

## 3.4 Probe Relocation Justification

### 3.4.1 Probe Relocation Justification

At most, nine of the 16 probes within the excavation site may be relocated. This section provides justification for relocating these probes.

**3.4.1.1 Probe P9-04.** Probe P9-04 is located near the center of the excavation site area. This probe was driven 16 ft, 6 in. into the ground until it reached depth of refusal. Probe P9-04 must be removed because it poses a significant obstacle during waste retrieval and subsequent probe relocation. In addition, the P9-04 probe must be moved to mitigate the risk posed by the probe falling over on its own (following waste excavation) and damaging equipment and structures. According to the probe table located in Appendix B, the P9-04 probe will extend over the shoring box and toward the RCS wall 0.2 ft (see Figure 19) if the probe is pulled completely out of the underburden and allowed to tip over in place. Precautions must be in place during the subsequent pulling and relocation of this probe to ensure that it is not inadvertently released during relocation and to avoid the possibility of it falling to the side and striking the excavator or RCS. This probe poses a significant risk because of its length and location in the center of the excavation area.

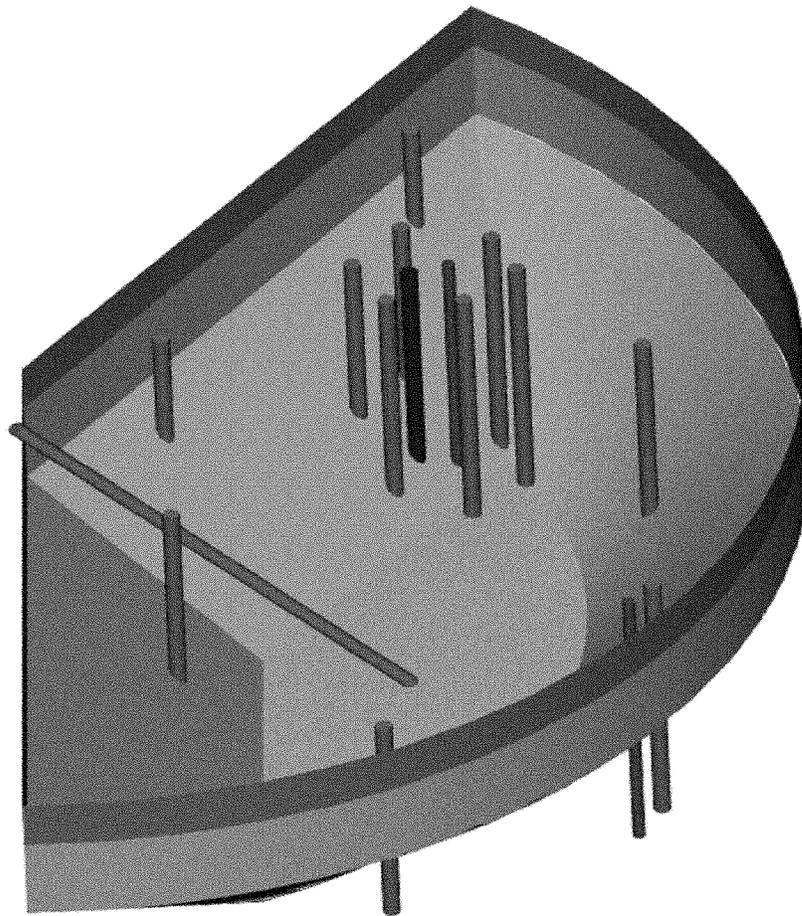


Figure 19. P9-04 Probe tipping.



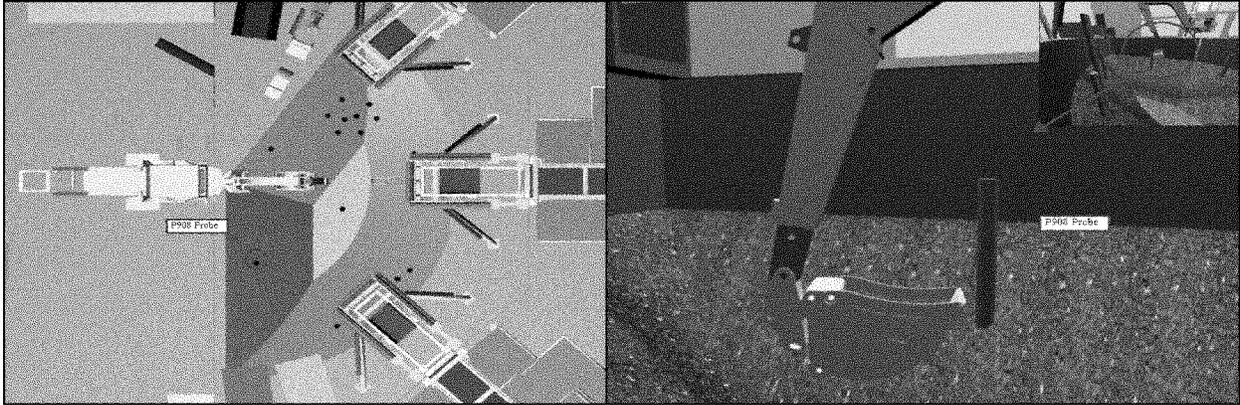


Figure 21. P9-08 Probe retention.

