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January 14, 2019

Ms. Amber Rheubottom
New Mexico Environment Department
Ground Water Quality Bureau – Water Protection Division
Mining Environmental Compliance Section
Harold Runnels Building
1190 Saint Francis Drive
Santa Fe, NM 87502

Subject: Monthly Construction Update, December 2018, in Partial Fulfilment of item #4, "Request for Additional Information and Conditional Approval of Construction Quality Management Plan Phase I Construction, Mt. Taylor Mine Reactivation Rev. 0, 6/15/2018 for Conditions 31 and 32 of Discharge Permit 61"

Dear Ms. Rheubottom,

Rio Grande Resources is pleased to submit the December 2018 Monthly Construction Update, attached with this letter. This Monthly Construction Update is sent as requested in item #4 of the NMED letter dated 9/11/18: Request for Additional Information and Conditional Approval of Construction Quality Management Plan Phase 1 Construction Mt Taylor Mine Reactivation Rev. O, 6/15/2018 for Conditions 31 and 32 of Discharge Permit 61.

If you have any questions, please contact me at (505) 287-7971 or by email at <a href="mailto:bruce.norquist@ga.com">bruce.norquist@ga.com</a>. A hard-copy of this document is also being sent by regular mail.

Sincerely,

**Bruce Norquist** 

Facilities Manager, Mt. Taylor Mine Rio Grande Resources Corporation

CC: David Ohori, NMMMD (via email)

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For Period Ending: Rio Grande Resources December 31, 2018 Date: 1/13/19

This construction update report provides details of construction activities that occurred in December, 2018. It is being prepared and sent as partial fulfillment of the 9/11/18 letter from NMED, "Request for Additional Information and Conditional Approval of Construction Quality Management Plan Phase I Construction Mt Taylor Mine Reactivation Rev 0, 6/15/2018 for Conditions 31 and 32 of Discharge Permit 61." It provides an update of ongoing activities, forecast of future activities and discusses schedule delays and proposed plan changes.

### Milestones to the Beginning of December:

- 1) Construction Design Package Completed 1/18/18
- 2) Contract Bid Award Awarded 4/11/18, Contractor Selected and Notified
- 3) RGR Preparation Work on the MWTU ponds (1, 2, 3, 4, 5, 6, 7 and 8) May and June, 2018
  - Removal of Brush
  - Locating buried pipe and utility lines for repair or removal prior to pond excavation
  - Repair of a soil void beneath the overflow structure connecting MWTU ponds 2 and 3
- 4) Construction Contractor Mobilization to Site Began 5/8/18
- 5) Reshaping of Waste Rock Pile Began 5/14/18, Completed 7/12/18
- 6) Delivery of HDPE Liner Materials to Site Completed 6/7/18
- 7) Disposal Cell Floor Clay Liner Construction
  - Began 7/13/18
  - 80% Completed by 8/1/18
    - o Task completion delayed because original clay source was exhausted
  - 100% completed by 10/22/18
    - Completed remainder of unlined disposal cell floor with clay once excavation of MWTU Pond No.3 was completed (priority)
- 8) Contaminated Sediment and Soil Placement in Disposal Cell Began 8/15/18, ongoing
  - This task could not start until a suitable amount of disposal cell floor had been prepared
- 9) South Stormwater Pond Excavation Excavation began 8/2/18
  - Excavation was 40% complete by 8/13/18
    - The task was stopped at that time in order to prioritize excavation work of MWTU Pond No.3 and the need to control stormwater runoff during the monsoon season
  - Excavation was 100% complete by 10/20/18
    - o Completion of the task was delayed slightly due to difficulties in ripping a persistent sandstone lens
    - Completion of the task was also delayed due to the radiological scanning and cleanup verification process
      - Radium soil sampling and analysis required 9 days of time for return of results before work could continue
- 10) South Stormwater Pond Concrete Structures 100% complete
  - Run-down chute base Started 8/20/18, Completed 9/19/18
  - Rundown chute wingwalls were formed and poured by 10/4/18
  - South Force Main pad was formed and poured by 10/4/18

