0.174	26
			Nickel (mg/L)	0.376	-0.181	26	0.416	-0.167	26	0.711	-0.0763	26	0.514	-0.134	26
			Zinc (mg/L)	0.634	-0.0980	26	0.688	-0.0827	26	0.290	-0.216	26	0.302	-0.211	26
			Total Suspended Solids (mg/L)	0.490	-0.142	26	0.523	-0.131	26	0.341	-0.195	26	0.700	-0.0795	26
			Lab Turbidity (NTU)	0.037	-0.397	28	0.060	-0.359	28	0.287	-0.208	28	0.144	-0.283	28
	Mine-exposed; Mary River	E0-20	Total Ammonia (mg/L)	0.770	0.0601	26	0.870	0.0338	26	0.399	0.173	26	0.518	0.133	26
			Nitrate (mg/L)	0.521	0.132	26	0.491	0.141	26	0.372	-0.182	26	0.232	-0.243	26
			Nitrite (as N)	0.193	0.263	26	0.193	0.264	26	0.103	0.327	26	0.640	0.0962	26
			Total Kjeldahl Nitrogen (mg/L)	0.498	-0.142	25	0.352	-0.194	25	0.985	0.00391	25	0.543	-0.128	25
			Aluminum (mg/L)	0.613	-0.104	26	0.736	-0.0694	26	0.834	-0.0431	26	0.439	-0.159	26
			Arsenic (mg/L)	0.988	0.00320	26	0.988	0.00321	26	0.352	0.190	26	0.763	0.0622	26
			Cadmium (mg/L)	0.656	0.0916	26	0.656	0.0917	26	0.903	-0.0251	26	0.324	0.202	26
			Chromium (mg/L)	0.715	-0.0751	26	0.715	-0.0752	26	0.469	0.149	26	0.645	0.0949	26
			Copper (mg/L)	0.495	0.140	26	0.431	0.161	26	0.614	0.104	26	0.771	-0.0601	26
			Iron (mg/L)	0.994	-0.00142	26	0.849	0.0391	26	0.759	-0.0633	26	0.501	-0.138	26
			Lead (mg/L)	0.222	0.248	26	0.165	0.280	26	0.679	0.0851	26	0.968	-0.00824	26
			Nickel (mg/L)	0.431	0.161	26	0.391	0.176	26	0.576	0.115	26	0.768	0.0608	26
			Zinc (mg/L)	0.751	0.0654	26	0.751	0.0654	26	0.909	-0.0237	26	0.957	-0.0111	26
			Total Suspended Solids (mg/L)	0.699	0.0795	26	0.856	0.0374	26	0.806	-0.0505	26	0.594	0.110	26
			Lab Turbidity (NTU)	0.184	-0.259	28	0.214	-0.242	28	0.384	-0.171	28	0.158	-0.274	28
	Mine-exposed; Mary River immediately downstream from connection with Sheardown Lake SE	C0-10	Total Ammonia (mg/L)	0.681	0.0865	25	0.810	0.0507	25	0.272	0.228	25	0.344	0.198	25
			Nitrate (mg/L)	0.841	0.0422	25	0.751	0.0668	25	0.331	-0.203	25	0.237	-0.246	25
			Nitrite (as N)	0.260	0.234	25	0.260	0.234	25	0.110	0.327	25	0.697	0.0818	25
			Total Kjeldahl Nitrogen (mg/L)	0.555	-0.124	25									

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Mary River	Mine-exposed; Mary River	C0-05	Total Ammonia (mg/L)	0.543	0.128	25	0.691	0.0837	25	0.711	0.0779	25	0.692	0.0833	25
			Nitrate (mg/L)	0.596	0.111	25	0.527	0.133	25	0.583	-0.115	25	0.463	-0.154	25
			Nitrite (as N)	0.321	-0.207	25	0.320	-0.207	25	0.165	0.286	25	0.697	0.0818	25
			Total Kjeldahl Nitrogen (mg/L)	0.917	-0.0220	25	0.792	-0.0555	25	0.949	-0.0134	25	0.303	0.215	25
			Aluminum (mg/L)	0.772	0.0611	25	0.813	0.0499	25	0.717	0.0762	25	0.685	-0.0854	25
			Arsenic (mg/L)	0.751	0.0667	25	0.751	0.0668	25	0.486	0.146	25	0.939	0.0162	25
			Cadmium (mg/L)	0.565	0.121	25	0.564	0.121	25	0.966	0.00901	25	0.193	0.269	25
			Chromium (mg/L)	0.943	-0.0150	25	0.943	-0.0150	25	0.475	0.150	25	0.933	0.0177	25
			Copper (mg/L)	0.324	0.206	25	0.303	0.215	25	0.380	0.184	25	0.847	0.0406	25
			Iron (mg/L)	0.515	0.137	25	0.501	0.141	25	0.592	0.113	25	0.859	0.0373	25
			Lead (mg/L)	0.305	0.214	25	0.307	0.213	25	0.383	0.182	25	0.675	0.0881	25
			Nickel (mg/L)	0.423	0.168	25	0.386	0.181	25	0.503	0.140	25	0.702	0.0805	25
			Zinc (mg/L)	0.830	-0.0453	25	0.830	-0.0453	25	0.245	0.242	25	0.208	0.261	25
			Total Suspended Solids (mg/L)	0.782	0.0584	25	0.742	0.0693	25	0.768	0.0622	25	0.974	0.00693	25
	Lab Turbidity (NTU)	0.878	0.0310	27	0.867	0.0339	27	0.969	0.00794	27	0.929	-0.0180	27		
	Mine-exposed; Mary River	C0-01	Total Ammonia (mg/L)	0.675	0.0863	26	0.812	0.0489	26	0.310	0.207	26	0.702	0.0789	26
			Nitrate (mg/L)	0.222	0.248	26	0.189	0.266	26	0.926	0.0190	26	0.744	-0.0673	26
			Nitrite (as N)	0.308	-0.208	26	0.308	-0.208	26	0.126	0.308	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.410	-0.169	26	0.274	-0.223	26	0.680	-0.0850	26	0.233	-0.243	26
			Aluminum (mg/L)	0.726	-0.0722	26	0.705	-0.0779	26	0.926	-0.0191	26	0.312	-0.206	26
			Arsenic (mg/L)	0.785	-0.0563	26	0.785	-0.0563	26	0.840	0.0417	26	0.429	-0.162	26
			Cadmium (mg/L)	0.325	0.201	26	0.325	0.201	26	0.519	-0.132	26	0.360	0.187	26
			Chromium (mg/L)	0.195	-0.262	26	0.195	-0.263	26	0.869	0.0341	26	0.425	-0.163	26
			Copper (mg/L)	0.341	0.195	26	0.335	0.197	26	0.510	0.135	26	0.616	-0.103	26
			Iron (mg/L)	0.757	0.0636	26	0.785	0.0562	26	0.724	0.0728	26	0.568	-0.117	26
