COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

April 28, 2025

Lynn Shults
L.G. Everist, Inc
7321 E. 88th Ave. Suite 200
Henderson, CO 80640

Re: Fort Lupton Sand and Gravel Mine, Permit No. M-1999-120; L.G. Everist, Incorporated, Amendment 3, 3rd Adequacy Review

Dear Ms. Shults:

The Division of Reclamation, Mining and Safety (Division) reviewed the content of the applicant's Adequacy Review Responses submitted by Environment, Inc. on April 3, 2025. After a review of the responses, the following additional questions need to be addressed before the Division can approve the application.

DRMS Adequacy Letter 1, February 5, 2025

6.4.4 Exhibit D - Mining Plan

7. River Setback and Bank Armoring. The Applicant states the South Platte River is within 400 feet of the mining area along the east sides of the Northeast Phases 1 and 3 in the amendment area and the slurry wall will be installed at least 200 feet from the edge of the river. The proposed mining setback is 275 feet from the riverbank. Based on Table 1 in the Division's 2024 Floodplain Protection Standards for Sand and Gravel Pits (attached), the standard setback is 400 feet where no pitside bank or riverbank protection is required, and 300 feet is the minimum setback for pit side armoring only.

Applicant Response

Thank you for catching this. When I was laying out the proposed mining area I was maximizing the area to be mined and forgot about the 300 feet that MHFCD used. Since LG Everist has to armor any areas within 400 feet of the river we are modifying the mining plan to recover the lost material that the new setback distance will require us to leave. The following information is the same as approved at out West Farm Reservoirs and more detail has been added to the Mining and Reclamation Plans and the Bond estimate. In simple terms, the areas within 400 feet of the river will be mined within 250 feet of the top bank of the river and then that area will be backfilled using native material from the floor of the mined area. They will rebuild this 50-foot-wide band so the top of the 3h to 1v slope will begin at 300 feet, covered with gravel and then will be armored as described in the armoring plan. Note that the same method is proposed for the area along the east side of the Parker #4 phase but there is river bank armoring in that area so the final setback will be 250 feet from riverbank to the top of the reservoir slope.

7a. DRMS Additional Comment

In the adequacy response, the applicant is proposing a 250-foot setback from the top of the riverbank during mining that will be backfilled to 300 feet during slope reclamation. The Division requires that the "Floodplain Protection Standards for Sand and Gravel Pits Adjacent to Rivers and Perennial Streams" (February 2024) be applied, both during and after the mining operation and during reclamation, to limit impacts during flooding events and reduce the possibility of stream capture. Therefore, please revise the exhibits, both text and maps, to incorporate a 300-foot setback from the top of the riverbank to the top of the pitside bank during all phases of mining and reclamation.

The Division acknowledges that in the area of the Parker #4 phase on the south end of the permit area, the riverbank is armored, and a 250-foot setback from riverbank to the top of the mining/reservoir slope is appropriate.

6.4.7 Exhibit G - Water Information

10. Per Rule 3.1.6, please submit a new groundwater study and model that demonstrates disturbances to the prevailing hydrologic balance of the affected land and of the surrounding area will be minimized both during and after mining operations and during reclamation activities.

Applicant Response

Please find attached a copy of the groundwater study prepared by Schnable Engineering for the areas surrounding the amendment areas on the north end of the mine.

DRMS Additional Comments

10a. The model prepared by Schnable Engineering does not include the recently installed French drain on the west side of the NCCI pit, adjacent to the Northwest area. Will the drain change the modeled predictions? If so, please revise the groundwater study to include this drain.

10b. The model shows a minimum depth to groundwater of four feet and predicts up to 4 feet of mounding upgradient of the slurry wall. The operator proposes to install a drain if the depth to groundwater, following the construction of the slurry wall, approaches three feet below the surface. Please update the groundwater study include an evaluation of the potential impacts from groundwater changes to property and structures adjacent to the Northeast area. This includes homes and outbuildings, wells, agricultural fields, CR 25, and the horse property and track on the north side of the proposed mine.

10c. In the comment letter from the Division of Water Resources, they state that the design of lined gravel pits should ensure that they will not individually or cumulatively result in impacts to the timing and quantity of groundwater flow from upgradient locations back to the stream system. Since the operator is not proposing to install a drain at this time, please respond to this comment

and specifically discuss how the timing and quantity of groundwater flow will be affected by the proposed slurry walls in the Northeast and Northwest areas.

