# Appendix 10-A

## Flow and Water Quality Impact Assessment Modelling Technical Memo

SRK Consulting (U.S.), Inc.
1125 17th Street, Suite 600
Denver, CO 80202
United States

+1 303 985 1333 office
+1 303 985 9947 fax

denver@srk.com
www.srk.com

# Technical Memo

January 15, 2021

| | |
|---|---|
| **To** | Mike Allen, NWP Coal |
| **From** | David Hoekstra |
| **Cc** | Paul Donahue, Dillon Consulting Ltd. |
| **Subject** | Crown Mountain Flow and Water Quality Impact Assessment Modeling |
| **Client** | NWP Coal Canada Ltd. |
| **Project** | 393100.010 |

## 1 Introduction

In 2020, SRK Consulting (Canada and USA) (SRK) completed a conceptual site wide water quality prediction model (SWWQ model) for the Crown Mountain Coking Coal Project (the Project) in southeast British Columbia (BC) in support of the Application for an Environmental Assessment (EA) Certificate (SRK, 2020a). As part of the Environmental Impact Assessment, NWP Coal Canada Ltd. (NWP) requested SRK use the model to make streamflow and water quality predictions under a number of scenarios, providing a comparative level analysis of the impacts of the mine on the surrounding streams and rivers.

The Project is an open pit coal mine project with a planned production of approximately 55.3 million tonnes (Mt) of run-of-mine (RoM) coal. Ore throughput is expected to be 3.5 Mt/year during the 17-year life-of-mine (LoM) with a one-year start-up phase where production will be limited to 0.5 Mt/year (Table 1, Section 2.6). Generation of waste is variable through the LoM with an average rate of 48.5 Mt/year being generated with an average stripping ratio of 4.84 bank cubic meters (bcm):RoM.

The Project location is in close proximity of the Teck Mining Elkview operations and the Coal Mountain operations, so although the Crown Mountain operation is a new, “green field” site, it is located within an area of existing coal mining operations. Experiences at the adjacent operating mining operations guided the design and operational plan of the Project.

# 2 Model Components

The SWWQ model simulates water quantity and water quality behavior at the Crown Mountain site and downstream to Lake Koocanusa using mathematical simulations of rainfall, snowpack/snowmelt, ice formation/melt, runoff, seepage, and water quality. A brief description of key methodologies is presented below, but a full description and presentation of development and calibration of the methodologies is covered in the Water Quality Prediction Model Report (SRK, 2020a).

## 2.1 Software

The Crown Mountain SWWQ model was developed using the current release of GoldSim simulation software, version 12.1. The GoldSim model was designed as a probabilistic, dynamic simulator running continuously from preproduction to LoM and into closure/reclamation for a total simulation duration of 34 years, in a sequence of quarter-day to one-day time-steps. The model tracks the accumulation of water and solids in the modeled storage systems and predicts the movement of water and chemical loads transported with the water through the Project, downstream to the Elk River, and down to Lake Koocanusa.

The GoldSim model provides water quality predictions through the use of the GoldSim Contaminate Transport Module (GCTM), an add-on module to GoldSim that allows the tracking of water quality through advective transport of soluble chemical mass with the flows calculated by the water balance portion of the model. Chemical mass is modeled conservatively, meaning that chemical reactions within the mass in solution are not simulated, and solubility constraints are not enforced in the model transport calculations.

## 2.2 Precipitation and Temperature

The model was constructed to use both historical records as well as stochastically generated climate, although the stochastic climate generator was not used for this modeling effort. Daily historical records are available from 1971 through 2018 and were used to both develop the stochastic climate generator and as climatic inputs to the simulations.

A climate change model was included that allowed a monthly adjustment to precipitation and temperature based on the RCP8.5 climate change scenarios developed from the Representative Concentration Pathway (RCP) trajectory used in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5). These scenarios predicted the change in temperature and precipitation from a baseline of 2000 at four points in time: 2020, 2050, 2080, and 2100.

For this modeling effort, the climates from 1985 through 2018 were mapped to the simulation years 2020 through 2053. As climate change would be applied to all climate years from the baseline of the year 2000, for climate records from 2001 through 2018, daily precipitation and temperatures were normalized for climate change to the baseline of year 2000. In scenarios that included climate change, the normalized climate values were adjusted according to the simulation year (i.e., 2020 through 2053).

## 2.3 Evaporation

Potential evaporation from bodies of open water was calculated from daily temperature and typical values of dewpoint temperature, windspeed, and solar radiation.

## 2.4 Runoff and Snowpack/Melt

Daily runoff, snowpack accumulation, and snowmelt were combined into a single lumped parameter model using the degree-day CemaNeige model (Valéry, 2010) for snowpack and snowmelt, and the GR5J runoff model (Perrin, 2002; Perrin et al., 2003) to model runoff and the release of water from the shallow soils. The CemaNeige model uses temperature and precipitation as inputs and two parameters to determine rainfall, snow accumulation, and melt. Melt and rainfall are passed to the GR5J runoff model, which uses five parameters to model interception and evaporation, runoff from a production store, routing and attenuation through a Routing Store, and groundwater interaction. The CemaNeige/GR5J model was calibrated to existing streamflow monitoring at the numerous points along Grave and Alexander Creek. A composite set of parameters was developed as representative of streamflow behavior for the entire site.

## 2.5 Water Quality Source Terms

Chemical mass is introduced into the model through water quality source terms. Every stream of water that enters or is created in the model is assigned a water quality source term value as determined by the water quality study, described in the geochemical modeling report (SRK, 2020b). Source terms for 43 different chemical parameters were developed for both average and upper cases, where the 50th percentile value, or the value where 50 percent (%) of the values are below and 50% of the values are above, was used for the average scenario, and the 95th percentile value, or the value where 95% of the values were below and 5% of the values were above, was used for the upper scenario.

Water quality predictions for the Project were predicted as dissolved metals. Total suspended solids (TSS) do not act conservatively due to sedimentation processes and will not be accounted for in a mass balance approach. It was assumed that the proposed on-site sedimentation ponds will be sufficient for settling of particulates.

Source terms for the pit wall runoff and the seepage through the waste rock dump (WRD) were simulated dynamically, where the water quality profile would change over the LoM as a result of continued oxidation of the materials. Additionally, seepage water quality through the WRD was developed for two conditions: one scenario where the layering approach (described in Section 2.6) functions as intended, limiting the oxidation of the waste rock in the WRD, and a second scenario where the layering approach fails to perform as intended, and the WRD behaves as a conventional waste rock dump, allowing oxidation throughout the WRD.

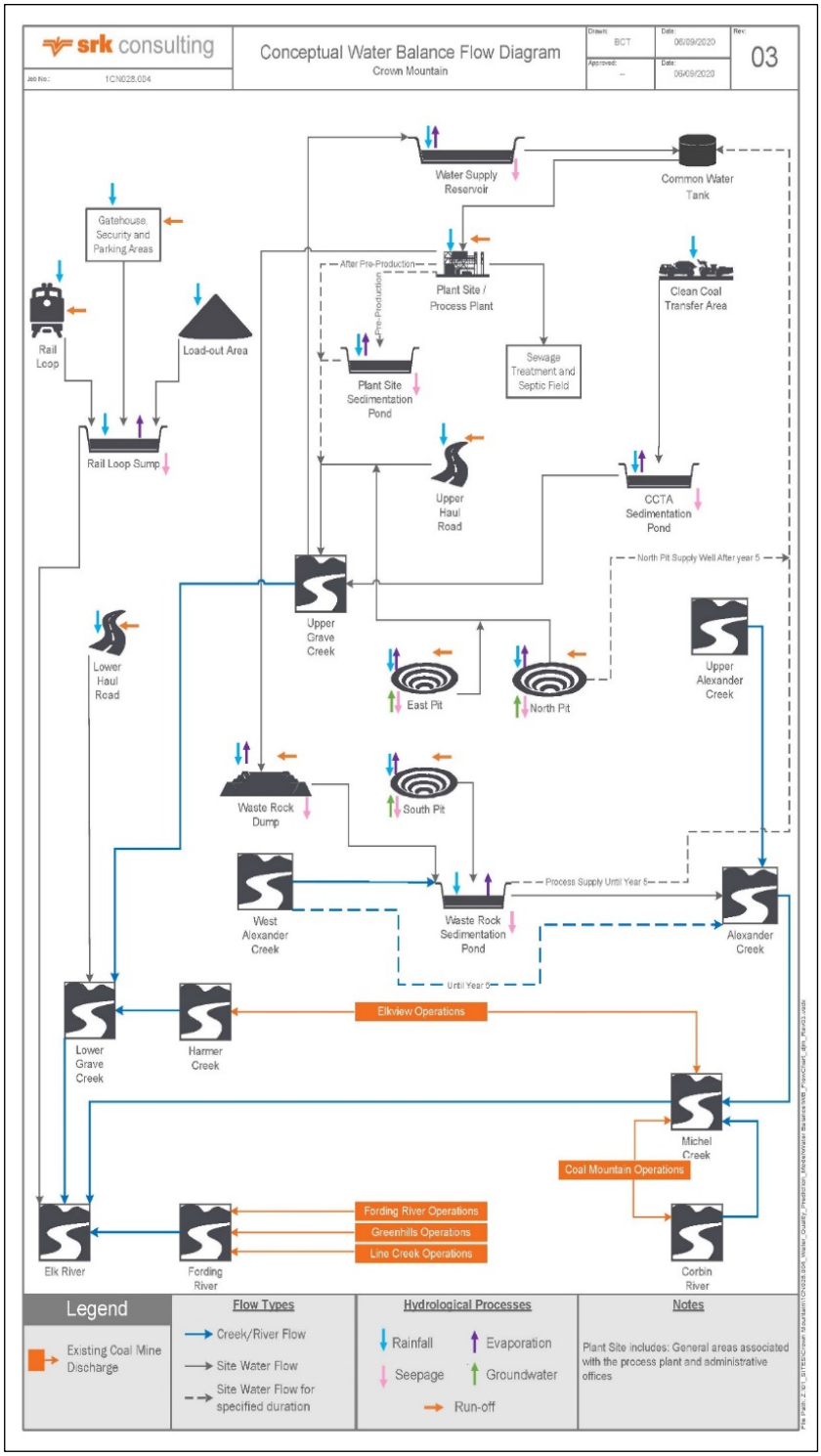
Other source terms within the model, including runoff from natural ground and the WRD, flow in Harmer Creek, and groundwater inflows, are modeled statically; a single-water quality profile for the average conditions and a second profile for the Upper Case is used for the entire LoM.

Precipitation entering the model is assumed to carry no chemical mass, and the icepack formation and ice melt volumes also neither add nor remove chemical mass from the ponds.

## 2.6 Mine Components

The SWWQ model included dynamic representation of all the major components of the mine associated with water management with interactions and flow interconnections, as shown in Figure 1.

**Figure 1: Conceptual Flow Diagram**




Sources: SRK, 2020a

Each facility represented in the model is typically constructed as a separate module that is internally balancing the inflows, outflows, water generation, and water consumption. Most of the facilities incorporate detailed dynamic components, such as ore production, footprints, or commissioning/decommissioning dates.

The WRD module was developed with more detail in order to better understand the behavior of the layering system. This system of alternating layers of ~20-meter (m) waste rocks covered with a thin layer of low oxygen permeability rejects from the Coal Handing Preparation Plant was developed to limit the transportation of oxygen into the heap and prevent oxidizing conditions in the heap. The oxidation process produces undesirable soluble aqueous forms of selenium.

In order to capture the unsaturated flow behavior and water quality aspects of seepage from the toe of the WRD, an unsaturated flow model was developed in Hydrus 1D, a pseudo-surface flux boundary model that solves the Richards equation for saturated and unsaturated flow. The results of the Hydrus 1D modeling were used to calibrate a simplified version of the Richards equation in the GoldSim model to produce similar results.

The majority of the facilities include some means of simulating the water quality associated with water within or flowing to/from the facility. Where water quality is simulated in the facility, concentration of all parameters is either determined statically, as a function of time for facilities with dynamically simulated water quality, or the water quality case (50th or 95th percentile) selected.

For the water quality assigned to seepage through the WRD, two additional conditions (in addition to the 50th percentile and 95th percentile source term assignments) were developed: one scenario where the layering approach is successful, limiting the oxidation of the waste rock in the WRD, and a second scenario where the layering approach fails to perform as intended, and the WRD behaves as a conventional waste rock dump, allowing oxidation throughout the WRD.

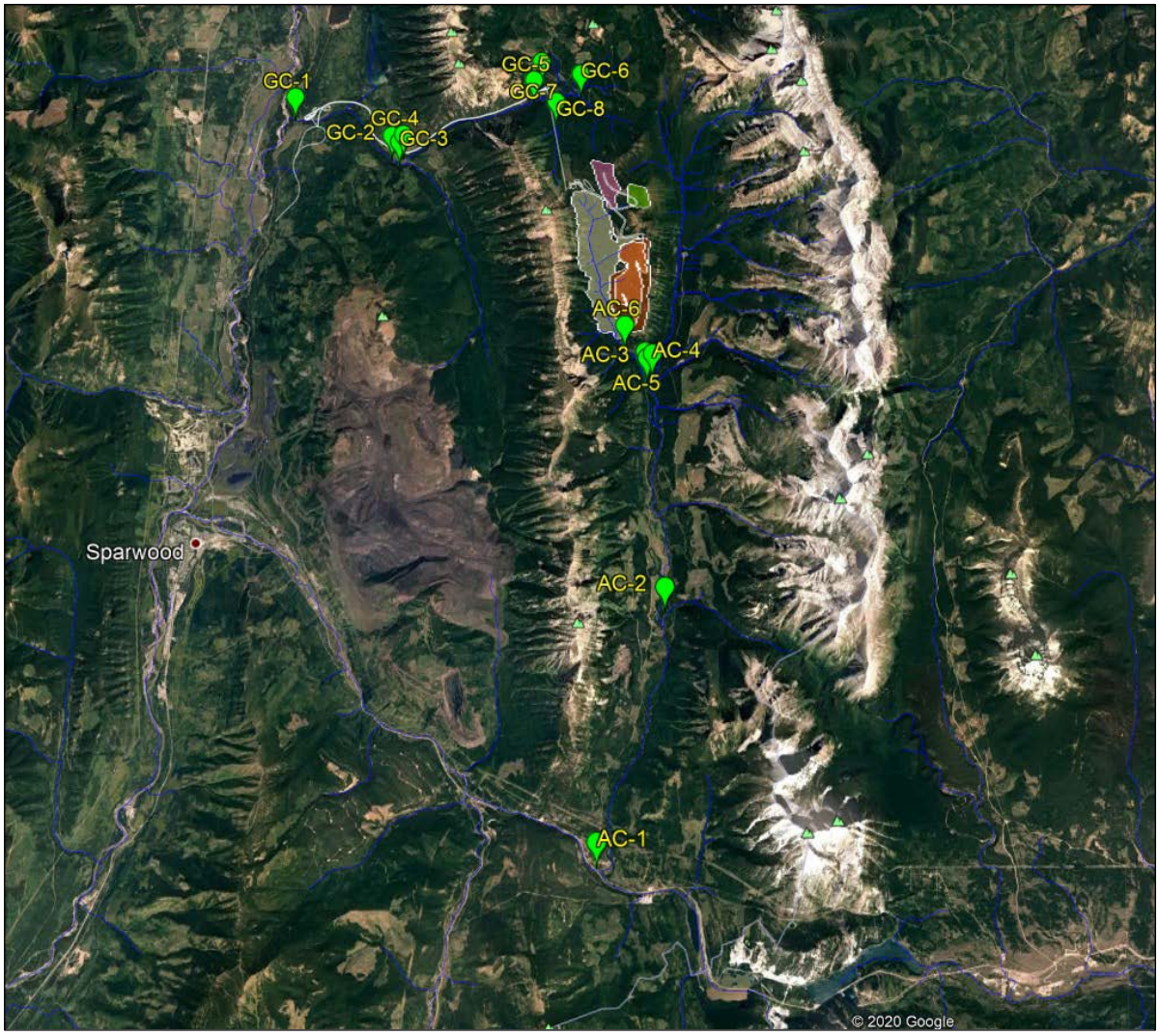
Streamflow and water quality were calculated throughout the model, but specific points of interest were identified for reporting (Dillon Consulting Ltd. (Dillon), 2020a). These reporting nodes include eight in the Grave Creek and Harmer Creek watersheds, designated GC-1 (farthest downstream) to GC-8 (farthest upstream), and six in the Alexander Creek and West Alexander Creek watersheds, designated AC-1 (farthest downstream) to AC-6 (farthest upstream), as described in Table 1 and shown in Figure 2. Three reporting nodes in the Elk Valley were also included, corresponding to reporting nodes in the Elk Valley Regional Water Quality Model (RWQM) model (EV-ER1, RG-ELKORES, and RG-DSELK), as described in Table 2 and shown in Figure 3.

**Table 1: SWWQ Reporting Nodes in Grave Creek and Alexander Creek Watersheds**

| Watershed | Node | Description | Watershed | Node | Description |
|---|---|---|---|---|---|
| Grave Creek | GC-1 | Grave Creek upstream of confluence with Elk River | Alexander Creek | AC-1 | Alexander Creek upstream of Highway 3 |
| | GC-2 | Grave Creek downstream of confluence with Harmer Creek | | AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/ West Alexander confluence) |
| | GC-3 | Grave Creek upstream of confluence with Harmer Creek | | AC-3 | Alexander Creek downstream of confluence with West Alexander Creek |
| | GC-4 | Harmer Creek upstream of confluence with Grave Creek | | AC-4 | Alexander Creek upstream of confluence with West Alexander Creek |
| | GC-5 | Grave Creek downstream of withdrawal location | | AC-5 | West Alexander Creek upstream of confluence with Alexander Creek |
| | GC-6 | Grave Creek upstream of withdrawal location | | AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet |
| | GC-7 | Grave Creek downstream of clean coal transfer area | | | |
| | GC-8 | Grave Creek downstream of coal handling and preparation plant | | | |

Source: Dillon, 2020a

**Figure 2: Location of the Reporting Nodes in the Grave and Alexander Watersheds**



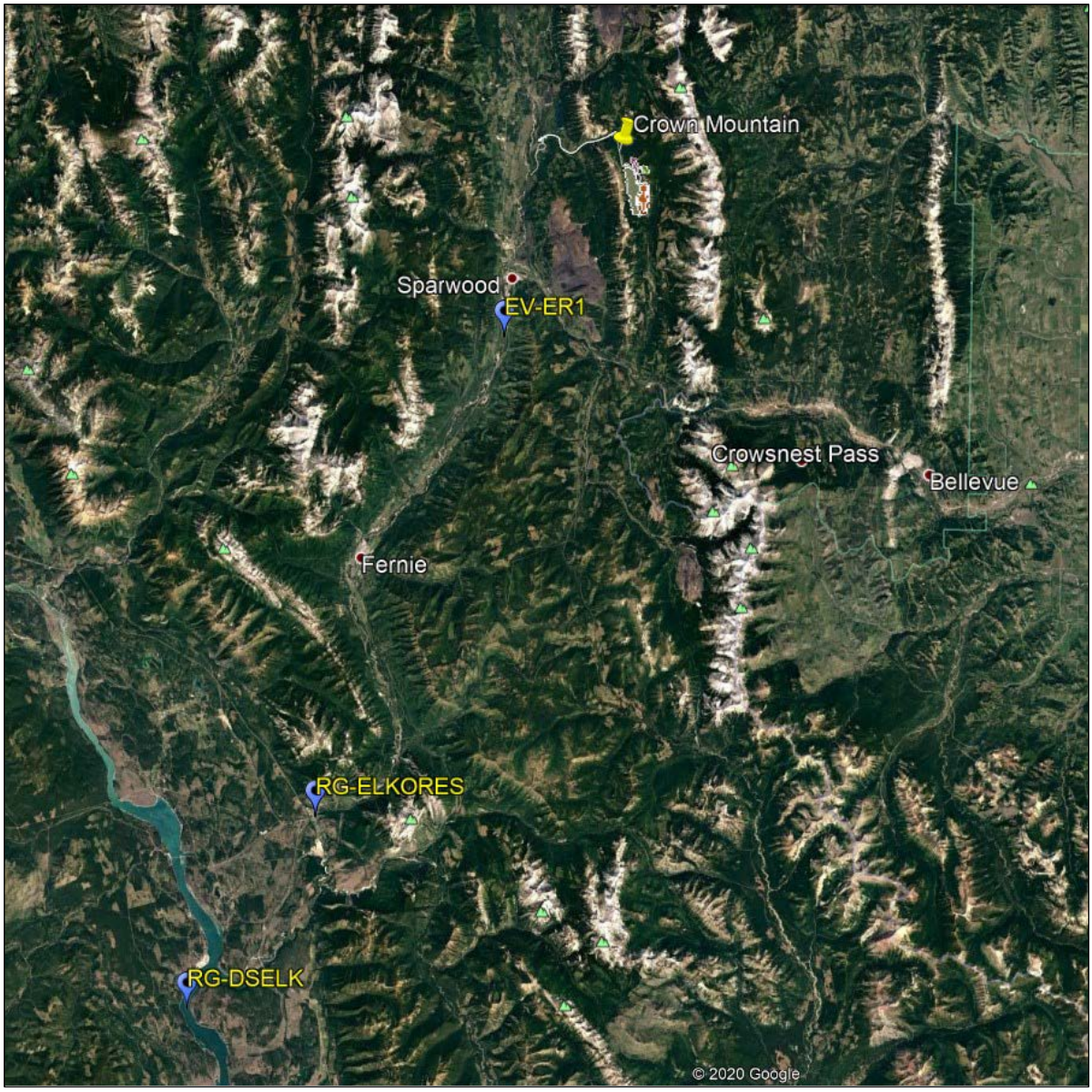

Sources: Dillon, 2020a; Ministry of the Environment (MOE), 2018; Google Earth, 2021
Notes: Locations provided by Dillon, November 2020, and MOE, 2018.

**Table 2: SWWQ Reporting Nodes in Elk Valley**

| Watershed | Node | Description |
|---|---|---|
| Elk Valley | EV-ER1 | Confluence of Elk River and Michel Creek, near Sparwood |
| | RG-ELKORES | Elk River at Elko Reservoir |
| | RG-DSELK | Koocanusa River south of the Elk River |

Sources: SRK, 2021; Google Earth, 2021
Notes: Locations provided by Dillon, November 2020.

**Figure 3: Location of Reporting Nodes in the Elk Valley**




Source: Google Earth, 2021

Notes: Locations provided by MOE, 2018.

## 2.7 Pre-Development Conditions

The model was constructed to dynamically simulate the development of the mine, from the existing pre-mining conditions through post-mining. To provide an equivalent comparison of With Mine Components versus Without Mine Components, a second, parallel model was constructed in the

SWWQ model that started with the same pre-mining conditions but did not simulate the development of the mine. This parallel structure is subjected to the identical climate conditions and water quality scenario as the original model which includes the mine components, allowing an equivalent comparison of flow and water quality at the site with and without the Project.

## 2.8 Integration with the Elk Valley Water Quality Prediction Model

There are three watercourses relevant to the Project that will have cumulative effects from multiple mines in the Elk Valley:

- Harmer Creek (Harmer Creek flows into Grave Creek to the north of the Project downstream of the Grave Creek Reservoir and is also impacted by Teck Coal's Elkview Operations.)
- Michel Creek (West Alexander Creek to the south of the Project flows into Michel Creek, which is also impacted by Teck Coal's Coal Mountain Operations.)
- Elk River (Elk River receives runoff from all five current Teck Coal Operations and several proposed coal projects.)

The following three Ministry Order Stations are located downstream of the Project in the Elk River:

- EV_ER1: confluence of Elk River and Michel Creek, near Sparwood
- RG_ELKORES: Elk River at Elko Reservoir
- RG_DSELK: Koocanusa River south of the Elk River

The Elk Valley RWQM was provided by the MOE. The RWQM predictions for the above Ministry Order Stations include the following

- 1 in 10-year dry, average, and 1 in 10-year wet weekly flow rates (reported as monthly flow rates in model output)
- Monthly selenium, nitrate (as N), sulphate, and hardness concentrations for the low flow, average flow, and high flow conditions

Due to the different methodologies used to evaluate stream flow in the SWWQ and RWQM models, only the average flow rates and concentrations provided by the RWQM at the three Ministry Order Stations were considered suitable for integrating the cumulative effects from the Project into the RWQM results.

To prevent double-counting of the contribution from the Crown Mountain site to the RWQM results at the Ministry Order Stations, the calculated 50th percentile water quality for selenium, nitrate, sulphate, and hardness from the Harmer Creek and all other natural ground in the Crown Mountain watersheds in a pre-mining condition under average flow conditions were estimated using the SWWQ model. Average stream flow was produced by simulating the model under a typical climate year, selected as 2013 from the historical record, for every year where RWQM results were available (2017 through 2053). The historical record from 2013 was selected as it produced a total annual precipitation near the median value (48th percentile) and produced a stream flow hydrograph with the spring freshet peak

coinciding with the peak in the RWQM model. The mass produced under average water quality and flow from the undeveloped Crown Mountain site was subtracted from the chemical mass in the RWQM model at the three Ministry Order Stations to produce adjusted RWQM model results representing the water quality from flows other than the Crown Mountain watersheds contributing to the three Ministry Order Stations.

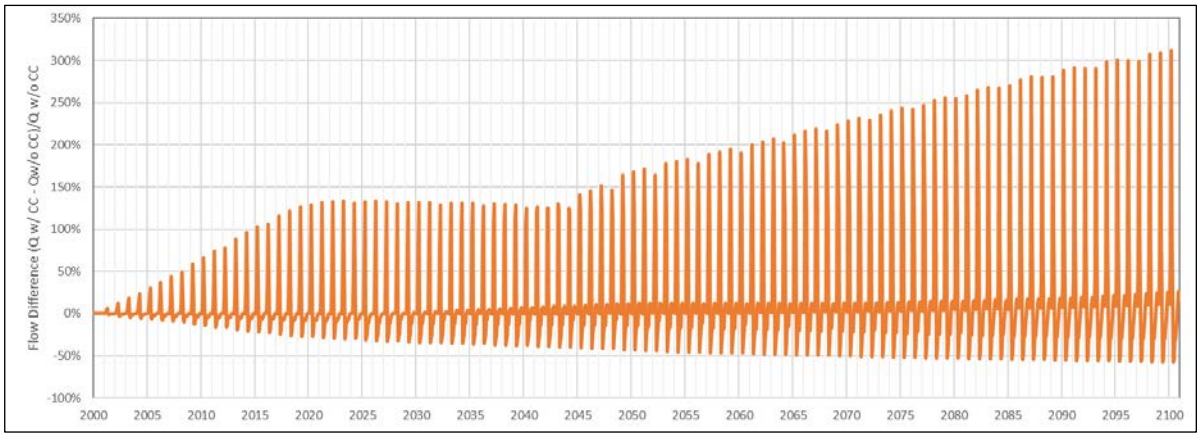
During the simulation of the SWWQ model, the loading contributions from the SWWQ model to the Elk River were produced by Crown Mountain site. The chemical mass and flow contributions calculated by the SWWQ were added to the adjusted water quality and stream flow of the RWQM to provide predictions of the water quality and stream at the three Ministry Order Stations with the inclusion of the Project to all other sources within the Elk Valley.

## 2.9 Incorporation of Climate Change Predictions into the RWQM Model

The RWQM model provided to SRK did not include the impacts of climate change on stream flow predictions, which was a desired output of the SWWQ model. SRK developed an adjustment factor for the RWQM model flow output to simulate climate change.

The SWWQ model was simulated for pre-mine conditions for the period of 2000 through 2053 assuming average climate conditions (historical year 2013) for every year of the simulation both with and without climate change RCP8.5. Stream flow produced by the model were compared for both simulations to develop a monthly adjustment factor for stream flow to account for climate change. The modeling effort indicated that the spring freshet typically moves forward in response to the warming climate, as shown in Figure 4.

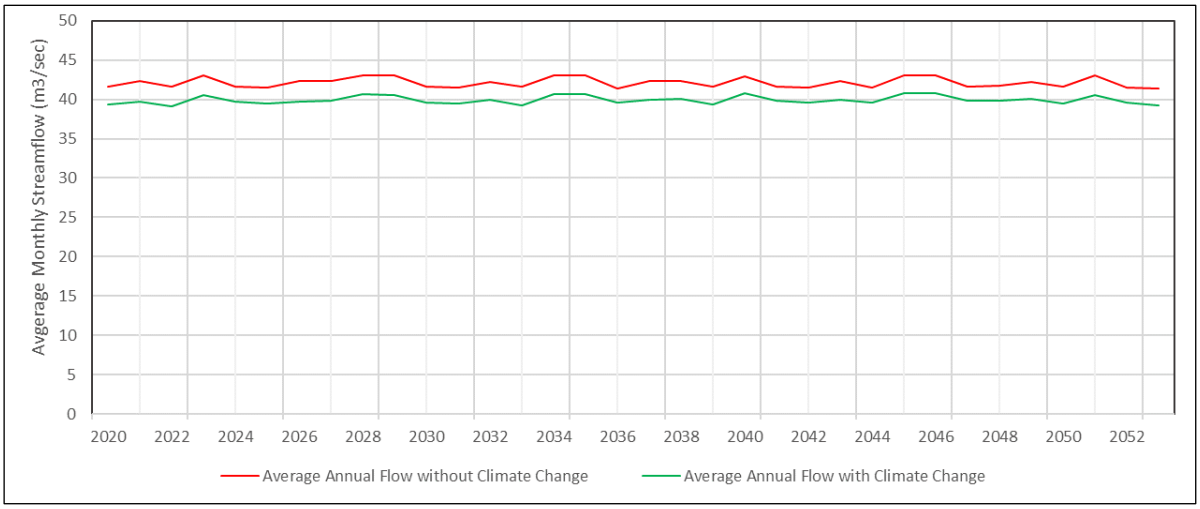
**Figure 4: Percent Difference Calculated Monthly Stream Flows in SWWQ Model, with and without Climate Change**




Source: SRK, 2021

However, the model predicted only a slight change in overall stream flow, as shown in the following comparison of average annual streamflow at Node ER-EV1 (Figure 5).

**Figure 5: Calculated Annual Stream Flows at EV-ER1 in SWWQ Model, with and without Climate Change under Average Climatic Conditions**




Source: SRK 2021

# 3 Model Scenarios and Simulations

The SWWQ model was simulated under a number of conditions in order to define the impact of the Project on the surrounding watersheds. Additionally, because of the differences in methodologies between the RWQM model and the SWWQ model climate and runoff simulations described in Section 2.8, the model was evaluated under different climate conditions for the nodes local to the Project versus the nodes with the Elk Valley.

For the nodes local to the Project, which included all nodes on Grave Creek, Harmer Creek, West Alexander Creek, and Alexander Creek, a climate record based on historical records was used. The climate change normalized historical climate from 1985 through 2018 (as described in Section 2.2) was mapped to the simulation period (2020 through 2053) for all scenarios.

For the nodes in the Elk Valley, a single, average climate year (historical year 2013) was used for all simulations to produce average stream flow in all portions of the SWWQ model. However, the average results were only reported for the Elk River Nodes (EV_ER1, RG_ELKORES, and RG_DSELK).

## 3.1 Scenarios A and B: With Mine Components and Without Mine Components

As described in Section 2.7, a parallel model of the watersheds impacted by the Project was constructed in the SWWQ. During all model simulations, the SWWQ thus calculated two scenarios simultaneously:

A. Grave Creek and Alexander Creek watersheds remain in their relatively undisturbed condition for the entire simulation.

B. Mine components are dynamically simulated in the Grave Creek and Alexander Creek watersheds.

## 3.2 Scenarios 1 and 2: With Climate Change and Without Climate Change

The SWWQ included the ability to simulate climate change impacts on the precipitation and temperature simulated in the model as described in Section 2.9, which would thus impact stream flow through the runoff, snowpack accumulation, snowmelt, ice formation, and ice melt behavior simulated from precipitation and temperature inputs. The SWWQ was run for two climate change scenarios:

1. Climate change was not considered.

2. Climate change under the RCP8.5 predictions was included.

## 3.3 Scenarios a, b, and c: Water Quality Predictions

As discussed in Section 2.5, the SWWQ model included the ability to simulate different water quality source terms when introducing chemical mass into the flow network. The SWWQ model was simulated under three water quality scenarios:

a. Simulate source-term water quality at the 50th percentile values (i.e., average values) and assume the WRD layering approach functions as intended

b. Simulate source-term water quality at the 95th percentile values (i.e., upper values) and assume the WRD layering approach functions as intended

c. Simulate source-term water quality at the 95th percentile values (i.e., upper values), assume the WRD layering approach does not function as intended, and seepage from the WRD is similar to that of conventional waste rock dumps

## 3.4 Simulation Runs

The SWWQ model was configured and run so that all combinations of the scenarios were simulated. This resulted in 12 scenarios run in the model, as shown in Table 3.

**Table 3: SWWQ Model Simulations**

| Simulation ID | Mine Components | Climate Change | Source Term | WRD Approach |
|---|---|---|---|---|
| A.1.a | Not Present | No Climate Change | 50th percentile | Successful |
| A.1.b | Not Present | No Climate Change | 95th percentile | Successful |
| A.1.c | Not Present | No Climate Change | 95th percentile | Fails |
| A.2.a | Not Present | With Climate Change | 50th percentile | Successful |
| A.2.b | Not Present | With Climate Change | 95th percentile | Successful |
| A.2.c | Not Present | With Climate Change | 95th percentile | Fails |
| B.1.a | Present | No Climate Change | 50th percentile | Successful |
| B.1.b | Present | No Climate Change | 95th percentile | Successful |
| B.1.c | Present | No Climate Change | 95th percentile | Fails |
| B.2.a | Present | With Climate Change | 50th percentile | Successful |
| B.2.b | Present | With Climate Change | 95th percentile | Successful |
| B.2.c | Present | With Climate Change | 95th percentile | Fails |

Source: SRK, 2021

## 3.5 Result Screening

Due to the large number of potential results (12 scenarios, 17 reporting nodes, and 43 chemical parameters plus flow), SRK performed an initial screening analysis to determine which chemical parameters are of concern. SRK established a base threshold level for each parameter based on current regulatory standards, typical values from monitoring, range of values produced during the simulations, or other sources, as shown in Table 4.

For the 12 scenarios at each node, an exceedance count was calculated for three different levels. The number of days that the simulated water quality exceeded the threshold of 50%, 75%, or 100% of the base threshold level was recorded, resulting in a value between 0 and 12,418 (number of days in the simulation), which was presented as the percent of the simulated days that the predicted water quality exceeded the threshold. Attachment 1 includes results of the screening analysis at each of the 17 reporting nodes for each simulation scenario.

The results of the screening analyses were used by Dillon (2020b) to reduce the number of chemical parameters of concern presented in this technical memorandum from 43 to the following seven parameters:

- Hardness
- Selenium (Se)
- Cadmium (Cd)
- Nitrate ($NO_3$)
- Sulphate ($SO_4$)
- Nickel (Ni)
- Cobalt (Co)

**Table 4: Screening Threshold Levels**

| Chemical Parameter | | Threshold Value | Source |
|---|---|---|---|
| Alkalinity | Alkalinity | 20 | BC WQG- aquatic health |
| Hardness | Hardness | None | Not Screened |
| Silver | Ag | 0.0001 | BC WQG Acute |
| Aluminum | Al | 0.1 | Canadian Water Quality Guidelines |
| Arsenic | As | 0.005 | BC WQG Acute |
| Boron | B | 1.2 | BC WQG Acute |
| Barium | Ba | 1 | Working BC WQG |
| Beryllium | Be | 0.00013 | BC WQG Acute |
| Bismuth | Bi | None | Not Screened |
| Calcium | Ca | 40 | BC Contaminated Sites Regulation 375/96 |
| Cadmium | Cd | 0.000588208 | BC WQG Acute |
| Chlorine | Cl | 150 | BC WQG Acute |
| Cobalt | Co | 0.004 | BC WQG Acute |
| Chromium | Cr | 0.001 | Canadian Water Quality Guidelines |
| Copper | Cu | 0.0114 | BC WQG Acute |
| Fluorine | F | 1.3341 | BC WQG Acute |
| Iron | Fe | 0.3 | BC WQG Acute |
| Mercury | Hg | 0.00002 | BC WQG Acute |
| Potassium | K | None | Not Screened |
| Lithium | Li | 0.87 | Working BC WQG – 2017 |
| Magnesium | Mg | 100 | BC Contaminated Sites Regulation 375/96 |
| Manganese | Mn | 1.642 | BC WQG Acute |
| Molybdenum | Mo | 0.073 | BC WQG Acute |
| Sodium | Na | 200 | BC Contaminated Sites Regulation 375/96 |
| Ammonium | NH4 | 0.61 | BC WQG- aquatic health |
| Nickel | Ni | 0.096 | BC WQG Acute |
| Nitrite | $NO_2$ | 0.02 | BC WQG- aquatic health |
| Nitrate | $NO_3$ | 3 | BC WQG Acute |
| Phosphorus | P | 0.01 | BC WQG- aquatic health |
| Lead | Pb | 0.00318 | BC WQG Acute |
| Sulfur | S | None | Not Screened |
| Antimony | Sb | 0.009 | BC WQG Acute |
| Selenium | Se | 0.002 | BC WQG Acute |
| Silicon | Si | None | Not Screened |
| Tin | Sn | None | Not Screened |
| Sulphate | $SO_4$ | 310 | BC WQG Acute |
| Strontium | Sr | 7 | Median Baseline Value |
| Titanium | Ti | 1 | BC Contaminated Sites Regulation 375/96 |
| Thallium | Tl | 0.0008 | Working BC WQG |
| Uranium | U | 0.0085 | BC WQG Acute |
| Vanadium | V | 0.1 | Working BC WQG |
| Zinc | Zn | 0.0405 | BC WQG Acute |
| Zirconium | Zr | None | Not Screened |

| Chemical Parameter | | Threshold Value | Source |
|---|---|---|---|
| Sulfate | SO4 | 310 | BC WQG Acute |
| Strontium | Sr | 7 | Median Baseline Value |
| Titanium | Ti | 1 | BC Contaminated Sites Regulation 375/96 |
| Thallium | Tl | 0.0008 | Working BC WQG |
| Uranium | U | 0.0085 | BC WQG Acute |
| Vanadium | V | 0.1 | Working BC WQG |
| Zinc | Zn | 0.0405 | BC WQG Acute |

Source: Dillon, email correspondence, December 2020

## 3.6 Stream Flow and Water Quality Results

Daily simulated stream flow values at each of the 17 reporting nodes was produced for four scenarios. As water quality prediction Scenarios a, b, and c address water quality and do not impact stream flow, only Scenarios A and B and 1 and 2 are relevant to streamflow. Attachment 2 graphically presents the results for Scenarios A.1.a, A.2.a, B.1.a, and B.2.b. Tabular results have been provided with this technical memorandum in electronic format.

Attachment 3 graphically presents water quality results for each of the 17 reporting nodes for the seven parameters of concern identified in Section 3.5 for all 12 scenarios. Tabular results have been provided with this technical memorandum in electronic format.

It should be noted that all 43 chemical parameters were simulated in the model but have not been presented here for the sake of brevity. A review of the screening results for all 43 chemical parameters presented in Attachment 1 indicates that only these seven parameters are the parameters of concern for this study.

The model results provided in Attachment 2 and Attachment 3 are intended to provide a comparative evaluation of the different in stream flow quantity and quality between the different scenarios of mine activity, climatic conditions, and water quality. The simulation of streams without and without the mine present is performed in parallel within the model so that identical climate and water quality inputs and assumptions are used and a comparison of impacts from the mine can be evaluated. Similarly, the model was run with and without climate change adjustments to allow the impacts resulting from climate change can be assessed.

These results are provided to support the Environmental Impact Assessment being performed by Dillon but should be used in qualitative evaluations rather than quantitative evaluations.

Regards,
SRK Consulting (U.S.), Inc.

<Original signed by>

David Hoekstra, BS, PE, NCEES, SME-RM
Principal Consultant (Water Resource Engineering)

## Attachments:

| | |
|---|---|
| Attachment 1 | Water Quality Screening Results |
| Attachment 2 | Streamflow Results |
| Attachment 3 | Water Quality Results |

# References

SRK Consulting (U.S.), Inc. (SRK), (2020a). Water Quality Prediction Model, Crown Mountain Coking Coal Project, British Columbia, prepared by SRK Consulting (U.S.), Inc. for NWP Coal Canada Ltd. Project No. 1CN028.004, June 11, 2020.

SRK, (2020b). Geochemical Characterization Report.

Dillon Consulting Ltd. (Dillon), (2020a). Dillon Consulting Ltd. Email Communication from Hannah Blanchard. Crown Mountain – Updated Request for Information, November 24, 2020.

Dillon, (2020b). Dillon Consulting Ltd. Email Communication from Hannah Blanchard. Re: Crown Mountain WQ screening, December 23, 2020.

Valéry, A., (2010). Modélisation précipitations – débit sous influence nivale. Élaboration d'un module neige et évaluation sur 380 bassins versants. Thèse de Doctorat, Cemagref (Antony), AgroParisTech (Paris), 405 pp.

Perrin, C., (2002). Vers une amélioration d'un modèle global pluie-débit au travers d'une approche comparative. La Houille Blanche, n°6/7, 84-91.

Perrin, C., Michel, C., and Andréassian, V., (2003). Improvement of a parsimonious model for streamflow simulation. Journal of Hydrology 279(1-4), 275-289.

# Table A-1
## Summary Screening Report for Scenario A.1.a - No Mine Development, Without Climate Change, for 50th Percentile Water Quality, WRD Layering Succeeds

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

# Table A-2
## Summary Screening Report for Scenario A.1.b - No Mine Development, Without Climate Change, for 95th Percentile Water Quality, WRD Layering Succeeds

| Threshold Value (mg/l) | | | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| Reporting Node | | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 100% | -- | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

## Table A-3
## Summary Screening Report for Scenario A.1.c - No Mine Development, Without Climate Change, for 95th Percentile Water Quality, WRD Layering Fails

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

## Table A-4
## Summary Screening Report for Scenario A.2.a - No Mine Development, With Climate Change, for 50th Percentile Water Quality, WRD Layering Succeeds

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

# Table A-5

## Summary Screening Report for Scenario A.2.b - No Mine Development, With Climate Change, for 95th Percentile Water Quality, WRD Layering Succeeds

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

# Table A-6
## Summary Screening Report for Scenario A.2.c - No Mine Development, With Climate Change, for 95th Percentile Water Quality, WRD Layering Fails

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

## Table A-7
## Summary Screening Report for Scenario B.1.a - Mine Development, Without Climate Change, for 50th Percentile Water Quality, WRD Layering Succeeds

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 64% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 1% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 32% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 41% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 72% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 2% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 100% | 2% | 0% | 62% | 2% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 87% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 60% | 0% | 0% | 37% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 80% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 18% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 70% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 99% | 2% | 0% | 62% | 1% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 86% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 1% | 0% | 0% | 37% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 79% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 18% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 67% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

## Table A-8

## Summary Screening Report for Scenario B.1.b - Mine Development, Without Climate Change, for 95th Percentile Water Quality, WRD Layering Succeeds

| Threshold Value (mg/l) | | | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| Reporting Node | | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 26% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 2% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 23% | 0% | 0% | 0% | 0% | 2% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 48% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 100% | -- | 100% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 100% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 50% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 92% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 7% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 13% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 21% | 0% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 52% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 17% | -- | 100% | 22% | 0% | 84% | 21% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 12% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 100% | 3% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 78% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 86% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 16% | -- | 99% | 22% | 0% | 84% | 10% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 12% | 0% | 0% | 0% | -- | 0% | 99% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 72% | 2% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | -- | 0% | 90% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 78% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 85% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

# Table A-9
## Summary Screening Report for Scenario B.1.c - Mine Development, Without Climate Change, for 95th Percentile Water Quality, WRD Layering Fails

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 26% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 2% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 23% | 0% | 0% | 0% | 0% | 2% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 48% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 100% | -- | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 100% | -- | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 50% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 92% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 84% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 84% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 100% | 0% | 0% | 22% | 0% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 85% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 80% | -- | 100% | 22% | 0% | 84% | 21% | 0% | 0% | 0% | 9% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 12% | 0% | 42% | 0% | 0% | -- | 0% | 100% | -- | -- | 24% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 69% | -- | 100% | 3% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 16% | 0% | 0% | -- | 0% | 100% | -- | -- | 3% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 52% | -- | 0% | 0% | 0% | 80% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 6% | 0% | 0% | -- | 0% | 88% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 80% | -- | 99% | 22% | 0% | 84% | 10% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 12% | 0% | 41% | 0% | 0% | -- | 0% | 99% | -- | -- | 22% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 68% | -- | 72% | 2% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 16% | 0% | 0% | -- | 0% | 91% | -- | -- | 3% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 52% | -- | 0% | 0% | 0% | 80% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 6% | 0% | 0% | -- | 0% | 87% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

## Table A-10
## Summary Screening Report for Scenario B.2.a - Mine Development, With Climate Change, for 50th Percentile Water Quality, WRD Layering Succeeds

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 62% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 2% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 28% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 38% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 70% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 1% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 100% | 2% | 0% | 59% | 1% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 87% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 63% | 0% | 0% | 35% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 80% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 13% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 68% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 99% | 2% | 0% | 59% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 86% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 1% | 0% | 0% | 35% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 78% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 13% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 66% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

## Table A-11
## Summary Screening Report for Scenario B.2.b - Mine Development, With Climate Change, for 95th Percentile Water Quality, WRD Layering Succeeds

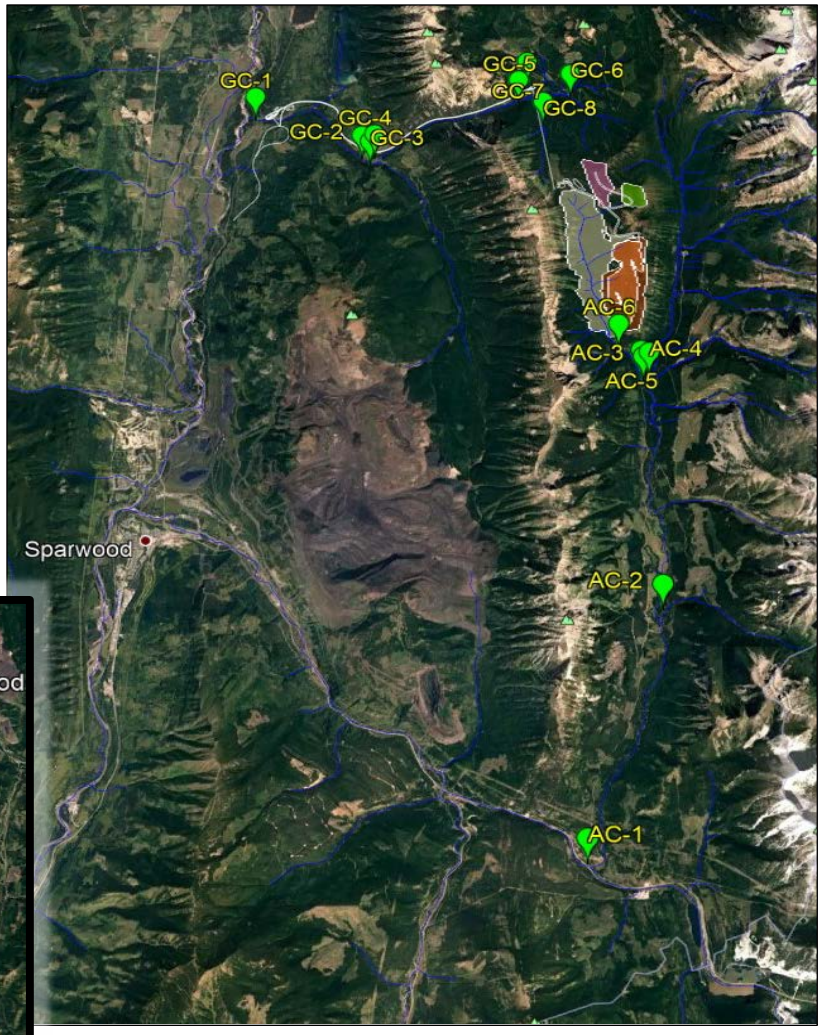
| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 23% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 2% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 20% | 0% | 0% | 0% | 0% | 2% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 45% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 62% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 94% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 5% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 9% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 16% | 0% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 49% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 11% | -- | 100% | 17% | 0% | 84% | 16% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 7% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 100% | 2% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 79% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 86% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 10% | -- | 99% | 17% | 0% | 84% | 6% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 7% | 0% | 0% | 0% | 0% | -- | 0% | 99% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 1% | -- | 72% | 2% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 90% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 79% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 85% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

## Table A-12
## Summary Screening Report for Scenario B.2.c - Mine Development, With Climate Change, for 95th Percentile Water Quality, WRD Layering Fails

| | | Threshold Value (mg/l) | 20 | -- | 0.00005 | 0.10 | 0.0050 | 1.2 | 1.0 | 0.00013 | -- | 40 | 0.000212 | 150 | 0.0040 | 0.0010 | 0.0020 | 1.334 | 0.30 | 0.000020 | -- | 0.87 | 100 | 1.05 | 0.07 | 200 | 0.61 | 0.10 | 0.020 | 3 | 0.010 | 0.0032 | -- | 0.01 | 0.002 | -- | -- | 310.00 | 7.000 | 1.0 | 0.00080 | 0.01 | 0.10 | 0.0150 | -- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Alkalinity | Hardness | Ag | Al | As | B | Ba | Be | Bi | Ca | Cd | Cl | Co | Cr | Cu | F | Fe | Hg | K | Li | Mg | Mn | Mo | Na | NH4 | Ni | NO2 | NO3 | P | Pb | S | Sb | Se | Si | Sn | SO4 | Sr | Ti | Tl | U | V | Zn | Zr |
| | Reporting Node | Percent of Threshold | Alkalinity | Hardness | Silver | Aluminum | Arsenic | Boron | Barium | Beryllium | Bismuth | Calcium | Cadmium | Chlorine | Cobalt | Chromium | Copper | Fluorine | Iron | Mercury | Potassium | Lithium | Magnesium | Manganese | Molybdenum | Sodium | Ammonium | Nickel | Nitrite | Nitrate | Phosphorus | Lead | Sulfur | Antimony | Selenium | Silicon | Tin | Sulfate | Strontium | Titanium | Thallium | Uranium | Vanadium | Zinc | Zirconium |
| GC-1 | Grave Creek upstream of confluence with Elk River | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 23% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-2 | Grave Creek downstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 2% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-3 | Grave Creek upstream of confluence with Harmer Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 20% | 0% | 0% | 0% | 0% | 2% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 45% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-4 | Harmer Creek upstream of confluence with Grave Creek | 50% | 100% | -- | 0% | 0% | 0% | 100% | -- | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 100% | -- | 100% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-5 | Grave Creek downstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-6 | Grave Creek upstream of withdrawal location | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-7 | Grave Creek downstream of clean coal transfer area | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 62% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 94% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| GC-8 | Grave Creek downstream of coal handling and preparation plant | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-1 | Alexander Creek upstream of Highway 3 | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 83% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-2 | Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 84% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-3 | Alexander Creek downstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 18% | 0% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 85% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-4 | Alexander Creek upstream of confluence with West Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 100% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-5 | West Alexander Creek upstream of confluence with Alexander Creek | 50% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 79% | -- | 100% | 17% | 0% | 84% | 16% | 0% | 0% | 0% | 8% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 8% | 0% | 39% | 0% | 0% | -- | 0% | 100% | -- | -- | 19% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 66% | -- | 100% | 2% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 13% | 0% | 0% | -- | 0% | 100% | -- | -- | 3% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 100% | -- | 0% | 0% | 0% | 0% | 0% | 49% | -- | 0% | 0% | 0% | 80% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 5% | 0% | 0% | -- | 0% | 88% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| AC-6 | West Alexander Creek downstream of ultimate sediment pond outlet | 50% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 79% | -- | 99% | 17% | 0% | 84% | 6% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 8% | 0% | 39% | 0% | 0% | -- | 0% | 99% | -- | -- | 17% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 75% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 65% | -- | 72% | 2% | 0% | 82% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 13% | 0% | 0% | -- | 0% | 91% | -- | -- | 3% | 0% | 0% | 0% | 0% | 0% | 0% | -- |
| | | 100% | 99% | -- | 0% | 0% | 0% | 0% | 0% | 49% | -- | 0% | 0% | 0% | 80% | 0% | 0% | 0% | 0% | 0% | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 5% | 0% | 0% | -- | 0% | 87% | -- | -- | 0% | 0% | 0% | 0% | 0% | 0% | 0% | -- |

# Attachment 2 Streamflow Results

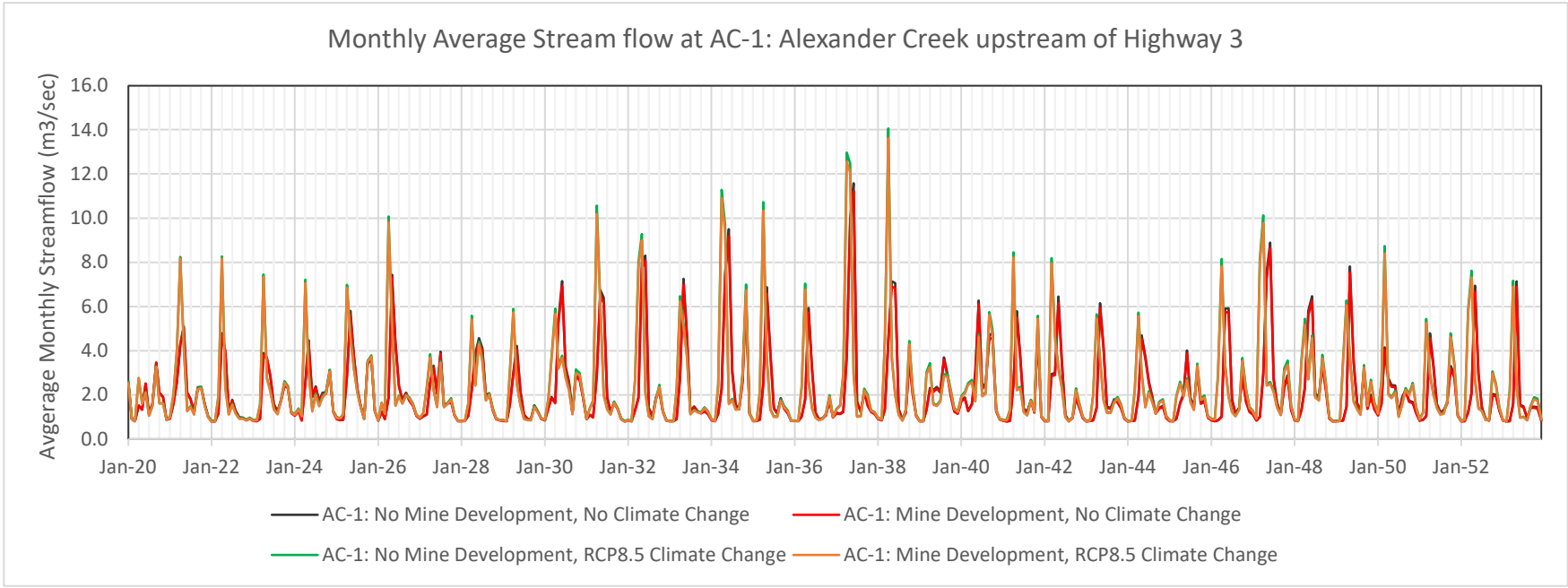
Tabular data is provided separately in electronic format.

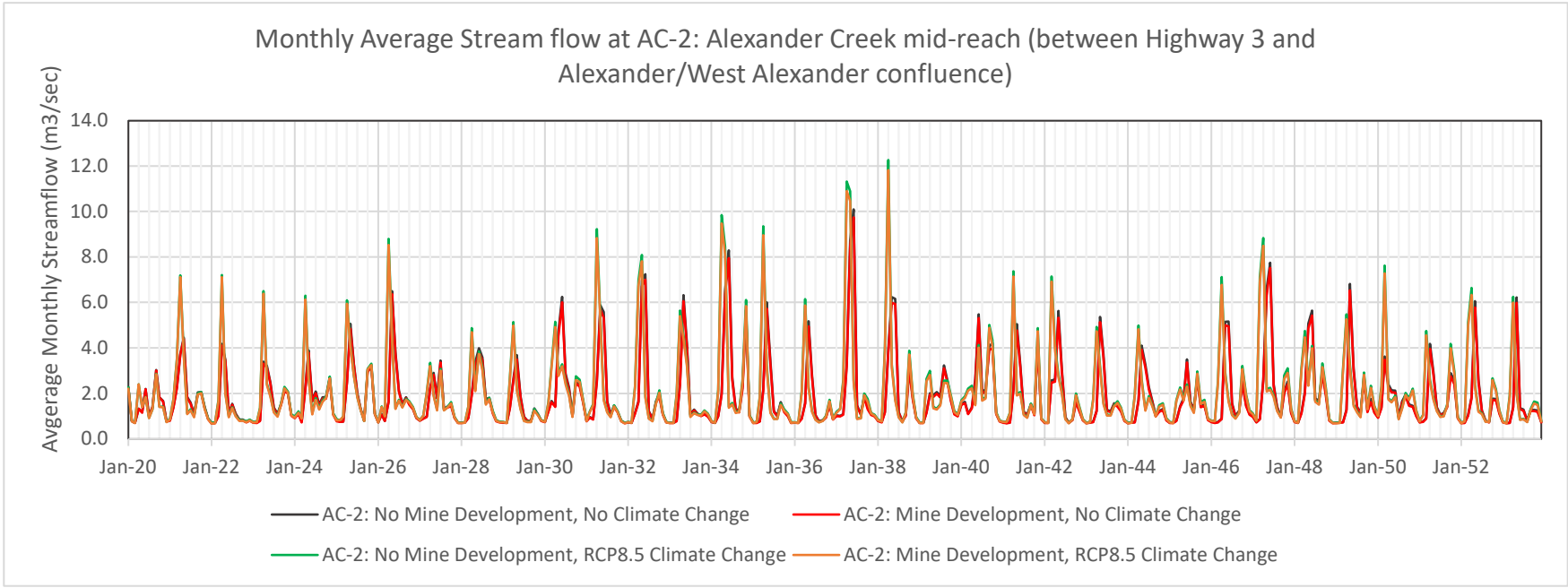


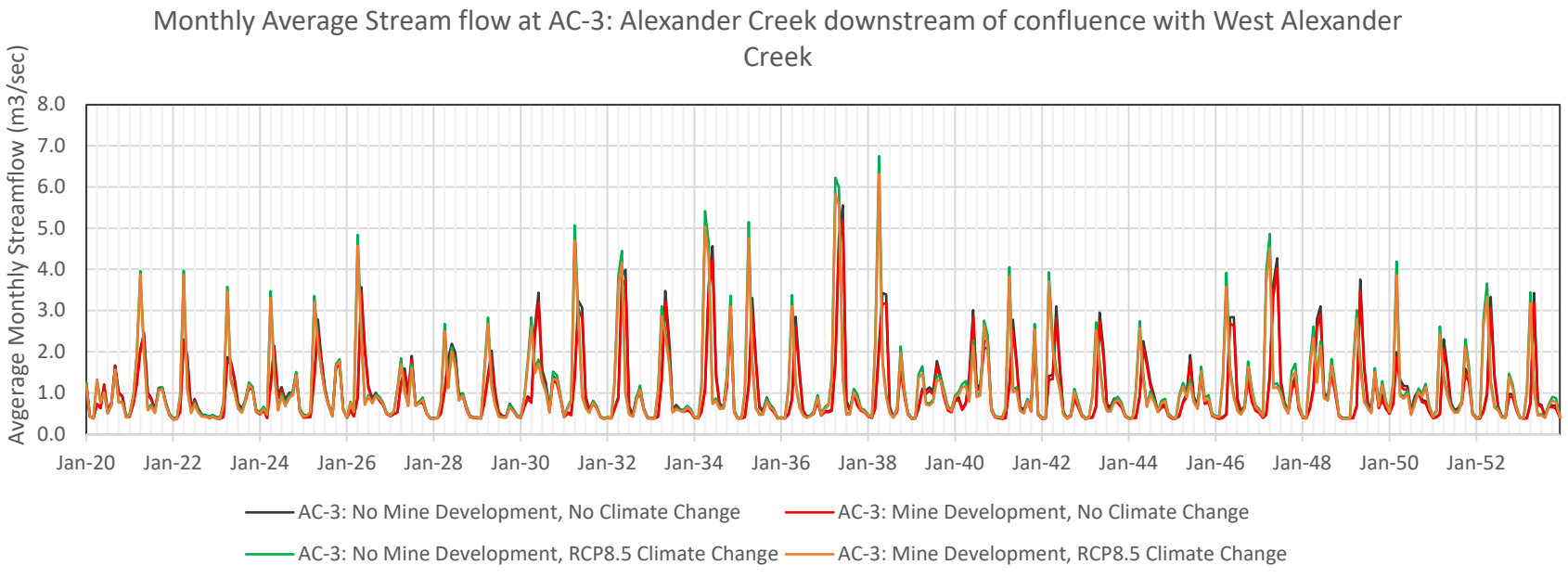


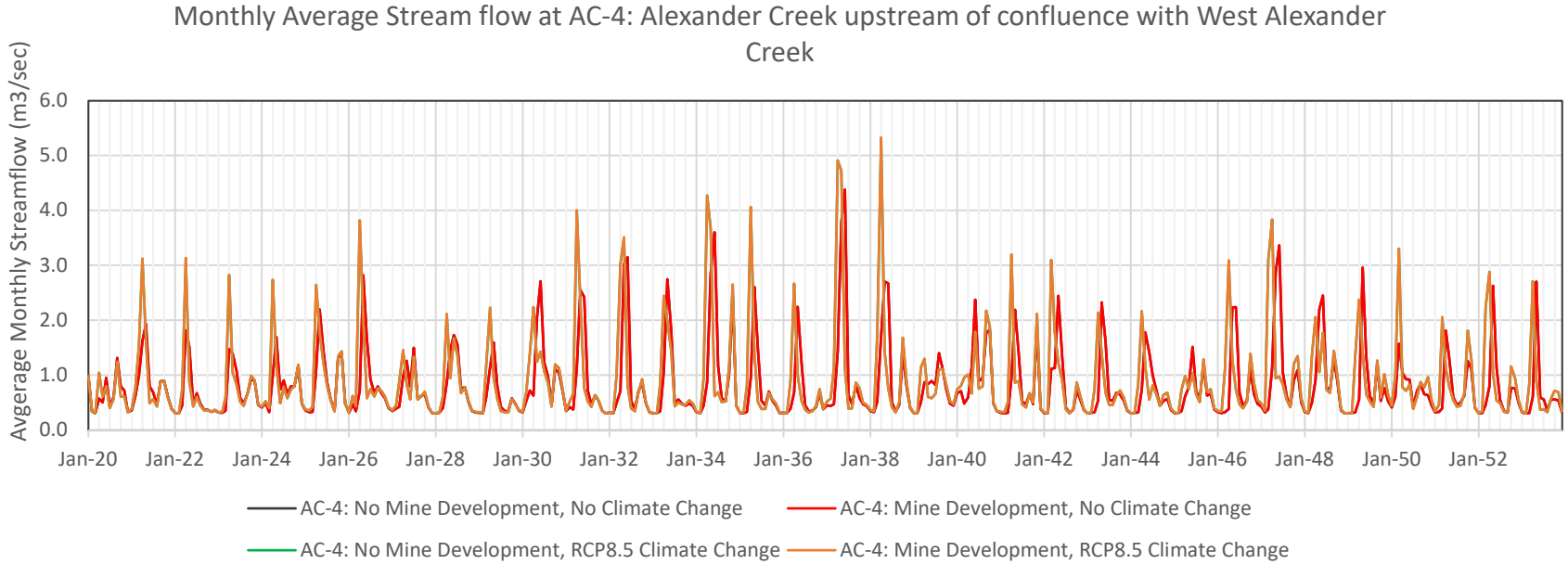
**Scenario Legend**

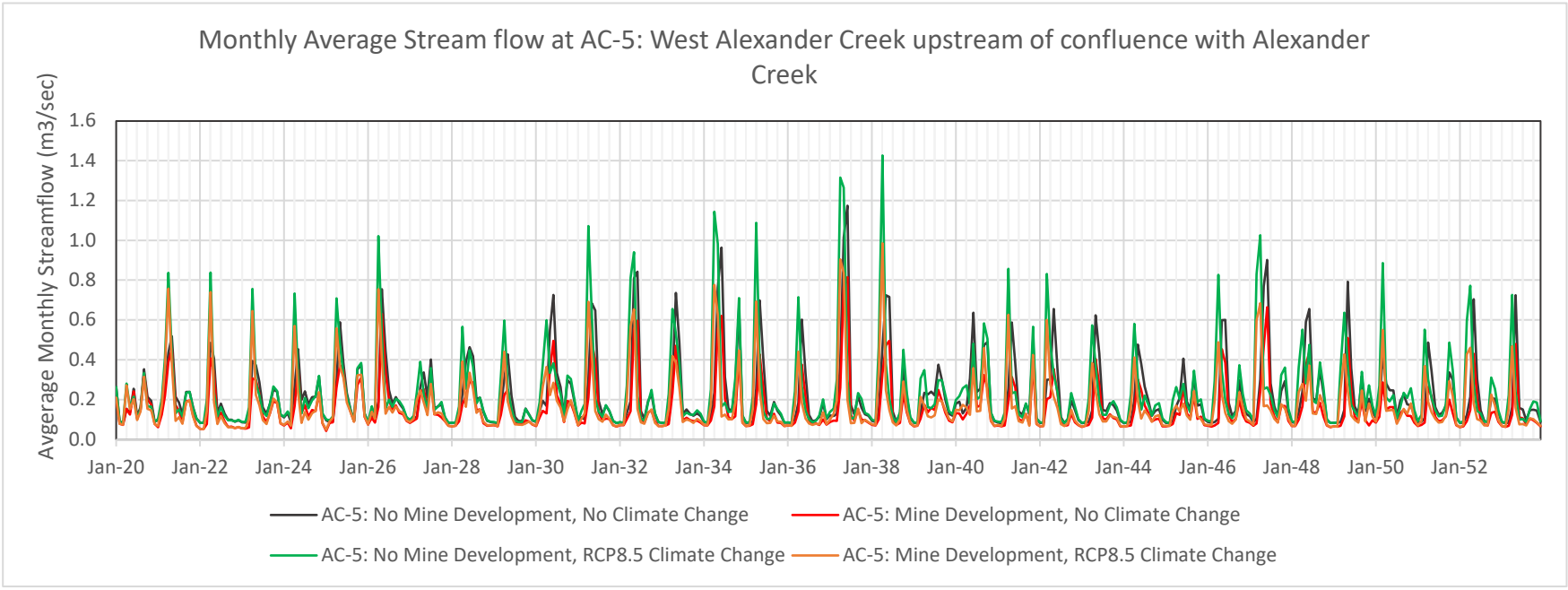
| | |
|---|---|
| A | Without Mine Components |
| B | With Mine Components |
| 1 | No Climate Change |
| 2 | Climate Change RCP8.5 |

