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STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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Temple A. Reynolds, Executive Director
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4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

August 3, 1983

Mr. Dan Gry
Beaver Creek Coal Company
P. O. Box AU
Price, Utah 84501

RE: Determination of Completeness
and Technical Deficiencies
Beaver Creek Coal Company
Castle Valley Spur
ACT/007/022, Folder No. 2
Carbon County, Utah

Dear Mr. Gry:

The Division of Oil, Gas and Mining (DOGM) technical staff has completed an in-depth review of Beaver Creek Coal Company's Mining and Reclamation Plan (MRP) submitted in response to the Division's April 3, 1981 Apparent Completeness Review (ACR). Enclosed please find the Division's combined Determination of Completeness (DOC) and Technical Deficiency (TD) review documents for the Castle Valley Spur.

In the DOC portion of the review, requirements pertaining to the UMC 700 regulations which have not been adequately addressed in Beaver Creek Coal Company's revised MRP are stated as they originally appeared in the ACR, including the concerns or deficiencies which have not been adequately answered in the ACR response and outlining what is required to complete the MRP. During the review, some sections which were not addressed by the Division in the ACR were found to be incomplete. These are included following the appropriate section.

The TD section of the review relates to the UMC 800 regulations and those concerns or deficiencies which must be addressed by Beaver Creek Coal Company in order for the Division to proceed with the Technical Analysis (TA).

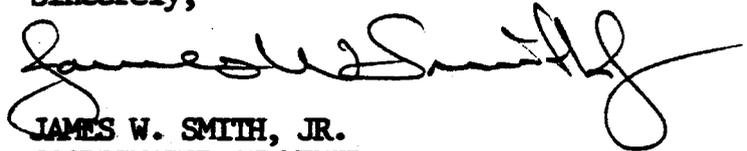
It must be emphasized that a timely and adequate response to those deficiencies or concerns listed under the DOC (UMC 700 regulations) should be of immediate priority. This is necessary for the MRP to be determined "complete" so that the Division can then notify all federal, state and local agencies and other interested parties that a complete plan has been received.

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A determination of completeness by the Division allows the operator to publish the consecutive four week notice in a local newspaper as required by UMC 786.11. Upon submission of the information requested in the TD, the Division will proceed with the Technical Analysis (TA) portion of the mine plan review. Beaver Creek Coal Company's response to the TD must be received by the Division no later than September 2, 1983. An earlier response would be appreciated. Final approval of the Castle Valley Spur permit application is scheduled for November 18, 1983.

If you have any questions regarding the enclosed documents, or about the review schedule, please contact me or Rick Summers of my staff.

Sincerely,



JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

JWS/RS:btb

Enclosures

cc: Allen Klein, OSM, Denver
R. Summers, DOGM
E. Hooper, DOGM
P. Grubaugh-Littig, DOGM
C. Young, DOGM
J. Whitehead, DOGM

DETERMINATION OF COMPLETENESS

AND

TECHNICAL DEFICIENCIES

**Beaver Creek Coal Company
Castle Valley Spur
ACT/007/022, Carbon County, Utah**

August 3, 1983

DETERMINATION OF COMPLETENESS
AND
TECHNICAL DEFICIENCIES

Beaver Creek Coal Company
Castle Valley Spur
ACT/007/022, Carbon County, Utah

UMC 782.19 Identification of Other Licenses and Permits

2. the 10-inch pipe running from the canal south of the permit area should be included in the permit application with the following information:
 - a. Type of permit or license;
 - b. Name and address of issuing authority;
 - c. Identification numbers of applications for those permits or licenses or, if issued, the identification numbers of the permits or licenses; and
 - d. If a decision has been made, the date of approval or disapproval by each issuing authority. All water right agreements should be included.

DETERMINATION OF COMPLETENESS

The applicant must supply the above information.

UMC 783.13-.15 Ground Water Information

The operator has provided a description of the regional ground-water conditions which encompass the C. V. Spur site. Specific information is required regarding recharge and storage capacities of the aquifers in the mine area.