DRMS Adequacy Letter 2 from DRMS Engineering, February 7, 2025

In the adequacy response, the applicant did not provide answers to the questions on the second page of Adequacy Letter 2. Please respond to the following.

6. The design drawing for the Bank Armoring Plan (Figure 1) does not include a geotextile material or granular filter under the armoring material. Please explain why this standard practice is excluded from the design.

7. More detail is needed to explain the calculations on page 114. a. How was the hydraulic radius (R value) determined, and is it associated with a return event, such as the 100-year event? b. What is the source for the S s value of 2.4? c. What is the source for the value of 35 degrees for the angle of repose? d. The S value is defined as "face slope of pitside bank." Is that terminology accurate?

8. On Map C-1, Plan B has no illustration of armoring. Please revise this map or explain why that illustration is excluded.

New Adequacy Comments

Exhibit G – Water Information

1. In Exhibit G Groundwater Monitoring Plan, page 30, the operator states water level measurements are made in monitoring wells at least once every three months (quarterly, and usually monthly). Additionally, on page 30, LG Everist commits to obtaining water quality samples on a quarterly basis for five quarters prior to exposing water during mining to establish baseline conditions, while subsequent water quality data, *obtained annually,* will be compared to the baseline data to assess water quality variation.

   Per the attached 2024 DRMS Groundwater Monitoring Sampling and Analysis Plan Guidance for Construction Materials, baseline sampling must be sufficient to allow the Division to assess the impacts of the future mining operation on the prevailing hydrologic balance. Groundwater level data for all monitoring wells should be collected monthly and groundwater quality should be collected quarterly. Once site groundwater characterization commences, it will be required that groundwater monitoring will continue for the life of mine. Any modifications to the approved water monitoring plan must be made through the technical revision process with appropriate justification provided by the operator. Water quality sampling frequency will not be reduced to less than a minimum of twice yearly (high flow and low flow data with a collection interval of 5-7 months).

Please revise the monitoring plan to state that water levels will be collected monthly, and water quality samples will be collected quarterly to establish baseline conditions. A Technical revision will be required to reduce the sampling frequency.

Additionally, a commitment should be made as to how the monitoring data will be reported to the Division. The groundwater monitoring report will include:
- Tabulated data for all parameters
- Graphs/plots for selected parameters
- A narrative analysis of the data, with trends and anomalies identified
- A comparison of the observed data to the predictions and to the groundwater quality standards

Exhibit L – Reclamation costs

2. The Division reviewed the cost estimate included in Exhibit L. The estimate does not appear to include the construction of the four slurry walls, grading, topsoiling, and seeding in the Amendment 3 area. Specifically, Table L3, page 88, does not describe the reclamation activity for the Northeast or Northwest areas. Please revise Exhibit L to include the reclamation costs for the Northwest and Northeast areas and resubmit the exhibit to the Division for review. Note, If the Northwest or Northeast areas will be disturbed prior to the release of other mining phases in the existing permit listed on Table L3, the currently held bond cannot be applied to new disturbances to keep the bond at the current level, as suggested at the bottom of page 94.

This concludes the Division's 3rd adequacy review of this application. Please note that the decision date for this application is **May 9, 2025**. Please allow the Division sufficient time to perform another review of your responses prior to this date. If you are unable to provide satisfactory responses to any inadequacies, it will be your responsibility to request an extension of time to allow for continued review of this application.

If you have any questions, please contact me by telephone at (720)527-1640 or by email at nikie.gagnon@state.co.us.

Sincerely,

Nikie Gagnon

Nikie Gagnon
Environmental Protection Specialist

Enclosure: DRMS Groundwater Monitoring and Sampling and Analysis Plan Guidance Construction Materials and Hard Rock Sites

Ec: Stevan O'Brian, Environment Inc
Jared Ebert, DRMS

COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

Groundwater Monitoring: Sampling and Analysis Plan Guidance Construction Materials and Hard Rock Sites

July 2024

Contents

Introduction

This document is intended to provide guidance to permittees of Construction Materials or Hard Rock mines, on the typical requirement of a groundwater sampling and analysis plan, where the proposed operation has the potential to adversely impact the prevailing hydrologic balance of the affected land and of the surrounding area, with respect to the quantity and quality of water in groundwater systems. It is intended to supplement the Groundwater Monitoring and Protection Technical Bulletin of November 19, 2019, and is an attempt to provide more detailed and specific guidance to permittees in an area where the Division has found approaches to compliance have varied widely.