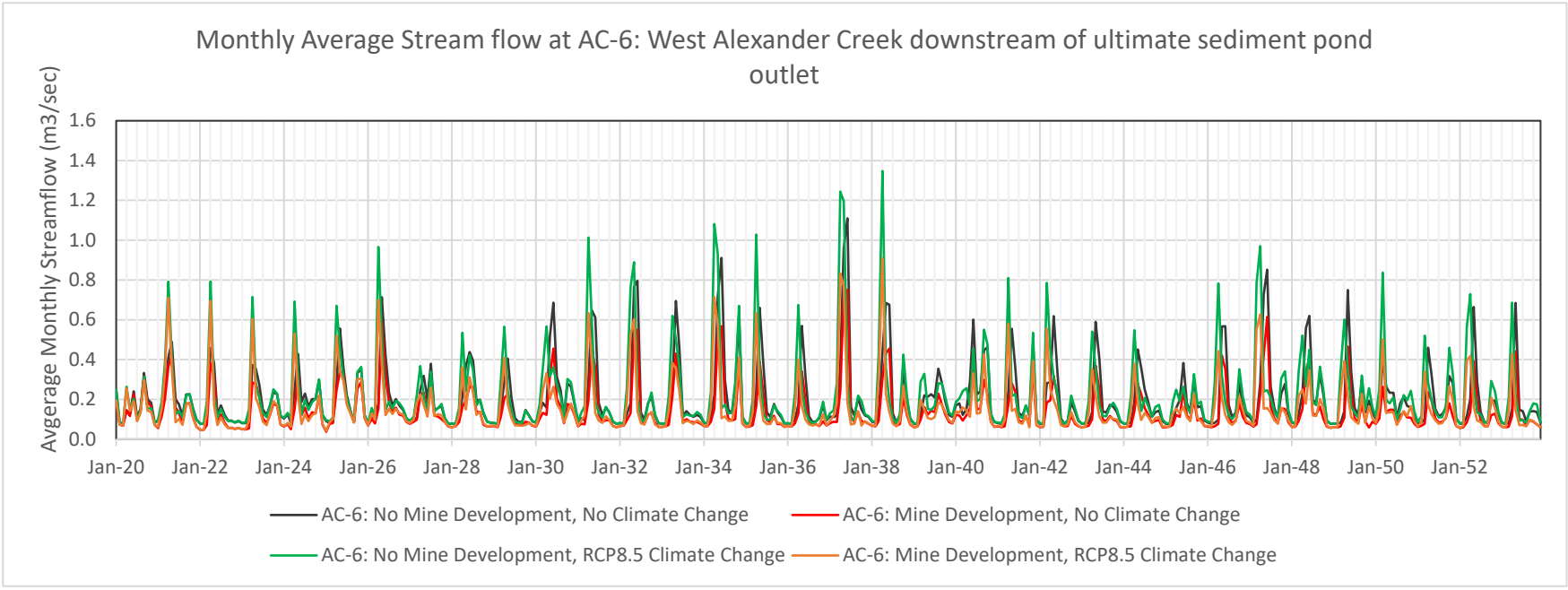

Monthly Average Stream flow at AC-1: Alexander Creek upstream of Highway 3
Avgerage Monthly Streamflow (m3/sec)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
AC-1: No Mine Development, No Climate Change
AC-1: Mine Development, No Climate Change
AC-1: No Mine Development, RCP8.5 Climate Change
AC-1: Mine Development, RCP8.5 Climate Change

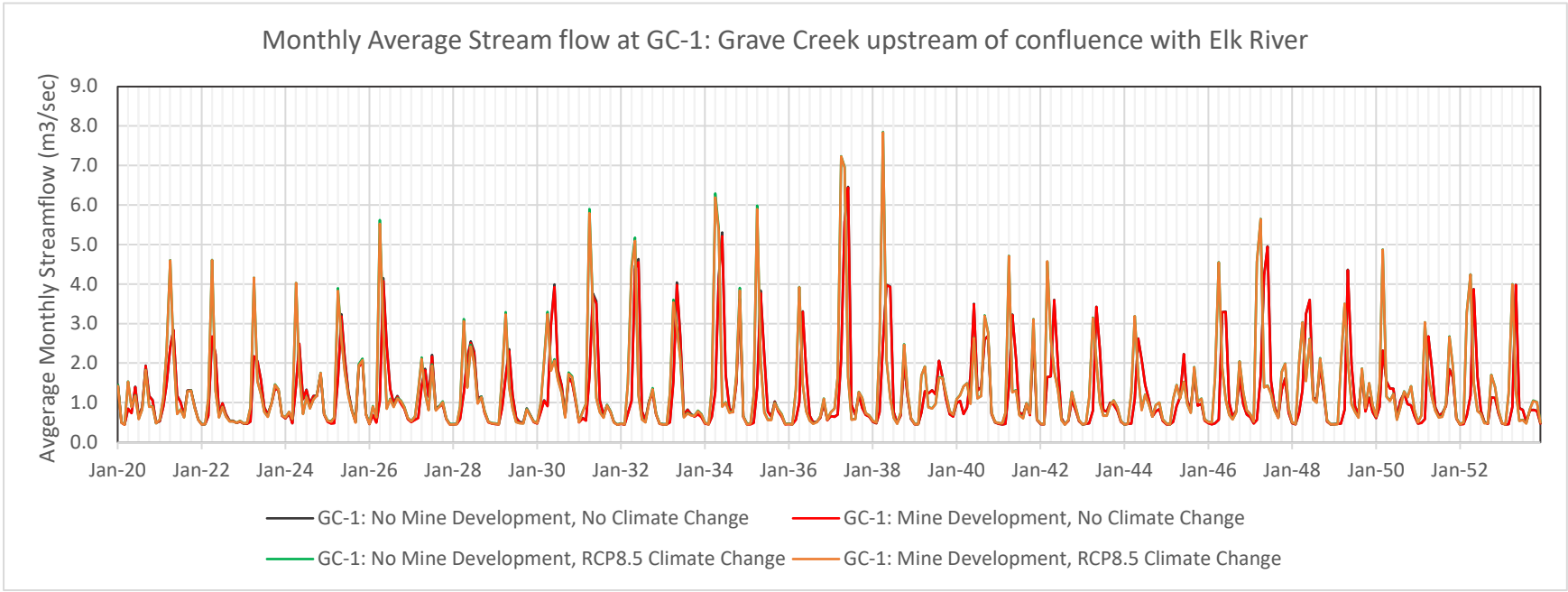

Monthly Average Stream flow at AC-2: Alexander Creek mid-reach (between Highway 3 and Alexander/West Alexander confluence)
Avgerage Monthly Streamflow (m3/sec)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
AC-2: No Mine Development, No Climate Change
AC-2: Mine Development, No Climate Change
AC-2: No Mine Development, RCP8.5 Climate Change
AC-2: Mine Development, RCP8.5 Climate Change

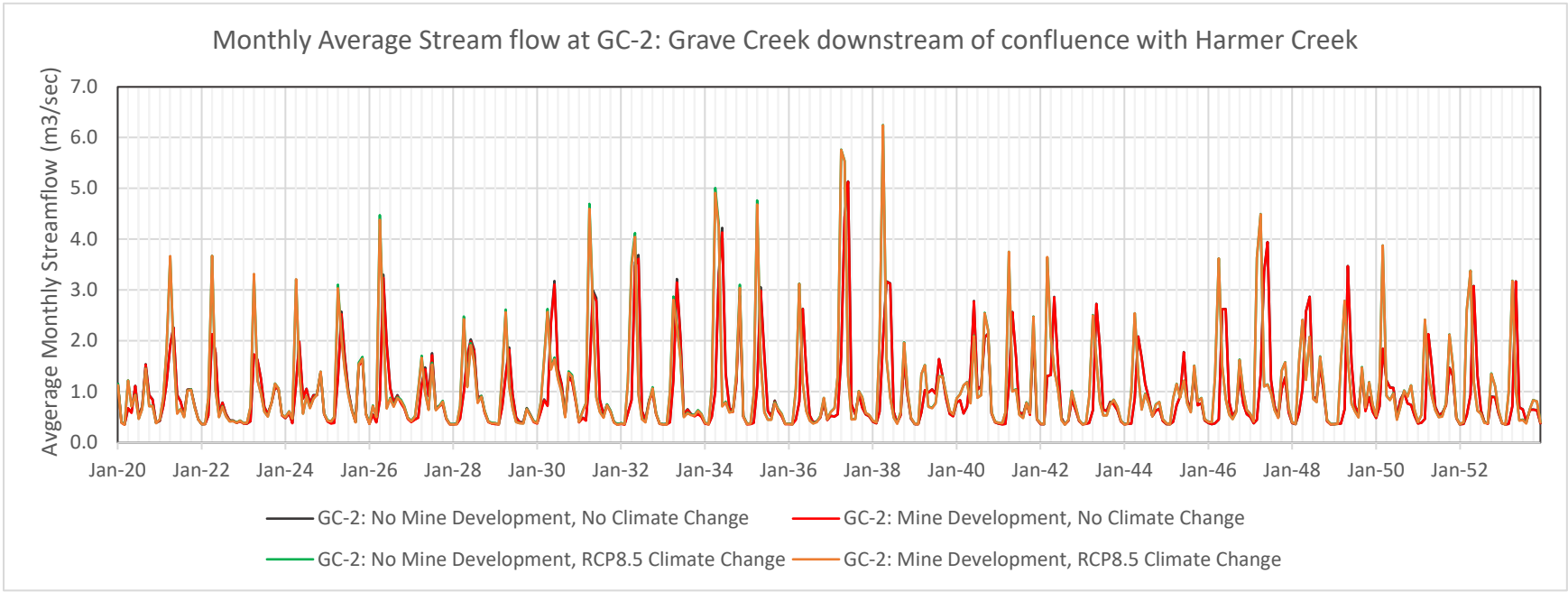

Monthly Average Stream flow at AC-3: Alexander Creek downstream of confluence with West Alexander Creek
Avgerage Monthly Streamflow (m3/sec)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
AC-3: No Mine Development, No Climate Change
AC-3: Mine Development, No Climate Change
AC-3: No Mine Development, RCP8.5 Climate Change
AC-3: Mine Development, RCP8.5 Climate Change

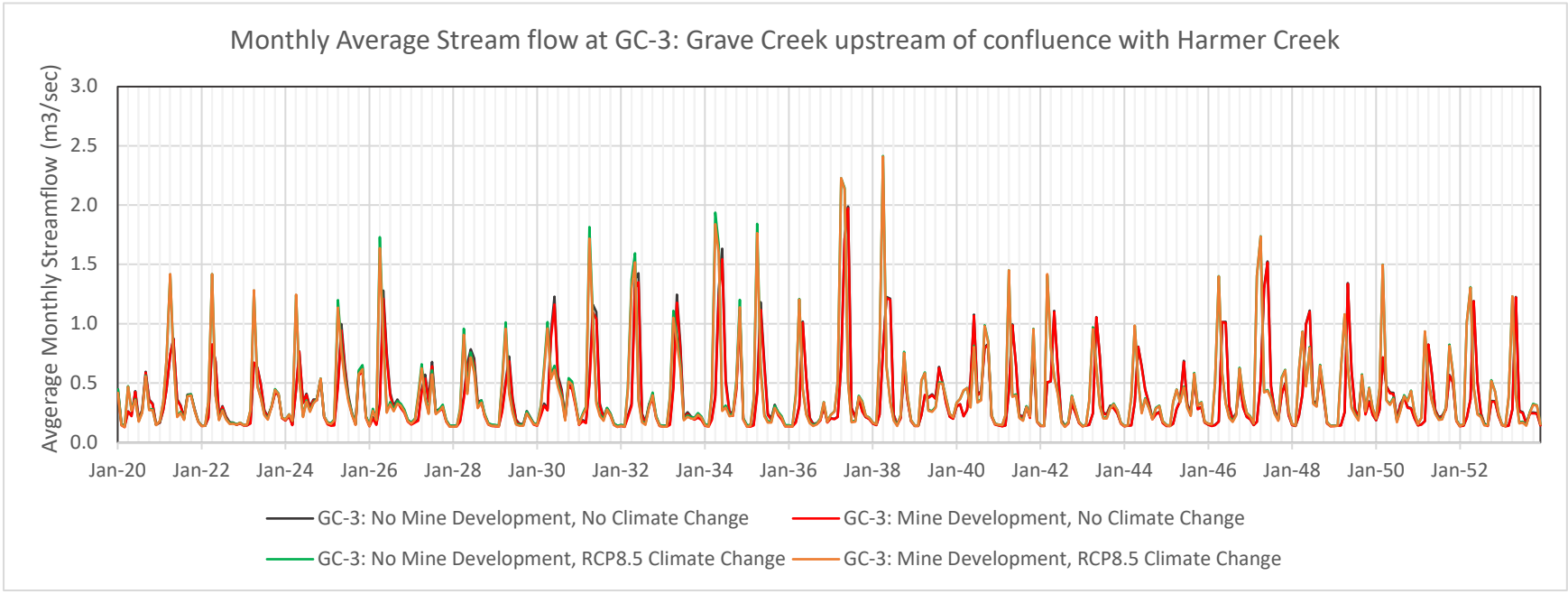

Monthly Average Stream flow at AC-4: Alexander Creek upstream of confluence with West Alexander Creek
Avgerage Monthly Streamflow (m3/sec)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
AC-4: No Mine Development, No Climate Change
AC-4: Mine Development, No Climate Change
AC-4: No Mine Development, RCP8.5 Climate Change
AC-4: Mine Development, RCP8.5 Climate Change

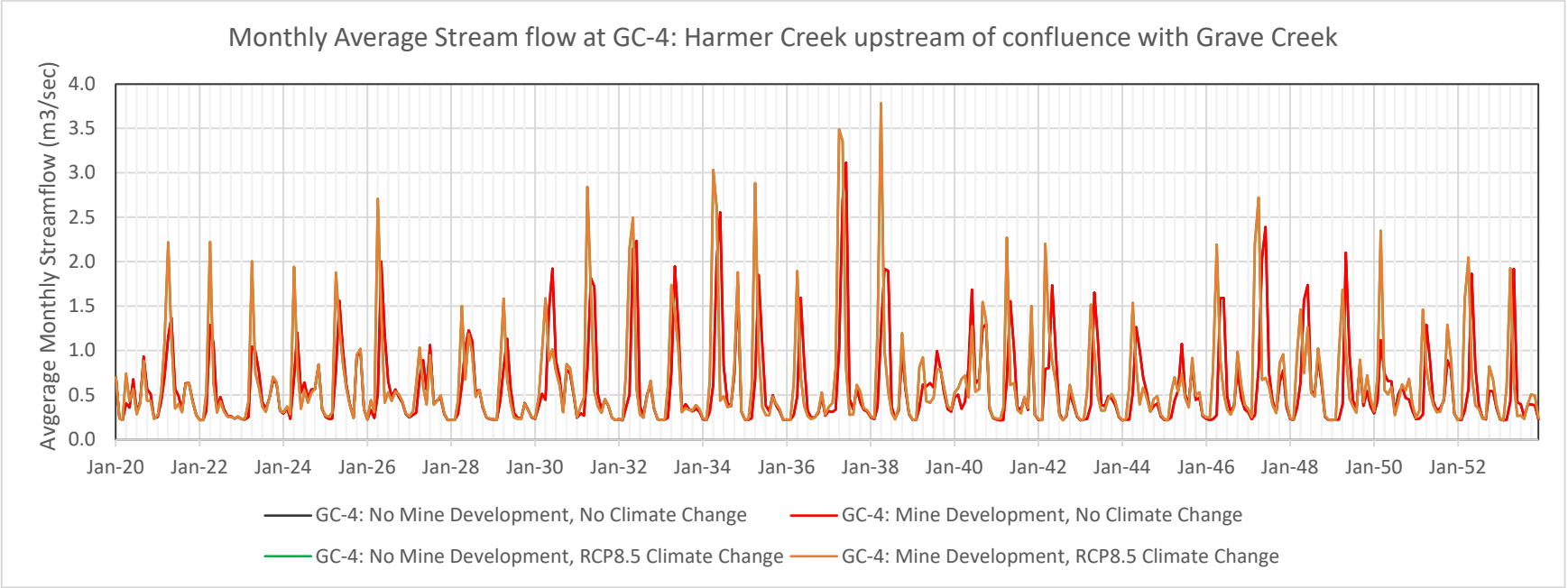

Monthly Average Stream flow at AC-5: West Alexander Creek upstream of confluence with Alexander Creek
Avgerage Monthly Streamflow (m3/sec)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
AC-5: No Mine Development, No Climate Change
AC-5: Mine Development, No Climate Change
AC-5: No Mine Development, RCP8.5 Climate Change
AC-5: Mine Development, RCP8.5 Climate Change

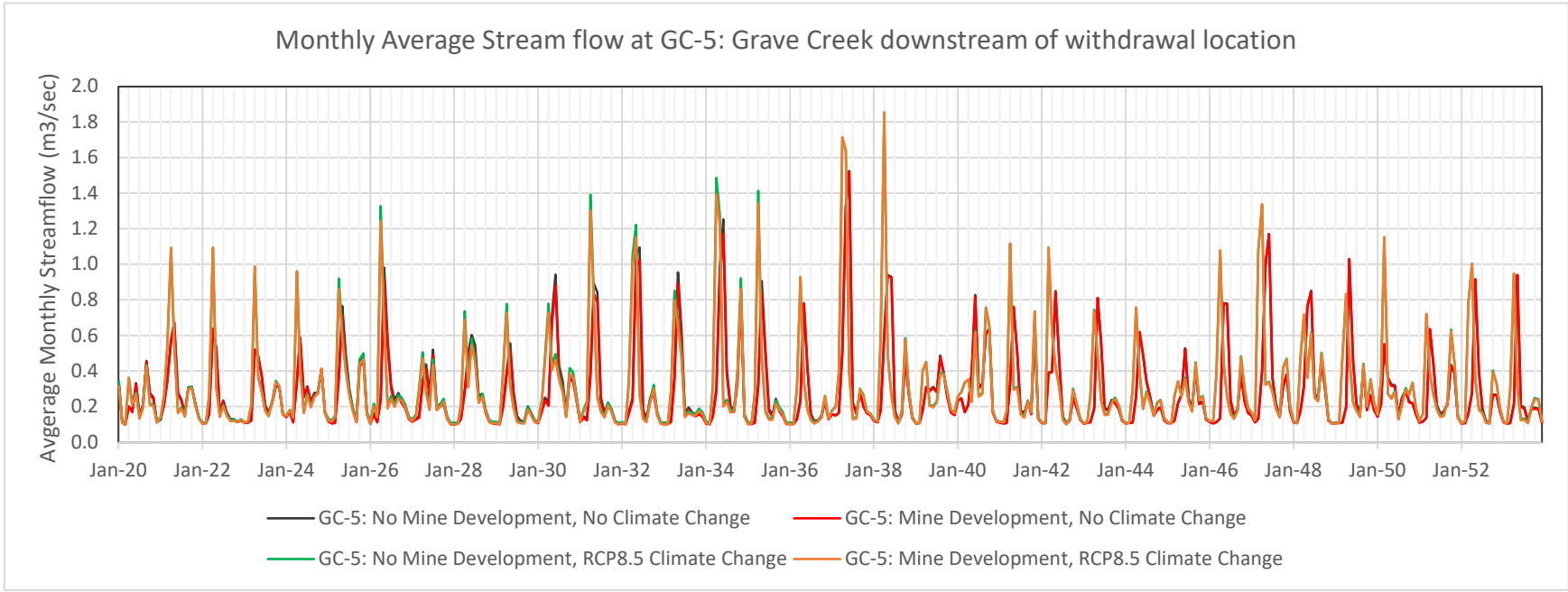

Monthly Average Stream flow at AC-6: West Alexander Creek downstream of ultimate sediment pond outlet
Avgerage Monthly Streamflow (m3/sec)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
AC-6: No Mine Development, No Climate Change
AC-6: Mine Development, No Climate Change
AC-6: No Mine Development, RCP8.5 Climate Change
AC-6: Mine Development, RCP8.5 Climate Change

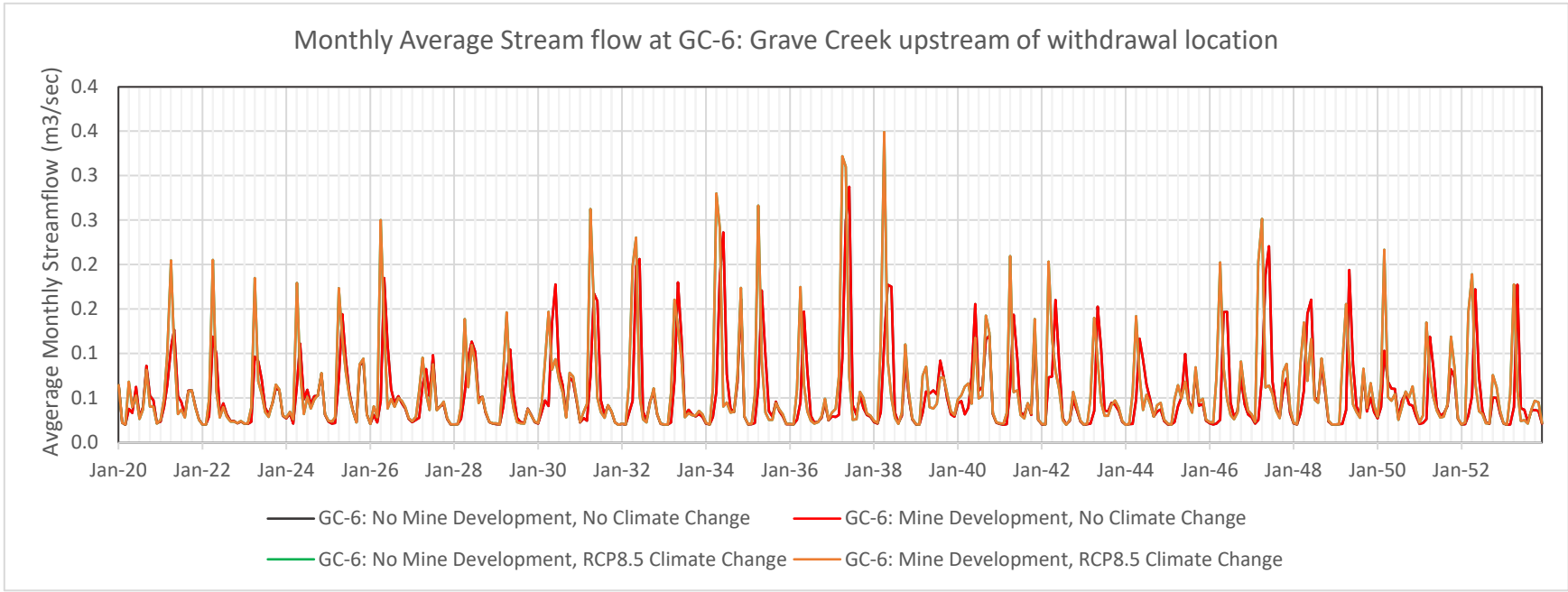

Monthly Average Stream flow at GC-1: Grave Creek upstream of confluence with Elk River
Avgerage Monthly Streamflow (m3/sec)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-1: No Mine Development, No Climate Change
GC-1: Mine Development, No Climate Change
GC-1: No Mine Development, RCP8.5 Climate Change
GC-1: Mine Development, RCP8.5 Climate Change

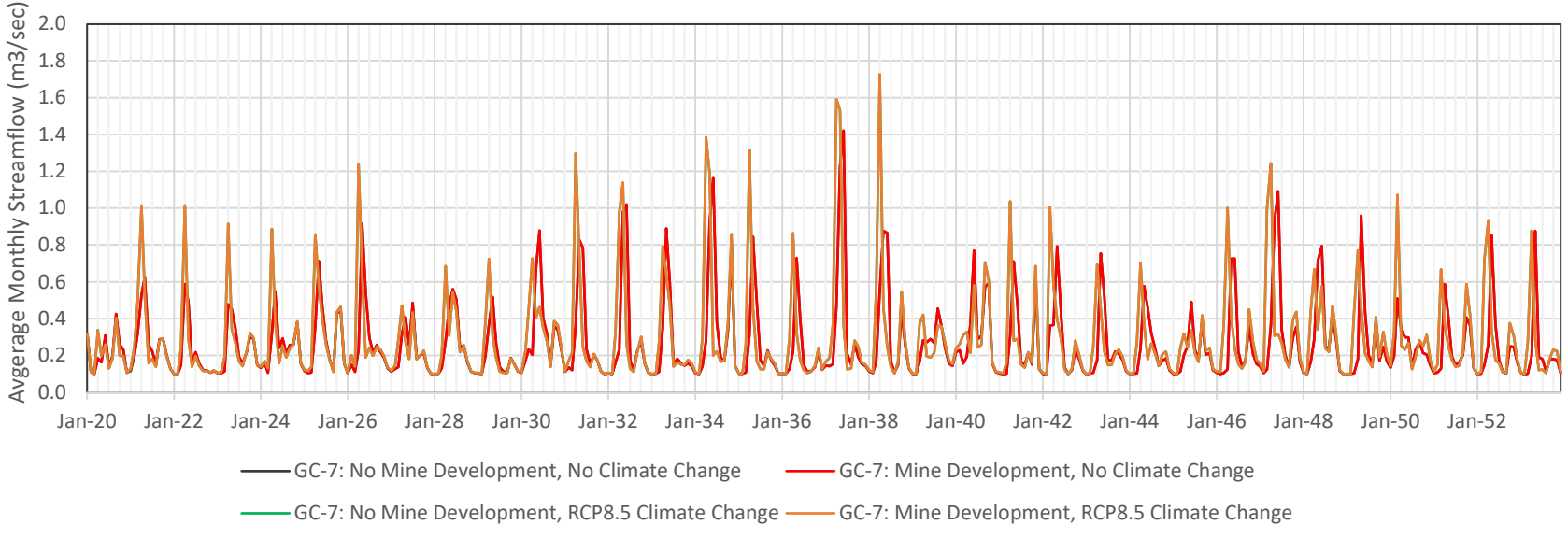

Monthly Average Stream flow at GC-2: Grave Creek downstream of confluence with Harmer Creek
Avgerage Monthly Streamflow (m3/sec)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-2: No Mine Development, No Climate Change
GC-2: Mine Development, No Climate Change
GC-2: No Mine Development, RCP8.5 Climate Change
GC-2: Mine Development, RCP8.5 Climate Change

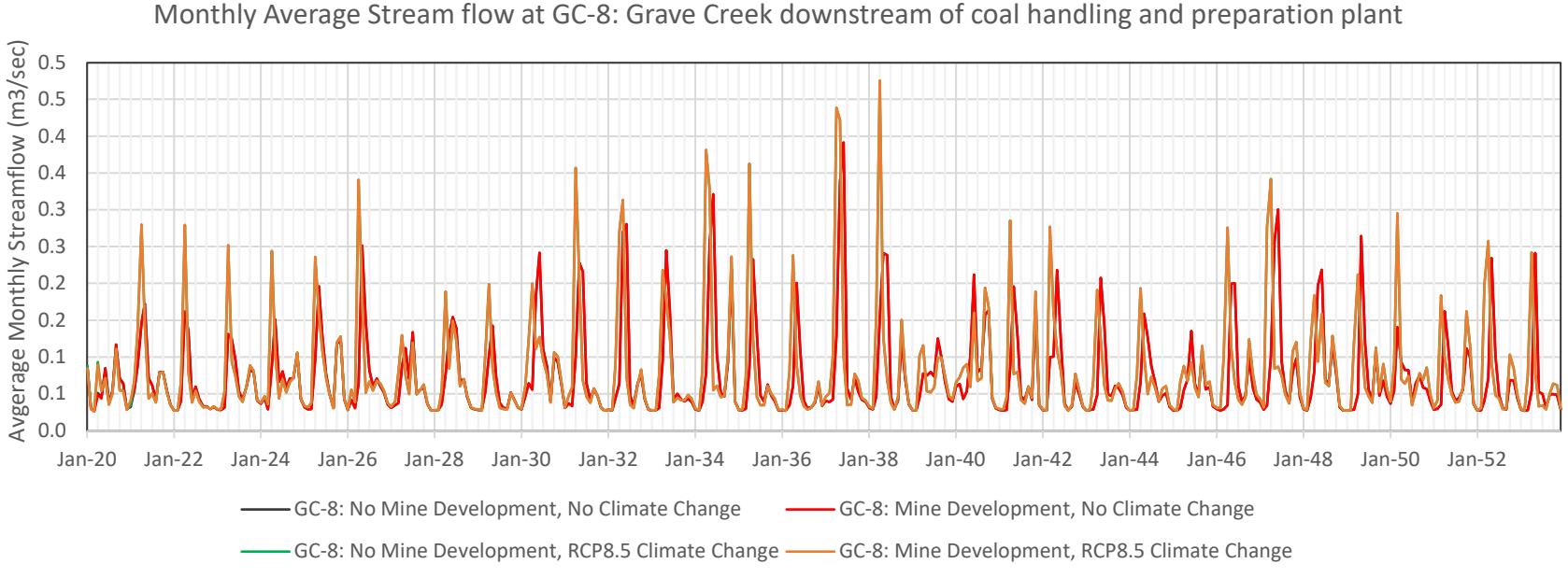

Monthly Average Stream flow at GC-3: Grave Creek upstream of confluence with Harmer Creek
Avgerage Monthly Streamflow (m3/sec)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-3: No Mine Development, No Climate Change
GC-3: Mine Development, No Climate Change
GC-3: No Mine Development, RCP8.5 Climate Change
GC-3: Mine Development, RCP8.5 Climate Change

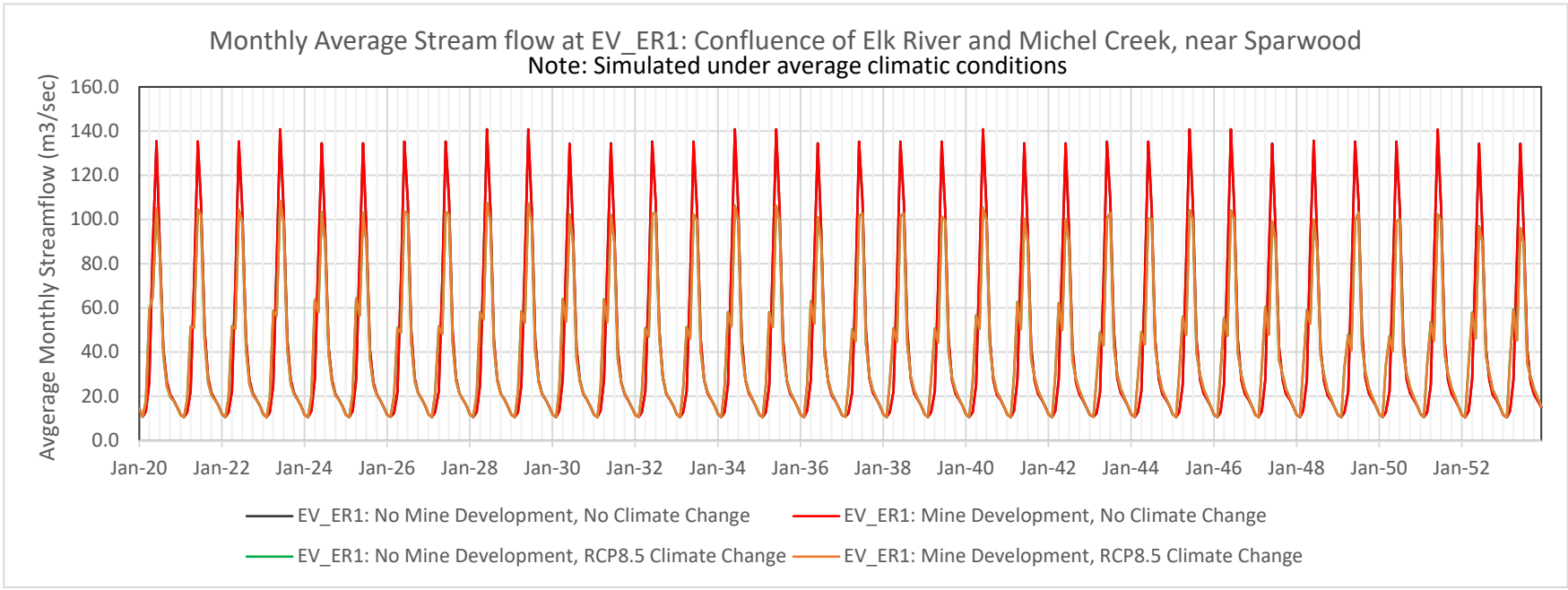

Monthly Average Stream flow at GC-4: Harmer Creek upstream of confluence with Grave Creek
Avgerage Monthly Streamflow (m3/sec)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-4: No Mine Development, No Climate Change
GC-4: Mine Development, No Climate Change
GC-4: No Mine Development, RCP8.5 Climate Change
GC-4: Mine Development, RCP8.5 Climate Change

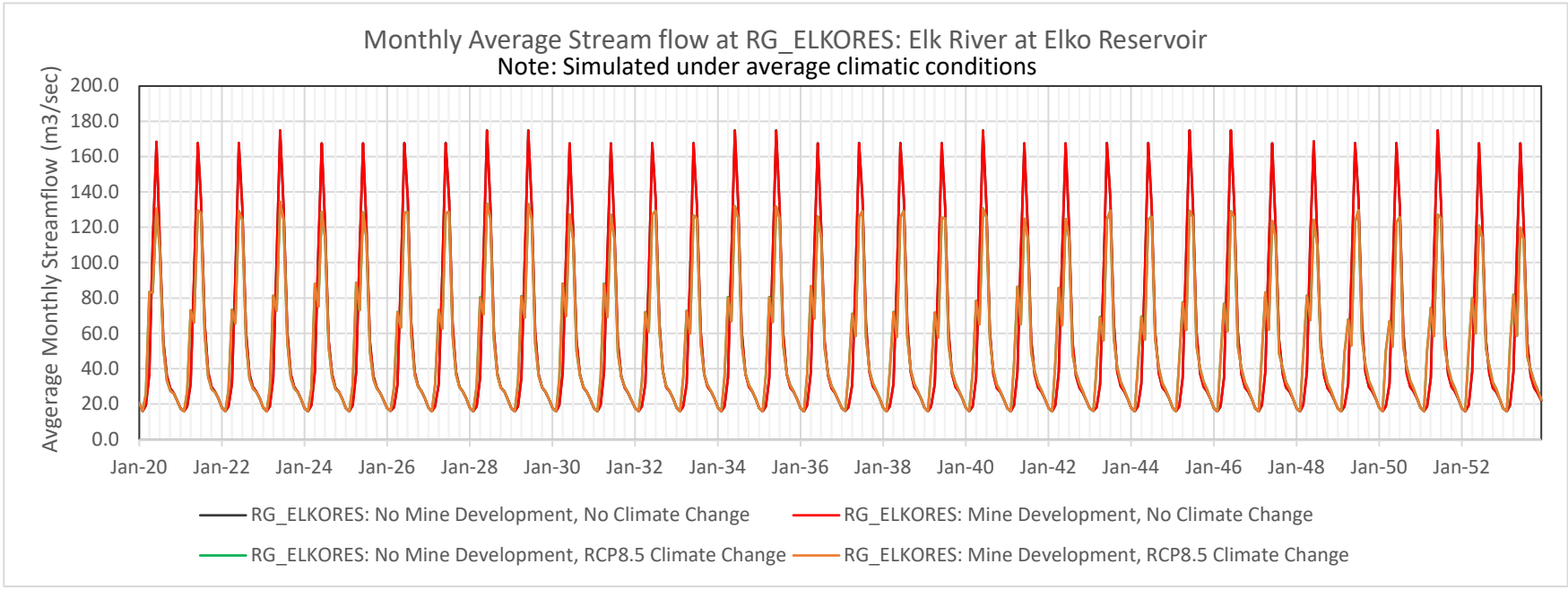

Monthly Average Stream flow at GC-5: Grave Creek downstream of withdrawal location
Avgerage Monthly Streamflow (m3/sec)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-5: No Mine Development, No Climate Change
GC-5: Mine Development, No Climate Change
GC-5: No Mine Development, RCP8.5 Climate Change
GC-5: Mine Development, RCP8.5 Climate Change

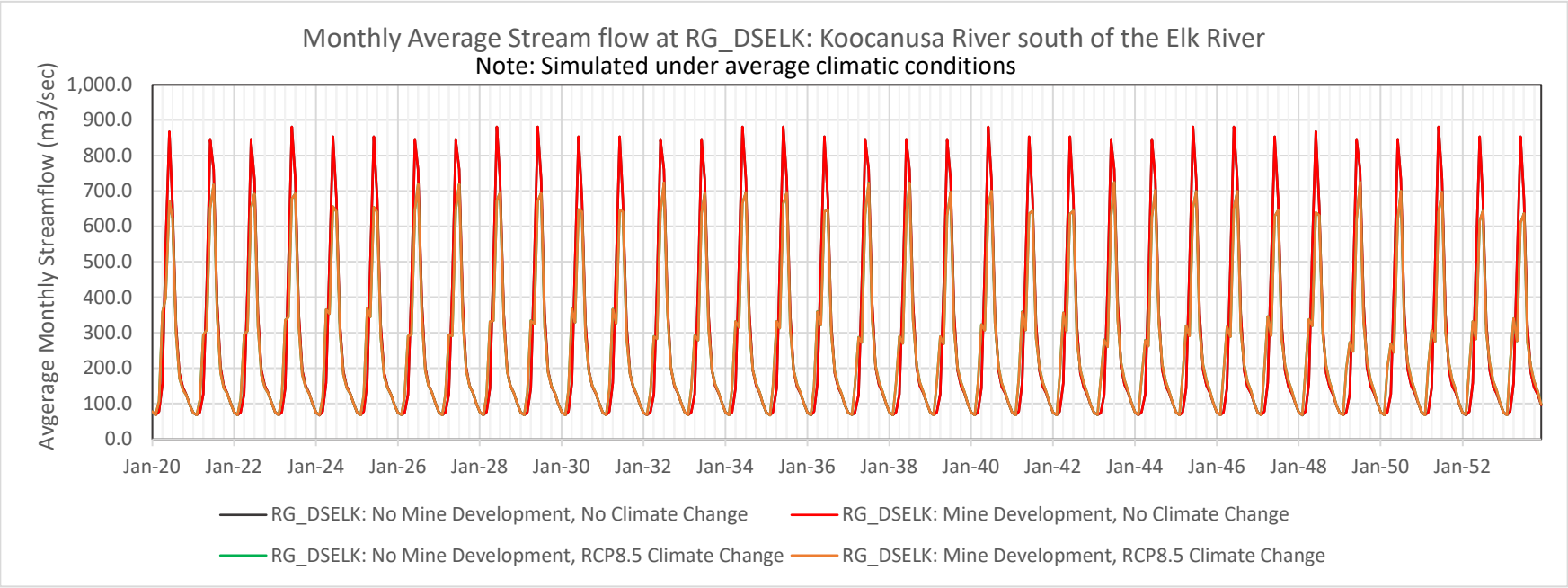

Monthly Average Stream flow at GC-6: Grave Creek upstream of withdrawal location
Avgerage Monthly Streamflow (m3/sec)
0.4
0.4
0.3
0.3
0.2
0.2
0.1
0.1
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-6: No Mine Development, No Climate Change
GC-6: Mine Development, No Climate Change
GC-6: No Mine Development, RCP8.5 Climate Change
GC-6: Mine Development, RCP8.5 Climate Change


Monthly Average Stream flow at GC-7: Grave Creek downstream of clean coal transfer area
Avgerage Monthly Streamflow (m3/sec)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-7: No Mine Development, No Climate Change
GC-7: Mine Development, No Climate Change
GC-7: No Mine Development, RCP8.5 Climate Change
GC-7: Mine Development, RCP8.5 Climate Change


Monthly Average Stream flow at GC-8: Grave Creek downstream of coal handling and preparation plant
Avgerage Monthly Streamflow (m3/sec)
0.5
0.5
0.4
0.4
0.3
0.3
0.2
0.2
0.1
0.1
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
GC-8: No Mine Development, No Climate Change
GC-8: Mine Development, No Climate Change
GC-8: No Mine Development, RCP8.5 Climate Change
GC-8: Mine Development, RCP8.5 Climate Change

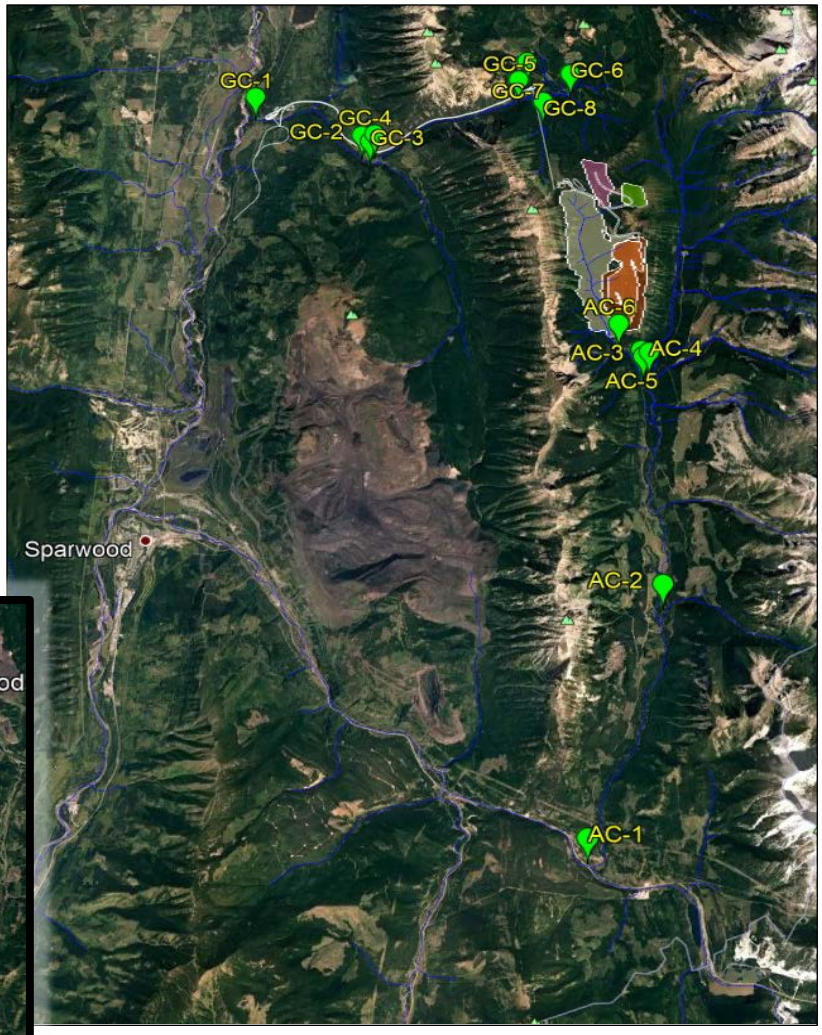

Monthly Average Stream flow at EV_ER1: Confluence of Elk River and Michel Creek, near Sparwood
Note: Simulated under average climatic conditions
Avgerage Monthly Streamflow (m3/sec)
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
EV_ER1: No Mine Development, No Climate Change
EV_ER1: Mine Development, No Climate Change
EV_ER1: No Mine Development, RCP8.5 Climate Change
EV_ER1: Mine Development, RCP8.5 Climate Change


Monthly Average Stream flow at RG_ELKORES: Elk River at Elko Reservoir
Note: Simulated under average climatic conditions
Average Monthly Streamflow (m3/sec)
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
RG_ELKORES: No Mine Development, No Climate Change
RG_ELKORES: Mine Development, No Climate Change
RG_ELKORES: No Mine Development, RCP8.5 Climate Change
RG_ELKORES: Mine Development, RCP8.5 Climate Change


Monthly Average Stream flow at RG_DSELK: Koocanusa River south of the Elk River
Note: Simulated under average climatic conditions
Avgerage Monthly Streamflow (m3/sec)
1,000.0
900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
Jan-20
Jan-22
Jan-24
Jan-26
Jan-28
Jan-30
Jan-32
Jan-34
Jan-36
Jan-38
Jan-40
Jan-42
Jan-44
Jan-46
Jan-48
Jan-50
Jan-52
RG_DSELK: No Mine Development, No Climate Change
RG_DSELK: Mine Development, No Climate Change
RG_DSELK: No Mine Development, RCP8.5 Climate Change
RG_DSELK: Mine Development, RCP8.5 Climate Change

# Attachment 3 Water Quality Results

Tabular data is provided separately in electronic format.

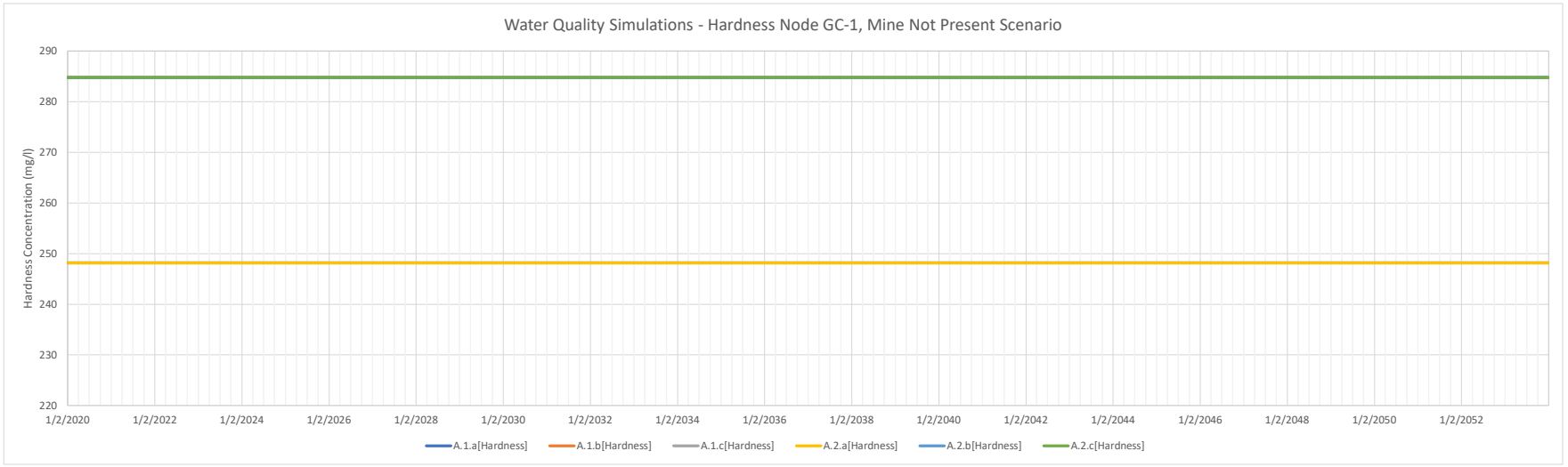


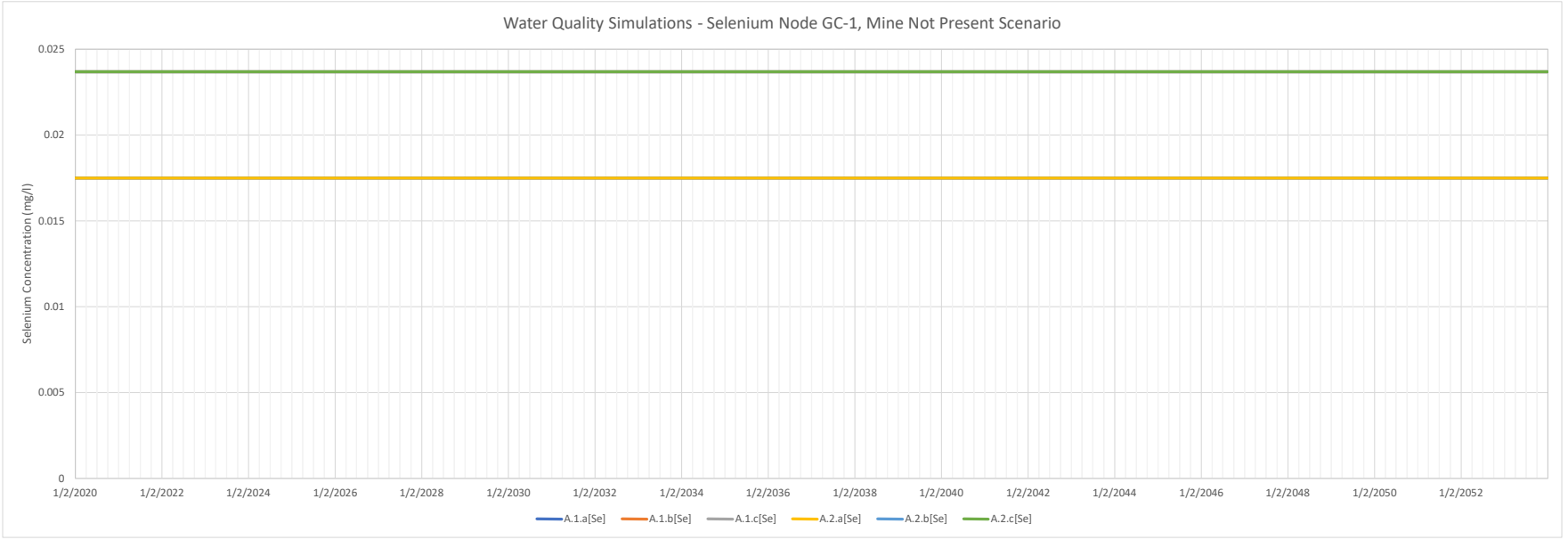


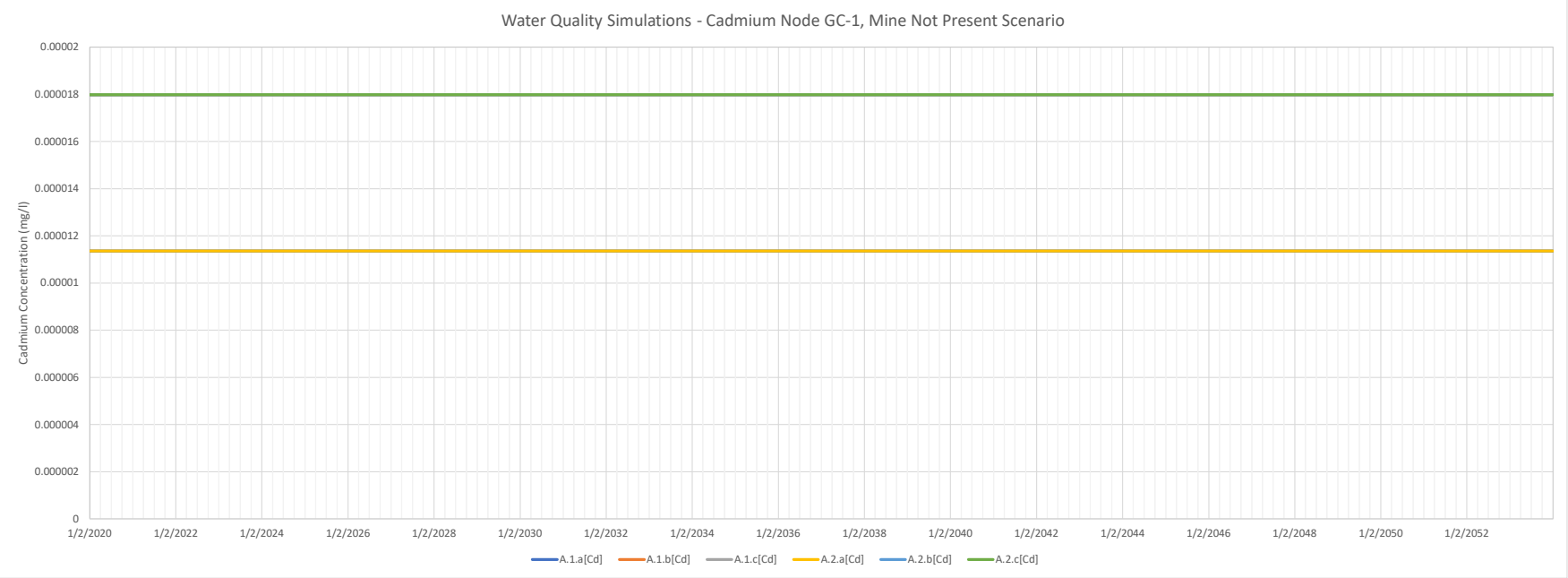
**Scenario Legend**

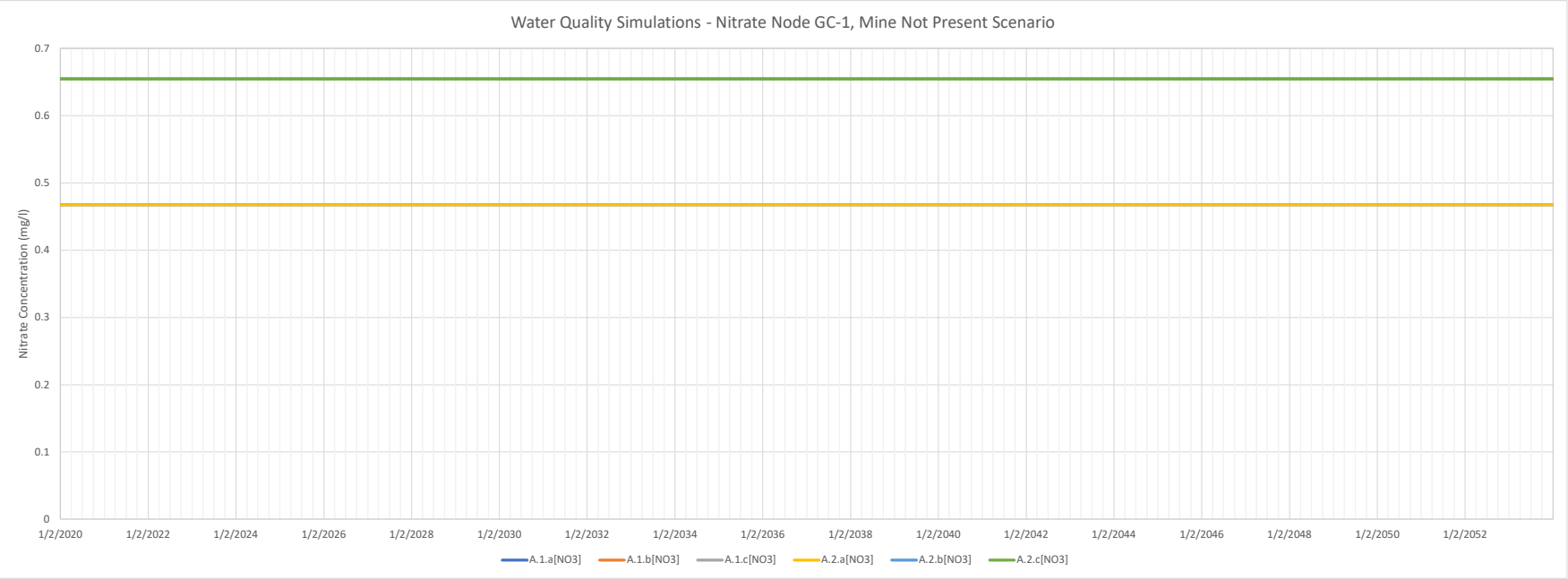
| | | |
|---|---|---|
| A | | Without Mine Components |
| B | | With Mine Components |
| | 1 | No Climate Change |
| | 2 | Climate Change RCP8.5 |
| | | a Water Quality Terms based on 50th Percentile, assuming layering approach is successful |
| | | b Water Quality Terms based on 95th Percentile, assuming layering approach is successful |
| | | c Water Quality Terms based on 95th Percentile, assuming layering approach fails |

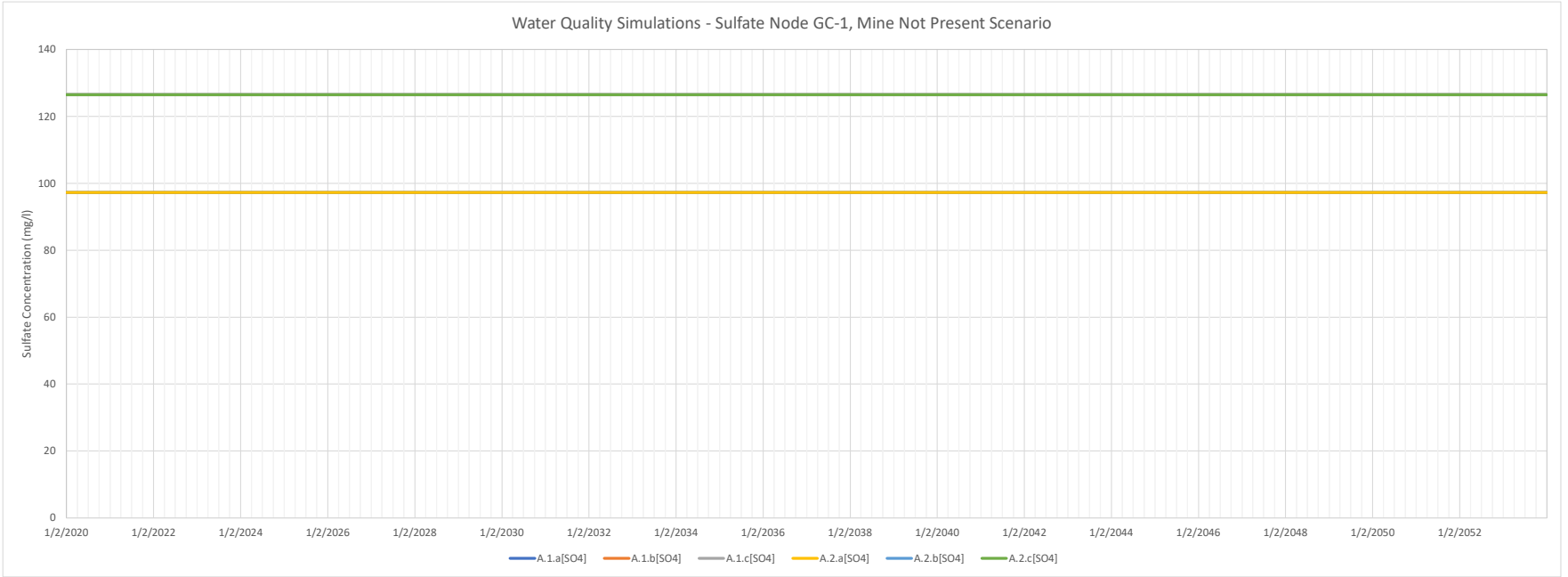
# Node GC-1 : Mine Not Present Scenarios

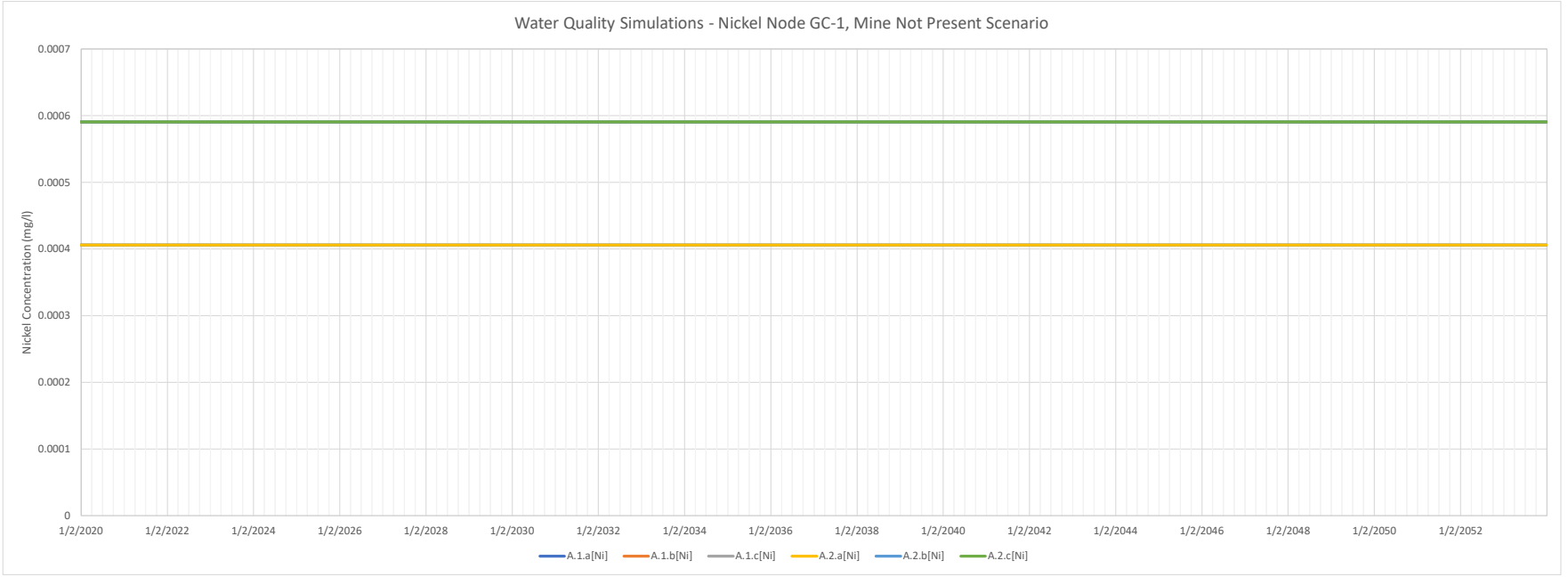

Water Quality Simulations - Hardness Node GC-1, Mine Not Present Scenario
Hardness Concentration (mg/l)
290
280
270
260
250
240
230
220
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Hardness]
A.1.b[Hardness]
A.1.c[Hardness]
A.2.a[Hardness]
A.2.b[Hardness]
A.2.c[Hardness]

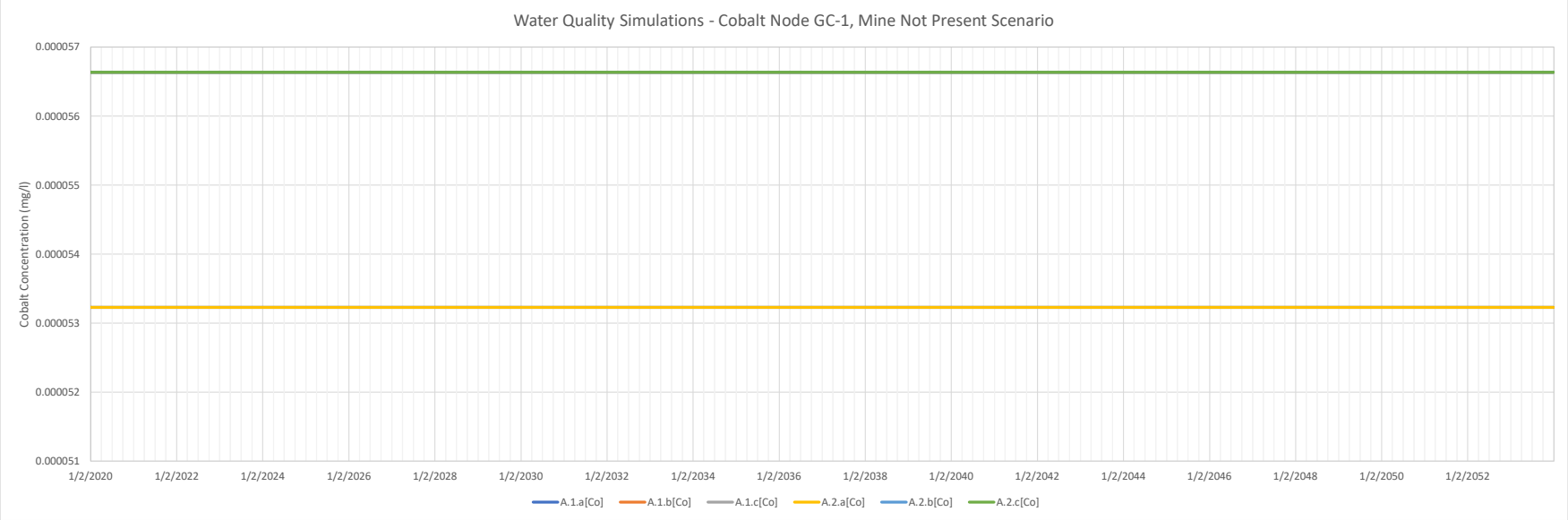

Water Quality Simulations - Selenium Node GC-1, Mine Not Present Scenario
Selenium Concentration (mg/l)
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Se]
A.1.b[Se]
A.1.c[Se]
A.2.a[Se]
A.2.b[Se]
A.2.c[Se]


Water Quality Simulations - Cadmium Node GC-1, Mine Not Present Scenario
Cadmium Concentration (mg/l)
0.00002
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Cd]
A.1.b[Cd]
A.1.c[Cd]
A.2.a[Cd]
A.2.b[Cd]
A.2.c[Cd]

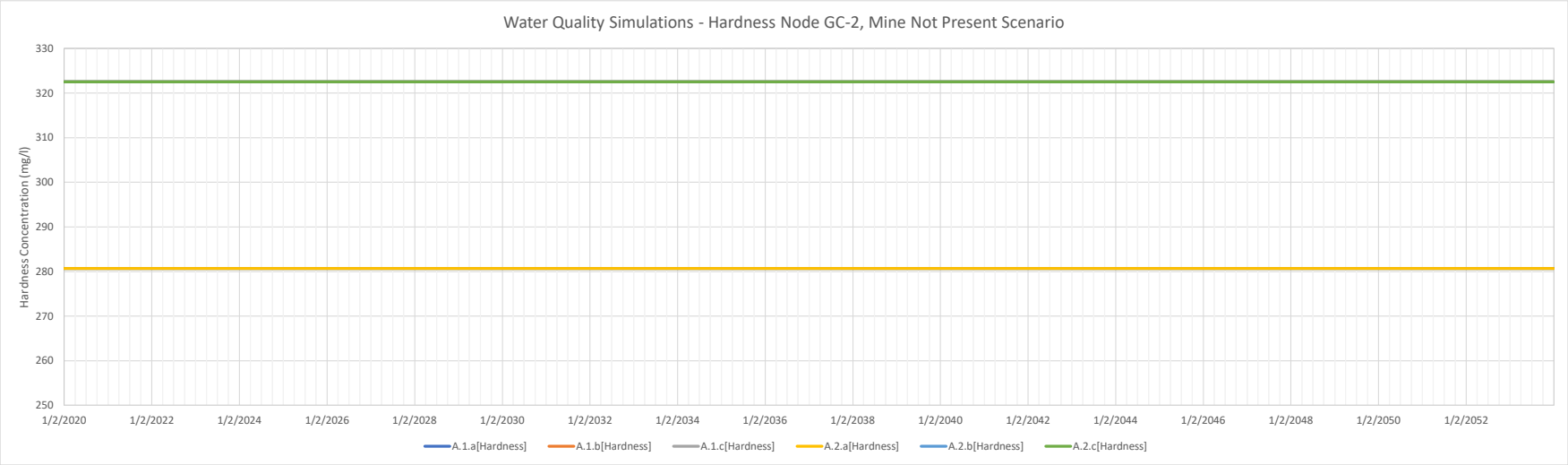

Water Quality Simulations - Nitrate Node GC-1, Mine Not Present Scenario
Nitrate Concentration (mg/l)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[NO3]
A.1.b[NO3]
A.1.c[NO3]
A.2.a[NO3]
A.2.b[NO3]
A.2.c[NO3]

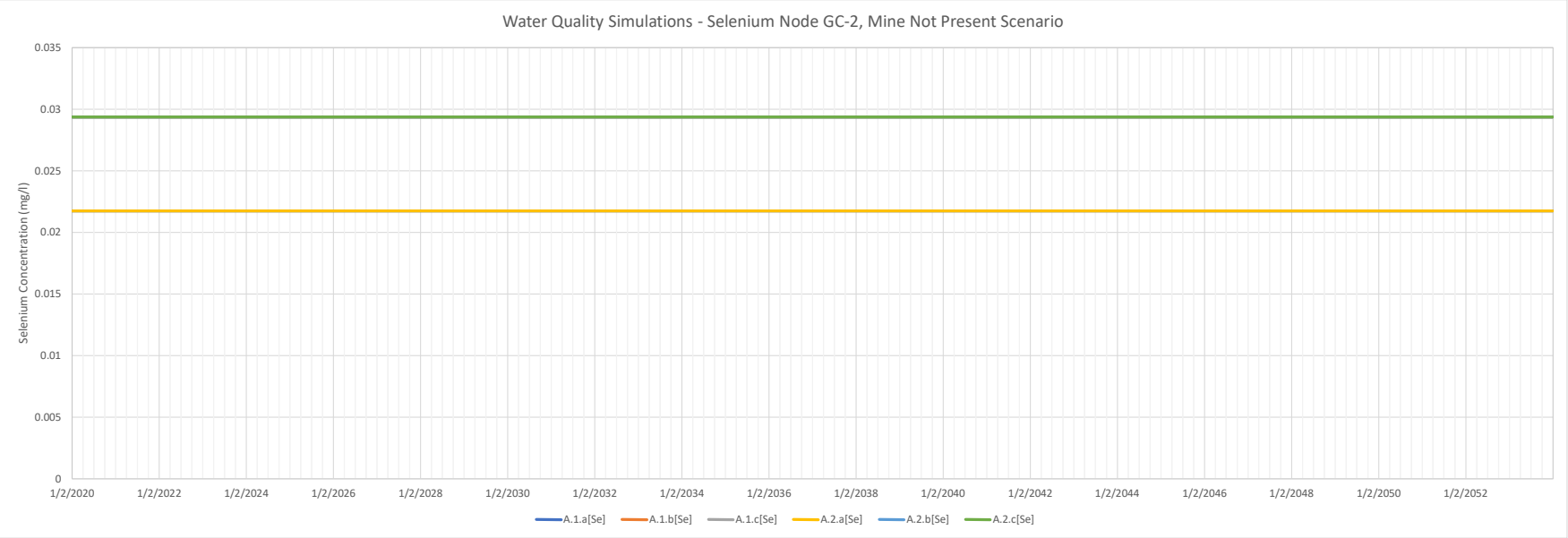

Water Quality Simulations - Sulfate Node GC-1, Mine Not Present Scenario
Sulfate Concentration (mg/l)
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[SO4]
A.1.b[SO4]
A.1.c[SO4]
A.2.a[SO4]
A.2.b[SO4]
A.2.c[SO4]

