

*Pollution Prevention Awards Program Nomination*

*Pollution Prevention Using Innovative Equipment and Methods to Plug Contaminated Wells at Oak Ridge National Laboratory — Figures*



Figure 1. The cementing unit is backed onto the reusable bermed rig pan to access a wellhead. The rig pan serves the dual purpose of providing containment of possible spills and protecting the equipment from contamination.



Figure 2. A reusable vinyl liner designed to contain possible spills is shown installed on a well. A “cellar” approximately 5 feet in diameter and 4 feet deep is excavated around the wellhead and then a metal culvert is positioned to support the excavation sidewalls. The vinyl liner resembling a large “angel food cake pan” is then installed and secured to both the casing and culvert edge to contain possible spills.

**Beta/Gamma Pancake Detectors**



**Blow Out Preventer**

**Internal Seal Unit**

**High Pressure Connectors and Hoses**

Figure 3. The custom-designed wellhead assembly is shown set up on a well that is ready to be plugged. From bottom to top, the assembly consists of: (1) 4 high-pressure connectors and hoses used to decon tubing as it is withdrawn from the well, (2) an internal seal unit that “squeezees” the tubing dry, (3.) blow out preventer, and (4) remote beta/gamma pancake detectors used to give early detection of rad contamination.

**Tubing and Spool**



**Section of Transparent Hose**

Figure 4. The wellhead assembly is shown set up on a well that is ready to be plugged. Note the section of transparent hose. A crew member monitors the hose as the well is being filled with cement. The pump is immediately turned off when cement returns from the well are observed in the hose. Using this method reduces the volume of liquid waste.