

REPORT SUMMARY

PNNL-25880, Hanford Tank Vapors COPCs Update

One of the Tank Vapor Assessment Team (TVAT) recommendations was to update and review the current list of Chemicals of Potential Concern (COPCs) at the Hanford Site Tank Farms. In 2016, Pacific Northwest National Laboratory (PNNL) evaluated the current list of COPCs using historical and current data stored in both the Tank Waste Information Network System (TWINS) and the Site-Wide Industrial Hygiene Database (SWIHD). The SWIHD database was limited to headspace data only. The sampling data was compared against predetermined screening values pertaining to Hanford Tank Farm specific Occupational Exposure Limits (TFOELs), Acceptable OELs (AOELs), OELs provided by the SWIHD database or Regulatory OELs (NIOSH, OSHA, or ACGIH). Screening values were set at 10% of the OEL for the compound being analyzed.

In total, available sampling data for over 1,400 chemicals were evaluated by PNNL. Of those, 88 chemicals were identified for further examination based on a comparison of the maximum reported tank vapor concentrations against the screening values. Five (5) furan compounds were identified as suspected misidentified, and recommended for further review for possible removal from the current COPC list. The remaining 83 compounds were evaluated further. Of those 83 compounds, 3 were identified and recommended for inclusion on the COPCs list based on the reported concentrations against the screening values. These compounds were N-nitrosodi-n-butylamine, 2-propenal, and dimethylmercury. An additional 34 compounds were recommended for further toxicological review and TFOEL development. Additionally, 12 compounds were greater than 10% of the OEL and were recommended for further evaluation as a result of changes to the evaluation criteria. Additional evaluation of these compounds is underway. The remaining 34 compounds were not recommended for further evaluation by PNNL, as the evaluation team concurred with the previous study conducted in 2006 to classify them as non-COPCs.

Table 1. Recommended Classification of Potential COPCs.

| <i>Number of Chemicals</i> | <i>Recommended Action</i> | <i>Justification</i> |
|----------------------------|---|--|
| 3 | Additions to COPC listing | Maximum headspace concentrations from new data exceeded screening values (i.e. > 10% "OEL"). |
| 5 | Removals from COPC listing | Suspect misidentified compounds, review further prior to removal. |
| 12 | Further review | Maximum headspace concentrations exceeded screening values, but with limited data. |
| 34 | Further research and toxicological review | No current AOEL or screening criteria available to make a determination of COPC status. |
| 34 | No change in status | Previous determination of non-COPC status remains sound. |

The full PNNL report (PNNL-25880 Hanford Tank Vapors COPCs Update) can be found [here](#).