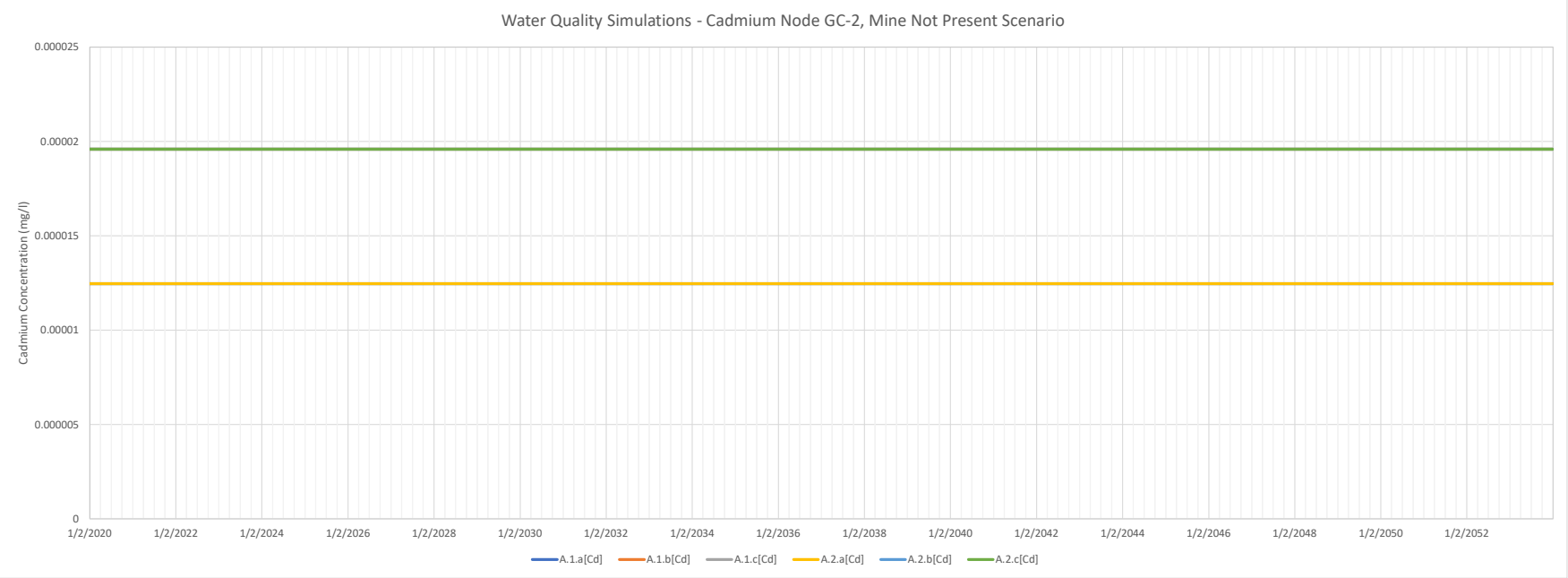

Water Quality Simulations - Nickel Node GC-1, Mine Not Present Scenario
Nickel Concentration (mg/l)
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Ni]
A.1.b[Ni]
A.1.c[Ni]
A.2.a[Ni]
A.2.b[Ni]
A.2.c[Ni]

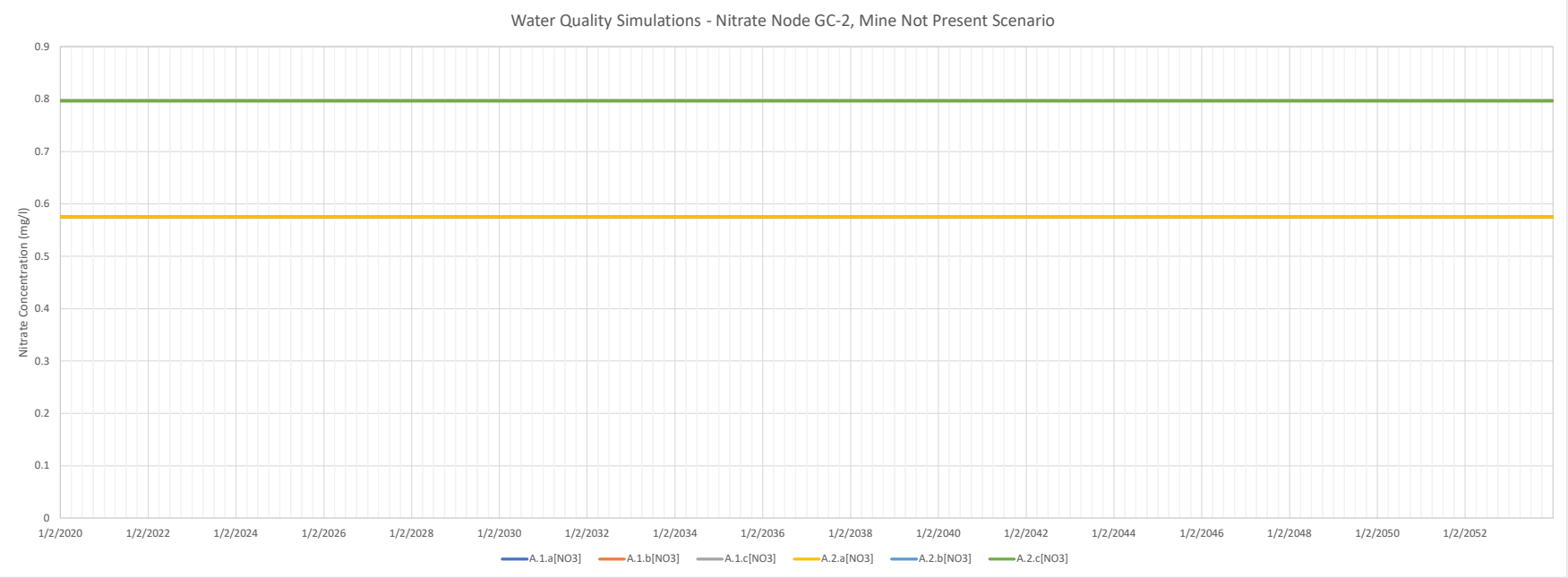

Water Quality Simulations - Cobalt Node GC-1, Mine Not Present Scenario
Cobalt Concentration (mg/l)
0.000057
0.000056
0.000055
0.000054
0.000053
0.000052
0.000051
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Co]
A.1.b[Co]
A.1.c[Co]
A.2.a[Co]
A.2.b[Co]
A.2.c[Co]

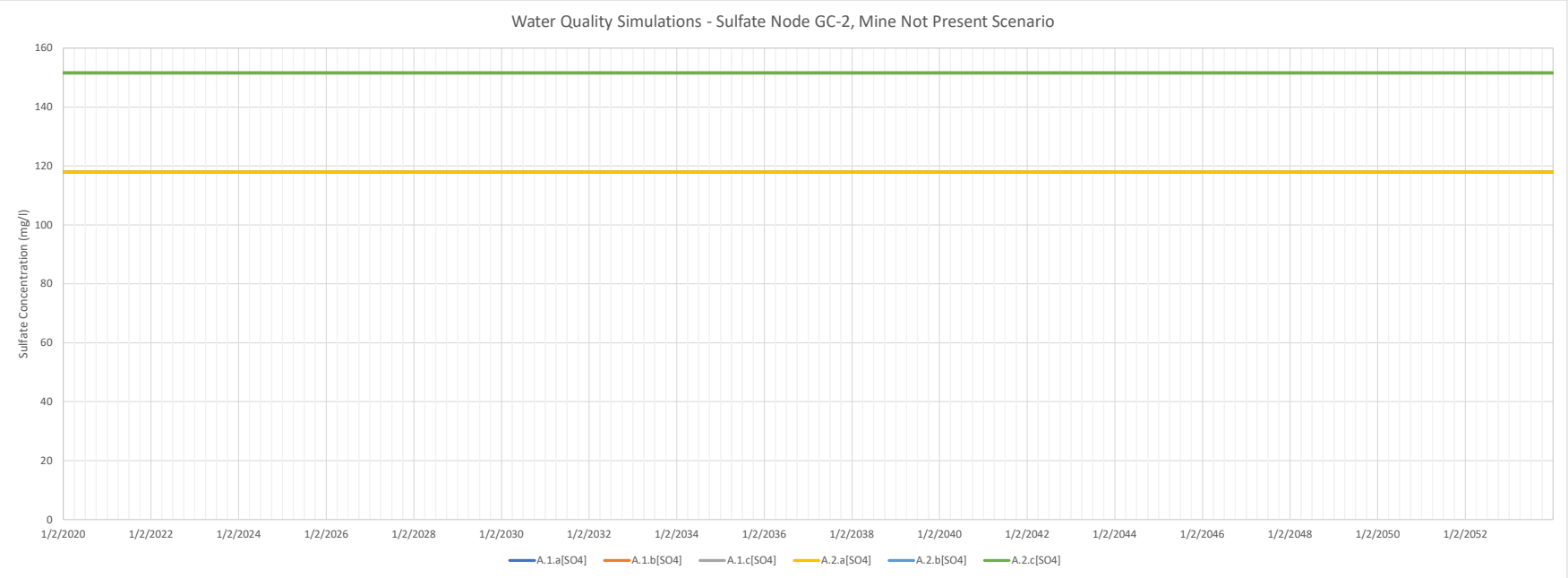
# Node GC-2 : Mine Not Present Scenarios

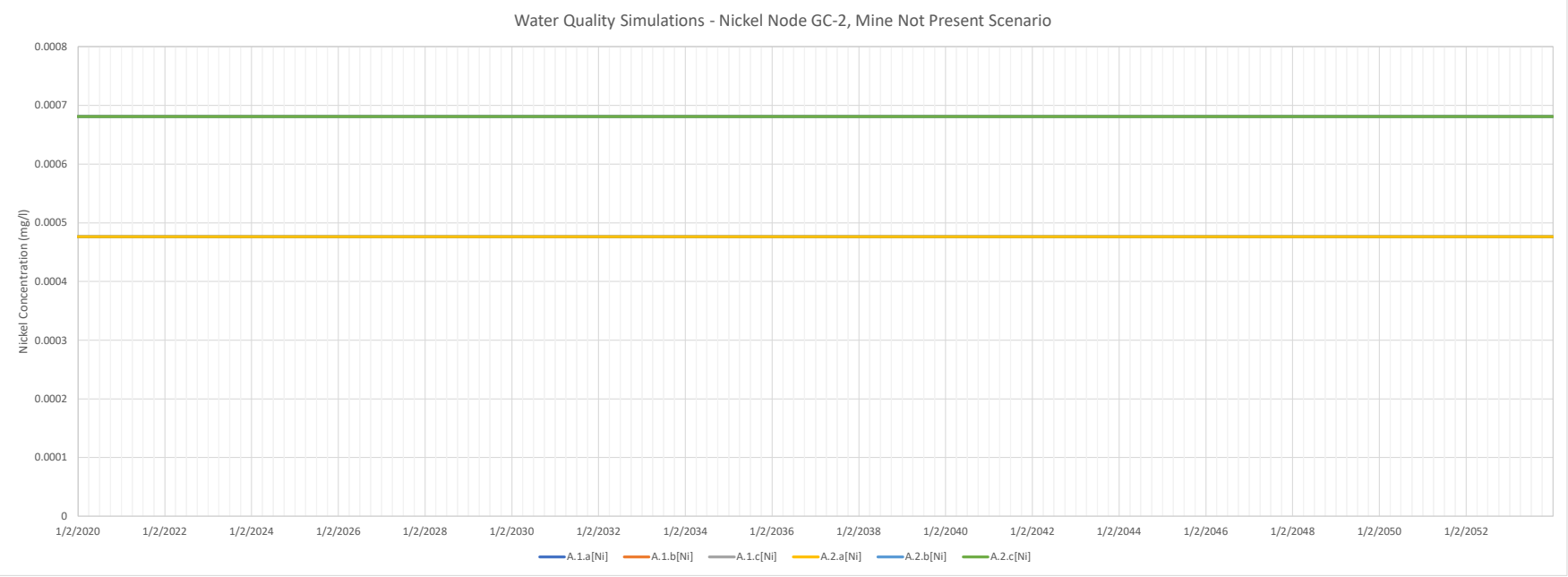

Water Quality Simulations - Hardness Node GC-2, Mine Not Present Scenario
Hardness Concentration (mg/l)
330
320
310
300
290
280
270
260
250
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Hardness]
A.1.b[Hardness]
A.1.c[Hardness]
A.2.a[Hardness]
A.2.b[Hardness]
A.2.c[Hardness]

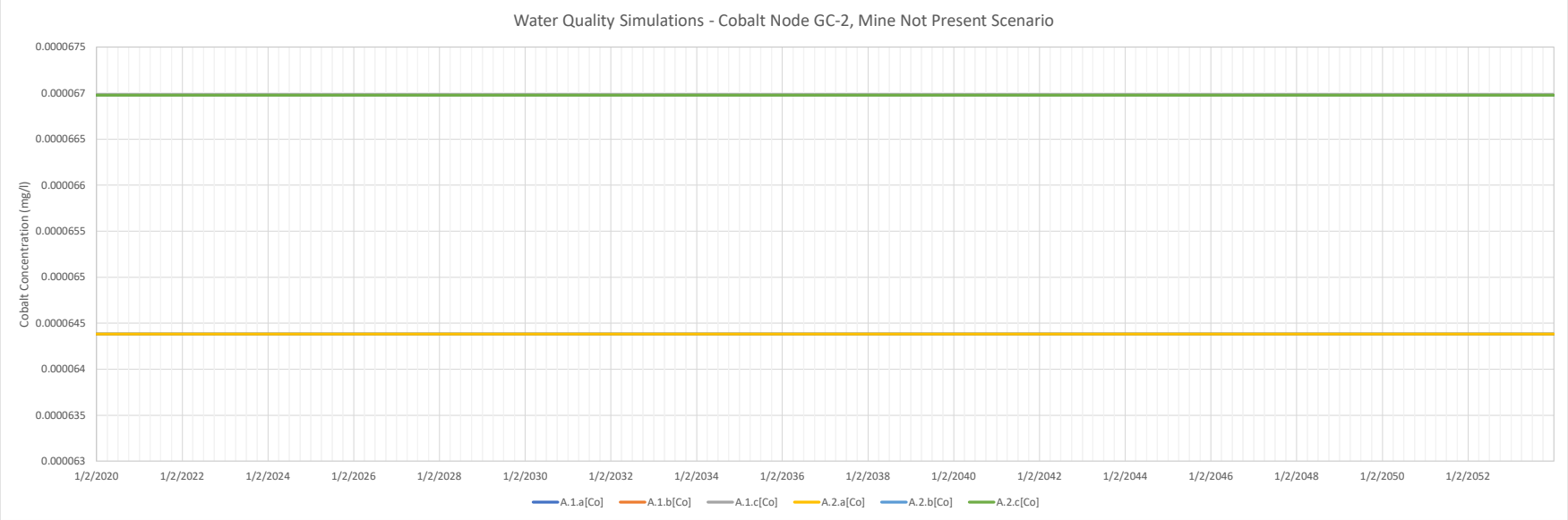

Water Quality Simulations - Selenium Node GC-2, Mine Not Present Scenario
Selenium Concentration (mg/l)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Se]
A.1.b[Se]
A.1.c[Se]
A.2.a[Se]
A.2.b[Se]
A.2.c[Se]


Water Quality Simulations - Cadmium Node GC-2, Mine Not Present Scenario
Cadmium Concentration (mg/l)
0.000025
0.00002
0.000015
0.00001
0.000005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Cd]
A.1.b[Cd]
A.1.c[Cd]
A.2.a[Cd]
A.2.b[Cd]
A.2.c[Cd]

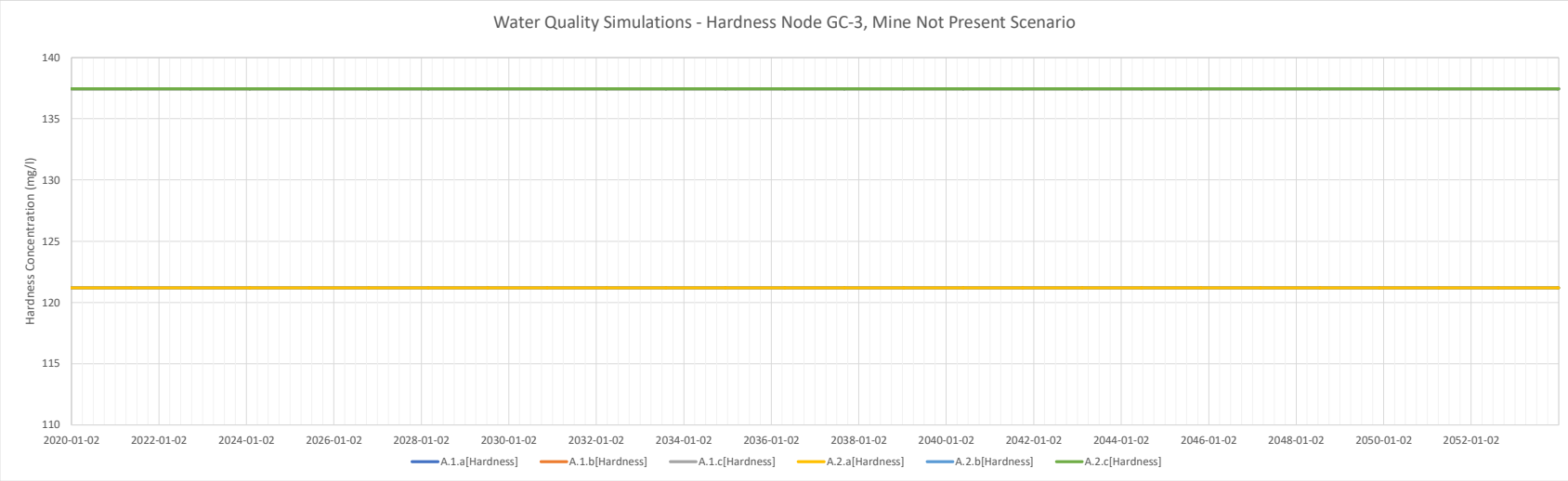

Water Quality Simulations - Nitrate Node GC-2, Mine Not Present Scenario
Nitrate Concentration (mg/l)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[NO3]
A.1.b[NO3]
A.1.c[NO3]
A.2.a[NO3]
A.2.b[NO3]
A.2.c[NO3]

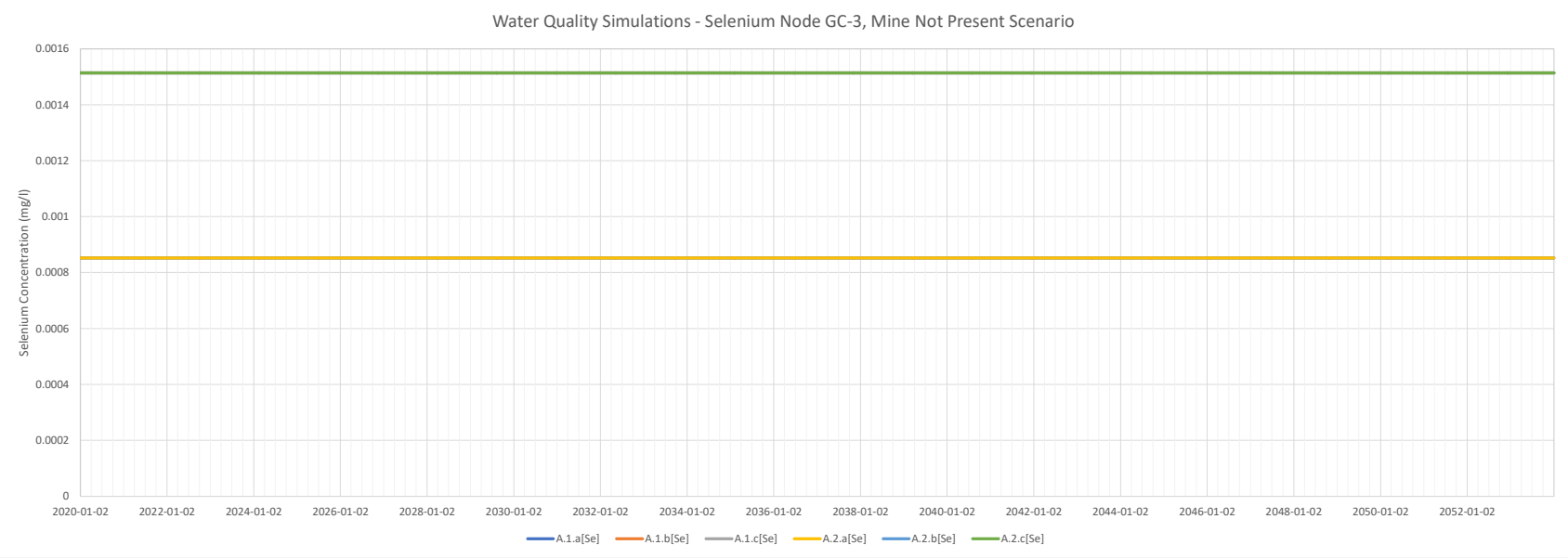

Water Quality Simulations - Sulfate Node GC-2, Mine Not Present Scenario
Sulfate Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[SO4]
A.1.b[SO4]
A.1.c[SO4]
A.2.a[SO4]
A.2.b[SO4]
A.2.c[SO4]

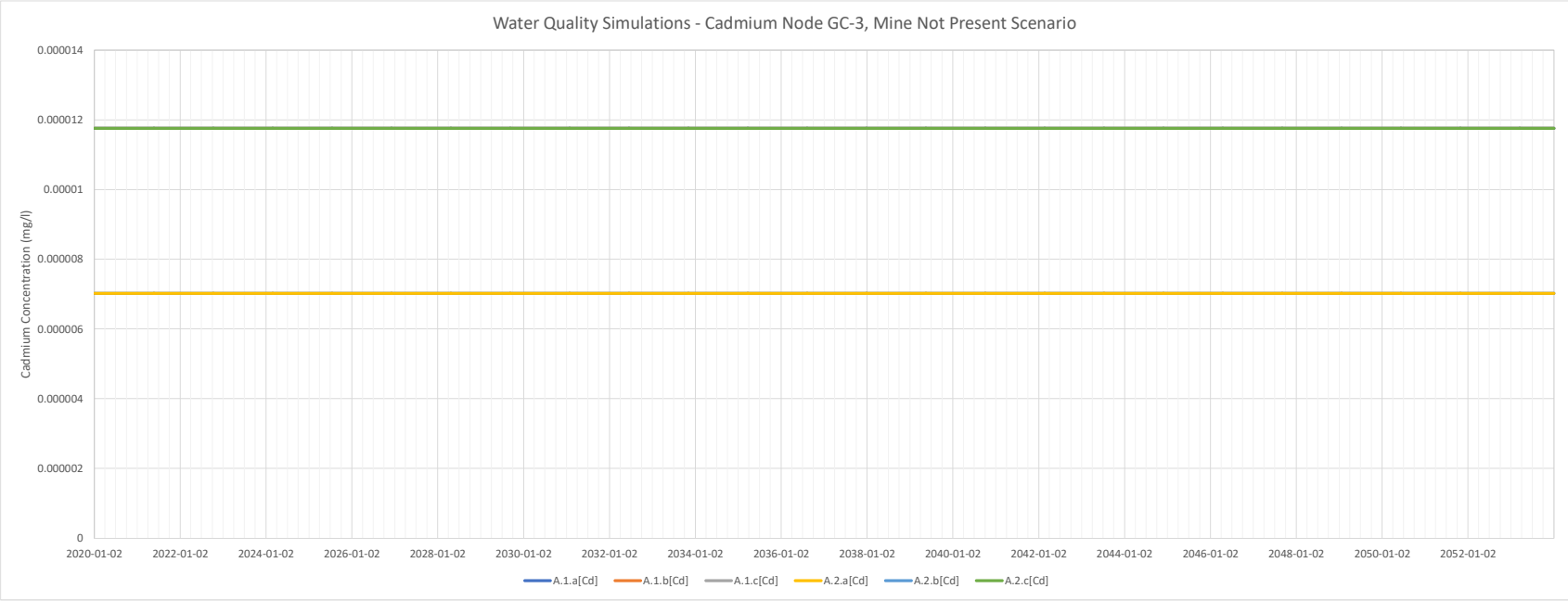

Water Quality Simulations - Nickel Node GC-2, Mine Not Present Scenario
Nickel Concentration (mg/l)
0.0008
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Ni]
A.1.b[Ni]
A.1.c[Ni]
A.2.a[Ni]
A.2.b[Ni]
A.2.c[Ni]

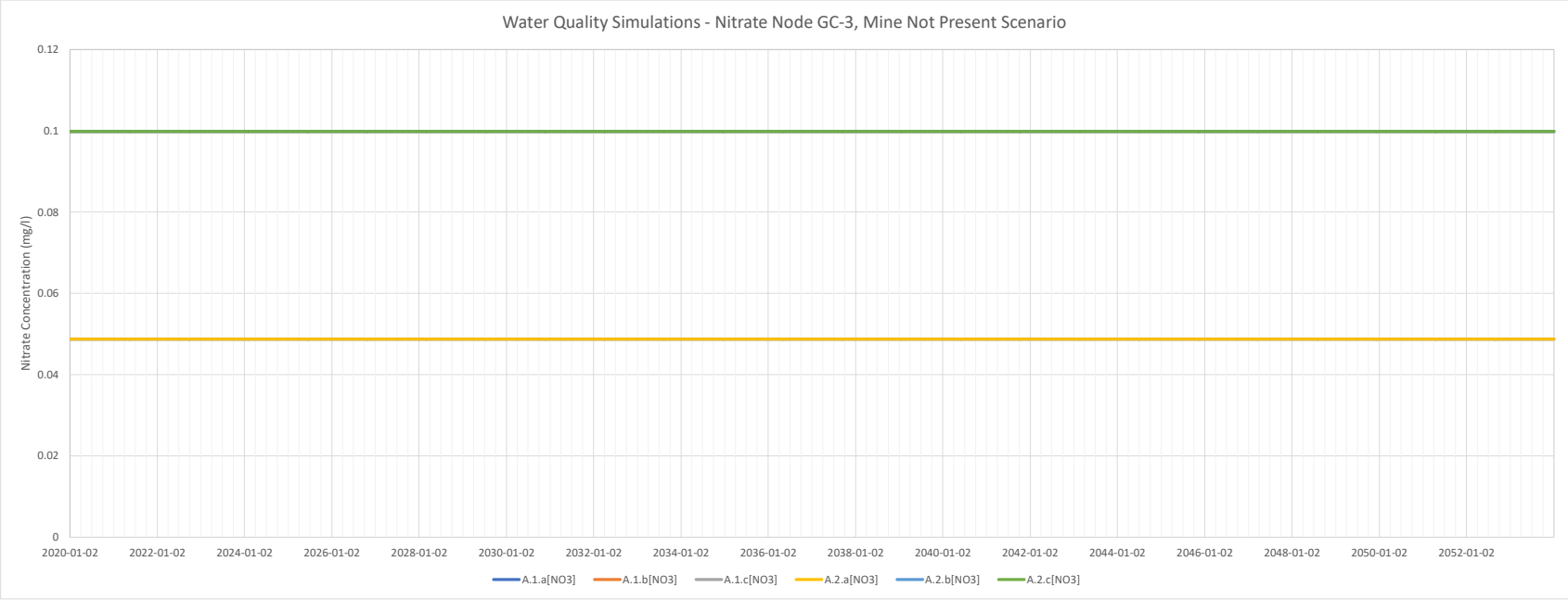

Water Quality Simulations - Cobalt Node GC-2, Mine Not Present Scenario
Cobalt Concentration (mg/l)
0.0000675
0.000067
0.0000665
0.000066
0.0000655
0.000065
0.0000645
0.000064
0.0000635
0.000063
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Co]
A.1.b[Co]
A.1.c[Co]
A.2.a[Co]
A.2.b[Co]
A.2.c[Co]

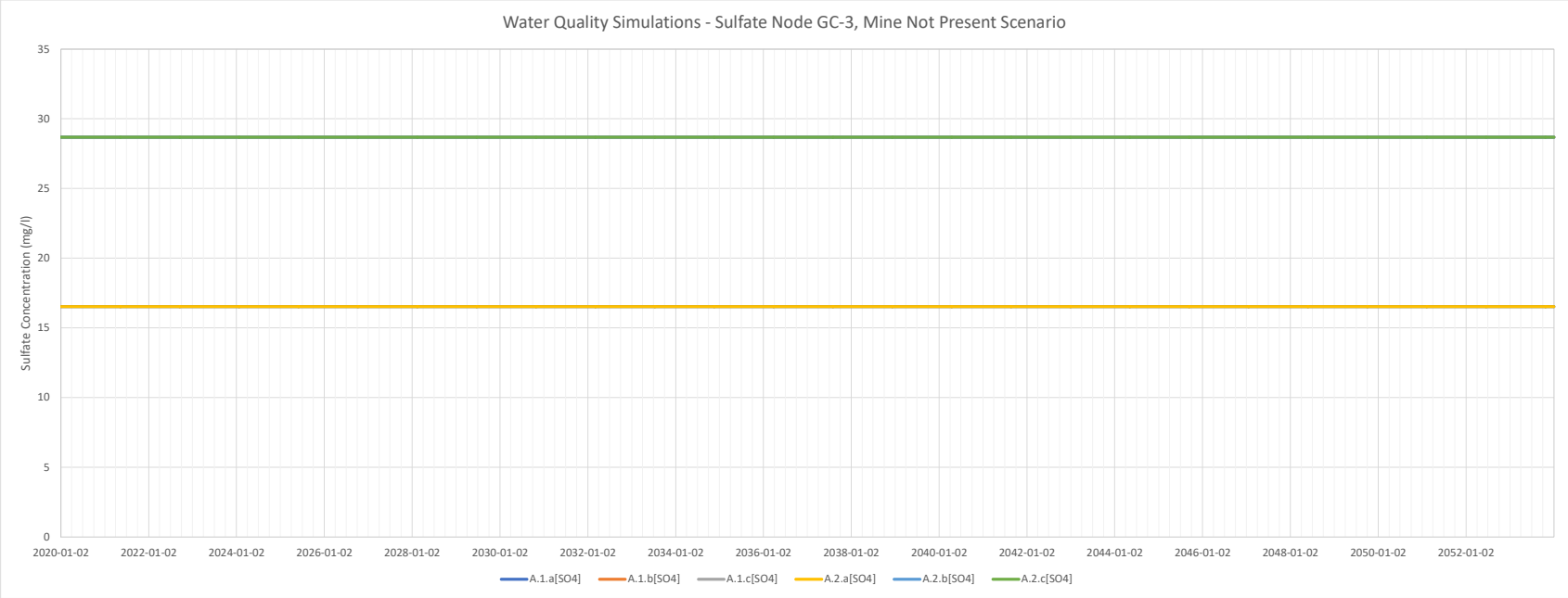
# Node GC-3 : Mine Not Present Scenarios

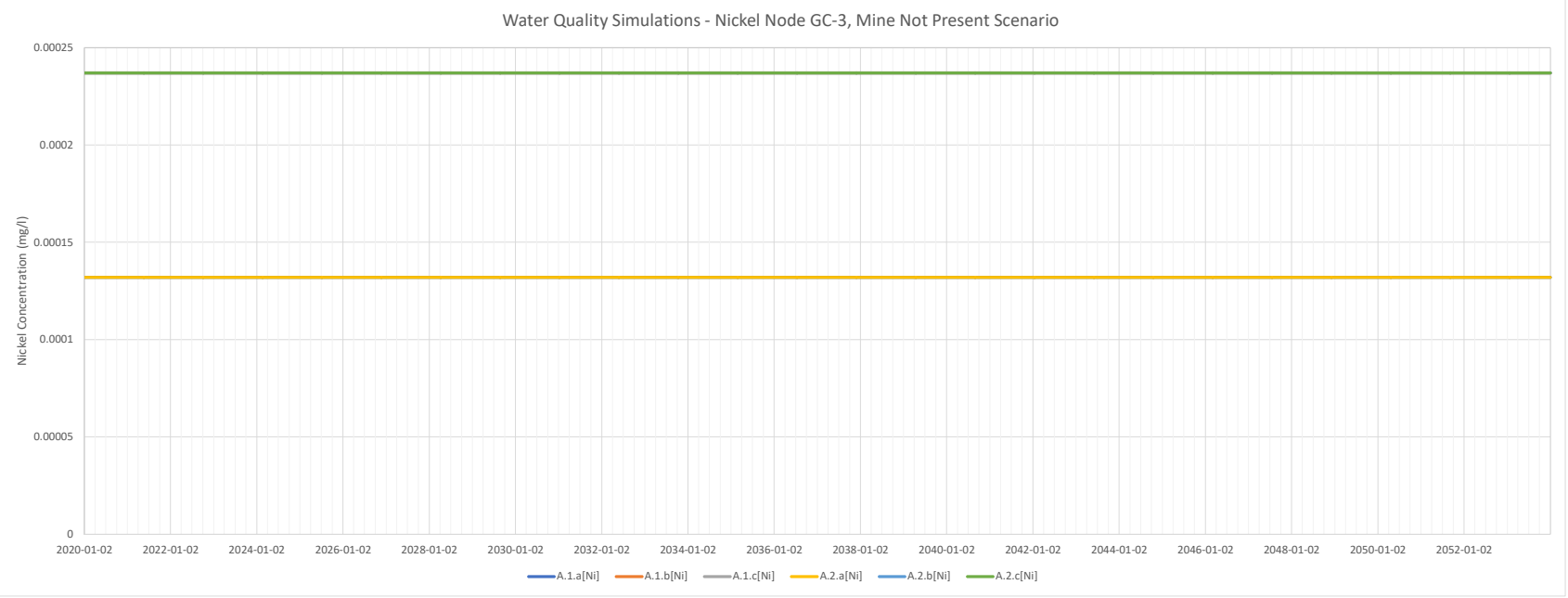

Water Quality Simulations - Hardness Node GC-3, Mine Not Present Scenario
Hardness Concentration (mg/l)
140
135
130
125
120
115
110
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Hardness]
A.1.b[Hardness]
A.1.c[Hardness]
A.2.a[Hardness]
A.2.b[Hardness]
A.2.c[Hardness]

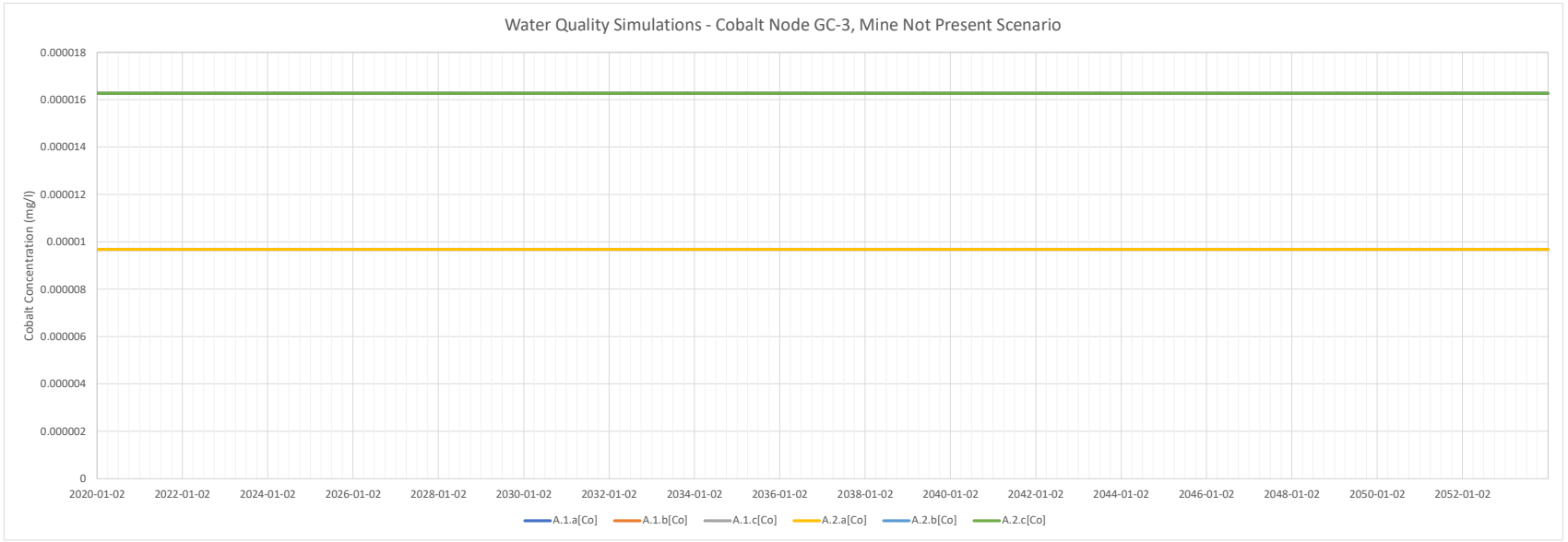

Water Quality Simulations - Selenium Node GC-3, Mine Not Present Scenario
Selenium Concentration (mg/l)
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Se]
A.1.b[Se]
A.1.c[Se]
A.2.a[Se]
A.2.b[Se]
A.2.c[Se]


Water Quality Simulations - Cadmium Node GC-3, Mine Not Present Scenario
Cadmium Concentration (mg/l)
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Cd]
A.1.b[Cd]
A.1.c[Cd]
A.2.a[Cd]
A.2.b[Cd]
A.2.c[Cd]

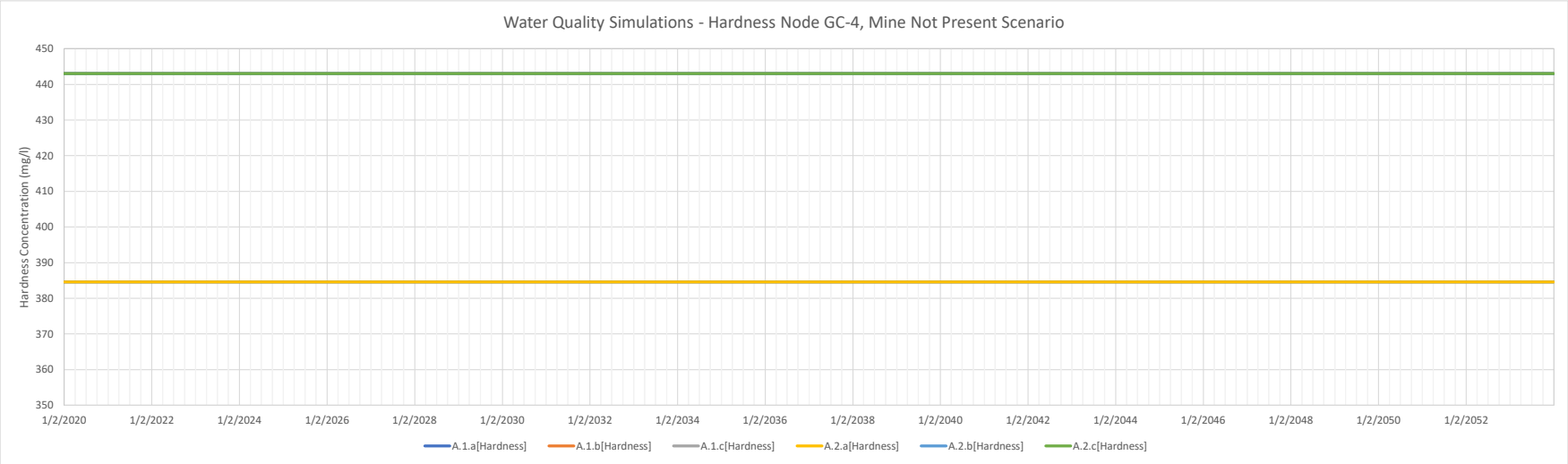

Water Quality Simulations - Nitrate Node GC-3, Mine Not Present Scenario
Nitrate Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[NO3]
A.1.b[NO3]
A.1.c[NO3]
A.2.a[NO3]
A.2.b[NO3]
A.2.c[NO3]

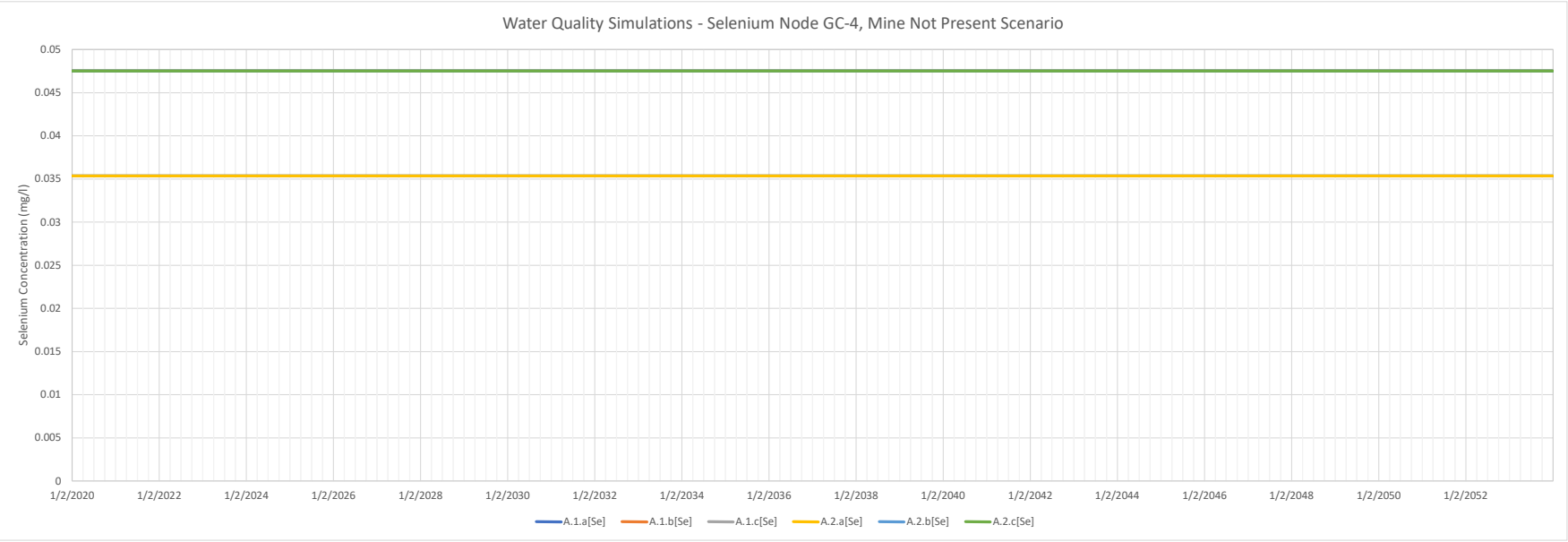

Water Quality Simulations - Sulfate Node GC-3, Mine Not Present Scenario
Sulfate Concentration (mg/l)
35
30
25
20
15
10
5
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[SO4]
A.1.b[SO4]
A.1.c[SO4]
A.2.a[SO4]
A.2.b[SO4]
A.2.c[SO4]

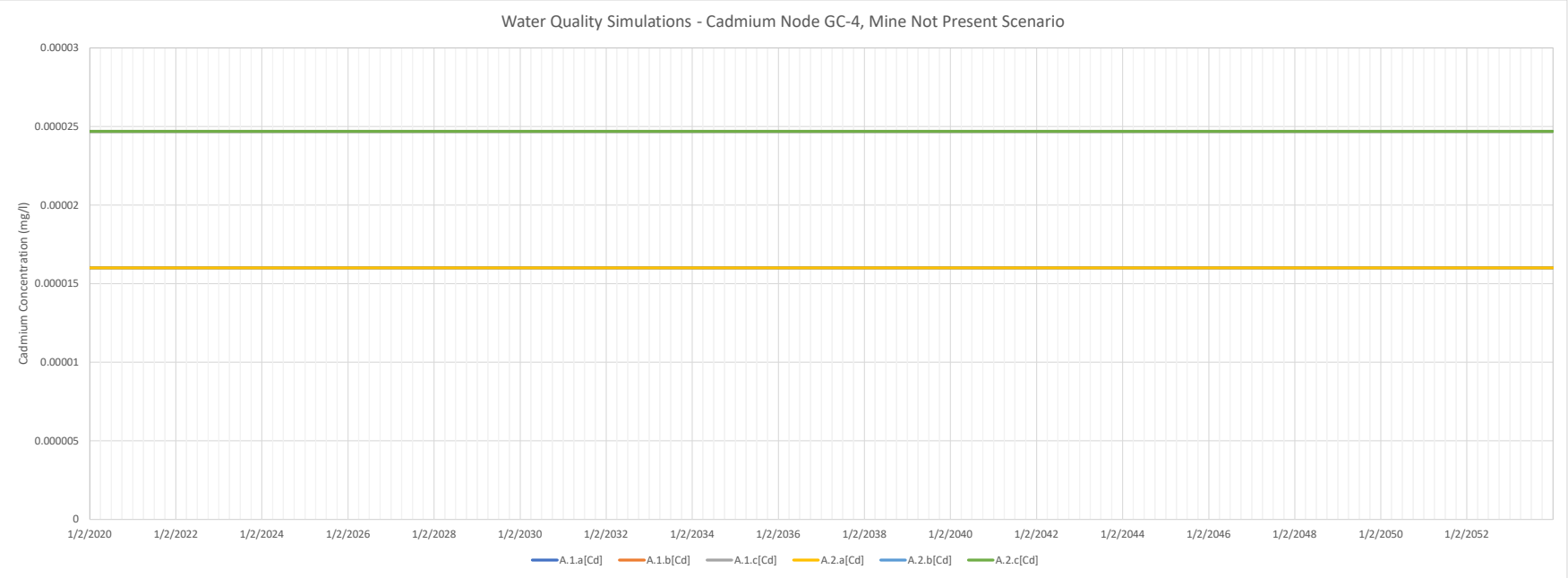

Water Quality Simulations - Nickel Node GC-3, Mine Not Present Scenario
Nickel Concentration (mg/l)
0.00025
0.0002
0.00015
0.0001
0.00005
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Ni]
A.1.b[Ni]
A.1.c[Ni]
A.2.a[Ni]
A.2.b[Ni]
A.2.c[Ni]

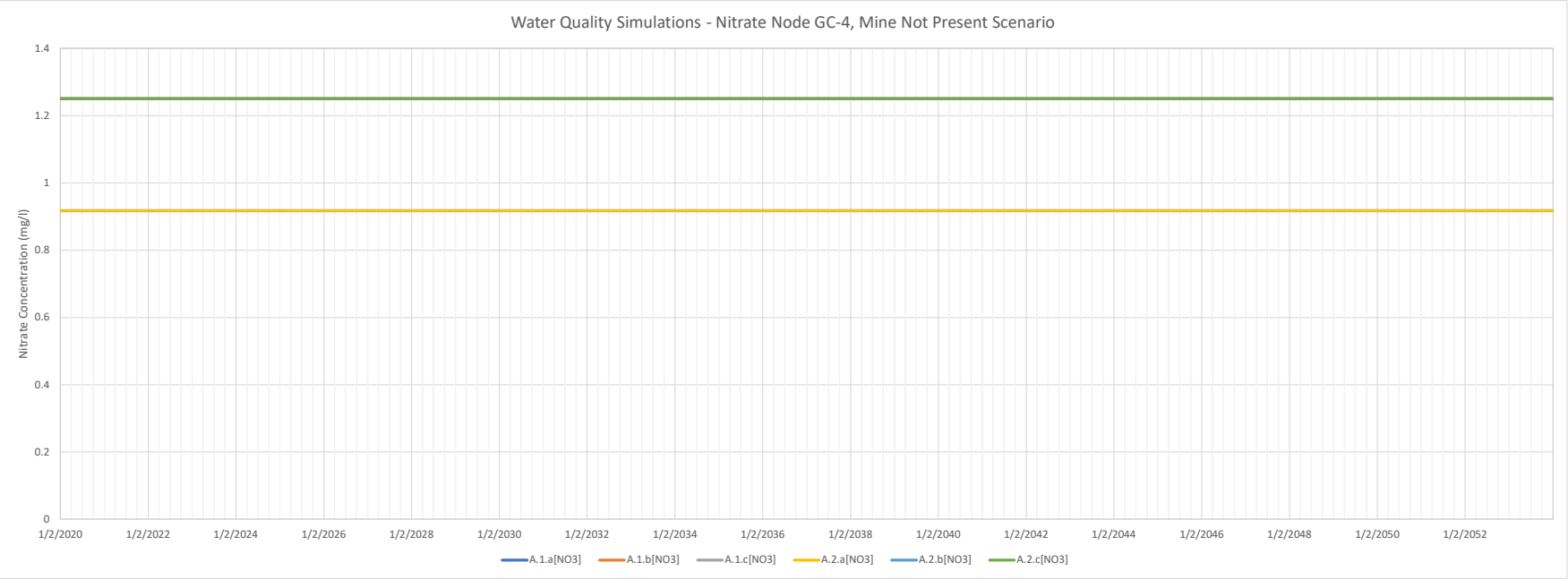

Water Quality Simulations - Cobalt Node GC-3, Mine Not Present Scenario
Cobalt Concentration (mg/l)
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Co]
A.1.b[Co]
A.1.c[Co]
A.2.a[Co]
A.2.b[Co]
A.2.c[Co]

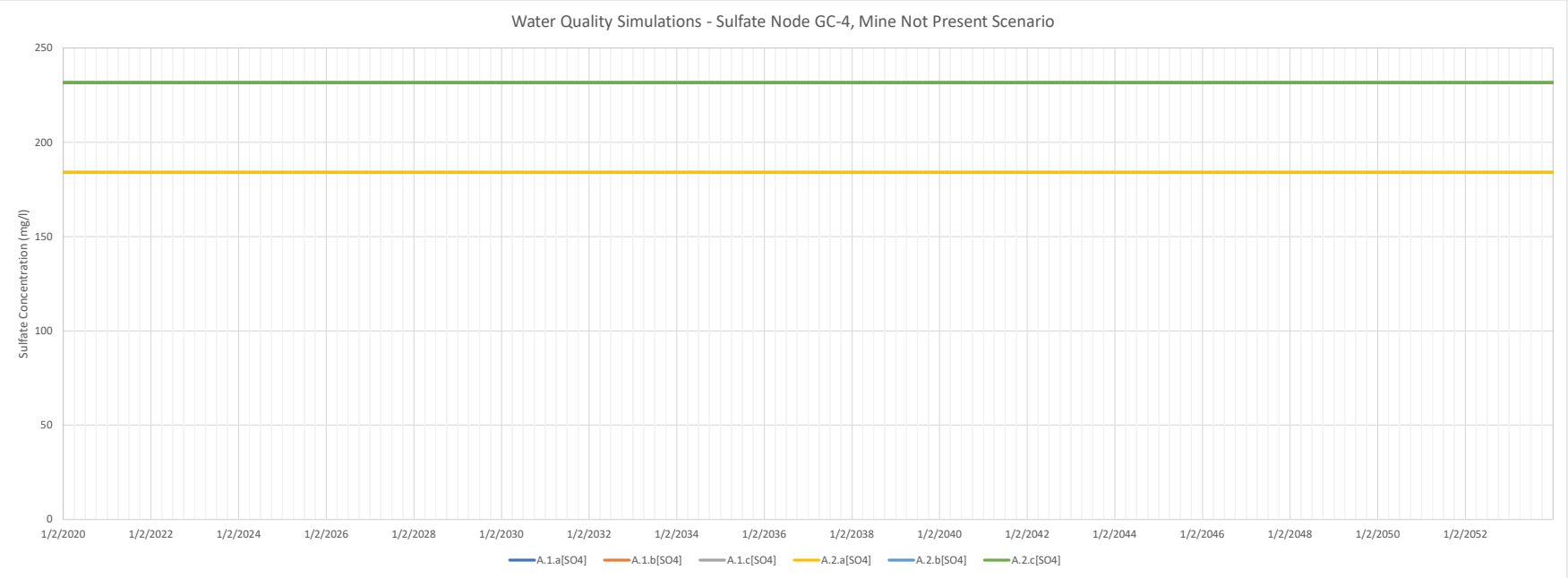
# Node GC-4 : Mine Not Present Scenarios

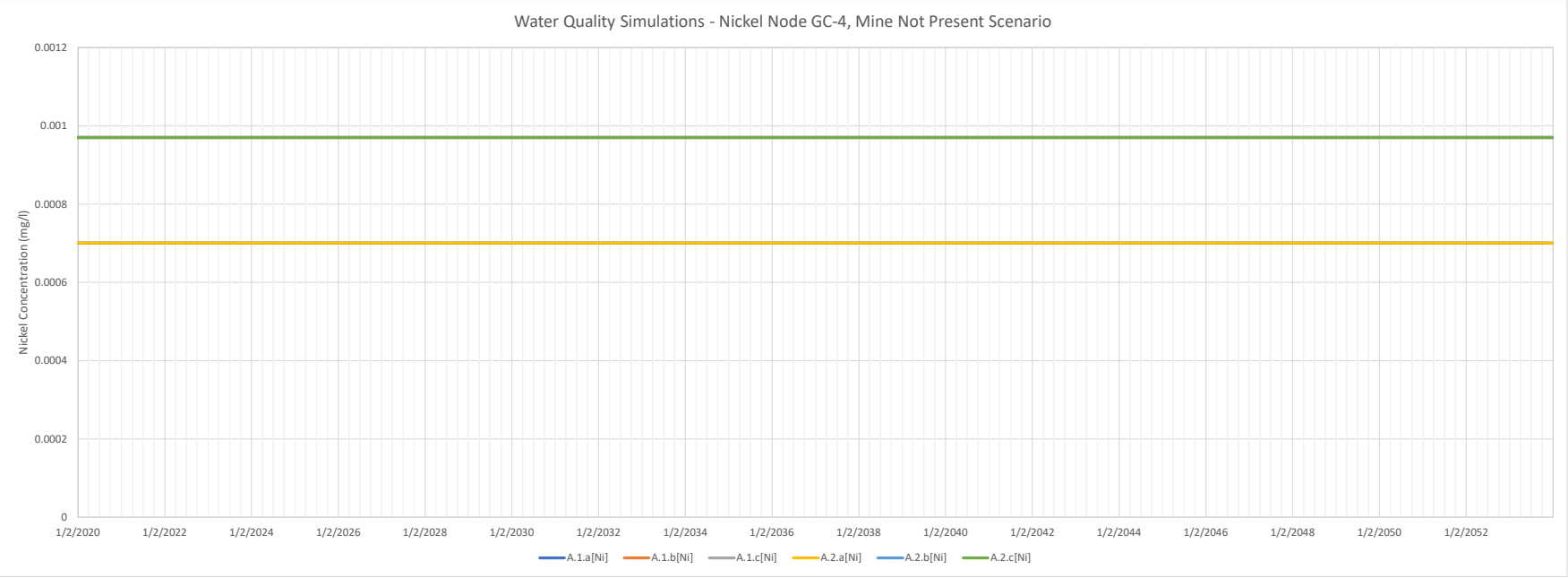

Water Quality Simulations - Hardness Node GC-4, Mine Not Present Scenario
Hardness Concentration (mg/l)
450
440
430
420
410
400
390
380
370
360
350
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Hardness]
A.1.b[Hardness]
A.1.c[Hardness]
A.2.a[Hardness]
A.2.b[Hardness]
A.2.c[Hardness]

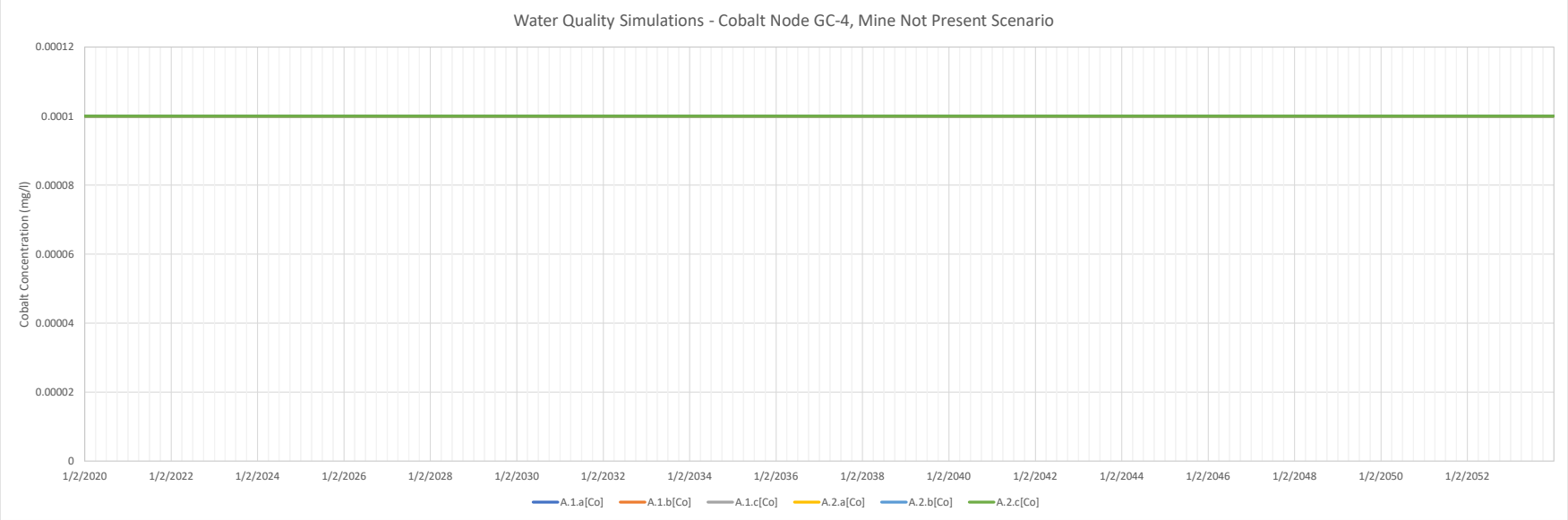

Water Quality Simulations - Selenium Node GC-4, Mine Not Present Scenario
Selenium Concentration (mg/l)
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Se]
A.1.b[Se]
A.1.c[Se]
A.2.a[Se]
A.2.b[Se]
A.2.c[Se]


Water Quality Simulations - Cadmium Node GC-4, Mine Not Present Scenario
Cadmium Concentration (mg/l)
0.00003
0.000025
0.00002
0.000015
0.00001
0.000005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Cd]
A.1.b[Cd]
A.1.c[Cd]
A.2.a[Cd]
A.2.b[Cd]
A.2.c[Cd]


Water Quality Simulations - Nitrate Node GC-4, Mine Not Present Scenario
Nitrate Concentration (mg/l)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[NO3]
A.1.b[NO3]
A.1.c[NO3]
A.2.a[NO3]
A.2.b[NO3]
A.2.c[NO3]

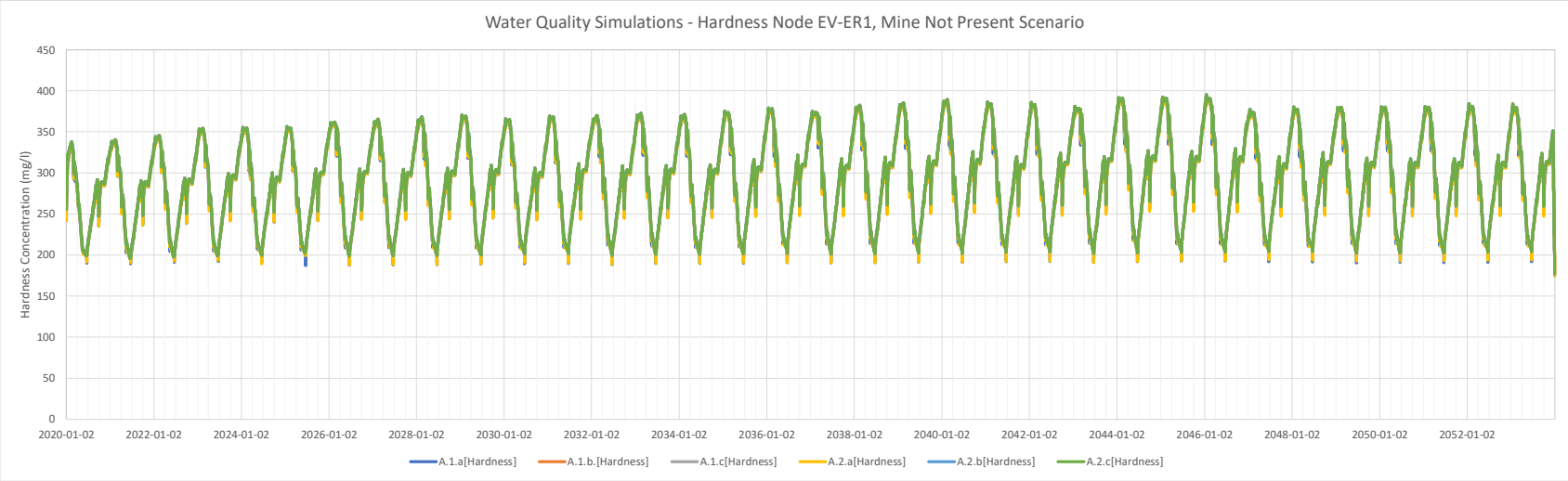

Water Quality Simulations - Sulfate Node GC-4, Mine Not Present Scenario
Sulfate Concentration (mg/l)
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[SO4]
A.1.b[SO4]
A.1.c[SO4]
A.2.a[SO4]
A.2.b[SO4]
A.2.c[SO4]

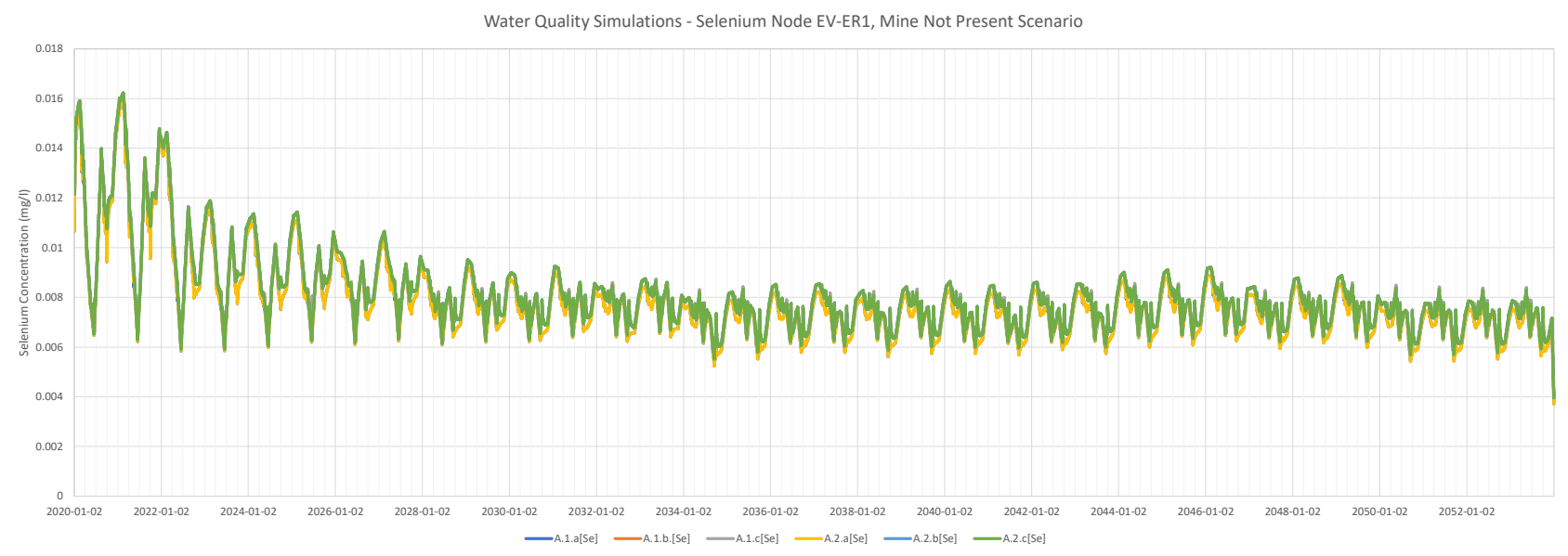

Water Quality Simulations - Nickel Node GC-4, Mine Not Present Scenario
Nickel Concentration (mg/l)
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Ni]
A.1.b[Ni]
A.1.c[Ni]
A.2.a[Ni]
A.2.b[Ni]
A.2.c[Ni]


Water Quality Simulations - Cobalt Node GC-4, Mine Not Present Scenario
Cobalt Concentration (mg/l)
0.00012
0.0001
0.00008
0.00006
0.00004
0.00002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
A.1.a[Co]
A.1.b[Co]
A.1.c[Co]
A.2.a[Co]
A.2.b[Co]
A.2.c[Co]

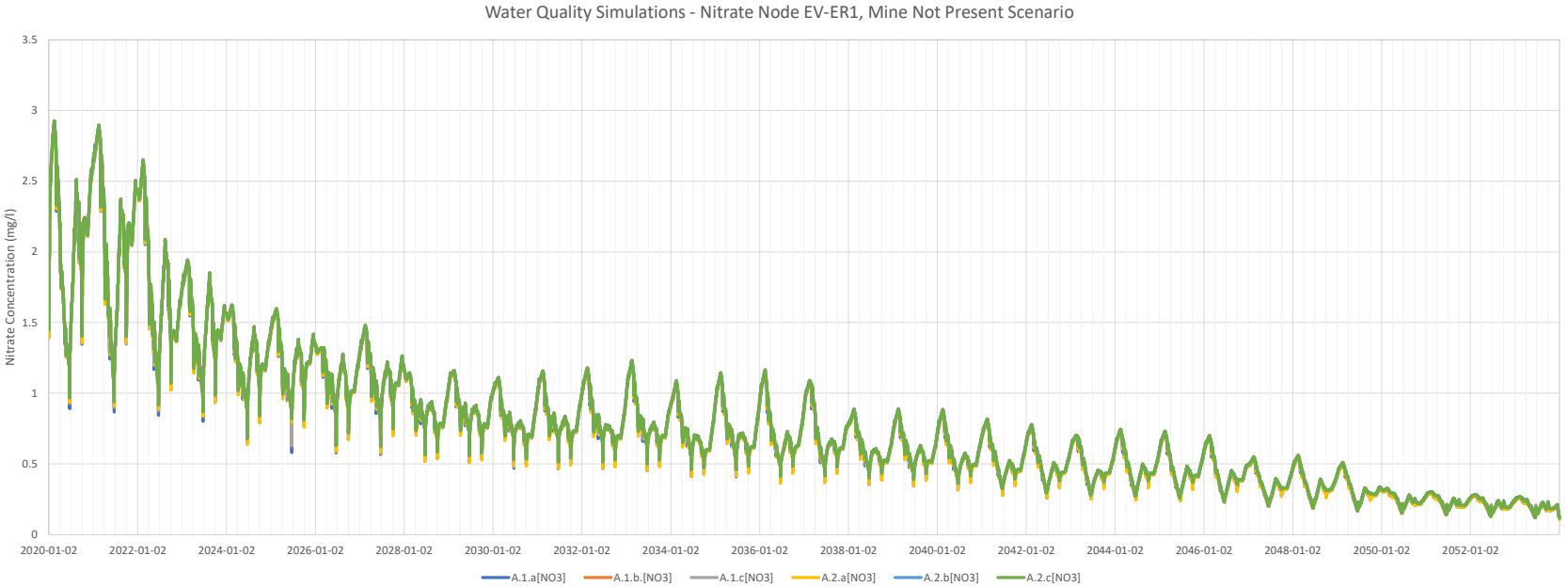
# Node ER-EV1 : Mine Not Present Scenarios