			Lead (mg/L)	0.535	0.128	26	0.575	0.115	26	0.643	0.0954	26	0.677	-0.0859	26
			Nickel (mg/L)	0.636	0.0975	26	0.636	0.0973	26	0.469	0.148	26	0.802	-0.0518	26
			Zinc (mg/L)	0.893	-0.0277	26	0.893	-0.0277	26	0.948	0.0133	26	0.897	0.0267	26
Total Suspended Solids (mg/L)			0.169	-0.278	26	0.170	-0.277	26	0.399	-0.173	26	0.786	-0.0560	26	
Lab Turbidity (NTU)	0.227	-0.236	28	0.245	-0.227	28	0.846	-0.0383	28	0.684	-0.0805	28			
Mary Lake	Mine-exposed; Mary Lake North Basin (downstream from Camp Lake system)	BL0-01	Total Ammonia (mg/L)	0.623	0.124	18	0.544	0.153	18	0.201	0.316	18	0.108	0.391	18
			Nitrate (mg/L)	0.475	0.180	18	0.437	0.196	18	0.375	0.222	18	0.749	0.0811	18
			Nitrite (as N)	0.360	0.229	18	0.360	0.229	18	0.107	0.393	18	0.302	0.258	18
			Total Kjeldahl Nitrogen (mg/L)	0.939	0.0193	18	0.943	-0.0181	18	0.846	-0.0493	18	0.537	0.156	18
			Aluminum (mg/L)	0.105	0.394	18	0.087	0.415	18	0.630	0.122	18	0.896	-0.0330	18
			Arsenic (mg/L)	-	-	18	-	-	18	-	-	18	-	-	18
			Cadmium (mg/L)	0.791	-0.0672	18	0.791	-0.0673	18	0.842	-0.0505	18	0.430	0.199	18
			Chromium (mg/L)	0.414	0.205	18	0.414	0.205	18	0.126	0.374	18	0.126	0.374	18
			Copper (mg/L)	0.656	-0.113	18	0.659	-0.112	18	0.455	0.188	18	0.255	0.283	18
			Iron (mg/L)	0.202	0.316	18	0.135	0.366	18	0.237	0.293	18	0.683	0.103	18
			Lead (mg/L)	0.912	-0.0279	18	0.912	-0.0279	18	0.264	0.278	18	0.025	0.526	18
			Nickel (mg/L)	0.229	-0.299	18	0.228	-0.299	18	0.855	-0.0463	18	0.855	-0.0463	18
			Zinc (mg/L)	0.765	0.0757	18	0.540	0.155	18	0.632	0.121	18	0.806	0.0624	18
			Total Suspended Solids (mg/L)	0.399	0.212	18	0.399	0.212	18	0.797	-0.0652	18	0.541	0.154	18
	Lab Turbidity (NTU)	0.020	0.543	18	0.016	0.559	18	0.494	0.172	18	0.810	0.0609	18		
	Mine-exposed; Mary Lake North Basin (downstream from Camp Lake system)	BL0-01-A	Total Ammonia (mg/L)	0.444	0.199	17	0.349	0.242	17	0.198	0.328	17	0.249	0.296	17
			Nitrate (mg/L)	0.753	0.0824	17	0.740	0.0871	17	0.177	0.343	17	0.317	0.258	17
			Nitrite (as N)	0.380	0.227	17	0.380	0.228	17	0.098	0.414	17	0.248	0.296	17
			Total Kjeldahl Nitrogen (mg/L)	0.765	0.0785	17	0.873	0.0421	17	0.636	-0.124	17	0.908	0.0304	17
			Aluminum (mg/L)	0.027	0.536	17	0.015	0.576	17	0.212	0.319	17	0.586	0.142	17
			Arsenic (mg/L)	-	-	17	-	-	17	-	-	17	-	-	17
			Cadmium (mg/L)	0.718	0.0948	17	0.717	0.0948	17	0.966	0.0111	17	0.581	0.144	17
			Chromium (mg/L)	0.394	0.221	17	0.394	0.221	17	0.129	0.383	17	0.129	0.383	17
			Copper (mg/L)	0.561	-0.152	17	0.558	-0.153	17	0.855	0.0480	17	0.993	-0.00246	17
			Iron (mg/L)	0.181	0.340	17	0.162	0.355	17	0.306	0.264	17	0.414	0.212	17
			Lead (mg/L)	0.319	0.257	17	0.202	0.325	17	0.017	0.572	17	0.059	0.466	17
			Nickel (mg/L)	0.207	-0.322	17	0.207	-0.322	17	0.848	-0.0504	17	0.848	-0.0504	17
			Zinc (mg/L)	-	-	17	-	-	17	-	-	17	-	-	17
			Total Suspended Solids (mg/L)	0.673	-0.111	17	0.673	-0.111	17	0.276	-0.280	17	0.639	-0.123	17
	Lab Turbidity (NTU)	0.077	0.441	17	0.083	0.432	17	0.043	0.496	17	0.137	0.376	17		
	Mine-exposed; Mary Lake North Basin (downstream from Camp Lake system)	BL0-01-B	Total Ammonia (mg/L)	0.756	0.0788	18	0.719	0.0911	18	0.287	0.266	18	0.090	0.411	18
			Nitrate (mg/L)	0.784	0.0695	18	0.753	0.0797	18	0.189	0.324	18	0.371	0.224	18
			Nitrite (as N)	0.360	0.229	18	0.360	0.229	18	0.107	0.393	18	0.302	0.258	18
			Total Kjeldahl Nitrogen (mg/L)	0.961	-0.0124	18	0.829	-0.0548	18	0.684	-0.103	18	0.872	0.0408	18
			Aluminum (mg/L)	0.002	0.686	18	<0.001	0.730	18	0.984	-0.00517	18	0.347	-0.236	18
			Arsenic (mg/L)	-	-	18	-	-	18	-	-	18	-	-	18
			Cadmium (mg/L)	0.825	0.0561	18	0.825	0.0561	18	0.910	0.0287	18	0.494	0.172	18
			Chromium (mg/L)	0.414	0.205	18	0.414	0.205	18	0.126	0.374	18	0.126	0.374	18
			Copper (mg/L)	0.776	0.0720	18	0.828	0.0550	18	0.287	0.266	18	0.536	0.156	18
			Iron (mg/L)	0.189	0.324	18	0.126	0.374	18	0.615	0.127	18	0.886	0.0364	18
			Lead (mg/L)	0.574	0.142	18	0.574	0.142	18	0.063	0.446	18	0.020	0.543	18
			Nickel (mg/L)	0.229	-0.299	18	0.228	-0.299	18	0.961	0.0123	18	0.961	0.0123	18
			Zinc (mg/L)	-	-	18	-	-	18	-	-	18	-	-	18
			Total Suspended Solids (mg/L)	0.612	-0.128	18	0.612	-0.128	18	0.303	-0.257	18	0.760	-0.0775	18
	Lab Turbidity (NTU)	0.028	0.518	18	0.026	0.524	18	0.189	0.324	18	0.512	0.165	18		
	Mine-exposed; Mary Lake between the north and south basins	BL0-03	Total Ammonia (mg/L)	0.212	0.309	18	0.200	0.317	18	0.313	0.260	17	0.477	0.185	17