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- 11) South Stormwater Pond Clay Liner and Protective Soil Cover 100% Complete
  - Construction of 2-ft Clay Liner began 10/24/18 and completed by 11/19/18
    - o Pre-clay liner radiation cleanup verified complete by 10/22/18
  - Placement of 6" protective soil cover began 11/19/18 and completed by 11/27/18
- 12) South Stormwater Pond Other Construction Completed
  - Placement of Rip-Rap at toe of run-down chute completed by 11/26/18
  - Installation of overflow piping started 11/29/18, finished by 11/30/18
  - By the end of November, the SSWP was completed sufficiently that stormwater runoff could be stored in it.
- 13) New Septic System Started 7/11/18, 100% Complete 8/7/18
  - Old system deactivated 8/7/18
- 14) Service Road Fill 100% Completed 8/13/18
- 15) MWTU Pond No.3 Geosynthetic liner Leak Detection Contractor Selected 8/27/18
  - Contractor selection was made at this time in anticipation of the pond liners being installed by the end of November 2018
- 16) Waste Rock Pile Placement of Clay Cover Soil / Radon Barrier on Outer-Slopes 99% complete
  - Began 8/15/18
  - 90% complete by 9/7/18
    - At that time, all of the exposed WRP material on the slope had been covered with clay.
    - Work stopped 9/7/19 to prioritize excavation and construction of the MWTU Pond No.3
  - 99% complete by 11/20/18
    - o Restarted task on 11/15/18
      - Started placing remaining 1-ft cover on the north nose of the WRP on 11/15/18
      - 1-ft was previously placed by 9/7/18, now total thickness was brought to 2-ft
    - Completed placement of all clay cover soil on the WRP by 11/20/18
      - Final compaction work remained to be completed; stopped at the end of November to work on sub-grade preparation of the MWTU Pond No.3
- 17) MWTU Pond No. 3 Excavation Began 9/10/18, 100% Complete by 10/5/18
  - Lining of this pond has been significantly delayed (1 month +) due to the need to excavate excessive quantities of contaminated soils below the existing pond floor
    - o Original estimate of 2,500 cu. yds.; Actual excavated was 9,000+ cu. yds. (4 times greater)
    - o Final excavation took longer than anticipated because of the need for radium soil sampling and analysis during cleanup instead of reliance on correlated gamma scanning
      - 3 stages of cleanup; each stage of radium soil sampling required a minimum of 9 days for return of results of analyses
      - Correlated gamma scanning results at low radiological levels were not reliable due to area shine effects
- 18) MWTU Pond No. 3 Backfilling with clean fill material to design grade 100% completed
  - High Priority Task
  - Started 10/29/18, completed 11/6/18
  - The backfilling process contributed to a delay in the liner installation task because of the greater amount of fill needed to reach design grade than previously planned. This fill

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required more time for compaction. In turn, this delayed start of work on the hydraulic structures, which could not begin until the fill was completed.

- Radiation cleanup verified complete, approval to backfill received on 10/24/18
- 19) MWTU Pond No. 2 Excavation of contaminated sediments Began 9/19/18
  - 50% Complete by 10/19/18
  - Task was halted due to extremely wet material and the need to excavate MWTU Pond No.3
- 20) Stormwater Drainage System Began excavation 10/30/18, task continues
  - This task has been significantly delayed because of a lack of availability of materials
    - Several of the primary manholes had long procurement lead-times
  - North Alignment started with placement of the first Manhole, No.24 by 10/30/18
    - o By 11/6/18, 200 ft of pipe and catch basin CB32 had been installed
    - o By 11/19/18, 200 ft of pipe and manhole 25 had been installed
    - By end of November, 160 feet of pipe had been installed towards manhole 26

#### **December Milestones**

- 1) SSWP 6-inch cover soil compaction 100% completed by 12/4/18
  - The SSWP was made functional and ready to receive stormwater runoff by that time
    - o All cover material had been placed by 11/27/18, but had not been compacted due to the need for the dozer to work in MWTU Pond No. 3
- 2) South Stormwater Pond Other Construction
  - Installed the overflow piping by 12/21/18
    - o Formed headwall by 12/20/18
    - o Poured headwall by 12/21/18
  - Placed rip-rap at toe of the west slope concrete cloth drainage channel
- MWTU Pond No. 3 Repair and Upgrade of Concrete Hydraulic Structures (High Priority Task)

All four of the hydraulic structures of Pond 3 were completed by 12/12/18. Completion of the hydraulic structures by this date was time-critical. Slippage of this date would have increased the risk that the clay sub-liner would not be ready for liner installation on the scheduled day (12/17/18). The concrete subcontractor worked hard and efficiently to complete their work on time. They required several overtime days.

