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May 11, 2010

Mr. Bryan C. Bower, Director  
US Department of Energy  
West Valley Demonstration Project  
10282 Rock Springs Road  
West Valley, NY 14171

Dear Mr. Bower,

We are forwarding our comments on the Characterization, Sampling and Analysis Plan. We would like to reserve an opportunity to go over the CSAP after you have received the comments from the Nuclear Regulatory Commission and have planned how to proceed. We feel at that time you will be better able to inform us of the final shape of the CSAP and answer our questions at that time. While others have not been able to join in submitting these comments, they have expressed interest in participating in a conference call to further discuss the CSAP.

In general, we support the written comments provided by NYSERDA and would like to see the issues raised addressed in the final CSAP. Our comments are attached and we would appreciate your careful review of these comments for integration into the CSAP.

Thank you for your attention.

Sincerely,

A handwritten signature in black ink that reads "Barbara J. Warren". The signature is written in a cursive, flowing style.

Barbara Warren  
Executive Director

cc. Chad, Glenn  
Tadesse, Rebecca  
Murray, Frank  
Bembia, Paul

## **CEC Comments on the Characterization, Sampling and Analysis Plan**

### **Background Contamination**

Establishing Background for purposes of meeting cleanup guidelines in contaminated areas is critically important and we think the information about the selected reference area and levels of contamination needs to be provided to the public before further work proceeds. This is a key parameter for all subsequent testing and must be adequate for the stated purpose. Given extensive site contamination it may not be possible to find a good reference area within the bounds of the WVDP or the larger West Valley site and other locations should be considered. Several possible reference areas should be explored with limited sampling before selecting one for more extensive sampling.

### **Site Characterization**

Most of the plan is focused on Phase 1 construction and remediation activities, rather than full site characterization. We think this cannot be called a characterization plan unless all data gaps are filled and the site fully characterized. We also note that the boundaries of the WVDP are limiting on the sampling plan and we believe this is not appropriate. Survey and sampling work should assess contamination beyond the project boundaries as there should be an assumption that the Project contributed to current site contamination including some that is headed off-site.

### **RCRA work not included**

While we understand the need for separating radiological from other chemical contamination sampling, we also know that work will have to be done to meet DEC requirements related to hazardous waste. Integration of some of the field sampling programs could have cost benefits.

### **Excavation Sampling.**

Need to use all opportunities to sample near WMA-3 and HLW tanks including pipe & pump removals and excavation at WMA-1 & 2. Analysis for all radionuclides from any liquid or solid material found in pipes and pumps. As noted on p. 38 the excavation is close enough that concern is expressed about not extending the excavation of WMA 1 so that it might compromise the structural integrity of the HLW tanks in WMA 3. At this time we see no evidence of plans to do more extensive sampling to better establish possible subsurface contamination in WMA 3. Deep sampling in Both WMA-1 and WMA-5 should be used for this purpose.

The Vertical migration of the plume must be established.

### **Phase 2 Decision-making Support**

This objective is one of only four objectives for the CSAP yet it is given inadequate attention. A section of the report should have been devoted to this since so much of the CSAP is devoted to preparing for and carrying out Phase I activities. If this objective remains poorly detailed it will be unlikely to be achieved.

Understanding where buried contamination is present and the extent is important for the following reasons: p.32

1) FSS protocols can only be applied to surface soils where there is confidence that deep or subsurface contamination is not present.

2) Phase 2 decision-making requires knowledge of the nature and extent of buried contamination. With the exception of the north plateau groundwater plume there is only very limited data on the nature and extent of subsurface soil contamination within the WVDP premises.

In addition p. 34, mention is made of the problem of generic buried contamination over larger areas. These areas must be identified for the public.

### **Subsurface Contamination is essential to delineate for purposes of Phase 2.**

**Subsurface Sampling** must be improved. There are currently no soil samples within the WVDP Electronic Laboratory Information System (ELIMS) that have results for all 18 ROIs. There are 13 subsurface soil samples that were analyzed for all 18, except uranium isotopes, but these were only taken from the area of the process building spill. p.21 Reference is made to limited sampling and limited data set on p. 22.

Relying on surface sampling or the GWS, Gamma walkover survey, is simply not adequate to determine the need for subsurface sampling. In addition, the CSAP needs to more fully describe a program for subsurface sampling beyond a 1 meter depth for all WMAs that have structures at depth, particularly those facilities that will not be remediated in Phase I. Otherwise the CSAP cannot claim as one of its objectives " providing Phase 2 decision-making support".

### **Buried infrastructure**

There are two reasons for sampling of buried infrastructure: 1) because they carried contaminated waste or water and 2) because they provide a preferential contaminant pathway. Therefore sampling of soil near pipes should be below the pipe, not above(as the CSAP says), even for pipes not carrying contaminated material. See p. A-16.

HLW Transfer Trench contamination status -- should take samples at depth along side this transfer trench which is not being removed. There should not be an assumption that the exterior of the trench has not been impacted by spills.

The sampling plan for the Foundation pilings under the Process Building should include a number of soil samples at depth adjacent to these pilings, rather than relying only on samples of soil at the top of the pilings.

**Groundwater sampling is also very important.**

The conceptual model for groundwater flow has not been confirmed and the CSAP should have outlined a program to obtain more evidence of actual groundwater flow.

As the CSAP indicates impacted groundwater is likely to have higher concentrations than impacted soils p. 39. As a result groundwater sampling serves as conservative indicator of subsurface contamination.

