



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 11, 2005

Robert Kelso
Hazmat Coordinator
U.S. Department of Interior
Bureau of Land Management
Nevada State Office
P.O. Box 12000
1340 Financial Boulevard
Reno, Nevada 89520

RE: October 4, 2004 Request for Review and Formal Opinion Regarding “Yerington Mine Site Fugitive Dust Radiological Dose Assessment, dated September 19, 2004 by Foxfire Scientific, Inc.

Dear Mr. Kelso:

In a letter, dated October 4, 2004, from Mr. Robert Abbey, the Bureau of Land Management’s (BLM’s) State Director for Nevada, to Mr. Wayne Nastri, Regional Administrator of the United States Environmental Protection Agency (EPA) Region 9 it was requested that EPA review and provide a formal opinion regarding the report by Foxfire Scientific, Inc. entitled “*Yerington Mine Site Fugitive Dust Radiological Dose Assessment*” (Report), dated September 19, 2004. The request specifically requested the review and opinion in regards to the accuracy of the data in the report and the conclusions regarding the threat to public health (on-site and off-site) from radiation hazards at the Yerington Mine Site.

As was noted in the letter EPA has expressed concerns about how representative the data used in the report was, the need for actual air monitoring data, and the focus on the radiological contaminants alone in the report. As was also noted in the letter the conclusions provided in the report differed significantly from those drawn by BLM based on the sampling data collected by Walker and Associates personnel for the BLM Health and Safety Plan.

As a result of concerns in regarding the (1) representativeness of the data utilized in the modeling conducted within the study; (2) the narrow focus of the assessment and it’s exclusion of other potential contaminants of concern such as from metals in fugitive dust as well; and (3) lack of actual air monitoring data to calibrate and assess the results of the modeling conducted, EPA does not feel that the conclusions drawn are supported and therefore useful at this time.

In regards to the representativeness of the data as was noted in your letter the data provided in the Report (based on sampling by SRK Consultants in November 2003 and May/June 2004 in

the area of the evaporation ponds and portions of the sulfide tailings) does not reflect those values seen in the survey conducted by Walker and Associates in June through August 2004 in the Process Areas. Subsequent gamma ray surveys and samples collected in December 2004 by BLM's alternate radiological consultant Technical Resources Group also detected levels of radiological contaminants elevated beyond those seen by SRK (in the case of radium 226; 9,300 pico Curies per gram (pCi/gm) versus 1.11 pCi/gm) as well as indicating substantial radiological disequilibrium. The radioactive disequilibrium seen in the soil samples indicates that a more extensive analytic suite and the use of discrete samples versus composite samples would be required as well. Therefore it does not appear that the data used in the Report is as representative as necessary, for such an assessment of radiological risk. The original data quality objectives for the SRK sampling data set is not consistent with the data quality needs for the Report and therefore results in significant uncertainty regarding statistical methods and models used to generate the conclusions.

At a site such as the Yerington Mine Site a human health and ecological risk assessment of the potential risk to receptors, both on-site and off-site, for all of the contaminants of concern at a site will need to be conducted, rather than only focusing on one specific class of contaminants. If the initial screening indicates that specific contaminant classes comprise major risk drivers at a site then such a focused risk assessment maybe appropriate, but the investigation at this site is not currently at that point.

When using modeling to assess the risk of contaminants through air pathways, the need to incorporate actual air monitoring data is also highly desirable. Since the Report was prepared, air monitoring data collection at the site perimeter has been initiated and hopefully will provide such air monitoring data. The use of actual air monitoring data to calibrate such mathematical models is always useful.

EPA agrees that the data provided in the Report is useful but does not agree with the broad conclusions of the Report. Neither the BLM or SRK data sets are conclusive for generating estimates of site-wide or off-site risk. Both data sets are useful for describing contaminant concentration in the limited areas sampled. Therefore it is of primary importance to characterize the extent and magnitude of the radiological risk so that it can be evaluated alongside other contaminants in a comprehensive Risk Assessment consistent with EPA Risk Assessment Guidance (RAGS, Part B).

If you have any questions please give me a call at 415-972-3265.

Sincerely,

James Sickles, R.G.
Remedial Project Manager
Site Cleanup Branch
Superfund Division

cc: Art Gravenstein, NDEP
Craig Smith, BLM

Summary of EPA Issues with FoxFire Fugitive Dust Assessment

Both BLM and NDEP, over the past year have collected radiological data from different areas of the site for differing purposes. Back in September the MOU agencies developed an Action Plan which we shared with the public that specifically outlined activities which ARC would be directed to conduct to further assess on-site and off-site radiological risk and reduce possible exposure while this additional information was being gathered. After the development of the Action Plan, NDEP shared a draft Report entitled, "Yerington Mine Site Fugitive Dust Radiological Dose Assessment"(dated September 19, 2004) and has requested, along with BLM, that we provide comments. The purpose of this letter is to transmit those general comments. We are unable to comment specifically on some of the report due to the fact that we have not received supporting documentation which was requested on September by our Remedial Project Manager Jim Sickles (see attached e-mail).

Background

Site records had indicated the likely presence of technically enhanced radioactive materials (TENORM) at the site. Although some data had been collected which had confirmed this possibility there had been no plan to comprehensively screen the site. BLM staff, in a effort to ensure that adequate Health and Safety procedures were in place prior to the beginning of sampling in the process area of the site, which was partially located on BLM property, collected radiological data for this purpose. The data generally indicated that the Health and Safety Plans for workers conducting sampling and site characterization efforts should address, and therefore prevent unacceptable radiological exposures.

Analytical Radiological data provided in the "Yerington Mine Site Fugitive Dust Radiological Dose Assessment", were collected under an NDEP effort to identify areas of high metals along with radiological concentrations in order to prioritize pre-selected areas of the evaporation ponds and tailing for dust abatement activities as interim measures. The samples were collected prior to the BLM radiological data and prior to the development of the Radiological Action Plan. Although the data were collected for purposes of assessing the need for dust abatement, the Assessment purports to estimate off-site radiological risk.

Neither the BLM nor the NDEP data sets are conclusive for generating estimates of site-wide or off-site risk. Both sets of data are, however, useful for describing contaminant concentration in the limited areas sampled. It is critical for the regulatory agencies to accurately communicate conclusions which can be drawn from these data and not to overstate or understate those conclusions. In EPA's view, we do not have sufficient site characterization to state an opinion on site-wide or off-site risks which may be posed by the site. Therefore, it is of primary importance to characterize the extent and magnitude of the radiological risk so that it can be evaluated alongside other contaminants in a comprehensive Risk Assessment consistent with EPA Risk Assessment Guidance (RAGS, Part B). I look forward to discussing how we can accomplish this in light of the uncompleted site characterization work which remains and the unimplemented components of the Action Plan.

General Comments

- 1) Sample locations used in the "Yerington Mine Site Fugitive Dust Radiological Dose Assessment" were not originally proposed for the purpose they are being used for in the "Yerington Mine Site Fugitive Dust Radiological Dose Assessment." As the BLM data indicates, contaminant concentration throughout the site varies. Therefore, the Assessment data is not representative of site-wide conditions.
- 2) Data used in the "Yerington Mine Site Fugitive Dust Radiological Dose Assessment" is encouraging in that it demonstrates lower levels of radiological risk in the pond area as opposed to the process area.
- 3) The "Yerington Mine Site Fugitive Dust Radiological Dose Assessment" does not consider the higher levels identified by BLM in the process area. Estimates are not representative of site-wide

conditions and likely underestimate any offsite risk.