Repairing and upgrading of the hydraulic structures was considered to be the bottleneck in completing the liner installation project. Until this task was completed, the clay sub-liner could not be placed and compacted, which in-turn would delay the liner installation.

The design for the new concrete structure upgrades was complicated. The curbs required imaginative and skilled forming to achieve the design shapes. Form-work was tedious and time-consuming. Water stop materials were sole-sourced and had a long lead time. Each of these concrete upgrade pieces required specialized forming, pouring of concrete and cure time. On average, each piece required 3 to 4 days of work. For the 3 structures, a total of 9 pours was required, amounting to around 32 days of work.

- 4) MWTU Pond 3 Placement of the 6 in. Clay Sub-liner (High Priority Task)
  - Placement of the 6" clay sub-liner in MWTU Pond 3 began 11/27/18. By 12/6/18 the last of the clay sub-liner material was placed and finish grading started immediately afterwards.

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Mt Taylor Mine
Existing Mining Operation
5) MWTU Pond 3 – Liner Installation

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Finish grading began 12/6/18 and was finished by 12/14/18. Last-minute rolling of the clay sub-liner surface and final touch-up work were performed on 12/17/18, the same day as the arrival of the liner installation sub-contractor. Poor weather conditions slowed the progress of work a bit, but by the end of the day, the liner installer had approved of the clay sub-liner surface.

Southwest Liner Systems, Inc. (SLS) was the liner installation subcontractor selected for the task. A crew of 11 arrived on 12/17/18. No liner work was performed on the first day. SLS personnel underwent site safety and hazard training.

RGR's QA/QC inspector arrived on 12/17/18. RGR employed Geomat of Farmington for the liner QA/QC inspections. RGR selected Leak Locating Services Inc. (LLSI) to provide the leak detecting services. LLSI arrived on 12/18/18 and stayed through 12/21/18 to complete leak detection services of the secondary liner. LLSI will return to test the primary liner once water filling of MWTU Pond No. 3 is complete.

Actual liner installation work began 12/18/18. By the end of 12/18/18, the first full day of liner installation, 1/3 of the secondary (40mil) liner had been installed. This work encompassed the north slope and sump. By late afternoon, LLSI had completed a leak test on the sump area.

December 19<sup>th</sup> was very windy and prevented SLS from safely installing any significant amount of liner. Instead of losing the entire day, all contractor personnel helped to place gravel, sand and the LDCS piping for the sump.

Weather-wise, December 20<sup>th</sup> was the nicest day of the week. Liner installation proceeded smoothly and by the end of the day, the secondary liner was 100% completed. Additionally, SLS installed about 1/3 of the geonet. LLSI completed the leak test for the 40mil secondary liner.

By the end of December 21, installation of the geonet had been completed 100%. SLS had also installed about 15% of the primary liner. RGR's earthwork contractor left the site for the holiday and did not return until December 26<sup>th</sup>.

December 22 started out cold and a little windy. By the end of the day, nearly 75% of the primary liner had been installed.

By the end of December 23<sup>rd</sup>, the primary liner was 100% installed. SLS left the site for the Christmas holiday and returned on 12/26/18 to finish the remaining small percentage of welds not previously completed.

SLS demobilized from the site on December 27<sup>th</sup>, but did instruct the earthwork contractor about proper backfilling procedures for the anchor trench. The anchor trench could not be backfilled until after the geomembranes had been placed.

