# VOLUME II-C

## LIST OF EXHIBITS - CONTINUED

Previously, during evaluation of the CRDA, as permitted under TR-15, a chemical analysis of the processed waste material was completed, with the results presented as Table 20A, Waste Material Analysis. Based on this analysis, it appears the refuse materials are not potentially toxic-forming or acid-generating. The previously referenced CTL/Thompson report addressing the CRDA design and geotechnical evaluation includes a conservative estimate of the maximum quantity of water projected to drain from within the pile (see Exhibit 26A, page 17). The estimate is based upon the assumption that 3 inches of water infiltrates into and discharges from the pile on an annual basis. The analysis further assumes that discharge from the pile occurs during a one-month time period. Under these conditions, the average calculated flow from the drain is 0.2 cfs for the month drainage occurs. The discharge from the refuse pile rock drain will be routed to Pond D. Given the very limited volume of rock drain discharge relative to the surface water runoff contributions typically received by Pond D, no adverse water quality impacts are anticipated as a result of construction of the waste pile. Pond D will continue to be monitored for the applicable NPDES discharge permit parameters as required.

The permanent diversion ditches on and around the perimeter of the CRDA (see Map 24 and Exhibit 26A, Appendix D) were established prior to constructing the refuse pile. The uppermost portion of the west side diversion ditch segment RDA-1b, however, was temporarily aligned slightly to the east of the location depicted on Map 24 in order to avoid the established topsoil stockpile (SF-6) in this area (see Exhibit 26A, Figure 2). Topsoil Stockpile SF-6 remained in its original location and will be utilized as the initial topsoil source for reclamation of the refuse pile benches. In the event Topsoil Stockpile SF-6 has not been reduced through topsoil replacement to the degree necessary to allow construction of the final configuration of ditch RDA-1b once the pile is developed to this elevation, any portion of Topsoil Stockpile SF-6 conflicting with the final ditch alignment will be relocated and the permanent diversion ditch will be established between the existing sections. TCC does not intend to riprap the temporarily located portion of Ditch RDA-1b, but will riprap the ditch when the final alignment is established.

In order to facilitate the establishment of vegetation in permanent diversion Ditch RDA-2, temporary rock check-dams will be installed in selected segments of the ditch. The design of these rock check-dams can be found in Exhibit 26-a(1), Refuse Pile, Rock Check-Dam design. It should be noted that these dams will not exceed one foot in height, and extend across the 8-foot wide ditch bottom. The 12-foot rock dams will extend up the ditch sideslopes to the flow-line. The rock check-dams will be placed according to the following spacing interval: Slopes 1 percent or less - every 100 feet, 2 percent slope - every 50 feet, 3 percent slope - 3 dams per 100-foot segment of ditch, 4 percent slope – 4 dams per 100-foot segment of ditch, 5 percent slope - 5 dams per 100-foot segment of ditch, and 8 percent slope - 8 dams per 100-foot segment of ditch.

Temporary diversion ditches designed to convey the 100-year, 24-hour storm runoff will be cut-in approximately 50 feet upslope from the working area of the CRDA as pile construction progresses. The temporary ditches will be established in areas stripped of topsoil, and are intended to divert surface runoff away from the exposed coal waste materials during construction of the pile. TCC estimates a maximum of six temporary ditches will be established throughout the life of the pile.

**Coal Refuse Disposal Area Modification (TR95-21, TR05-49, MR08-233, TR20-94)**

The CRDA construction sequence and final grading are modified as reflected in Exhibit 26A-1. The modification of the construction sequence and final grading will result in a stable refuse pile configuration in accordance with the requirement of the DMG regulations. In 2020, a TR-94 was submitted to correct for a surveying error in previous Refuse Pile surveys following the 2nd lift, that led to a 10-degree rotation of the upper lifts from the original layout. The Slope Stability analysis by NWCC shows that no changes in the stability of existing and future slopes are anticipated. In addition, there will also be no changes in the disturbed acres. The bench ditch design is presented in Exhibit 8M. It should be noted the bench design is adequate to pass runoff from the 100-year, 24-hour event.

