



February 21, 2025

Ed Seymour
Caerus Cross Timbers LLC
143 Diamond Ave
Parachute, CO 81635

RE: Colony Shale Oil Project, Permit No. M-1980-047 , Technical Revision (TR-18), Adequacy Review-2

Dear Mr. Seymour:

The Division of Reclamation, Mining and Safety (Division) is in the process of reviewing the above referenced Technical Revision in order to ensure that it adequately satisfies the requirements of the Colorado Mined Land Reclamation Act (Act) and the associated Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations (Rules). During review of the material submitted, the Division determined that the following issue(s) of concern need to be adequately addressed before the Technical Revision can be considered for approval. Items that have been completely addressed have been removed. **New or amended items are listed in red.** Please provide the following:

Reclamation Plan

1. Pursuant to Rule 6.4.5(2)(a) please explicitly state the type(s) of reclamation to be employed for each area. Additionally state why each was chosen, the amount of acreage associated with each, and a general discussion of methods of reclamation as related to the mechanics of earthmoving.
 - a. Include a table which states the post mine land use for each area and the acres associated with land use type.
2. Similarly, per Rule 6.4.5(2)(b) state the comparison of the proposed post mining land use to other land uses in the vicinity and to adopted state and local land use plans and programs.

Overview states proposed land uses are aligned with county development code but does not address a comparison to vicinity land.
3. For all areas where revegetation is to occur state within the Reclamation Plan state the total number of acres to be seeded and the seeding method by area. Clarify if application of topsoil, fertilizers, mulch or nursery stock will be employed. Explicitly state if areas will require no additional seeding.



Please explicitly state this information within the narrative portion of the reclamation plan.

- a. It may be beneficial to include a table summarizing all reclamation information required under Rule 6.4.5(2)(f). Be sure to break it out by area.

Partially summarized in "Colony Mine Reclamation Plan Outline" table. Clarify if application of topsoil, fertilizers, mulch or nursery stock will be employed for each area.

Each Exhibit should stand on its own without needing to refer to other exhibits to see the full picture. Likewise the information presented in each should coincide.

4. For all items to be demolished please specify their disposal location / method.
 - a. For any remaining items that QB proposes disposing of at a QB ranch property the Division will need to bond for off-site removal to a landfill. In the event of forfeiture the Division would not have access to the QB ranch property as a means of disposal location.
 - b. For any items listed on "Existing Building Summary" table that are to be removed please state the disposal location/ method.
5. Please provide a table summarizing available topsoil stockpile volumes present on site. As well as the various areas to received topsoil and which stockpile the volume will be coming from. No table provided-does not intend to utilize salvaged topsoil.
 - a. If topsoil will be imported from an external source clarify the cost to purchase the material per cubic yard, as well as the cost for delivery to site.

Importation of topsoil is proposed. Please provide 3 quotes which clearly state the cost per CY to purchase topsoil and the per CY cost for delivery to the mine. If a delivery quote cannot be obtained the Division can calculate the cost if provided the source location.
 - b. Pg 13 "General Seeding Requirements – Seeding" section states that "no topsoil importation is anticipated" please revise this statement. Either salvaged topsoil needs to be reapplied or imported topsoil needs to be utilized, application of no topsoil where revegetation is to occur is impractical.
6. Will any spot seeding be required in areas where recontouring will not be completed for the purposes of increasing vegetation density? If so, please specify which area(s), how many acres and anticipated methods used.

Has vegetation been surveyed in all areas where contouring will not take place to ensure that additional spot seeding is not required? The Division cannot assume areas have completely self-reclaimed. Provide additional documentation spot-seeding is not required or update the plan accordingly.
7. State the anticipated seeding time(s) per Rule 6.4.5(2)(f)(ii). Under the "General Seeding Requirements – Seeding" section explicitly state when (what time of year) will seeding occur.
8. Within the narrative portion of the Reclamation Plan please specify the maximum slopes to remain. May need to be Area specific. Rule 3.1.5(7) and (8). Within each section state the

maximum grade to remain, all highwalls shall be removed. If steeper than a 2H: 1V as please provide a justification.

9. The seed mix is made up of entirely cool season grasses. Please update the mix to include at least one warm season grass and at least one forb, shrub or legume.
10. Incorporation of fertilizers or soil amendments are proposed on page 13. Please provide the per unit cost for each additive utilized.
 - a. Explicitly state if any areas are to not receive these treatments prior to seeding.
11. Paragraph 2 of Area 4 indicates that electrical utilities have been dismantled but only partially disposed of. Off-site disposal of the remaining items will be accounted for in the RCE.

Area 4

12. A 8' x 3' x 6" foundation is mention as being removed. What was this foundation for?
13. Address revegetation methods for the area where the weather station and 28 railroad ties were removed leading to the weather station.
14. Provide the dimensions and building material type for the weather station which will be removed from site and disposed of offsite.