SLS informed RGR that the water filling of the completed liner could not begin until the anchor trench was backfilled and compacted. When the contractor returned from the holiday, weather was poor. Freezing conditions persisted on site through the remainder of 2018. During this time, backfilling of the anchor trench could not proceed because of compaction requirements.

The contractor was instructed to prioritize backfilling of the anchor trench as soon as possible after the holidays. Freezing conditions continued through the first full week of January. Towards the end of that week, sufficiently warm weather occurred to allow about 15% of the anchor trench to be backfilled. By the second week of January, several days of warm weather

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permitted the anchor trench backfilling work to progress well. As of the date of this report (1/11/19) backfilling of the anchor trench was around 45%. Backfilling of the anchor trench is tedious work. Hand tools are used so as not to damage the geomembrane materials

RGR estimates that Pond No.3 will require approximately 2 million gallons of water to fill for the final leak test. RGR's pumping capacity is around 50 to 75 gallons per minute. RGR estimates it will take between 20 to 30 days to complete the clean-water filling task. Assuming the leak test is performed without any problems, the liner system in Pond No.3 should be certified and ready for use before the end of February 2018.

RGR crews began work on the clean-water delivery system for Pond No.3 on 12/4/18. By 12/20/18, RGR's crew had completed the water delivery system slightly ahead of schedule. A "Notice to Discharge" was sent to NMED on December 21, 2018 so that RGR could begin filling the MWTU Pond No. 3 with clean water when ready.

In summary, SLS initially estimated 5 full days of work to install the 3-geomembrane layer liner system. While the task ran from December 17<sup>th</sup> though December 26<sup>th</sup>, actual work was 5.5 days. Two days were lost to weather and 1 day was lost to training and site familiarization. The backfilling of the anchor trench has been prolonged due to freezing conditions and generally poor weather. Filling of Pond No.3 has similarly been delayed due to the delay in completing the anchor trench.

- 6) Stormwater Drainage System North Alignment
  - By 12/13/18, manhole 26 was set in place. This manhole tied into the existing site drainage system from the south and was fully connected to the SSWP by December 18th
  - By 12/27/18, work had advanced to completing the north alignment piping to within 10 feet of manhole 27, some 590 feet from manhole 24.
  - The North Alignment is estimated at 65% complete
  - By end of December, about 400 feet remained to complete for the North Alignment drainage system
  - Anticipated completion of the North Alignment drainage system is January 25th, 2019, depending on weather conditions.
- 7) Ore Stockpile Removal Haulage of low-grade ore is still anticipated to start in 2nd Quarter 2019
  - Began work on defining cover soil and low-grade ore boundaries
    - Started staking out the pile on 11/30/18
    - Completed drilling at staked locations (12/21/18) for the purpose of defining the thickness of the soil cover and estimate material quantities
  - RGR is currently in contract negotiations with a licensed receiving facility
    - A draft contract has been written and is in review
    - Held a phone conference with an official at the licensed receiving facility to understand shipping procedures and practices (12/5/18)
    - o In talks with potential shippers and working on potential agreements

#### **Forecasted Activities**

- 1) MWTU Pond No. 3 Completion of Liner Installation Highest Priority task
  - Remaining work involves:
    - Completion of backfilling of anchor trench