3. According to the probe table located in Appendix B, if the P9-08 probe is pulled completely out of the underburden and allowed to tip over in place, it would extend over the shoring box and toward the south RCS wall 0.9 ft (see Figure 22). The length of this probe poses a significant risk of damaging equipment and structures.

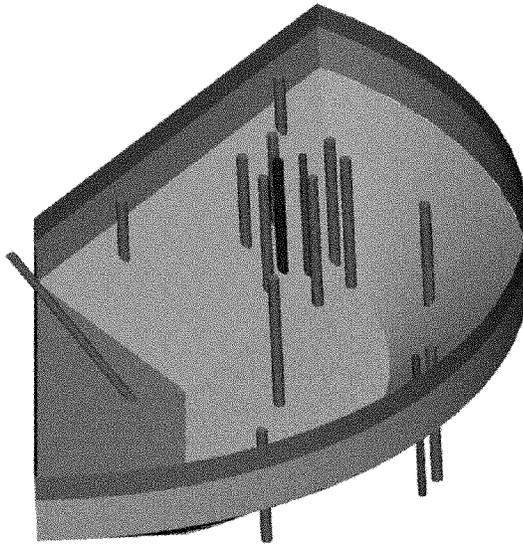


Figure 22. P9-08 Probe tipping.

**3.4.2.2 Probe P9-02.** Probe P9-02 is not chosen for relocation for three reasons:

1. Probe P9-02 is buried deep within the 52-degree angle of repose. If this probe were to be pulled, the potential for breaching the shoring box seal would be high.
2. As shown in Figure 23, the P9-02 probe does not create a significant obstacle during waste retrieval operations.
3. According to the probe table located in Appendix B, if the P9-02 probe is pulled completely out of the underburden and allowed to tip over in place in a straight line extending toward the south RCS wall, it would penetrate the south RCS wall by 5.3 ft. The length of this probe poses a significant risk of damaging equipment and structures.

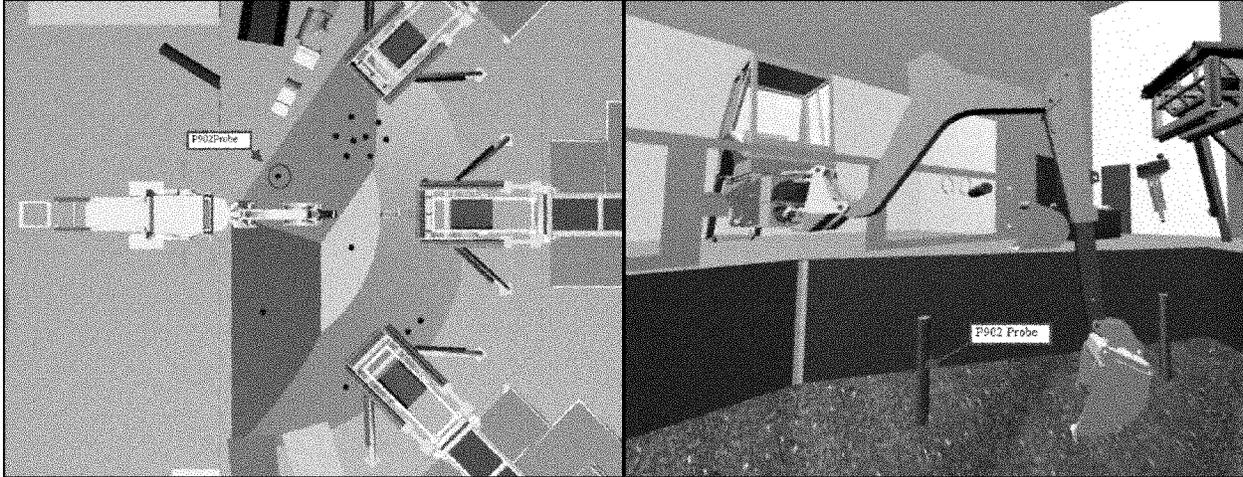


Figure 23. P9-02 Probe retention.

