



City of  
Golden

**PLANNING**

TEL: 303-384-8097

**PUBLIC WORKS**

TEL: 303-384-8151

1445 10<sup>TH</sup> ST. GOLDEN, CO 80401

FAX: 303-384-8161

WWW.CITYOFGOLDEN.NET

October 1, 2021

Mr. Peter S. Hays  
Colorado Division of Reclamation Mining and Safety  
1313 Sherman Street, Room 215  
Denver, CO 80203

RE: Empire Pit  
Reclamation Permit No. M-1977-534

Dear Mr. Hays,

Please find the City of Golden's response to the DRMS Adequacy Reviews dated September 1, 2021 and September 9, 2021 for Technical Revision #4 (TR-04).

Please contact Anne Beierle at [abeierle@cityofgolden.net](mailto:abeierle@cityofgolden.net) or 303-384-8153 if you have any questions or require additional information.

Sincerely,

Dan Hartman, Director  
Public Works Department  
City of Golden

**Technical Revision**  
**Empire Pit**  
**Reclamation Permit No. M-1977-534**

**Introduction**

The City of Golden is submitting a technical revision to make changes to existing 112 Operation Reclamation Permit No. M-1977-534 for its Empire Pit. Changes include modifications to the methods to address potentially saline soils in TR-03, re-establishment of an access road to the former explosives storage facility, and construction of a new road to access property to the south.

**Reclamation Plan**

Golden proposes to make the following changes to the reclamation plan for the area east of the reservoir:

1. Saline Soils

Golden proposes to modify the reclamation plan revisions included in TR03 as follows: Golden will excavate and remove 24 inches from the project area instead of the 30 inches approved in TR03. A geosynthetic clay liner will be installed at the base of the excavation instead of the 6 inch clay layer approved in TR03.

Consistent with TR03, a combination of soil and topsoil, 24 inches thick, will be placed on the barrier to provide sufficient depth for the native species roots. The subsoil will be approximately 18 inches thick, would be inert and not contain excessive salts or sodium, and would otherwise meet DRMS requirements. The topsoil would be a minimum of 6 inches and provide sufficient nutrients to support native grasses. Additionally, the topsoil would be within the pH range and alkalinity/salt tolerance of the native grasses planted.

Golden proposes to delete the requirement to test the soils and submit results to DMRS before application at the project area. Noxious weed best management practices will be followed including using certified weed-free mulch and seeds and inspecting the site after seeding to determine if noxious weeds are growing. If weeds are growing, appropriate noxious weed-control methods would be used.

2. Access Roads

Golden proposes to re-establish an access road along the east side of the west fence line of the pasture at the request of the property owners. The Reclamation Plan Map has been amended to reflect this change and is included in this technical revision. Where this access road overlaps areas that have had unsuccessful revegetation, soils will not be excavated and replaced. Where

needed, the liner will be anchored under the road in such a way to prevent migration to the areas addressed in item 1 above.

Golden will also redirect drainage from the site that is currently causing minor erosion on a road that connects the reclamation area to the property to the north.

Technical Revision 04  
Empire Pit  
Reclamation Permit No. M-1977-534  
Response to Adequacy Reviews

**September 1, 2021 Adequacy Review Response**

The following are the City of Golden's responses to issues raised in the Divisions September 1, 2021 Adequacy Review:

1. The Operator proposes to re-establish an access road along the east fence line of the pasture at the request of the property owners. The Division believes based on the map submitted with the technical revision the Operator intends to re-establish an access road along the west fence line permit boundary. Please review the statement and revise the technical revision accordingly.

**Response:** The Division is correct. Golden proposes to re-establish an access road along the east side of the west fence line. The technical revision has been revised accordingly and is attached.

2. Please provide typical construction details for the proposed access roads and turn around area.

**Response:** Construction details for the access road and turn around area are attached to this response.

3. The Operator states, where needed, the liner will be anchored under the road in such a way to prevent migration. Please explain and provide details regarding how the geosynthetic clay liner will be anchored under the new access road adjacent to the saline soil revegetation area.

**Response:** Construction details showing how the geosynthetic clay liner will be installed to prevent migration are attached to this response. The liner will be anchored per manufacturer's recommendations.