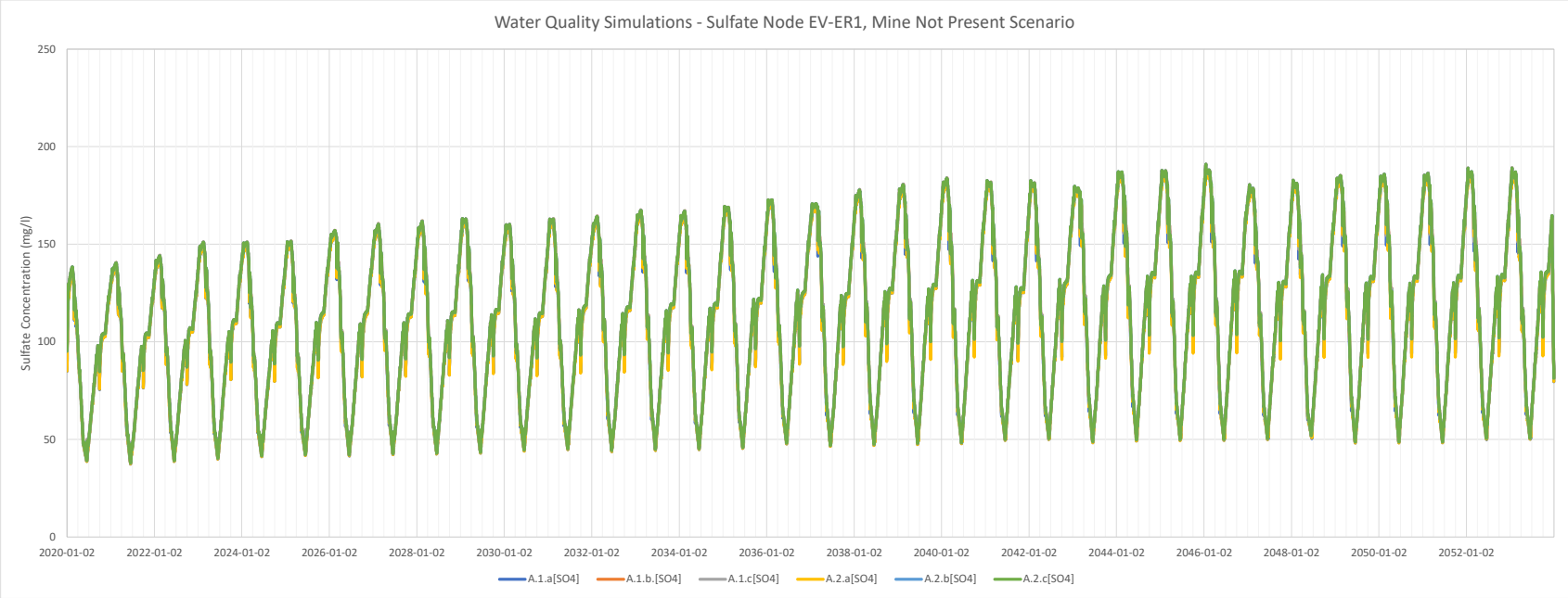
Note: Simulated under average climatic conditions


Water Quality Simulations - Hardness Node EV-ER1, Mine Not Present Scenario
Hardness Concentration (mg/l)
450
400
350
300
250
200
150
100
50
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Hardness]
A.1.b.[Hardness]
A.1.c[Hardness]
A.2.a[Hardness]
A.2.b[Hardness]
A.2.c[Hardness]


Water Quality Simulations - Selenium Node EV-ER1, Mine Not Present Scenario
Selenium Concentration (mg/l)
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Se]
A.1.b.[Se]
A.1.c[Se]
A.2.a[Se]
A.2.b[Se]
A.2.c[Se]

**Cadmium Concentrations Not Provided with the RWQM Model**



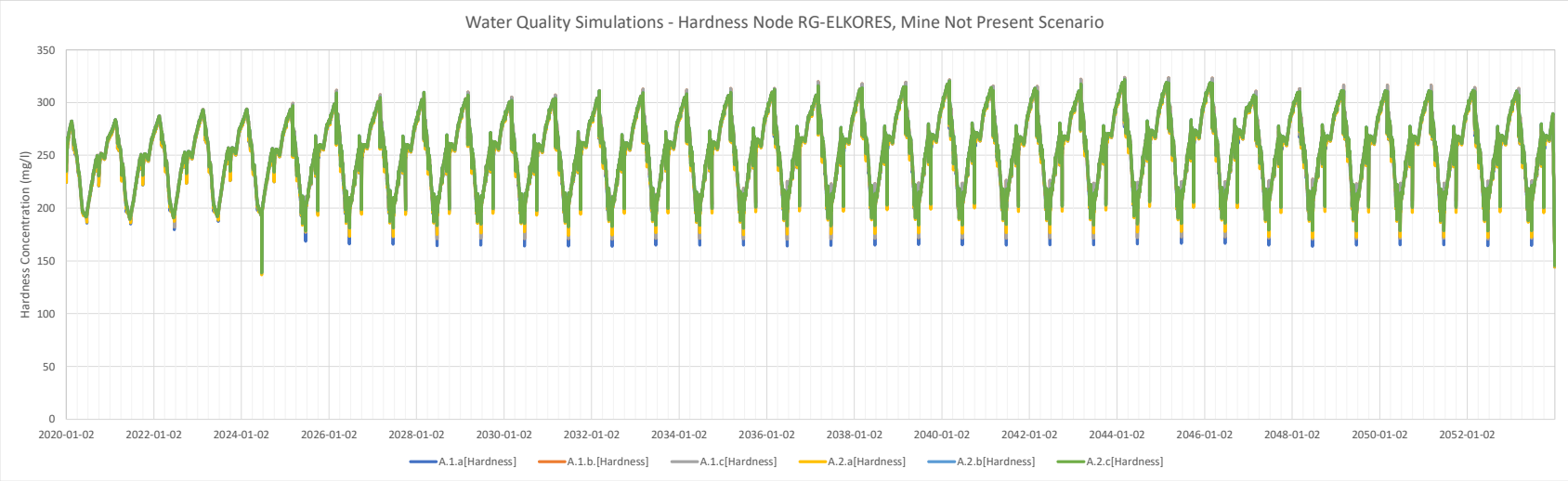


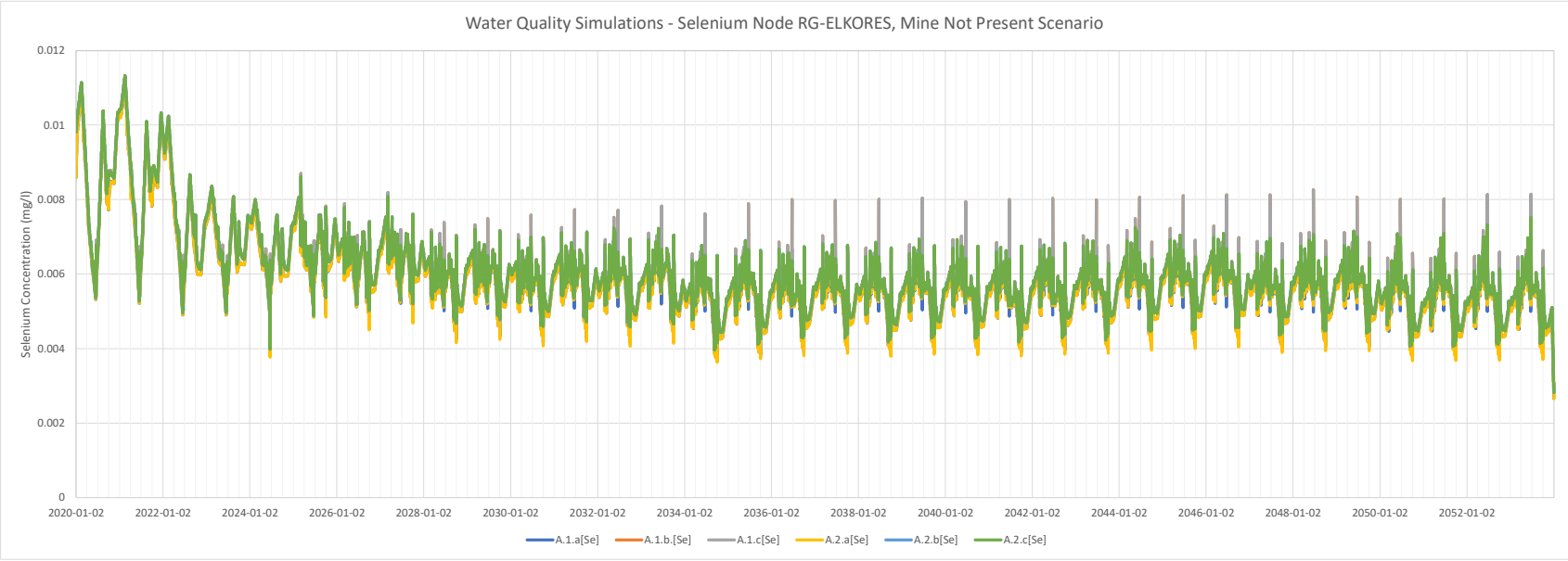

**Nickel Concentrations Not Provided with the RWQM Model**

**Cobalt Concentrations Not Provided with the RWQM Model**

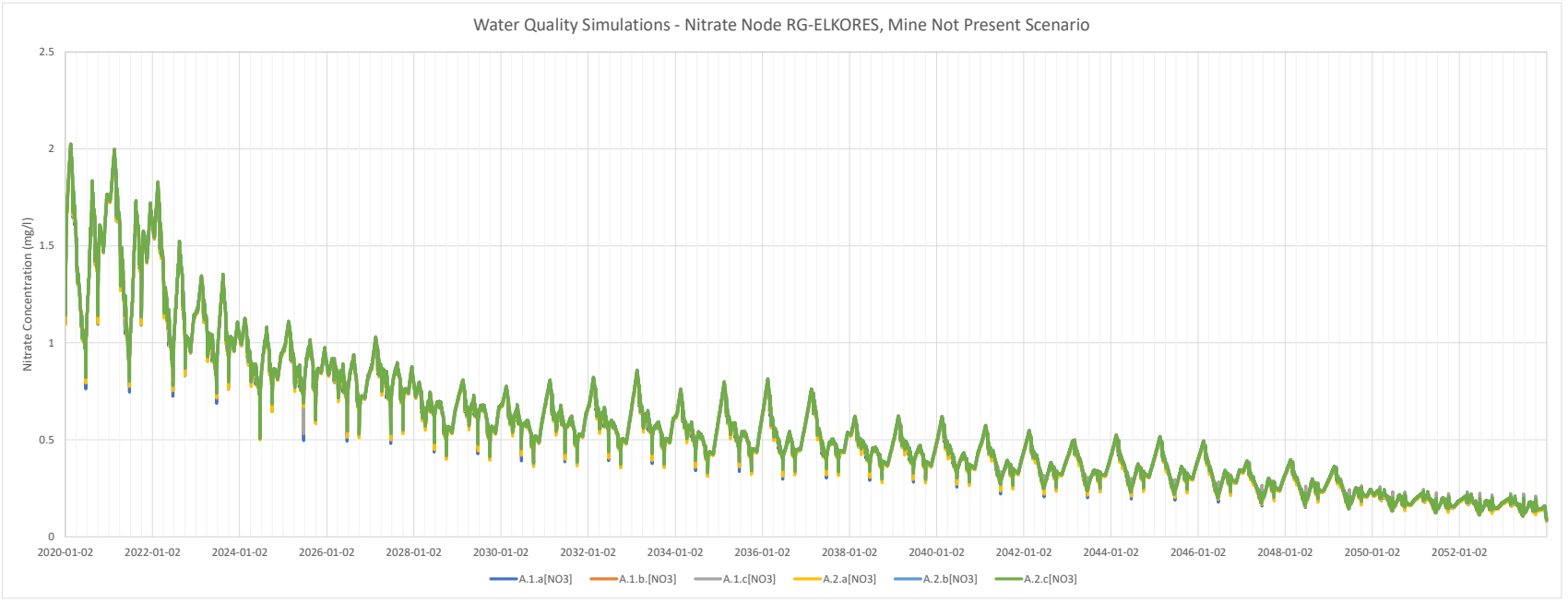
# Node RG-ELKORES : Mine Not Present Scenarios

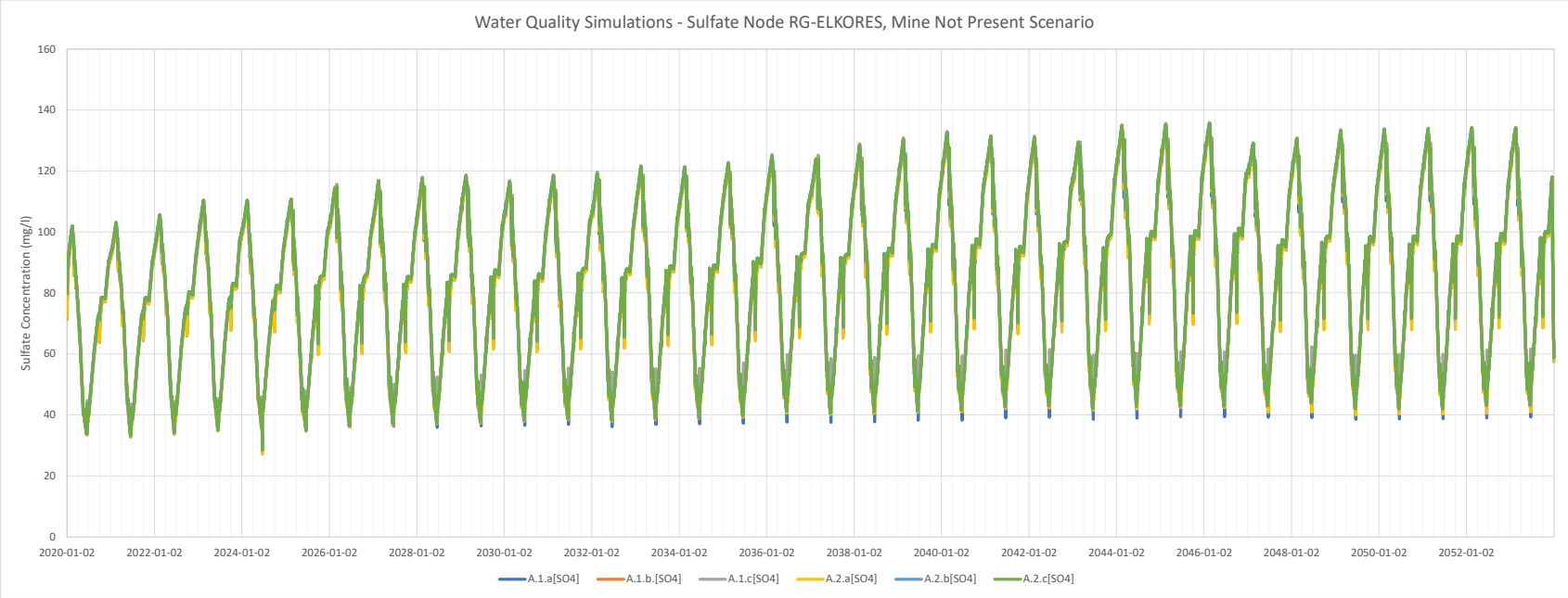
Note: Simulated under average climatic conditions


Water Quality Simulations - Hardness Node RG-ELKORES, Mine Not Present Scenario
Hardness Concentration (mg/l)
350
300
250
200
150
100
50
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Hardness]
A.1.b.[Hardness]
A.1.c[Hardness]
A.2.a[Hardness]
A.2.b[Hardness]
A.2.c[Hardness]


Water Quality Simulations - Selenium Node RG-ELKORES, Mine Not Present Scenario
Selenium Concentration (mg/l)
0.012
0.01
0.008
0.006
0.004
0.002
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Se]
A.1.b.[Se]
A.1.c[Se]
A.2.a[Se]
A.2.b[Se]
A.2.c[Se]

**Cadmium Concentrations Not Provided with the RWQM Model**



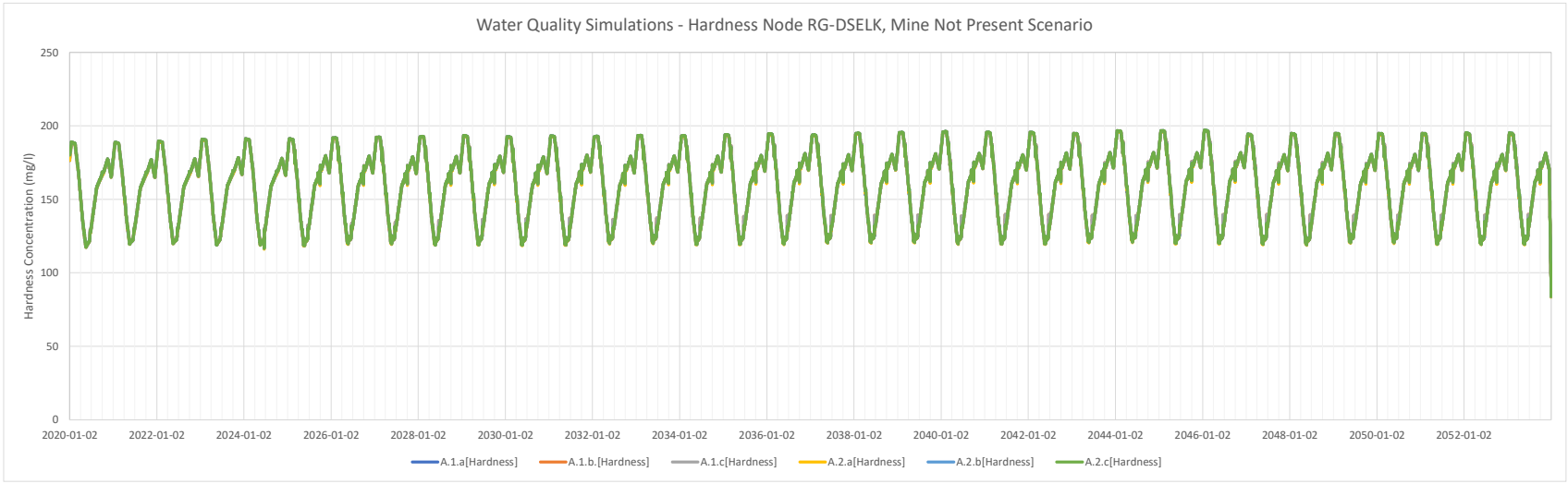


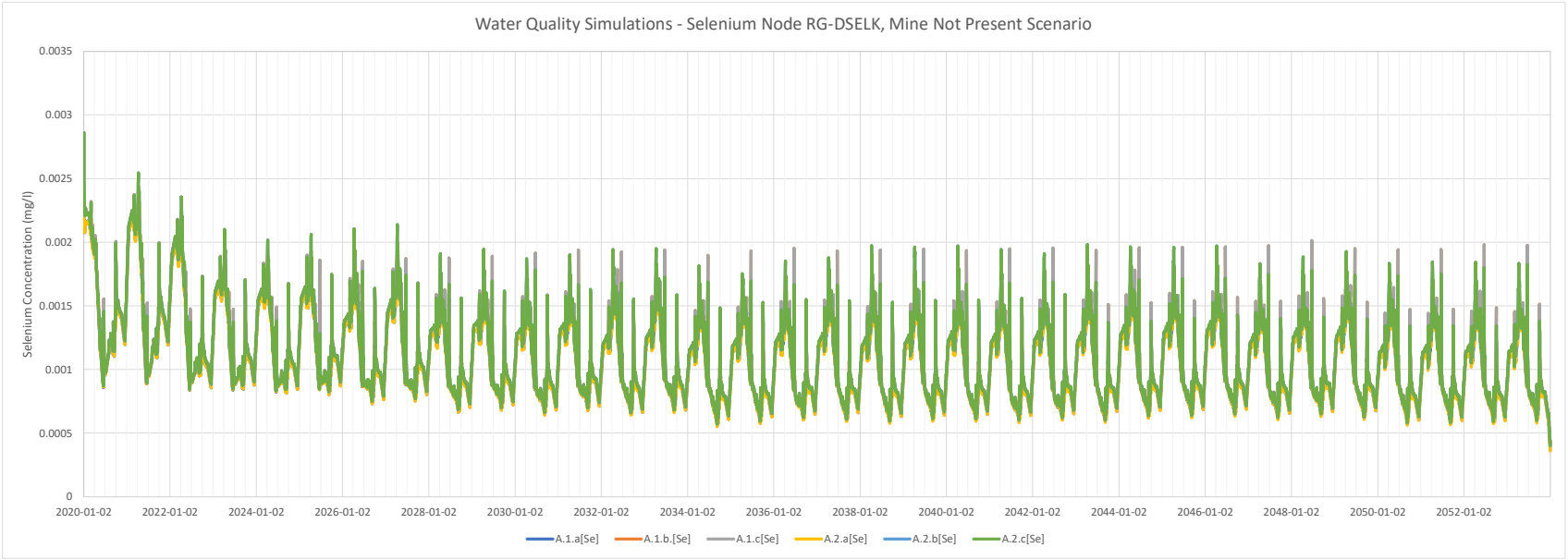

**Nickel Concentrations Not Provided with the RWQM Model**

**Cobalt Concentrations Not Provided with the RWQM Model**

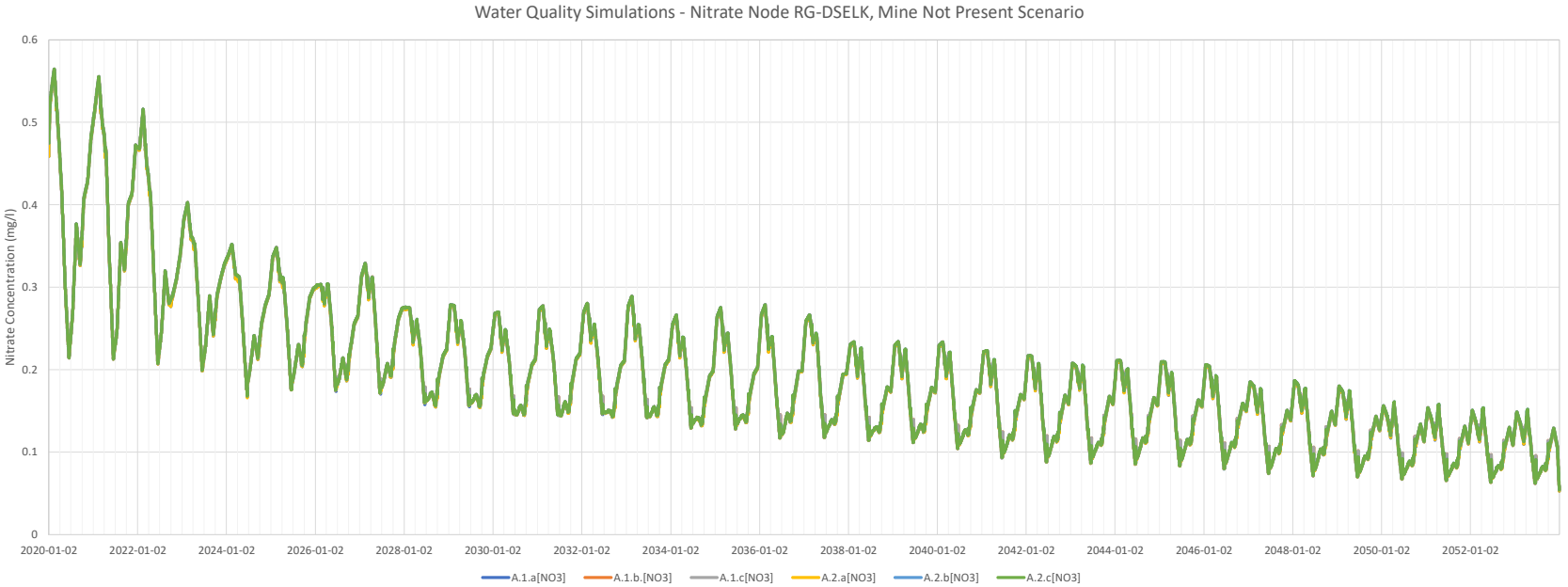
# Node RG-DSELK : Mine Not Present Scenarios

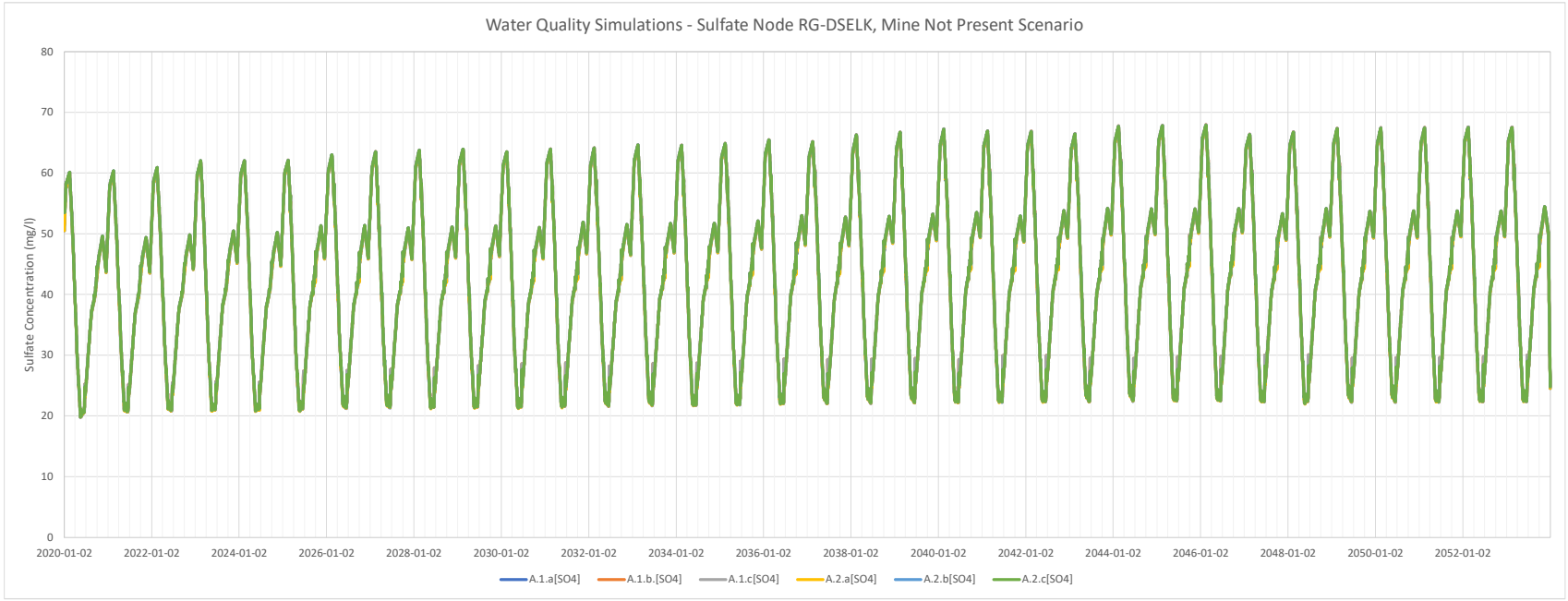
Note: Simulated under average climatic conditions


Water Quality Simulations - Hardness Node RG-DSELK, Mine Not Present Scenario
Hardness Concentration (mg/l)
250
200
150
100
50
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Hardness]
A.1.b.[Hardness]
A.1.c[Hardness]
A.2.a[Hardness]
A.2.b[Hardness]
A.2.c[Hardness]


Water Quality Simulations - Selenium Node RG-DSELK, Mine Not Present Scenario
Selenium Concentration (mg/l)
0.0035
0.003
0.0025
0.002
0.0015
0.001
0.0005
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
A.1.a[Se]
A.1.b.[Se]
A.1.c[Se]
A.2.a[Se]
A.2.b[Se]
A.2.c[Se]

**Cadmium Concentrations Not Provided with the RWQM Model**



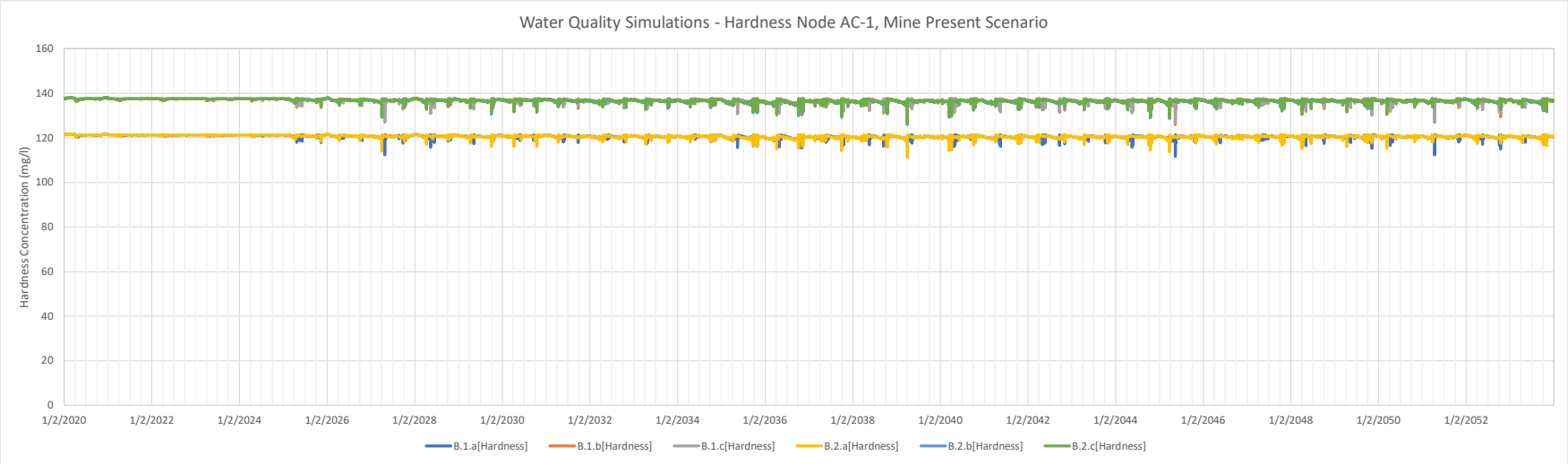


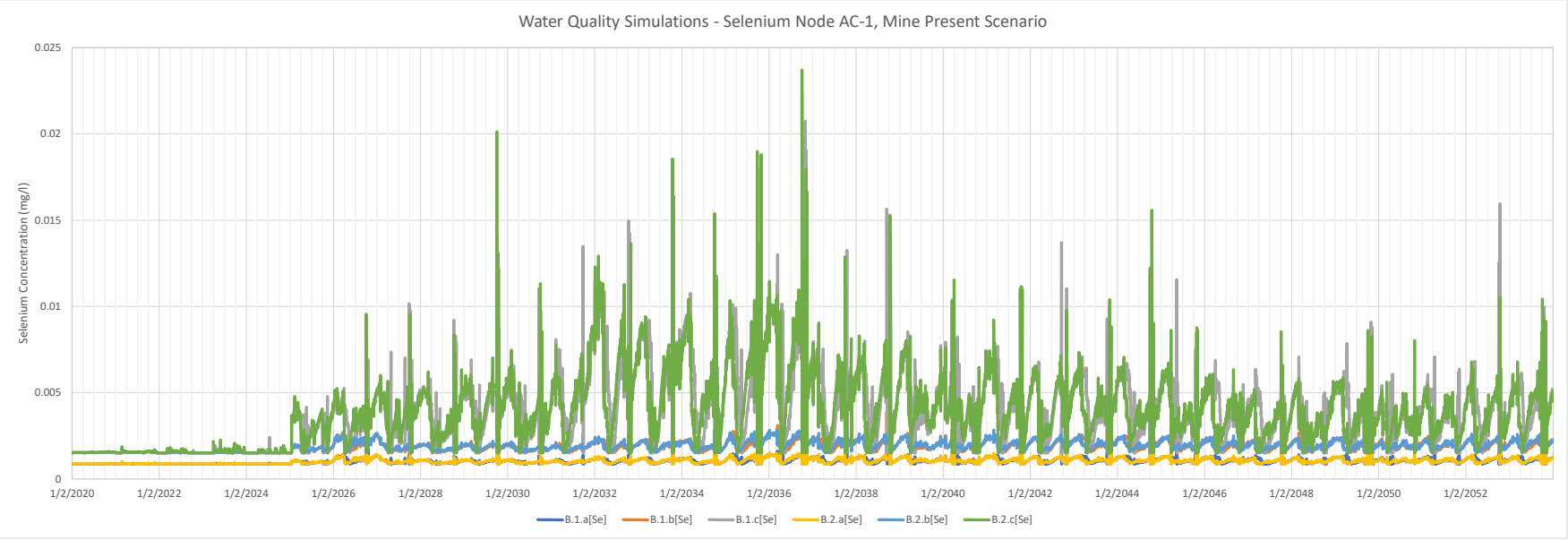

**Nickel Concentrations Not Provided with the RWQM Model**

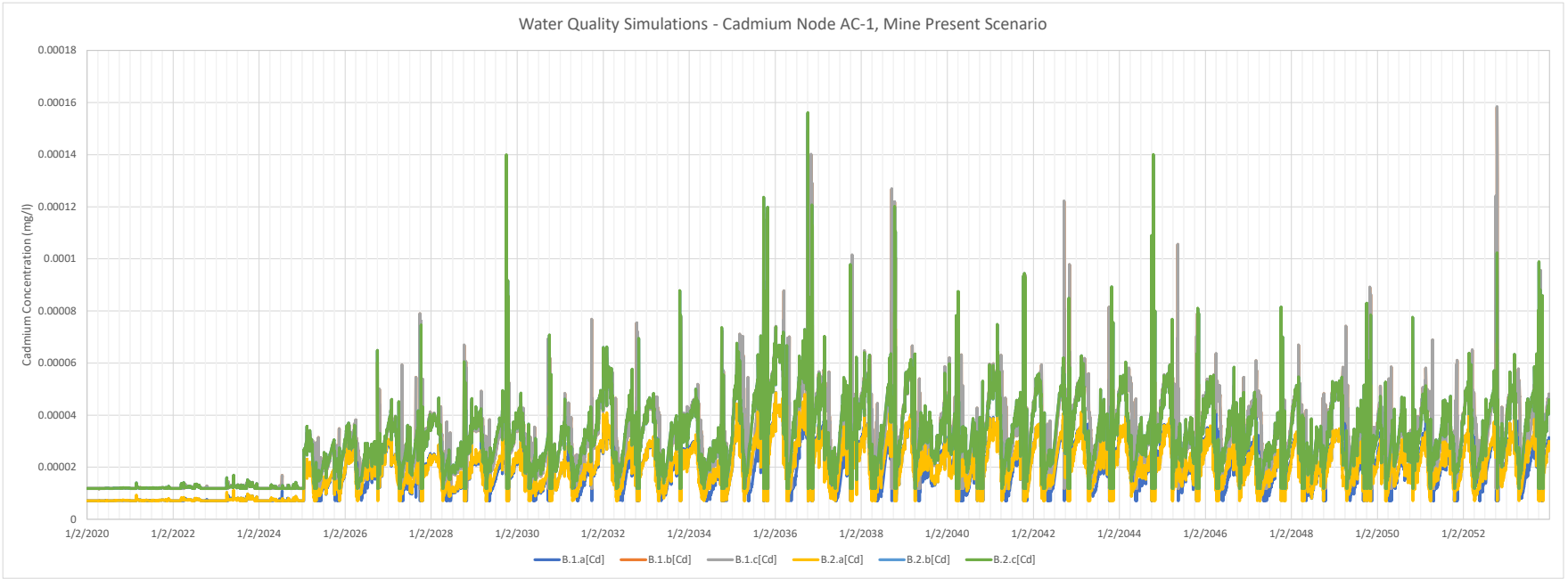
**Cobalt Concentrations Not Provided with the RWQM Model**

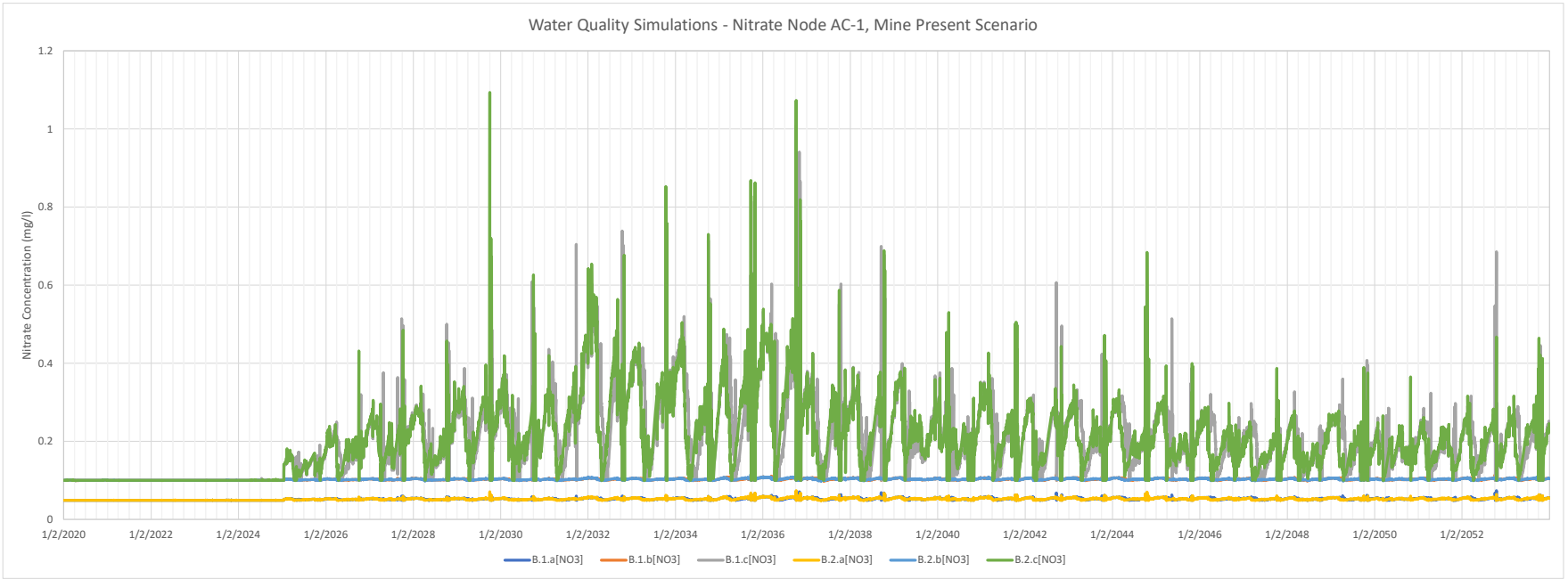
**Nodes AC-1, AC-2, AC-3, AC-4, AC-5, AC-6, GC-5, GC-6, GC-7, GC-8 are all identical to Node GC-3 for the Mine Not Present Scenario**

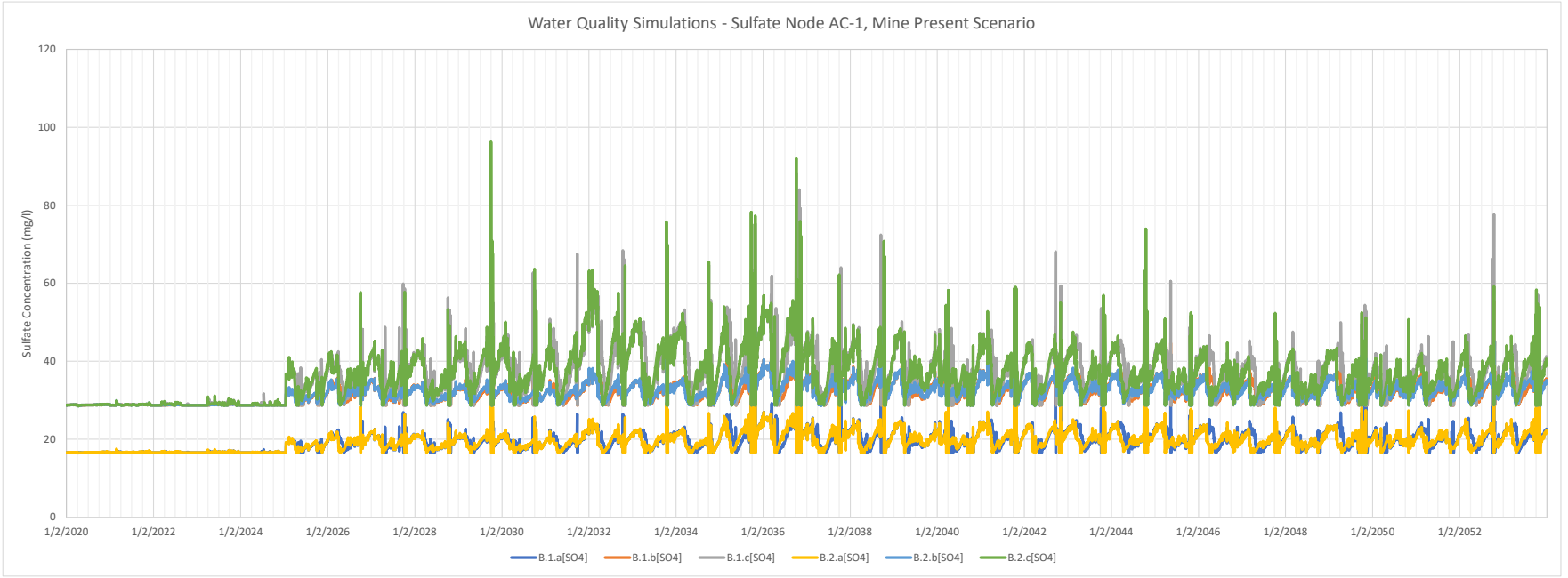
# Node AC-1 : Mine Present Scenarios

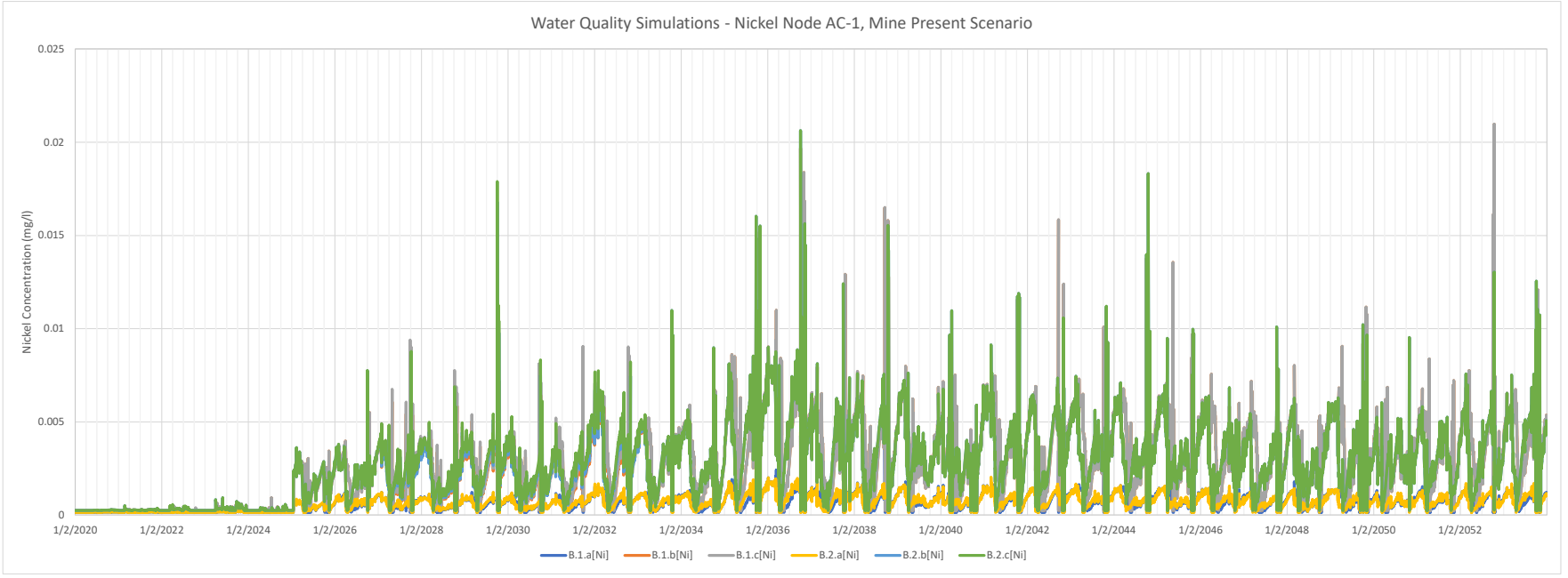

Water Quality Simulations - Hardness Node AC-1, Mine Present Scenario
Hardness Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

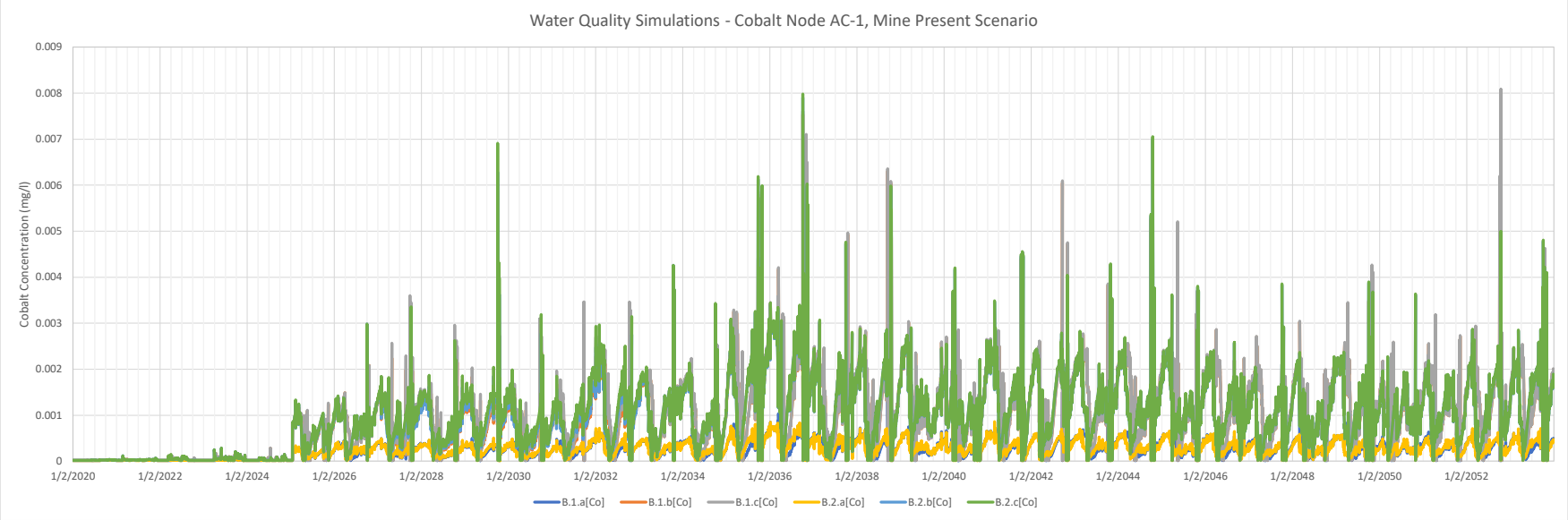

Water Quality Simulations - Selenium Node AC-1, Mine Present Scenario
Selenium Concentration (mg/l)
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node AC-1, Mine Present Scenario
Cadmium Concentration (mg/l)
0.00018
0.00016
0.00014
0.00012
0.0001
0.00008
0.00006
0.00004
0.00002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

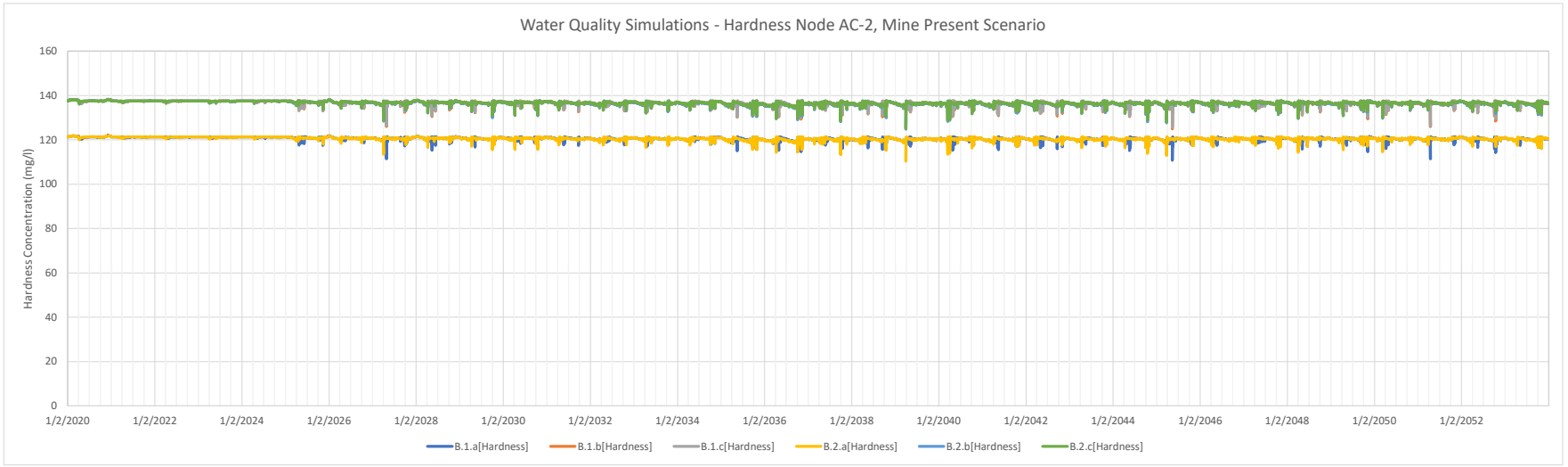

Water Quality Simulations - Nitrate Node AC-1, Mine Present Scenario
Nitrate Concentration (mg/l)
1.2
1
0.8
0.6
0.4
0.2
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

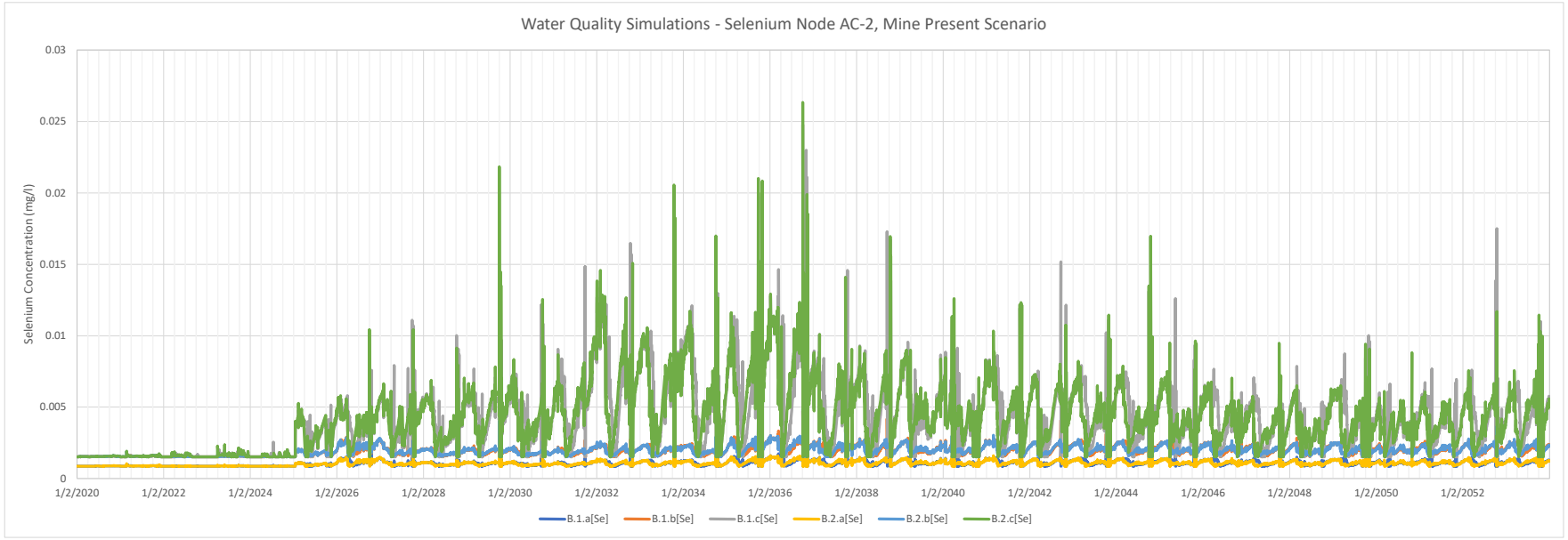

Water Quality Simulations - Sulfate Node AC-1, Mine Present Scenario
Sulfate Concentration (mg/l)
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

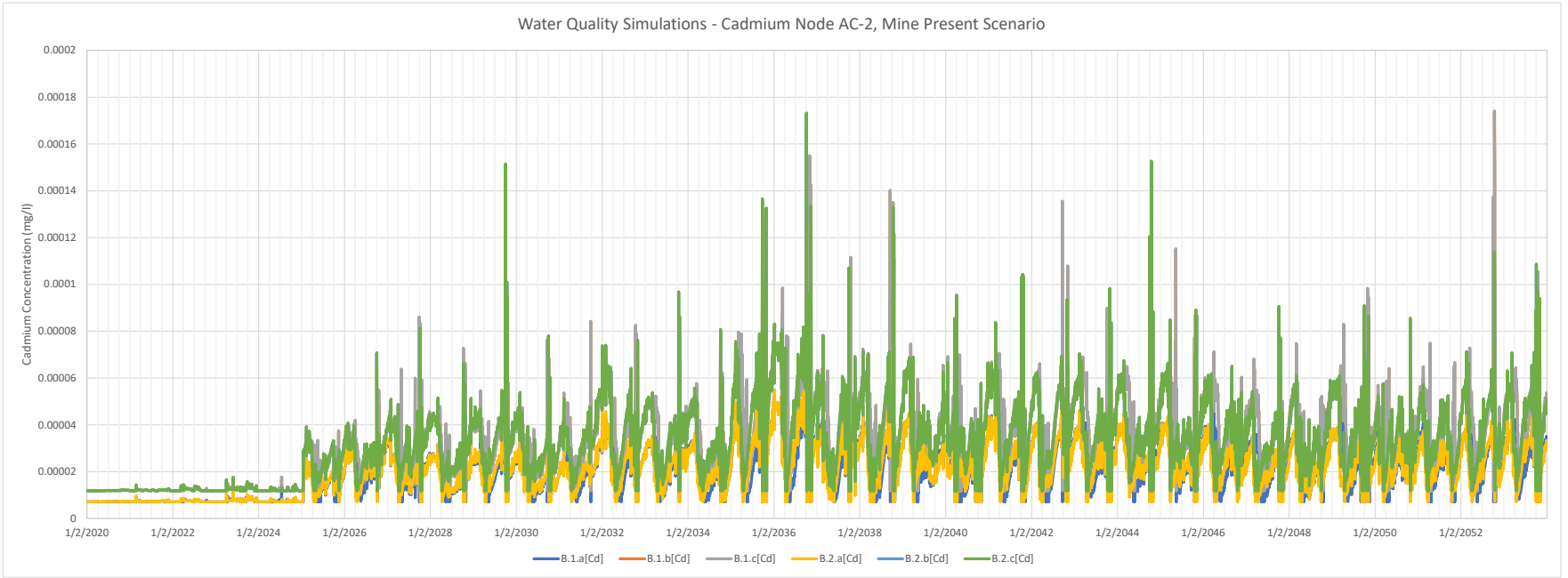

Water Quality Simulations - Nickel Node AC-1, Mine Present Scenario
Nickel Concentration (mg/l)
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

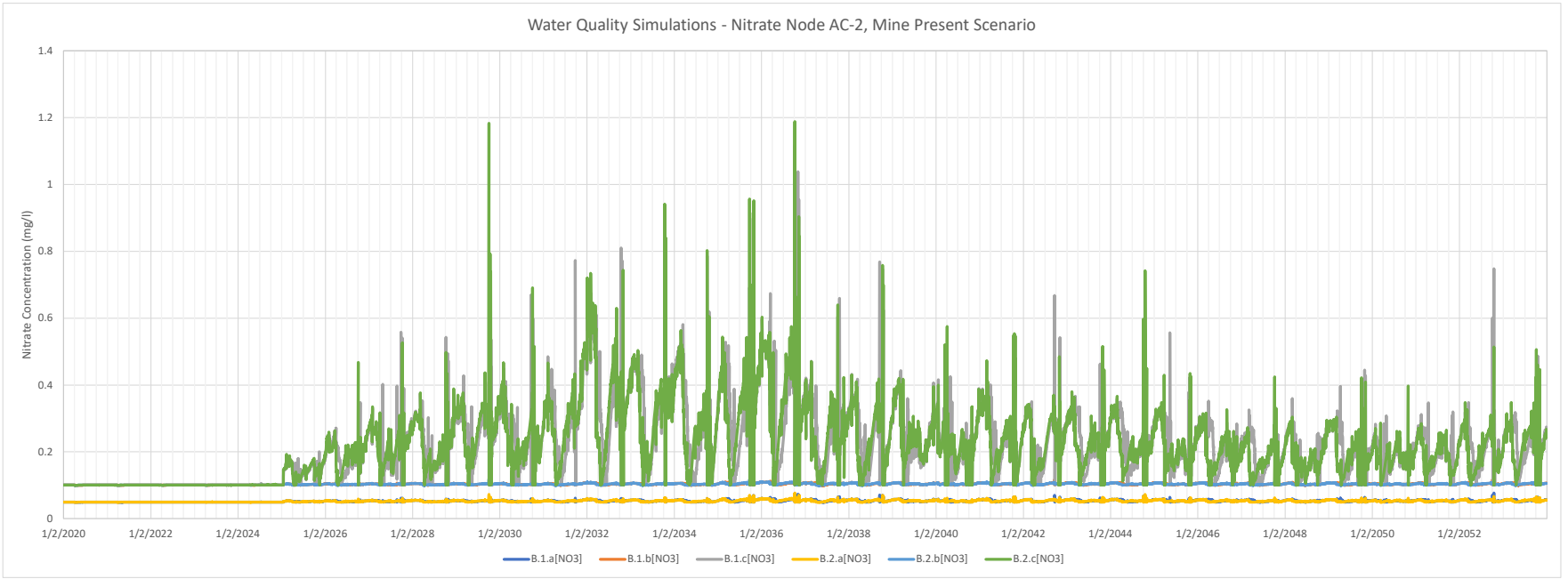

Water Quality Simulations - Cobalt Node AC-1, Mine Present Scenario
Cobalt Concentration (mg/l)
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

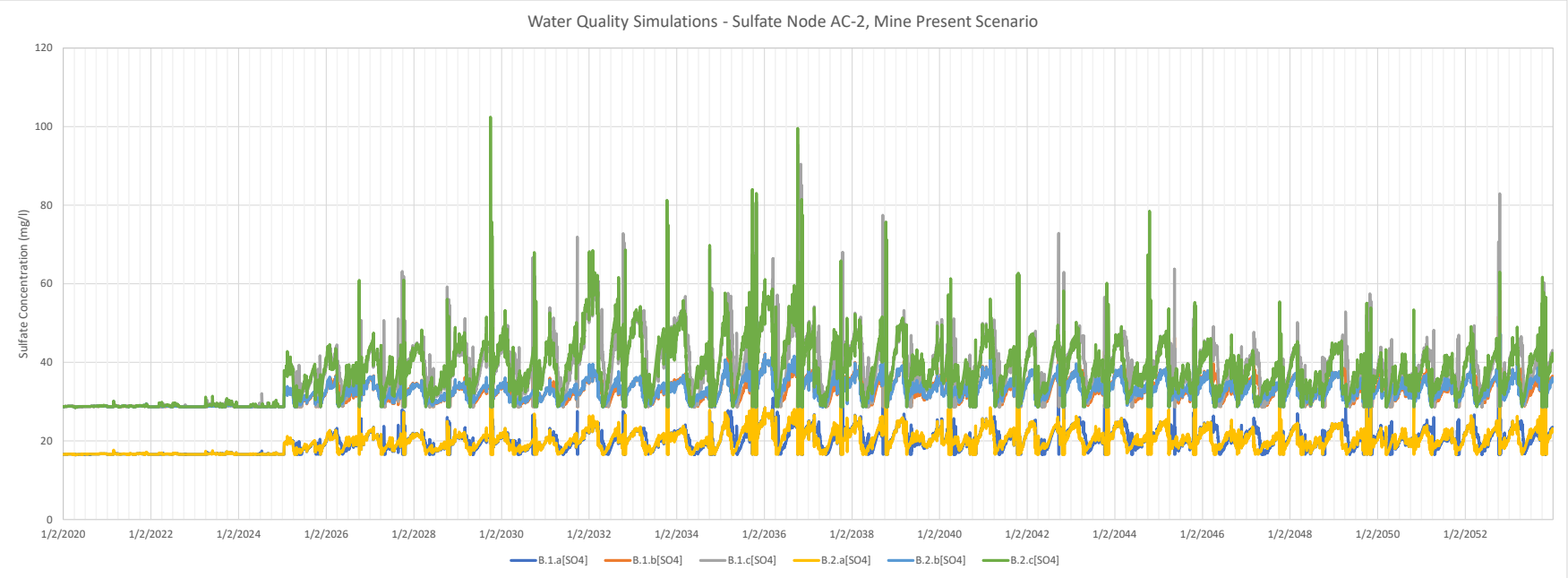
# Node AC-2 : Mine Present Scenarios

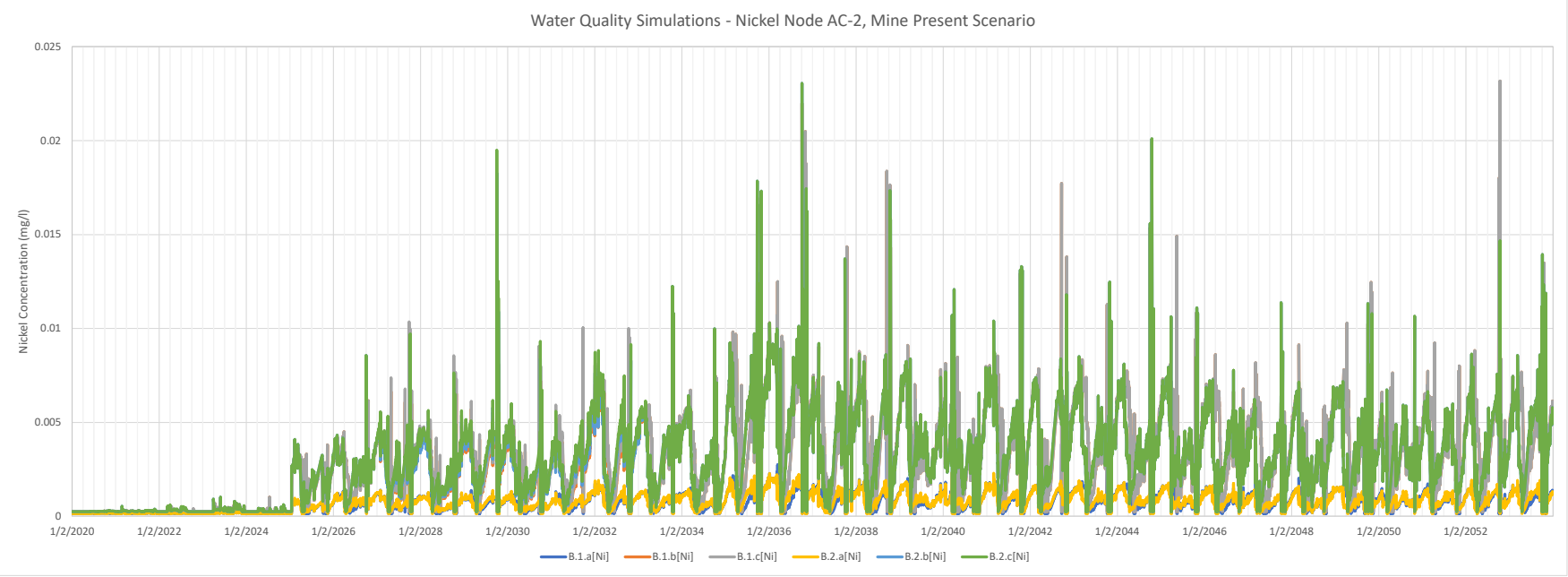

Water Quality Simulations - Hardness Node AC-2, Mine Present Scenario
Hardness Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

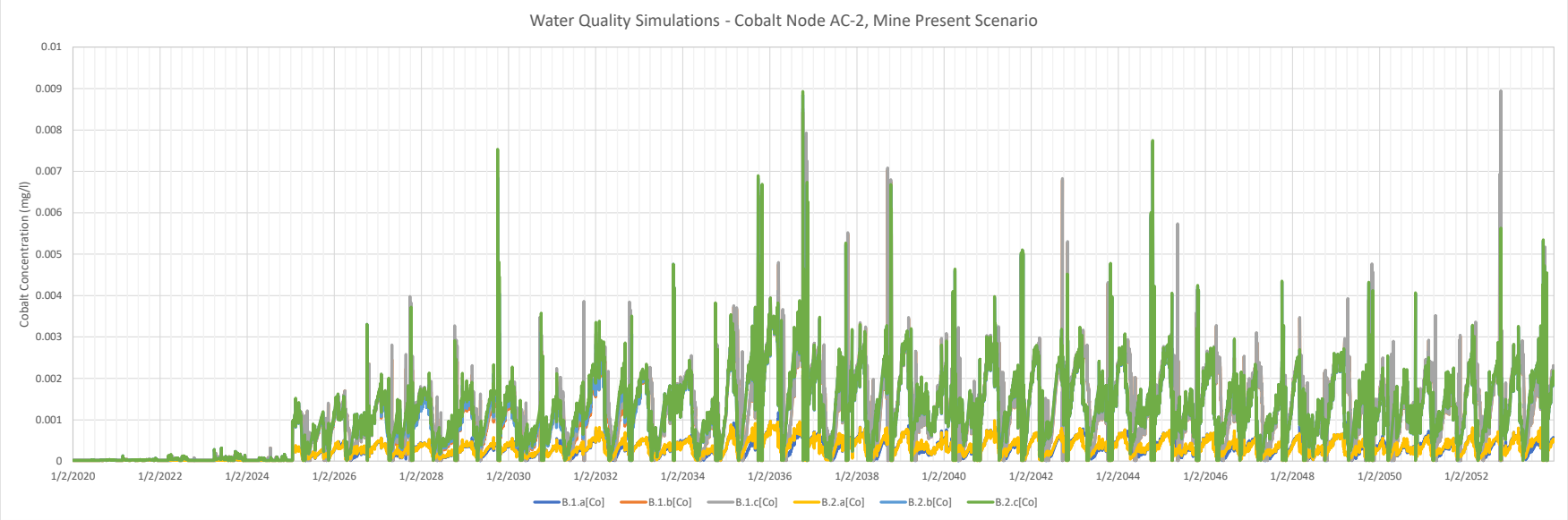

Water Quality Simulations - Selenium Node AC-2, Mine Present Scenario
Selenium Concentration (mg/l)
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node AC-2, Mine Present Scenario
Cadmium Concentration (mg/l)
0.0002
0.00018
0.00016
0.00014
0.00012
0.0001
0.00008
0.00006
0.00004
0.00002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

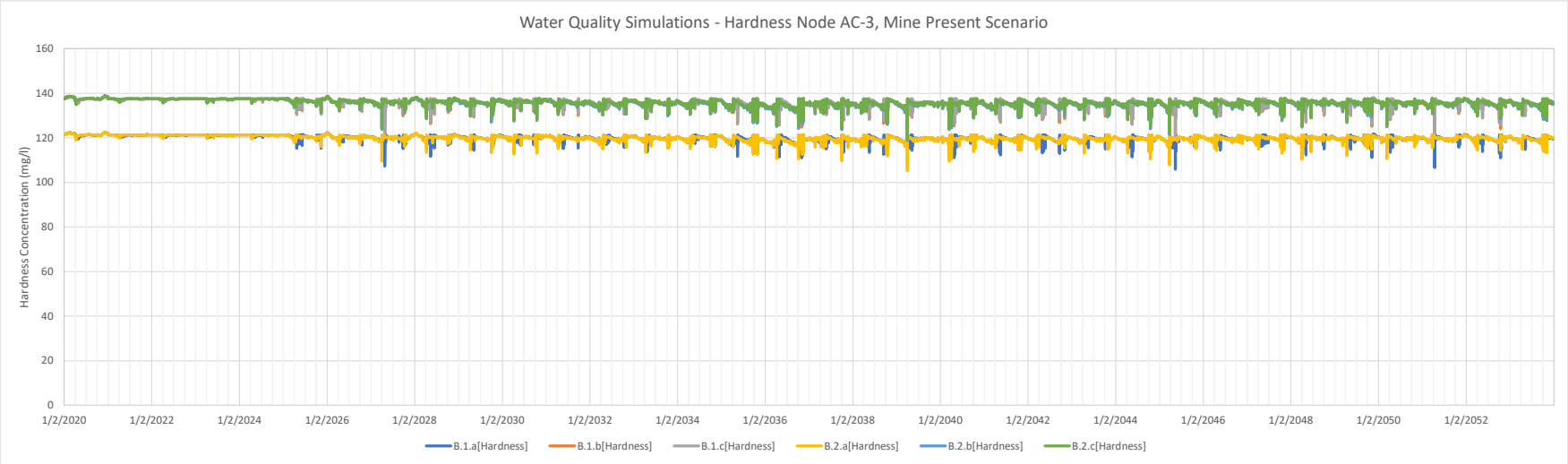

Water Quality Simulations - Nitrate Node AC-2, Mine Present Scenario
Nitrate Concentration (mg/l)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