			Nitrate (mg/L)	0.331	-0.243	18	0.331	-0.243	18	0.818	0.0602	17	0.940	-0.0198	17
			Nitrite (as N)	0.693	0.0999	18	0.693	0.0999	18	0.696	-0.102	17	0.846	-0.0511	17
			Total Kjeldahl Nitrogen (mg/L)	0.824	-0.0564	18	0.824	-0.0564	18	0.298	0.268	17	0.373	0.231	17
			Aluminum (mg/L)	0.619	0.126	18	0.607	0.130	18	0.985	0.00491	17	0.940	-0.0196	17

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Mary Lake	Mine-exposed; Mary Lake, south basin near Mary River inflow (NW)	BL0-05-A	Total Ammonia (mg/L)	0.571	0.143	18	0.571	0.143	18	0.030	0.527	17	0.090	0.423	17
			Nitrate (mg/L)	0.169	-0.338	18	0.169	-0.338	18	0.503	-0.175	17	0.292	-0.272	17
			Nitrite (as N)	0.612	0.128	18	0.612	0.128	18	0.696	-0.102	17	0.846	-0.0511	17
			Total Kjeldahl Nitrogen (mg/L)	0.380	-0.220	18	0.380	-0.220	18	0.797	0.0675	17	0.473	0.187	17
			Aluminum (mg/L)	0.841	0.0510	18	0.841	0.0510	18	0.163	0.355	17	0.161	0.356	17
			Arsenic (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17
			Cadmium (mg/L)	0.612	-0.128	18	0.612	-0.128	18	0.696	0.102	17	0.846	0.0511	17
			Chromium (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17
			Copper (mg/L)	0.365	0.227	18	0.365	0.227	18	0.049	0.485	17	0.131	0.381	17
			Iron (mg/L)	0.818	0.0584	18	0.818	0.0584	18	0.426	0.207	17	0.560	0.152	17
			Lead (mg/L)	0.738	0.0847	18	0.738	0.0847	18	0.073	0.446	17	0.158	0.358	17
			Nickel (mg/L)	0.070	0.436	18	0.070	0.436	18	0.159	0.358	17	0.129	0.383	17
			Zinc (mg/L)	0.414	-0.205	18	0.414	-0.205	18	0.846	0.0511	17	0.431	0.204	17
			Total Suspended Solids (mg/L)	0.736	0.0854	18	0.736	0.0854	18	0.238	0.303	17	0.140	0.374	17
			Lab Turbidity (NTU)	0.359	0.230	18	0.359	0.230	18	0.507	0.173	17	0.402	0.217	17
	Mine-exposed; Mary Lake, south basin near Mary River inflow	BL0-05	Total Ammonia (mg/L)	0.571	0.143	18	0.571	0.143	18	0.030	0.527	17	0.090	0.423	17
			Nitrate (mg/L)	0.169	-0.338	18	0.169	-0.338	18	0.503	-0.175	17	0.292	-0.272	17
			Nitrite (as N)	0.612	0.128	18	0.612	0.128	18	0.696	-0.102	17	0.846	-0.0511	17
			Total Kjeldahl Nitrogen (mg/L)	0.380	-0.220	18	0.380	-0.220	18	0.797	0.0675	17	0.473	0.187	17
			Aluminum (mg/L)	0.841	0.0510	18	0.841	0.0510	18	0.163	0.355	17	0.161	0.356	17
			Arsenic (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17
			Cadmium (mg/L)	0.612	-0.128	18	0.612	-0.128	18	0.696	0.102	17	0.846	0.0511	17
			Chromium (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17
			Copper (mg/L)	0.365	0.227	18	0.365	0.227	18	0.049	0.485	17	0.131	0.381	17
			Iron (mg/L)	0.818	0.0584	18	0.818	0.0584	18	0.426	0.207	17	0.560	0.152	17
			Lead (mg/L)	0.738	0.0847	18	0.738	0.0847	18	0.073	0.446	17	0.158	0.358	17
			Nickel (mg/L)	0.070	0.436	18	0.070	0.436	18	0.159	0.358	17	0.129	0.383	17
			Zinc (mg/L)	0.414	-0.205	18	0.414	-0.205	18	0.846	0.0511	17	0.431	0.204	17
			Total Suspended Solids (mg/L)	0.736	0.0854	18	0.736	0.0854	18	0.238	0.303	17	0.140	0.374	17
			Lab Turbidity (NTU)	0.359	0.230	18	0.359	0.230	18	0.507	0.173	17	0.402	0.217	17
	Mine-exposed; Mary Lake, south basin near Mary River inflow (SE)	BL0-05-B	Total Ammonia (mg/L)	0.672	0.124	14	0.672	0.124	14	0.378	0.267	13	0.891	0.0421	13
			Nitrate (mg/L)	0.985	0.00540	14	0.985	0.00540	14	0.803	0.0770	13	0.384	-0.264	13
			Nitrite (as N)	0.697	0.114	14	0.697	0.114	14	0.304	-0.309	13	0.447	-0.231	13
			Total Kjeldahl Nitrogen (mg/L)	0.470	0.211	14	0.509	0.193	14	0.352	0.281	13	0.209	0.373	13
			Aluminum (mg/L)	0.462	0.214	14	0.431	0.229	14	0.609	-0.157	13	0.737	-0.104	13
			Arsenic (mg/L)	-	-	14	-	-	14	-	-	13	-	-	13
			Cadmium (mg/L)	0.697	-0.114	14	0.697	-0.114	14	0.304	0.309	13	0.447	0.231	13
			Chromium (mg/L)	-	-	14	-	-	14	-	-	13	-	-	13
			Copper (mg/L)	0.431	0.229	14	0.337	0.277	14	0.284	0.322	13	0.643	0.143	13
			Iron (mg/L)	0.389	0.250	14	0.316	0.289	14	0.806	-0.0758	13	0.223	-0.363	13
			Lead (mg/L)	0.481	0.206	14	0.384	0.252	14	0.626	-0.149	13	0.228	-0.359	13
			Nickel (mg/L)	0.357	0.267	14	0.357	0.267	14	0.802	0.0773	13	0.305	-0.309	13
			Zinc (mg/L)	-	-	14	-	-	14	-	-	13	-	-	13
			Total Suspended Solids (mg/L)	0.791	0.0779	14	0.669	0.125	14	0.602	0.160	13	0.585	0.167	13
			Lab Turbidity (NTU)	0.747	0.0949	14	0.660	0.129	14	0.559	-0.179	13	0.656	-0.137	13