### 3.4.2.3 Probes near the Packaging Glovebox System Transfer Cart Frames

**3.4.2.3.1 Probe P9-22**—Probe P9-22 is not chosen for relocation for two reasons:

1. Probe P9-22 is buried deep within the 52-degree angle of repose.
2. As shown in Figure 24, grappling the P9-22 probe poses a significant risk to the Packaging Glovebox System (PGS) transfer cart frame. This risk is increased by the fact that the PGS transfer cart frame's protective cages (not shown) add additional width to the transfer cart frames.

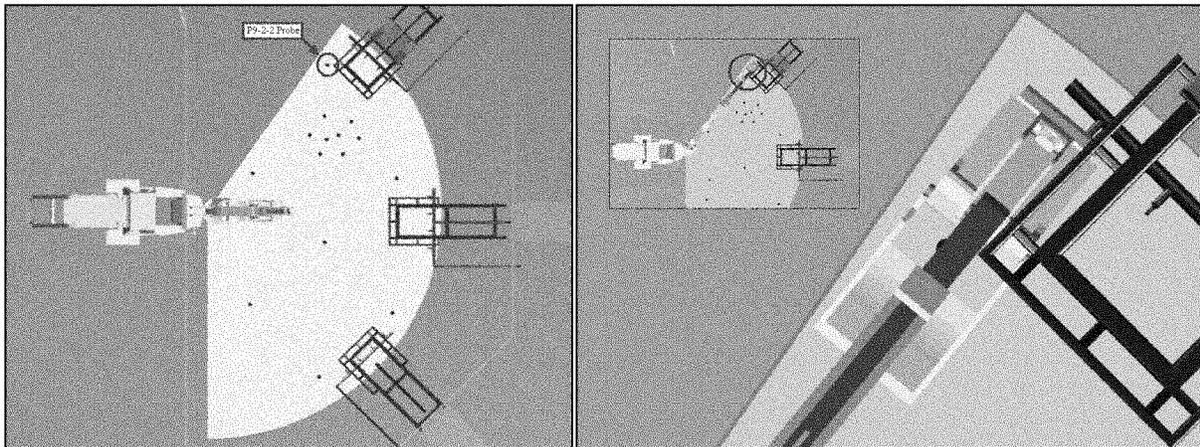


Figure 24. P9-22 Probe retention.

**3.4.2.3.2 Probe P9-03**—Probe P9-03 is not chosen for relocation for two reasons:

1. Probe P9-03 is buried deep within the 52-degree angle of repose.
2. Grappling the P9-03 probe poses a risk to the PGS transfer cart frame (see Figure 25). This risk is increased by the fact that the PGS transfer cart frame's protective cages (not shown) add additional width to the transfer cart frames.

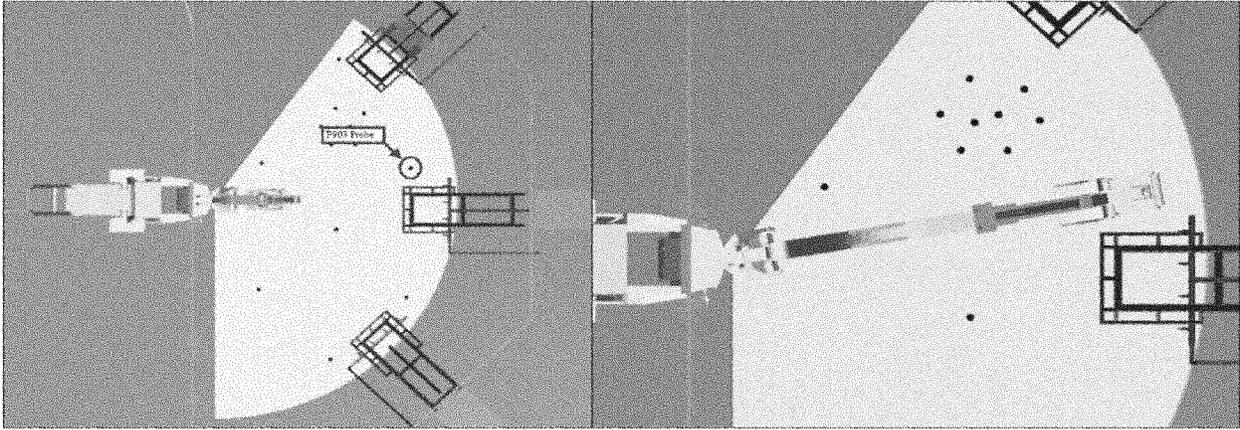


Figure 25. P9-03 Probe retention.