Area 5

15. Specify the anticipated total CY of material to be graded out in the scree area. Provide a volume of the anticipated material which will be graded to maintain positive drainage.
16. The "Colony Mine Reclamation Plan Outline" table indicates that area 5 will be disced and drill seeded. This area is a contoured scree area, with no topsoil being proposed to be added, drill seeding is not feasible under these conditions. Please revise reclamation measures to be compatible with site conditions. Ie. Add topsoil or change seeding methods.

Area 6

17. State the total number of cubic yards of topsoil that will be imported to the lower bench. Specify the source location (and cost if applicable) of the topsoil to be imported.

Provide a justification as to why topsoil import topsoil is not being proposed, only deep ripping. Previous revegetation efforts in this area have failed, what will make this different.

 - a. Map C13 for Area 6A states that 1-6" of topsoil will be imported which is inconsistent with the narrative portion of the Reclamation Plan.
18. The Reclamation Plan states, the water discharging from the portal has been sampled and tested. Please provide sampling results to demonstrate water quality. Rule 3.1.6
 - a. Clarify what water quality standard the sample results were compared to.
19. Please state each opening's dimensions that the IMP Bid Spec book closure methods will be applied to.

- a. What are the dimensions of the Secondary escape that will receive a Hollow Core Shaft Closure method?
20. Until the Operator can provide documentation that the existing masonry wall at each of the portal entrances meets the IMP Bid Specs the Division will bond for installation of a new feature at each portal entrance.
21. What sort of surface reclamation/revegetation will take place on Area 6-Mine Bench. Only the pull-out parking area is mentioned with regards to surface reclamation.
Vegetation throughout the entire mine bench is not comparable to adjacent undisturbed areas. Additional revegetation efforts will be required. Please explicitly state the number of acres to be revegetated and the methods utilized.

Area 7

22. Please provide documentation which demonstrates that the buried 6' steel pipe may remain post-mining. ~~Further clarify within the narrative that removal of this feature is no longer being considered.~~
As previously discussed, QA/QC must be provided to demonstrate that the 6' buried steel pipe has not been compromised over the past 50 years and that it is in an acceptable state and may remain post-reclamation.
23. What are the specific species of concern in Area 7 and how many treatments per year are anticipated to get the noxious weeds under control?

Area 10C

24. What is the anticipated area that will require reclamation after the wells are abandoned?
Water wells are located on both the north and south sides of the road connecting area 10C and 12.

Area 10A and 16B

25. What is required to remove the PVC delineator is it just removing the PVC sleeve and t-post by hand? How many delineators need removed?

Area 12 and 14

26. If these two stockpiles will not be disturbed, what is the source of topsoil for reclaiming this project?
See question 5a. If on-site topsoil stockpiles will not be utilized, please provide information regarding alternative sources to be imported. Volume, location, and cost(haul and purchase).

Area 16A

27. Please provide information regarding the dimensions of the foundations to be crushed and buried on site.

What are the dimensions of the four piers to be removed?

28. How will the well located on site be addressed?

What is the current well-ID? Provide documentation once re-permitting has occurred.

29. On the 72'x72'x6" pad that will remain its noted that the anchor bolts shall be cut off. Please provide the quantity and size of bolts to be cut flush with the foundation.

Area 17A

30. Rational was provided for not topsoiling areas that have self-reclaimed but explain why no topsoil is anticipated in areas where grading is to occur.

31. What is the anticipated area that will require reclamation after grading?

32. Where is the 50 CY of road maintenance stockpiled material being transported to? What is the material type?

Area 18A

33. Why is no topsoil anticipated to be applied to areas where grading is to occur?

34. What is the anticipated area that will require reclamation after grading?

Only revegetation of contoured berm areas is address. The pad itself needs to be decompacted and reclaimed.

Area 18C

35. State the total number of cubic yards of topsoil that will be imported. Specify the source location (and cost if applicable) of the topsoil to be imported.

Map C3 stets 1-6" of topsoil will be imported. Please revise Reclamation Plan narrative and Exhibit L to include this information as well as state the total CY of topsoil to be applied.

36. What is the anticipated area that will require reclamation after topsoil application?

Area 18D, E, F, and G

37. Please provide information regarding the dimensions of the foundations to be crushed and buried on site. Only estimated CY of volume generated was provided

38. Please summarize the total number of cubic yards of material that requires grading.

39. No mention of topsoil application stated, please clarify.

40. What is the anticipated area that will require reclamation after grading?

ESR

41. Please provide an itemized list of all equipment located at the ESR that requires removal. State the building materials, dimensions, foundations, electrical, etc.

a. Demolition of the lysimeter is not sufficiently described. Internal contents must be

removed before exterior cement foundations can be demolished. What is the volume of the internal instrumentation to be removed? What is the thickness of the foundation, and is it reinforced?

