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September 1, 1992

Mr. Frazer Lockhart
U. S. Department of Energy
Rocky Flats Office
P.O. Box 928
Golden, Colorado 80402-0928

RE: Soil Sampling Methodology for Industrialized Area OUs

Dear Mr. Lockhart,

As you are aware, RFI/RI Workplans for all of the OUs within the industrialized areas of the Rocky Flats Plant are either under review or recently reviewed. Only two of these workplans (OUs 9 and 10) have been approved. During our review of the workplans, we have noticed many inconsistencies in the surficial soil sampling proposed. We believe these inconsistencies are caused by various subcontractors applying the standard operating procedure for surficial soil sampling (SOP GT.8) differently.

Therefore, in an effort to correct the workplan inconsistencies, we are taking this opportunity to provide input to DOE and EG&G on the soil sampling program that we feel needs to be included in the industrialized area workplans. This input concerns when and how different sampling procedures included in SOP GT.8 will be employed rather than the equipment and the procedural methods used. Much of this information was originally included in Technical Memorandum 5 to the Phase III RFI/RI Workplan for OU 1. We have modified it slightly for application within industrialized area IHSSs.

As you will see from these proposals, the Division has not distinguished between radionuclide and non-radionuclide samples. This was done to keep implementation simple as well as to keep costs as low as possible and because we feel that one sample set can be successfully analyzed for all analytes. We recognize that further research into sampling techniques and data results may show that rad and non-rad sampling should be different. If so, we will defer to whatever changes are needed and can be agreed upon.

The items important to CDH for inclusion in the workplans are as follows:

- 1) The CDH method for surficial soil sampling was designed for evaluating large tracts of land which are remote from the source of windblown contamination. For these reasons, we do not believe this method is applicable for evaluating most IHSSs within the industrialized portions of the plant.
- 2) Screening surveys are proposed for the first stage of RFI/RI field work in the workplans. The Division believes that the screening surveys should always include, in addition to the radiation and soil gas surveys, a surficial soil sampling survey carried out across each IHSS or area of concern on an appropriate grid. The soil samples should be taken in the following manner:
 - in an area where the ground surface is covered with paving, soil samples should be taken using the "Grab Sampling" method presently outlined in SOP GT.8. These samples should be taken from the soil substrate underlying whatever base materials are immediately beneath the paving and would be located, when possible, in holes cut through the paving for the soil gas survey.
 - in an area where the ground surface is unpaved, soil samples should be taken by the "RFP method" presently outlined in SOP GT.8 using the 10 cm x 10 cm x 5 cm sampling jig. However, the Division proposes that each point on the sampling grid be overlain with the one square-meter template proposed in TM 5. In this case, five discrete subsamples will be collected from each grid point and composited into a 2500 cm³ sample. Details of this procedure need to be incorporated into SOP GT.8.
- 3) In some of the workplans, vertical soil profile samples are proposed for use in conjunction with the rad surveys. We believe this type of sampling is a good idea because it will provide further understanding of both the rad survey results as well as rad contamination distribution. Vertical soil profiles, with samples collected from intervals consistent with those proposed in SOP GT.7, and analyzed for radionuclides, should be included in all industrialized Ous. Vertical profile sampling will need to be coordinated between those doing the soil sampling and those doing the radiation surveys. Procedures for vertical profile sampling should be incorporated into SOP GT.8 even if they are also included in radiation survey SOPs.
- 4) The Division proposes that all of the soil samples collected be analyzed for a complete suite of contaminants appropriate for the history of the IHSS. In formulating this analytical suite, consideration should be given to radionuclides, metals, and semi-volatiles. The reasons that the Division considers a comprehensive

analysis necessary are:

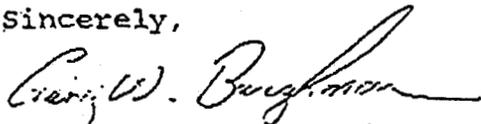
- there is currently no other way to screen for metals contamination using other survey types,
- the rad surveys cannot assess radionuclide contamination beneath paving, and
- soil gas surveys are not always effective for organic compounds with relatively low volatility.

5) After the soil sampling results from the first stage of the RFI/RI are analyzed, additional soil sampling may be necessary in subsequent RFI/RI stages. Unless specifically approved by EPA and CDH, these samples should be taken in the same manner as those taken previously.

While the Division feels strongly that a consistent soil sampling program needs to be developed for the entire industrialized area of RFP, the points included in this letter are open for discussion. However, the Final OU 8 RFI/RI Workplan is due to us September 29, 1992. If discussions have not taken place by that date, we expect these points to have been included in the OU 8 workplan and all other workplans in preparation. In addition, SOP GT.8 needs minor revisions as indicated.

If you have any questions regarding these matters, please call Joe Schieffelin of my staff at 331-4421.

Sincerely,



Gary W. Baughman, Chief
Facilities Section
Hazardous Waste Control Program

cc: Martin Hestmark, EPA