Sites where mining will not expose groundwater, e.g., dry sites or sites where mining will not be near the water table, are not required to submit a groundwater sampling and analysis plan.

A Sampling and Analysis Plan should be tailored to the specific site to which it applies, but this guidance document does not take site-specific factors into account.

The remaining sections of this document are organized under the same headings that the Division would expect to see in a typical groundwater sampling and analysis plan.

As described in the Technical Bulletin, the Division of Reclamation, Mining and Safety (DRMS/Division) has statutory mandates to monitor groundwater and protect the hydrologic balance during and after mining operations under the Colorado Mined Land Reclamation Act (C.R.S. Title 34, Article 32), and the Colorado Land Reclamation Act for the Extraction of Construction Materials (C.R.S. Title 34, Article 32.5). The Division is requiring groundwater monitoring throughout the life of mine to demonstrate compliance with these statutes for mines that have, or potentially will affect the hydrological balance.

Hyperlinks are included in the document text for convenience, and a full list of references is given at the end.

1 Background Information

1.1. Site Description

The Site Description should include the following:

- Name of the site or sampling area. Also include the name or abbreviation (e.g., "the Site"), if any, that will be used throughout the plan.

- A general description of the region in which the site or sampling area is located. Include the street address, city, state, and postal code, if appropriate.

- A detailed description of the physical geography of the site or sampling area. Include a description of the topography, land use/surface cover, any relevant physical features, past and present activities, existing structures. Give the area in acres.

- A description of the geology of the area, including lithology and stratigraphy. Give the composition, thickness and extent of each formation. Identify any faults or other major structural features in the area. Diagrams are often a helpful addition to a geologic description.

- A description of the hydrogeology of the area. Identify each aquifer underlying the site. Characterize each aquifer (hydraulic conductivity, isotropy, confined/unconfined, recharge zones, groundwater flow direction) and describe how the characterization was made. Identify aquitards/confining layers.

- At least two maps:
  - A vicinity map that shows the permit area within its geographic region.

  - A Monitoring Well Location map that shows the sampling sites or sampling areas within the local area. Scale criteria need not be followed for this map. The map should include a layer of projected potentiometric contour lines for each identified aquifer, or a groundwater directional flow arrow (if appropriate). All permitted wells within the map extent should be shown – this information is available from the Division of Water Resources (DWR). All sampling locations (historic, active and planned) should be shown. All springs and seeps should be shown. The outcrop of any geologic formations should be shown. Other physical features and man-made structures may be included for clarity.

  All maps should include a title, legend, North arrow, scale bar, date, and section lines/marks. All maps must be prepared and signed by a registered land surveyor, professional, engineer, or other qualified person.

1.2. Baseline Groundwater Characterization

A Sampling and Analysis Plan will be informed by a baseline characterization of groundwater at the site, but may also need to include a plan to collect the data that will allow the initial characterization to be made. Applicants are encouraged to utilize information available from the public domain literature

and private sector data in developing their baseline groundwater characterization. These data sources will not require a Notice of Intent (Rule 5) to perform exploration operations. Private sector sources will likely include environmental site assessments performed as part of land acquisition.

Baseline sampling must be sufficient to allow the Division to assess the impacts of the future mining operation on the prevailing hydrologic balance. Sampling locations shall be established upgradient and downgradient of the proposed operation, the number of sampling locations is not specified since it depends greatly on the site, (a minimum of three data points are needed to establish groundwater flow direction). Unless otherwise approved by the Division, all groundwater monitoring wells should be within the permit area. The screened intervals of groundwater monitoring wells should be sufficient to monitor each identified aquifer that maybe impacted by the mining operation. Samples should be taken with sufficient frequency to capture site-specific temporal variability. The duration of the sampling period should be sufficient to identify seasonal trends. The minimum sample location, frequency and duration requirements for baseline groundwater characterization are summarized below:

- Upgradient and downgradient sampling locations in each identified aquifer.
- Samples taken quarterly for analytical analysis.
- Water level data for all wells should be collected at least monthly.
- Five consecutive quarters of data, plus additional quarters up to two years may be required and utilized if site activity is delayed.