	Mine-exposed; Mary Lake, middle of south basin	BL0-04	Total Ammonia (mg/L)	0.179	0.322	19	0.179	0.322	19	0.165	0.353	17	0.321	0.256	17
			Nitrate (mg/L)	0.679	-0.102	19	0.679	-0.102	19	0.124	-0.388	17	0.063	-0.460	17
			Nitrite (as N)	0.696	-0.0961	19	0.696	-0.0961	19	0.149	-0.366	17	0.195	-0.331	17
			Total Kjeldahl Nitrogen (mg/L)	0.268	0.268	19	0.268	0.268	19	0.700	0.101	17	0.830	-0.0563	17
			Aluminum (mg/L)	0.326	0.238	19	0.288	0.257	19	0.560	0.152	17	0.680	0.108	17
Arsenic (mg/L)			0.569	0.140	19	0.569	0.140	19	-	-	17	-	-	17	
Cadmium (mg/L)			0.705	-0.0931	19	0.705	-0.0931	19	0.696	0.102	17	0.846	0.0511	17	
Chromium (mg/L)			0.569	-0.140	19	0.569	-0.140	19	-	-	17	-	-	17	
Copper (mg/L)			0.253	0.276	19	0.202	0.306	19	0.646	0.120	17	0.673	-0.110	17	
Iron (mg/L)			0.747	0.0791	19	0.657	0.109	19	0.757	-0.0810	17	0.557	-0.153	17	
Lead (mg/L)			0.182	0.320	19	0.145	0.347	19	0.195	0.330	17	0.700	0.101	17	
Nickel (mg/L)			0.117	0.372	19	0.074	0.419	19	0.159	0.358	17	0.104	0.408	17	
Zinc (mg/L)			-	-	19	-	-	19	-	-	17	-	-	17	
Total Suspended Solids (mg/L)			0.431	0.192	19	0.356	0.224	19	0.217	0.315	17	0.218	0.315	17	
Lab Turbidity (NTU)			0.202	0.307	19	0.171	0.328	19	0.454	0.195	17	0.961	0.0129	17	
Mine-exposed; Mary Lake, middle of south basin	BL0-09	Total Ammonia (mg/L)	0.688	0.102	18	0.688	0.102	18	0.171	0.348	17	0.124	0.388	17	
		Nitrate (mg/L)	0.679	-0.105	18	0.679	-0.105	18	0.656	0.117	17	0.823	-0.0586	17	
		Nitrite (as N)	0.612	0.128	18	0.612	0.128	18	0.696	-0.102	17	0.846	-0.0511	17	
		Total Kjeldahl Nitrogen (mg/L)	0.532	0.158	18	0.532	0.158	18	0.942	0.0190	17	0.940	0.0198	17	
		Aluminum (mg/L)	0.174	0.335	18	0.153	0.351	18	0.453	0.195	17	0.525	0.166	17	
		Arsenic (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17	
		Cadmium (mg/L)	0.612	-0.128	18	0.612	-0.128	18	0.696	0.102	17	0.846	0.0511	17	
		Chromium (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17	
		Copper (mg/L)	0.474	0.180	18	0.414	0.205	18	0.021	0.553	17	0.200	0.327	17	
		Iron (mg/L)	0.552	0.150	18	0.475	0.180	18	0.739	-0.0872	17	0.495	-0.178	17	
		Lead (mg/L)	0.476	0.180	18	0.401	0.211	18	0.383	0.226	17	0.604	0.135	17	
		Nickel (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17	
		Zinc (mg/L)	-	-	18	-	-	18	-	-	17	-	-	17	
		Total Suspended Solids (mg/L)	0.484	0.176	18	0.399	0.212	18	0.217	0.315	17	0.218	0.315	17	
		Lab Turbidity (NTU)	0.659	0.112	18	0.582	0.139	18	0.708	-0.0982	17	0.859	0.0466	17	
Mine-exposed; Mary Lake, south basin closest to outflow to Mary River	BL0-06	Total Ammonia (mg/L)	0.473	0.175	19	0.468	0.177	19	0.038	0.507	17	0.136	0.376	17	
		Nitrate (mg/L)	0.816	-0.0571	19	0.776	-0.0698	19	0.878	0.0402	17	0.904	-0.0316	17	
		Nitrite (as N)	0.705	0.0931	19	0.705	0.0931	19	0.697	-0.102	17	0.846	-0.0511	17	
		Total Kjeldahl Nitrogen (mg/L)	0.775	-0.0701	19	0.731	-0.0844	19	0.826	0.0578	17	0.663	0.114	17	
		Aluminum (mg/L)	0.908	0.0285	19	0.847	0.0474	19	0.822	0.0589	17	0.554	0.155	17	
		Arsenic (mg/L)	0.445	0.186	19	0.569	0.140	19	-	-	17	-	-	17	
		Cadmium (mg/L)	0.705	-0.0931	19	0.705	-0.0931	19	0.697	0.102	17	0.846	0.0511	17	
		Chromium (mg/L)	0.445	-0.186	19	0.569	-0.140	19	-	-	17	-	-	17	
		Copper (mg/L)	0.027	0.505											

Table 10: Spearman Correlation Results between Water Quality Parameters and Precipitation Endpoints, Water License Renewal Comment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Precipitation Endpoints ^a											
				3 Day Mean Rainfall (mm)			3 Day Maximum Rainfall (mm)			30 Day Mean Rainfall (mm)			30 Day Maximum Rainfall (mm)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Stream Reference	Reference; Outside of Project Area	CLT-REF3	Total Ammonia (mg/L)	0.842	0.0411	26	0.711	0.0762	26	0.557	0.123	25	0.727	0.0736	25
			Nitrate (mg/L)	0.072	0.352	27	0.078	0.345	27	0.546	0.124	26	0.943	0.0147	26
			Nitrite (as N)	0.888	0.0285	27	0.888	-0.0285	27	0.218	0.250	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.124	-0.304	27	0.162	-0.277	27	0.596	-0.109	26	0.601	0.108	26
			Aluminum (mg/L)	0.098	0.325	27	0.130	0.299	27	0.104	0.326	26	0.404	0.171	26
			Arsenic (mg/L)	-	-	25	-	-	25	-	-	24	-	-	24
			Cadmium (mg/L)	0.503	-0.135	27	0.503	-0.135	27	0.101	-0.329	26	0.815	-0.0482	26
			Chromium (mg/L)	0.108	-0.316	27	0.108	-0.316	27	0.475	-0.147	26	0.327	-0.200	26
			Copper (mg/L)	0.354	0.185	27	0.397	0.170	27	0.433	0.161	26	0.658	-0.0910	26
