Willard Bay Diesel Spill Assessment

The Utah Department of Health's Environmental Epidemiology Program (EEP) was asked by the Utah Department of Environmental Quality's Division of Water Quality (DWQ) to provide an assessment of any potential health effects that might result from consuming fish caught in Willard Bay following the March 18th, 2013 diesel fuel pipeline leak.

On Monday March 18th a diesel fuel leak from a petroleum pipeline released an estimated 27,500 gallons of diesel fuel into a drainage ditch and retention pond located less than a quarter mile from Willard Bay. Though the vast majority of fuel was captured by an existing beaver dam before reaching the Bay, some small amounts of fuel did enter the Willard Bay waters. As of March 28, 2013, an estimated 21,000 gallons of diesel has been recovered by cleanup crews.

Under the supervision of the DWQ, sampling of the impacted ditch, retention pond, and Bay waters began on March 19th, 2013. Sampling data includes 21 distinct hydrocarbons (including benzene, toluene, ethyl benzene, and xylene- known commonly as BTEX, and naphthalene) along with values for the broad class of diesel range organics (DRO). Although there is currently no fish tissue data to use for assessment of the presence of hydrocarbons in the fish, there are strong lines of evidence that indicate that consumption of fish caught from Willard Bay will not result in harmful health effects.

The first line of evidence comes from U.S. Environmental Protection Agency's (EPA) fish consumption Screening Levels (SLs) that are publicly available at: http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search. These screening levels have been developed based upon human and animal toxicological data and are very health protective values. As a screening level, this value is used to compare against collected data to use as a first step in determining if a problem may exist and further investigations (that take into account the amounts of fish eaten, how often they are eaten, and the age of the individual eating the fish) are warranted. In the case of Willard Bay, water samples taken from the bay do not indicate hydrocarbon levels that exceed the EPA fish screening levels for any of the listed chemicals.

The second line of evidence comes from scientific literature that consistently finds that hydrocarbons such as those found at the spill site do not accumulate to a large degree within fish due to rapid metabolism and excretion (ATSDR, 1995; 2000; 2005; 2007; 2007; 2007; van der Oost, 2003; Bucheli and Fent, 1995; Melancon et al., 1992; Lech and Vodicnik, 1985). The metabolic half-life for common environmental hydrocarbon contaminants such as those found in the waters of the Willard Bay spill site is approximately nine days or less (ATSDR, 1995; 2000; 2007).

Taking together the low level of hydrocarbon contamination in the bay (well below the EPA SLs for these compounds in fish tissue) along with the very low tendency for these compound to accumulate in fish, the EEP concludes that consuming fish caught in Willard Bay is not expected to result in harmful health effects due to diesel spill contamination.

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