4. The Operators states that drainage will be redirected from the site that is currently causing minor erosion on the road that connects the reclamation area to the property to the north. Please describe the drainage improvements and indicate the location of the improvements on the revised Reclamation Plan Map.

**Response:** Erosion on the road appears to be the result of a small rock check dam that has been installed on the road and a drainage ditch located on the south side of the road. The check dam runs through the drainage ditch from the southwest to the northeast and appears to direct flow from the ditch onto the road. Golden proposes to reverse the check dam and stop flows from

the ditch from flowing into the road. If the road needs repairs, they will be completed to the standards in the construction details. The approximate location of these improvements has been added to the Reclamation Plan Map.

5. The Operator states the construction of a new road to access the property to the south is included in the technical revision. The Operator did not provide a description or depict the new access road on the revised Reclamation Plan Map. Please provide a description and revise the Reclamation Plan Map to indicate the location of the new access road.

**Response:** The new road to access the property for the south will not be included in the technical revision. Golden has completed a recent property survey and determined that the location discussed during the inspection is not controlled by Golden and includes USFS property. This makes construction along that alignment undesirable. Golden has, and will continue, to work the adjacent property owners to provide the best access possible. Currently, that appears to be from the road around the reservoir and outside the current permit boundary.

6. Note #3 on the revised Reclamation Plan Map states, refer to specification for the permanent seeding requirement. Please confirm that the Operator is not proposing to revise the approved reclamation seed mixture for the site.

**Response:** Golden is not proposing to revise the approved reclamation seed mixture for the site.

### **September 9, 2021 Adequacy Review Response**

The following are City of Golden's responses to issues raised by Glenda Guanella in her September 3, 2021 email.

1. "The low available water holding capacity is the primary limitation concerning the establishment and maintenance of plants. Special supplemental watering practices at planting time and early stages of growth are essential." According to the USDA Soil Conservation Service report on file for the area. What are these plans?

**Response:** Golden has not provided supplemental watering for any of the reclamation at the Empire Pit and is not proposing any in this technical revision. Golden will, of course, monitor the progress of reclamation and may consider supplemental water if needed.

2. Why is it acceptable to leave the imported buried salt on the property? All the salt and asphalt should be removed. It will limit the root growth and pose a future liability for us.

**Response:** Golden is not aware of any buried salt on the property. We do know that salt storage has contaminated some soils on site. We disagree that all of the contamination must be removed in order to have successful reclamation meeting the identified post mining land use. We believe that the reclamation proposed in TR03 and TR04 will result in successful reclamation of the property.

3. The revision does not show plans for addressing the erosion on the road to the adjoining lower north property.

**Response:** Information about how erosion on the road will be addressed is included in the response to the Divisions September 1, 2021 Adequacy Review.

4. The revision does not state what successful measures of plant growth will be.

**Response:** Golden intends to meet the requirements of the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials, which states in section 3.1.10 that "land shall be revegetated in such a way as to establish a diverse, effective, and long-lasting vegetative cover that is capable of self-regeneration without continued dependence on irrigation, soil amendments or fertilizer, and is at least equal in extent of cover to the natural vegetation of the surrounding area."

5. Topsoil and subsoil specifications should be listed, Example for gravelly sandy loam: Organic matter 3.5 %, Non Organic matter of 65% sand, 25% silt and 10% clay, bulk density of 1.4 grams per cc and 50% porosity all plus or minus 10%. "The Nature of Property of Soils," by Harry Buckman and Nyle Brady. What will be compaction and moisture content upon completion of the subsoil and topsoil?

**Response:** Golden cannot provide topsoil and subsoil specifications such as those described above since the source materials for the work proposed technical revision have not been identified. Golden is committed to finding, if possible, a local source for materials. Specifications for subsoil compaction are included in the typical construction details.

6. All the weed and asphalt patches should be removed throughout the property.

**Response:** Golden will continue weed control until the permit is released. Patches of asphalt found in the work area while work is being performed will be removed.

7. The areas next to the contaminated areas need to be top-seeded to diversify the cover to near the percentage of the original seed mix. Also a mulch needs to be added to increase the organic content. Then the area needs to be aerated to incorporate the organic matter and increase the porosity of the top surface.

**Response:** Reseeding will be completed per the approved reclamation plan. No changes are proposed in this technical revision.