A table should be included with a row for each sampling location. Each point should have a unique identifier. The table should include the location (Lat/Long), land surface elevation, top of casing elevation, total depth, screened interval, and completion date. The latitude/longitude could be shown in decimal degrees showing five places to the right of decimal, e.g., 39.73934, -104.98486.

It should be noted that once site groundwater characterization commences, it will be required that groundwater monitoring will continue for the life of the mine. Any modifications to the approved water monitoring plan must be made through the technical revision process with appropriate justification provided by the operator. Analytical sampling frequency will not be reduced to less than a minimum of twice yearly (high flow and low flow data with a collection interval of 5-7 months). Analytical and water level monitoring will not be suspended due to delay in site activity, or placing the site into temporary cessation unless approved by the Division.

Upon request, the Division is available for consultation during development of a Sampling and Analysis Plan.

1.2.1. Monitoring Well Installation

All monitoring wells should be:

- Permitted with the State Engineer's Office (SEO) Division of Water Resources (DWR); and

- Constructed (and later abandoned) according to the required SEO standards (see 2 CCR 402-2 Rules and Regulations for Water Well Construction, Pump Installation, Cistern Installation, and Monitoring and Observation Hole/Well Construction)

The well construction standards are designed to protect aquifer integrity and to ensure that constructed wells serve their purpose; in this case to provide representative, defensible data. Failure to follow the applicable permitting and well construction rules could result in unacceptable data; and failure to adequately protect groundwater resources could result in subsequent enforcement action as deemed appropriate by DRMS or the SEO.

All wells should be installed by a licensed contractor, as required by SEO. Site specific well placement and construction details should be recorded and approved by a qualified professional, before being submitted to DRMS.

The Division should be notified within 30 days if any groundwater monitoring wells are damaged or destroyed during the life of the permit. Damaged or destroyed wells should be appropriately repaired or replaced as soon as reasonably possible to preserve data comparability, and the Division notified when this is complete. The notification shall include details of any repairs or new well construction summary. If an existing monitoring well requires removal or relocation for any reason, the justification and proposed new well location should be provided to DRMS as a technical revision for approval prior to the removal of the existing well.

1.2.2. Baseline Groundwater Quantity

Baseline water level data should be recorded in a table, and a narrative description of how the data was collected should be provided. A graph of the water level against time at each monitoring point should also be included. In most cases a static water level can be measured using a depth gauge from the top of the casing, however if the aquifer is under confined conditions, and the pressure is such that the well is flowing, an alternative method will be necessary (for example: https://www.usgs.gov/media/videos/measuring-water-levels-a-flowing-well).

The potentiometric head at the well can be readily derived from the depth to water measurement and the casing elevation. Head measurements from three or more points may be interpolated to give a groundwater flow direction and an approximation of the potentiometric surface in the aquifer. In many cases it will be necessary to collect more data points to adequately characterize the pre-mining conditions.

Often a numerical model (for example: Modflow) will be an appropriate tool to characterize the hydrogeology of the site. In other cases, the Division acknowledges, routine one-dimensional groundwater equations may be appropriate to evaluate potential offsite hydrologic impacts. If a numerical model is used, it should be thoroughly documented, with all assumptions explicitly stated. The documentation should include:

- An explanation of the conceptual model, with assumptions explicitly stated

- A detailed description of the model grid, with figures

- A list of parameter values for boundary conditions and initial conditions
- Details of the model calibration

1.2.3. Baseline Groundwater Quality

A table should be provided with a complete list of water quality parameters to be measured. This will comprise both field parameters and laboratory analytes. The full parameter list should be based on Tables 1-4 from Regulation 41: The Basic Standards for Groundwater (Reg. 41). Selected parameters from these tables have been compiled in Appendix A for Construction Materials sites and Appendix B for Hard Rock sites. unless modifications are approved by the Division. It will be up to the Operator/Permittee to submit a Technical Revision with proper justification to reduce the analyte list.

The Division will entertain variances from the Reg. 41 list on a case-by-case basis, but any proposed variance must be justified.

Baseline groundwater quality data should be recorded in a table, with the sampling date. Minimum, maximum and average values for each parameter should be given and any exceedance of a standard shall be clearly identified.

2 Predicted Impacts to Hydrologic Balance

Following the characterization of baseline conditions a prediction should be made as to the possible impacts of the proposed mining operation on groundwater quantity and quality.