**3.4.2.3.3 Probe P9-09 and P9-09-Vis Probe**—Probe P9-09 and the visual probe adjacent to P9-09 were not chosen for relocation for two reasons:

1. Probe P9-09 and the P9-09-Vis probe are buried deep within the 52-degree angle of repose.
2. Grappling the P9-09 probe poses a risk to the PGS transfer cart frame (see Figure 26). This risk is increased by the fact that the PGS transfer cart frame’s protective cages (not shown) add additional width to the transfer cart frames.

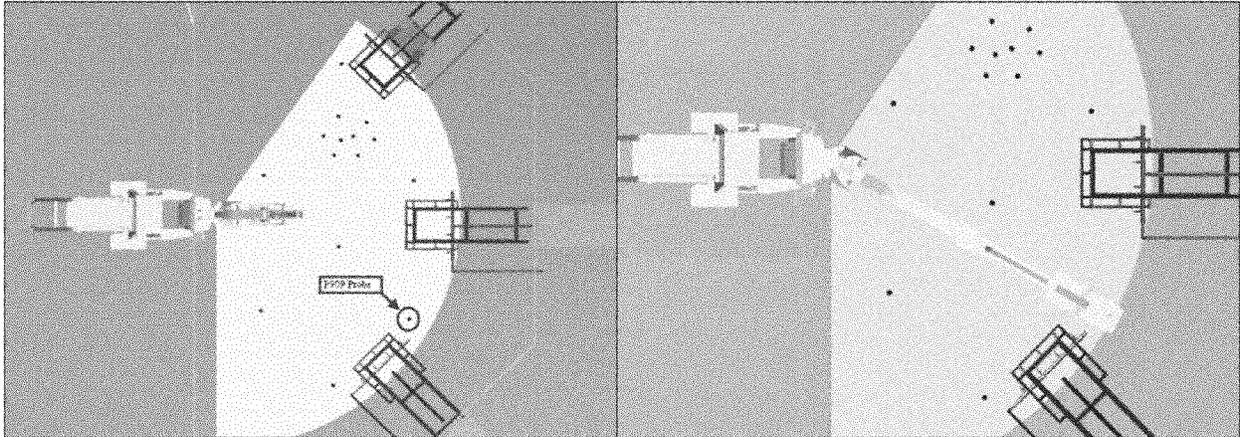


Figure 26. P9-09 Probe retention.

**3.4.2.3.4 Probe P9-10**—Probe P9-10 is not chosen for relocation for two reasons:

1. Probe P9-10 is buried deep within the 52-degree angle of repose. If this probe were to be pulled, the potential for breaching the shoring box seal would be high.
2. As shown in Figure 27, grappling the P9-10 probe poses a risk to the PGS transfer cart frame. This risk is increased by the fact that the PGS transfer cart frame’s protective cages (not shown) add additional width to the transfer cart frames.

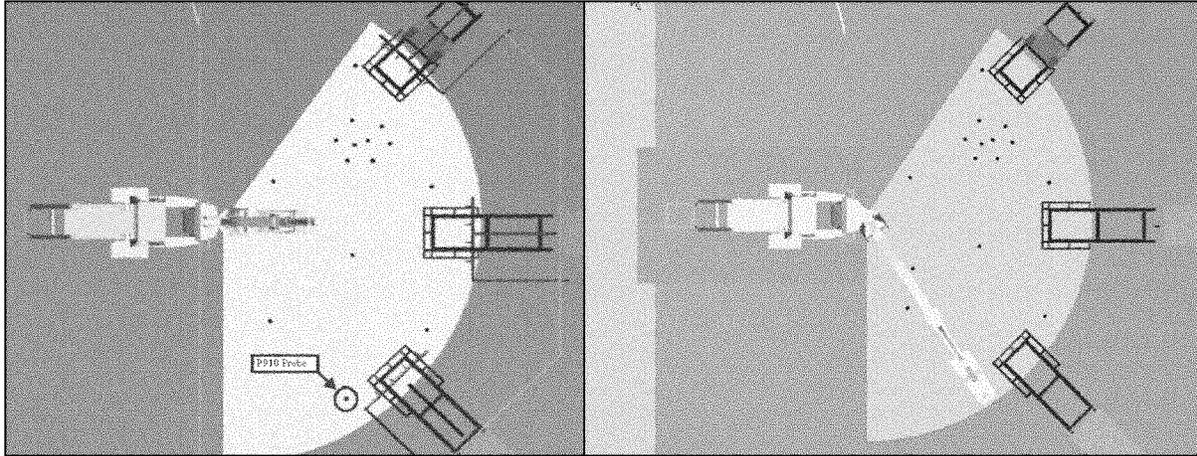


Figure 27. P9-10 Probe retention.