DETERMINATION OF COMPLETENESS

The information provided in Section 7.1.2.1 and 7.1.2.2 is sufficient in the description of the regional ground water conditions in the C. V. Spur area. Reference is made on page 7-2 to drilling logs for oil and gas wells which document regional ground water conditions. This source must be listed in the literature cited Section 7.2.7. Additionally, information indicating the recharge and discharge characteristics of the shallow aquifers encompassed by the minesite is not complete. This must be clarified with further detail. The pump test data and results listed in Table 7-2 must be documented with details on the equations used and the assumptions made. A reference documenting the applicability of the equations use is also required.

UMC 783.16 Surface Water Information

The operator has not completely described the surface water sources adjacent to the C. V. Spur site. The constituents sampled for in the water quality data are incomplete.

DETERMINATION OF COMPLETENESS

A general description of the water quality is given in Section 7.2.2.1, however, complete water quality data are not included for the Price River which is adjacent to the C. V. Spur site. This information should be provided. Additionally, water quality data are given in Table 7-18 for Drunkards Wash, an unnamed creek at Highway 10, and Miller Creek near Wellington. The location of the sites should be delineated on a map. Table 7-19 omits the dissolved iron constituent and acidity from the chemical analysis of surface water given. These constituents must be included in the surface water quality analysis. Additionally, Table 7-19 does not provide units for most of the constituents given. This should be clarified.

UMC 783.19 Vegetation Information

The vegetation information is incomplete to the degree that it is difficult to evaluate compliance for reclamation. The applicant should provide the total number of acres to be disturbed of the 160 acre permit area. There is no map which explicitly depicts the 108.41 (or 110) acres of total planned disturbance. It is not clear whether the weed community will be disturbed and how much of the remaining shadscale community will be disturbed? Did a sedge meadow occur on the site in the past? Is it now drained by the french drain on the west end of the permit area? Until these points are clarified, it is difficult to approve only one reference area (shadscale community) for reclamation of the entire site. The vegetation information should explain what community and thus what reference area the already disturbed area is to be assigned.

DETERMINATION OF COMPLETENESS

The applicant has not answered all of the questions asked in the original ACR, i.e., "It is not clear whether the weed community will be disturbed . . .? Did a sedge meadow occur on the site in the past? Is it now drained by the french drain on the west end of the permit area?"

Also, there are some major discrepancies that exist in the vegetation report (Chapter 9) that was submitted:

1. Table 9-3 reports production for the affected area as 167.9 g/m², sample size as 25 and a standard deviation as 198.87. Yet, Table 9-4 reports production for the affected area as 110.9 g/m², sample size as 65 and a standard deviation as 150.4. Please clarify. Also, a t-test shows affected area vs. reference area productivity not equal at $p = .10$.
2. Please provide rationale for sampling reference area cover outside the two-acre reference area vs. within the reference area.
3. Why was shrub density not sampled within the affected area?
4. Similarity has not been demonstrated between the reference area and the affected area (cover reported for the reference area was similar but was not sampled within the reference area). Which species were found in the affected area? Which in the reference area?
5. The formula for calculating minimum sample size = T^2s^2

where:

t = the t-value for a 2-tailed test at 80 percent or 1.282

s = sample standard deviation

d = .1 X the sample mean.

From this, sample adequacy was not reached for any of the parameters for either the affected area or the reference area. Please justify why sample adequacy was not met.

6. On a minor scale, the sum of the cover values on Tables 9-2 and 9-15 are 19.3 percent and 17.8 percent, respectively, vs. 18.8 percent and 17.5 percent. Also, Table 9-8 should show shrub density as 6801.6 stems per acre vs. 6798.9 stems/acre.

If these discrepancies cannot be cleared up to the satisfaction of the Division, resampling will be required.

UMC 783.24 Maps: General Requirements

DETERMINATION OF COMPLETENESS

The applicant must supply a map of all water supply intakes for current users of water in and adjacent to the permit area. Locations of agriculture intakes and irrigation canals must be included.

UMC 783.25 Cross-Section, Maps and Plans

DETERMINATION OF COMPLETENESS

The location of the temporary garbage disposal area needs to be included in the surface facilities map.

The following maps or plans are not certified: Plates 5-1, 6-1, 1-1, 3-1, 7-2, 7-1 and 8-1. Please submit a certification statement for all maps.