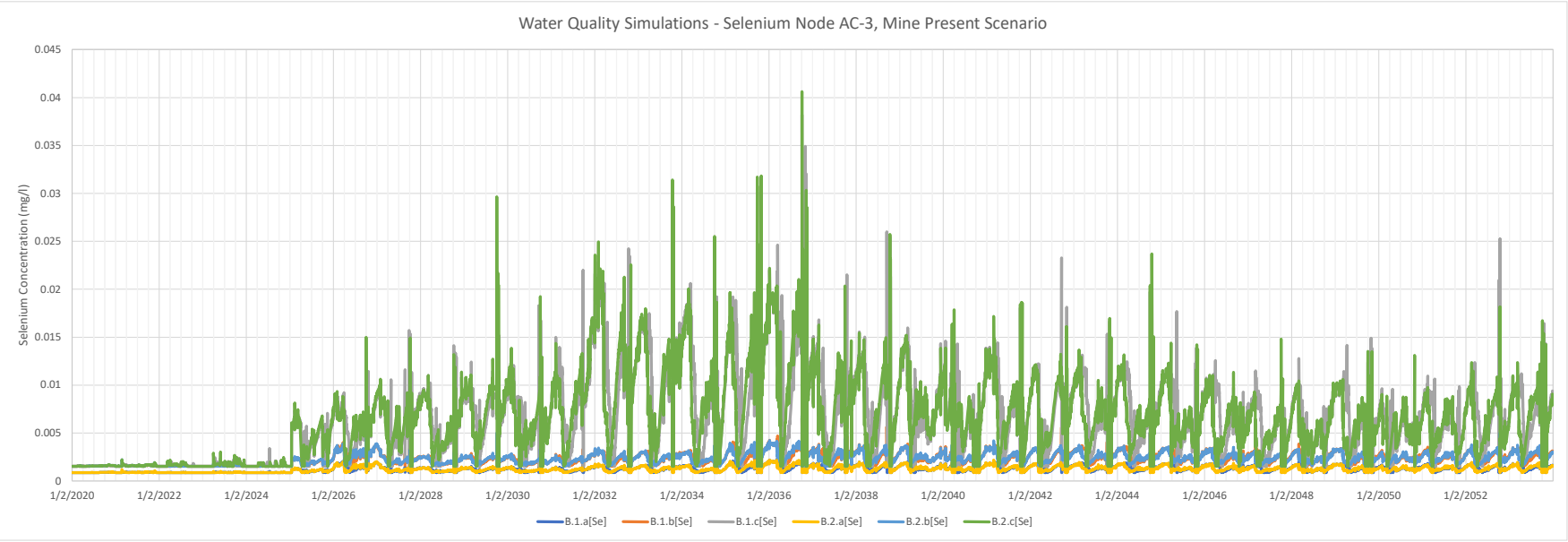

Water Quality Simulations - Sulfate Node AC-2, Mine Present Scenario
Sulfate Concentration (mg/l)
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

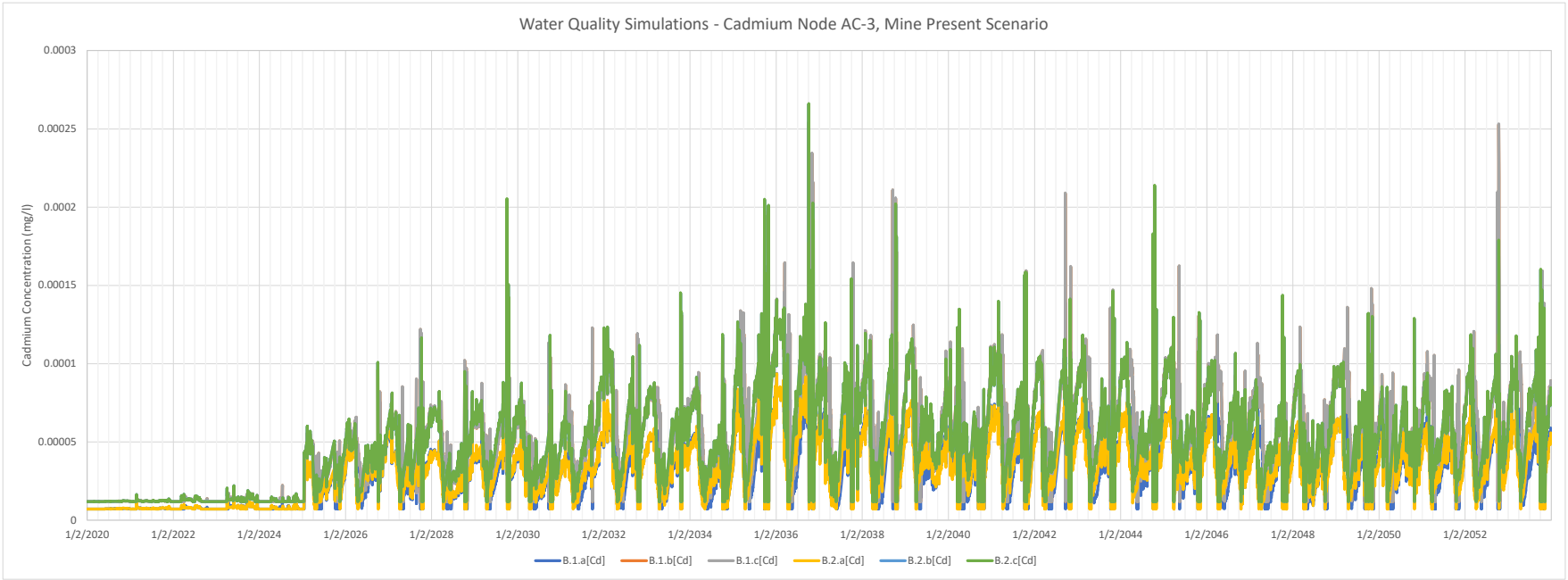

Water Quality Simulations - Nickel Node AC-2, Mine Present Scenario
Nickel Concentration (mg/l)
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

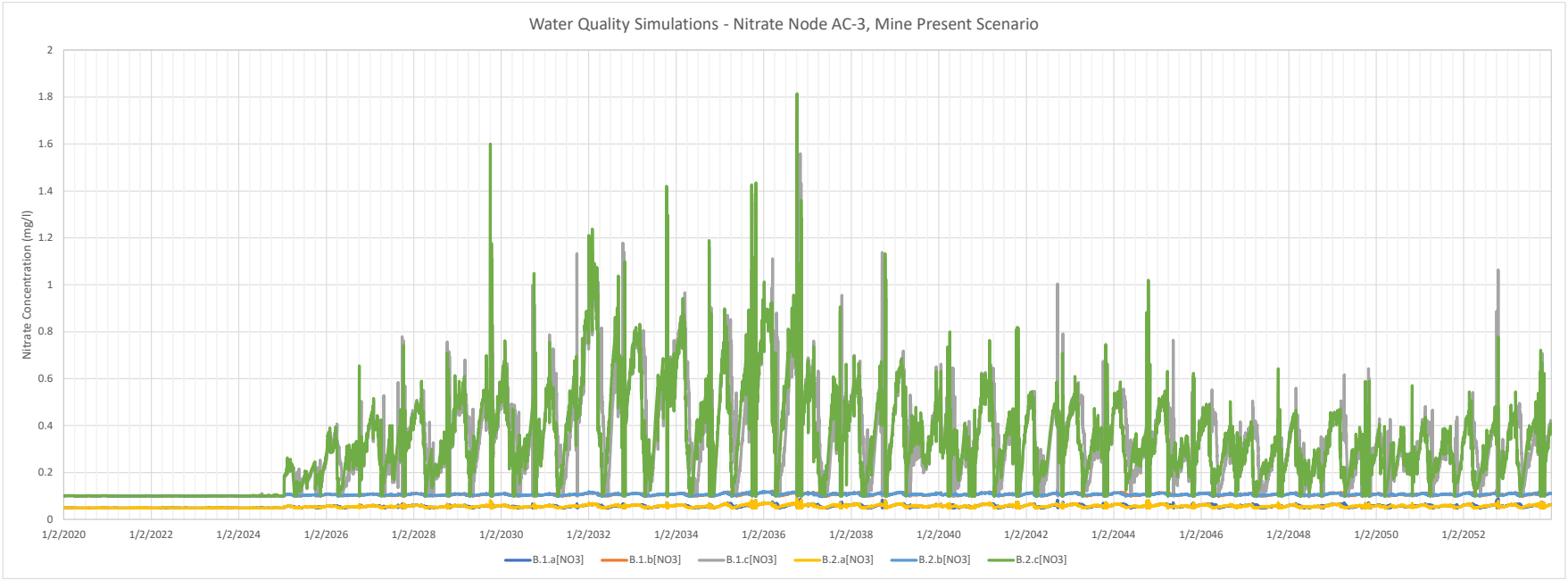

Water Quality Simulations - Cobalt Node AC-2, Mine Present Scenario
Cobalt Concentration (mg/l)
0.01
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

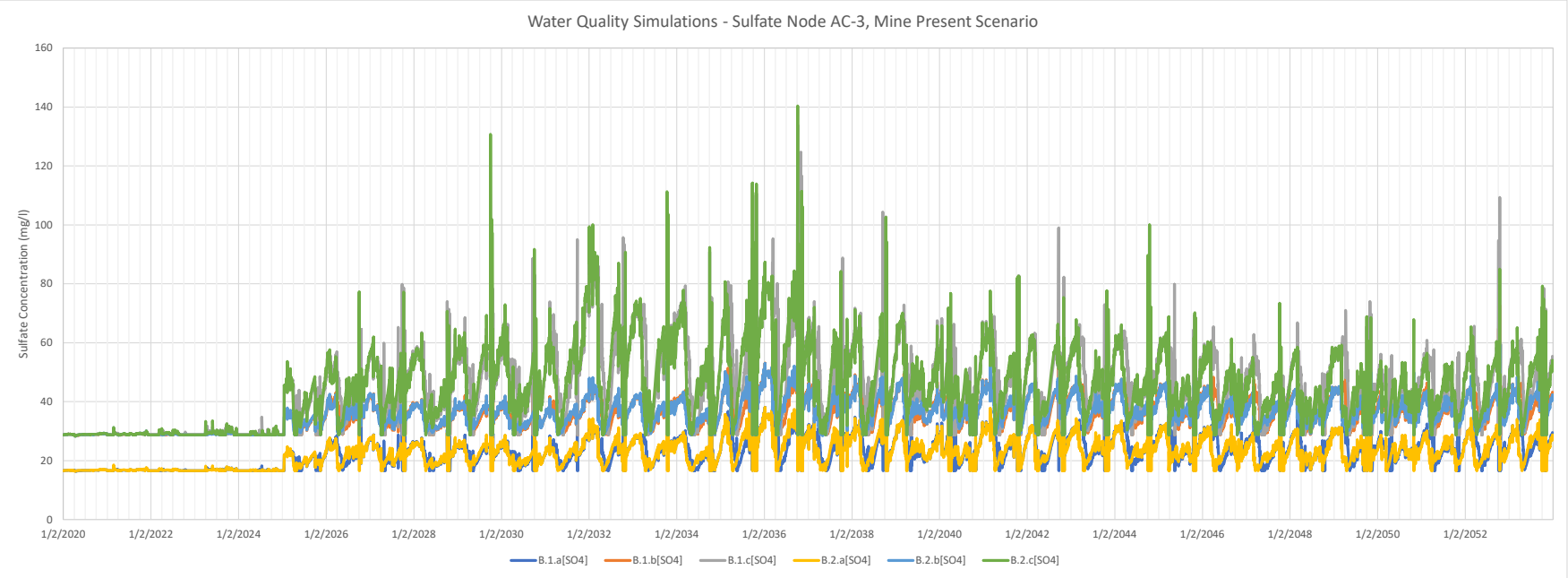
# Node AC-3 : Mine Present Scenarios

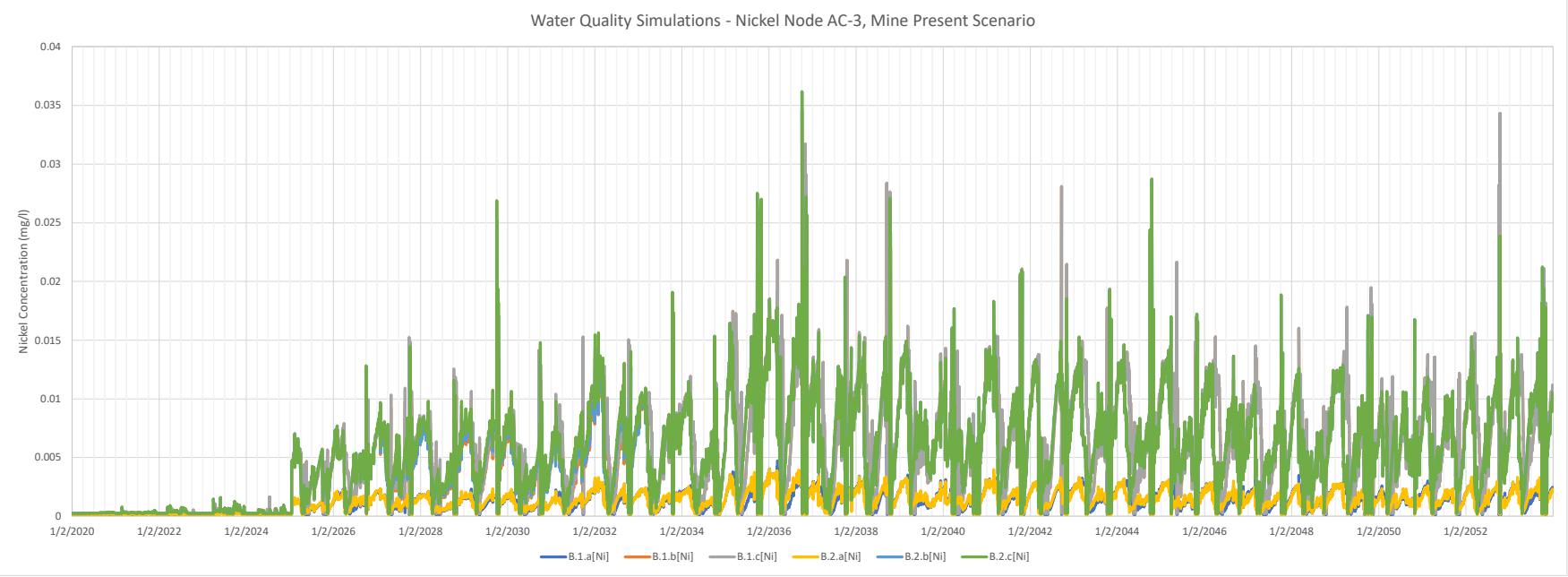

Water Quality Simulations - Hardness Node AC-3, Mine Present Scenario
Hardness Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

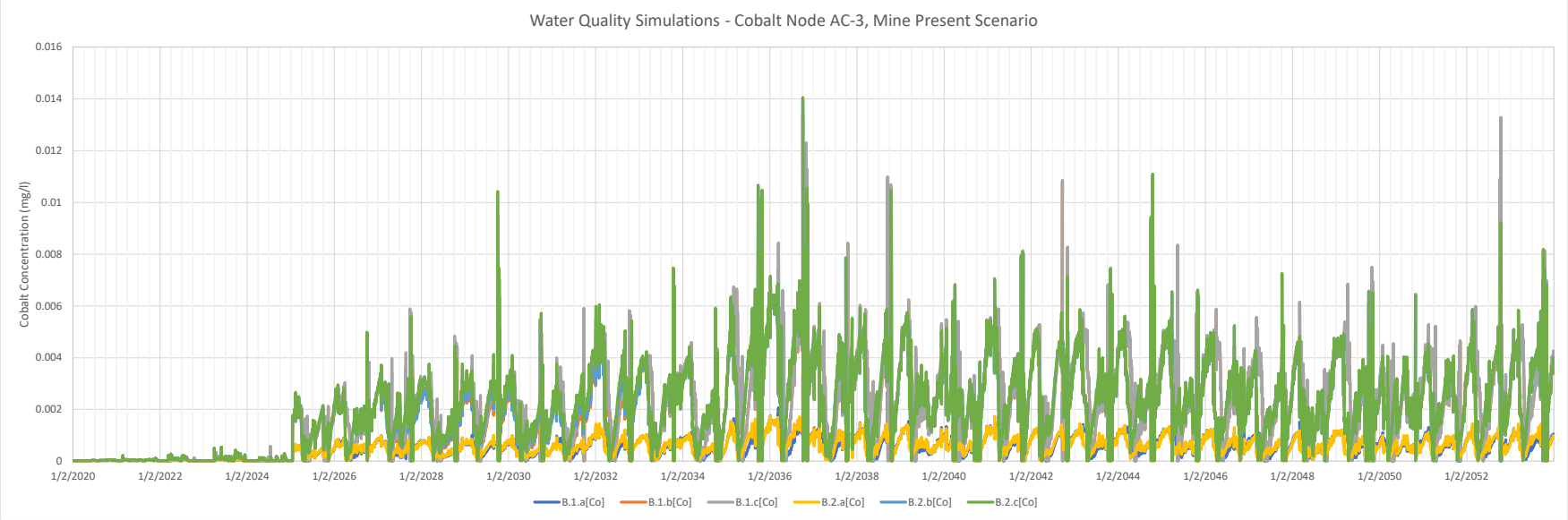

Water Quality Simulations - Selenium Node AC-3, Mine Present Scenario
Selenium Concentration (mg/l)
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node AC-3, Mine Present Scenario
Cadmium Concentration (mg/l)
0.0003
0.00025
0.0002
0.00015
0.0001
0.00005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

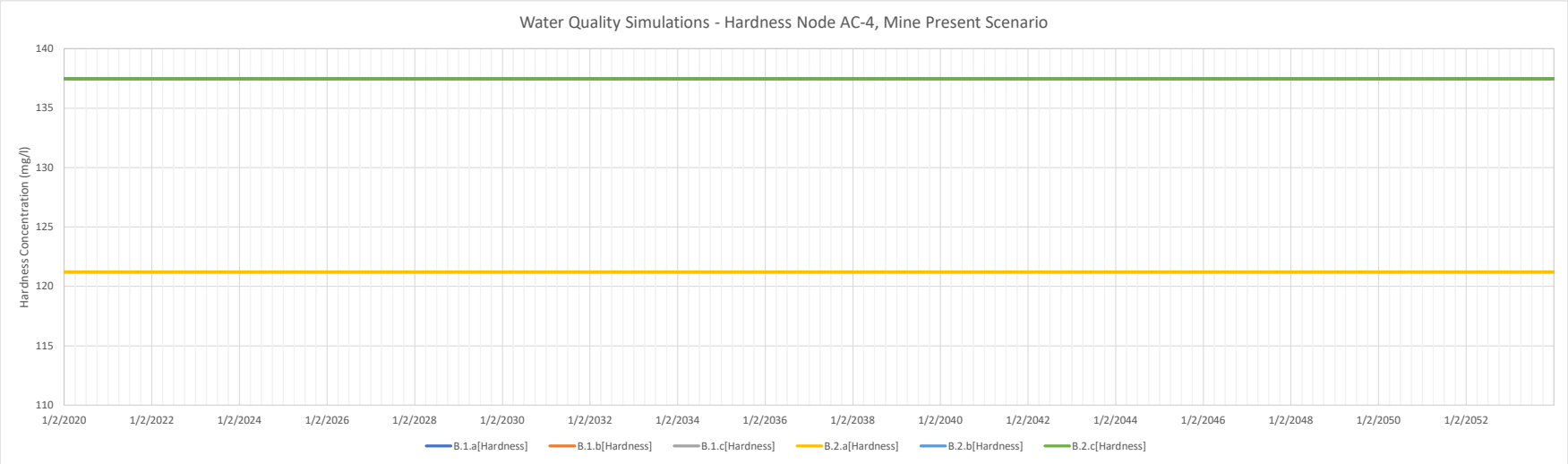

Water Quality Simulations - Nitrate Node AC-3, Mine Present Scenario
Nitrate Concentration (mg/l)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

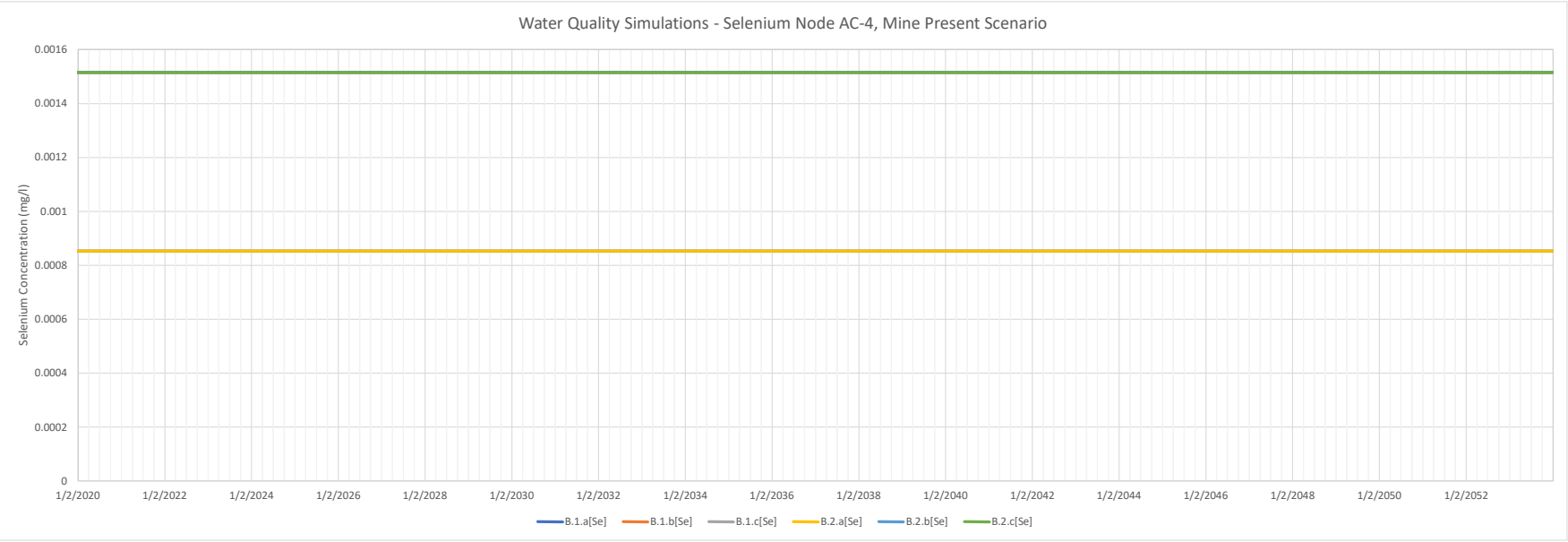

Water Quality Simulations - Sulfate Node AC-3, Mine Present Scenario
Sulfate Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

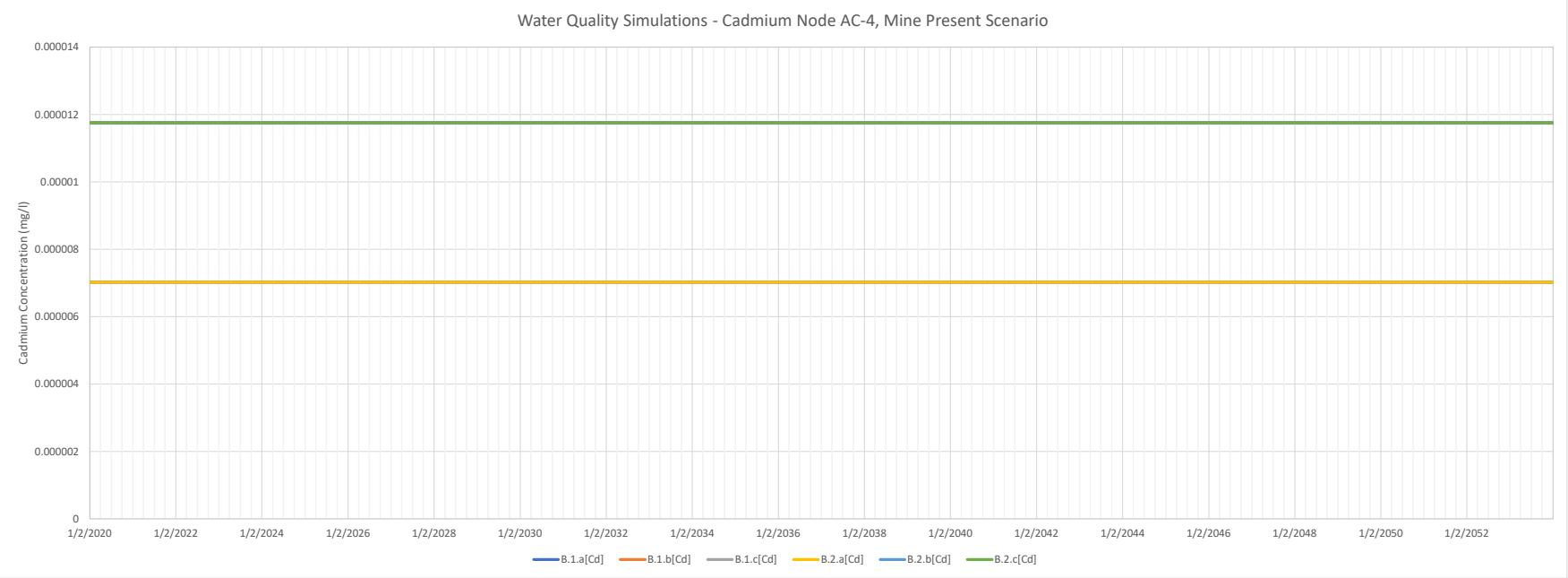

Water Quality Simulations - Nickel Node AC-3, Mine Present Scenario
Nickel Concentration (mg/l)
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

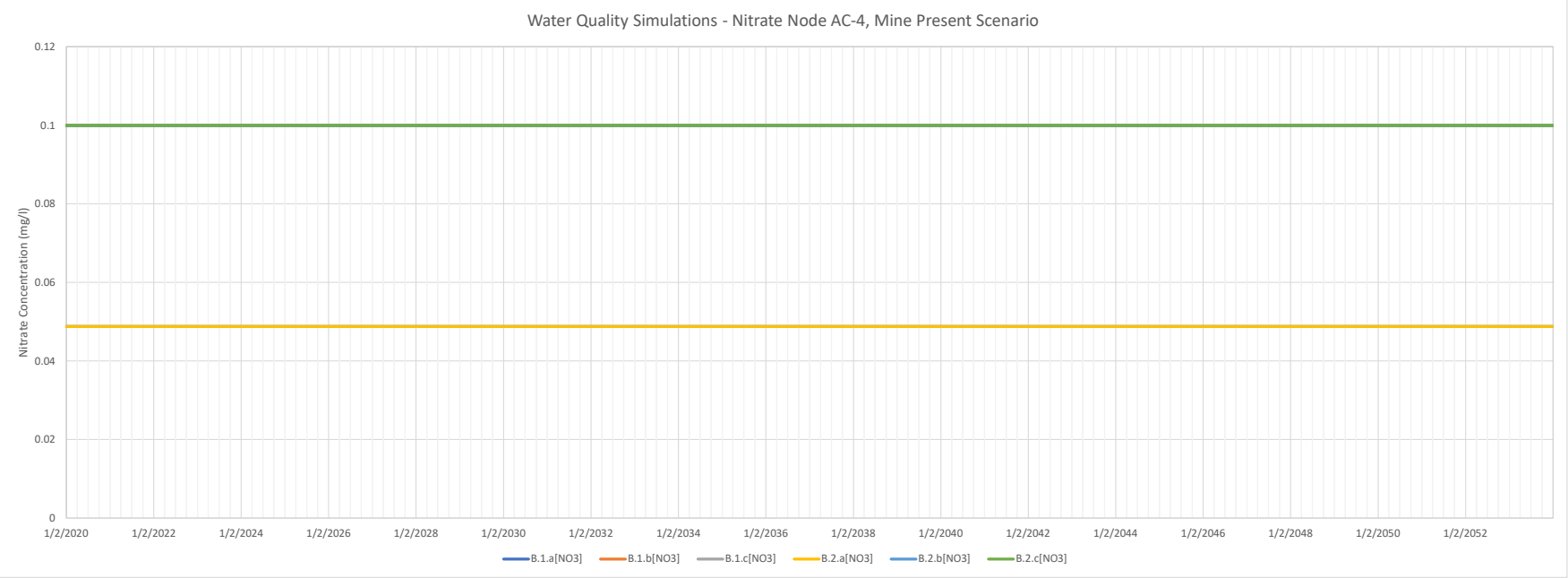

Water Quality Simulations - Cobalt Node AC-3, Mine Present Scenario
Cobalt Concentration (mg/l)
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

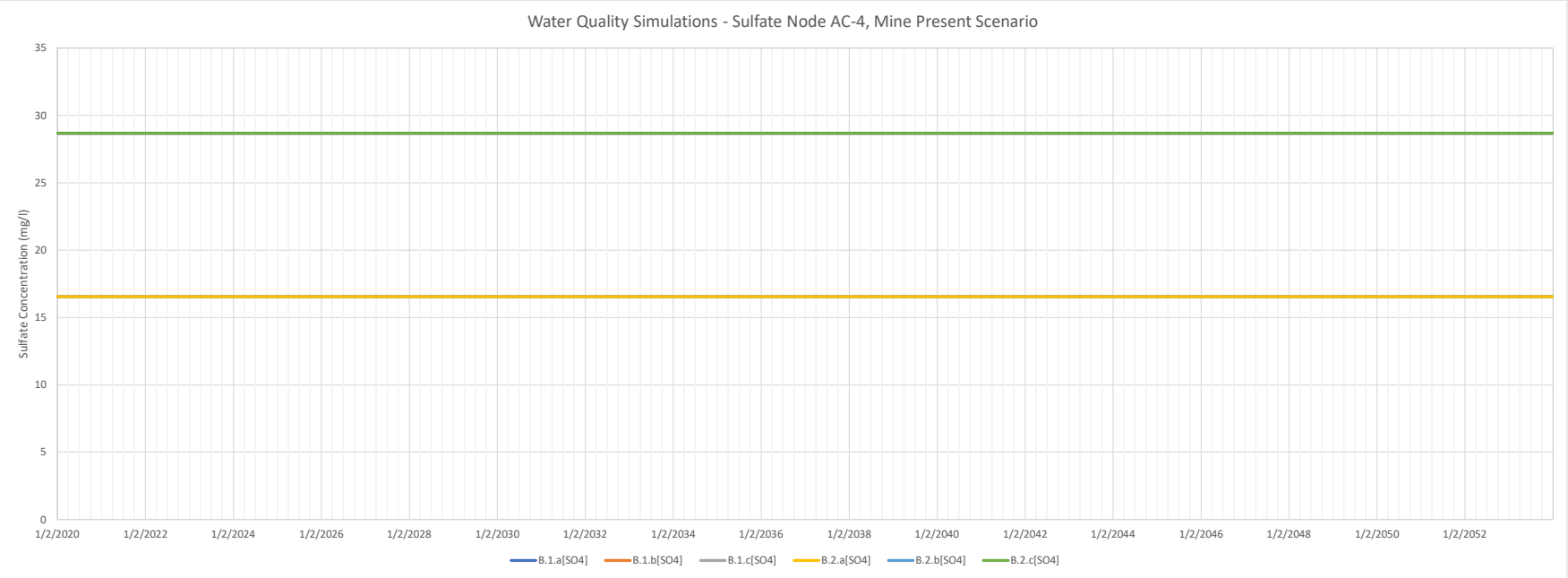
# Node AC-4 : Mine Present Scenarios

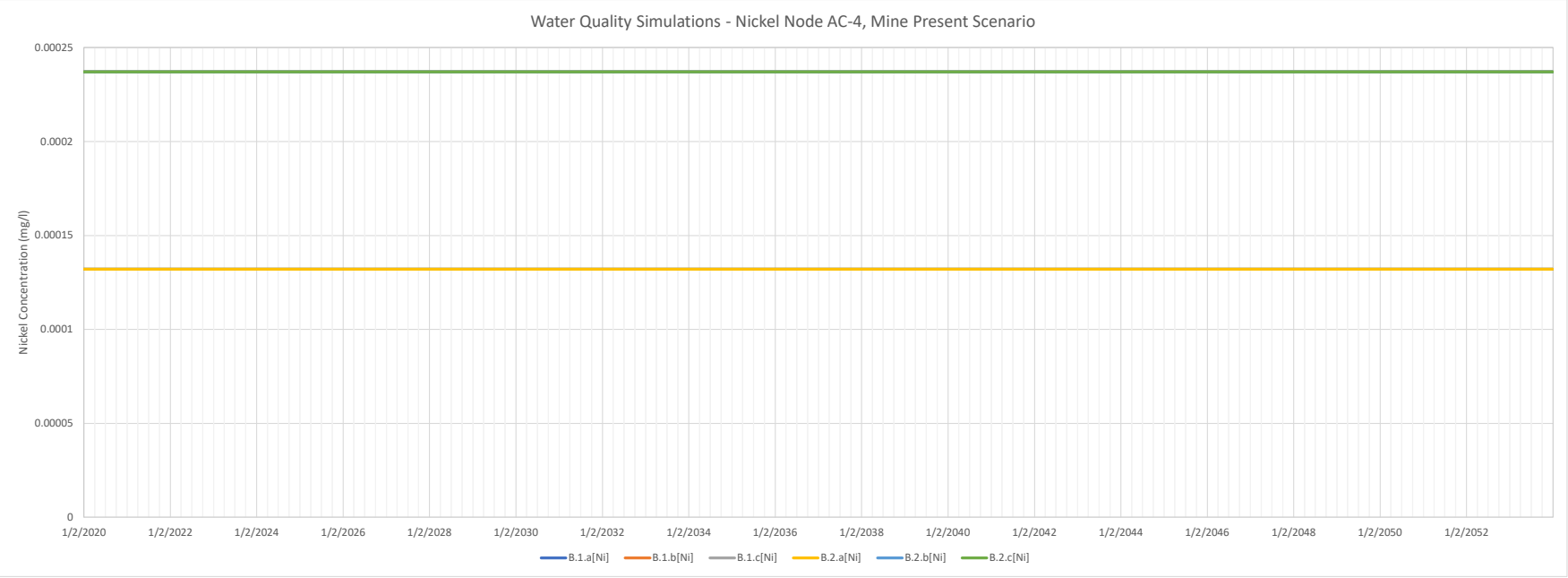

Water Quality Simulations - Hardness Node AC-4, Mine Present Scenario
Hardness Concentration (mg/l)
140
135
130
125
120
115
110
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

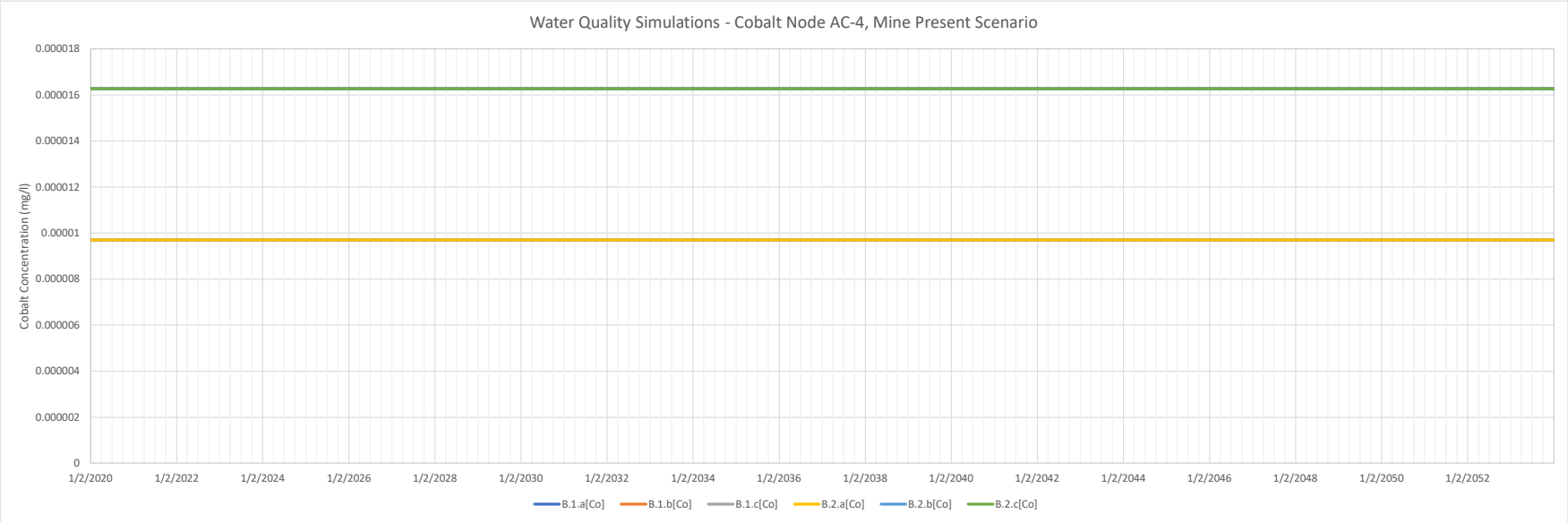

Water Quality Simulations - Selenium Node AC-4, Mine Present Scenario
Selenium Concentration (mg/l)
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node AC-4, Mine Present Scenario
Cadmium Concentration (mg/l)
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

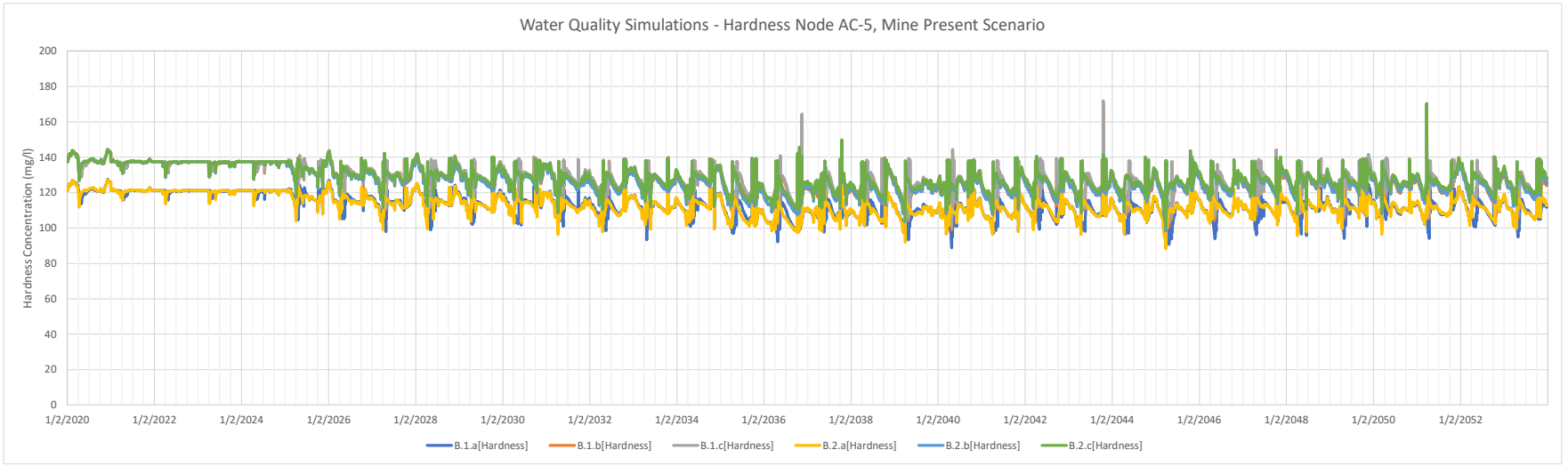

Water Quality Simulations - Nitrate Node AC-4, Mine Present Scenario
Nitrate Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

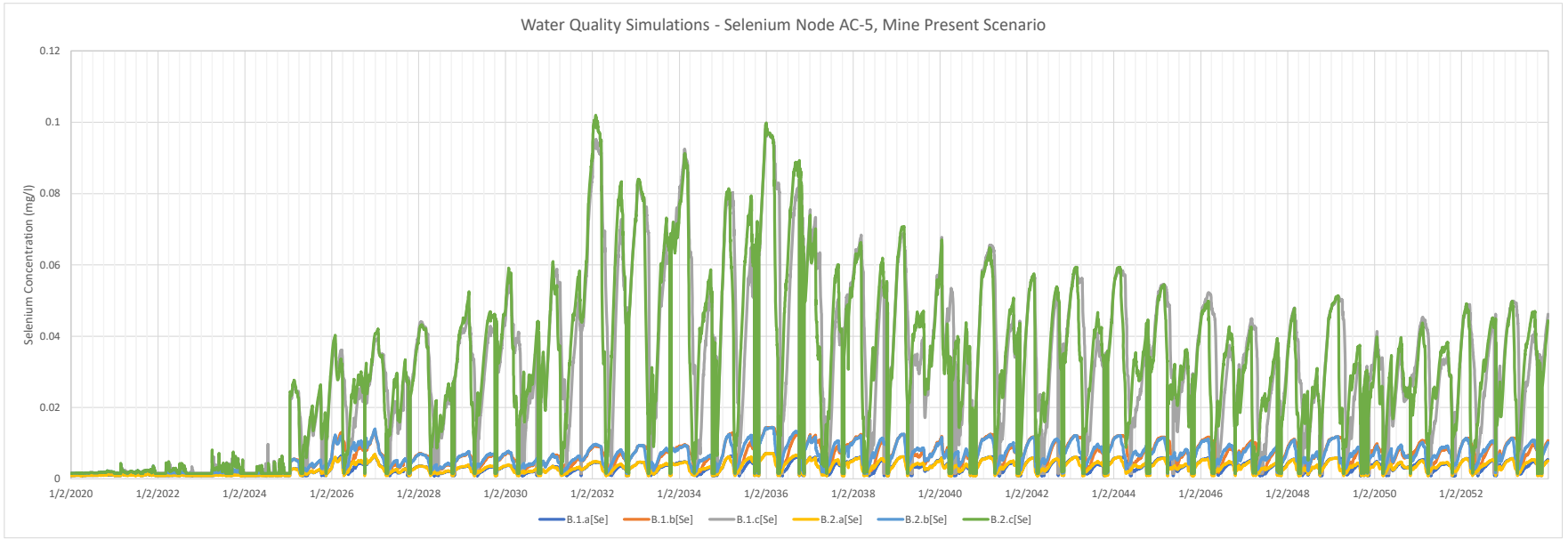

Water Quality Simulations - Sulfate Node AC-4, Mine Present Scenario
Sulfate Concentration (mg/l)
35
30
25
20
15
10
5
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

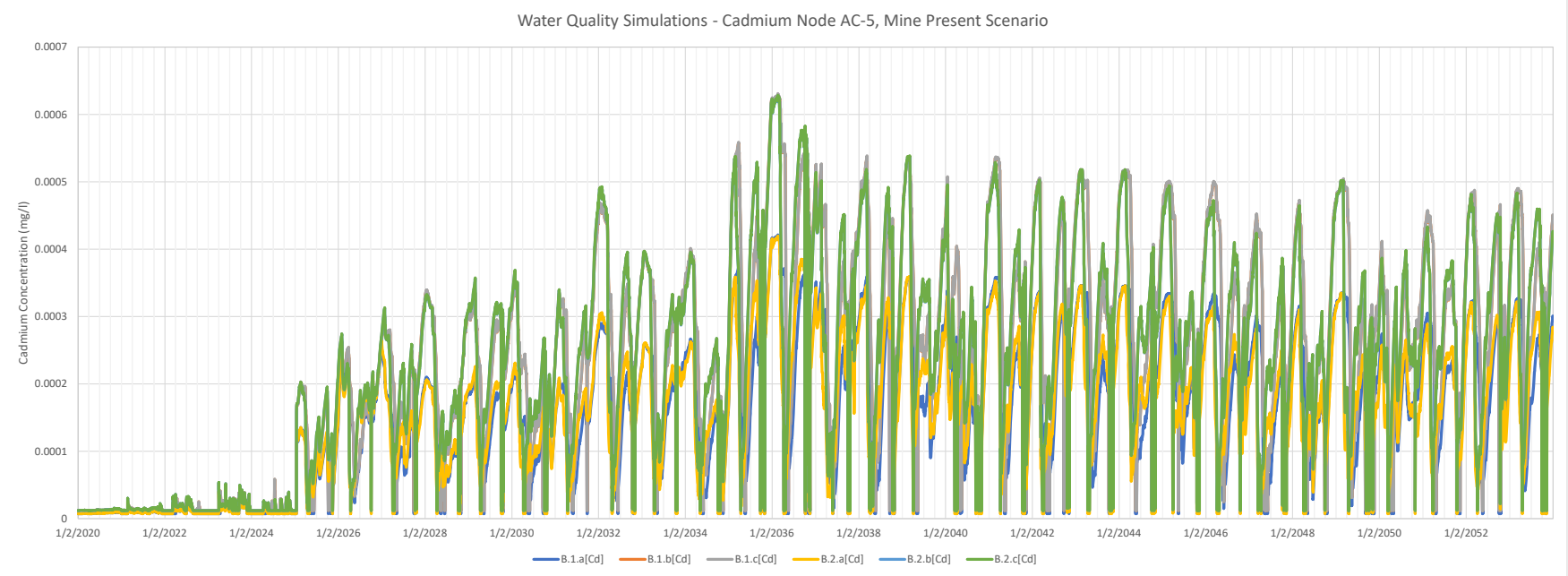

Water Quality Simulations - Nickel Node AC-4, Mine Present Scenario
Nickel Concentration (mg/l)
0.00025
0.0002
0.00015
0.0001
0.00005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

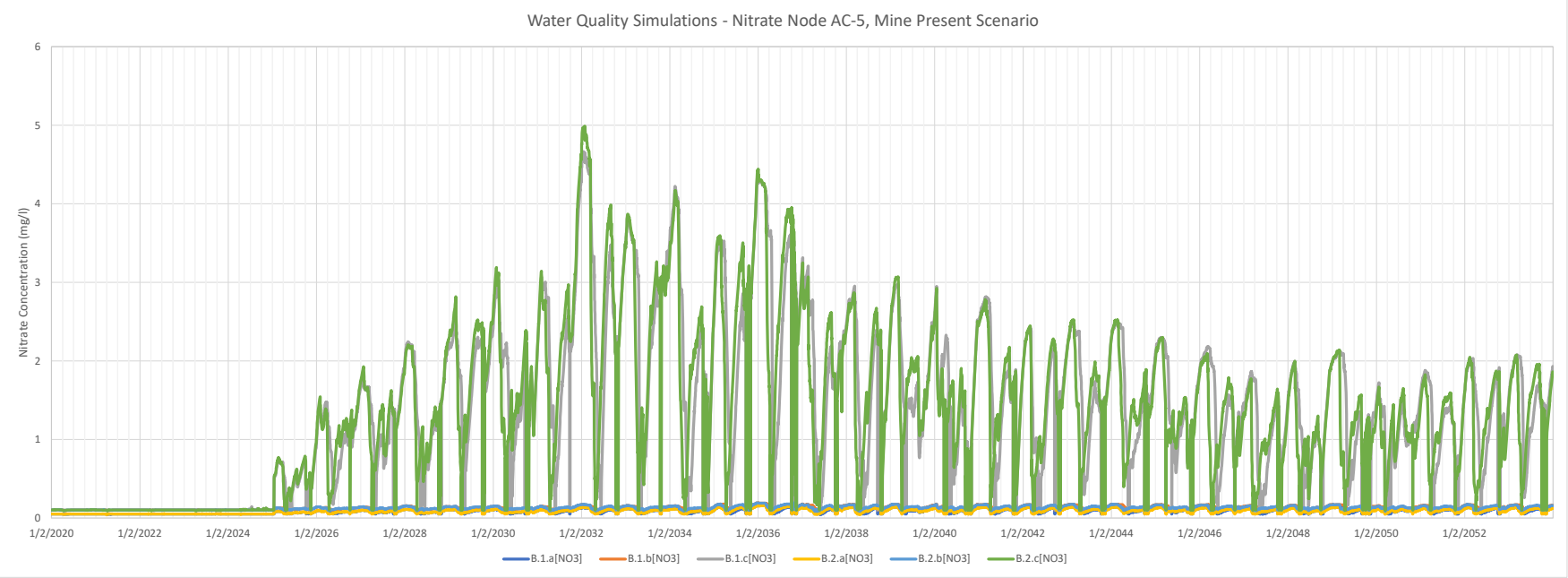

Water Quality Simulations - Cobalt Node AC-4, Mine Present Scenario
Cobalt Concentration (mg/l)
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

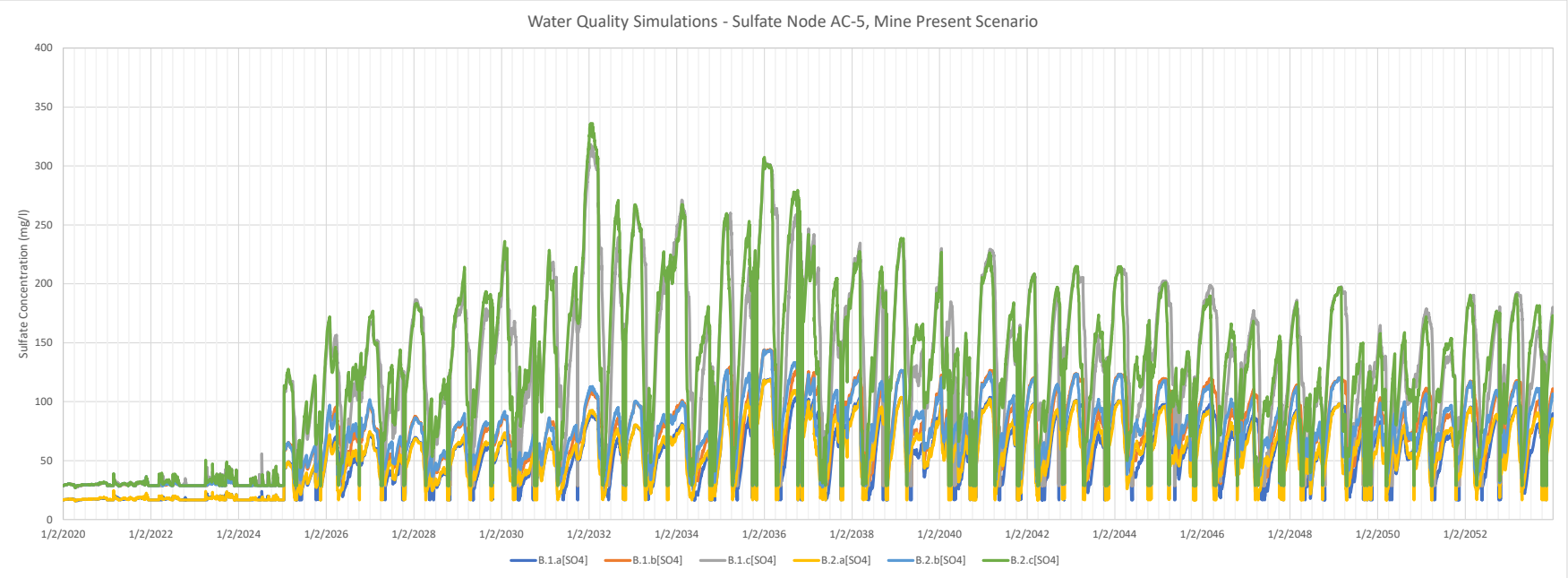
# Node AC-5 : Mine Present Scenarios

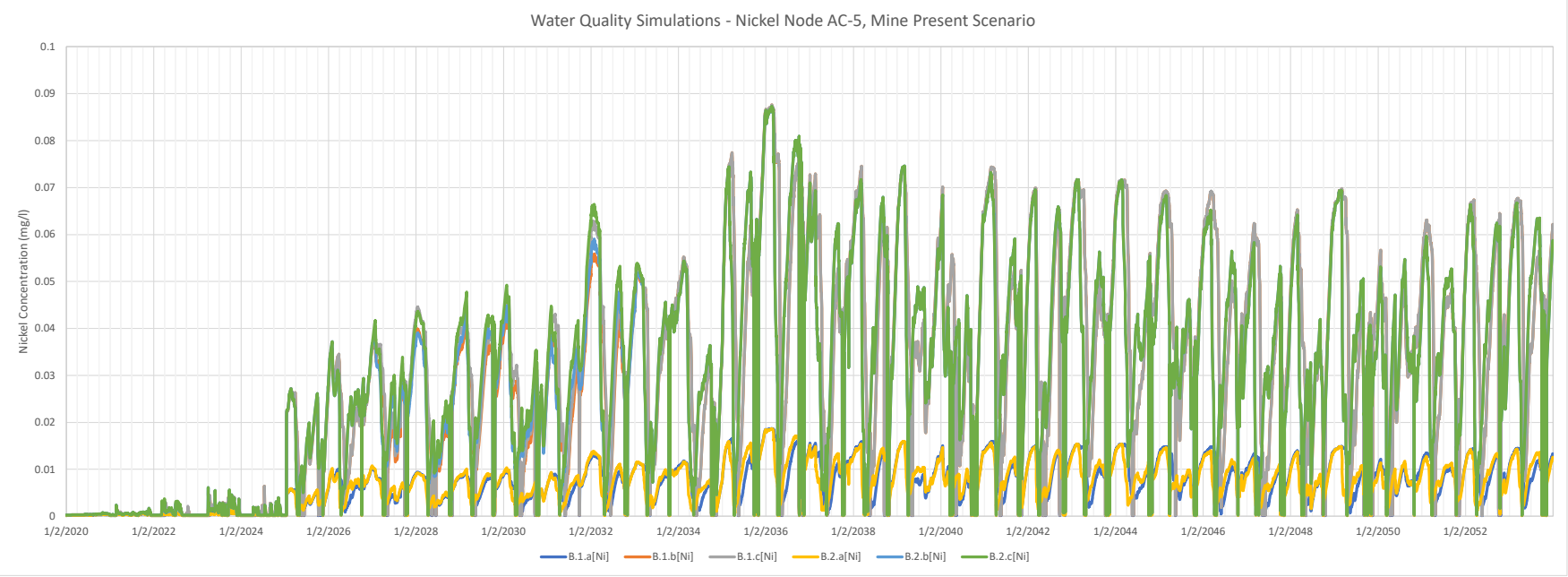

Water Quality Simulations - Hardness Node AC-5, Mine Present Scenario
Hardness Concentration (mg/l)
200
180
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

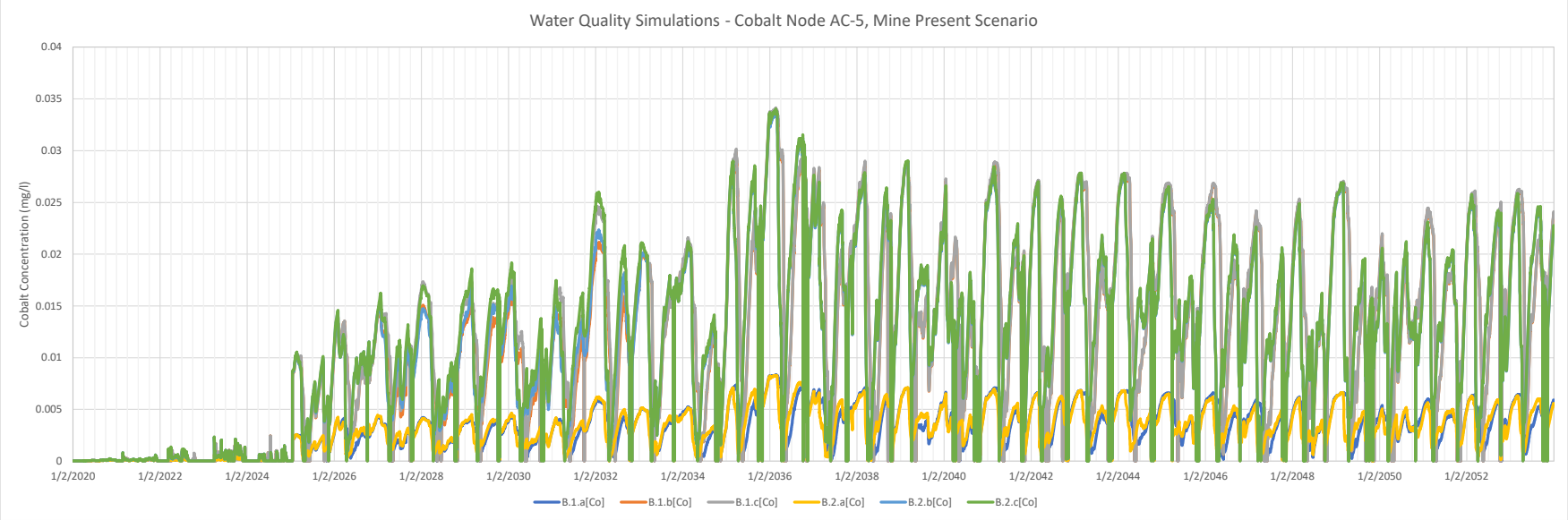

Water Quality Simulations - Selenium Node AC-5, Mine Present Scenario
Selenium Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node AC-5, Mine Present Scenario
Cadmium Concentration (mg/l)
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

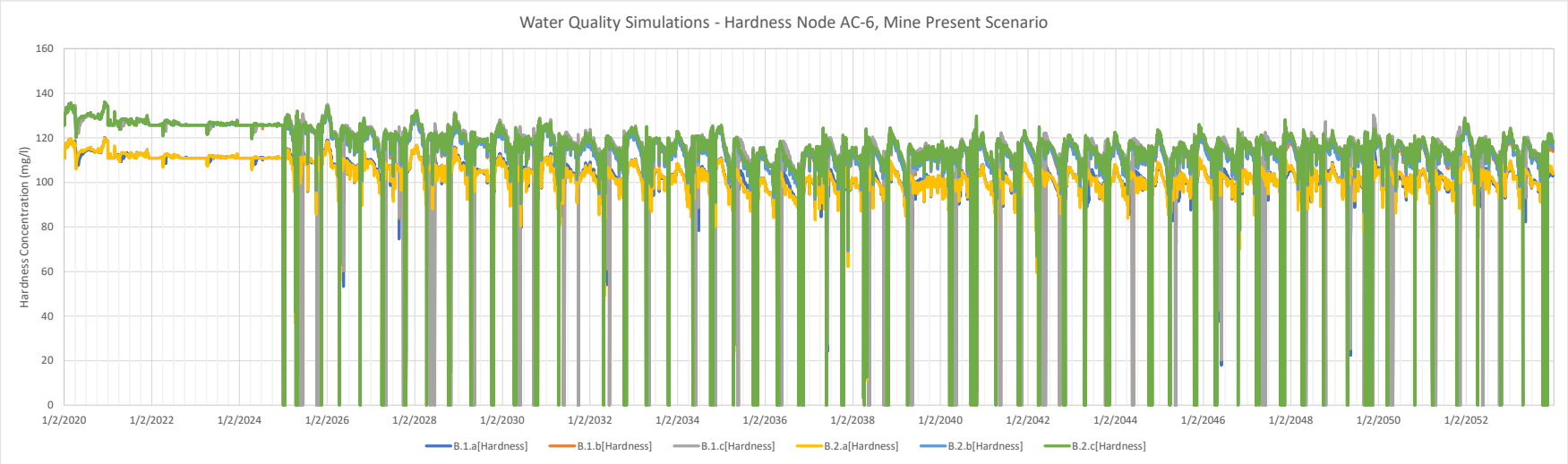

Water Quality Simulations - Nitrate Node AC-5, Mine Present Scenario
Nitrate Concentration (mg/l)
6
5
4
3
2
1
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

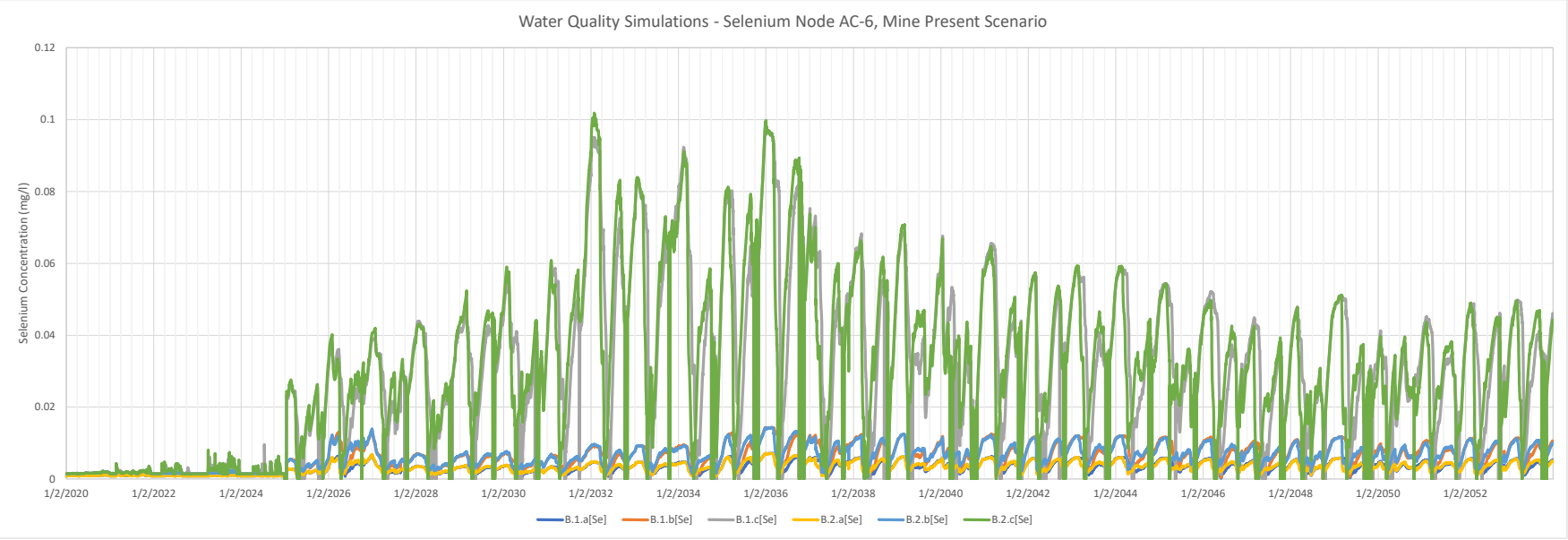

Water Quality Simulations - Sulfate Node AC-5, Mine Present Scenario
Sulfate Concentration (mg/l)
400
350
300
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

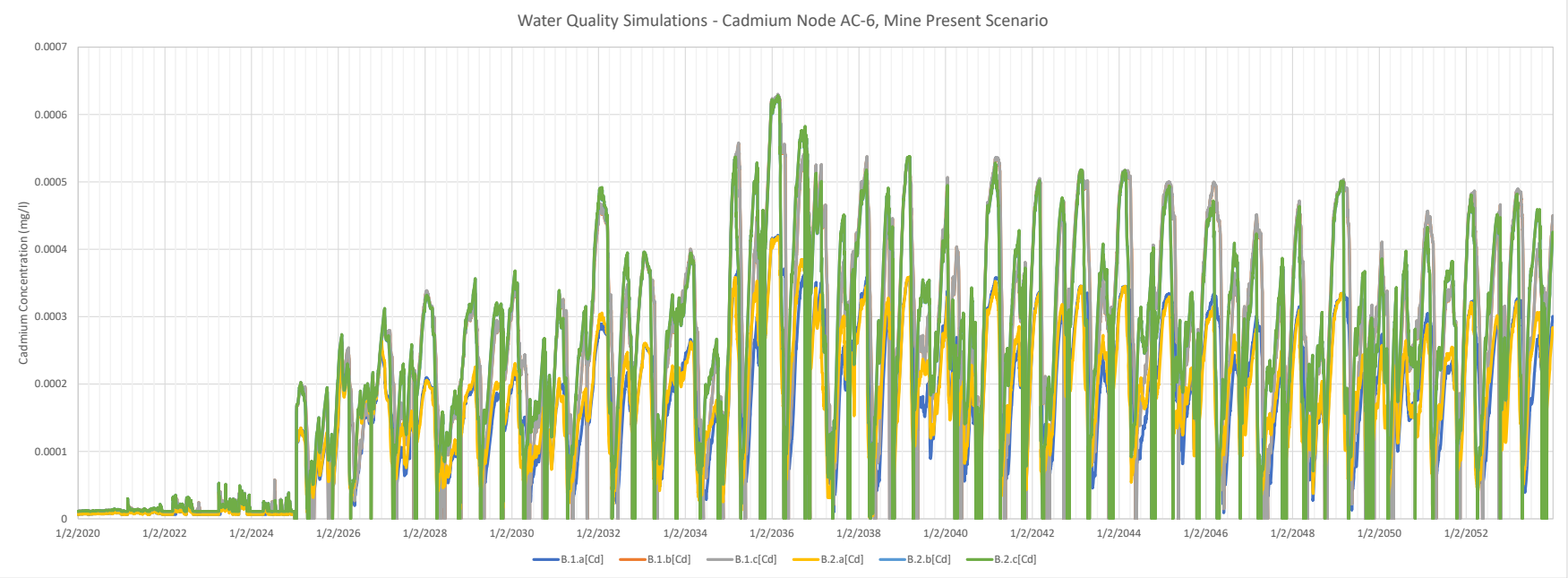

Water Quality Simulations - Nickel Node AC-5, Mine Present Scenario
Nickel Concentration (mg/l)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

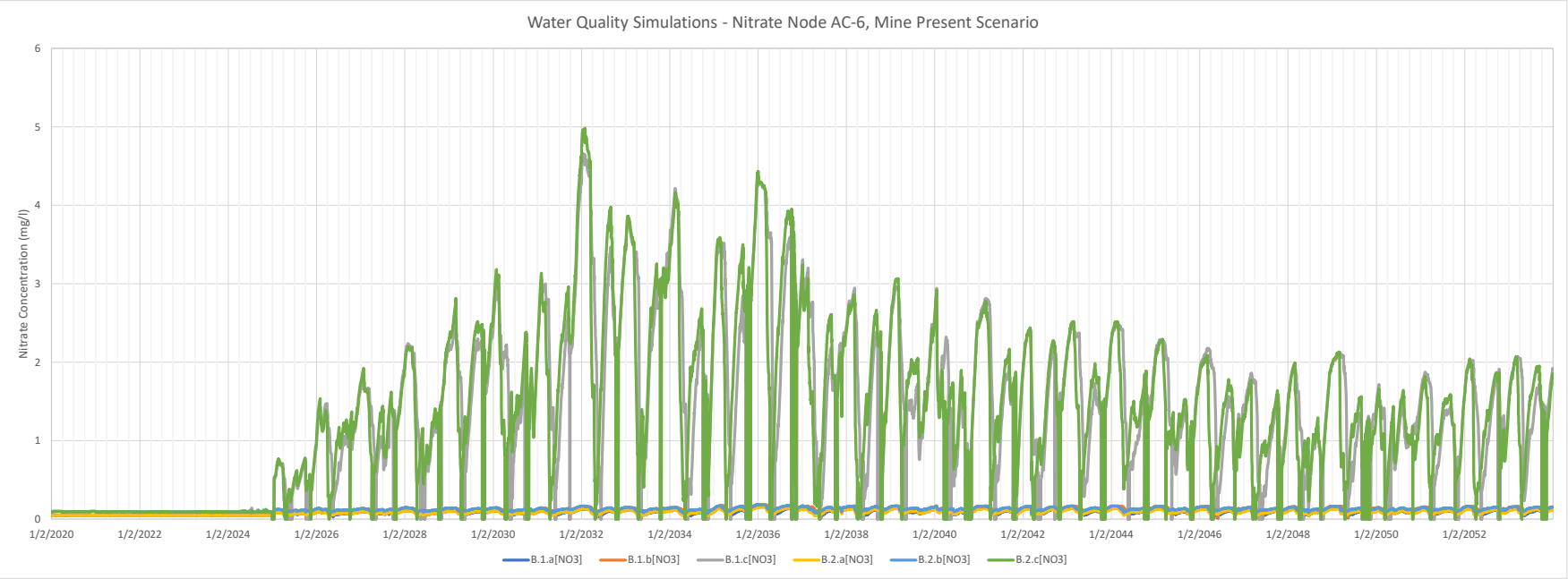

Water Quality Simulations - Cobalt Node AC-5, Mine Present Scenario
Cobalt Concentration (mg/l)
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