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- Forecasted to complete by 1/18/19, depending on weather
- o Complete filling of MWTU Pond No. 3 with clean water for the primary liner leak test
  - Forecasted to be end of February, 2019
  - Estimated 20 to 30 days filling time based on RGR's pumping capacity
- Schedule and complete the primary liner leak test
  - Forecasted as first week of March 2019.
  - Assumption that no leaks will be detected
- o Final certification and commissioning of MWTU Pond No. 3
  - Forecasted to be complete by second week of March, 2019
- 2) South Stormwater Pond
  - Completion of the concrete cloth drainage channel anticipated before 1/31/19, weather dependent
    - o SSWP is currently ready to accept stormwater runoff
- 3) Surface Water Drainage System
  - North Alignment High Priority Task
    - Anticipated to be complete and functional by end of January 2019
    - o Anticipated connection to east end of existing drainage system and fully functional by 1/25/19
  - South Alignment
    - o Anticipated start the last week of January 2019, anticipated finish end of February 2019
- 4) MWTU Pond No. 2 Liner Installation
  - This project is on hold until after Pond No. 3 is completed and commissioned
  - Anticipated restart of task is end of February 2019 due to anticipated winter weather conditions.
    - o RGR is contemplating re-bidding the work into a smaller, more manageable project
    - o RGR may decide to postpone the work until early spring when weather is more conducive to construction
  - Liner installation currently projected as May 2019, depending on success of radiological cleanup efforts in cold or wet weather and overall project plan adjustments. This revised date is based on previous experience with Pond No.3
- 5) Removal of Contaminated Sediments from MWTU ponds 1, 4 through 8
  - This task is partly a Phase II activity
  - Anticipated start 2<sup>nd</sup> guarter 2019, after MWTU Pond No. 2 is excavated
    - May be worked concurrently with Pond No.2 to ensure contractor has a sufficient work load while waiting on radiological sampling results
  - RGR is currently deciding if this work will be bid to a new contractor
- 6) Ore Stockpile Removal anticipated start 2nd Quarter 2019
  - This task is still scheduled to proceed in 2nd quarter 2019, once contracts and preparations are in place
  - After discussion with MMD and NMED in July 2018, the task of removing low-grade-ore and old ore pad materials was deleted from the current project
- 7) Connection to Surface Water Drains (Stage 2 Abatement Plan, well waters)
  - Anticipate making connections to MWTU Pond No. 3 by end of February 2019, after final leak detection survey of MWTU Pond No. 3 confirms the integrity of the primary liner

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 As a temporary measure, all evacuated well water could be trucked to MWTU Pond No.3 once it is commissioned.

8) Completion of Phase I activities appear to be late-summer 2019

# Critical Path Items – to be Constructed as soon as weather conditions allow (late first quarter 2019)

- 1) Completion of MWTU Pond No. 3 liner and commissioning anticipated mid to end of February 2019
- 2) Completion of the North Storm Drain System anticipated end of January 2019
- 3) Completion of South Storm Drain System anticipated end of February 2019

# **Plan Changes**

One new variance issued in December 2018

# **Drawing Variances**

VARIANCE #			Drawing	Variance Subject	Date	
	Sheet #	Drawing #	Title			
2018-5	1	See Tables 2018- 5.1 and -5.2. GS00-GC130, 132, 133, 134	Storm Manholes	Constructibility issues of the reinforced concrete storm manholes - design diameters not large enough to accept drain pipe sizes. STMH20-23, 27, 28, 29; MH01-04	7/23/18	
2018-6	ST19A	GS00-GC119-02	Force Main North Plan View	concrete valve vault, elbow, and coordinates		
	ST19B	GS00-GC120-02		concrete valve vault, elbow, coordinates, elevat	9/14/18	
	ST20	GS00-GC121-02		elbow, elevations		
2018-8	SW00	GSSW-GC01-01	South Storm Water Pond and Waste Rock Pile-Cover Sheet and Key Drawing	deletion of reference to ore storage		
	SW02	GSSW-CS504-01	Waste Rock Pile and Disposal Cell Survey Layout and Control Points	deletion of reference to ore storage	]	
	SW03	GSSW-CB101-01	South Storm Water Pond and Waste Rock Pile-Site Plan	deletion of reference to ore storage	9/19/18	
	SW06A	GSSW-CB104-01	South Storm Water Pond and Waste Rock Pile-Site Plan	deletion of reference to ore storage		
	SW06B	GSSW-C8105-01	Waste Rock Pile and Disposal Cell Earthwork and Grading Plan - South	deletion of reference to ore storage		
2018-11	MW02	MW00-CX501-00	Pond Liner Details	Delete seaming of geomembranes edges in the anchor trench, extend geomembrane to the top of the outer trench wall.		

