

DRC-2011-001274

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21 January 2011

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Division of Radiation Control  
Utah Department of Environmental Quality  
195 North 1950 West  
PO Box 144850  
Salt Lake City, Utah 84114-4850  
Oxnard, CA 93030

**Subject: Response to Review of Cell 4B Construction and Request for Information  
Cell 4B Construction Quality Assurance Report Addendum  
White Mesa Mill – Cell 4B  
Blanding, Utah**

Dear Mr. Rupp,

Geosyntec Consultants, Inc. (Geosyntec) has prepared this letter on behalf of Denison Mines (USA) Corp. (DMC) in response to the Utah Department of Environmental Quality, Division of Radiation Control's (DRC's) Review of Cell 4B Construction and Request for Information dated 20 January 2011. This letter serves as an addendum to the "Cell 4B Construction Quality Assurance Report, White Mesa Mill, Blanding, Utah" prepared by Geosyntec, dated November 2010. For ease of review, the DRC's comments are summarized below in italics with DMC's responses following each comment.

- 1. The Construction Drawings. The originally dated November 2009 Construction Drawings are mentioned in the report, paragraph 3.2. Several design change notifications (DCN) are provided in Appendix B. It appears that revisions of the original drawings, except for sheets 1 and 6 are included in the subject CQA Report. Please provide for these missing drawing sheets 1 and 6, as revised for construction, in the report.*

Drawing sheets 1 and 6 were not changed during construction and were therefore not included as a DCN. Drawing sheets 1 and 6 are included with this letter response as Attachment 1.

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2. *The Slimes Drain Header*

- a. *As discussed last month by telephone, please provide one or more photographs demonstrating that the along the slimes drain header in the SE corner of the cell, that the slimes drain header is ballasted continuously on both sides, as request in the subject DRC Email dated December 14, 2010.*

Photographs nos. 1 and 2 in Attachment 2 show the slimes drain header sandbags. Photo 1 was taken 13 December 2010. Following receipt of the email request 14 December 2010, additional sandbags were installed to provide continuous ballasting on 21 December 2010. Photo 2 shows the installation of the sandbags during the 21 December 2010 event. A photograph of the header is unavailable as approximately 5 feet of precipitation has accumulated in the southeast portion of the cell and is now covered with 8 inches of ice. Removing the water beneath the ice and subsequently breaking and removing the ice may damage the liner system and is therefore not recommended.

- b. *In the subject Geosyntec letter of December 21, 2010, photographs nos. 1 and 2 show there are two separate sand bag lines crossing over the woven geotextile, which covers the slimes drain header. Also photograph no. 34 in Appendix A of the subject CQA Report show sandbags crossing over the woven geotextile covering the slimes drain access pipe. It appears these bags may have been placed to ballast woven geotextile joints without sewing such joints. According to the subject CQA Plan paragraph 11.7 and the CQA Report, paragraph 6.6.3.3, the woven geotextile is to be sewn at all joints. Please provide photographs to demonstrate that these locations, including examples of other woven geotextile joins, have been sewn in accordance with these specifications.*

The woven geotextile overlying the nonwoven filter geotextile along the header pipe is designed to only provide ultra-violet (UV) protection of the underlying nonwoven geotextile. The underlying nonwoven filter geotextile is designed to act as a filter between the tailings and the drainage aggregate. The nonwoven geotextile seams are continuously sewn, while the woven geotextile seams (3 butt seams) are overlapped 12-inches and ballasted with sand bags. The performance of the woven geotextile is not compromised by the lack of sewn seams.

Furthermore, the woven geotextile seams are in compliance with the Technical Specifications (Geosyntec, 2009), which state the geotextile shall be overlapped a minimum of 12-inches and

does not require a sewn seam. Although the CQA Plan (Geosyntec, 2009a) states that all seams will be overlapped 12-inches and continuously sewn in accordance with the Technical Specifications, the design intent and the Technical Specifications are correct in not requiring the woven seam to be sewn.

### 3. Strip Drains

- a. *Page 7 of the subject CQA Report discusses design change notification (DCN)-006. It states "This design change modifies the specifications to allow the placement of additional sandbags parallel and adjacent to the existing sand bags if the underlying strip composite is visible." In contrast, the subject Geosyntec letter of December 21, 2010, page 3, the fifth paragraph, the first sentence contains a phrase which states, "...sand bags are no longer placed along the sides of...bags, which have been rearranged to comply with the coverage and thickness requirements..." It appears the intent of this statement may be to cancel DCN-006, i.e. perhaps now there is no parallel and adjacent sand bags to strip drains installed on the project. However, this statement in the letter may be interpreted in more than one way. Therefore, verbiage in the current CQA Report, regarding DCN-006 need to be clarified as to the preservation of any parallel sand bag placements adjacent to strip drain lines.*

The intent of DCN-006 was to allow the parallel and adjacent placement of sandbags in the event the sand bags overlying the strip composite could not be moved (e.g. frozen in place and shape). DCN-006 is an option for sand bag placement in addition to the original design as shown in Detail C on Drawing Sheet 6. The sandbags currently in place in Cell 4B were made compliant with Detail C on Drawing Sheet 6 in December 2010 when warmer weather allowed for the bags, which were previously frozen in place and shape, to be moved to comply with the original design. Therefore, although DCN-006 was not used in the final construction of Cell 4B, modifying or retracting DCN-006 is not necessary.