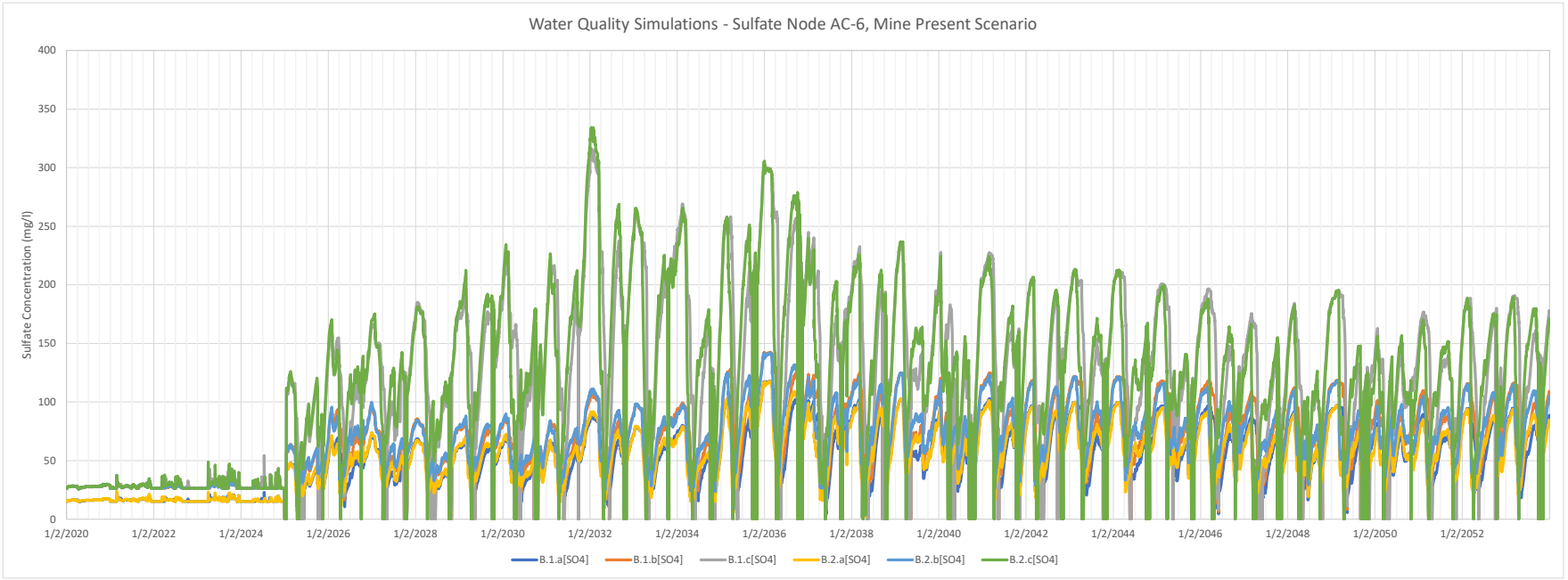
# Node AC-6 : Mine Present Scenarios

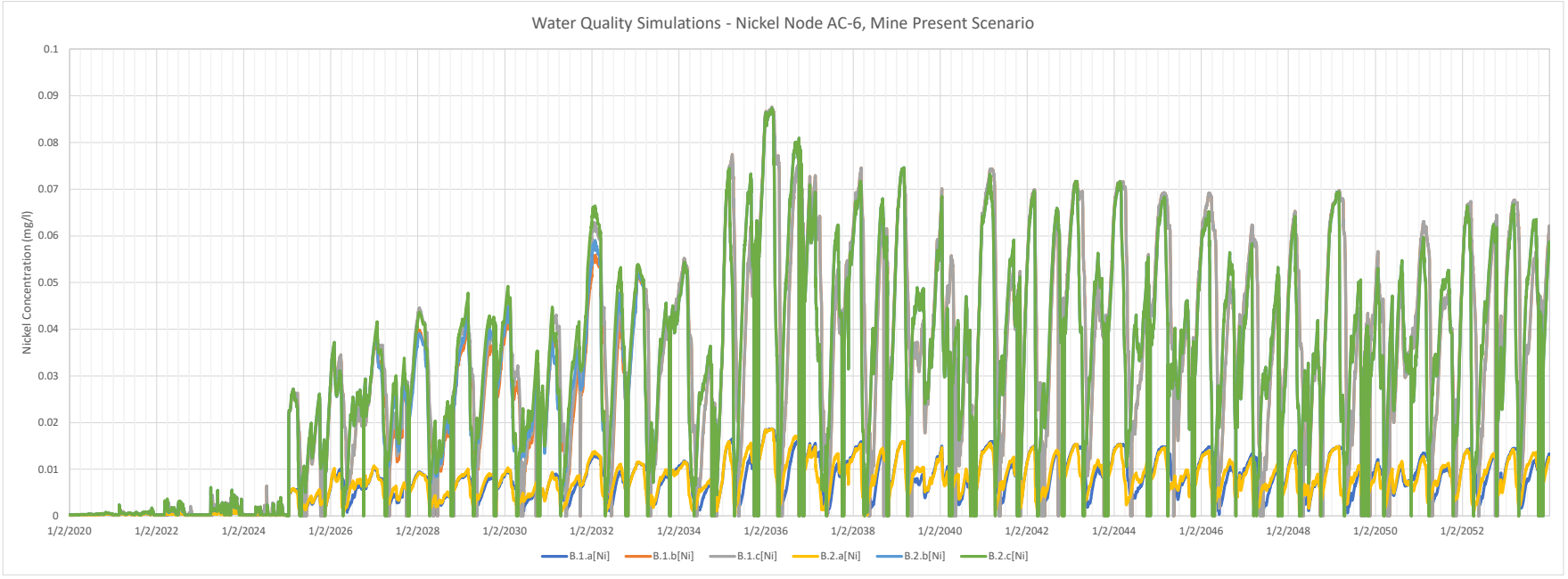

Water Quality Simulations - Hardness Node AC-6, Mine Present Scenario
Hardness Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

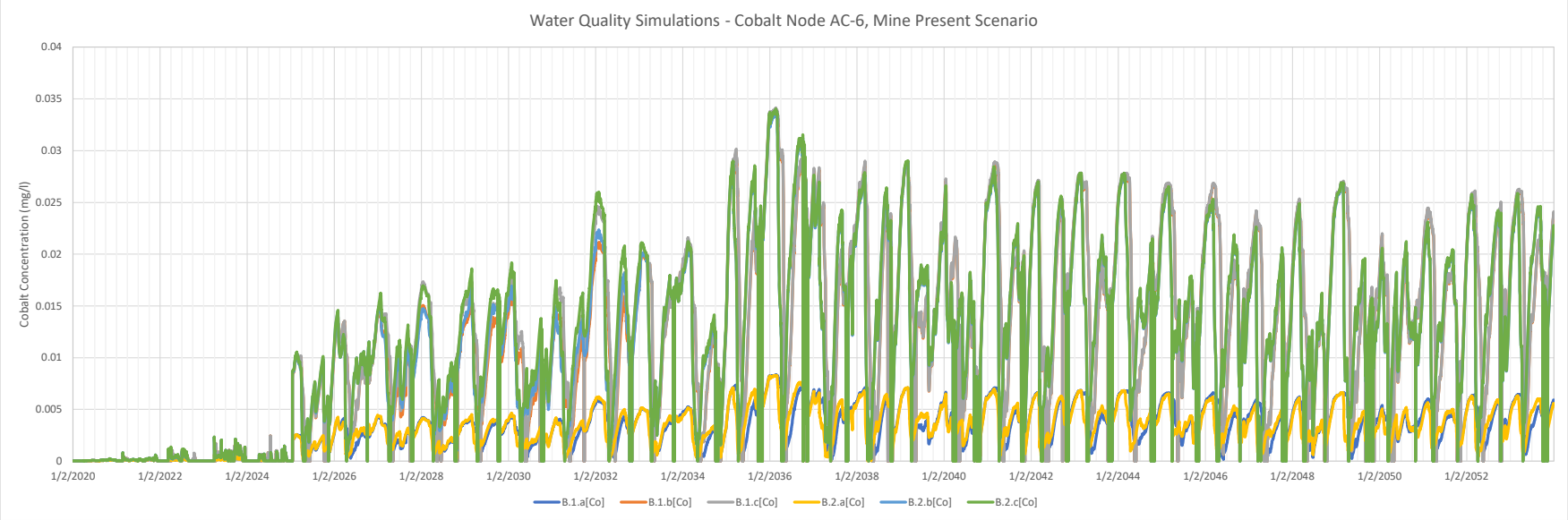

Water Quality Simulations - Selenium Node AC-6, Mine Present Scenario
Selenium Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node AC-6, Mine Present Scenario
Cadmium Concentration (mg/l)
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

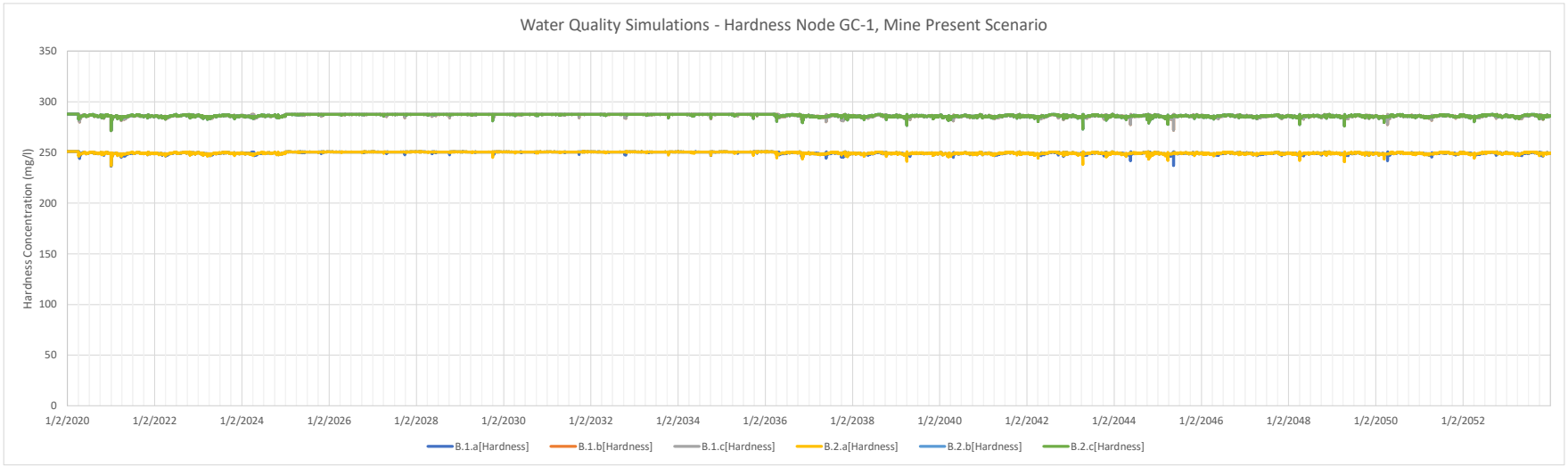

Water Quality Simulations - Nitrate Node AC-6, Mine Present Scenario
Nitrate Concentration (mg/l)
6
5
4
3
2
1
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

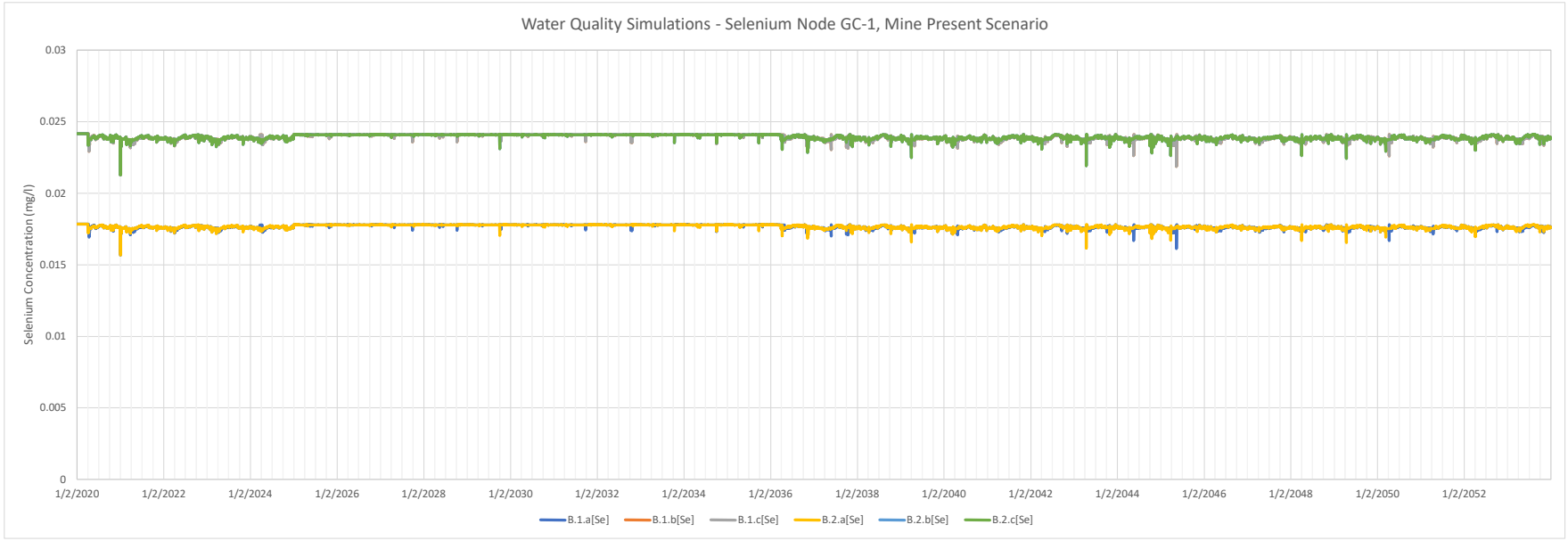

Water Quality Simulations - Sulfate Node AC-6, Mine Present Scenario
Sulfate Concentration (mg/l)
400
350
300
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

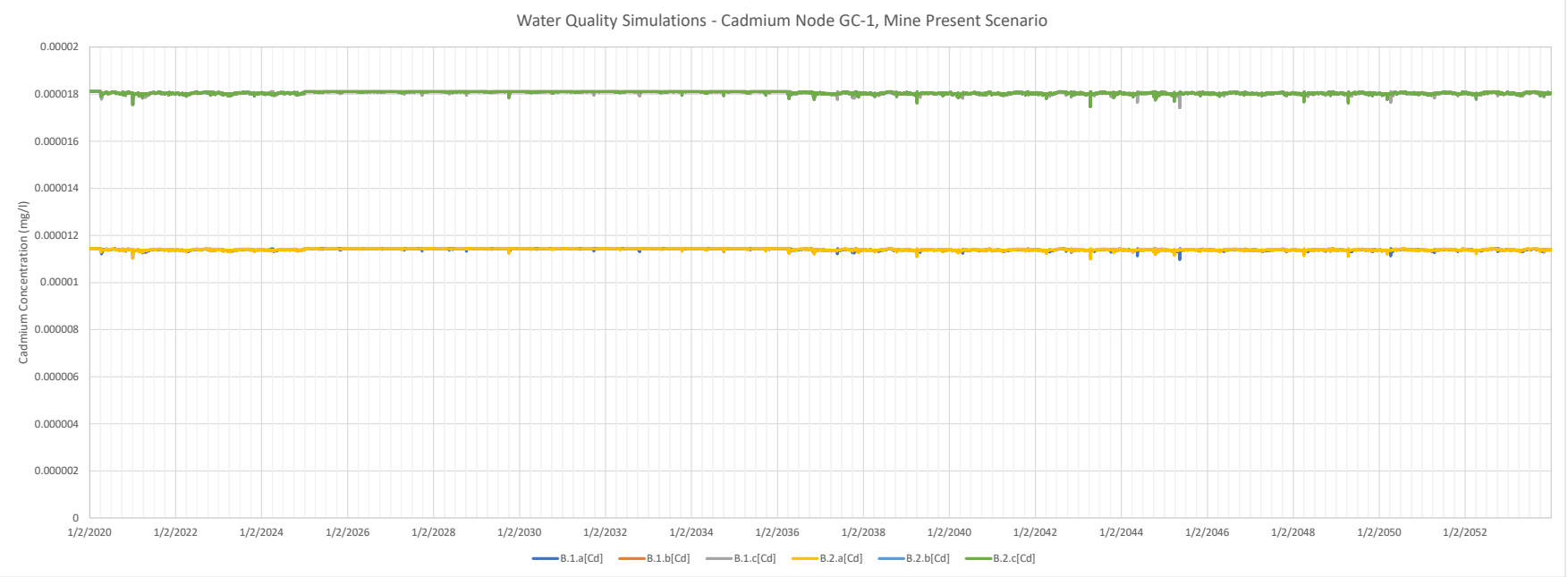

Water Quality Simulations - Nickel Node AC-6, Mine Present Scenario
Nickel Concentration (mg/l)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

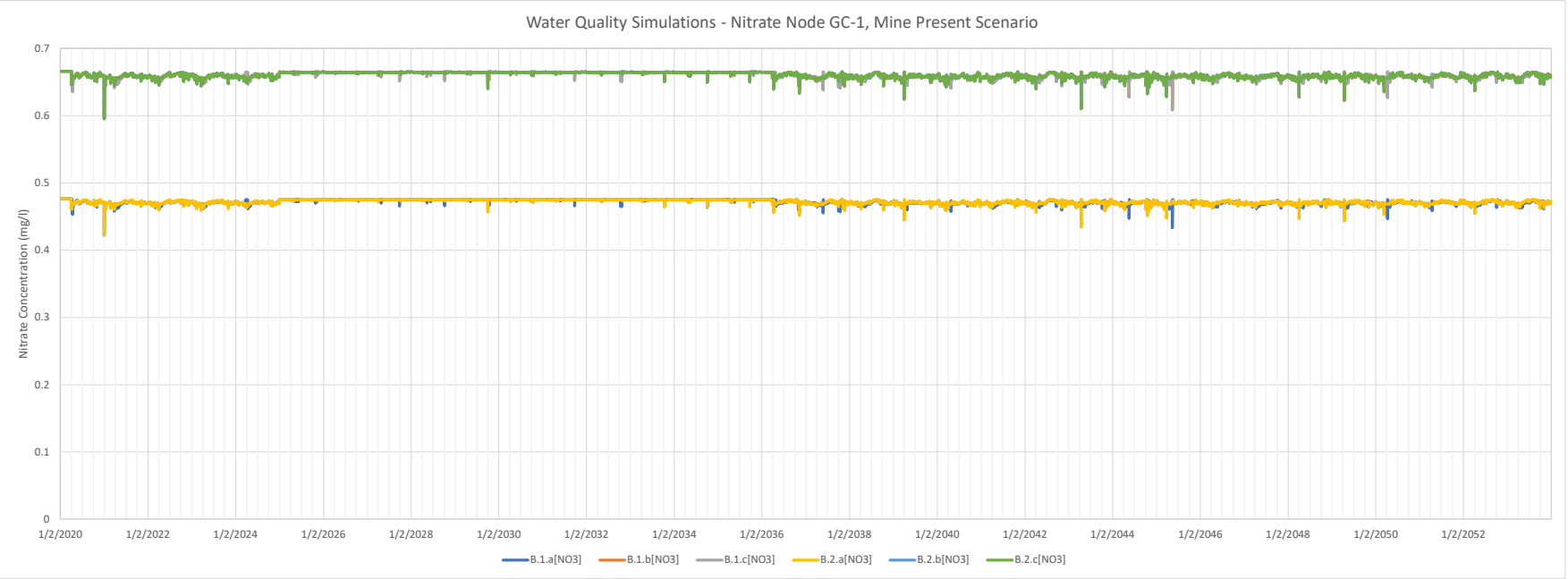

Water Quality Simulations - Cobalt Node AC-6, Mine Present Scenario
Cobalt Concentration (mg/l)
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

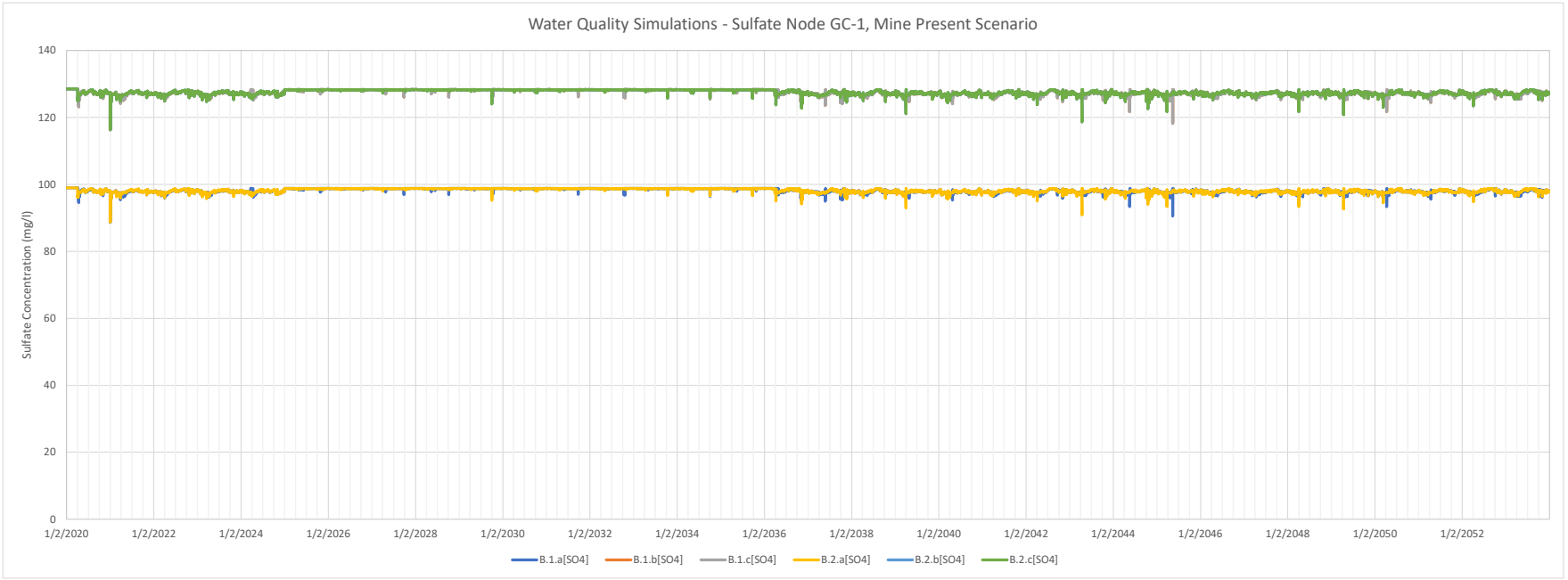
# Node GC-1 : Mine Present Scenarios

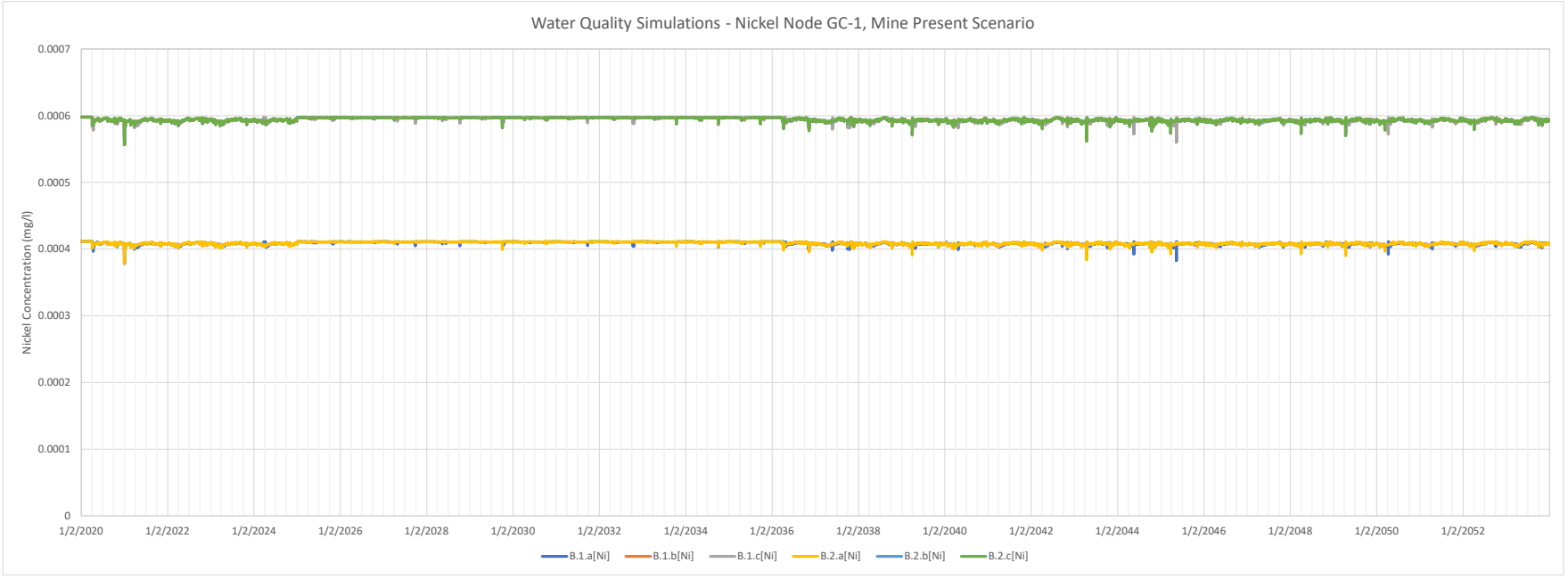

Water Quality Simulations - Hardness Node GC-1, Mine Present Scenario
Hardness Concentration (mg/l)
350
300
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

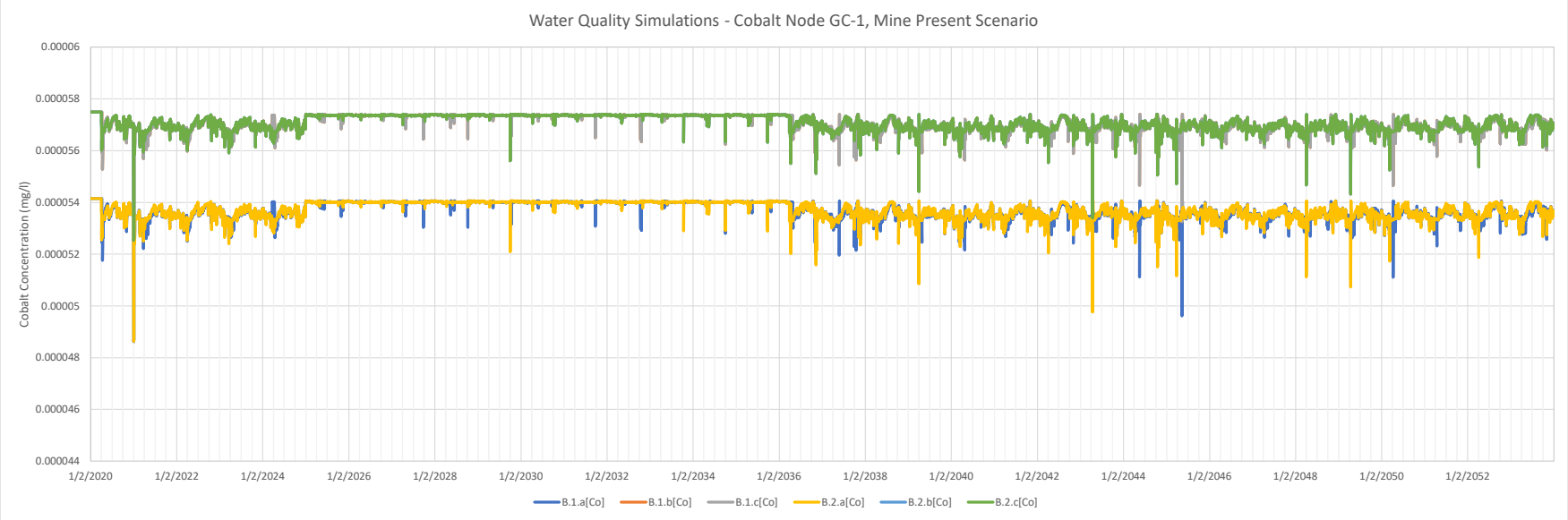

Water Quality Simulations - Selenium Node GC-1, Mine Present Scenario
Selenium Concentration (mg/l)
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-1, Mine Present Scenario
Cadmium Concentration (mg/l)
0.00002
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

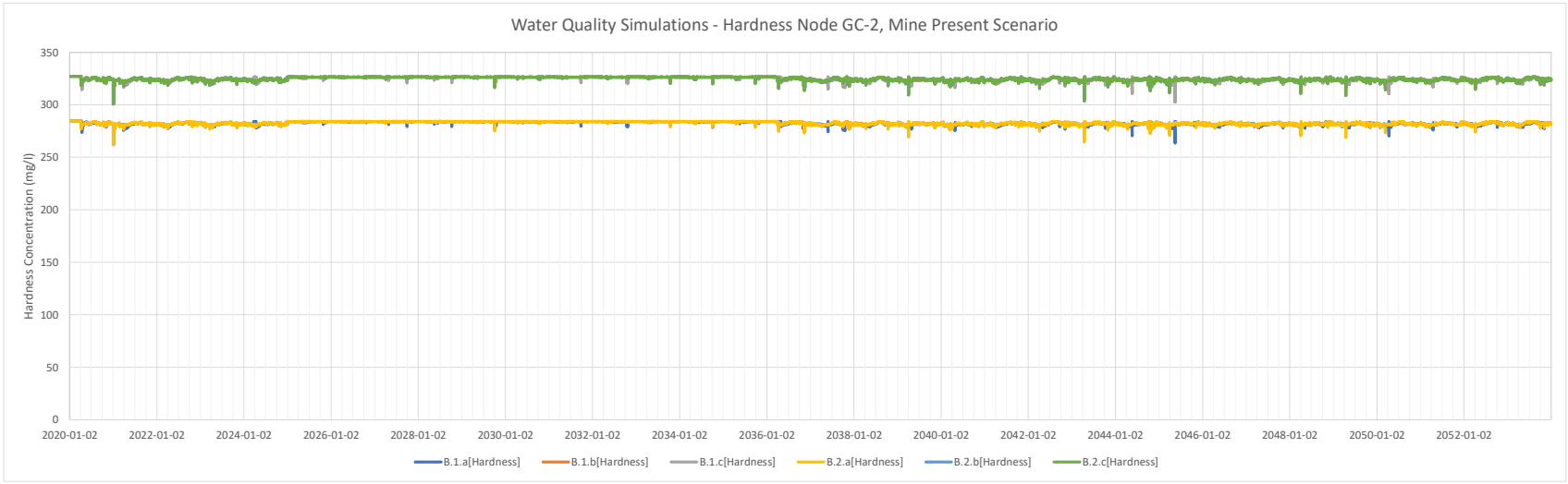

Water Quality Simulations - Nitrate Node GC-1, Mine Present Scenario
Nitrate Concentration (mg/l)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

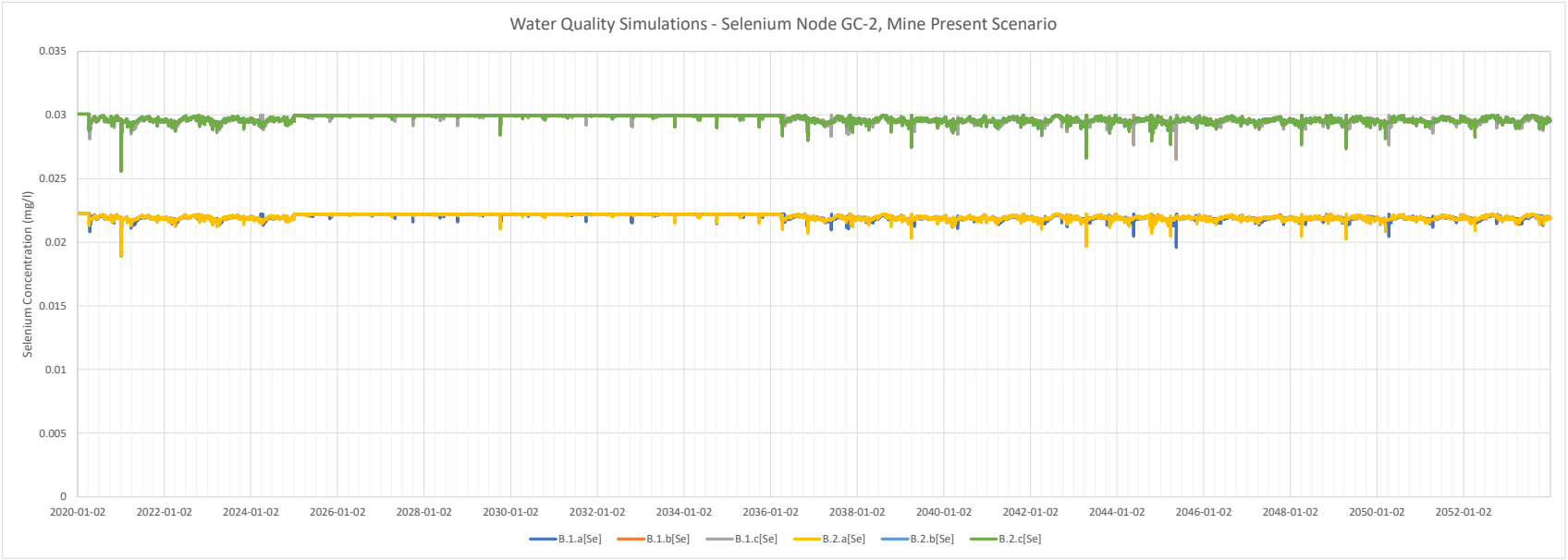

Water Quality Simulations - Sulfate Node GC-1, Mine Present Scenario
Sulfate Concentration (mg/l)
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

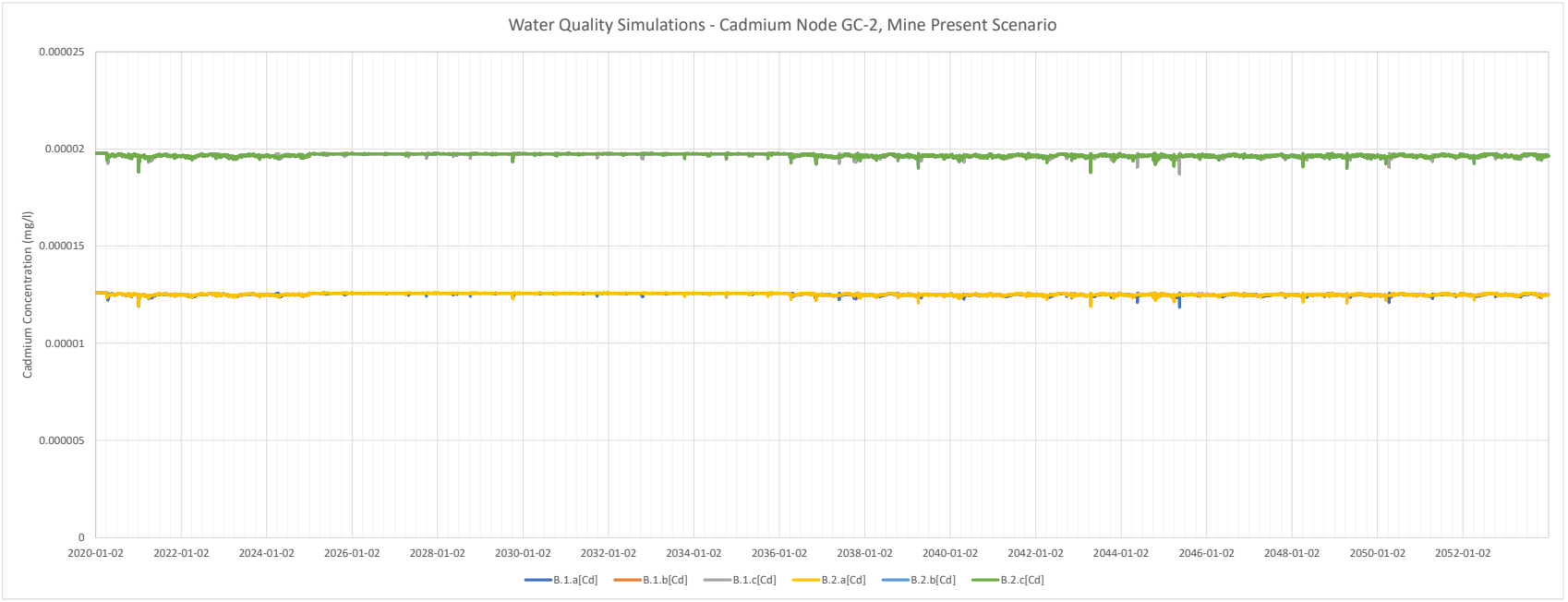

Water Quality Simulations - Nickel Node GC-1, Mine Present Scenario
Nickel Concentration (mg/l)
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

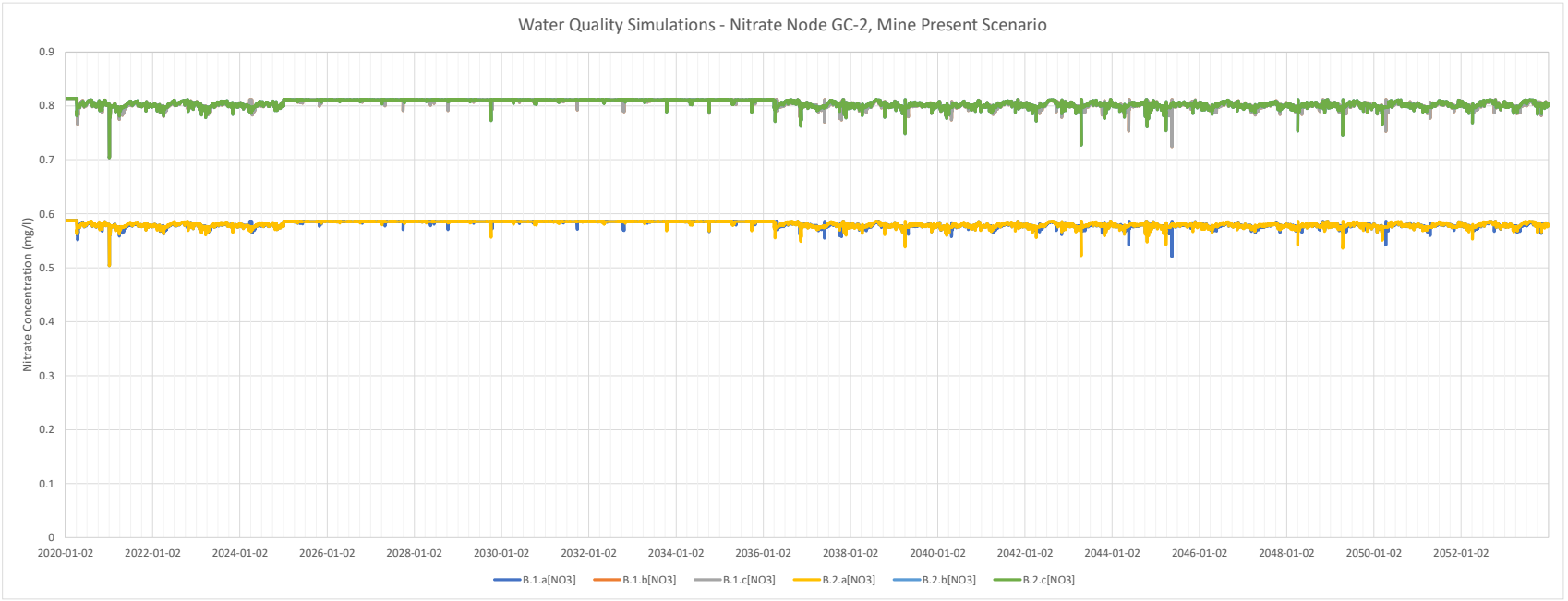

Water Quality Simulations - Cobalt Node GC-1, Mine Present Scenario
Cobalt Concentration (mg/l)
0.00006
0.000058
0.000056
0.000054
0.000052
0.00005
0.000048
0.000046
0.000044
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

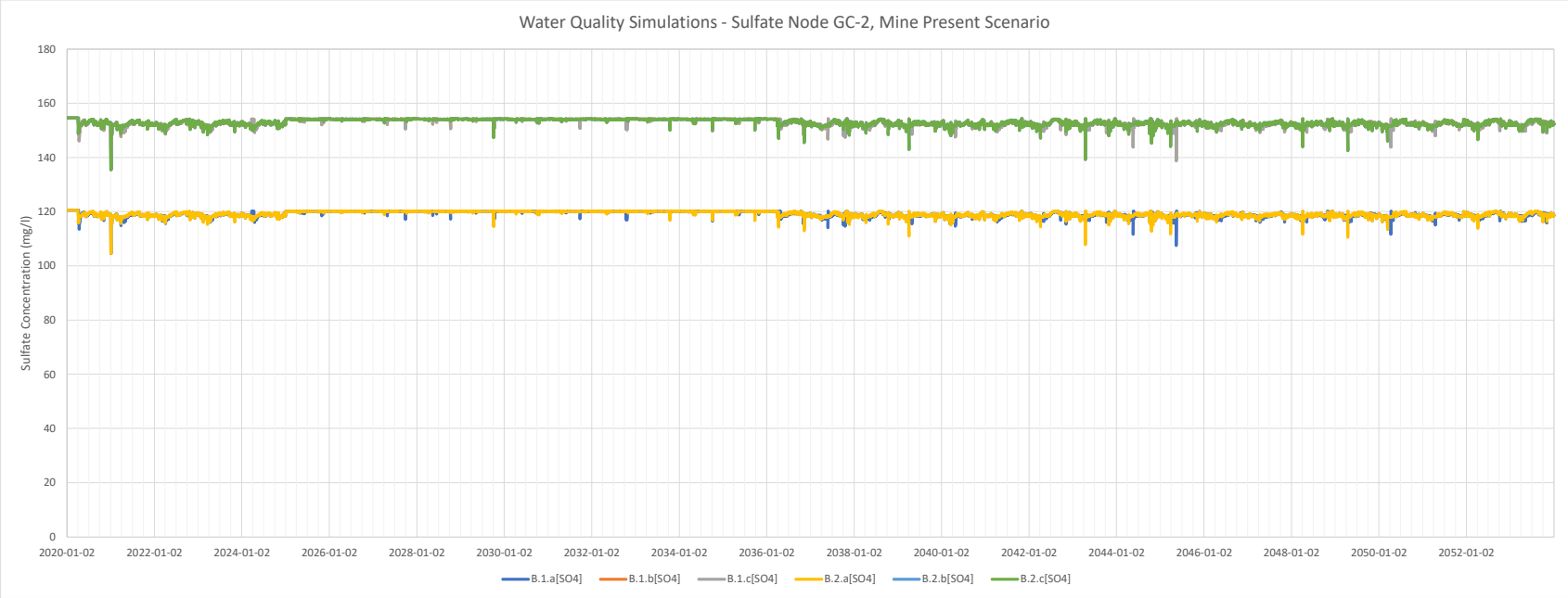
# Node GC-2 : Mine Present Scenarios

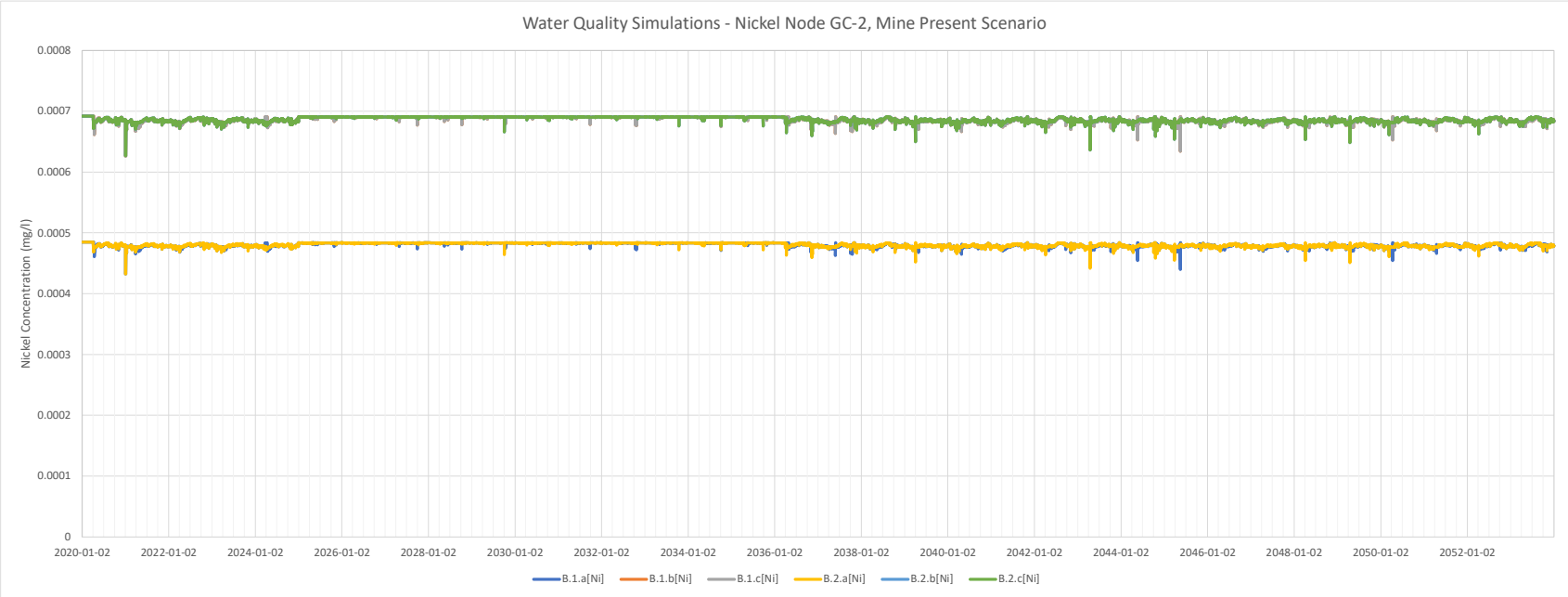

Water Quality Simulations - Hardness Node GC-2, Mine Present Scenario
Hardness Concentration (mg/l)
350
300
250
200
150
100
50
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

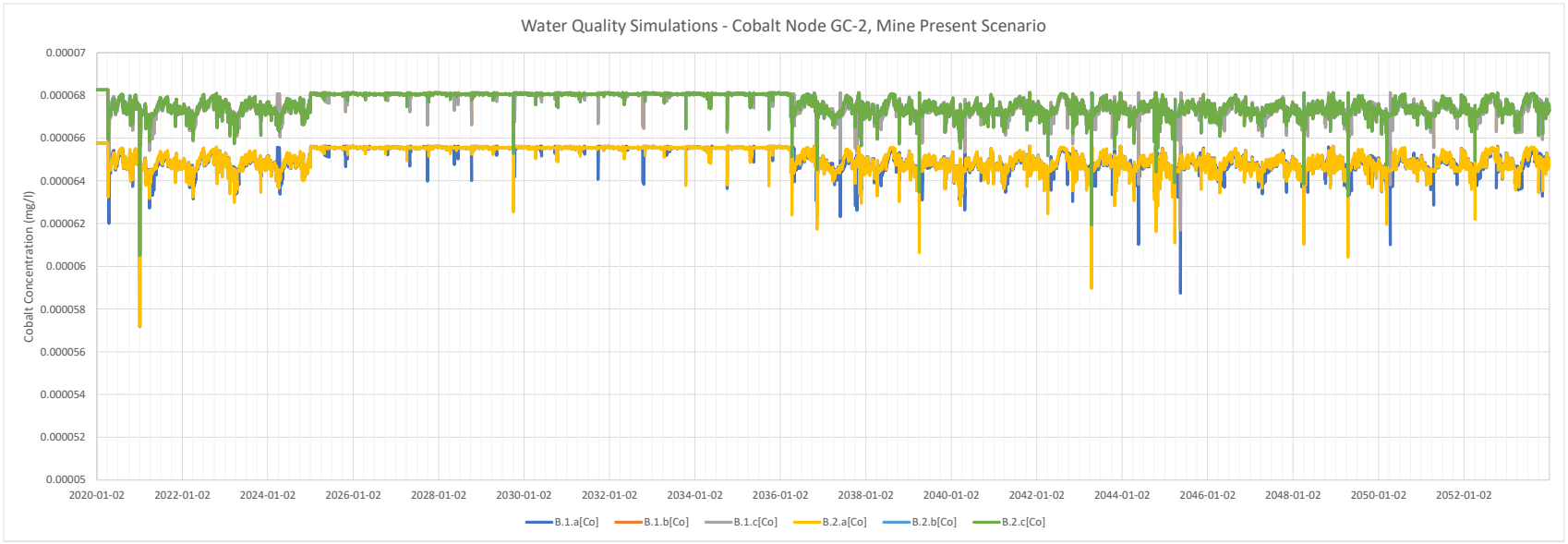

Water Quality Simulations - Selenium Node GC-2, Mine Present Scenario
Selenium Concentration (mg/l)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-2, Mine Present Scenario
Cadmium Concentration (mg/l)
0.000025
0.00002
0.000015
0.00001
0.000005
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

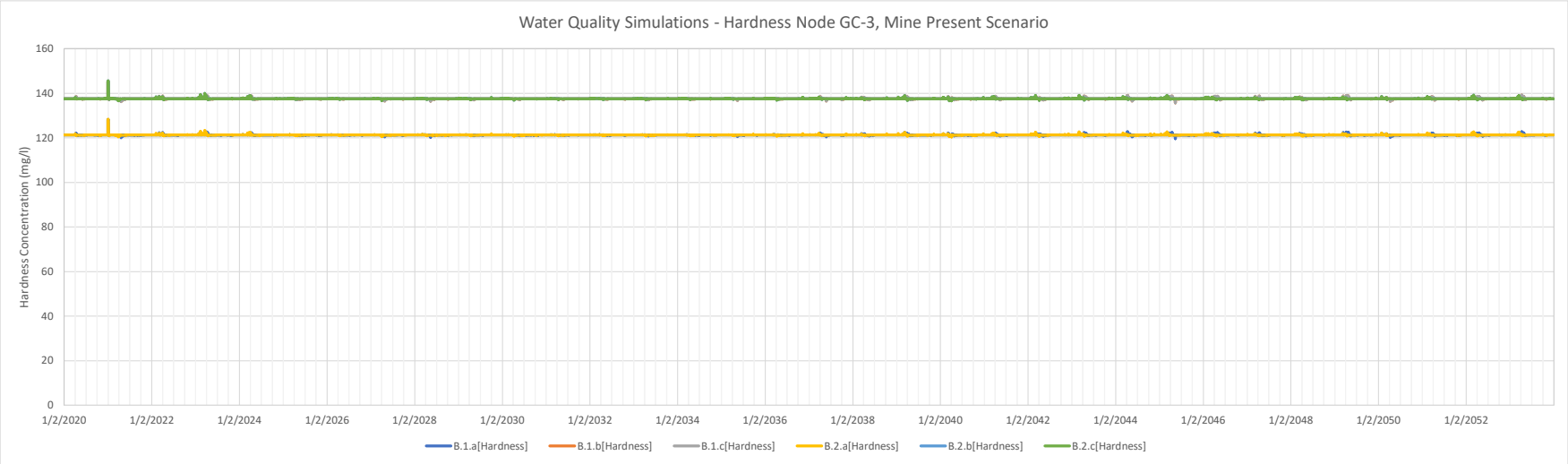

Water Quality Simulations - Nitrate Node GC-2, Mine Present Scenario
Nitrate Concentration (mg/l)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

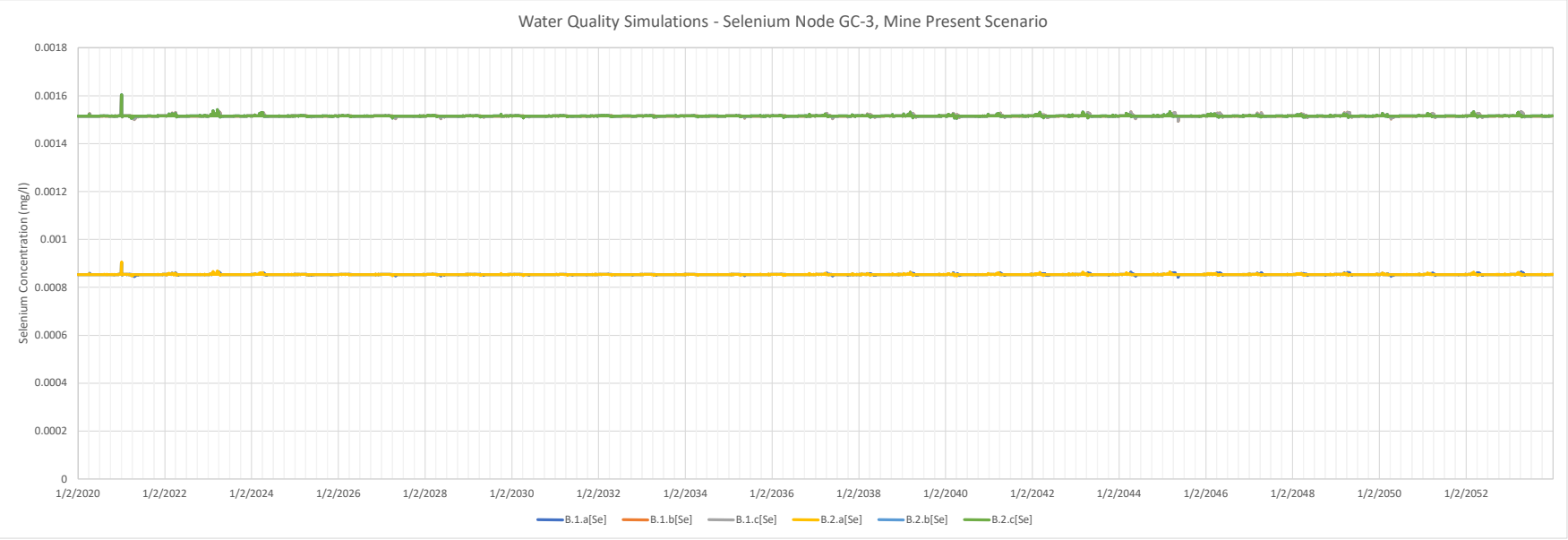

Water Quality Simulations - Sulfate Node GC-2, Mine Present Scenario
Sulfate Concentration (mg/l)
180
160
140
120
100
80
60
40
20
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

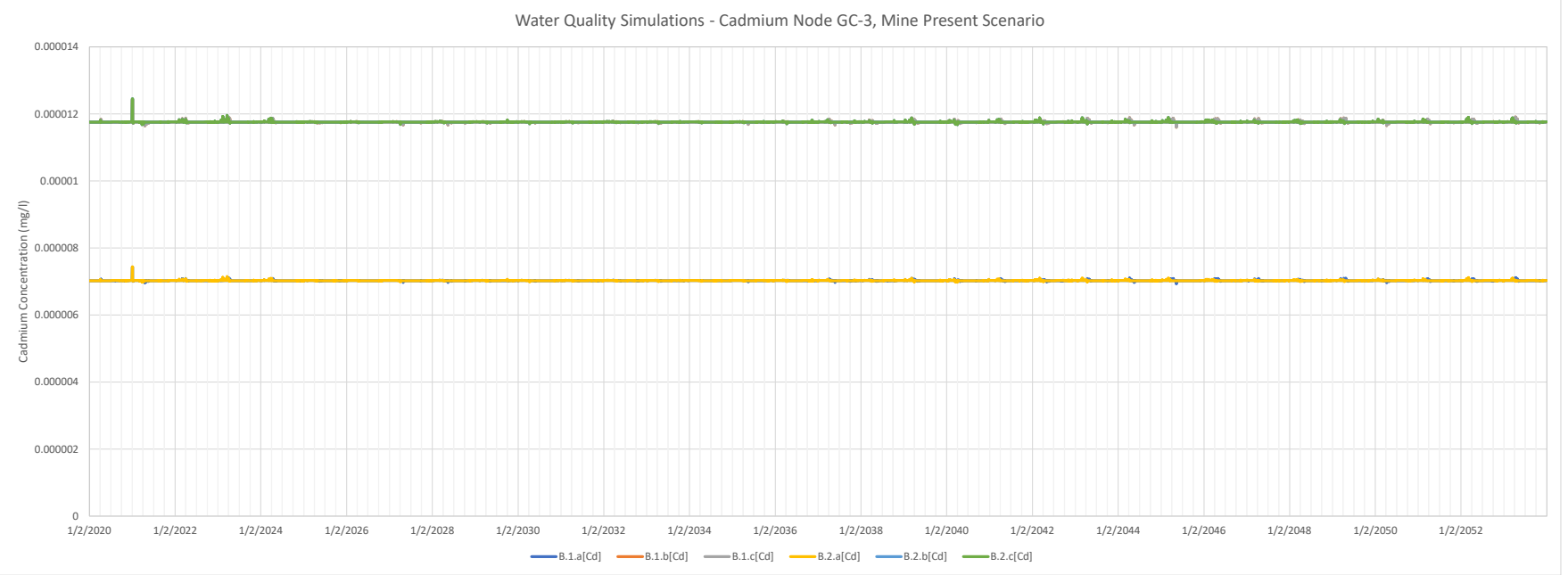

Water Quality Simulations - Nickel Node GC-2, Mine Present Scenario
Nickel Concentration (mg/l)
0.0008
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

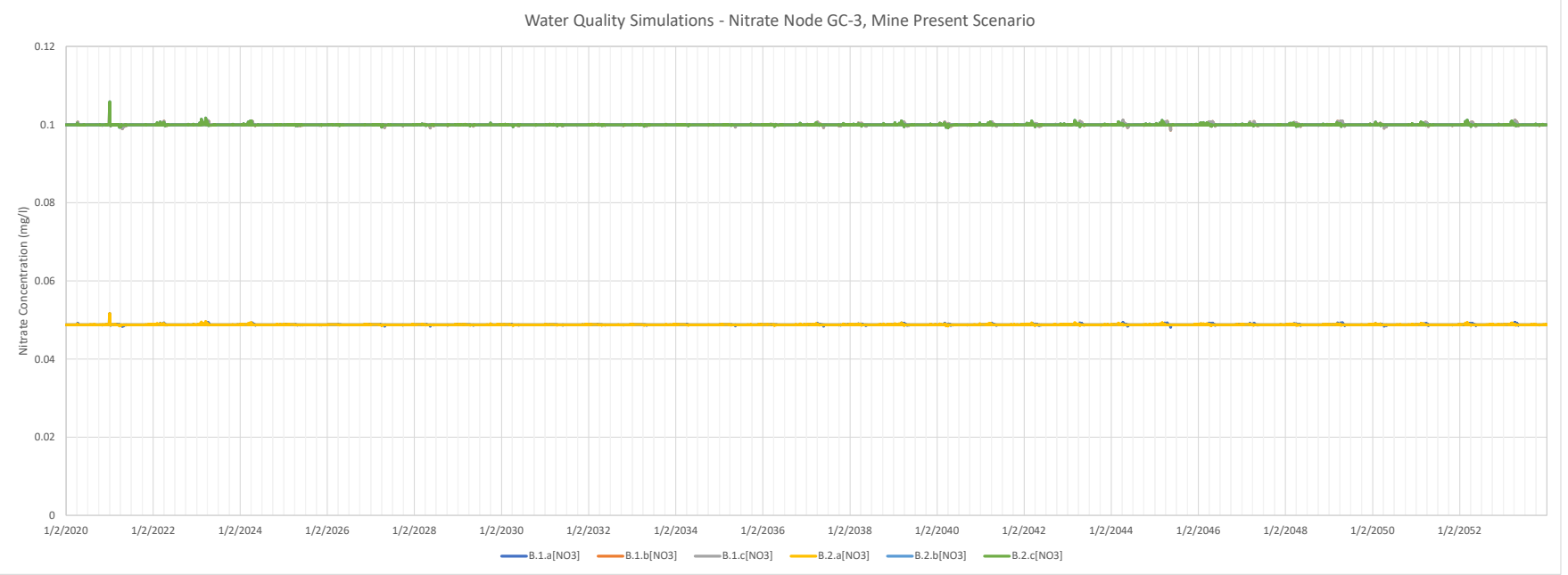

Water Quality Simulations - Cobalt Node GC-2, Mine Present Scenario
Cobalt Concentration (mg/l)
0.00007
0.000068
0.000066
0.000064
0.000062
0.00006
0.000058
0.000056
0.000054
0.000052
0.00005
2020-01-02
2022-01-02
2024-01-02
2026-01-02
2028-01-02
2030-01-02
2032-01-02
2034-01-02
2036-01-02
2038-01-02
2040-01-02
2042-01-02
2044-01-02
2046-01-02
2048-01-02
2050-01-02
2052-01-02
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

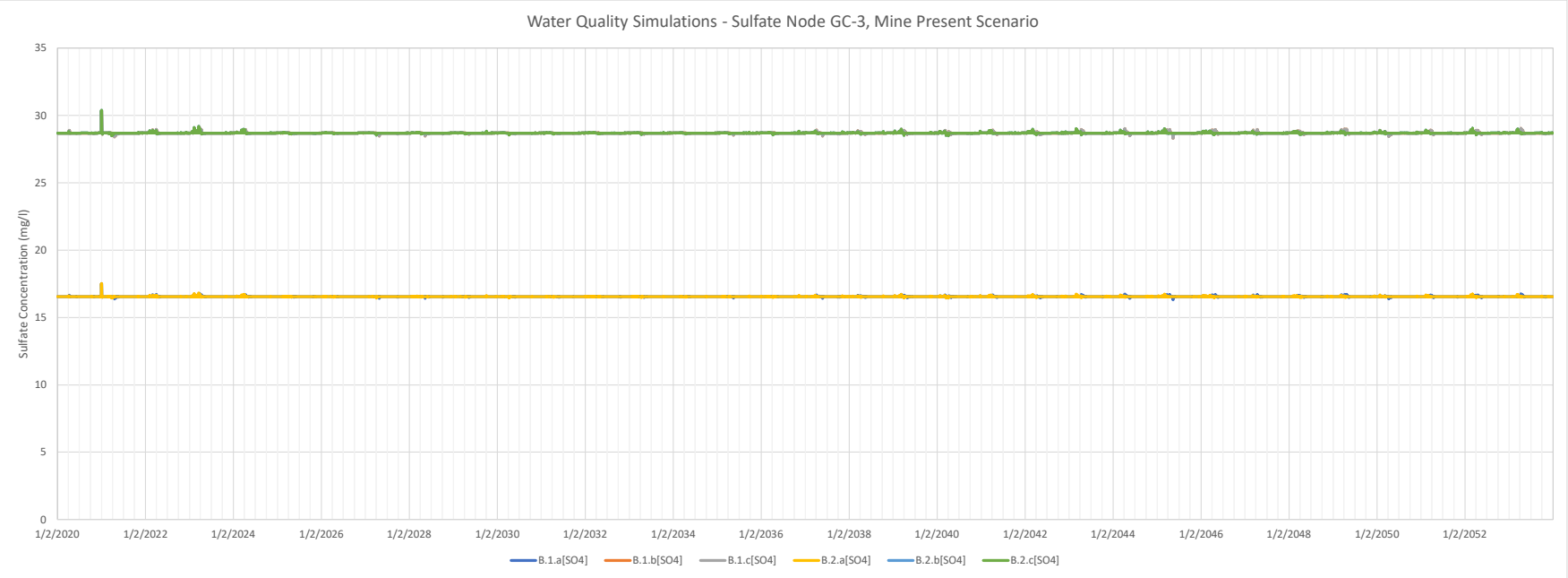
# Node GC-3 : Mine Present Scenarios

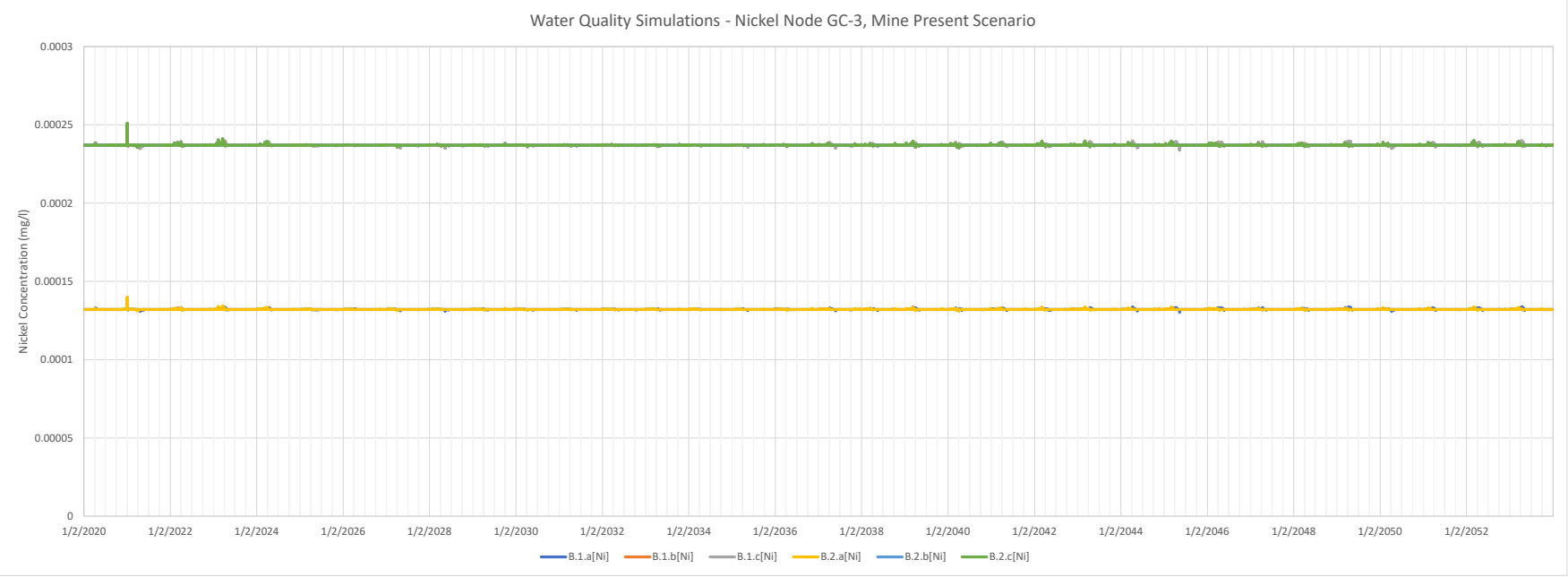

Water Quality Simulations - Hardness Node GC-3, Mine Present Scenario
Hardness Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

