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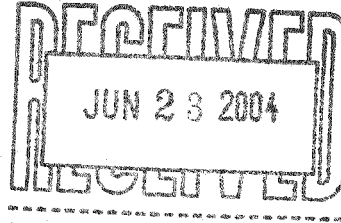
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Colorado Department
of Public Health
and Environment



June 21, 2004

Mr. Linn Havelick
Colorado School of Mines
1500 Illinois St.
Golden, Colorado 80401-1887

RE: Remediation of the CSMRI Creekside Site

Dear Mr. Havelik,

On June 2, 2004, we met with you and Mr. Maki Iatridis of Berg Hill Greenleaf and Ruscitti, LLP. At the meeting, you and Mr. Iatridis provided a status report on the remediation being performed at the CSMRI Creekside site. In summary, we were informed that much more Class I (>3 pCi/g $^{226/228}\text{Ra}$) contaminated soil had been discovered than had been originally estimated and that, therefore, insufficient budget was available to complete the project. At this point, the project has been indefinitely suspended and the contractor is stabilizing the site.

This turn of events is very disappointing to the Department. This letter is intended to provide the Colorado School of Mines (CSM) with our position on several matters so that you can factor this information into your future decision-making regarding the CSMRI Creekside site.

First, the Department has tried to work closely with CSMRI to save money and yet be protective of public health and the environment. Here are some examples where our staff has been innovative and precedent-setting on the Creekside cleanup:

- When the risk assessment provided by CSMRI showed that a "family farm" scenario was overly conservative and yielded clean-up values that would be difficult to quantify, the Department agreed to change the scenario such that the final cleanup values were measurable, yet still protective. The Department could have held CSMRI to the original scenario, but agreed to be flexible. This has resulted in considerable savings in the volume of soils that need to be remediated, and in savings for analytical costs. The Department does not think a recreational use scenario is appropriate for this site as it would not be adequately protective.

- Technically enhanced naturally occurring radioactive material (TENORM) can be solid waste based on statute (CRS 25-11-20x). As such, the Department must determine if a concentration of TENORM can be safely disposed in a licensed radioactive waste facility or in a facility permitted under RCRA C or RCRA D. Based on experience in Colorado and a relatively new ANSI standard (N13.12, 1999), the Department authorized a cut-off value of 3 pCi/g ^{226/228}Ra that would allow for disposal in a solid waste facility without additional risk assessment. CSM agreed to this standard. The Creekside site is the first site with such a determination in Colorado, and this determination significantly lowered the cost of the Creekside cleanup. Without this determination, all contaminated soils at the Creekside site would have had to go to the US Ecology facility in Idaho at very high expense.
- The terms Class I and Class II are actually taken from the Multi-Agency Radiological Site Survey and Investigation Manual (MARSSIM). Using MARSSIM protocols, Class I areas are those that are anticipated to exceed the cleanup criteria for the site, and as such are not released until they meet the cleanup objectives. Class II areas are those that had contamination, but would not exceed the cleanup criteria on average. Having these areas “stacked” atop one another is a novel application that the Department was willing to implement to save CSM money, since these areas have different survey densities. We are not aware of this approach being implemented anywhere else.
- The Department also set precedent when it approved the use of field equipment for release of soils with only 20% of the samples also being analyzed in a laboratory for quality control. CSMRI requested the use of this equipment, called ISOCS, in order to save money. The Department is aware of the ISOCS being used for characterization and monitoring of the progress of cleanups, but it is standard practice that all analytical results for release of the site be through a laboratory. Nonetheless, the Department tried to work with CSMRI on this to save funds. As of this writing, there are not enough samples back from the laboratory to verify if the ISOCS is representative or not. The Department may cancel the use of this equipment if the laboratory results are not favorable.
- Disposition of radioactive materials at CSMRI is addressed by license condition 14, which states that the material must go to a properly licensed facility, or a facility granted special dispensation by the Division through license condition. The Idaho facility was approved through plans for the Class I materials. Foothills was approved through the plans for the Class II materials only, and the Department will not approve its use for the Class I materials.
- For many documents, CSM wanted short review periods by Department staff. We made every effort to accommodate your requests so that downtime for the athletic fields could be minimized.