The location and extent of subsurface water is in part indicated by the data contained in the application. However, the portrayal of it is difficult to interpret without a map of the potentiometric surface.

DETERMINATION OF COMPLETENESS

A map of the potentiometric surface of the ground water encountered in the area of C. V. Spur should be included.

(1) Maps, plans and cross-sections included in the permit application need to be certified by a qualified registered professional engineer or professional geologist.

DETERMINATION OF COMPLETENESS

Plate 7-1 and 7-2 and other information provided to document the location of surface water bodies must be certified by a qualified registered professional engineer or professional geologist.

UMC 784.11 Operation Plan: General Requirements

DETERMINATION OF COMPLETENESS

The letter from the land fill accepting refuse from C. V. Spur was not found. Please include. Where will the post-operation disposal of surface facility components such as concrete, gravel, etc., occur?

The applicant must submit plans describing the removal of the sediment ponds. Page 3-54 of Volume I states ponds will be removed "when vegetation is reestablished." What criteria and monitoring methods will be used to determine this criteria. See related comments under UMC 817.46(u).

The applicant must submit methods of sediment removal and areas of disposal. The applicant must submit plans for sediment markers to indicate sediment cleanout levels for all ponds.

The applicant must submit operation plans for the plant water system. This must include the plans for keeping the daily log as required by DOGM for the prior approval of the plant overflow pond.

The applicant must submit maps and plan showing the location of the septic system and including all lines.

UMC 784.12 Operation Plan: Existing Structures

(b) Each application shall contain a compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate underground coal mining activities.

DETERMINATION OF COMPLETENESS

(b) Each application shall contain a compliance plan for each existing structure proposed to be modified or reconstructed. This was not addressed, i.e., if the structures would be modified and when?

UMC 784.13 Reclamation Plan: General Requirements

(b) A plan for any necessary backfilling, soil stabilization, compacting and grading for these areas.

(b)(5) A plan for revegetation for above mentioned areas including:

(i) Schedule of revegetation;

On-going reclamation of refuse disposal areas was mentioned then contradicted. Interim reclamation should be carried out where practical to provide slope stability, prevent spontaneous combustion and provide erosion control.

(ii) Species and amounts per acre of seeds and seedlings to be used;

(iii) Methods to be used in planting and seeding; and

(iv) Mulching techniques.

(vi) The postmining land-use has been proposed as fish and wildlife habitat by the applicant. Therefore, measures to determine the success of revegetation must be met according to the requirements of UMC 817.116(iv), that is, 70 percent of the ground cover of the reference areas with 90 percent statistical confidence, and the requirements of UMC 817.117(c), that is, stocking rates for shrubs must be 90 percent of the woody stem occurrence per acre present on the reference area. These revegetation plans should be discussed in the reclamation plan.

DETERMINATION OF COMPLETENESS

(a) A detailed estimate of the costs reclamation of the operation should be included with supporting calculations. This means that more detail is needed to identify the equipment along with unit costs per hour, etc. (The "1983 Means Site Work Cost Data Book" and the "Rental Rate Blue Book for Construction Equipment" are used for cost estimating).

(b) A plan for the grading was not addressed other than it was mentioned that the area will be graded. Backfilling was mentioned. Which areas would be backfilled and graded? Please explain.

The applicant must include the removal of the sediment ponds and associated diversions in the reclamation timetable.

All modifications approved or pending must be inserted into the mining and reclamation plan in the appropriate locations.

The areas of variance for topsoil removal must be indicated.

(b)(5) Please provide a map indicating areas that are to be drill seeded and broadcast or hydroseeded.

At what rate (pounds per acre) will hydromulch be applied?

More detail is needed in the time schedule (i.e., season, month, etc.) for revegetation.