			Iron (mg/L)	0.119	0.308	27	0.140	0.292	27	0.518	0.133	26	0.897	0.0267	26
			Lead (mg/L)	0.142	0.290	27	0.170	0.272	27	0.031	0.423	26	0.176	0.274	26
			Nickel (mg/L)	0.083	0.340	27	0.106	0.318	27	0.621	0.102	26	0.626	-0.100	26
			Zinc (mg/L)	-	-	27	-	-	27	-	-	26	-	-	26
			Total Suspended Solids (mg/L)	0.888	-0.0285	27	0.888	0.0285	27	0.218	-0.250	26	0.542	-0.125	26
			Lab Turbidity (NTU)	0.118	0.297	29	0.149	0.275	29	0.378	0.173	28	0.256	0.222	28
	Reference; Outside of Project Area	CLT-REF4	Total Ammonia (mg/L)	0.435	-0.160	26	0.456	-0.153	26	0.646	0.0967	25	0.839	0.0427	25
			Nitrate (mg/L)	0.342	0.190	27	0.353	0.186	27	0.799	0.0525	26	0.834	0.0432	26
			Nitrite (as N)	0.888	0.0285	27	0.888	-0.0285	27	0.218	0.250	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.034	-0.409	27	0.056	-0.372	27	0.278	-0.221	26	0.209	-0.255	26
			Aluminum (mg/L)	0.162	0.277	27	0.188	0.261	27	0.109	0.322	26	0.418	0.166	26
			Arsenic (mg/L)	-	-	26	-	-	26	-	-	25	-	-	25
			Cadmium (mg/L)	0.503	-0.135	27	0.503	-0.135	27	0.101	-0.329	26	0.815	-0.0482	26
			Chromium (mg/L)	0.108	-0.316	27	0.108	-0.316	27	0.475	-0.147	26	0.327	-0.200	26
			Copper (mg/L)	0.576	0.113	27	0.600	0.106	27	0.273	0.223	26	0.785	0.0562	26
			Iron (mg/L)	0.028	0.422	27	0.067	0.358	27	0.535	0.127	26	0.242	0.238	26
			Lead (mg/L)	0.006	0.511	27	0.013	0.473	27	0.165	0.281	26	0.195	0.262	26
			Nickel (mg/L)	-	-	27	-	-	27	-	-	26	-	-	26
			Zinc (mg/L)	0.323	-0.198	27	0.323	-0.198	27	0.559	-0.120	26	0.327	-0.200	26
			Total Suspended Solids (mg/L)	0.933	-0.0169	27	0.851	0.0380	27	0.224	-0.247	26	0.554	-0.122	26
			Lab Turbidity (NTU)	0.837	0.0399	29	0.955	0.0110	29	0.372	0.175	28	0.121	0.300	28
	Reference (Mary River) on tributary to Angijurjuk Lake	MRY-REF3	Total Ammonia (mg/L)	0.997	-0.000735	26	0.977	-0.00591	26	0.955	0.0120	25	0.404	0.175	25
			Nitrate (mg/L)	0.294	0.210	27	0.289	0.212	27	0.751	-0.0655	26	0.638	-0.0967	26
			Nitrite (as N)	0.962	0.00950	27	0.888	-0.0285	27	0.218	0.250	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.077	-0.346	27	0.085	-0.338	27	0.325	-0.201	26	0.142	-0.296	26
			Aluminum (mg/L)	0.928	-0.0182	27	0.863	-0.0348	27	0.918	-0.0212	26	0.390	-0.176	26
			Arsenic (mg/L)	0.435	0.157	27	0.435	0.157	27	0.611	0.105	26	0.706	-0.0777	26
			Cadmium (mg/L)	1.000	0	27	1.000	0	27	0.557	-0.121	26	0.533	0.128	26
			Chromium (mg/L)	0.819	0.0462	27	0.865	0.0342	27	0.779	0.0578	26	0.561	-0.120	26
			Copper (mg/L)	0.201	0.254	27	0.201	0.254	27	0.655	0.0920	26	0.579	-0.114	26
			Iron (mg/L)	0.767	0.0598	27	0.801	0.0508	27	0.908	-0.0239	26	0.562	-0.119	26
			Lead (mg/L)	0.546	0.122	27	0.569	0.115	27	0.706	-0.0776	26	0.318	-0.204	26
			Nickel (mg/L)	0.398	0.169	27	0.413	0.164	27	0.508	0.136	26	0.835	-0.0428	26
			Zinc (mg/L)	0.142	0.290	27	0.108	0.316	27	0.475	0.147	26	0.327	0.200	26
			Total Suspended Solids (mg/L)	0.755	0.0628	27	0.817	0.0467	27	0.889	-0.0287	26	0.311	0.207	26
			Lab Turbidity (NTU)	0.848	0.0372	29	0.903	0.0238	29	0.145	-0.283	28	0.161	-0.272	28
	Reference (Mary River) on tributary to Angijurjuk Lake	MRY-REF2	Total Ammonia (mg/L)	0.672	-0.0872	26	0.680	-0.0849	26	0.747	0.0679	25	0.879	0.0320	25
			Nitrate (mg/L)	0.298	0.208	27	0.284	0.214	27	0.897	0.0268	26	0.952	0.0123	26
			Nitrite (as N)	0.962	0.00950	27	0.888	-0.0285	27	0.218	0.250	26	0.542	0.125	26
			Total Kjeldahl Nitrogen (mg/L)	0.252	-0.228	27	0.295	-0.209	27	0.697	-0.0802	26	0.679	-0.0851	26
			Aluminum (mg/L)	0.418	0.163	27	0.477	0.143	27	0.661	0.0903	26	0.490	-0.142	26
			Arsenic (mg/L)	-	-	26	-	-	26	-	-	25	-	-	25
			Cadmium (mg/L)	0.555	-0.119	27	0.555	-0.119	27	0.101	-0.329	26	0.815	-0.0482	26
			Chromium (mg/L)	0.142	-0.290	27	0.108	-0.316	27	0.475	-0.147	26	0.327	-0.200	26
			Copper (mg/L)	0.205	0.252	27	0.205	0.252	27	0.282	0.219	26	0.938	-0.0160	26
			Iron (mg/L)	0.162	0.277	27	0.162	0.277	27	0.812	0.0489	26	0.776	-0.0586	26
			Lead (mg/L)	0.411	0.165	27	0.458	0.149	27	0.116	0.316	26	0.229	0.244	26
			Nickel (mg/L)	-	-	27	-	-	27	-	-	26	-	-	26
			Zinc (mg/L)	0.142	0.290	27	0.108	0.316	27	0.475	0.147	26	0.327	0.200	26
			Total Suspended Solids (mg/L)	0.560	-0.117	27	0.666	-0.0870	27	0.122	-0.311	26	0.551	-0.122	26
			Lab Turbidity (NTU)	0.941	-0.0145	29	0.901	-0.0243	29	0.581	-0.109	28	0.803	-0.0495	28

Significant p-values (< 0.1).