Second, it has been and remains our position that the CSMRI Creekside cleanup is regulated by Radioactive Materials License 617-01. Because of this, we will ensure that any site stabilization that occurs with the shutdown of remedial activities is compliant with license requirements. A key requirement in the license to note is License Condition 11, which states, “Radioactive material authorized by License Condition 6 of this license shall be stored in a manner that will preclude use by unauthorized personnel.” Given the situation at the remediation site, we would interpret this to mean that no unauthorized personnel or member of the public can access any of the radioactive materials. The site must be properly fenced and posted.

Mr. Phil Egidi of our staff visited the site on June 9, 2004 following the recent heavy rains. He noted that there were some areas where further rain could cause sediment to be released from the site. He also noted that the soil stabilizer held up well in some areas, but not in others. We will continue to ensure that any remedial activities at the site are conducted in a manner compliant with the license.

Third, from our perspective, better site characterization should be accomplished before concluding that available funds are insufficient to accomplish the currently planned cleanup. Only when more is known about the relative volumes of Class I and Class II materials can accurate cleanup options and cost estimates be developed. Regardless of the cleanup options considered, the Division will continue to require a cleanup that is completely protective of public health and the environment.

Concerning the budget, other than the general information we received during the June 2 meeting, we have very little information on, or understanding of, the funds available for the Creekside cleanup. We believe that CSM had budgeted about \$2 million for contaminated soil removal, and had reserved about \$1.5 million for rebuilding the athletic fields and reclaiming the site. We do not understand how this funding allocation was determined, but it seems that making some or all of the \$1.5 million allocated to reclamation available for site remediation might be reasonable and might increase the number of cleanup options available.

Fourth, CSM has gone through a very exhaustive remedial decision-making process for the CSMRI Creekside site using the NCP process as a model. Many different cleanup scenarios were evaluated in that process and the removal of the contaminated soil now being implemented was chosen as the best option. We believe it is still the best option. The public, the PRPs, and the Department all wanted cleanup to unrestricted use. Getting agreement from these parties on a restricted-use cleanup may now be difficult.

A fifth issue of concern to the Department is ground water contamination. If the site is left stabilized and not completely remediated for some time, further contamination of ground water could result, and further migration of contaminated ground water could occur. We are likely to require further characterization of the ground water if a lengthy delay occurs. As you know, if the cleanup plans change and contaminated soil is left on-site, CSM will incur long-term liability for operations, sampling, and analytical costs of ground water monitoring.

Lastly, during the meeting, we committed to get CSM additional information regarding the possibility of taking more of the contaminated soils to a solid waste landfill, including some or all of the Class I materials. After reviewing this option, the Division has determined that:

- a. No Class I materials from CSMRI may go to any municipal solid waste landfill in Colorado. As stated previously, in allowing the Class II materials to go to the Foothills landfill, which is a municipal landfill, the Division has already taken a significant step towards CSM in trying to keep remedial costs low. The concern in sending any radioactive materials to a municipal solid waste landfill is the possibility of radioactivity in leachate and groundwater, radon emissions associated with methane gas venting during closure and post-closure of the municipal landfill, as well as future monitoring, liability and ownership issues. We believe that the Class II materials do not pose a risk in this regard, but the Class I materials would pose an unacceptable risk.
- b. Class I materials may be able to go to a non-municipal solid waste landfill in Colorado providing that the landfill has performed a Division-approved risk assessment. This risk assessment must consider the total inventory of radionuclides planned to be placed in the landfill, including the Class I material from CSMRI, and must show that no unacceptable risks are presented during operations and during closure and post-closure of the landfill. The Division is currently working with one facility in Colorado on such a risk assessment, but it is not clear when or if that risk assessment will be approved.

- c. Any use of a landfill for the disposition of these materials must be in conjunction with agreement from the permitting authority (usually the County) since the facilities are regulated by the State and the local permitting authority. The Department will not recommend that Foothills accept materials greater than 3 pCi/g ^{226/228}Ra for reasons cited above.

In summary, we are very concerned that a good remedial decision, on which all parties and the interested public worked very hard, and that we believe could still be accomplished with the available budget, may be vacated. This may cause a significant delay in the cleanup of the Creekside site, substantive changes in the approach to cleanup, and an overall increase in cleanup costs. We urge CSM to consider the information included in this letter and use available funding to make immediate remedial progress at the CSMRI Creekside site.

If you have any questions please feel free to call me at 303-692-3356.

Sincerely,



Joe Schieffelin
Compliance Program Manager
Hazardous Materials and Waste Management Division



Jeff Deckler
Remedial Program Manager

cc: Robert Moore, CSM, VP for Finance and Operations
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