- a. There is additional debris that needs to be removed from the ESR test plots.
- b. What is the total linear feet of fence that surrounds the ESR and its material/construction type?
- c. Include removal of electric to well among demolition tasks

42. What is the current well-ID? Provide documentation once re-permitting has occurred.

Existing Building Summary

43. Not all buildings, foundations or other features mentioned in the narrative portion of the Reclamation Plan are listed on this table. **The table should also include all features to be removed.**

44. How is Foundation 6 varied in thickness? What is the average or thickest area?

Colony Water Wells **No additional information was provided.**

80. It is unclear from the Colony Well Spreadsheet which wells are currently open and will remain so vs which wells will need to be plugged.

- a. Please clarify the abandonment method(s) for all wells. Rule 5.4.2
- b. Commit to providing any abandonment documentation to the Division within the time frames specified under Rule 5.7(1)
 - i. Note the Division has no abandonment records for any of the water wells listed on this table.
- c. Provide documentation from DWR that wells are permitted for appropriate use post-mining. Per Rule 5.4.5. Until such time as re-permitted has occurred the Division will bond for their abandonment.

81. Permit 18150-F is noted as being unusable and well 18150-F-R replaced that well. Was 18150-F ever abandoned? Provide clarification as to this wells status and documentation as needed.

82. Per the DWR link provided the decree uses listed in the spreadsheet do not match DWR's website.

- d. 18150-F this well's decree use is Industrial and Irrigation. However, the table provided lists additional uses not authorized by DWR.
- e. 18150-F-R this well's decree use is Industrial. However, the table provided lists additional uses not authorized by DWR.

Reclamation Plan Maps

83. **Per Rule 6.2.1(2)(b) all maps must be prepared and signed.**

84. Within several maps the legend includes a red line “area boundary” is this mean to indicate the current limits of disturbance?
85. Map C13 for area 6A has a Note 4. That states...topsoil imported and placed at a thickness of 1-6”. This is inconsistent with the Reclamation Plan narrative.
86. All Maps, in general the final reclamation maps should depict the areas after reclamation is completed. Any features (stockpiles, buildings, pipelines, etc.) to be removed as part of reclamation should not be depicted on the map as post-mining they will not remain. For tracking it may be necessary to provide as built of the current site conditions to visually see what changes are required to complete final reclamation.
87. Per Rule 6.4.6(a) The expected physical appearance of the area of the affected land, correlated to the proposed mining and reclamation timetables. The map must show proposed topography of the area with contour lines of sufficient detail to portray the direction and rate of slope of all reclaimed lands. Not all maps include contour lines for each area.
- a. It appears that only areas where grading is required has contour lines. The map legend had existing and proposed grade. So regardless of if grading is required include the contour lines.
88. Pursuant to Rule 6.4.6(b) on each map please state the proposed final land use for each portion of the affected lands.
89. Several of the maps rely on drone imagery to convey information however, the drone images are shadowed or unclear. Outdated imagery from other sources may be better convey information. Example, on map C11 the right portion has call outs pointed to nothing. Either update imagery or otherwise outline and improve contrast of features being referenced.
90. Map C17 has the area 10D outlined in green, however there is no indication in the legend what green means. Same for Maps C20, Area 12 and C21 Area 14.
91. Map C16 Area 10C and Map C23 Area 16A. Any wells that are to remain post-mining need to be depicted on a map(s).
- Include the location of any water wells that will be re-permitted and remain post mining.
92. The Reclamation Plan narrative indicates a 72’x72’x6” pad to remain on the west side of Area 16A. This feature is not delineated on map C23.

Exhibit L

93. Given the significant changes to the Reclamation Plan the current Exhibit L Reclamation Cost also needs to be updated to reflect the changes.
- a. An overly simple cost summary was provided. Details need to be clarified, and additional reclamation tasks need to be included.
 - b. Inputs should be area specific and include all applicable input factors like regrade volume,

regrade slope and push distance, haul volume, haul grade, material types and consistency (swell)

c. Update estimate to include adequacy items list above.

Please submit your response(s) to the above listed issue(s) by Friday, February 28, 2025 in order to allow the Division sufficient time for review. If you cannot address the above issues by February 28, 2025 please request an extension to the decision due date to ensure adequate time for the Division to review materials. A decision due date of **March 8, 2025** has been set. If any adequacy issues remain by the decision due date the Division may deny your request.

The Division will continue to review your Technical Revision and will contact you if additional information is needed.

If you require additional information, or have questions or concerns, please feel free to contact me.

Sincerely,



Amy Yeldell
Environmental Protection Specialist

Ec: Travis Marshall, Senior EPS, DRMS