All of the provisions provided in Exhibit 26 will continue to be followed by TCC, except as modified by Exhibit 26A-1. The modification presented in Exhibit 26A-1 can be summarized as follows:

1) Segmented Construction – The requirement to place and compact the fill in 24-inch lifts will be followed, with testing of every other lift to verify compaction requirements are met. The southern portion of the CRDA will be the

primary temporary stockpiling area, although the entire footprint of the pile can be used for temporary stockpiling of refuse material to allow for temporary storage of material during the winter, when adequate compaction may not be feasible, and to allow water to drain from the refuse prior to placement and compaction. A maximum of approximately 1.0 million cubic yards of un-compacted refuse was previously permitted to be temporarily stockpiled in a surge pile at the south end of the refuse area on an area where the topsoil has been removed. Actual maximum placement in this area has been approximately 400,000 cubic yards and this volume has been reduced to approximately 80,000 cubic yards by dozing stockpiled material to an adjacent permanent refuse disposal area. Once the remaining stockpiled material is removed and placed in permanent disposal areas, TCC has no future plans to utilize this area for temporary stockpiling (other than the temporary winter stockpiling, as discussed below). Stockpiled materials are transferred, placed, and compacted on active portions of the refuse area. As the stockpiled material is moved and placed, during the summer construction season, any underlying spoil/sub-soil material will be recovered and placed on available completed refuse pile bench areas. During the winter, up to 300,000 cubic yards of material may be tail-dumped on active portions of the refuse pile for temporary storage. In the spring, once any frozen materials are thawed so that effective compaction can be achieved, the piles will be spread and compacted as the next lift on the active pile area(s). The pile will be constructed in 50-foot benches, as originally planned, and drainage will be established off of the pile as presented in Exhibit 26A.

2) Vertical Construction – This segment has been clarified to remove the requirement to construct "A" and "B" segments as proposed in Exhibit 26A. The recommendation presented in Exhibit 26A-1 to compact the entire lift as one unit without dividing it into segments will be followed. This will increase the stability of the fill by removing the potential for establishing a slip plane between segments A & B. As noted in Exhibit 26A-1, the two-segment construction was for "zoned construction" and this is not required for smaller piles.

3) Temporary Road Construction – The temporary road within the CRDA footprint will be filled in with refuse material, as per the recommendation in Exhibit 26A-1, when it is no longer required. The recommendation includes benching and tying in with existing refuse pile to the north and south of this road. Final refuse placement activities in this area will require recovery and temporary stockpiling of clay cover materials in a nearby placement area, as shown on Exhibit 49S-M1. The temporary clay stockpile will be placed on an existing permanent excess overburden stockpile. A short segment of the existing light-use road (designated a permanent postmining road in Permit C-81-071) will be widened to approximately 30 feet to accommodate two-way scraper traffic. Soil material will be stripped and stockpiled from stockpile and haulage areas prior to disturbance, and drainage control will be addressed by existing collection ditches and bench terraces on the excess spoil pile, which will route all drainage to the existing Sedimentation Pond D. The existing collection ditches and bench terraces, described in Exhibit 29, Draiange Control, and Exhibit 9, Excess Spoil, of Permit C-81-071 as follows, were designed to effectively collect and convey all surface drainage from the excess overburden stockpile.

> **Exhibit 29 (pg. Ex 29-36)** – "The drainage systems on top of the excess spoil structures are described in detail in Exhibit 9, Excess Spoil, and consist of maintaining a gradient that will prevent the impoundment of water on the spoil, thereby minimizing possible leaching. These drainage systems will transmit water off the spoil in a manner that prevents erosion and TSS loading of surface water. This will be accomplished by maintaining an even and consistent gradient and by installing riprap or other energy dissipaters where necessary. All drainage from the surface of the spoil will be diverted away from the outslope of the fill. Exhibit 9, page 27, Recommendation No. 11 addresses the drainage system on the top of the excess spoil piles. The intent of the recommendation is that the point of intersection of the outslope with the top of the fill be the highest portion of the excess spoil pile. As a result of the recommendation that the central portion of the fill be overbuilt approximately 5 percent, the water collecting on the top surface of the fill will flow to the edge of the fill and down the permanent diversion ditch.
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> **Exhibit 9 (pg. 27)** –
> 8. We recommend that diversion ditches be constructed around and uphill of all disposal areas. For Area 1, it appears that the most effective method would be to have a horseshoe-shaped drainage system with a high point near the highest elevation of the fill, with drainage occurring on the north side and the south side of the fill in natural materials. The drainage ditch on the south side of the fill should be substantially larger than on the north side to intercept drainage which might occur from the slope above the fill.