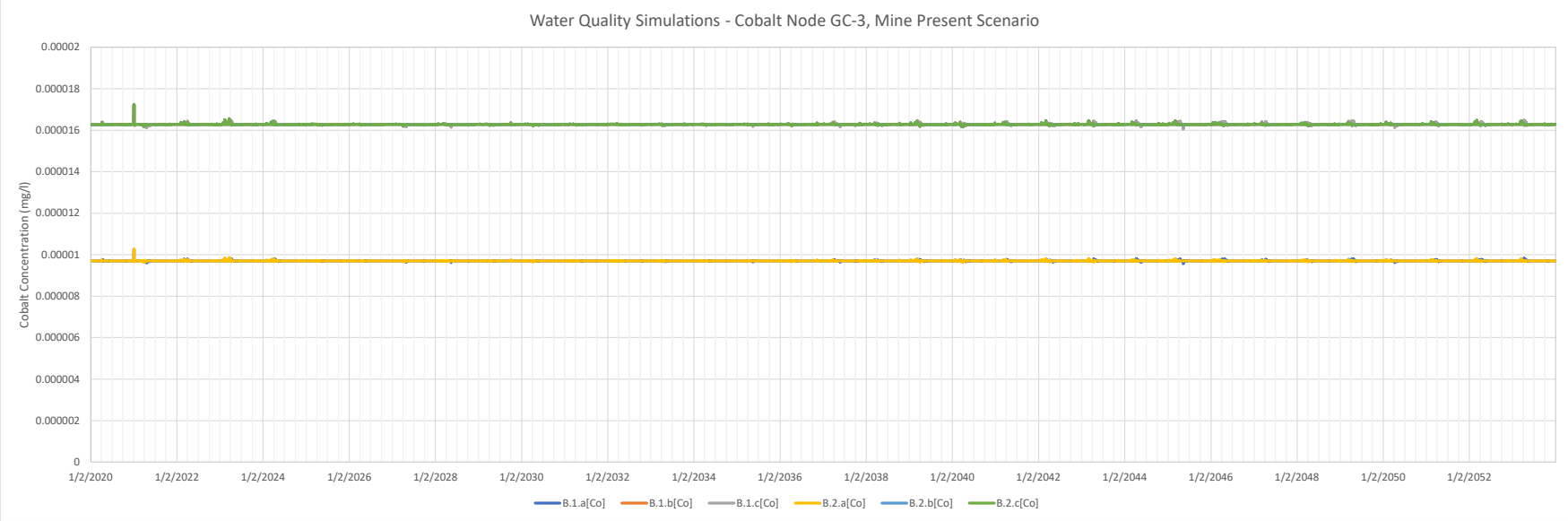

Water Quality Simulations - Selenium Node GC-3, Mine Present Scenario
Selenium Concentration (mg/l)
0.0018
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-3, Mine Present Scenario
Cadmium Concentration (mg/l)
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

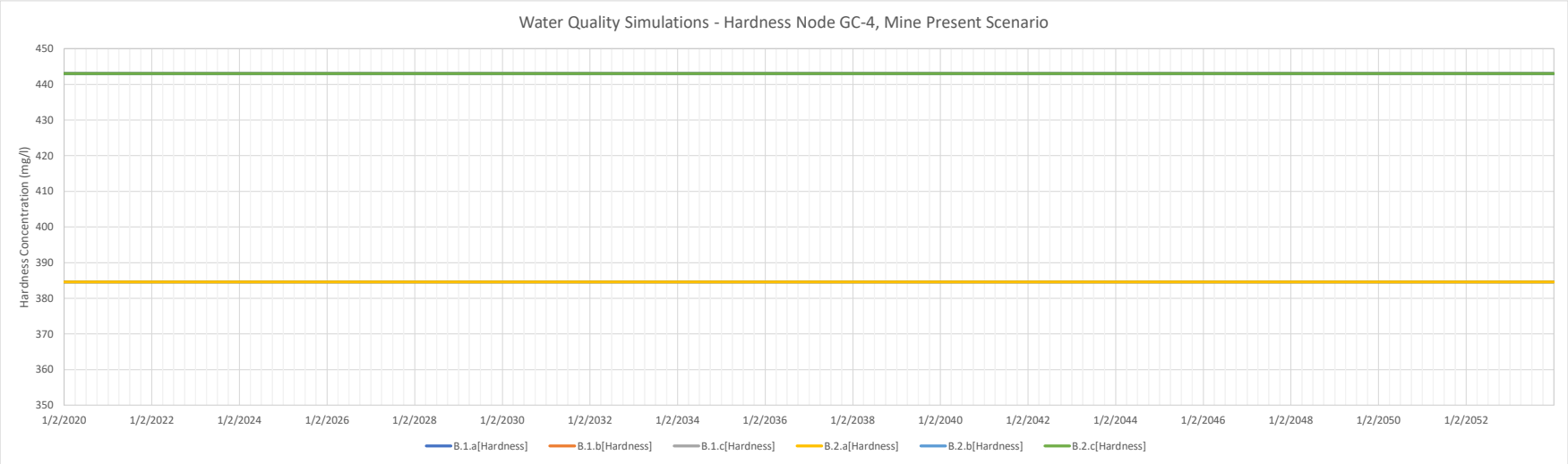

Water Quality Simulations - Nitrate Node GC-3, Mine Present Scenario
Nitrate Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

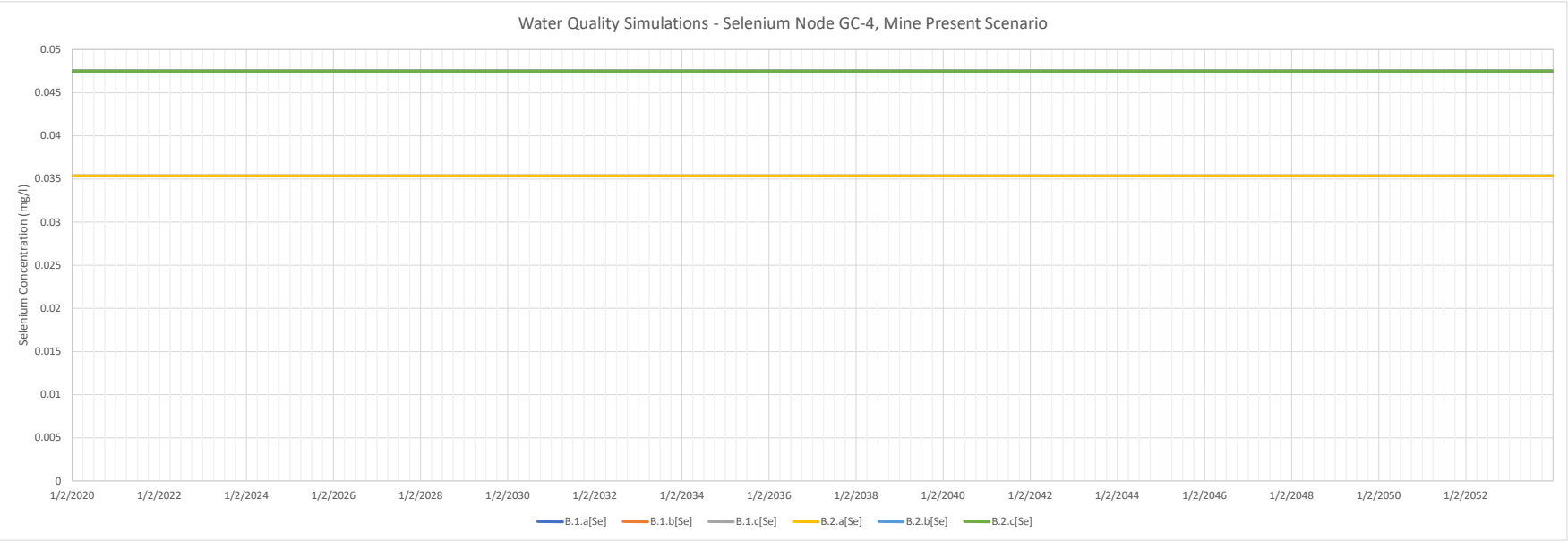

Water Quality Simulations - Sulfate Node GC-3, Mine Present Scenario
Sulfate Concentration (mg/l)
35
30
25
20
15
10
5
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

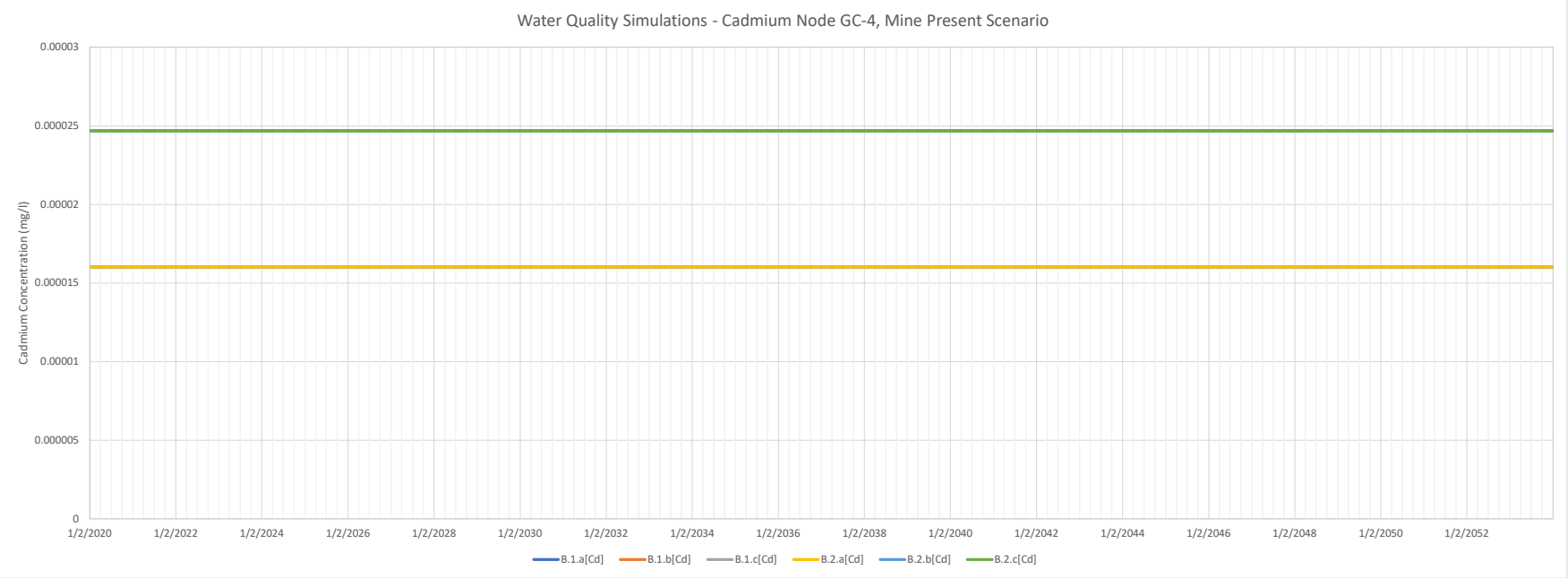

Water Quality Simulations - Nickel Node GC-3, Mine Present Scenario
Nickel Concentration (mg/l)
0.0003
0.00025
0.0002
0.00015
0.0001
0.00005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

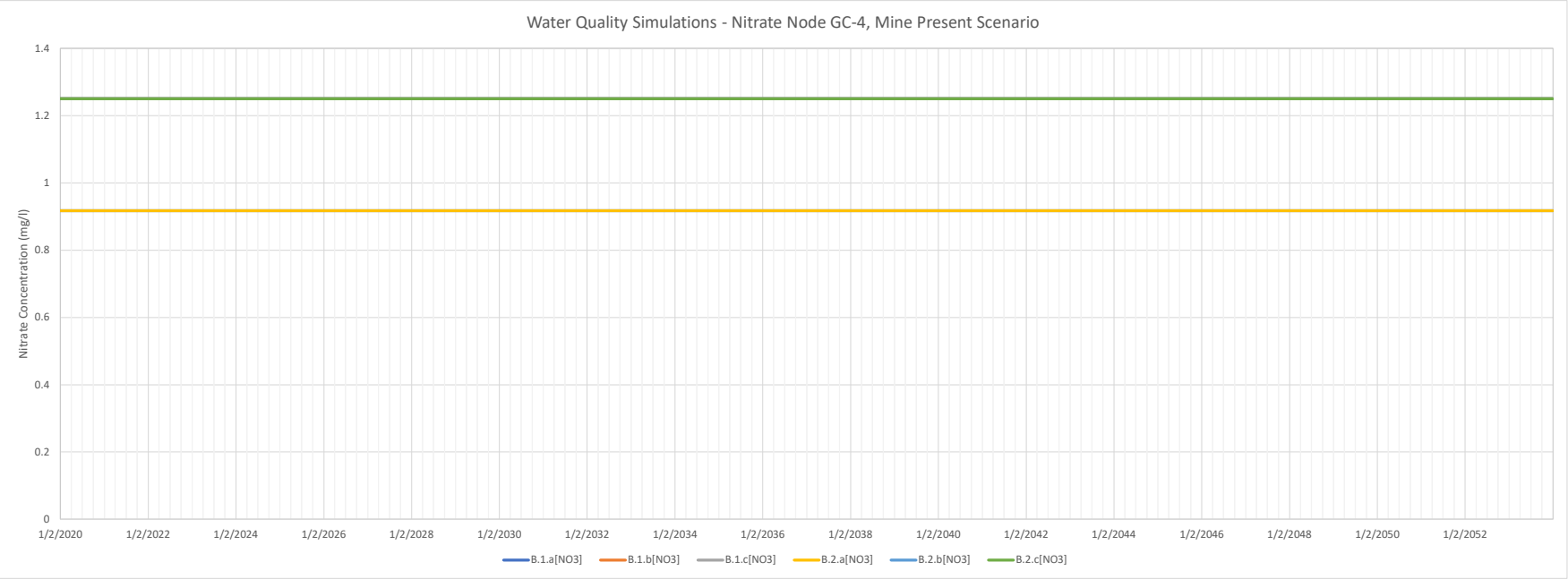

Water Quality Simulations - Cobalt Node GC-3, Mine Present Scenario
Cobalt Concentration (mg/l)
0.00002
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

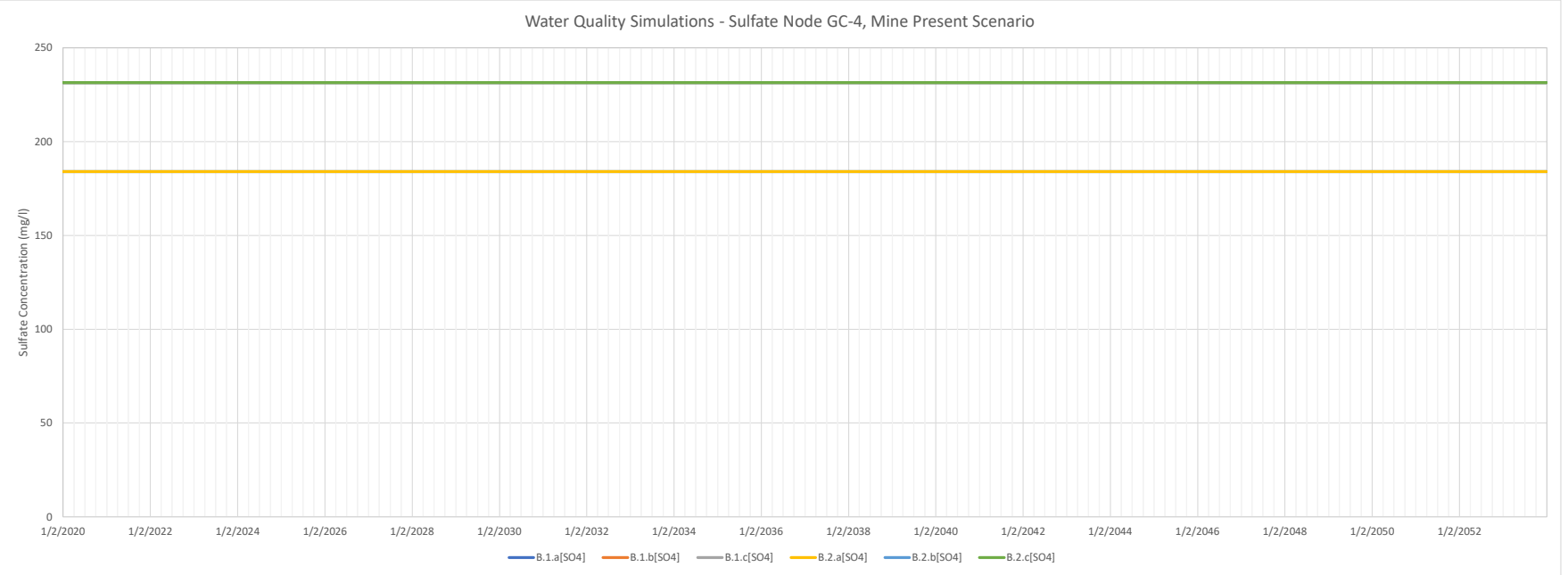
# Node GC-4 : Mine Present Scenarios

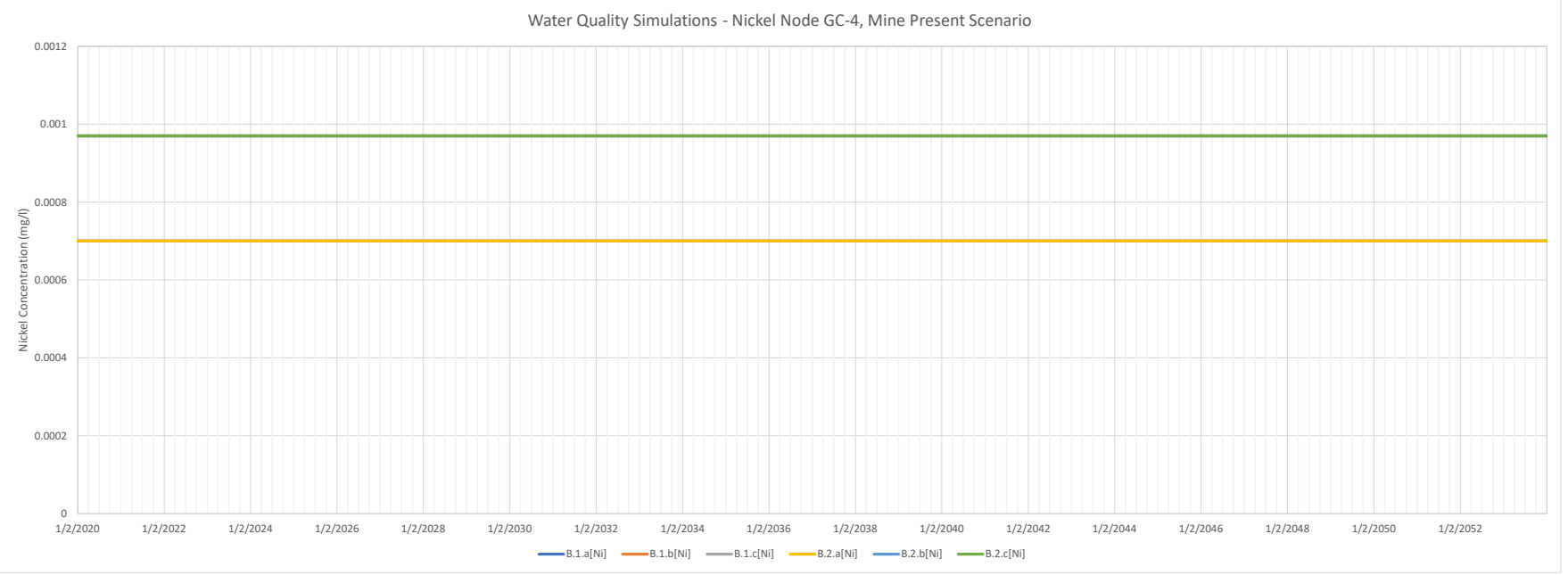

Water Quality Simulations - Hardness Node GC-4, Mine Present Scenario
Hardness Concentration (mg/l)
450
440
430
420
410
400
390
380
370
360
350
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

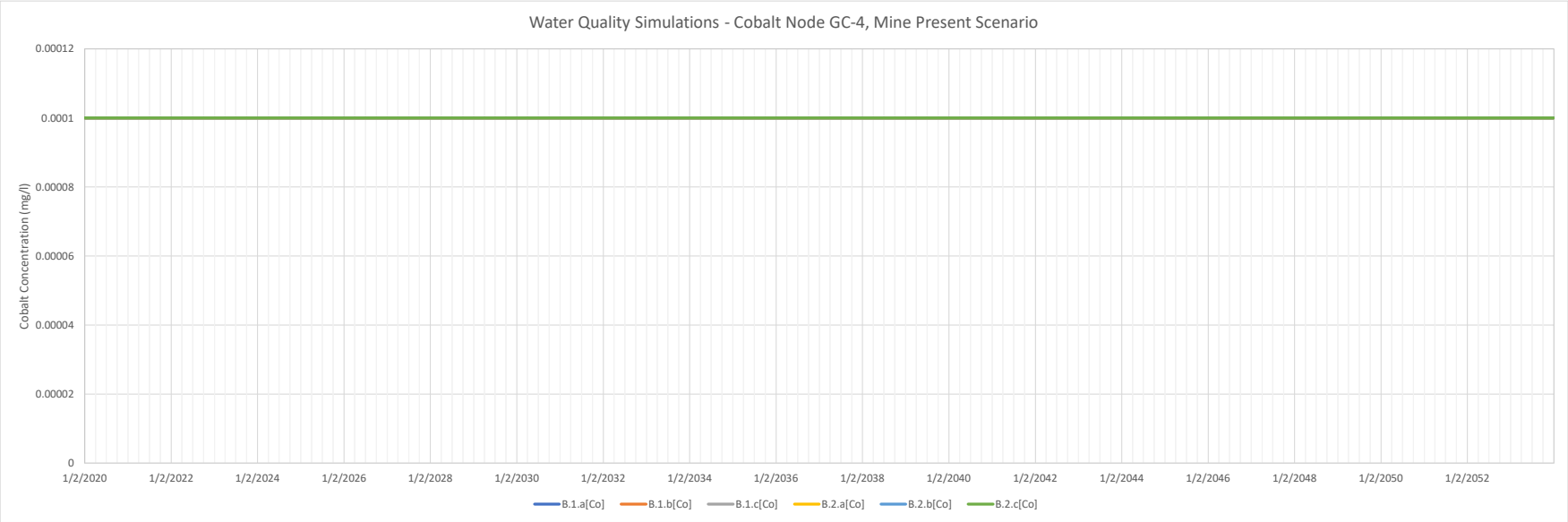

Water Quality Simulations - Selenium Node GC-4, Mine Present Scenario
Selenium Concentration (mg/l)
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-4, Mine Present Scenario
Cadmium Concentration (mg/l)
0.00003
0.000025
0.00002
0.000015
0.00001
0.000005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

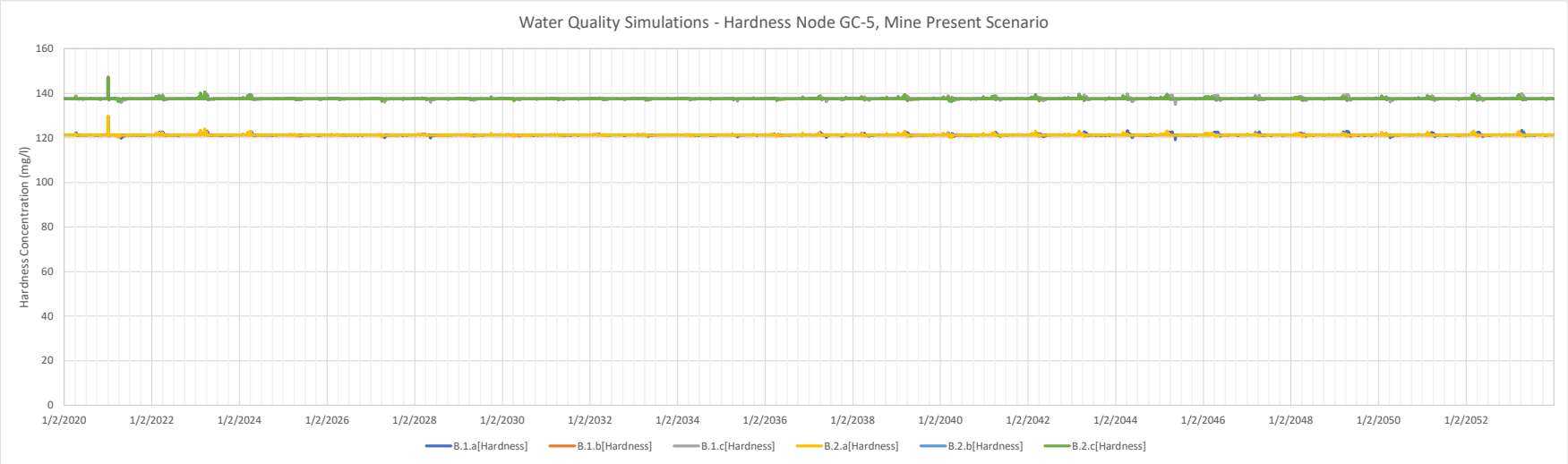

Water Quality Simulations - Nitrate Node GC-4, Mine Present Scenario
Nitrate Concentration (mg/l)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

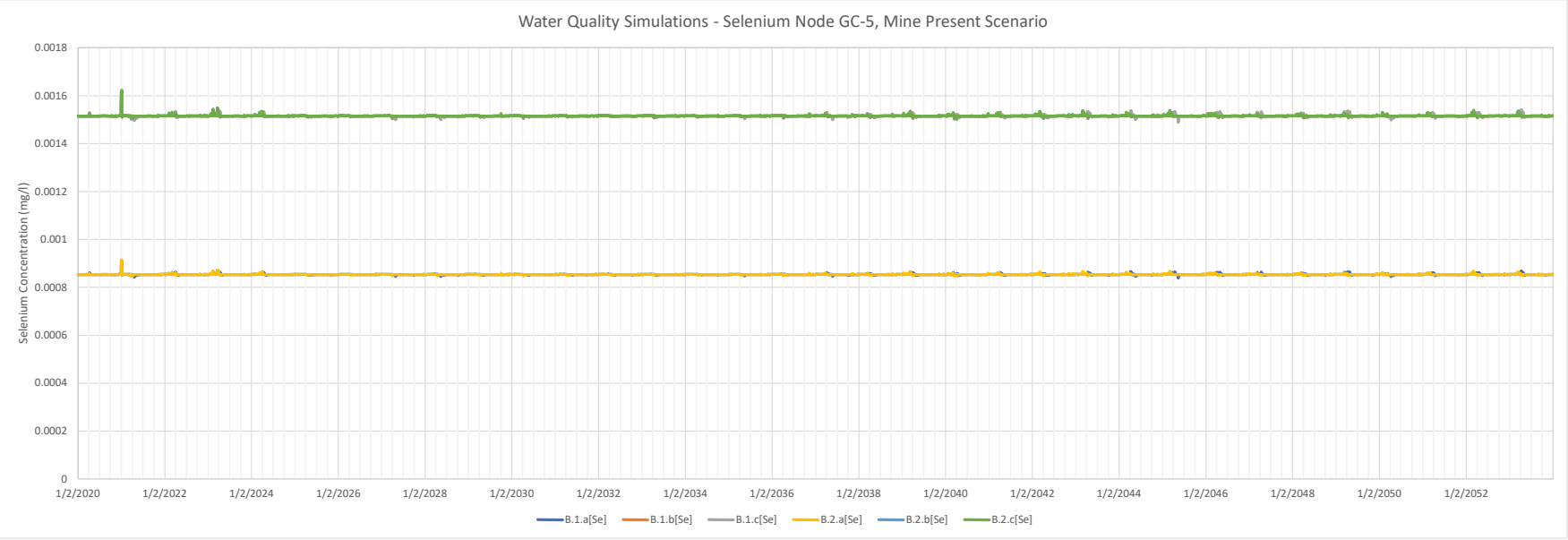

Water Quality Simulations - Sulfate Node GC-4, Mine Present Scenario
Sulfate Concentration (mg/l)
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

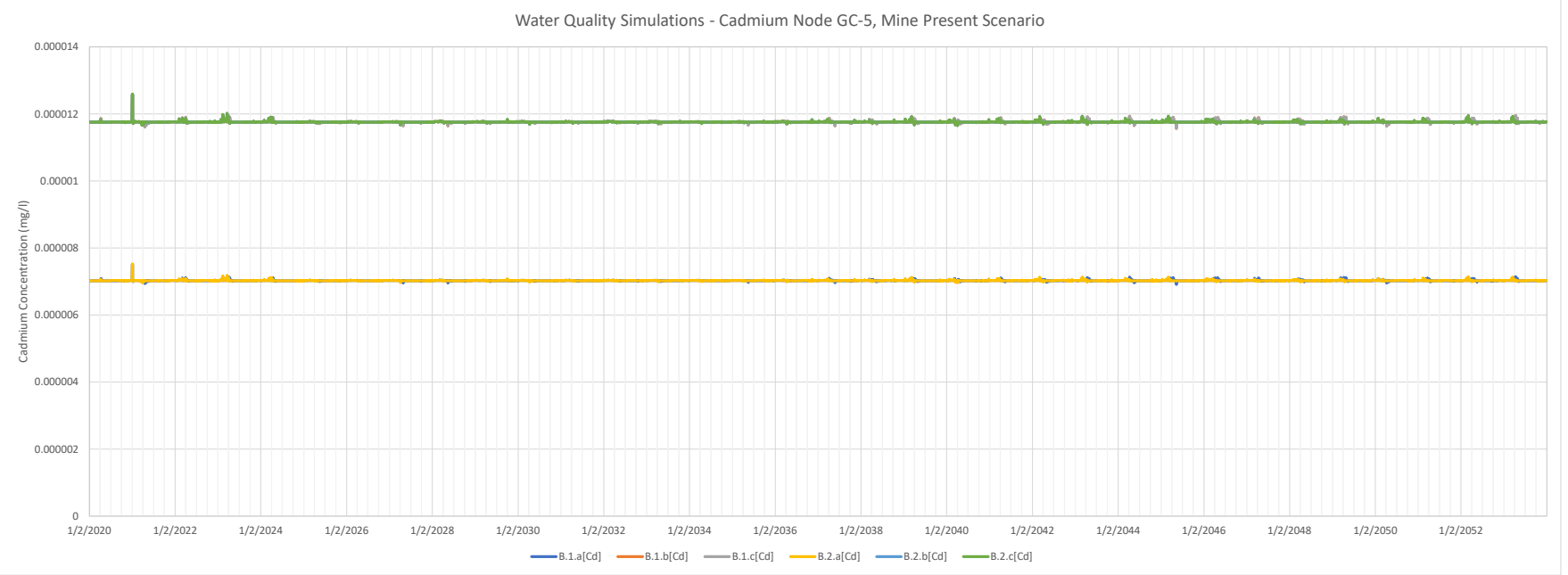

Water Quality Simulations - Nickel Node GC-4, Mine Present Scenario
Nickel Concentration (mg/l)
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

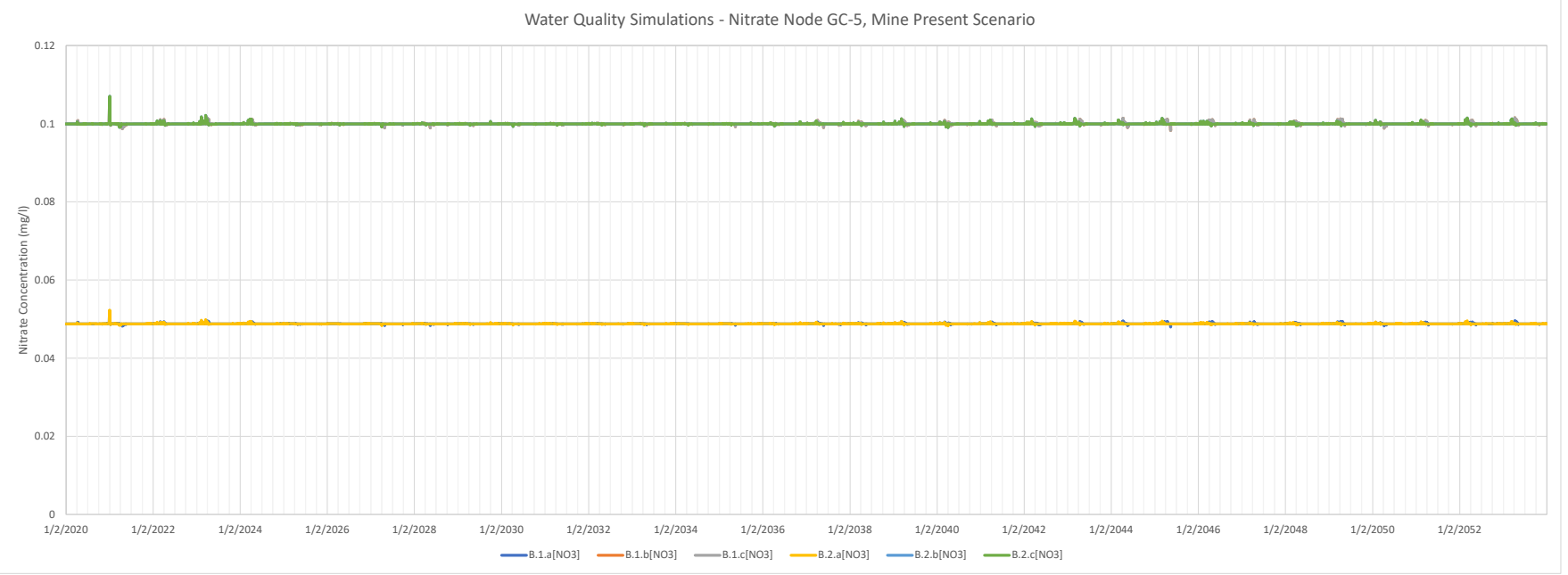

Water Quality Simulations - Cobalt Node GC-4, Mine Present Scenario
Cobalt Concentration (mg/l)
0.00012
0.0001
0.00008
0.00006
0.00004
0.00002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

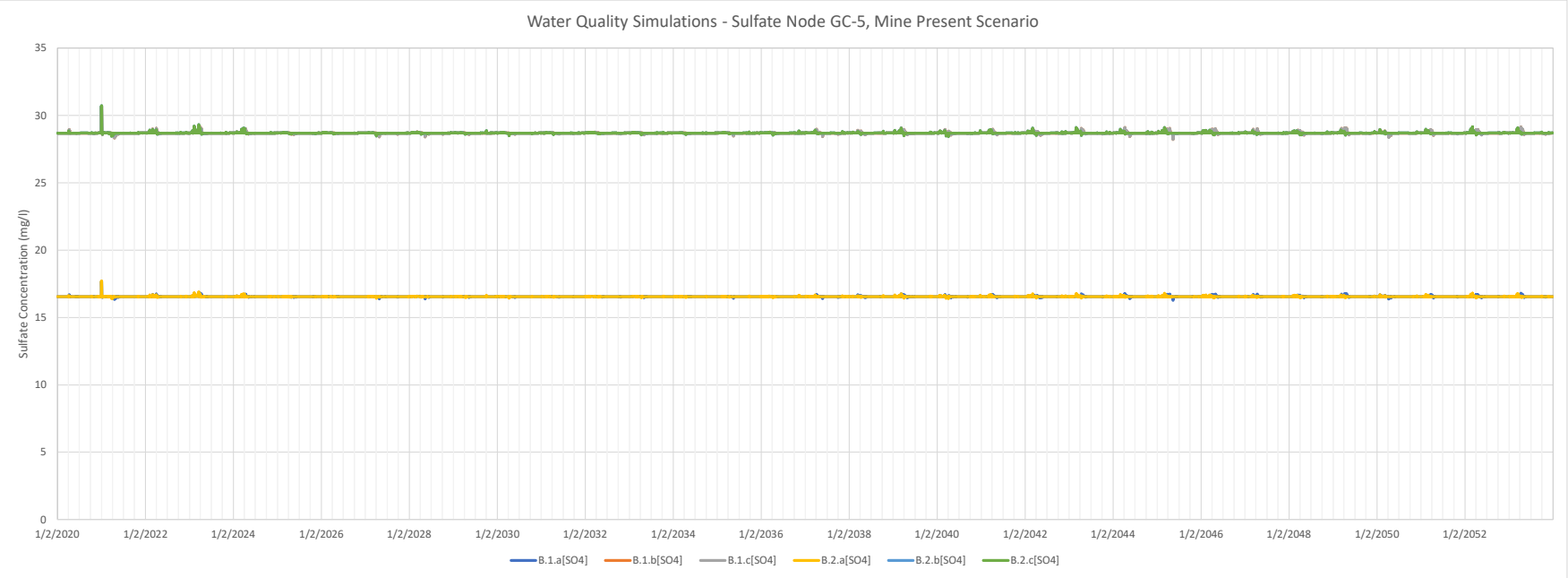
# Node GC-5 : Mine Present Scenarios

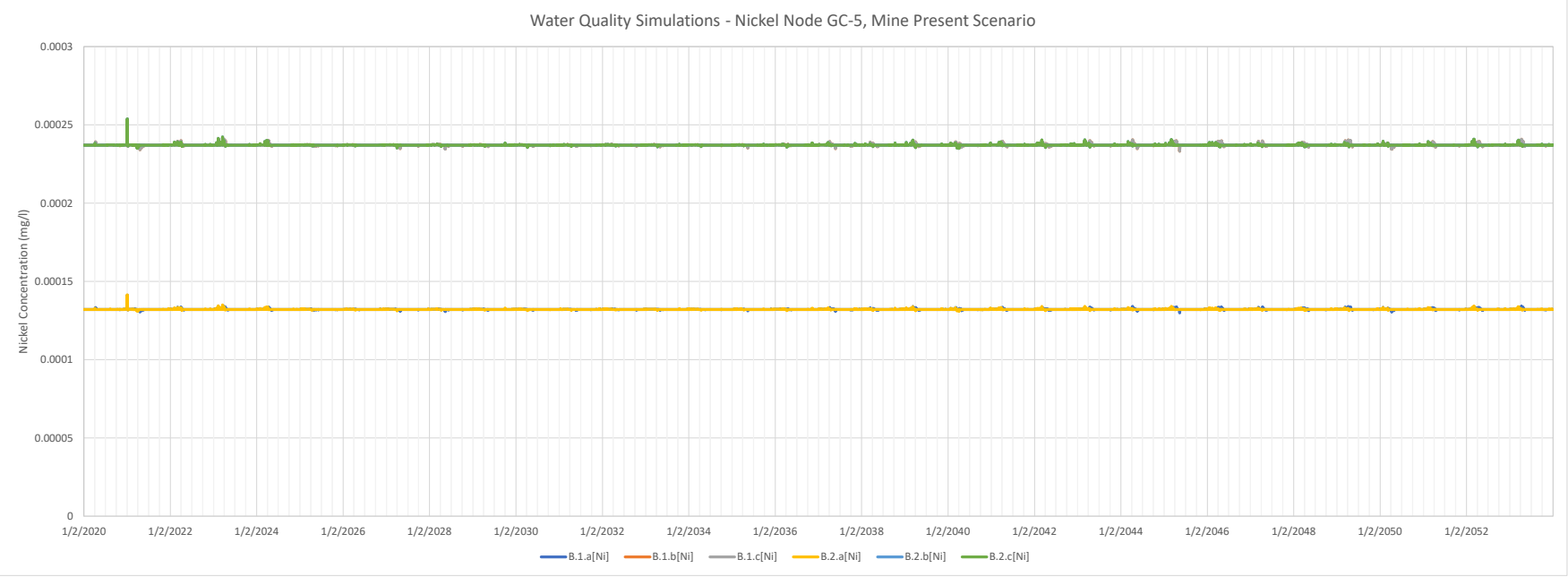

Water Quality Simulations - Hardness Node GC-5, Mine Present Scenario
Hardness Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

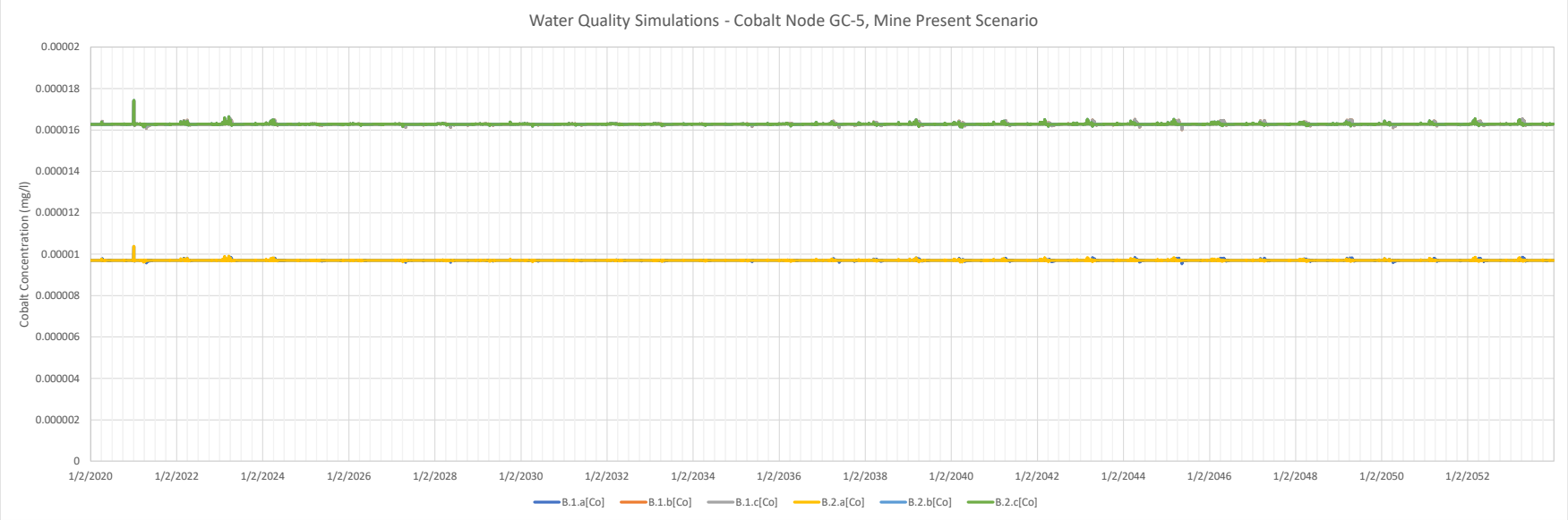

Water Quality Simulations - Selenium Node GC-5, Mine Present Scenario
Selenium Concentration (mg/l)
0.0018
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-5, Mine Present Scenario
Cadmium Concentration (mg/l)
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

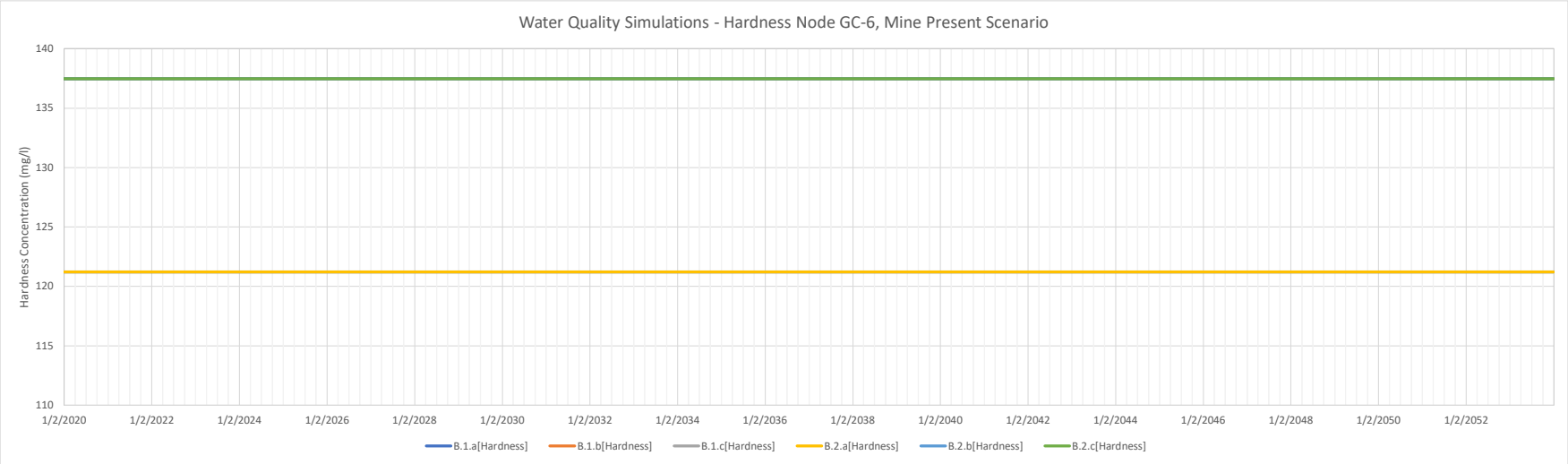

Water Quality Simulations - Nitrate Node GC-5, Mine Present Scenario
Nitrate Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

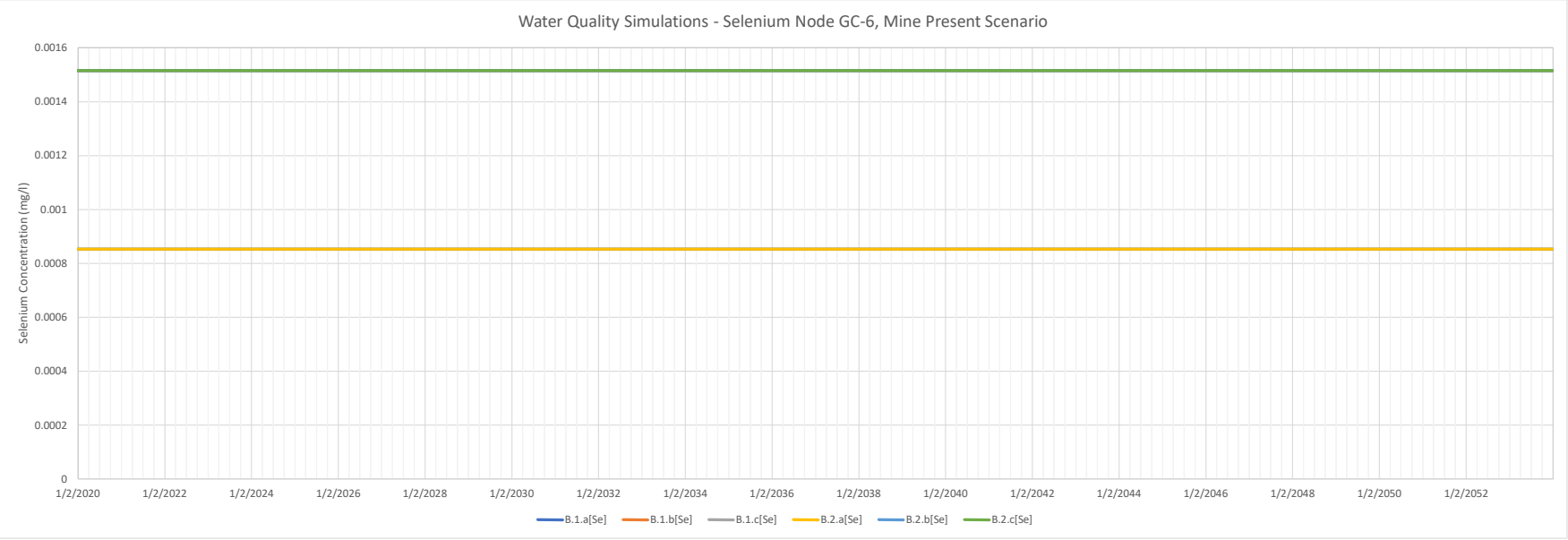

Water Quality Simulations - Sulfate Node GC-5, Mine Present Scenario
Sulfate Concentration (mg/l)
35
30
25
20
15
10
5
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

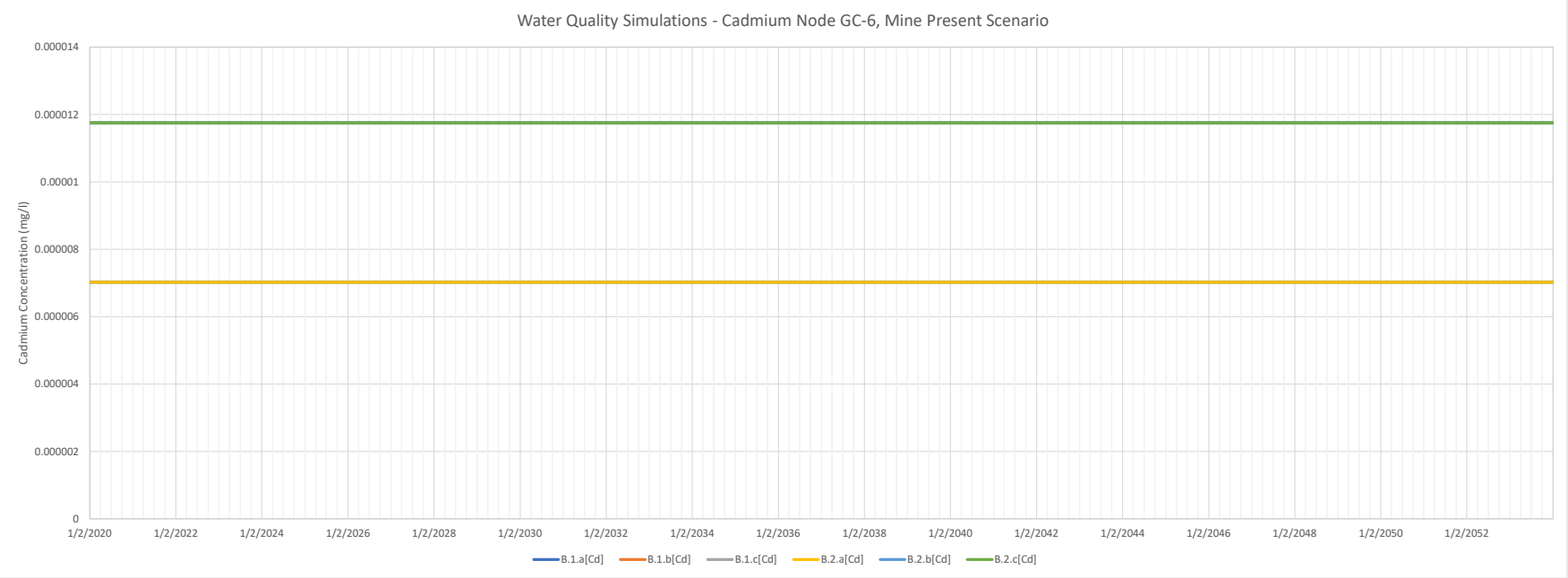

Water Quality Simulations - Nickel Node GC-5, Mine Present Scenario
Nickel Concentration (mg/l)
0.0003
0.00025
0.0002
0.00015
0.0001
0.00005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

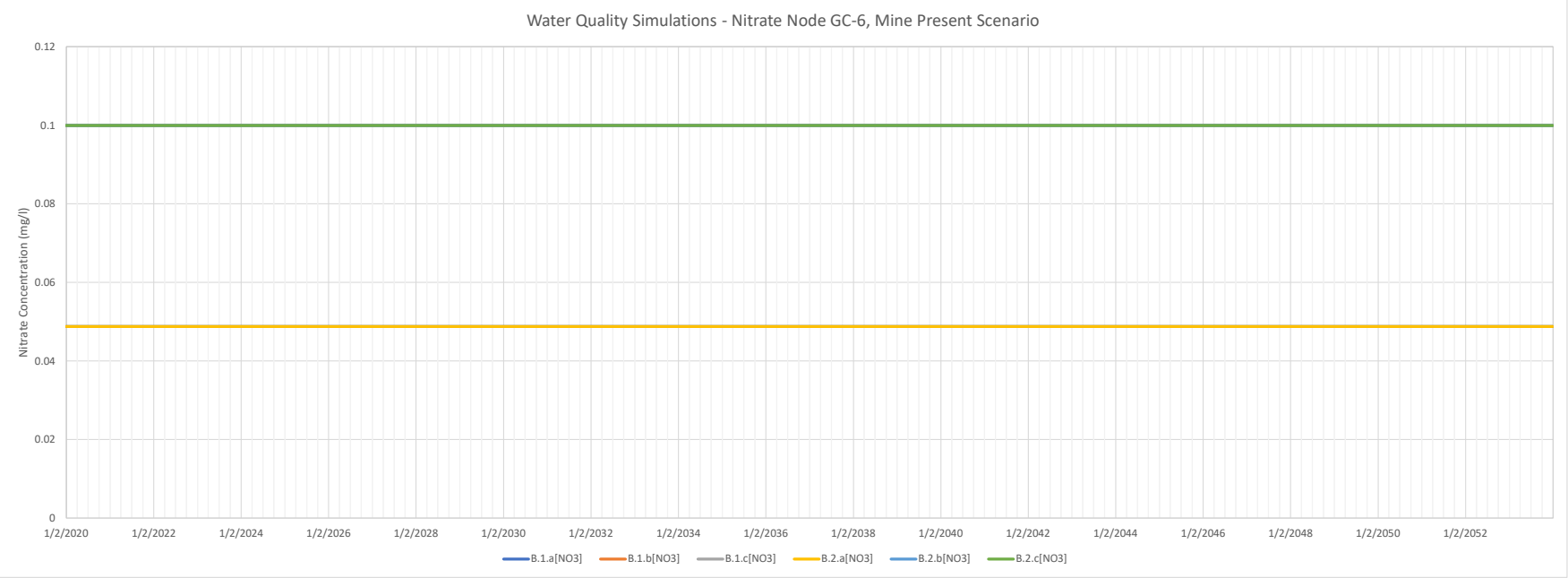

Water Quality Simulations - Cobalt Node GC-5, Mine Present Scenario
Cobalt Concentration (mg/l)
0.00002
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

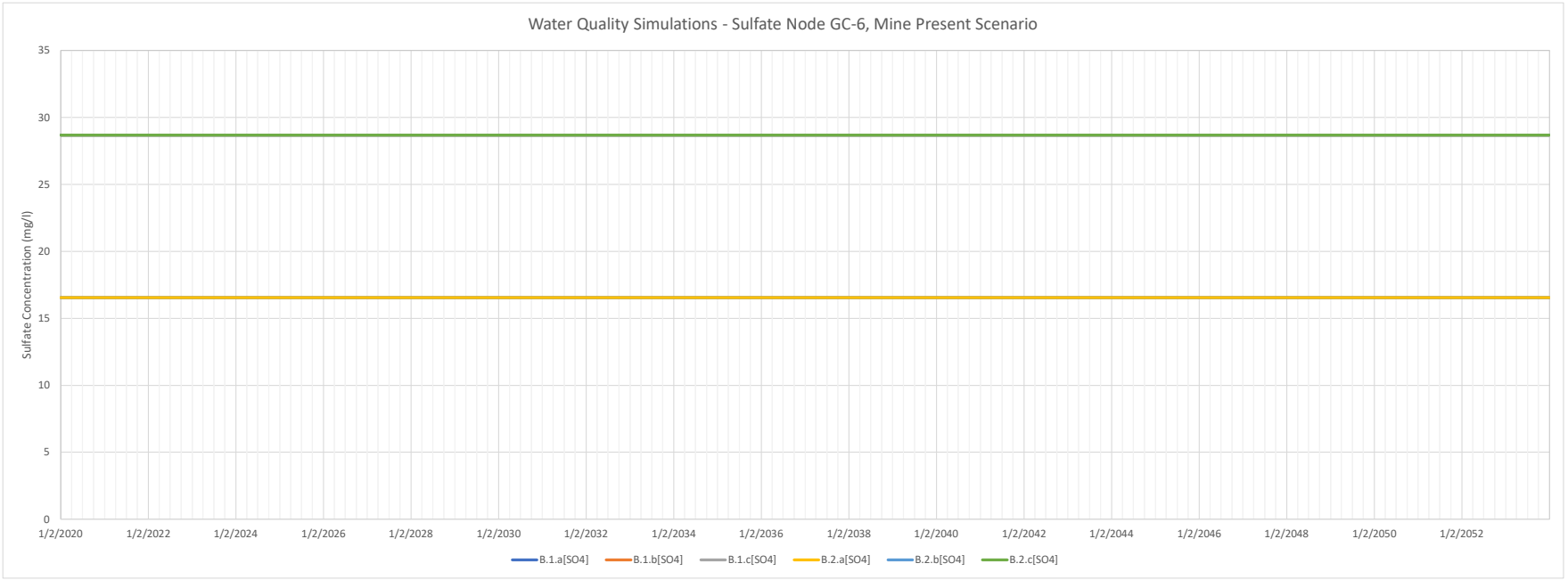
# Node GC-6 : Mine Present Scenarios

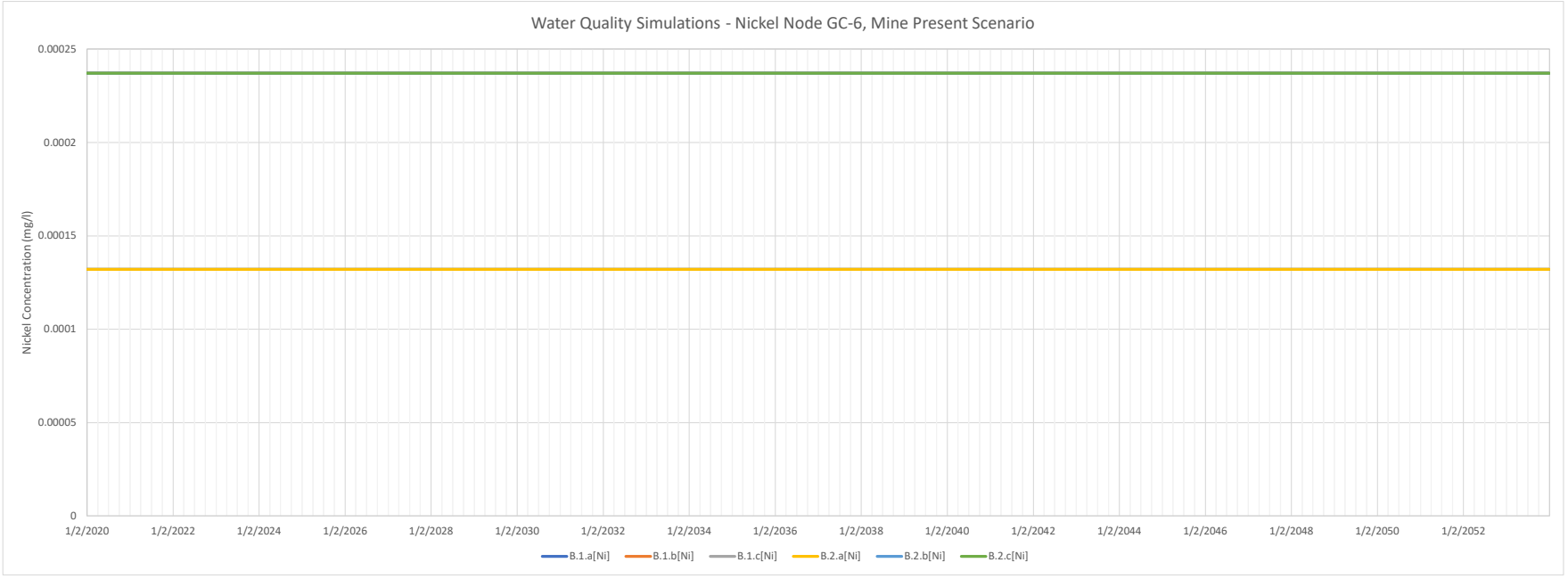

Water Quality Simulations - Hardness Node GC-6, Mine Present Scenario
Hardness Concentration (mg/l)
140
135
130
125
120
115
110
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

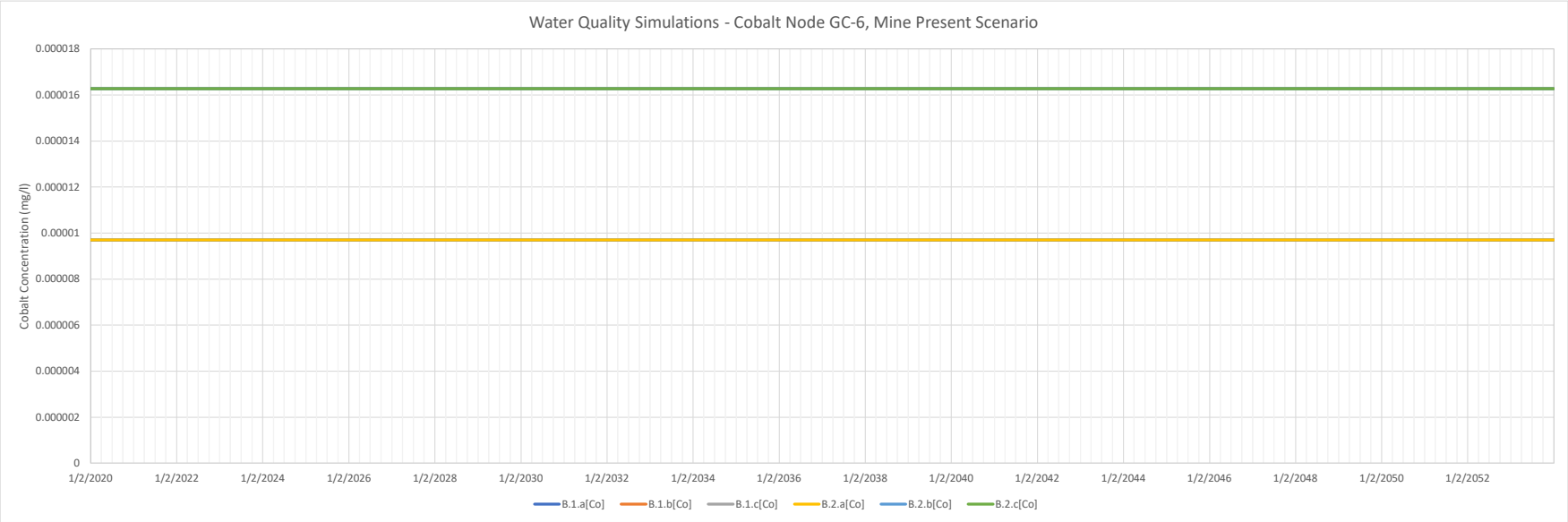

Water Quality Simulations - Selenium Node GC-6, Mine Present Scenario
Selenium Concentration (mg/l)
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-6, Mine Present Scenario
Cadmium Concentration (mg/l)
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

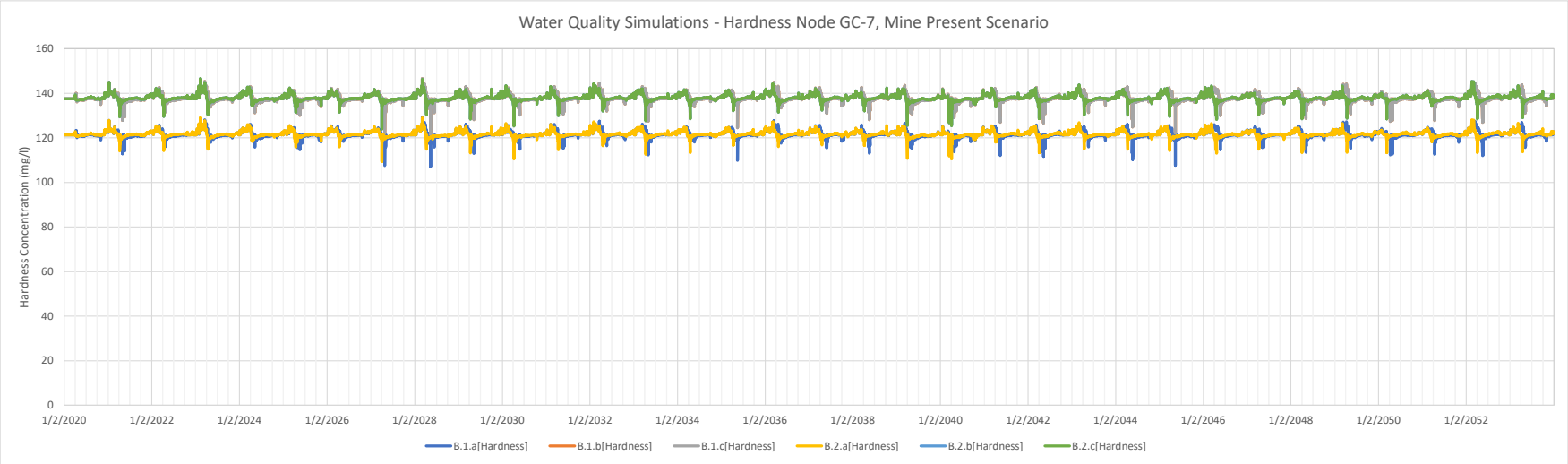

Water Quality Simulations - Nitrate Node GC-6, Mine Present Scenario
Nitrate Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

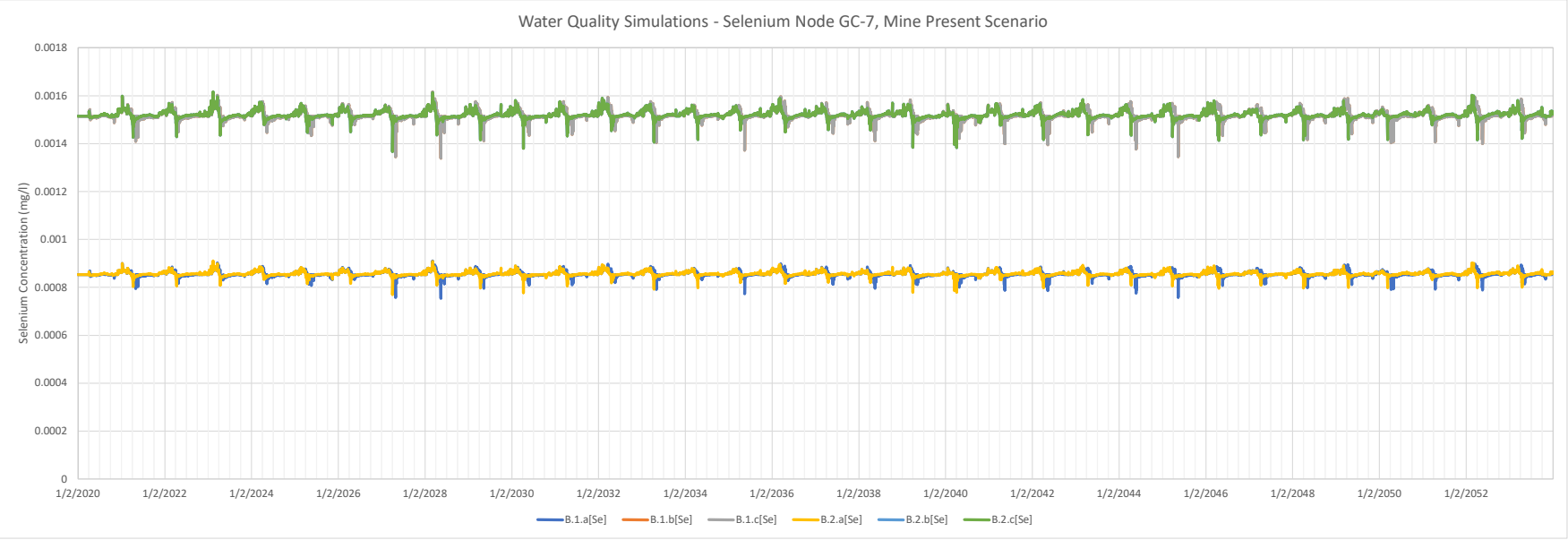

Water Quality Simulations - Sulfate Node GC-6, Mine Present Scenario
Sulfate Concentration (mg/l)
35
30
25
20
15
10
5
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

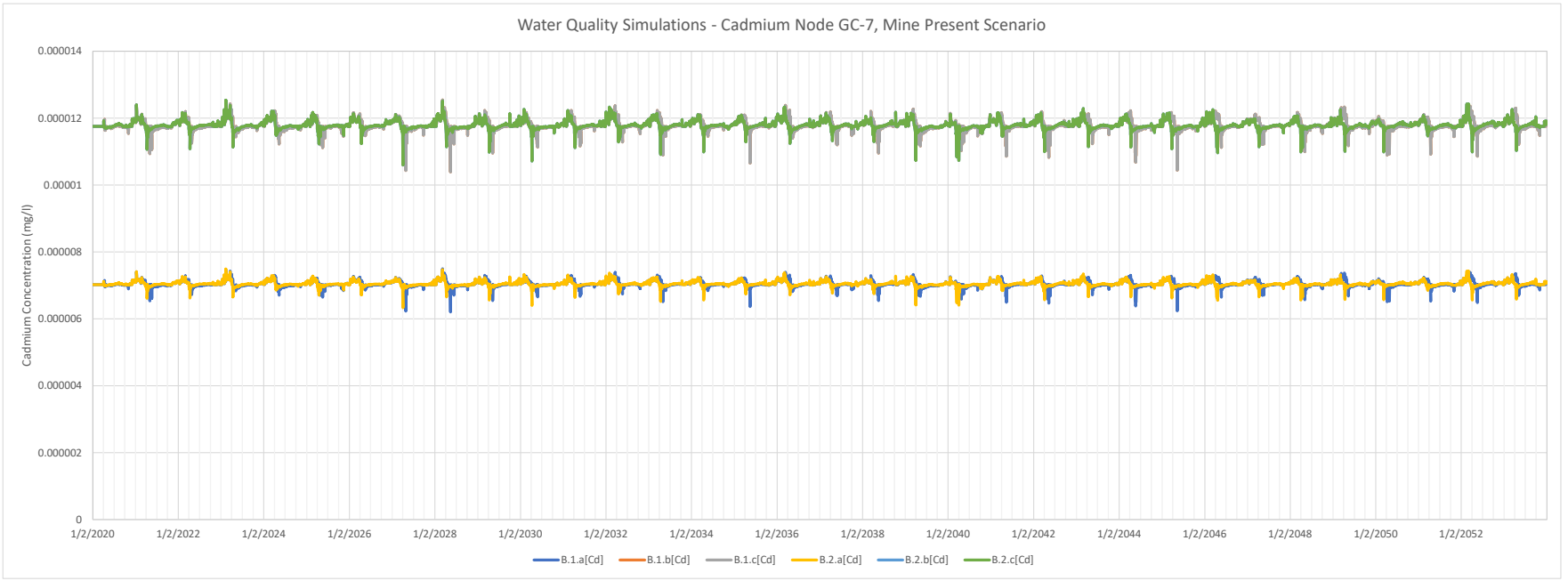

Water Quality Simulations - Nickel Node GC-6, Mine Present Scenario
Nickel Concentration (mg/l)
0.00025
0.0002
0.00015
0.0001
0.00005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