The seed mix(es) for permanent reclamation (Tables 3-2 and 3-3) contain several introduced species. Please provide justification for their use as per UMC 817.112 or substitute them for native species. The seed mixes should contain several forbs which are valuable to small mammals and birds. The applicant should provide for more shrub diversity (two species is not sufficient). Please provide the scientific name of all species to be used for reclamation. Also, streambank wheatgrass and riparian wheatgrass are the same species. Pursuant to the proposed seed mix needing revision, the Division recommends that the following seed mix be considered:

<u>Name</u>	<u>Rate (Pounds PLS Per Acre)</u>
<u>Grasses</u>	
Galleta (<u>Hilaria jamesii</u>)	2
Thickspike wheatgrass (<u>Agropyron dasystachyum</u>)	4
Indian ricegrass (<u>Oryzopsis hymenoides</u>)	3
Alkali scaton (<u>Sporobolus airoides</u>)	.75
Inland saltgrass (<u>Distichlis spicata</u>)	1

Forbs

Globemallow (<u>Sphaeralcea grossulariaefolia</u>)	.5
Sunflower (<u>Helianthus annuus</u>)	4
Palmer Penstemon (<u>Penstemon palmeri</u>)	.5
Yellow sweetclover (<u>Melilotus officinalis</u>)	2

Shrubs

Winterfat (<u>Ceratoides lanata</u>)	3
Shadscale (<u>Atriplex confertifolia</u>)	4
Mat salbush (<u>Atriplex corrugata</u>)	4
Whitestem rubber rabbitbrush (<u>Chrysothamnus nauseosus var. albicanlis</u>)	1.5
Four-wing saltbrush (<u>Atriplex canescens</u>)	<u>3</u>
TOTAL (for broadcast or hydroseeding)	<u>33.25</u>

(1/2 rate for drill seeding.)

There is no narrative which describes how or where the seed mix in Table 3-3 will be used. Please indicated areas of different seed mixes on the reclamation map. Also the number of species may need to be increased to meet diversity requirements.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance

The application provides a brief description of how the hydrologic balance will be protected from the operations at the C. V. Spur site. However, some of the conclusions drawn are not supported.

DETERMINATION OF COMPLETENESS

Page 7-55 under Effects of Operations on Ground Water, note that the quality of the water coming from the french drain on the northern boundary of the permit area is thought to be superior to the quality of the water that would eventually seep into the Price River. This statement needs to be supported.

Section 7.1.4 of the application indicates that the refuse disposal is not anticipated to effect ground water. One of the reasons given for this is the french drain on the northern periphery of the minesite is expected to lower the water table and reduce the rates of seepage and evaporation, therefore, preventing the refuse material from saturating. How long can this section of french drain be expected to be operational? Is this life time comparable with any concerns about the refuse pile and saturation of the pile?

The length of life of operation of the french drain needs to be demonstrated. A description of the impacts of the failure of the french drain to operate should be included.

(a)(2) The rights of present users of surface and ground water sources is not entirely delineated in the application. The applicant needs to document all water right holders in the area which may be impacted by C. V. Spur operations.

DETERMINATION OF COMPLETENESS

The operator must document all water right users in the immediate and adjacent area. The operator must describe what measures will be taken to insure the protection of these water rights.

(b)(3) The operator provides a brief description of the ground-water monitoring plan. The methodology used in the sampling of wells and the frequency and intensity of postmining sampling need clarification. The operator is encouraged to adopt in addition to the constituents listed in Table 7-15, acidity, total iron, total maganese and boron.

DETERMINATION OF COMPLETENESS

The applicant must provide the methodology used for sampling water quality in wells (e.g., are wells pumped or baled prior to sampling) and shall detail the frequency and intensity of postmining ground-water sampling.

In Section 7.2.6 of the application, the surface-water monitoring plan is briefly described. The surface-water monitoring plan lacks specifics in that the constituents sampled for are not indicated. Additionally, the monthly monitoring of the NPDES discharge point from the #6 pond appears inadequate. The postmining monitoring details are not defined in the plan as well.

DETERMINATION OF COMPLETENESS

The specific constituents which will be sampled in the surface-water monitoring plan should be delineated. The operator is encouraged to use the constituents listed in UMC 783.16 at a minimum. The monitoring of discharges from pond #6 should be on a discharge by discharge basis whenever it occurs, not on a monthly basis. The details of postmining monitoring should be defined. Frequency and the constituents to be sampled for should be listed. Plate 7-1 should reflect monitoring on the north drainage ditch which will receive any discharges from pond #6.

