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December 7, 2018

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, November 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 November 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 [bruce.norquist@ga.com](mailto:bruce.norquist@ga.com). A hard-copy of this document is also being sent by regular mail.

Sincerely,

A handwritten signature in black ink that reads "Bruce R. Norquist".

Bruce Norquist  
Facilities Manager, Mt. Taylor Mine  
Rio Grande Resources Corporation

CC: David Otori, NMMMD (via email)

This construction update report provides details of construction activities that occurred in November, 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 November:

- 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
  - a. Removal of Brush
  - b. Locating buried pipe and utility lines for repair or removal prior to pond excavation
  - c. 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 Construction – Began 7/13/18, 80% Complete by 8/1/18
- 8) Contaminated Sediment and Soil Placement in Disposal Cell – Began 8/15/18, ongoing
- 9) South Stormwater Pond – Excavation Began 8/2/18, 40% completed by 8/13/18
- 10) New Septic System – Started 7/11/18, Completed 8/7/18; Old system deactivated 8/7/18
- 11) Service Road Fill – Completed 8/13/18
- 12) Selection of a contractor to perform the leak detection survey for the MWTU retention pond Geosynthetic liners was awarded 8/27/18
- 13) Topsoil Cover / Radon Barrier on Waste Rock Pile Outer-Slopes - 90% complete by 9/7/18
- 14) 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
    - 2,500 cu. yds. estimated, 9,000+ cu. yds. actually excavated (4 times greater)
  - 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
- 15) MWTU Pond No. 2 Excavation of contaminated sediments – Began 9/19/18, 100% Complete by 10/19/18
- 16) South Stormwater Pond – Excavation 100% complete by 10/20/18
  - Task delay due to difficulties in ripping a persistent sandstone lens
  - Task delay due to radiological scanning and cleanup verification analysis
    - Radium soil sampling and analysis required 9 days of time for results
- 17) South Stormwater Pond Concrete Structures – 100% complete by 10/4/18
  - 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

- 18) Disposal Cell Clay Liner – 100% complete (10/22/18)
  - Task completion delayed because original clay source was exhausted
  - Completed construction of remaining 25% area by 10/22/18
- 19) MWTU Pond No. 3 Backfilling with Clean Soils – Started 10/29/18
  - Radiation cleanup verified complete, approval to backfill received on 10/24/18
- 20) South Stormwater Pond Clay Liner Construction – Started 10/24/18
  - Pre-clay liner radiation cleanup verified complete by 10/22/18
- 21) Stormwater Drainage System – Began excavation 10/30/18
  - This task has been significantly delayed because of a lack of availability of materials
  - Set Manhole 24 by 10/30/18

#### November Milestones

##### 1) South Stormwater Pond

###### a. Construction of 2-ft Clay Liner - 100% complete

Construction of the 2-ft thick clay liner was started 11/6/18 and fully placed and compacted by 11/19/18.

###### b. Construction of 6 in. Protective Soil Cover – 100% Complete

Placement of the 6" protective soil cover was started 11/19/18 and completed by 11/27/18.

###### c. Other Work

Placement of Rip-Rap at the toe of the rundown chute was completed by 11/26/18. Remaining rip-rap to be placed includes the toe of the concrete cloth drainage channel.

By November 30th, the contractor had installed piping for the overflow structure. Remaining work includes forming and pouring of the concrete headwall.

By the end of November, the SSWP was completed sufficiently that stormwater runoff could be stored in it. Once the stormwater drainage piping is completed to manhole 26, the site stormwater control and storage system will be functional. At that time, all stormwater will be directed into the SSWP. This is anticipated to be in place by 12/13/18.

##### 2) Waste Rock Pile - Placement of Clay Cover Soil on the North-West Out-slope – 99% Complete

This task was initially started in August and was 90% complete by 9/7/18. At that time, all of the exposed WRP material on the slope had been covered with clay. When halted, approximately 250 feet of the north nose remained unfinished, with only 1 foot of cover in-place instead of 2 feet as planned. Work stopped to concentrate on excavating the MWTU Pond 3, a high priority.

Final placement of the clay on the west slope resumed 11/15/18. By 11/20/18, the remaining amount of clay cover soil had been hauled to the location. Only finish spreading and compaction to meet design grade remains to complete. The work was intermittent while higher priority tasks were being completed (i.e. MWTU Pond 3).

3) MWTU Pond No. 3 – High Priority Task

a. Backfilling with clean fill material to design grade

By the end of October, 100% of Pond 3 had been excavated. Backfilling with clean subgrade material began on 10/30/18 and completed by 11/6/18. Backfilling also 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 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.

b. Installation and Upgrade of Concrete Hydraulic Structures

Once the backfill had been placed, a concrete forming and pouring crew began work. Concrete work became a bottleneck and further delay for the liner installation task.