The prediction of likely impacts to groundwater quantity should include a prediction of the maximum spatial extent of drawdown caused by dewatering, or of mounding caused by impermeable cell liners/slurry walls, and the time-scale over which it will be observed. The extent and time to recovery to a steady-state following reclamation should also be predicted.

The prediction of impacts to groundwater quality should include a discussion of water quality parameters that may be elevated as a result of the proposed operation, and the likely spatial and temporal extent of the impact. It is noted here that HB 19-1113, which applies to Hard Rock Sites only and was signed into law on April 4, 2019, requires most reclamation plans to demonstrate, by substantial evidence, a reasonably foreseeable end date for any water quality treatment necessary to ensure compliance with applicable water quality standards.

If a numerical model is used to inform any of the hydrologic predictions the model should be thoroughly documented, as discussed in Section 1.2.2.

3 Groundwater Monitoring Plan

A monitoring plan sufficient to verify the predictions of hydrologic impacts should be proposed. The

locations of sampling points, and the frequency at which they will be sampled should be specified. A complete list of groundwater quality parameters to be sampled for should be given. A description of sampling methods should be included in sufficient detail to ensure that the procedure can be replicated throughout the life of the permit (Sampling Methods are discussed in more detail below).

A commitment should be made as to how the monitoring data will be reported to the Division. Typically monitoring data will be compiled into a report, to be submitted by a specified date, e.g. annually or quarterly.

The groundwater monitoring report will include:

- Tabulated data for all parameters
- Graphs/plots for selected parameters
- A narrative analysis of the data, with trends and anomalies identified
- A comparison of the observed data to the predictions **and** to the groundwater quality standards (see below)

The requirements of the groundwater monitoring plan may continue to apply until final bond release and termination of jurisdiction. Changes to the groundwater monitoring plan will require a Technical Revision to the permit.

3.1. Groundwater Points of Compliance

It is likely that one or more Groundwater Points of Compliance (POC) will be established, these are locations at which compliance with the applicable standard will be assessed. Detailed guidance on POCs has been given in the Groundwater Monitoring and Protection Technical Bulletin of November 19, 2019, and will not be repeated here. POCs should be identified in the groundwater monitoring plan.

3.2. Groundwater Quality Standards

As is discussed in detail in the Groundwater Monitoring and Protection Technical Bulletin of November 19, 2019, the Division does not have the authority to set groundwater quality standards, but it does have both the authority and the obligation to apply the standards set by the Water Quality Control Commission, (in practice, this often involves the determination of how the Interim Narrative Standard from Reg. 41 should be applied at a site). For the sake of clarity, the numerical values for groundwater quality parameters that represent the applicable standard should be agreed and recorded in a table at the same time the POCs are established.

4 Sampling Methods

The goal of sampling is to make accurate, repeatable field measurements and to collect representative groundwater samples for laboratory analysis. There is no single correct method to conduct groundwater

sampling, however there many incorrect methods. Follow accepted best industry practices to ensure that a representative sample is collected and analyzed. Applicable references include those from the US Environmental Protection Agency, and the US Geological Survey.

It is likely that the contracted analytical laboratory will supply detailed instructions for sample collection and handling.

Best practices for sampling:

- Details of sampling events should be recorded – documentation is critical for Quality Assurance
- All samples should be collected on the same day, if possible
- Sampling should occur in a progression from upgradient to downgradient wells
- Depth to water should be measured first
- Field instruments should be calibrated according to manufacturer's specifications prior to use
- Field parameters (temperature, pH, conductivity, dissolved oxygen) should be measured and recorded before and after each purge of the well
- A well should be purged at least three times before samples are collected for lab analysis; if field parameters vary by >10% between consecutive purges, purging should continue up to six times
- Samples should be collected in the appropriate container and handled in a manner appropriate for the analysis
- Manufacturer’s instructions for the correct use and disposal of equipment should be followed
- Ship samples well before the holding time is up; ideally, within 24 hours of sample collection
- Do not leave sampling devices in monitoring wells for reuse

References

DRMS Groundwater Monitoring and Protection Technical Bulletin: November 19, 2019
https://drive.google.com/file/d/121Uc_KmuAx7xhc8heQcROPnK_u-kcG-J/view?pli=1

Well Construction Rules
https://dwr.colorado.gov/services/well-construction-inspection

Modflow Documentation
https://www.usgs.gov/mission-areas/water-resources/science/modflow-and-related-programs

Water Quality Control Commission regulations
https://cdphe.colorado.gov/water-quality-control-commission-regulations