UMC 784.15 Reclamation Plan: Postmining Land-Use

What impact will returning the flow of ground water to its "former drainage patterns" have upon the postmining vegetation success? Will bogs or marshy areas develop on-site or off-site, thereby limiting the extent of postmining land-use? Is there a need to adjust the seed mix proposed? Where are the most probable locations for these areas to develop? (Section 4.2-C, page 4-27)

DETERMINATION OF COMPLETENESS

The applicant has not addressed these concerns.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments

Applicant should delineate watersheds for each of the five sedimentation ponds as well as the water treatment pond.

DETERMINATION OF COMPLETENESS

The map submitted is not adequate. The map must include a scale. The Division recommends that the watersheds be added to Plate 3-2 to clarify drainage areas and corresponding diversions.

(a) Plans for the thickener and overflow ponds must be submitted. Plate 3-6 is not adequate. The plans must show 1.0 freeboard and include cross-sections of embankments showing slopes and top width of embankment.

(ii) The applicant must discuss the operation and maintenance procedures for the plant overflow and sediment systems. This information should include but not be limited to sediment removal and disposal plans, the daily log required by DOGM for the overflow pond approval, and the methods of pumping from the overflow thickener pond to the plant overflow pond.

(iv) Complete plans for removal of the sediment ponds must be submitted. These should include a post-operation/reclamation drainage plan depicting the sediment ponds and associated diversions to be left in place and the timing of removal for all structures. Criteria and monitoring methods to determine pond removal should also be submitted (see comments under UMC 817.46[u]). Any ponds planned to be left permanently must address all the sections of UMC 817.49.

(f) The applicant must submit a stability analysis for all waste embankments greater than 20 feet in height on the site. This analysis should address all the items of section (f) of this regulation.

UMC 784.17 Protection of Parks and Historic Places

DETERMINATION OF COMPLETENESS

Since Chapter 5.0 describes a historic site located within 1,000 feet of the permit area, a plan must be submitted describing the measures to be used to minimize any potential impacts to the site. The operator must also commit to the recommendations attached in the July 30, 1980 letter from the Utah Archeological Resource Corporation (see page 5-7 of Volume 1).

UMC 784.22 Diversions

DETERMINATION OF COMPLETENESS

The applicant must depict how drainage areas are separated (i.e., ditches or berms). This will perhaps become clear when the drainage areas are added to Plate 3-2.

Figure 7-5 not sufficient as a map scale is required.

The size of riprap and design velocity calculation including all assumptions must be submitted for all diversions. A discrepancy was noted as Plate 7-3 states "diversion ditches are earth lined" yet page 7-77 states cobbles are used to line the channels. Which is correct? If unlined, justify by using velocity calculations.

Designs must be submitted for all the diversions on the site similar to those submitted for DD-1. These must also include all diversions between ponds and all culverts. The plans should address all items of UMC 817.42 and include, but not be limited to, the drainage area for each diversion, velocity calculation and riprap design size, peak flow calculation and design size. Include all assumptions and method used in the calculation. Are the dimensions of the cross-sections of Page 7-5 with or without riprap.

UMC 784.23 Operation Plan: Maps and Plans

Each application shall contain maps, plans and cross-sections of the proposed mine plan and adjacent areas as follows:

(b) The Division recommends that the following be shown for the proposed permit area on a new mine operations or surface facilities map and refuse disposal and soil stockpile map, plus any other maps necessary.

DETERMINATION OF COMPLETENESS

(b) The revised surface facilities map and refuse disposal and soil stockpile map has been revised. However, the date of revision was not indicated on the map. Please indicate. Is this the present configuration?

The applicant makes reference to the #2 topsoil and subsoil storage piles to be found on Plate 3-2, no such location was found on Plate 3-2. The location of these stockpiles must be indicated on the surface map. The applicant must also provide cross-sections of the present and proposed topsoil and subsoil stockpiles.

TECHNICAL DEFICIENCIES

UMC 817.21-.25 Topsoil

DEFICIENCIES

There is a difference in lab results presented in the Mining and Reclamation Plan and that which was submitted for the modifications.