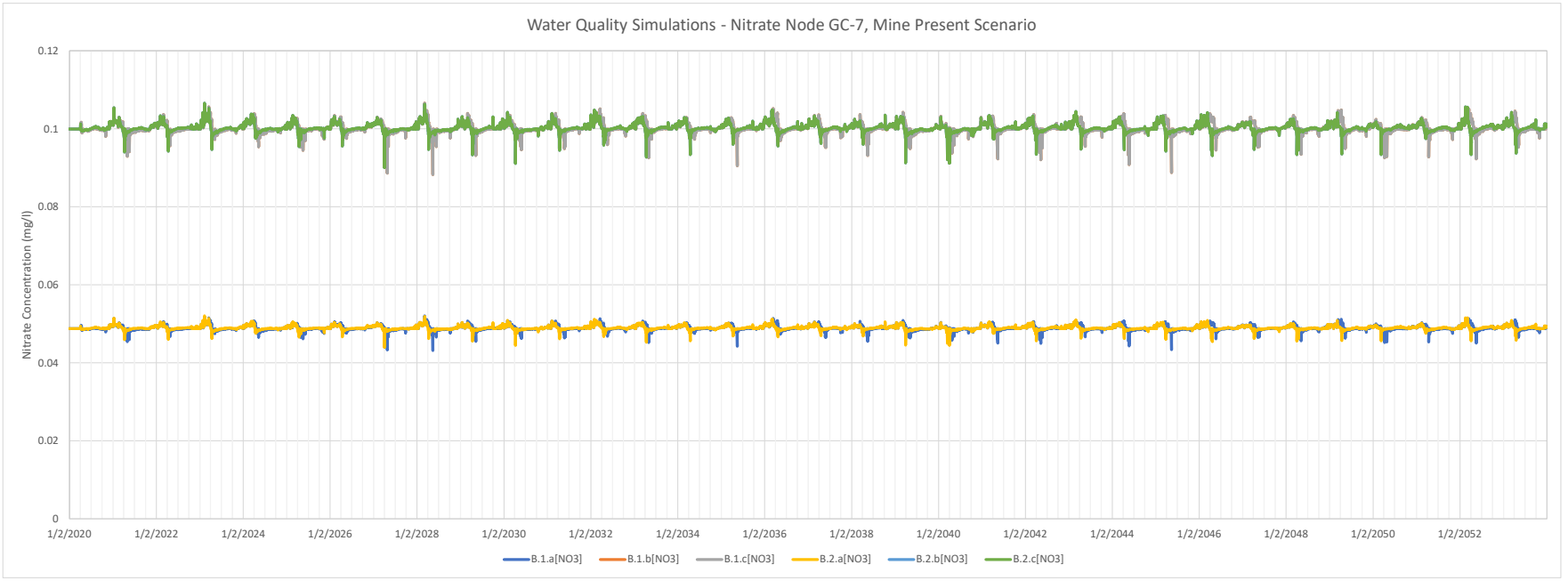

Water Quality Simulations - Cobalt Node GC-6, Mine Present Scenario
Cobalt Concentration (mg/l)
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

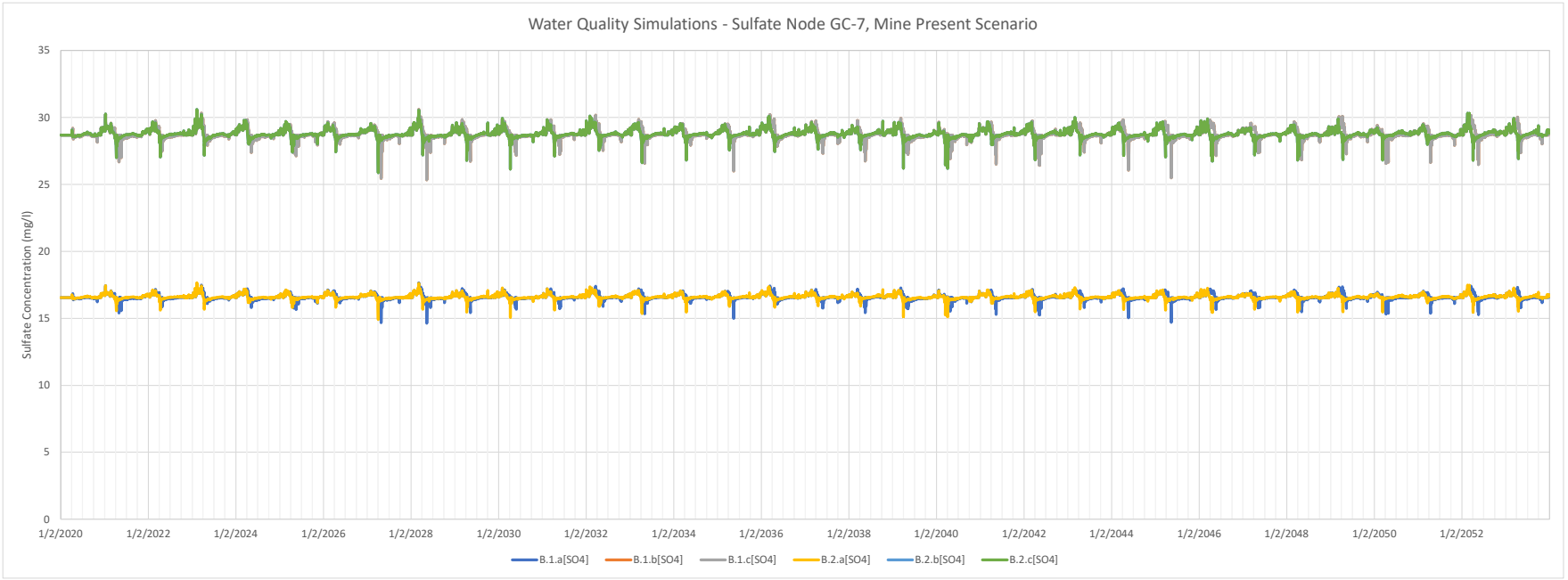
# Node GC-7 : Mine Present Scenarios

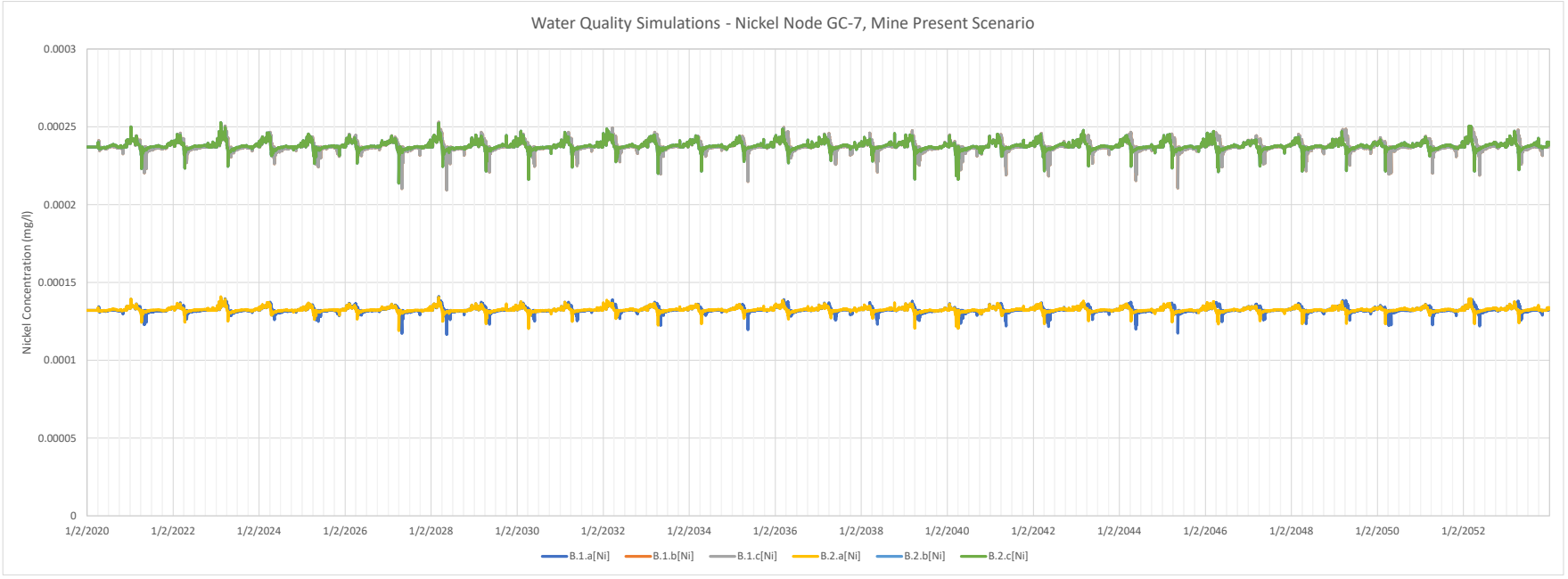

Water Quality Simulations - Hardness Node GC-7, Mine Present Scenario
Hardness Concentration (mg/l)
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

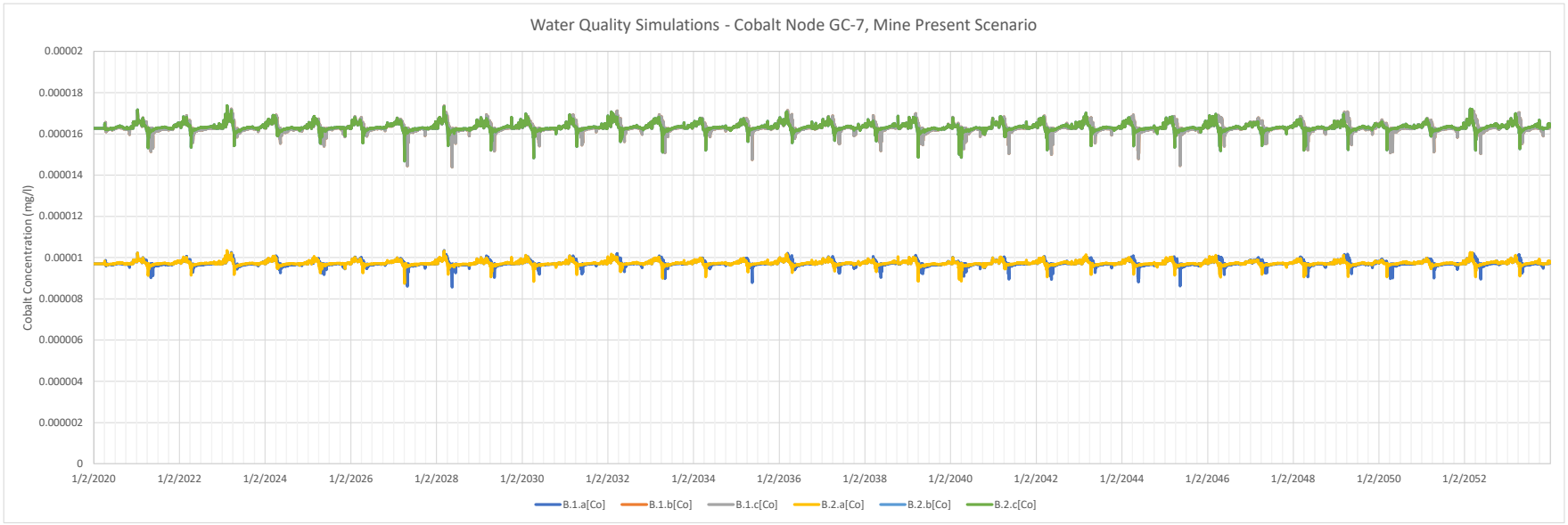

Water Quality Simulations - Selenium Node GC-7, Mine Present Scenario
Selenium Concentration (mg/l)
0.0018
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-7, Mine Present Scenario
Cadmium Concentration (mg/l)
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]

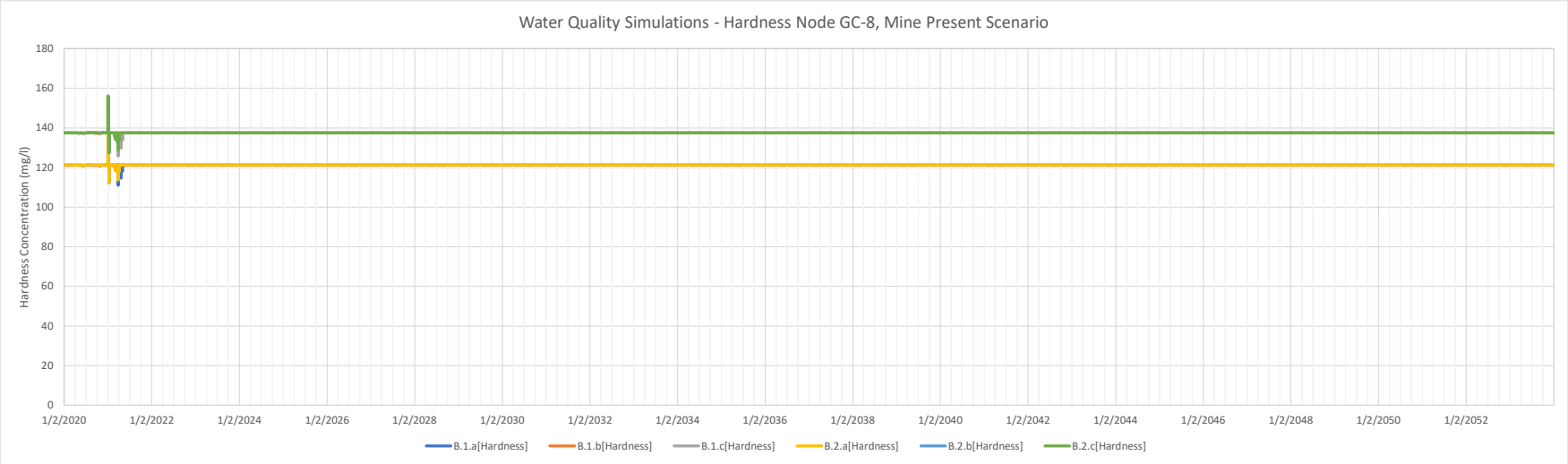

Water Quality Simulations - Nitrate Node GC-7, Mine Present Scenario
Nitrate Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

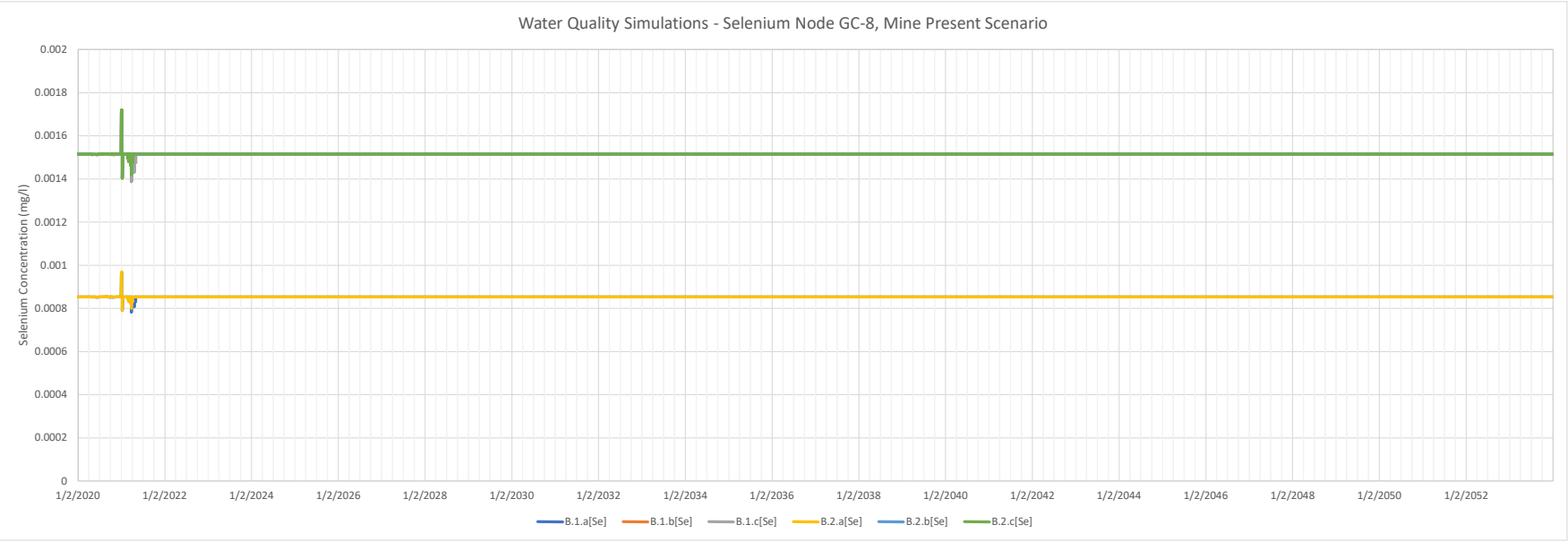

Water Quality Simulations - Sulfate Node GC-7, Mine Present Scenario
Sulfate Concentration (mg/l)
35
30
25
20
15
10
5
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

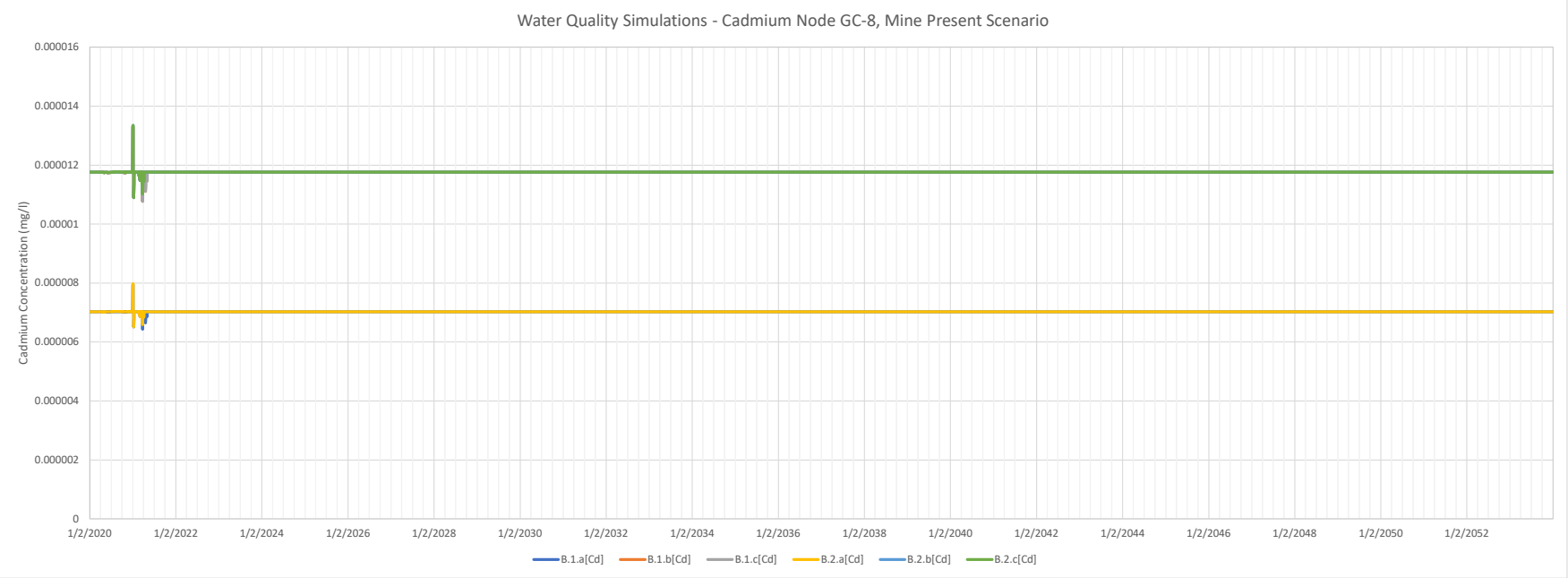

Water Quality Simulations - Nickel Node GC-7, Mine Present Scenario
Nickel Concentration (mg/l)
0.0003
0.00025
0.0002
0.00015
0.0001
0.00005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]

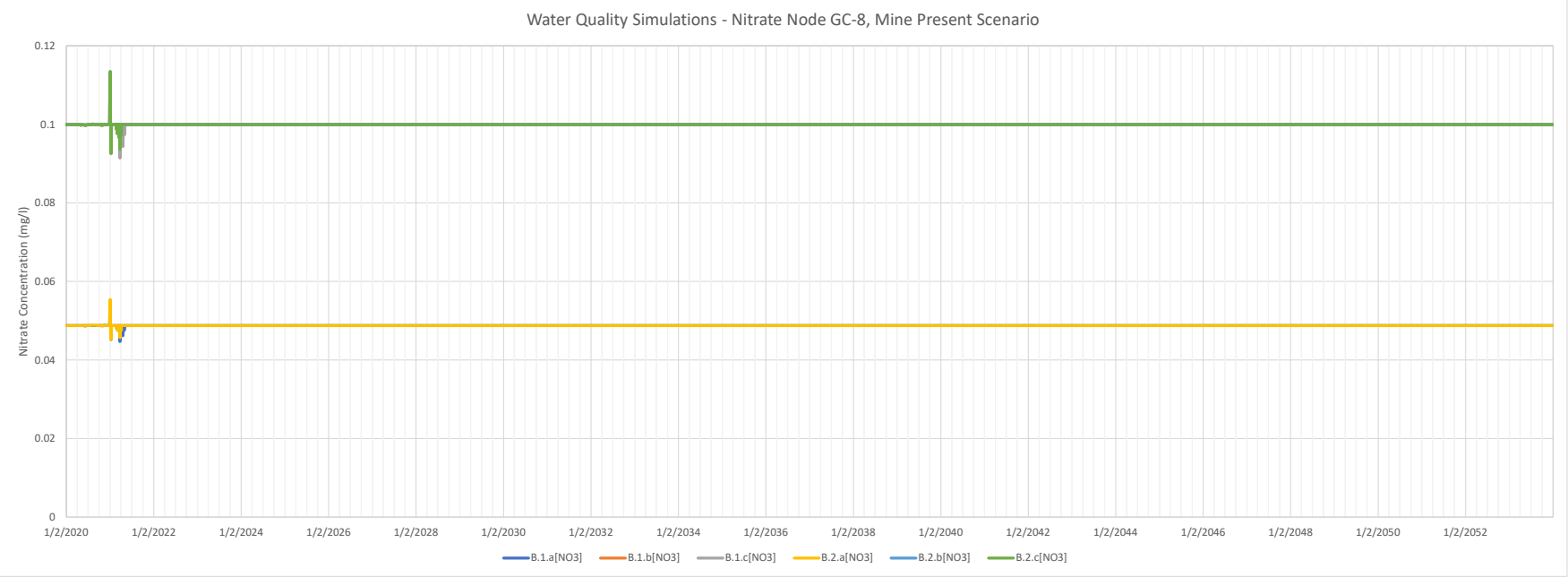

Water Quality Simulations - Cobalt Node GC-7, Mine Present Scenario
Cobalt Concentration (mg/l)
0.00002
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

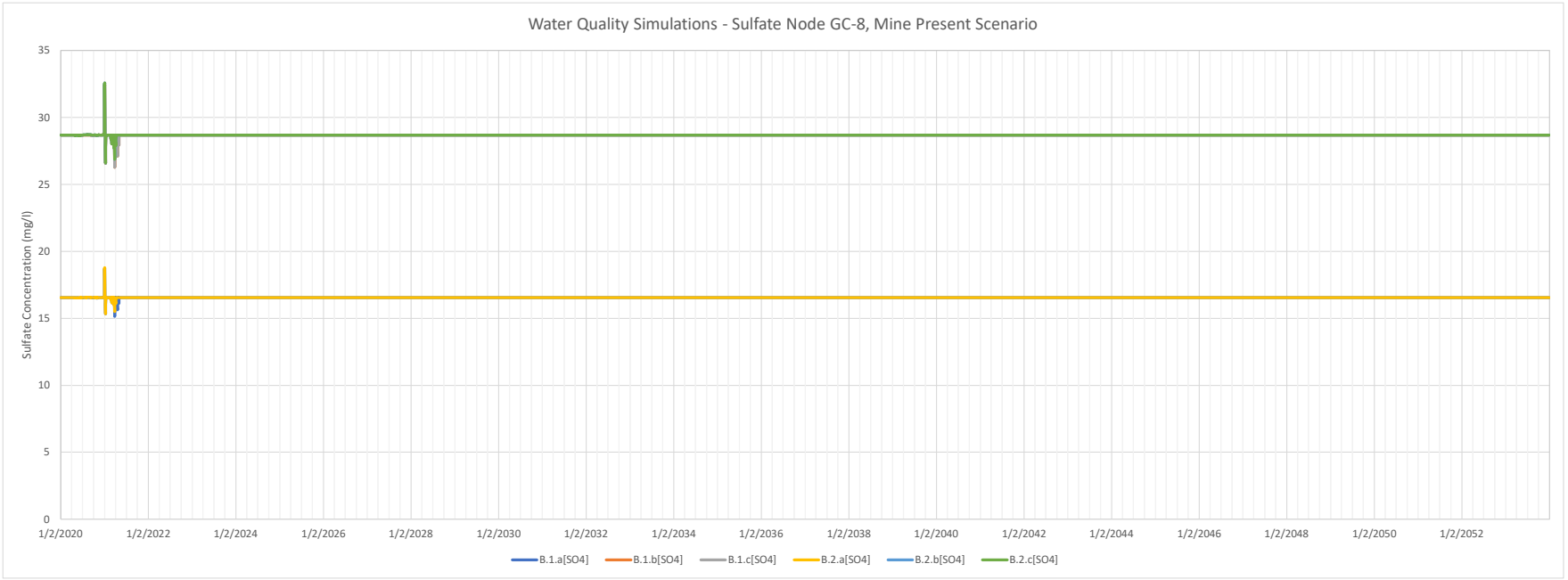
# Node GC-8 : Mine Present Scenarios

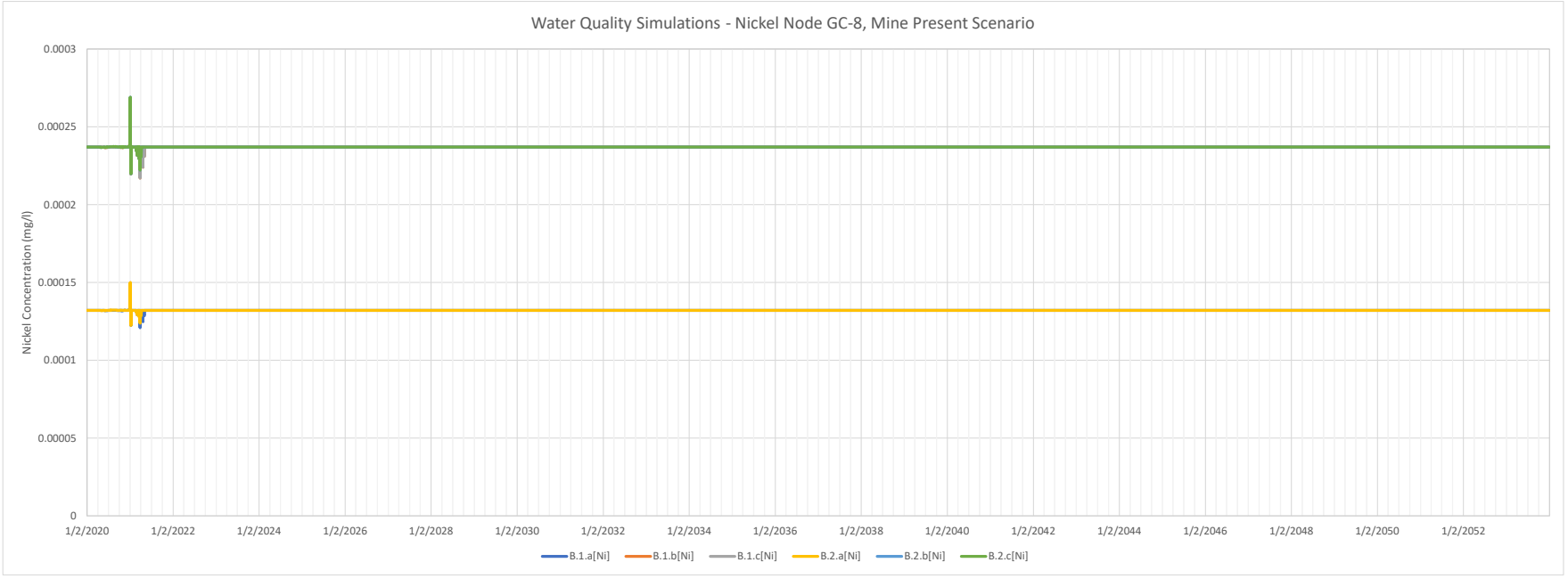

Water Quality Simulations - Hardness Node GC-8, Mine Present Scenario
Hardness Concentration (mg/l)
180
160
140
120
100
80
60
40
20
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]

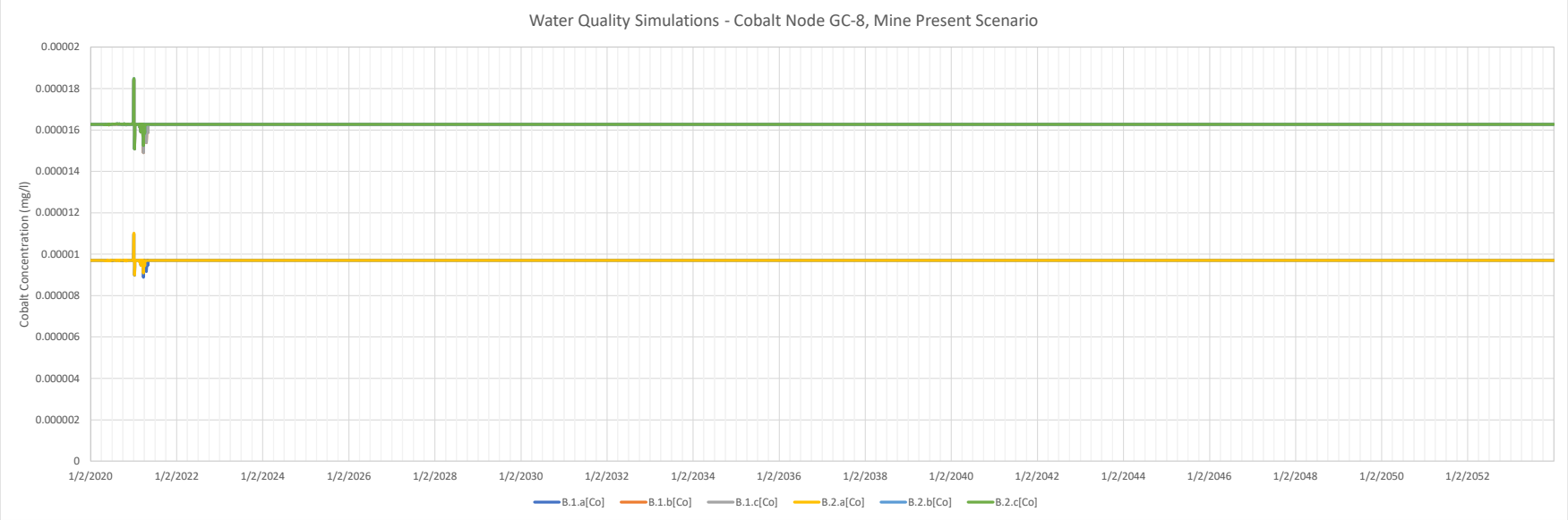

Water Quality Simulations - Selenium Node GC-8, Mine Present Scenario
Selenium Concentration (mg/l)
0.002
0.0018
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]


Water Quality Simulations - Cadmium Node GC-8, Mine Present Scenario
Cadmium Concentration (mg/l)
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Cd]
B.1.b[Cd]
B.1.c[Cd]
B.2.a[Cd]
B.2.b[Cd]
B.2.c[Cd]


Water Quality Simulations - Nitrate Node GC-8, Mine Present Scenario
Nitrate Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[NO3]
B.1.b[NO3]
B.1.c[NO3]
B.2.a[NO3]
B.2.b[NO3]
B.2.c[NO3]

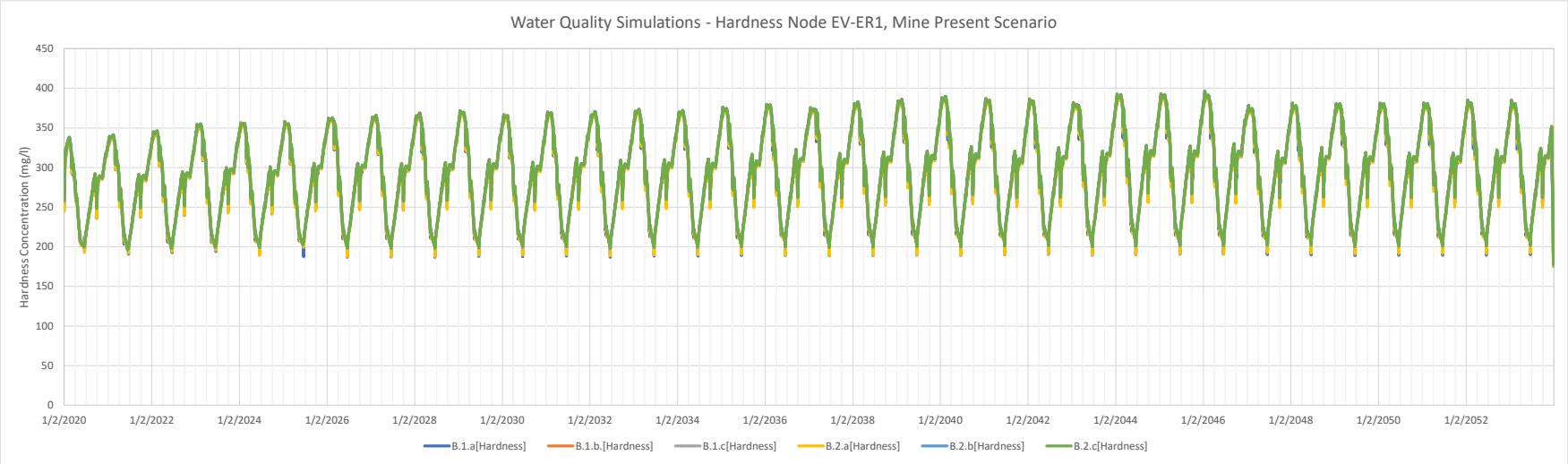

Water Quality Simulations - Sulfate Node GC-8, Mine Present Scenario
Sulfate Concentration (mg/l)
35
30
25
20
15
10
5
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[SO4]
B.1.b[SO4]
B.1.c[SO4]
B.2.a[SO4]
B.2.b[SO4]
B.2.c[SO4]

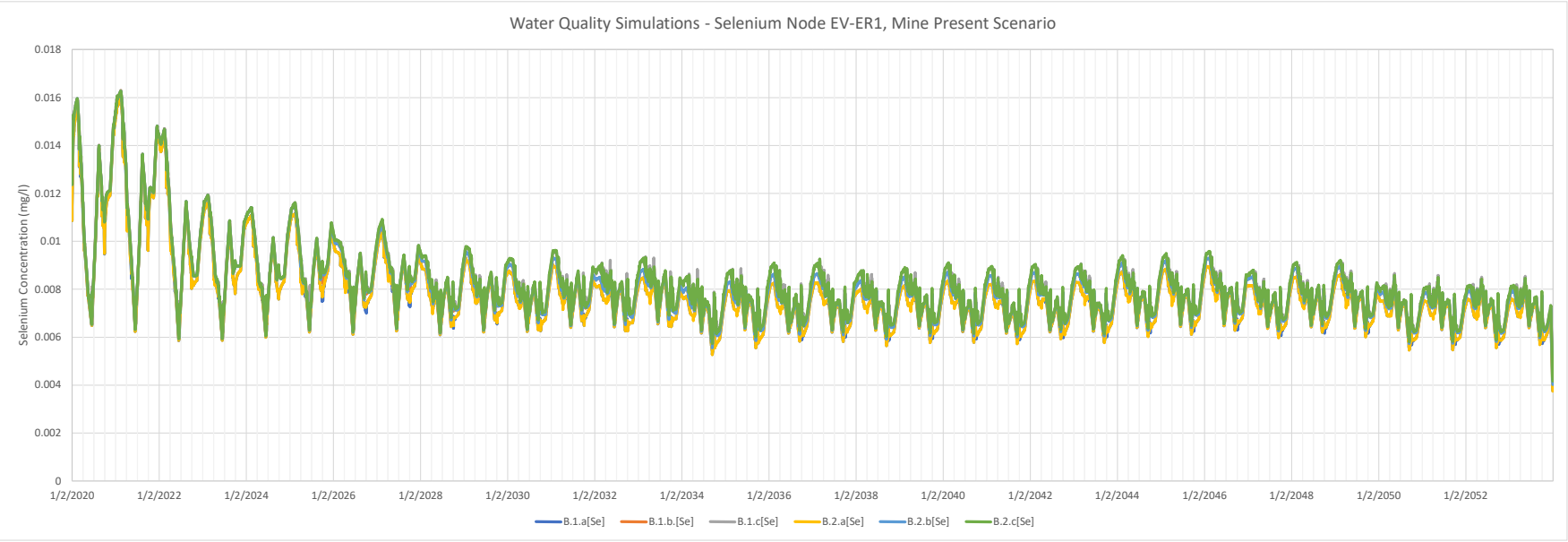

Water Quality Simulations - Nickel Node GC-8, Mine Present Scenario
Nickel Concentration (mg/l)
0.0003
0.00025
0.0002
0.00015
0.0001
0.00005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Ni]
B.1.b[Ni]
B.1.c[Ni]
B.2.a[Ni]
B.2.b[Ni]
B.2.c[Ni]


Water Quality Simulations - Cobalt Node GC-8, Mine Present Scenario
Cobalt Concentration (mg/l)
0.00002
0.000018
0.000016
0.000014
0.000012
0.00001
0.000008
0.000006
0.000004
0.000002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Co]
B.1.b[Co]
B.1.c[Co]
B.2.a[Co]
B.2.b[Co]
B.2.c[Co]

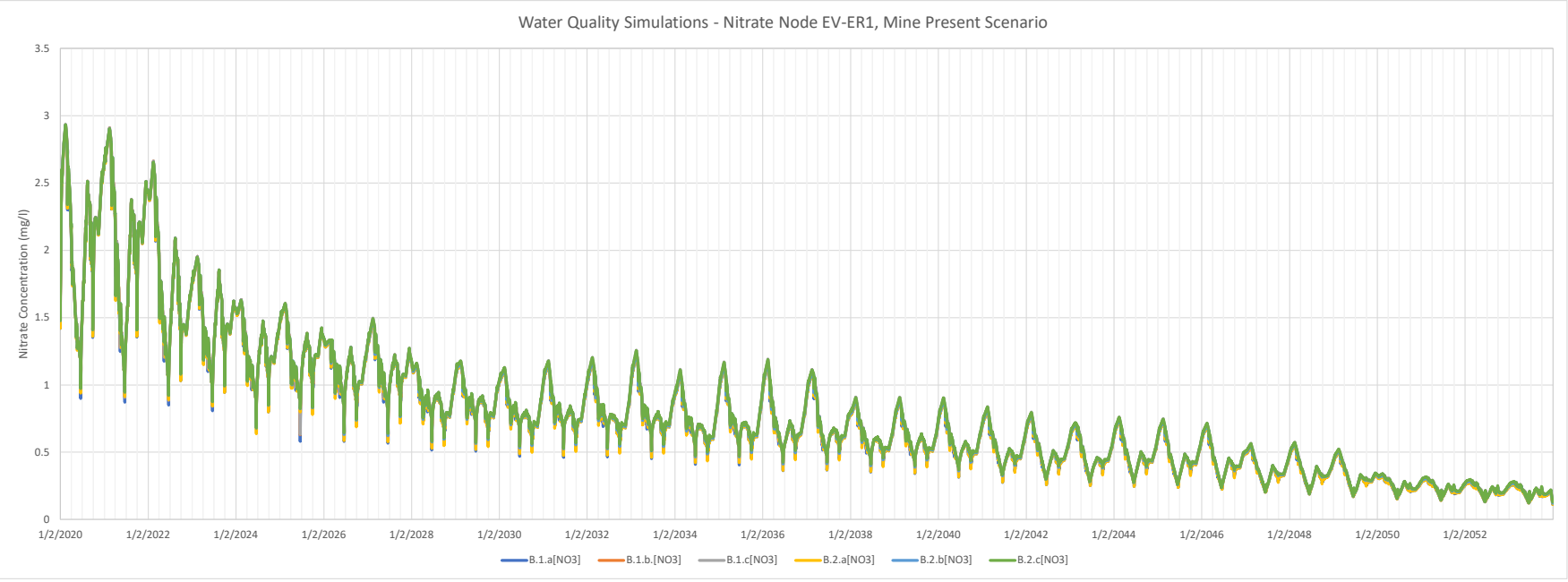
# Node ER-EV1 : Mine Present Scenarios

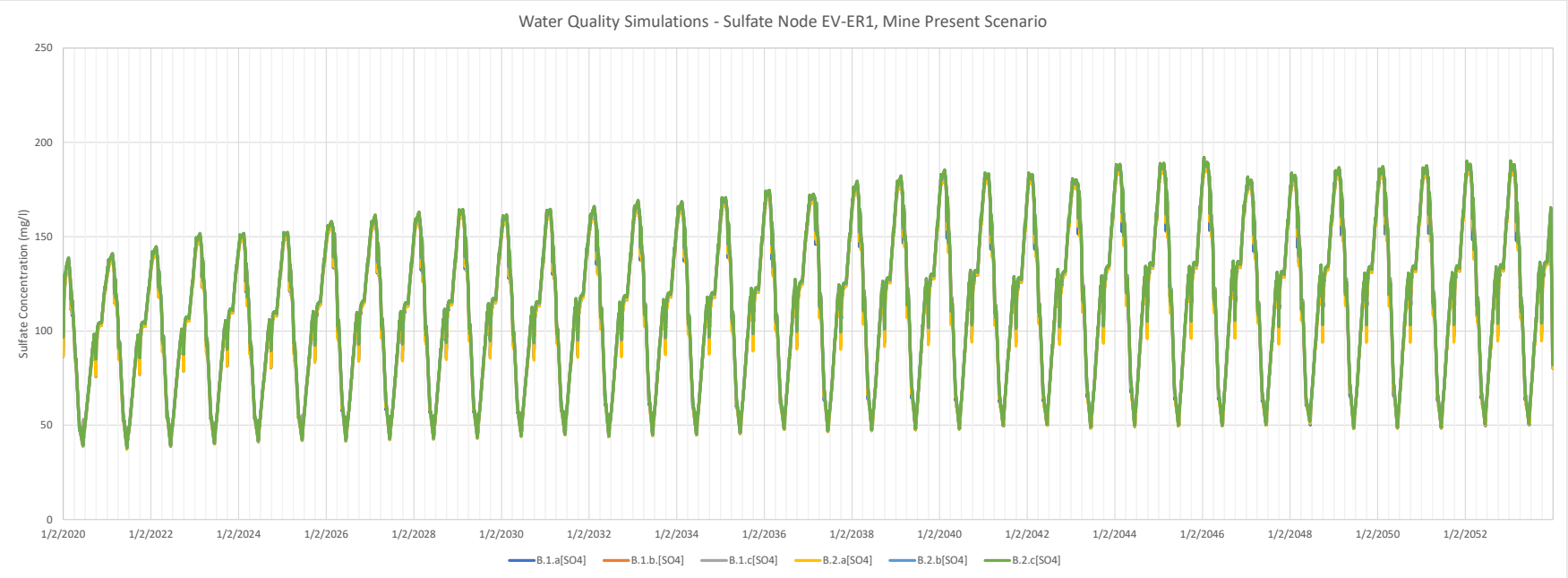
Note: Simulated under average climatic conditions


Water Quality Simulations - Hardness Node EV-ER1, Mine Present Scenario
Hardness Concentration (mg/l)
450
400
350
300
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b.[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]


Water Quality Simulations - Selenium Node EV-ER1, Mine Present Scenario
Selenium Concentration (mg/l)
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b.[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]

**Cadmium Concentrations Not Provided with the RWQM Model**



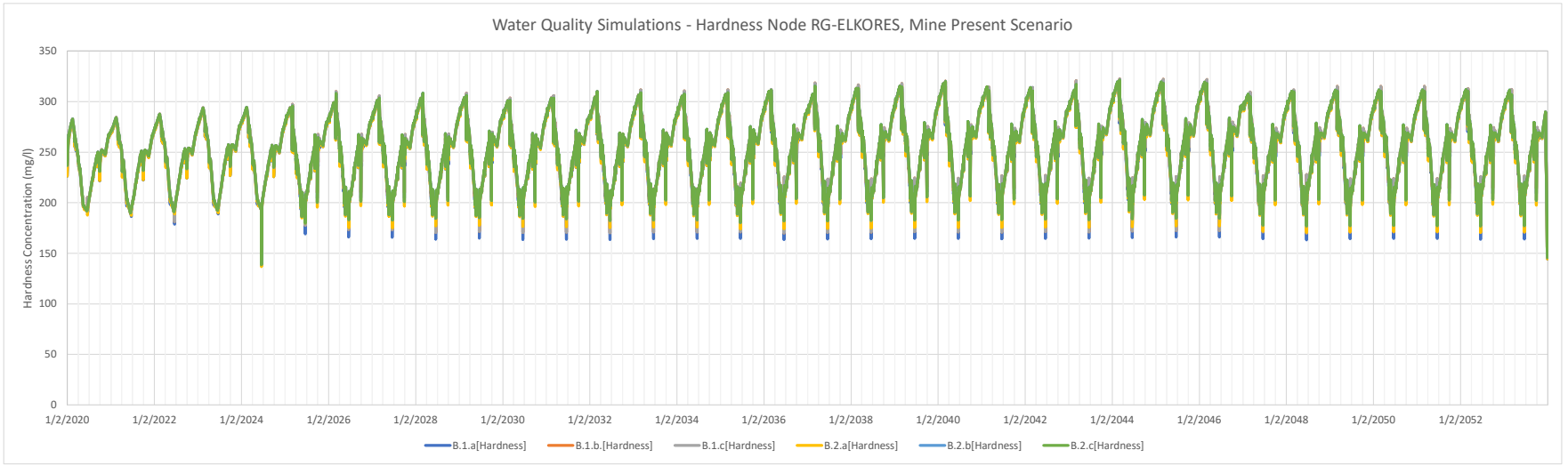


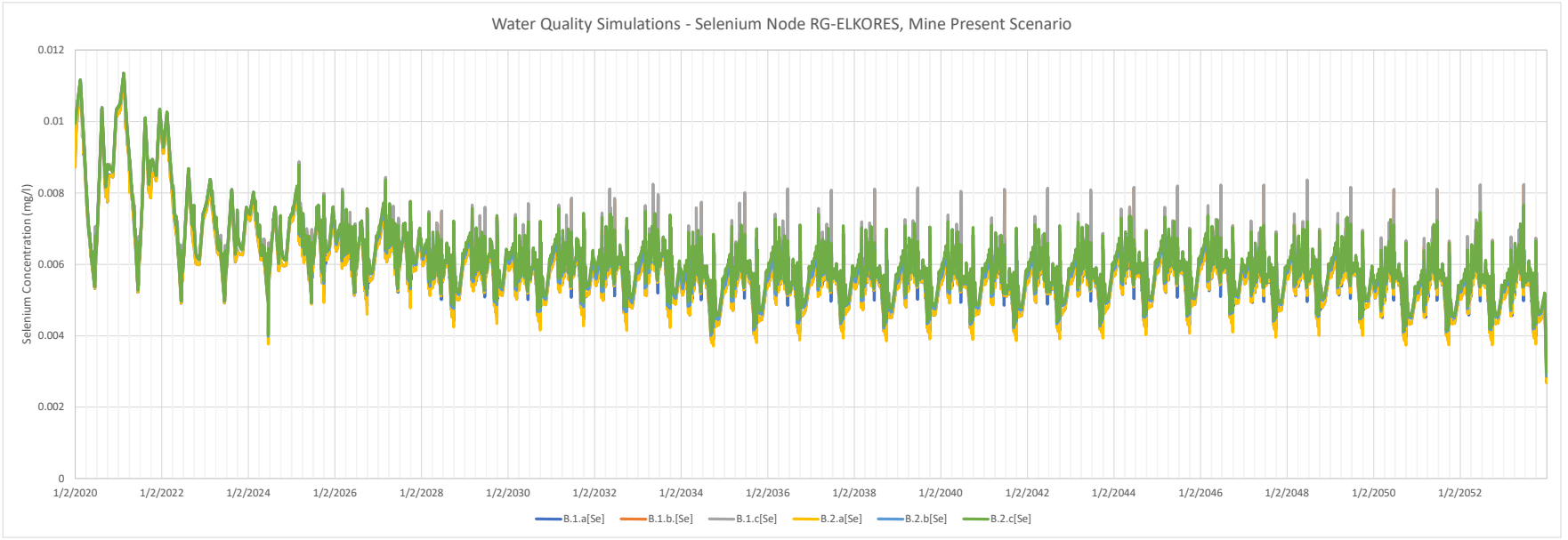

**Nickel Concentrations Not Provided with the RWQM Model**

**Cobalt Concentrations Not Provided with the RWQM Model**

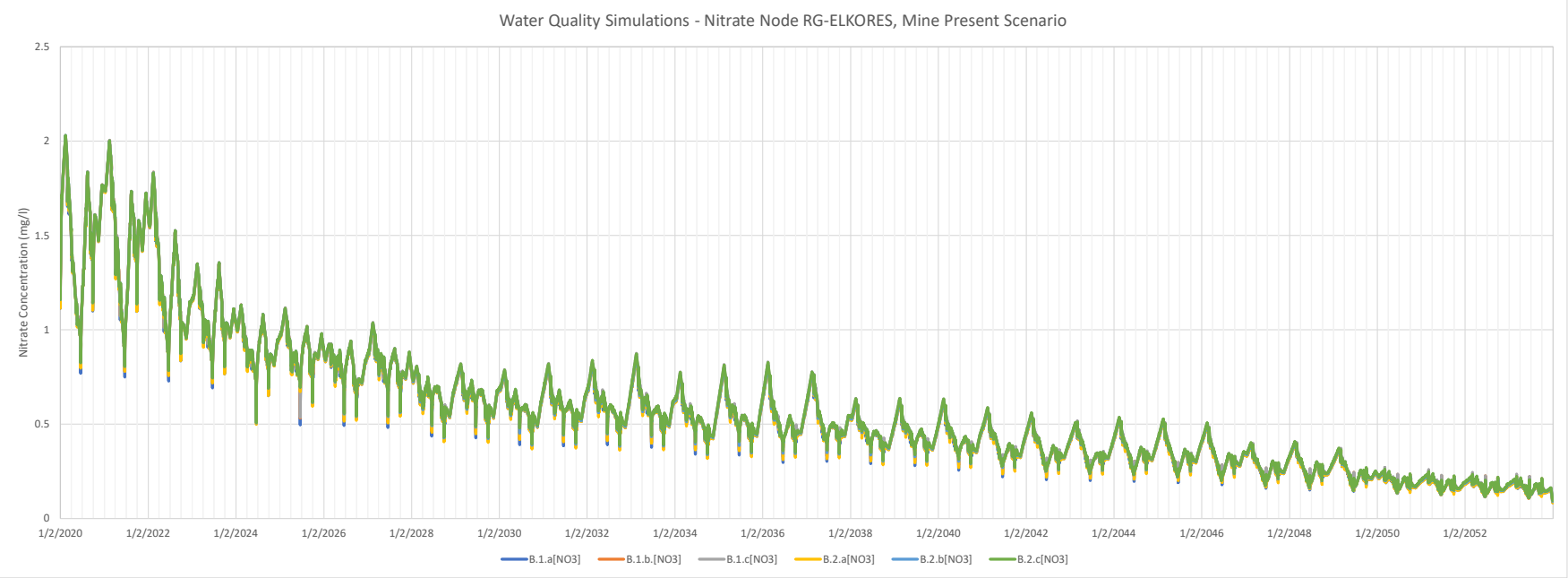
# Node RG-ELKORES : Mine Present Scenarios

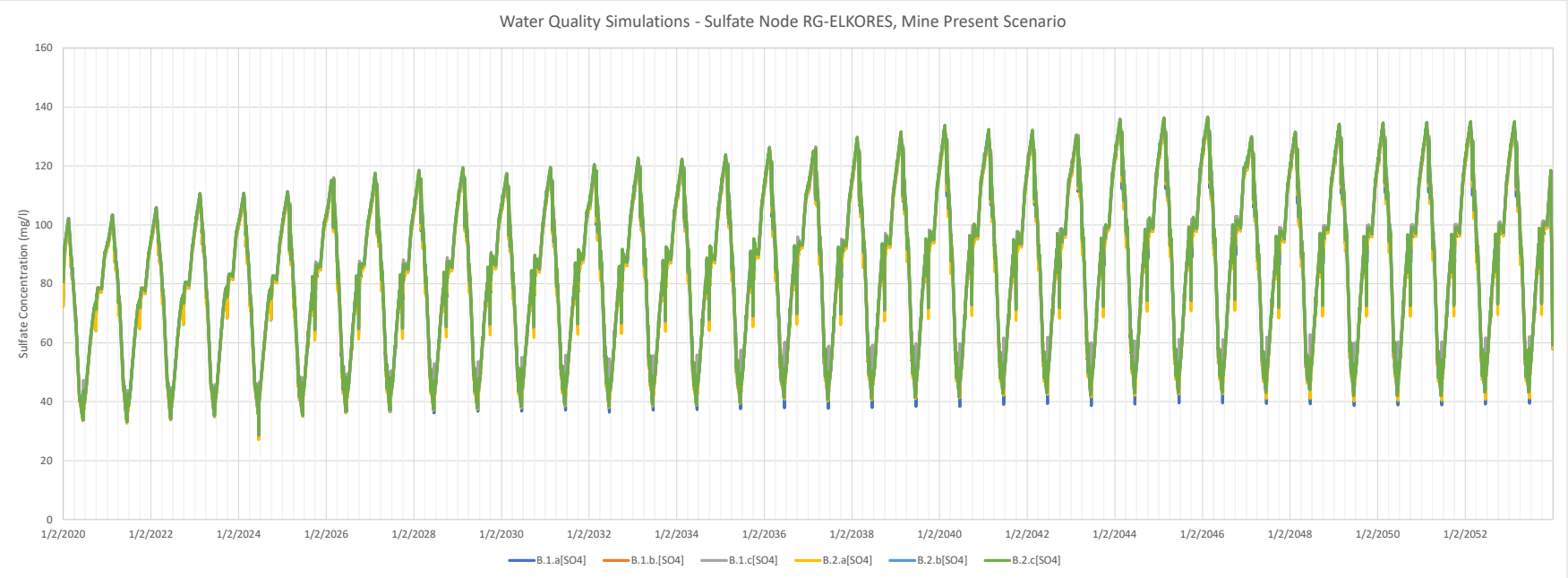
Note: Simulated under average climatic conditions


Water Quality Simulations - Hardness Node RG-ELKORES, Mine Present Scenario
Hardness Concentration (mg/l)
350
300
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b.[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]


Water Quality Simulations - Selenium Node RG-ELKORES, Mine Present Scenario
Selenium Concentration (mg/l)
0.012
0.01
0.008
0.006
0.004
0.002
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b.[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]

**Cadmium Concentrations Not Provided with the RWQM Model**



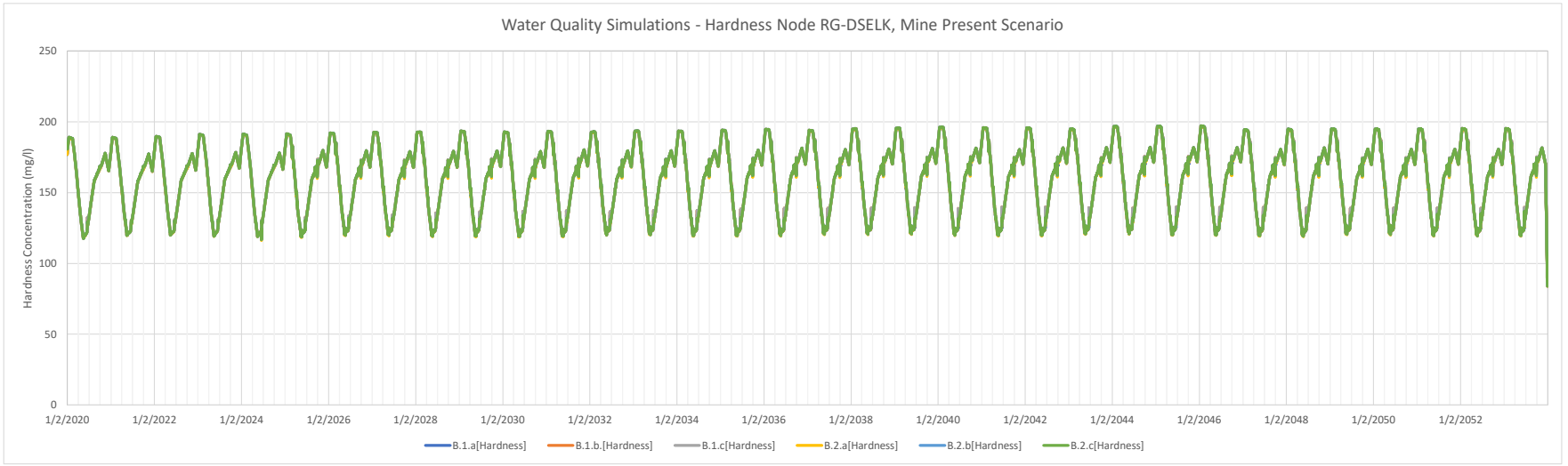


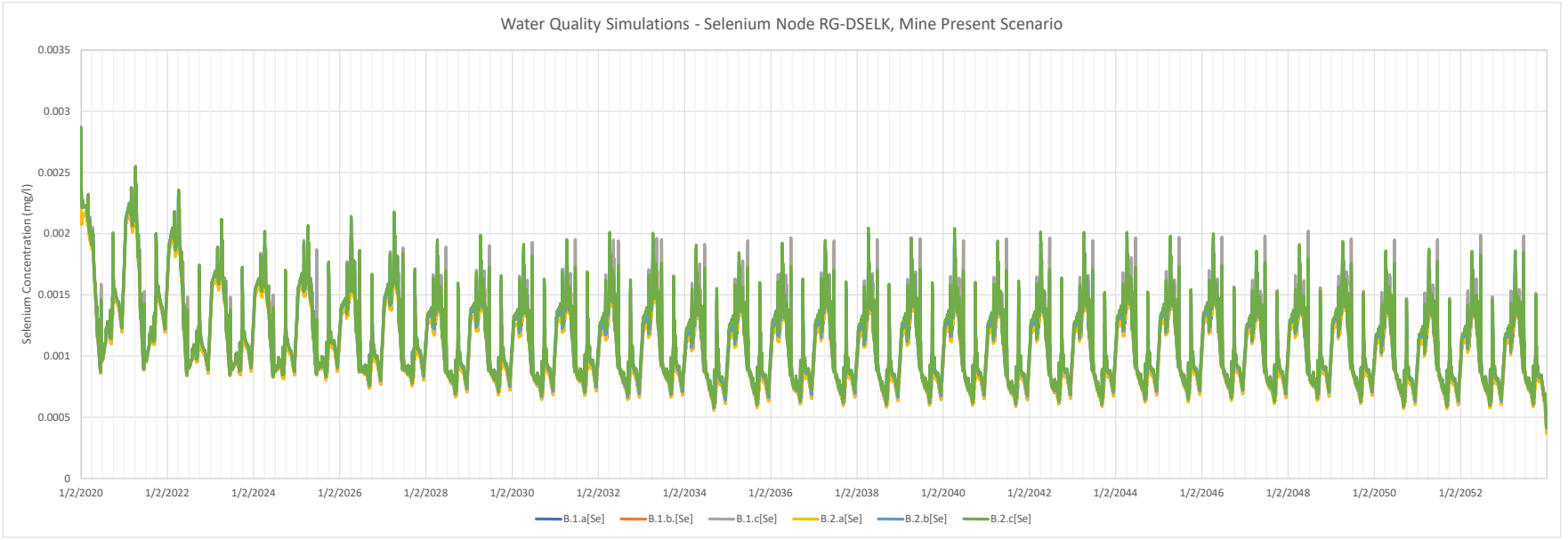

**Nickel Concentrations Not Provided with the RWQM Model**

**Cobalt Concentrations Not Provided with the RWQM Model**

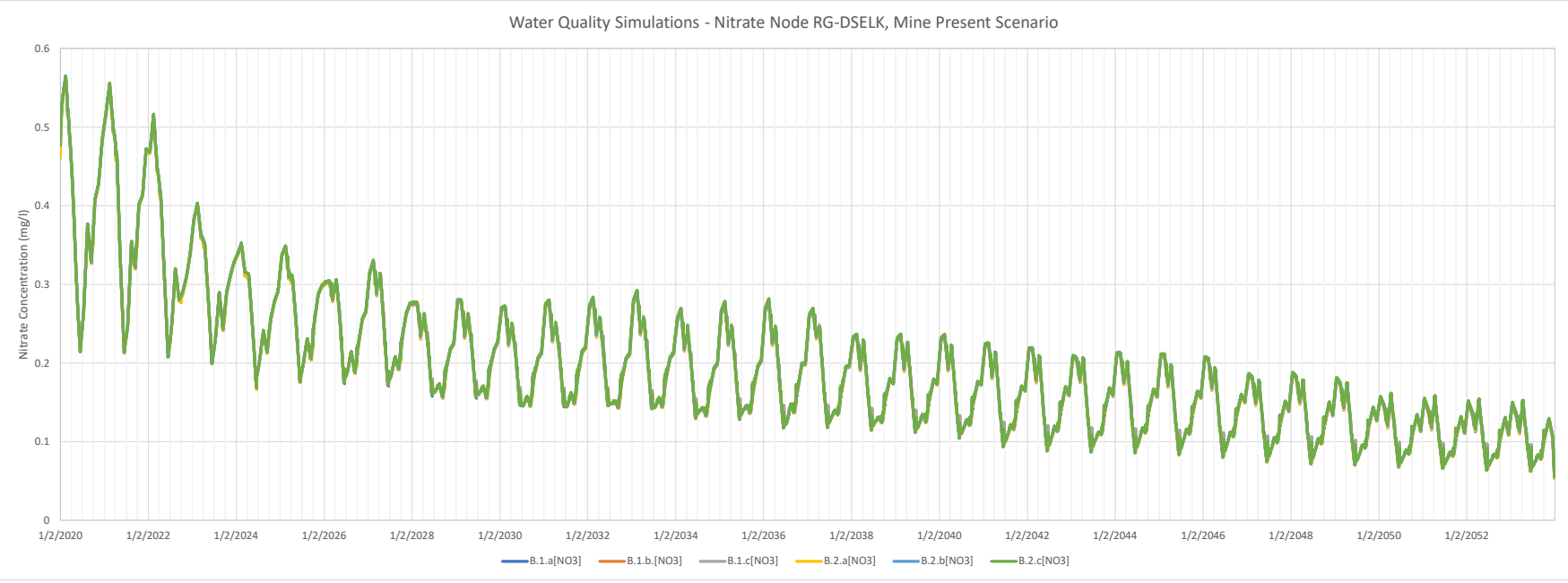
# Node RG-DSELK : Mine Present Scenarios

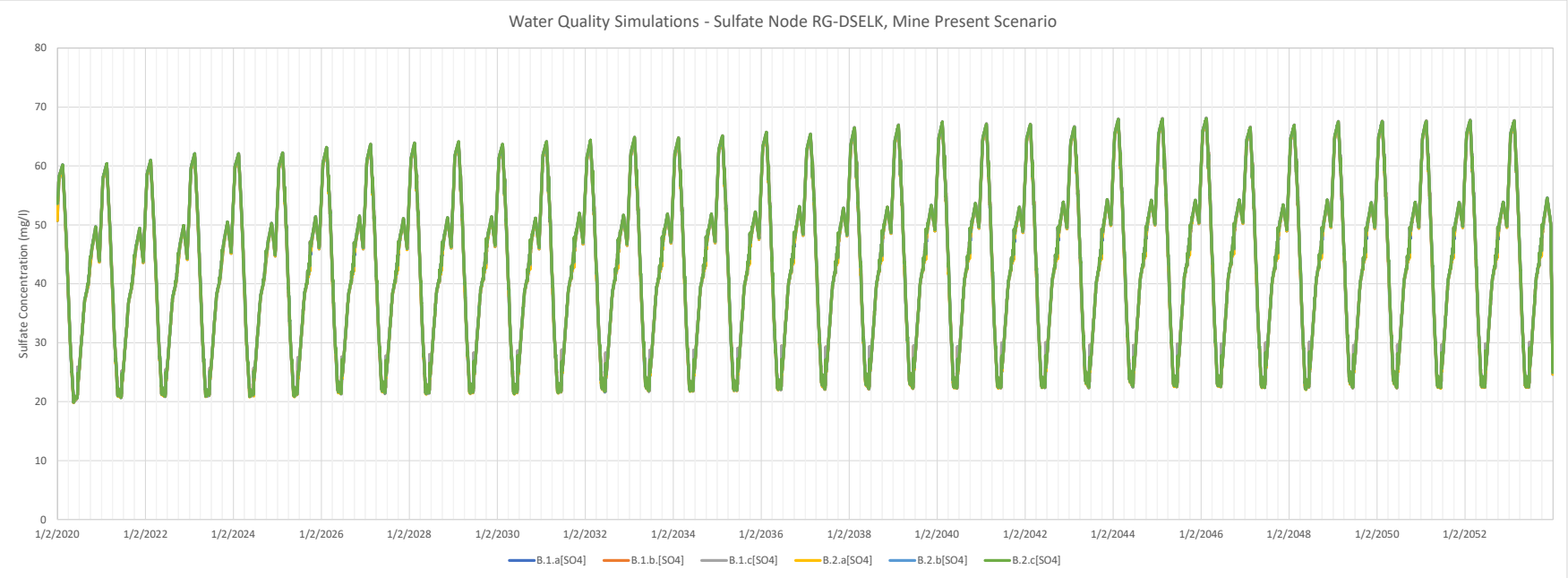
Note: Simulated under average climatic conditions


Water Quality Simulations - Hardness Node RG-DSELK, Mine Present Scenario
Hardness Concentration (mg/l)
250
200
150
100
50
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Hardness]
B.1.b.[Hardness]
B.1.c[Hardness]
B.2.a[Hardness]
B.2.b[Hardness]
B.2.c[Hardness]


Water Quality Simulations - Selenium Node RG-DSELK, Mine Present Scenario
Selenium Concentration (mg/l)
0.0035
0.003
0.0025
0.002
0.0015
0.001
0.0005
0
1/2/2020
1/2/2022
1/2/2024
1/2/2026
1/2/2028
1/2/2030
1/2/2032
1/2/2034
1/2/2036
1/2/2038
1/2/2040
1/2/2042
1/2/2044
1/2/2046
1/2/2048
1/2/2050
1/2/2052
B.1.a[Se]
B.1.b.[Se]
B.1.c[Se]
B.2.a[Se]
B.2.b[Se]
B.2.c[Se]

**Cadmium Concentrations Not Provided with the RWQM Model**






**Nickel Concentrations Not Provided with the RWQM Model**

**Cobalt Concentrations Not Provided with the RWQM Model**