Rho ≤ -0.6 or ≥ 0.6.

Notes: mm = millimetres. mg/L = milligrams per litre. NTU = Nephelometric Turbidity Units. < = less than. % = percent. ≤ = less than or equal to. ≥ = greater than or equal to.

^a Correlations were considered ecologically meaningful when the correlation coefficients explained at least 60% of the variance in concentrations of a given water quality parameter (i.e., Rho or p ≤ -0.6 or ≥ 0.6 were considered indicative of strong, significant relationships).

Table 11: Spearman Correlation Results between Water Quality Parameters and Discharge Endpoints, Water License Renewal Commitment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Discharge Endpoints ^a											
				3 Day Mean Discharge (m³/day)			3 Day Maximum Discharge (m³/day)			30 Day Mean Discharge (m³/day)			30 Day Maximum Discharge (m³/day)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Camp Lake Tributary 1 (CLT1)	Mine Exposed; CLT1 North Branch downstream of Deposit 1	L1-02	Total Ammonia (mg/L)	0.802	-0.0446	34	0.868	-0.0296	34	0.191	0.276	24	0.083	0.361	24
			Nitrate (mg/L)	0.781	0.0495	34	0.626	0.0867	34	0.144	0.307	24	0.115	0.330	24
			Nitrite (as N)	0.268	0.196	34	0.324	0.174	34	0.840	0.0436	24	0.840	-0.0436	24
			Total Kjeldahl Nitrogen (mg/L)	0.587	-0.0967	34	0.821	-0.0404	34	0.592	-0.115	24	0.734	0.0733	24
			Aluminum (mg/L)	0.009	0.440	34	0.005	0.472	34	0.010	0.515	24	<0.001	0.644	24
			Arsenic (mg/L)	0.803	0.0444	34	0.803	0.0444	34	0.132	0.316	24	0.097	0.346	24
			Cadmium (mg/L)	0.268	-0.196	34	0.324	-0.174	34	0.840	-0.0436	24	0.840	0.0436	24
			Chromium (mg/L)	0.727	0.0623	34	0.700	0.0685	34	0.307	-0.218	24	0.244	-0.247	24
			Copper (mg/L)	0.013	-0.422	34	0.011	-0.433	34	0.670	-0.0918	24	0.733	-0.0735	24
			Iron (mg/L)	0.750	-0.0566	34	0.958	-0.00947	34	0.389	-0.184	24	0.640	-0.100	24
			Lead (mg/L)	-	-	34	-	-	34	-	-	24	-	-	24
			Nickel (mg/L)	0.012	-0.424	34	0.016	-0.411	34	0.744	-0.0704	24	0.827	-0.0472	24
			Zinc (mg/L)	0.627	-0.0865	34	0.531	-0.111	34	0.288	0.226	24	0.288	0.226	24
Total Suspended Solids (mg/L)	0.812	0.0423	34	0.823	0.0398	34	0.821	-0.0489	24	0.785	0.0589	24			
Lab Turbidity (NTU)	0.030	0.368	35	0.021	0.390	35	0.387	0.181	25	0.514	0.137	25			
Camp Lake Tributary 2 (CLT2)	Mine Exposed; CLT2 downstream of tote road near confluence with Camp Lake	K0-01	Total Ammonia (mg/L)	0.219	0.204	38	0.138	0.245	38	0.002	0.551	29	<0.001	0.590	29
			Nitrate (mg/L)	0.264	-0.186	38	0.407	-0.138	38	0.819	-0.0444	29	0.930	-0.0170	29
			Nitrite (as N)	0.003	0.473	38	0.004	0.461	38	0.293	0.202	29	0.192	0.250	29
			Total Kjeldahl Nitrogen (mg/L)	0.367	0.157	35	0.267	0.193	35	0.271	0.224	26	0.094	0.335	26
			Aluminum (mg/L)	0.070	0.297	38	0.074	0.293	38	0.707	0.0730	29	0.632	0.0927	29
			Arsenic (mg/L)	0.136	0.247	38	0.195	0.215	38	0.494	0.132	29	0.352	0.179	29
			Cadmium (mg/L)	0.862	-0.0292	38	0.806	-0.0413	38	0.422	0.155	29	0.200	0.245	29
			Chromium (mg/L)	0.290	0.176	38	0.385	0.145	38	0.272	-0.211	29	0.212	-0.239	29
			Copper (mg/L)	0.002	-0.495	37	0.004	-0.462	37	0.353	-0.182	28	0.365	-0.178	28
			Iron (mg/L)	0.642	0.0779	38	0.552	0.0994	38	0.390	0.166	29	0.275	0.209	29
			Lead (mg/L)	0.680	0.0733	34	0.716	0.0646	34	0.988	0.00308	25	0.594	0.112	25
			Nickel (mg/L)	<0.001	-0.689	34	<0.001	-0.637	34	0.001	-0.608	25	0.001	-0.617	25
			Zinc (mg/L)	0.192	0.230	34	0.373	0.158	34	0.062	0.379	25	0.053	0.391	25
Total Suspended Solids (mg/L)	0.374	-0.155	35	0.295	-0.182	35	0.241	0.238	26	0.243	0.237	26			
Lab Turbidity (NTU)	0.014	0.394	38	0.010	0.413	38	0.071	0.340	29	0.053	0.363	29			
Sheardown Tributary 1 (SDLT1)	Mine-exposed; SDLT1 downstream from MS-11 FDP	D1-05	Total Ammonia (mg/L)	0.463	-0.126	36	0.603	-0.0896	36	0.439	-0.155	27	0.739	-0.0672	27
			Nitrate (mg/L)	0.036	0.351	36	0.059	0.318	36	0.352	0.186	27	0.424	0.161	27
			Nitrite (as N)	0.598	-0.0908	36	0.618	-0.0860	36	0.585	-0.110	27	0.865	-0.0344	27
			Total Kjeldahl Nitrogen (mg/L)	0.200	0.219	36	0.297	0.179	36	0.115	0.311	27	0.153	0.282	27
			Aluminum (mg/L)	0.005	0.456	36	0.002	0.490	36	0.018	0.454	27	0.018	0.454	27
			Arsenic (mg/L)	0.218	-0.210	36	0.192	-0.222	36	0.211	-0.249	27	0.724	-0.0712	27
			Cadmium (mg/L)	0.830	0.0371	36	0.917	0.0181	36	0.649	-0.0918	27	0.235	-0.236	27
			Chromium (mg/L)	0.263	0.192	36	0.383	0.150	36	0.343	0.190	27	0.157	0.280	27
			Copper (mg/L)	0.528	0.109	36	0.598	0.0910	36	0.382	0.175	27	0.087	0.335	27
