EG&G ROCKY FLATS

INTEROFFICE CORRESPONDENCE

DATE: May 7, 1993

TO: W. S. Busby, Remediation Project Management, Bldg. 080, X8509

FROM: M. F. McHugh, Remediation Project Management, Bldg. 080, X8624

SUBJECT: REJECTION OF REVISED FINAL PHASE I RFI/RI WORK PLAN FOR OU 13 - MFM-017-93

ISSUE

The Revised OU 13 Work Plan has been submitted to the agencies per the deadline of March 10, 1993. The Revised Final Phase I RFI/RI Work Plan was rejected (letter from CDH dated April 26, 1993) pending the resolution of one major and two very minor issues:

- Surficial Soils Sampling Plan;
- Clarification of the radiological survey in paved areas; and
- Delineation of the groundwater plume.

The main point of contention is the revised Surficial Soils Sampling Plan. CDH charges that our statistical approach is not valid to meet the Stage 1 data quality objectives (DQOs). In particular, they feel the number of surficial soil samples is insufficient. CDH would like to require 25 samples per IHSS. To buttress this assertion, they photocopied the OU 10 Surficial Soils Sampling Plan and then assumed the same coefficient of variation (.59) which is based on the historical information available from OU 10, to achieve the desired number of samples. Then, they arbitrarily reduced the number of samples at some of the smaller IHSSs "based on professional judgement". To be valid, this approach must have historical data on which to calculate a coefficient of variation—but there is no historical data available from OU 13 on which to base any assumptions or statistics. Any methodology must be rigorously applied, not amended arbitrarily. The OU 10 data simply cannot be used to generate OU 13 statistics.

After stating their objections to the Stage 1 DQOs, CDH cites EPA guidance for risk assessment. We stated that Risk Assessment is a Stage 2 or Stage 3 DQO and should be based on the determination of sufficient data collection and the results of the Stage 1 investigations. Even after they reference that guidance, CDH ignores an important part of the statistical requirements—performance measures that are used to evaluate sampling plans.

The plan that they would like us to use states:

> " Two performance measures.... are confidence level (α) and power (β) which are related to sample variability. The confidence level can be used to determine the probability of a false positive or Type I error. The power can be used to determine the probability of a false negative or Type II error. For risk assessment purposes, EPA recommends a minimum confidence of 80 percent (Type I error = 20 percent) and a minimum power of 90 percent (Type II error = 10 percent) (EPA 1990). The confidence level for this analysis was 95 percent and the power was not considered. However, a 95 percent confidence level provides a reasonable compromise between the probability of Type I and Type II errors."

This approach has two flaws:

- First, in our investigations, a Type I error would be obtaining results that indicate that contamination is present when it really isn't (false positive), and a Type II error would be failing to detect contamination that is really there (false negative). That is why EPA is less worried about a false positive, than a false negative. To state that power is not considered sets us up for not meeting EPA guidance, not only with the EPA but with independent oversight groups and the public.

- Second, their last statement, that a 95 percent confidence level provides a reasonable compromise, actually underestimates the number of samples.

Our approach was first to establish whether contamination was present and to identify what type of contamination might exist. A probablistic approach was used by which 11 samples would be taken in a first stage of sampling. This number was based on 95 percent probability of finding an area of contamination assuming the site was at least 25 percent contaminated. This assumption is reasonable based on historical information and the models of contaminant release. After the first samples are analyzed, the coefficient of variation could be calculated and the list of potential contaminants reduced using the data gathered from this OU. In addition, our sampling points were to be biased in favor of finding contaminated areas based on visual inspection, anecdotal information, and results of the HPGe survey, if available. It is likely that more samples, perhaps even more than 15, would be required in the second round of sampling to support the risk assessment DQO. To reiterate, the first stage of sampling is designed to provide us with information on which we can base a defensible sampling plan. Without the required statistical rigor, the data gathered is meaningless.

Our methods are based on DOE's SAFER (observational) approach, meet the Stage 1 DQOs, are statistically sound, and can be performed within current budgets and schedules. The technical staff stands solidly behind our proposed methodology. So does the DOE project manager.

The other two comments are minor and are easily resolved. I am of the opinion that we already clearly stated that HPGe is reliable only for the measurement of surface radionuclides and we have committed to delineate any plumes of groundwater contamination if they are discovered. In fact, I used the exact language that CDH proposed in their earlier round of comments. However, we can make the requested changes to the work plan to ensure that we are all in agreement.

IMPACTS:

The most obvious impact of the proposed sampling requirement is budgetary. The additional scope of work (approximately an additional 100 samples + required blanks, etc.) will cost approximately $0.5 million in analytic costs alone. The cost of taking the samples (particularly those below paved areas) will also increase greatly. Secondary will be the impacts to the schedule.

Sampling and lab analysis times will each be increased. The failure of the agencies to approve this work plan will result in schedule delays. Our response to CDH is due on or before June 1, 1993. Until these issues are resolved, inaction will provide week-for-week, month-for-month delays to the IAG schedule.

CORRECTIVE ACTIONS:

R. J. Hoagland is preparing a detailed rebuttal to the proposed sampling plan for DOE. I will prepare a responsiveness summary and incorporate her findings. The DOE project manager has indicated that he will then prepare a response letter. At this point he is in favor of invoking dispute resolution activities. I will support that effort as needed and keep you informed of our progress.

RECOMMENDATIONS:

At this time, we should wait to see how the agencies respond to the letter from DOE. However, I feel that if our technical staff feels our approach is sound, we should have a meeting with the agencies and prepare for dispute resolution. The one thing that really disappoints me is that I discussed this sampling approach with CDH several times. Their response was that it sounds reasonable, but they would need to see the whole plan. For them to say they are disappointed is ridiculous. Further, they incorrectly assert that the IAG requires an approvable work plan. All of our previous versions of the work plan were submitted in good faith based on the best available information. A great number of very thorny issues— such as the revision of the Benchmark tables, have been resolved. The only issue that remains is the Surficial Soils Sampling Plan. It would have been far more constructive to recognize that we have a difference of opinion on what constitutes an adequate sampling plan and suggest a meeting to resolve the issue rather than to demand 25 sampling points per IHSS and then back it up with misapplied statistics and threats of stipulated penalties.

dmf

cc:
R. J. Hoagland
Administrative Record