### 3.5 Segmentation of Waste Drums

Retrieval of several waste drums containing combustibles, noncombustibles, sludge, and graphite is expected during excavation of the site. The weights of these drums range from an empty drum up to a 1,000-lb drum (Einerson and Thomas 1999). Drums weighing over 350 lb are prohibited in the PGS due to safety concerns. In an effort to prevent 350-lb drums from entering the PGS, the weight of each drum will be monitored before loading the PGS transfer carts.

Any intact 55-gal waste drums encountered will be punctured with a non-sparking puncture tool. Following drum puncture, the excavated drum is weighed by picking up the waste drum with the jaw bucket and measuring the hydraulic pressure during a predetermined hydraulic manipulation. If a drum is found to weigh over 350 lb, it is returned to the pit and segregated into sections weighing less than 350 lb. The jaw bucket or hammer (coupled with a spade tool) will be used to break up the drum on a portable steel tray, as shown in Figure 28. The jaw bucket or hammer will be used to break apart the drum, empty its contents into the tray (called a drum sizing tray [DST]), place the empty drum shell into a transfer cart, mix absorbent with liquid waste (if necessary), and then scoop solidified waste out of the DST and into the transfer cart.

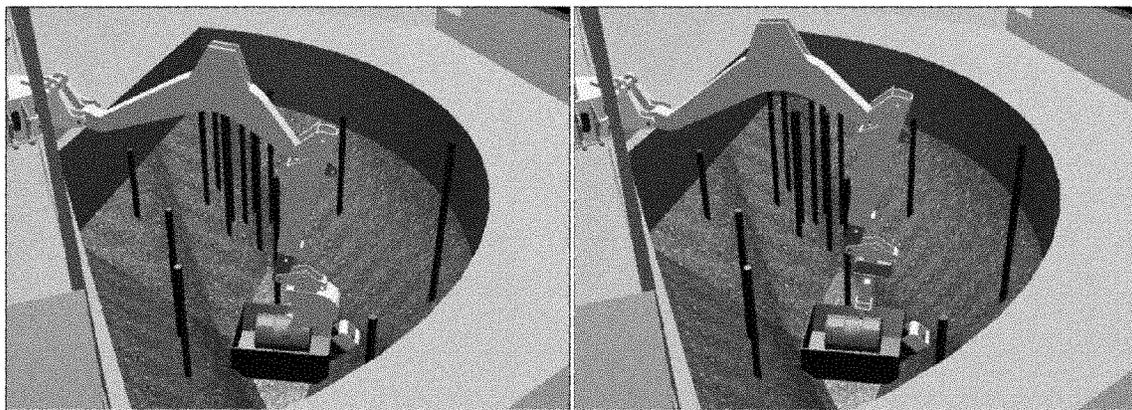


Figure 28. Waste drum demolition.

The DST and the position of each of the drum demolition tools (with the exception of the 16-in. bucket) on the 33-degree RCS laydown area are shown in Figure 29, left and right, respectively.

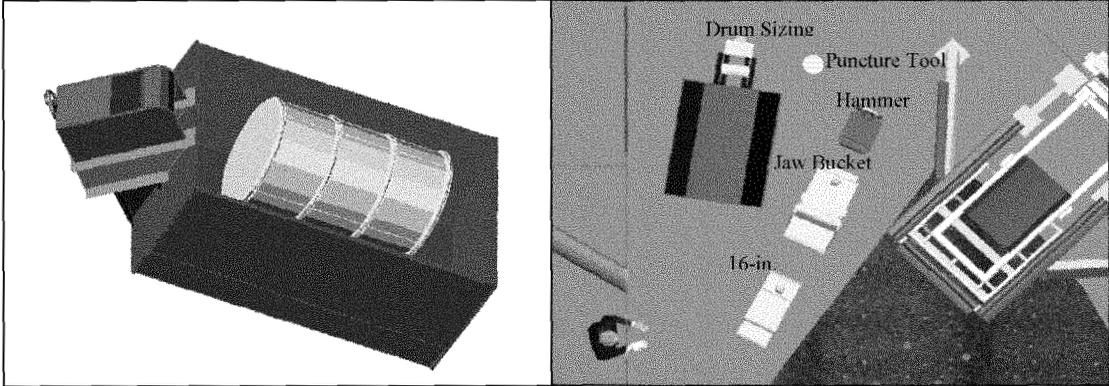


Figure 29. Drum sizing tray.