EPA Groundwater Sampling Methodology
https://www.epa.gov/sites/default/files/2015-06/documents/Groundwater-Sampling.pdf

USGS National Field Manual for the Collection of Water-Quality Data
https://www.usgs.gov/mission-areas/water-resources/science/national-field-manual-collection-water-quality-data-nfm#overview

HB 19-1113: Protect Water Quality Adverse Mining Impacts
https://leg.colorado.gov/bills/hb19-1113

Appendix A: Full parameter list for Construction Material Sites (with Table Value Standards) from Regulation 41, Tables 1-4

Analyte	Table Value Standard (mg/L, unless other units given)	Reg. 41 Table Reference (1-4)
pH Field (pH unit)	6.50 - 8.50	2 and 3
TDS	400 mg/L, or 1.25X background	4
Chloride - Dissolved	250	2
Fluoride - Dissolved	2	3
Nitrate (NO3)	10	1
Nitrite (NO2)	1.0	1
Nitrite + Nitrate as Nitrogen	10	1
Sulfate - Dissolved	250	2
Aluminum - Dissolved	5	3
Antimony - Dissolved	0.006	1
Arsenic - Dissolved	0.01	1
Barium - Dissolved	2	1
Beryllium - Dissolved	0.004	1
Boron - Dissolved	0.75	3
Cadmium - Dissolved	0.005	1
Chromium - Dissolved	0.1	1 and 3
Cobalt - Dissolved	0.05	3
Copper - Dissolved	0.2	3
Iron - Dissolved	0.3	2
Lead - Dissolved	0.05	1
Lithium - Dissolved	2.5	3
Manganese - Dissolved	0.05	2
Mercury - Dissolved	0.002	1
Molybdenum - Dissolved	0.21	1
Nickel - Dissolved	0.1	1
Selenium - Dissolved	0.02	3
Silver - Dissolved	0.05	1
Thallium - Dissolved	0.002	1
Uranium - Dissolved	0.0168 to 0.03	1
Vanadium - Dissolved	0.1	3
Zinc - Dissolved	2	3

These analytes, at a minimum, will be tested for during the five (5) consecutive quarters, or more, of baseline monitoring. This analyte list will also apply to the subsequent groundwater monitoring for the life of the mine. It will be up to the Operator/Permittee to submit a Technical Revision with proper justification to reduce the analyte list.

Appendix B: Full parameter list for Hard Rock Sites (with Table Value Standards) from Regulation 41, Tables 1-4

Analyte	Table Value Standard (mg/L, unless other units given)	Reg. 41 Table Reference (1-4)
pH Field (pH unit)	6.50 - 8.50	2 and 3
TDS	400 mg/L, or 1.25X background	4
Chloride - Dissolved	250	2
Fluoride - Dissolved	2	3
Nitrate (NO3)	10	1
Nitrite (NO2)	1.0	1
Nitrite + Nitrate as Nitrogen	10	1
Sulfate - Dissolved	250	2
Aluminum - Dissolved	5	3
Antimony - Dissolved	0.006	1
Arsenic - Dissolved	0.01	1
Barium - Dissolved	2	1
Beryllium - Dissolved	0.004	1
Boron - Dissolved	0.75	3
Cadmium - Dissolved	0.005	1
Chromium - Dissolved	0.1	1 and 3
Cobalt - Dissolved	0.05	3
Copper - Dissolved	0.2	3
Iron - Dissolved	0.3	2
Lead - Dissolved	0.05	1
Lithium - Dissolved	2.5	3
Manganese - Dissolved	0.05	2
Mercury - Dissolved	0.002	1
Molybdenum - Dissolved	0.21	1
Nickel - Dissolved	0.1	1
Selenium - Dissolved	0.02	3
Silver - Dissolved	0.05	1
Thallium - Dissolved	0.002	1
Uranium - Dissolved	0.0168 to 0.03	1
Vanadium - Dissolved	0.1	3
Zinc - Dissolved	2	3
Cyanide - Free	0.2	1
Beta and Photon emitters	4 mrem/yr	1
Gross Alpha	15 pCi/L	1

These analytes, at a minimum, will be tested for during the five (5) consecutive quarters, or more, of baseline monitoring. This analyte list will also apply to the subsequent groundwater monitoring for the life of the mine. It will be up to the Operator/Permittee to submit a Technical Revision with proper justification to reduce the analyte list.