



State of Utah

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DIVISION OF RADIATION CONTROL
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Director

August 26, 2008

Mr. Harold R. Roberts
Executive Vice President – US Operations
Denison Mines (USA) Corp. (DUSA)
1050 17th Street, Ste. 950
Denver, CO 80225

Dear Mr. Roberts:

SUBJECT: August 7, 2008 DUSA Email conveying Revised *Cell 4A BAT Monitoring, Operations and Maintenance Plan* (O&M Plan); **Comments and Request for Additional Information**

We received and reviewed your submittal on the subject above. In addition, we have considered several other DUSA submittals including:

- Emails dated August 5, 6, and 7, 2008 regarding the Leak Detection System (LDS), the LDS pump and control center, a proposed LDS Liquid Level Monitoring System and Horizontal Sump Pump systems respectively;
- Email dated July 16, 2008 DUSA conveying a Revised O&M Plan and proposed 7/08 DMT Monitoring Plan (DMT Plan).

DRC emails of August 1 and 7, 2008 were given in response to the other submittals. In accordance with our letter of July 29, 2008, we had several major comments on the subject O&M Plan that needed to be resolved prior to commencing operation. This letter pursues those major comments. Our minor comments will be pursued later, under separate cover. The minor items are deemed to not be critical for DUSA to resolve before initial operation of Cell 4A.

We have comments and requests for information regarding the August 7, 2008 subject submittal. Listed below are headings in bold, taken from our July 29, 2008 DRC letter, and other introductory remarks regarding the O&M Plan. Our comments are enumerated thereafter:

- a. **Detail drawings and procedures for the monitoring, operations and maintenance of the leak detection system (LDS) are needed. Similar details are also needed for the slimes drain system.**

On page 5, of the DUSA August 7, 2008 O&M Plan submittal, the last paragraph states, “. . . the fluid head above the lowest point on the secondary flexible membrane by use of procedures and equipment specified in the . . . DMT monitoring Plan.”

Comment 1: It appears that paragraph 3.1.a of the DMT plan gives the maximum head and leakage limits, but the bulk of the drawings and procedures requested for the LDS

are currently presented by DUSA in the O&M Plan, not the DMT Plan. Further, the DMT Plan does not state that the head is to be monitored and recorded on a continuous [or minimum hourly] basis. Please correct and coordinate these statements appropriately.

On page 8 regarding the LDS, the first paragraph states, "The presence of solution will be determined by the use of a "blow pipe" . . . the bottom of the blow pipe extends to the lowest level of the leak detection sump (elevation 5553.6) . . . the blow pipe extends approximately 1 foot out of the top of the leak detection access rise pipe (elevation 5599.36) . . . On a weekly basis the water level will be checked by the Inspector." The next paragraph states, "The pump is equipped with a pressure sensing transducer to start the pump, once the level of the solution in the leak detection sump is approximately 2.25 feet (elevation 5555.89) above the lowest level of the leak detection sump (9 inches above the lowest point on the lower flexible membrane liner . . ."

Comment 2: All LDS fluid level measurements must be made and recorded to the nearest 0.01 foot.

Comment 3: The bottom blow pipe is to be lowered to an elevation of 5553.6 feet. Please show this and all listed elevations to the nearest 0.01 foot.

Comment 4: Describe the details of the routine placing of the blow pipe to the correct position, its total length, its corresponding length in the monitoring pipe and the sump and the initial readings at the top of the blow pipe needed before beginning LDS fluid head measurements.

Comment 5: Regarding the blow pipe or manual measurements, the O&M plan does not state that the head is to be monitored and recorded on a continuous [or minimum hourly] basis. However, it does mention electronic measurements are to be recorded hourly. Please correct and coordinate these statements, to provide hourly LDS fluid level measurements and record keeping, even when manual methods are used.

Comment 6: The top of the leak detection access riser pipe elevation is given as 5599.36 feet. Please define this point in the O&M Plan. In other words, is this the actual top of the pipe or the flow-line of the pipe at its termination?

On pages 9-10 of the O&M Plan, the slimes drain system is addressed. Specific DRC comments regarding this system will be addressed under separate cover with our minor comments. The Ground Water Discharge Permit (the permit) will then be modified to require future revision of the O&M Plan, and resubmittal of such for DRC review and approval according to a schedule that will be negotiated with DUSA.

b1. The water elevation in the LDS sump for pump startup must not exceed 1-foot in depth below [above] the lowest elevation of the secondary liner in the pond to conform to requirements of the Ground Water Discharge Permit [Part I.E.8(a)(2)].

Comment 7: From the data supplied in the latest O&M Plan, the plan apparently should also correspondingly state the head must not exceed a distance of 2.50 feet above the lowest level of the leak detection sump. The corresponding maximum depth above the lowest point of the leak detection sump appears to be 5556.14 feet amsl.

We request this actual maximum head with respect to the sump, and the corresponding equivalent amsl elevation for such, be added to the plan. Also,

please include a diagram showing additional control head depths with respect to the LDS sump bottom, with the corresponding amsl elevations. At a minimum, this diagram will include the following: the bottom of the LDS sump, the representative lowest level on the secondary liner, the pump-on level, and the maximum level of compliance (i.e. the corresponding head distance and elevation at 1.00 foot above the lowest point on the secondary liner).

b3. The Ground Water Discharge Permit [Parts I.E.8(a)(1) and I.F.3] requires that continuous monitoring of the sump water elevation is provided, and certain other measurements be recorded. Drawings and adjustments to the plan text need to be made to incorporate these requirements.

Comment 9: An apparent conflict exists in the latest O&M Plan submittal, which needs to be resolved. The August 7, 2008 version of the O&M Plan on page 8, first paragraph, states that the LDS fluid levels will be measured on a weekly basis. As you are aware, these fluid levels determine compliance with BAT performance standards for Cell 4A, found at Part I.E.8 of the permit. In Part I.E.8(a)(1), the Permit requires continuous operation of the LDS pumping and monitoring equipment. As a result, a potential conflict is apparent, where the LDS pumping equipment could fail shortly after a manual weekly fluid level measurement that could go undetected for as long as 6 days before the next weekly manual fluid level measurement is made.

Such a period of non-operation of the LDS pumping equipment would fail the "continuous operation" performance standard set in Part I.E.8(a)(1) of the Permit. Please revise the O&M Plan to resolve and prevent this possible performance standard failure, by showing how equipment and procedures will be provided to minimize the interval of undetected non-operation of the Cell 4A LDS pump system.

Comment 10: Since the LDS fluid levels are proposed to be measured and recorded both manually and by automated means (pressure transducer), it is possible that discrepancies in reported fluid levels could exist (O&M Plan of August 7, 2008, page 8). Please explain how these discrepancies will be reconciled, and which source of data will be used to determine compliance with the BAT performance standard for the LDS fluid levels.

Comment 11: Provisions for rapid replacement of LDS monitoring equipment (as well as the pump) needs to be provided in the O&M Plan. This includes the pump controller head monitoring, and flow meter equipment, per part I.E.8(a)(1) of the permit.

Mr. Harold Roberts
August 26, 2008
Page 4

We request you review the above comments, and submit the requested information. If you have any questions, please contact me or Mr. Rupp.

Sincerely,

Loren B. Morton, P.G., Manager
Geotechnical Services Section

LBM:DAR:dr

Attachments:

cc: Mr. Ron Hochstein, President, DUSA

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