# **Construction Specification Variances**

VARIANCE #		Specification		Section		Approval	
	Number	Title	Number	Title	Ву	Date	
2018-1	MW-CB01-00	EARTHWORK FOR POND CONSTRUCTION	2.2.1	Waste Pile Slopes	A.K. Kuhn	6/7/2018	
2018-2	MW-CB01-00	EARTHWORK FOR POND CONSTRUCTION	2.2.2	Mine Debris Pit	A.K. Kuhn	6/7/2018	
2018-3	MW-CB01-00	EARTHWORK FOR POND CONSTRUCTION	2.2.3	Disposal Cell on the Waste Pile	A.K. Kuhn	6/8/2018	
2018-4	MW-CB01-00	EARTHWORK FOR POND CONSTRUCTION	2.2.4 (new)	Shaft Muck Excavation, Placement and Compaction	A.K. Kuhn	6/8/2018	
2018-7	GS-GC02-00	DRAINAGE AND HYDRAULIC CONTROL STRUCTURES, Rev	2.7	Manholes, Catch Basins, and Vaults	A.K. Kuhn	9/14/18	
2018-9	MW-CB01-00	EARTHWORK FOR POND CONSTRUCTION	2.2.3	Disposal Cell on the Waste Pile	A.K. Kuhn	10/15/2018	
2018-10	MW-CX01-00	INSTALLATION OF GEOMEMBRANE POND LINERS	2.5	Mechanical Connections	A. K. Kuhn	11/21/2018	
			3.11	Rub Sheets at Inflow Points	A. K. Kuhn	11/21/2018	
			Also Drawing Sheet HY-18, Note 7		A. K. Kuhn	11/21/2018	

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### Anticipated Delays and Changes to Project Schedule

#### **General Comment:**

Delays have been primarily caused by excessive quantities of contaminated materials encountered during excavation and related radiological clean-up efforts. The radiological clean-up efforts have significantly increased task duration because of long analyses time and a need to switch from simpler gamma scanning techniques to more involved and time-consuming soil sampling.

Phase I work tasks have generally been delayed due to:

- o Excavation of excessive amounts of contaminated materials in MWTU Pond 3
- o In-field radiological measurements heavily influenced by "shine"
- Need for radium soil sampling (long analyses time) instead of fast continuous gamma scanning during cleanup efforts
- Excavation of excessive quantities of WRP material during WRP reshaping
- o Excessive mine debris requiring extra effort to sort and dispose
- Winter weather conditions

Project delays have also arisen because of a lack of resources committed to the project by the contractor:

- Equipment and manpower
- Management of the procurement process
- Sub-contractor coordination

RGR is currently deciding if it will repackage the remaining work and re-bid items into smaller standalone projects. Based on project experience, task completion rates would be improved with multiple contractors on site, each performing a different task. This option will depend on finding suitable contractors willing to meet RGR's qualifications.

- 1) Change: MWTU Pond No. 3 was the first MWTU pond to be lined, instead of MWTU Pond No. 2
  - It was initially believed that both MWTU Ponds 2 and 3 could be lined by the 12/1/18 deadline
    - This belief changed when it became apparent that the contractor was unable to mobilize sufficient resources to complete excavation, backfilling and lining of more than 1 pond by the deadline
  - Because of heavy monsoonal rains in August and September 2018, control of stormwater would become problematic if MWTU Pond No.2 was taken offline
  - Plans were put in place to line one MWTU pond (Pond No. 3)
    - In September, the contractor indicated that they could finish one pond by mid to late November, ahead of the deadline
      - This was dependent on weather; temperatures would need to be above freezing for compaction of materials and moisture could not be on the liner geomembranes during installation. There was a physical need to get the liner installed before winter weather set in.
  - A decision was made prioritize the completion of MWTU Pond No.3 to meet the deadlines
- 2) Delay: Ability to line a single MWTU Pond (Pond No.3) by the deadline of 12/1/18 was impacted for the following reasons:
  - Schedule slip first began with the excavation process of MWTU Pond No.3