Sampling for tritium should be included and we don't believe your rationale for not including it is adequate. Given the historical limited subsurface sampling noted in the CSAP, it is important that tritium be included as one of the radionuclides of interest. Expired half-lives have not eliminated Tritium as a contaminant of concern. Worker protection should also be a key objective of this CSAP work.

The belief that the Lavery Till is impermeable should be confirmed by the sampling and analysis plan, that demonstrates that contamination has not reached the Kent Recessional sequence. We note that the Lavery Till is described in many different ways depending on which waste management area is being presented. Since there has not been confirmation of the conceptual model, perhaps this could also be mentioned.

**Creek Contamination**

Determine Level and extent of creek contamination in Erdman Brook and Franks Creek. Plans for sediment sampling of the creeks are inadequate. QA/QC requires that sufficient sampling and measurements are taken to assure representativeness. As this is an avenue for spreading contamination offsite, more than 3 samples of each creek need to be gathered and they should be analyzed individually not as composites. Samples from the center of a creek or in an area likely to result in deposits could have much higher contamination levels than areas on the banks. In addition there is no detail as to the height of sampling on the banks of the creeks. Composite samples could serve to dilute the higher concentrations at the center of the creek. Creek sampling should also not be limited to the boundaries of the WVDP as contamination may have moved beyond the project boundaries.

### **Gross Gamma Walkover Survey**

The limitations of this survey need to be stressed in analysis and reporting of results and their use for remediation activities. Only where strontium and cesium are co-located is this useful for estimation of contamination by both. Since soil moisture affects survey accuracy, its usefulness in some work areas could be nil.

Since water features are prominent in some WMAs on site and not amenable to GWS, additional sampling should be targeted in marshes, wetlands and creeks.

### **Final Status Surveys**

The CSAP suggests that some areas where no subsurface contamination exists could be released for Final Status surveys, but fails to identify any possible locations for this. Given the noted extensive contamination of this site and the congestion of facilities and construction work on the North Plateau where Phase I work is mostly occurring, we question the feasibility and wisdom of any plan to do Final Status surveys until the majority of the work is completed and the potential for recontamination eliminated.

## **Appendices**

### **WMA -1**

An approach throughout the CSAP is to start from surface soil measurements and proceed downward in regular increments only if excessive contamination is found. While there is a discussion of buried infrastructure the sampling approach focuses on pipes, trenches and pumps, not large underground structures like tanks, where the likelihood of any leak would be at the lowest level of the tanks or vaults. This is where it would make the most sense to sample at the depth first. Finding little contamination at one, two or three meters will tell us nothing about what is happening at the lowest level, or approximately 50 feet below grade.

Here there is a focus on buried infrastructure, but only piping or waste lines. While two fuel pools, the Cask Unloading Pool and the Fuel Storage Pool, are particularly important to focus on. The deeper pool is reported to lie 45 feet below grade. This infrastructure would be our priority for soil sampling.

### **WMA-2**

The vertical depth of the Strontium plume should be established as part of this work.

In addition the amount of buried infrastructure ( 4,000 linear feet) that is likely to remain because it was not within the excavation area should be made clear.

#### WMA-3

In the background section here note is not made of the fact that the HLW tanks are at the end of their useful lives.

We are told that because of the complexity and large amount of infrastructure features in WMA-3 that you will focus on infrastructure of greatest concern such as waste and wastewater lines.

The public views the HLW tanks as of greatest concern and the sampling approach for WMA-3 is unacceptable for identifying the current condition of the tanks and vaults in preparation for Phase 2 Decision-making. Core sampling similar to that being done at WMA- 1 of the water table , the Lavery Till and just above the Lavery Till is more appropriate here.

#### WMA-5

Sampling at this site should include sampling of the surface water discharge location at WSNSW74A That exits the WVDP premises in the NE corner of WMA-5. In addition, because this discharge goes to Quarry Creek, sediment samples of Quarry Creek should be taken in this location.

Groundwater also discharges to ditches draining the site and to seeps along Quarry Creek. Sampling of these groundwater discharges should be done to complete the picture of WMA-5.

Information relevant to history at WMA-5 should appear in Appendix discussion of WMA-2, as those involved with construction activity there will need to know this information. At WMA-5, there was a significant release of radioactivity at the Old Hardstand. Gamma radiation was measured as high as 1.5 R/hr and 46,000 cubic feet of soil and other contaminated materials were removed and placed in Lagoon 1 (after waste in Lagoon 1 was transferred to Lagoon 2). Then a clay cover was put on Lagoon 1.

Similarly information pertaining to WMA-3 should also be recorded in WMA-3 Appendix. Instead a leak of radioactive condensate from valve pit northeast of Tank 8D-2 is discussed only in relation to WMA-5 on p. E-5

#### WMA-7

In this area there should be more sampling focused on groundwater collected from the sumps associated with the NDA.

For groundwater monitoring wells, please show results of groundwater monitoring that is at a depth of 70 feet or more for this area. If there has been insufficient monitoring at this depth, the plan should increase sampling to improve the available information.

WMA-8

We cannot understand why the SDA, the State Disposal area is not included in the Characterization, Sampling and Analysis Plan. Phase I is supposed to include studies of the entire site to characterize it adequately to support Phase 2 decisions. We would appreciate an explanation for excluding this area.

WMA-12

The Southeast end of Frank's Creek in WMA-12 should have sediment sampling.

Additional attention should be paid to sampling in the Radiological Control area.

The North section of WMA-12 should have additional sampling to see if the plume has extended into this area.