

Stanford Place 3, Suite 1000  
4582 South Ulster Street Parkway  
Denver, Colorado 80237  
(303) 694-2770

# Woodward-Clyde Consultants

April 23, 1991

E. H. Wilson  
EG&G Rocky Flats, Inc.  
P. O. Box 464  
Golden, Colorado 80402-0464

Re: Observations of Remedial Action Temporary Decontamination Pad (RATDP), Rocky Flats Environmental Restoration, OU-2 Alluvial RFI/RI.  
BOA Contract BA 56801PB  
Requisition BA 71956PB/Phase II RI04  
WCFS Project 4006

Dear Mr. Wilson:

We were requested to address several comments made by the Colorado Department of Health on the design of the Environmental Restoration Remedial Action Temporary Decontamination Pad (RATDP). During the course of our observations to respond to those comments, we identified several other issues related to the design or construction of the decontamination facility that we wish to comment on.

- The pallets placed to support the 2,500 gallon storage tanks were placed immediately upon the liner for the secondary containment area. At several locations, the liner was folded over on itself, thereby seriously jeopardizing the integrity of the secondary containment liner. Normally, when a load is placed above a geomembrane liner, care must be taken that folds are not overlapped on themselves and that a cover soil ("cushion" layer of soil) is used to uniformly distribute loads to the liner. To place concentrated loads immediately upon a geomembrane liner can cause stress concentrations in the liner causing the liner to rupture. This is significantly aggravated if folds in the liner are present. Woodward-Clyde will be unable to accept the liability associated with an improperly constructed secondary containment liner until the situation is remedied.

We recommend the tanks and pallets be removed from the secondary containment area and that the folds be removed. This may require cutting the liner along the folds, overlapping, reseaming, and retesting the seams. This is conventional practice in liner construction for landfills and impoundments since HDPE geomembrane materials have a high thermal coefficient of expansion and large wrinkles develop regularly. Prior to replacement of the pallets and tanks, a four to six inch thick layer of sand should be placed in the bottom of the containment area to protect the liner. It should be confirmed that this will not reduce the secondary containment volume below that required. Where foot traffic will occur on the south side of the impoundment, a roughened HDPE geomembrane strip could be welded to the liner to provide skid resistance. Unroughened HDPE is extremely slippery, especially when wet or icy.

Consulting Engineers, Geologists  
and Environmental Scientists  
(document Wilson 9115)

Offices in Other Principal Cities  
**ADMIN RECORD**

A-0002-000290

REVIEWED FOR CLASSIFICATION/UCM

By

Date

*[Signature]*  
5/12/91 *[Signature]*



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- As a result of the volumes of decontamination and washwater anticipated to be generated, we recommend that two additional sedimentation tanks be added to the facility. One of these tanks could be placed on the existing pump pad to collect potentially contaminated water that has been bailed out of boreholes prior to well construction, or other waste liquids generated during drilling and well development. Another sedimentation tank could be added just east of the existing lower level sedimentation tank to increase the capacity of the sedimentation system. A new concrete pad would be required for this tank, and another concrete pad would be required at a central location on the upper level for a pump pad. The new tanks could be connected to the existing tanks using plumbing similar to that which has already been installed.
- The 2,500 gallon storage tanks are approximately eight feet tall. These tanks need to be sampled from above using a bailer. Therefore, scaffolding should be provided to allow access to the tops of the tanks.
- The 2,500 gallon storage tanks should also be fitted with suitable quick connection fittings at the tops of the tanks to allow for pumping into these tanks. It would be unsafe to attempt to pump into these tanks by holding a hose by hand while standing on a ladder or scaffold.

Other improvements may also be warranted around the decontamination pad. For example, a small staircase leading from the decontamination pad to the steamer heating shed may be appropriate. Areas need to be identified for the eight foot by ten foot steamer heating shed and the 2,500 gallon water supply tank. We are available to assist in accomplishing any of the recommended improvements described above. In any case, we believe it is extremely important to take the measures described above to preserve the integrity of the secondary containment liner.

If you have any questions or if we may be of further assistance, please contact me.

Very truly yours,



Alan F. Claybourn, P.E.  
Project Manager

AFC:cm

1c: Jim Koffer  
Tom Greengard  
File