			Iron (mg/L)	0.009	0.429	36	0.010	0.421	36	0.089	0.333	27	0.062	0.364	27
			Lead (mg/L)	0.014	0.405	36	0.008	0.437	36	0.188	0.261	27	0.183	0.264	27
			Nickel (mg/L)	0.034	0.354	36	0.053	0.325	36	0.137	0.294	27	0.153	0.282	27
			Zinc (mg/L)	0.700	-0.0665	36	0.535	-0.107	36	0.848	0.0386	27	0.681	0.0828	27
			Total Suspended Solids (mg/L)	0.025	0.372	36	0.037	0.349	36	0.603	-0.105	27	0.863	-0.0349	27
			Lab Turbidity (NTU)	0.004	0.457	38	0.003	0.469	38	0.065	0.354	28	0.059	0.361	28
	Mine-exposed; SDLT1 immediately upstream from Sheardown Lake NW	D1-00	Total Ammonia (mg/L)	0.423	-0.138	36	0.717	-0.0625	36	0.330	-0.195	27	0.840	-0.0407	27
			Nitrate (mg/L)	0.031	0.359	36	0.099	0.280	36	0.049	0.383	27	0.059	0.367	27
			Nitrite (as N)	0.335	0.166	36	0.259	0.193	36	0.451	0.151	27	0.307	0.204	27
			Total Kjeldahl Nitrogen (mg/L)	0.303	0.177	36	0.434	0.135	36	0.059	0.368	27	0.495	0.137	27
			Aluminum (mg/L)	0.013	0.411	36	0.007	0.439	36	0.002	0.575	27	0.003	0.546	27
			Arsenic (mg/L)	0.576	0.0963	36	0.546	0.104	36	0.741	-0.0666	27	0.936	0.0162	27
			Cadmium (mg/L)	0.141	0.250	36	0.204	0.217	36	0.283	0.215	27	0.368	0.180	27
			Chromium (mg/L)	0.183	0.227	36	0.268	0.190	36	0.257	0.226	27	0.131	0.298	27
			Copper (mg/L)	0.124	0.261	36	0.103	0.276	36	0.186	0.263	27	0.065	0.361	27
			Iron (mg/L)	0.579	-0.0956	36	0.421	-0.138	36	0.573	0.114	27	0.567	0.115	27
			Lead (mg/L)	0.030	0.363	36	0.016	0.398	36	0.002	0.581	27	0.009	0.491	27
			Nickel (mg/L)	0.008	0.436	36	0.015	0.401	36	0.010	0.490	27	0.004	0.540	27
			Zinc (mg/L)	0.724	0.0610	36	0.846	0.0336	36	0.266	0.222	27	0.299	0.207	27
			Total Suspended Solids (mg/L)	0.228	0.206	36	0.334	0.166	36	0.417	-0.163	27	0.573	-0.114	27
			Lab Turbidity (NTU)	0.005	0.442	38	0.004	0.461	38	0.003	0.542	28	0.010	0.480	28
Mary River	Mine-exposed; MRTF downstream from MS-08 outflow and immediately upstream from Mary River	F0-01	Total Ammonia (mg/L)	0.331	-0.135	54	0.232	-0.165	54	0.683	-0.0641	43	0.759	0.0482	43
			Nitrate (mg/L)	0.153	-0.194	56	0.233	-0.162	56	0.134	-0.227	45	0.005	-0.412	45
			Nitrite (as N)	0.201	0.177	54	0.226	0.168	54	0.064	0.285	43	0.078	0.271	43
			Total Kjeldahl Nitrogen (mg/L)	1.000	-0.0000671	45	0.870	0.0252	45	0.994	-0.00133	36	0.853	-0.0319	36
			Aluminum (mg/L)	<0.001	0.495	56	<0.001	0.467	56	0.007	0.395	45	0.187	0.200	45
			Arsenic (mg/L)	-	-	56	-	-	56	-	-	45	-	-	45
			Cadmium (mg/L)	0.110	-0.216	56	0.108	-0.217	56	0.059	-0.283	45	0.404	-0.127	45
			Chromium (mg/L)	0.074	0.241	56	0.091	0.228	56	0.709	-0.0572	45	0.089	-0.257	45
			Copper (mg/L)	0.033	-0.356	36	0.023	-0.379	36	0.548	-0.114	30	0.045	-0.369	30
			Iron (mg/L)	0.001	0.417	56	0.004	0.376	56	0.207	0.192	45	0.816	0.0357	45
			Lead (mg/L)	<0.001	0.585	36	<0.001	0.530	36	0.094	0.311	30	0.773	0.0549	30
			Nickel (mg/L)	0.696	0.0674	36	0.803	0.0431	36	0.612	0.0966	30	0.585	-0.104	30
			Zinc (mg/L)	0.003	0.466	38	0.005	0.444	38	0.077	0.317	32	0.701	-0.0705	32
			Total Suspended Solids (mg/L)	<0.001	0.504	48	0.001	0.459	48	0.212	0.204	39	0.432	0.130	39
			Lab Turbidity (NTU)	<0.001	0.467	53	0.001	0.429	53	0.007	0.407	42	0.096	0.260	42
	Mine-exposed; Mary River downstream from MRTF	E0-10	Total Ammonia (mg/L)	0.210	-0.177	52	0.166	-0.195	52	0.146	0.228	42	0.280	0.171	42
			Nitrate (mg/L)	0.039	-0.282	54	0.044	-0.276	54	0.020	-0.350	44	0.008	-0.394	44
			Nitrite (as N)	0.111	0.224	52	0.077	0.247	52	0.164	0.219	42	0.127	0.239	42
			Total Kjeldahl Nitrogen (mg/L)	0.810	-0.0364	46	0.568	-0.0865	46	0.956	-0.00907	39	0.766	-0.0491	39
			Aluminum (mg/L)	0.501	-0.0936	54	0.443	-0.107	54	0.643	0.0719	44	0.927	0.0143	44
			Arsenic (mg/L)	0.330	-0.135	54	0.332	-0.135	54	0.427	-0.123	44	0.518	-0.100	44
			Cadmium (mg/L)	0.171	-0.189	54	0.187	-0.182	54	0.972</					

Table 11: Spearman Correlation Results between Water Quality Parameters and Discharge Endpoints, Water License Renewal Commitment QIA-TR-1, 2025

Area	Type (Exposed vs Reference) and Description	Station	Parameter	Discharge Endpoints ^a											
				3 Day Mean Discharge (m³/day)			3 Day Maximum Discharge (m³/day)			30 Day Mean Discharge (m³/day)			30 Day Maximum Discharge (m³/day)		
				P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size	P-value	Rho	Sample Size
Mary River	Mine-exposed; Mary River downstream from MS-07 FDP	E0-03	Total Ammonia (mg/L)	0.633	-0.0665	54	0.436	-0.108	54	0.541	0.0936	45	0.910	0.0174	45