The design for the new concrete shapes was complicated. The curbs required specialized forming to achieve the design shapes. Water stop materials and rub-sheet attaching hardware was sole-sourced; many of the materials required long lead times for fabrication and procurement.

By design, each of the 3 hydraulic structures required 3 separate pours of concrete. These separate pours involved forming and pouring:

- 1) Attaching block strips – new concrete that served to anchor the aprons to existing structures
- 2) Aprons
- 3) Curbs

Each of these concrete 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. The longer time to complete forming and pouring of these complex shapes contributed to the additional slip of the liner installation schedule.

Formwork began on 11/6/18 with the attaching block strips. By 11/14/18, all 3 of the attaching block strips had been poured. By 11/27/18 all new concrete for structure P3-3 was complete (1 attaching block strip, 1 apron and 2 curbs). By 11/30/18, both the attaching block strip and apron of structure P3-2 was complete. Remaining work includes forming and pouring the curbs for P3-2 and forming and pouring the apron and curbs for P3-1. Structure P3-4 still needs to be completed. The existing drain pipe for this structure needs to be cut off and rewelded at a new angle. Concrete work is relatively simple, forming and pouring a rectangular sloped slab.

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 11/30/18 most of the clay liner had been placed in Pond 3. Rough grading is still in progress.

5) Stormwater Drainage System – Began excavation 10/30/18, work in progress

By 10/30/18, the first manhole was set in place (manhole 24). By 11/5/18 the catch basin 32 and 200 feet of pipe was completed to the south of manhole 24. Work began on the north alignment from manhole 24 to manhole 25 by 11/7/18. The flair end and attaching pipe from manhole 24 to the chute was completed by 11/9/18. Installation of piping from manhole 24 to manhole 25 was completed by 11/15/18. Manhole 25 was set on this date as well as completion of the fusion-welding of the north force main HDPE pipe. By 11/19/18 piping to manhole 26 was started. By 11/26/18 backfilling and compaction of all piping from manhole 24 to manhole 25 was completed.

Installation of the SSWP overflow pipe structure was started 11/28/18 and completed 11/30/18. Rip-rap was placed at the outlet side. Remaining work includes forming and pouring of the headwall.

6) Ore Stockpile Removal – Haulage of low-grade ore is anticipated to start early 2nd Quarter 2019

- Began work on defining cover soil and low-grade ore boundaries
- RGR is currently in contract negotiations with a licensed receiving facility
  - A draft contract has been written and is being reviewed

Forecasted Activities

1) MWTU Pond No. 3 liner installation – Highest Priority task

- Hard Start-Date of 12/17/18. This date was committed to by RGR's contractor and their sub-contracted liner installer
- Completion date is anticipated to be 12/21/18
  - 1 day for site orientation, setup and sub-liner approval
  - 1 day for installation of the secondary liner
  - 1 day for leak detection survey
  - 1 day for installation of the geonet and leak detection and collection system (LDCS)
  - 1 day for installation of the primary liner
  - It was estimated last month that the liner installation would be completed by 12/15/18 based on RGR's contractor schedule
    - A week delay was caused by the slow progress of the new concrete work and an inability of the liner installer to schedule their work before 12/17/18
- Final grading of the clay sub-liner is anticipated to be completed by 12/17/18 and ready for approval by the liner installer (cannot be completed more than 24 hours before liner installation per specifications)
  - Currently, the rough grading of the clay sub-liner is 80% complete
- MWTU No. 3 Hydraulic Structure Upgrades – anticipated to be completed by 12/12/18
  - 80% complete at this time
- RGR's contracted liner inspection QA/QC personnel on site by 12/17/18
- RGR's contracted leak detection survey personnel on site 12/19/18
- Installation and testing schedules of the double-liner system may be affected by cold weather

- After successful leak detection testing, it is anticipated that the lined MWTU Pond No. 3 will be fully functional in the week of 1/7/19.

Note: final leak detection survey of the primary liner may not occur until January 3, 2019 due to the need for a fully filled pond prior to testing. RGR estimates that 10 to 15 days of pumping will be required to fill MWTU Pond 3 based on installed pumping capacity. Pumping should start once the primary liner is in place, December 21, 2018.

- 2) South Stormwater Pond (High Priority Task) – Completion of the concrete cloth drainage channel – anticipated before 12/22/18; SSWP is currently ready for runoff water storage
- 3) Surface Water Drainage System (High Priority Task)
  - anticipated connection to existing drainage system, operational status by 12/13/18
  - North Alignment complete by end of December
  - South Alignment anticipated start January 2019, anticipated finish February 2019
- 4) MWTU Pond No. 2 Liner Installation
  - Excavation and cleanup anticipated to be completed in February 2019
    - Excavation work is on hold until early 2019 due to need to have completed liner in MWTU Pond No. 3 first
  - Liner installation currently projected as March 2019, depending on success of radiological cleanup efforts in cold or wet weather
  - Proper liner installation is heavily dependent on weather (cannot have moisture on the liner)
- 5) Removal of Contaminated Sediments from MWTU ponds 1, 4 through 8
  - This task is partly a Phase II activity
  - Anticipated start early 2019, after MWTU Pond No. 2 is excavated
  - Likely to start early January to avoid conflicts with contractor operations
- 6) Ore Stockpile Removal – anticipated start 2nd Quarter 2019

Note: 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 activities. Physical off-site removal of the materials is anticipated to begin in early 2<sup>nd</sup> Quarter, 2019, once contracts and preparations are in place.