These differences must be cleared up before the Technical Analysis (TA) can be completed.

the use of the soil material beneath the areas of pre-Law disturbance must be tested just prior to final reclamation to evaluate the soil condition at that time.

The applicant must provide for a another source of a soil substitute in case the disturbed soil is found to be of too poor a quality for use as a plant growth medium.

UMC 817.41 Hydrologic Balance

The plan does not adequately address the impact to the off-site hydrologic balance from plant water discharge into the runoff control system should the 10-year, 24-hour storm or greater occur.

DEFICIENCIES

The operator must delineate the quantity and quality of waters in the runoff control system which may result from plant overflows. The chemical constituents in plant water and plant processes should be identified. In the event of a discharge from pond #6, how will discharge impacts be mitigated? This information must be provided.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

(h) When are the ponds determined to be at their maximum sediment storage capacity? What method is utilized to determine volume at 60 percent of design capacity? "Periodically" is not adequate enough to define when sediment should be removed.

(i) Show formulas and references utilized in designing and present calculations for the following structures:

1. Overflow culverts for all sedimentation ponds.
2. Diversions as constructed (Section 4.4-B, page 35; Section 4.10, page 4-56).

DEFICIENCIES

(b) The operator must submit plans to install sediment pond markers (or a similar method of detection) to demonstrate when periodic cleanout will be done.

What cover values and type was assumed in determining the D-22C factor on page 7-84?

What is the basis for the assumption of a sediment density of 100 lbs/ft³ found on page 7-86?

(g) The height of all spillways (and intake to line from pond #6) must be indicated on cross-sections or described in the plan.

(i) The applicant must submit calculations for each pond outlet demonstrating ability to pass the 25-year, 24-hour peak flow (similar to those submitted for pond 5).

(r) Each pond must be certified following construction by a registered, professional engineer.

(u) The applicant must provide a reclamation plan for the removal of the sediment ponds and associated diversions. This plan must address how ponds will be left in place during reclamation of remainder of site, criteria and monitoring plans to determine when ponds meet the requirements of this section for removal, and which diversions are to be left on-site to insure separation of undisturbed drainage from the ponds.

UMC 817.47 Hydrologic Balance: Discharge Structures

DEFICIENCIES

The vertical dimensions for all spillways and outlet works must be given. Refer to outlet detail on Plate 7-4. Also, the design flow depth through spillway should be indicated.

The applicant must submit riprap design size for all spillways, outlets and diversions including design velocity calculations, assumptions and sources used in that determination.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

In determining adequacy of filter pond #6 to handle the volume of runoff from the 10-year, 24-hour event, was the permeability of the filter medium and the discharge capacity of the pipe draining into the underground sump taken into account? How readily can water pass through the filter media and out of this pond? In comparison, how rapidly will runoff enter this filter system? Are calculations available?

DEFICIENCIES

The applicant must address the above items in the MRP.

(e) The pond embankments, diversions and surrounding areas disturbed during construction must be revegetated. The operator must submit an evaluation of the vegetative cover at these areas and submit plans to revegetate those areas as needed.

UMC 817.53 Hydrologic Balance: Transfer of Wells

DEFICIENCIES:

The applicant must address whether any wells are planned to be transferred to other parties. If so, the operator must address all items of this regulation.

UMC 817.85 Coal Processing Waste Banks: Construction Requirements

DEFICIENCIES:

(b)(5) The applicant failed to discuss how piles will be maintained so that water will be prevented from affecting stability.

(c)(2) The applicant did not provide the percentage of water contained at final stage of drying for the processed waste. What will be the area over which processed waste will be spread to dry?

UMC 817.103 Backfilling and Grading: Covering of Coal and Acid- and Toxic-forming Materials

DEFICIENCIES

Some coal refuse material at other mines have shown a tendency to have a drop in pH over time. If this occurs, revegetation efforts may be affected.

The applicant should propose a plan for monitoring the refuse material after it has a chance to weather to insure that the potential toxicity does not change. If the material does become toxic, then a deeper cover layer will be required.

The texture of the refuse material must also be included in the chemical and physical analysis.

The possibility of soil erosion from the refuse pile will require that more than a six inch layer of soil material be used for reclamation.