			Nitrate (mg/L)	0.042	-0.268	58	0.060	-0.249	58	0.041	-0.293	49	0.037	-0.299	49
			Nitrite (as N)	0.169	0.190	54	0.082	0.238	54	0.109	0.242	45	0.059	0.283	45
			Total Kjeldahl Nitrogen (mg/L)	0.277	0.160	48	0.521	0.0949	48	0.788	0.0427	42	0.975	0.00508	42
			Aluminum (mg/L)	0.023	-0.298	58	0.015	-0.318	58	0.465	0.107	49	0.833	0.0308	49
			Arsenic (mg/L)	0.254	-0.152	58	0.301	-0.138	58	0.688	-0.0589	49	0.901	0.0183	49
			Cadmium (mg/L)	0.164	-0.185	58	0.185	-0.176	58	0.907	-0.0172	49	0.882	0.0218	49
			Chromium (mg/L)	0.006	-0.358	58	0.004	-0.372	58	0.297	-0.152	49	0.504	-0.0978	49
			Copper (mg/L)	0.002	-0.427	50	0.002	-0.436	50	0.070	-0.272	45	0.117	-0.237	45
			Iron (mg/L)	0.053	-0.255	58	0.048	-0.261	58	0.625	0.0716	49	0.868	0.0243	49
			Lead (mg/L)	0.589	-0.0847	43	0.525	-0.0996	43	0.193	0.210	40	0.205	0.205	40
			Nickel (mg/L)	0.025	-0.342	43	0.031	-0.330	43	0.598	-0.0859	40	0.889	-0.0228	40
			Zinc (mg/L)	0.331	-0.152	43	0.215	-0.193	43	0.764	-0.0489	40	0.477	-0.116	40
			Total Suspended Solids (mg/L)	0.005	0.381	53	0.006	0.374	53	0.690	-0.0597	47	0.697	-0.0584	47
			Lab Turbidity (NTU)	0.091	-0.228	56	0.106	-0.218	56	0.268	0.160	50	0.494	0.0990	50
	Mine-exposed; Mary River downstream from MS-06 Outflow	E0-21	Total Ammonia (mg/L)	0.497	-0.129	30	0.580	-0.105	30	0.380	0.183	25	0.812	0.0502	25
			Nitrate (mg/L)	0.006	-0.490	30	0.015	-0.441	30	0.112	-0.326	25	0.037	-0.419	25
			Nitrite (as N)	0.823	0.0427	30	0.343	0.179	30	0.650	-0.0954	25	0.527	-0.133	25
			Total Kjeldahl Nitrogen (mg/L)	0.873	0.0312	29	0.789	-0.0518	29	1.000	0	24	0.857	0.0388	24
			Aluminum (mg/L)	0.149	-0.270	30	0.118	-0.291	30	0.641	0.0977	25	0.777	0.0596	25
			Arsenic (mg/L)	0.523	-0.121	30	0.352	-0.176	30	0.227	-0.251	25	0.446	-0.160	25
			Cadmium (mg/L)	0.483	-0.133	30	0.292	-0.199	30	0.880	-0.0319	25	0.793	-0.0553	25
			Chromium (mg/L)	0.124	-0.287	30	0.081	-0.323	30	0.954	-0.0122	25	0.830	-0.0452	25
			Copper (mg/L)	0.003	-0.532	30	0.003	-0.525	30	0.238	-0.245	25	0.136	-0.307	25
			Iron (mg/L)	0.909	-0.0218	30	0.560	-0.111	30	0.245	0.241	25	0.211	0.259	25
			Lead (mg/L)	0.961	0.00935	30	0.718	-0.0688	30	0.504	0.140	25	0.344	0.198	25
			Nickel (mg/L)	0.060	-0.347	30	0.019	-0.426	30	0.470	-0.151	25	0.551	-0.125	25
			Zinc (mg/L)	0.476	-0.135	30	0.244	-0.219	30	0.710	0.0783	25	0.516	0.136	25
			Total Suspended Solids (mg/L)	0.028	0.401	30	0.058	0.350	30	0.814	0.0495	25	0.493	0.144	25
			Lab Turbidity (NTU)	0.841	-0.0383	30	0.566	-0.109	30	0.361	0.187	26	0.222	0.248	26
	Mine-exposed; Mary River	E0-20	Total Ammonia (mg/L)	0.543	-0.116	30	0.571	-0.108	30	0.159	0.291	25	0.573	0.118	25
			Nitrate (mg/L)	<0.001	-0.628	30	<0.001	-0.571	30	0.056	-0.387	25	0.026	-0.444	25
			Nitrite (as N)	0.877	0.0295	30	0.376	0.168	30	0.650	-0.0954	25	0.527	-0.133	25
			Total Kjeldahl Nitrogen (mg/L)	0.891	-0.0267	29	0.611	-0.0984	29	0.344	0.202	24	0.607	0.111	24
			Aluminum (mg/L)	0.658	-0.0839	30	0.601	-0.0990	30	0.183	0.275	25	0.352	0.194	25
			Arsenic (mg/L)	0.817	-0.0442	30	0.707	-0.0716	30	0.288	0.221	25	0.228	0.250	25
			Cadmium (mg/L)	0.901	0.0237	30	0.992	-0.00188	30	0.637	0.0991	25	0.821	0.0476	25
			Chromium (mg/L)	0.808	0.0464	30	0.921	-0.0189	30	0.543	0.128	25	0.280	0.225	25
			Copper (mg/L)	0.002	-0.538	30	0.001	-0.563	30	0.207	-0.261	25	0.305	-0.214	25
			Iron (mg/L)	0.923	-0.0185	30	0.858	-0.0340	30	0.188	0.272	25	0.232	0.248	25
			Lead (mg/L)	0.581	0.105	30	0.724	0.0672	30	0.092	0.344	25	0.072	0.366	25
			Nickel (mg/L)	0.004	-0.506	30	0.009	-0.471	30	0.022	-0.457	25	0.032	-0.429	25
			Zinc (mg/L)	0.525	0.121	30	0.948	0.0124	30	0.566	-0.121	25	0.966	0.00886	25
			Total Suspended Solids (mg/L)	0.071	0.334	30	0.157	0.265	30	0.640	-0.0983	25	0.866	-0.0356	25
			Lab Turbidity (NTU)	0.772	0.0552	30	0.886	-0.0274	30	0.137	0.300	26	0.068	0.363	26

Significant p-values (< 0.1).

Rho ≤ -0.6 or ≥ 0.6.

Notes: m³/day = cubic metres per day. mg/L = milligrams per litre. NTU = Nephelometric Turbidity Units. < = less than. % = percent. ≤ = less than or equal to. ≥ = greater than or equal to.

^a Correlations were considered ecologically meaningful when the correlation coefficients explained at least 60% of the variance in concentrations of a given water quality parameter (i.e., Rho or p ≤ -0.6 or ≥ 0.6 were considered indicative of strong, significant relationships).