- 7) Connection to Surface Water Drains (Stage 2 Abatement Plan)
  - Anticipate making connection to MWTU Pond No. 3 by early January 2019, after final leak detection survey of MWTU Pond No. 3 confirms the integrity of the primary liner
- 8) Completion of Phase I activities appear to be Early March 2019
  - Schedule has been pushed back 2 months from previous forecasts
  - Difficulties in scheduling MWTU Pond No. 3 liner installer
  - Several unforeseen factors have contributed to the push-back of the project schedule
    - Excavation of excessive amounts of contaminated materials in MWTU Pond 3

- 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
- Excessive mine debris requiring extra effort to sort and dispose
- Occurrence of a persistent sandstone lens in the South Stormwater Pond

Critical Path Items – to be Constructed before the end of 2018

- 1) Completion of MWTU Pond No. 3 liner installation – anticipated mid-December
- 2) Completion of North Storm Drain System – anticipated end of December
  - Connection to existing Storm Drain System – mid December

Plan Changes

Drawing Variances

VARIANCE #	Drawing			Variance Subject	Date
	Sheet #	Drawing #	Title		
2018-5	ST2, 5,7, 9, 10, 11	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	9/14/18
	ST19B	GS00-GC120-02		concrete valve vault, elbow, coordinates, ele	
	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	9/19/18
	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	
	SW06A	GSSW-CB104-01	South Storm Water Pond and Waste Rock Pile-Site Plan	deletion of reference to ore storage	
	SW06B	GSSW-CB105-01	Waste Rock Pile and Disposal Cell Earthwork and Grading Plan - South	deletion of reference to ore storage	

Construction Specification Variances

VARIANCE #	Specification		Section		Approval	
	Number	Title	Number	Title	By	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

#### Anticipated Delays and Changes to Project Schedule

- 1) Change: MWTU Pond No. 3 is to be lined instead of MWTU Pond No. 2
  - Plans are in place to line one MWTU pond (MWTU Pond No. 3)
    - Dependent on weather; need temperatures to be above freezing; no moisture on ground or liners
  - In September, it was initially believed that both MWTU Ponds 2 and 3 could be lined by the 12/1/18 deadline
  - A decision was made in late September to prioritize the completion of MWTU Pond 3
    - Control of Stormwater; MWTU Pond 2 was a major storage component and had to remain operational
    - Excessive quantities of contaminated materials increased excavation time and impacted the project schedule for liner installation
    - Radiological sampling and analysis time significantly increased with the need for radium soil sampling
      - Schedule originally based on continuous correlated gamma scanning
      - “Shine” rendered gamma scanning unreliable as a confirmatory cleanup tool
      - Radium analyses for soil samples required between 1 to 3 weeks for confirmatory results
  
- 2) Delay: Ability to line a single MWTU Pond (Pond 3) by the deadline of 12/1/18 was impacted for similar reasons stated above
  - Because of excessive quantities of contaminated materials as well as excessive radiological sampling time, nearly 1 full month 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
  
- 3) Delay: Excavation of contaminated sediments from MWTU Ponds 1, 4, 5, 6, 7 and 8 anticipated to continue through winter months; work may get pushed into 2<sup>nd</sup> quarter of 2019
  - 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
    - Equipment travel on icy roadways
    - Icy conditions on steep pond access ramps
  
- 4) Delay: Stormwater Drain System Schedule
  - Significant delays due to availability of materials and lack of availability of contactor’s rented equipment.
    - Originally anticipated that pipe and fabricated hydraulic structures would be on-site by late August
    - Materials did not arrive on site until 10/23/18
      - Manhole structures – long fabrication lead time
      - Still awaiting construction of 2 catch basins



- Need for more specialized and different equipment than that of regular earthmoving
- 5) Delay: Construction of the Disposal Cell Clay Cap
  - Anticipated to be constructed in 2019
    - Construction of the disposal cell clay cap is intended to occur after the excavation and subsequent placement of contaminated sediments from the MWTU ponds and contaminated soils from the ore pad and pond
      - Ore pad work is scheduled to commence in 2nd quarter of 2019
  - Potential for early construction of the disposal cell cap is being investigated
    - Current disposal cell capacity is expected to be consumed once additional MWTU ponds are excavated (existing capacity is approximately the volume of 1 more pond, based on excavation history of MWTU Pond No. 3)
    - 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
      1. Expanding upwards
      2. Expanding Eastwards