- b. *As mentioned in a telephone conversation with you last month, we request a drawing or manufacturer's catalog cuts, etc., showing the engineer's approved method, used during this construction, to change the direction of the slimes strip drains.*

- (1). *There are several locations shown on the original plans requiring the direction of the strip drains to change. Please demonstrate the method used with example photographs of such use.*
- (2). *Numerous photographs of the strip drain lines in Appendix M of the CQA Report as well as some surveyed strip drain lines in Appendix K demonstrate strip drain lines locations where the strip slimes drains have been turned from their original course to "short-cut intersect" the slimes drain header perpendicularly. Please demonstrate the method used at these locations with example photographs of such use as well.*

The strip drains were joined using the manufacturer supplied splice fittings (Attachment 2) and as shown in Photo 3. The curve in some of the strip drain laterals near the tie-in to the header pipe were made without cutting, kinking, using elbow fittings, or otherwise compromising the strip composite. Rather, the strip composite was simply bent to form a curve.

- c. *Specific Strip Drains. As you are aware, there have been several concerns raised regarding sand bags covering the strip drains. These concerns are mentioned in the subject DRC letters references at the beginning of this letter. DRC letter dated December 9, 2010 states that, "each individual line of strip drain and sandbag cover will be reviewed, corrected as needed, and separately documented by Geosyntec. Further, that an individual record for each strip drain will be made by Geosyntec in the as-built report [the CQA Report], or as an addendum thereto. This element will be critical to obtain final DRC approval of the strip drain/sand bag system."*

*In the construction inspection chronology, DUSA conveyed the subject CQA Report to DRC via letter dated November 30, 2010. That date is the same date as a DRC construction inspection, summarized by our mentioned letter dated December 9, 2010. That letter stated some general concerns regarding the strip drain sand bag placement. The subject Geosyntec response letter of December 21, 2010 was written to address these DRC concerns. However, the Geosyntec letter, in general, was not specific to individual strip drains, per the intent of the DRC letter of December 9, 2010. In our telephone conversation last month, you mentioned that DUSA has strived to correctly reorient errant sand bag installation work.*

*The CQA Report, Appendix M, provides photographs pertaining to each strip drain. After review of such, we request the following:*

- (1). Photographs of reworked strip drains 31 and 51 demonstrating no "piggy-backing" or "fallen dominoes" type stacking of those bags.*

Strip drains 31 and 51 were reworked to remove "piggy-backing" and/or "fallen dominoes" on 16 December 2010. Photographs of the reworked strip drains are included as Photo Nos. 30 and 31 in Attachment 3. Currently, the strip drains are covered with snow and ice and cannot be entirely exposed without potentially jeopardizing the liner system.

- (2). Photographs of reworked strip drains 15, 16, 17, 18, 19, 20, 21, 22, and 23 demonstrating the following:*

- (a). The bags have been reoriented properly.*

- (b). That if any parallel bags (per DCN-006) are used, the parallel bags are not piggy-backed or fallen domino stacked onto the strip drain sand bags. Our previous comment in paragraph 3a above, discusses some concerns with respect to DCN-006.*

Strip drains 15 through 23 were reworked to remove parallel sandbags on 16 December 2010. Photographs of the reworked strip drains are included as Photo Nos. 4 through 27 and 37 through 45 in Attachment 3. Currently, the strip drains are covered with snow and ice and cannot be entirely exposed without potentially jeopardizing the liner system.

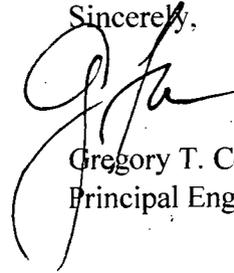
- 4. We are unaware if a fence has been installed or contemplated to be installed surround the Cell 4B site. A fence surrounding waste ponds is a requirement of UAC R317-3-10.8, which states, "Fencing. The lagoon area shall be enclosed with not less than 6 feet high chain link fence to prevent entering of livestock and to discourage trespassing. Fencing must not obstruct vehicle traffic on top of the dikes. A vehicle access gate of sufficient width to accommodate all maintenance equipment shall be provided. All access gates shall be provided with locks." We anticipate that contingent use of Cell 4B may be authorized, if a fence is installed in a reasonable period of time.*

A fence was installed around Cell 4B in December 2010. The fence is shown in Photo Nos. 34 through 36 in Attachment 3.

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If you have any additional questions please feel free to contact me at (858) 716-2905.

Sincerely,



Gregory T. Corcoran, PE  
Principal Engineer

Attachment: 1 – Drawing Sheets No. 1 and 6  
2 – MVP Manufacturer's Cut Sheet  
3 – Photo Log

Copies to: Harold Roberts, DMC