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- Schedule slip occurred when excessive quantities of contaminated materials were encountered, this significantly lengthened excavation time and ultimately contributed to pushing back the liner installation task into late December
- o Schedule slip increased further because of increased radiological sampling and analysis time during the cleanup verification process
  - Schedule was originally based on continuous correlated gamma scanning
  - Wide-area "shine" rendered gamma scanning unreliable as a confirmatory cleanup tool
  - Schedule was impacted because of the need to perform radium soil sampling
  - Each radium soil sampling and analysis campaign required 9 days of time for return of results before work could continue; with 3 cleanup campaigns, this resulted in 27 days of unanticipated schedule slip
- Through the course of work activities, it became apparent that the contractor was unable to mobilize sufficient resources to complete more than one excavation and construction task at a time
- Because of excessive quantities of contaminated materials as well as excessive radiological sampling time, nearly 1 full month of delay was added to the schedule
- Difficulties in procuring specialized and sole-source materials during upgrades of the hydraulic structures
- Design complexity of forming and pouring of new concrete for the hydraulic structures.
  - There were 9 individual concrete pours, 3 per each of the 3 hydraulic structures. Each pour required 3 to 4 days duration for forming, pouring and curing. This amounted to a total of 34 days (1.5 months) of work in concrete work alone.
    - This level of work effort was not accounted for in the in the original schedule.
       Ultimately this caused a 2-week delay
- Another week of schedule slip occurred because of late scheduling by the contractor; the sub-contracted liner installer could not mobilize by the time needed with the short notice given
- Four more days of delay occurred due to winter weather and the Christmas holiday
- While the geomembranes have been fully installed in Pond No.3, completion and commissioning have been delayed another 3 weeks because backfilling of the anchor trench has not yet been completed
  - o The cause of the delay in anchor trench backfilling has been primarily due to persistent winter weather on site since 12/26/18.
    - Compaction cannot be performed in freezing weather
  - The delay in backfilling of the anchor trench has delayed final commissioning of Pond No.3
    - Filling of the pond cannot proceed until the anchor trench is backfilled
    - In turn, the final leak test of the primary liner cannot be conducted until Pond
       No.3 is filled with water
- 3) Delay: Excavation of contaminated sediments from MWTU Ponds 1, 4, 5, 6, 7 and 8
  - This task has been delayed because of other priority work tasks (MWTU Pond No.3)
  - RGR anticipates resuming this work through the winter to gain on the schedule
  - Efficiency of excavation will decrease due to adverse weather and associated delays
    - Reduced digging capabilities in potentially frozen ground, icy roadways
  - Safety considerations for personnel due to winter weather conditions
    - Ability to perform radiation scans in freezing weather

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- o Equipment travel on icy roadways
- o lcy conditions on steep pond access ramps
- 4) Delay: Stormwater Drain System Schedule
  - Significant delays due to availability of materials, procurement management issues and lack of contractor's ability to commit additional resources
    - Originally anticipated that work crews and materials would be on-site by late August
    - o Materials did not arrive on site until 10/23/18
      - Manhole structures long fabrication lead time
      - Contractor procurement issues led to a 2-month delay of material delivery
    - o Need for more specialized and different equipment than that of regular earthmoving
  - The north alignment will be completed in mid-January 2019.
    - Delay of nearly a month later than previously forecasted due to weather conditions and the holiday season
  - The south alignment has not been started. Construction is expected to start once the north alignment is complete, due to stormwater control. Work on the south alignment has generally been delayed due to overall schedule slip of other precursory tasks.
  - Generally, winter weather conditions have delayed the stormwater drain system completion by 1 to 2 weeks due to freezing ground conditions
- 5) Delay: Construction of the Disposal Cell Clay Cap
  - Anticipated to be constructed in late 2019
    - Construction of the disposal cell clay cap was intended to occur after the excavation and subsequent placement of contaminated sediments from the MWTU ponds and contaminated soils from the ore pad and retention pond
  - Potential for early partial construction of the disposal cell cap is being investigated
    - Current disposal cell capacity is expected to be consumed once additional MWTU ponds are excavated
    - o Preliminary designs are being investigated for accelerating the timing of cap construction once the disposal cell is filled
    - Looking into layout options for expansion of disposal cell
      - Expanding upwards
      - Expanding Eastwards
- 6) Potential Delay: Removal of the Low-grade Ore stockpile
  - This could be potentially delayed an additional month due to ongoing contract negotiations and legal reviews between RGR and the licensed receiver of the materials