

GCC Rio Grande, Inc. Tijeras Quarry 1 PMT Revision: MMD Comment Responses

GCC Tijeras received comments from MMD on the report entitled Engineering Summary for Quarry 1 Post-Mining Topography (PMT) Design at the GCC Tijeras Plant, dated December 30, 2019. The submittal package has been revised to address these comments. The revised report has a stamped date of February 12, 2020. All the Exhibits have been updated to reflect the new revision dates. No changes have been made to the drawing sheets or fundamentals to the design. The following table describes the changes that have been made to address the MMD’s comments.

Comment No.	Comment Content	Response Update in Report
1	In the Introduction, Water & Earth Technologies, Inc. (WET) mentions that the Quarry 1 area will drain into Sediment Pond 1. Please discuss how this drainage will function at closeout when Sediment Pond 1 is removed.	Two paragraphs and a figure (Figure 1) have been added to the PMT design section on pages 1 and 2 of the report. The new paragraphs start on on line 5 of this section.
2	In the Maximum Slope Length and Drainage Diversity section WET talks about a K-Factor of 0.33 used for topdressing. Please discuss how this K-Factor was chosen for the soil type that will be used for topdressing. MMD is assuming that WET will be using the same redbed material for top dressing that has been used in the past for reclamation on this site. Please confirm this assumption.	This comment is addressed in the Maximum Slope Length and Drainage Density section on page 2 of the report. The response can be found in the first paragraph in lines 5 through 11 of that section. MMD's assumption concerning topdressing material is correct.
3	Provide a map showing where the specific Slope Gradients in Table 1 are located.	This comment has been addressed by adding Appendix A: RUSLE Analysis to the report. In the Appendix 13 Slopes have been delineated and described using screen shots from the RUSLE software. The generic slope analysis, as summarized in the table in the report (page 2) is also provided in Appendix A.
4	The Grading Tolerances section talks about a tolerance of plus or minus 1-ft for final grade. Does this tolerance include the minimum 2-ft minimum of topdressing, or is this prior to the placement of topdressing. MMD will require at least a 2-ft minimum of top dressing in all areas.	This comment has been addressed in two locations. The first location is in the Topography section starting on line 5. The second location is in the Grading Tolerances section where a sentence has been added for clarification on line 2.
5	In an area where no topsoil is added due to a 2-ft minimum of topsoil material already being present, the area must be ripped to a depth of 1-ft prior to seeding and mulching.	This comment has been addressed in the Topography section starting on line 6.
6	In the Drain Design it is mentioned that SEDCAD was used to model the drains. Please provide the SEDCAD output for the channels.	Appendix B: SEDCAD Analysis has been added to address this comment. There are 2 sections to this Appendix. Section 1 provides the hydrology evaluation used to predict runoff flows for the hydraulic design; Section 2 provides the SEDCAD channel design utility calculations used to determine channel geometry and lining requirements.
7	The Small Drain paragraph under Drain Design states “Sub-watershed D1 was used for channel design in the SEDCAD Channel Utility to ensure at least 1 foot of freeboard above the peak water surface elevation and for calculating rock size.” Was freeboard incorporated into the channel design parameters for all of the drains? If so, please provide the depth of freeboard as well as the factor of safety for all the channels.	This comment has been addressed in three places: 1) added an Appendix to the report entitled Appendix B: SEDCAD Analysis. There are 2 sections to this Appendix. Section 1 addresses the hydrology used to come up with the flows for the hydraulic design, and Section 2 shows the utilities to come up with channel size and rock sizing. 2) Two paragraphs were added to the Drain Design Section, (Page 4, 1st and 2nd paragraph) to describe this in further detail. 3) Columns (freeboard and safety factor) were added to the table on page 5 to emphasize this clearly.
8	Please provide explanations or calculations for any channel parameters that were not calculated within SEDCAD.	Channels were designed exclusively in SEDCAD. Appendix B has been added to support the hydrology and hydraulic calculations.
9	Please provide support for the size of material that is being used to construct all three types of drains.	The SEDCAD channel design utility was used to size riprap for each drain. This information has been provided in Section 2 of the added Appendix B. Size of riprap from the utility is now explicitly stated in Table 2 on page 5.