



Figure 3. Contaminants of concern at Site 300 for surface soil, subsurface soil/rock, surface water, and ground water.

What are the main contaminants at Site 300?

1. Volatile Organic Compounds (VOCs) are chemical substances that evaporate readily into air. Solvents, gasoline, paint thinners, and nail polish remover contain VOCs. VOCs were used as degreasing solvents and as a heat-exchange fluid in experiments at Site 300 and were released by spills and piping leaks. Trichloroethylene (TCE) is the most common VOC found at Site 300. Many VOCs are suspected human carcinogens if inhaled or ingested.
2. High Explosive (HE) compounds (primarily RDX) are formulated and tested at Site 300. These compounds were present in rinsewater that was once placed in unlined ponds. RDX is a suspected human carcinogen if inhaled or ingested.
3. Perchlorate is used in high explosives. It is toxic if ingested, but is not a carcinogen.
4. Nitrate is: (1) a byproduct of HE processing and combustion, (2) found in septic system drainage, and (3) present naturally in the bedrock and soil at Site 300. Nitrate is not toxic to adults, but can cause health problems in infants. It is not carcinogenic.
5. Tritium is the common name for hydrogen-3, a radioactive isotope of hydrogen. Although tritium can be a gas, its most common form is in water. Tritium replaces one of the stable hydrogen atoms in the water molecule, H₂O, which is then called tritiated water. Like "normal" water, tritiated water can evaporate to the atmosphere as a gas. Although nuclear weapon testing has never been performed at Site 300, tritium was used in some of the high

explosive experiments. Tritium was released during these detonations, and tritium-contaminated firing table debris was placed in unlined landfills and has leached into the ground water. Tritium naturally decays with a half-life of 12.3 years, and is a human carcinogen if inhaled or ingested.

6. Uranium is a radioactive metal that occurs naturally in soil and rock. Depleted uranium is natural uranium with the more radioactive uranium-235 isotope extracted leaving the less radioactive uranium-238 isotope. Depleted uranium is used in explosive tests at Site 300. Uranium was released from firing table gravels and unlined landfills. Uranium is a human carcinogen if inhaled or ingested.

7. Polychlorinated biphenyls (PCBs) and dioxin and furan compounds were contained in some of the equipment used for high explosive tests. The equipment was destroyed in the detonations, and PCBs and dioxin and furan compounds were found in the surrounding soil. PCBs and dioxin and furan compounds are human carcinogens if ingested or inhaled.

8. Tetrabutyl orthosilicate (TBOS) is a silicone-based lubricating oil that was mixed with TCE to preserve pump seals in heat-exchange piping systems.

9. Metals are elements found naturally in the environment or that may be associated with site activities. The metals beryllium, cadmium, copper, lead, and zinc have been detected in surface soil in some areas of the site at levels above those that occur naturally. However, these metals pose no unacceptable risk to human health and the environment and are no a threat to ground water.