

Building Number/Name: 2101-HV  
Date prepared: Feb 8 201  
Responsible Contractor: WRPS  
Contact: C M Smith; E A Hill

### **PAST OPERATIONS**

Beryllium brought in facility: YES

Form of beryllium: SOLID

Period of beryllium operations (dates): Start: Early 1980s End: Present

Location(s) in facility that contained beryllium materials: Tool Crib and Machine Shop

Description of beryllium activities: Beryllium tools (beryllium-copper alloy containing about 2% beryllium) are stored in the tool crib and given to employees for use in Tank Farms. These tools are then returned to the tool crib, and may have small amounts of dust containing beryllium on them. Based on contacts with tool manufacturers, the potential for significant airborne exposure to beryllium from these tools is very low. However, because air sampling was not performed prior to the FDH beryllium assessment project, nor were measures taken to reduce the potential for employee exposure, the potential exists for exposure to low levels of airborne beryllium dust. As such, the tool crib is being considered a potential source of past airborne beryllium exposure.

Building monitoring data summary: None identified.

Personnel monitoring data summary: Four breathing zone and two area samples related to personnel were collected in 1998 to evaluate worker exposures to beryllium in the vicinity of the tool cribs. All six samples were below the detection limits of  $0.2 \text{ mg/m}^3$ .

Specify Engineering/Administrative controls used during operations: Tools are wet-wiped before and after use.

### **CURRENT OPERATIONS**

Building still present: Yes

BCF: No

### **BERYLLIUM SAMPLING DATA**

#### **1999 Study Results**

Ambient air samples were collected on 6/9/99 and again on 6/24/99 just outside the entrance to the Tool Crib. A personal air sample was also collected on 6/9/99 in the breathing zone of a technician while wipe sampling surfaces for beryllium. Results reported for these samples were below the Method Detection Limit (MDL) of  $0.006 \text{ } \mu\text{g/m}^3$  and  $0.005 \text{ } \mu\text{g/m}^3$  for the ambient air samples and  $0.007 \text{ } \mu\text{g/m}^3$  for the personal sample, respectively. Surface samples were collected from 59 sites throughout the building on 6/9/99. Results reported for these samples were below the MDL of  $0.5 \text{ mg/100 cm}^2$ .

#### **2003 Beryllium Sampling**

Facility characterization sampling was conducted in 2003-early 2004 and 125 wipe samples were collected. 3 areas were identified as having surface Be above the DOE Release Criterion of 0.2 micrograms of Be per 100 square centimeter area ( $\mu\text{g/100cm}^2$ ) for wipe samples: 2 in the machine shop

area and 1 in the grinding area in the NE corner of the warehouse. The NE grinding area in the warehouse was controlled for Be in 2003 then cleaned and cleared through sampling in 2004. Tool crib cabinets were discarded and new cabinets were procured and installed.

### **2010 Beryllium Characterization**

In 2010, with the advent of DOE-0342, the Hanford Chronic Beryllium Disease Prevention Program (CBDPP), a revised characterization sampling protocol and set of evaluation criteria were issued and WRPS was directed to re-evaluate existing facility data and conduct additional sampling.

In 2010, 2101HV was re-characterized and sample results were compared with the Hanford Be Trigger Levels of  $0.1 \mu\text{g}/100\text{cm}^2$  for wipe samples, and 1 part per million (ppm) for bulk samples. Where sample results exceeded a Trigger Level, additional site investigation and/or sampling is required per the Hanford Corrective Action Plan (CAP) for Beryllium. Control levels for surface Be contamination were established by DOE-0342 as the  $0.2 \mu\text{g}/100\text{cm}^2$  DOE Release Criterion for wipe samples and the 2 ppm soil background level for bulk samples.

57 wipe and 18 bulk samples were collected in 2101HV and analyzed for Be in 2010. Surface sampling results indicated the wipe Trigger Level was exceeded on settling surfaces in the tool crib (top of wood beam and top of light fixture) and structural components (beam) in the NE quadrant of the warehouse. Follow up bulk sampling of exceedance areas did not show Be above natural soil background levels. Follow-up wipe sampling of exceedance areas were not found to exceed the Trigger Level.