

Chem-Nuclear Site

ANNUAL UPDATE

2013

Published Since 2007 • S.C. Department of Health and Environmental Control • Bureau of Land and Waste Management • December 2013

The S.C. Department of Health and Environmental Control (DHEC) is committed to providing annual updates about the groundwater contamination and other activities at the Chem-Nuclear Site. We hope you will find this annual newsletter to be informative. If you have questions about the Chem-Nuclear Site, please contact any of the DHEC staff listed on the back page. For additional information and past annual updates, visit www.scdhec.gov/radwaste.

The Groundwater Plume at the Chem-Nuclear Site

The Chem-Nuclear Site has a routine groundwater and surface water monitoring program. Groundwater samples are collected from monitoring wells and from locations in Mary's Branch Creek four times each year. The information gathered is used to evaluate changes in contaminant concentrations within the groundwater plume.

The most recent results for tritium are from samples collected during the second quarter of 2013 (April to June). The highest concentration of tritium continues to be found on site at well WM-0110 where it was 18,800,000 pCi/L (April). The concentration where the plume enters Mary's Branch Creek (WC-0002) was 311,000 pCi/L (April).

The surface water "point of compliance" (WC-0008) is the point where regulatory limits apply. In April, the level of tritium measured at the point of compliance was 81,200 pCi/L. This is less than the regulatory limit of 500,000 pCi/L and slightly lower than the level measured in April 2012 (82,400 pCi/L).

A map showing the point of compliance is provided on the back page. Visit www.scdhec.gov/radwaste for additional maps.

The latest quarterly sampling results (July 2013) show that the only volatile organic compound (VOC) present in the creek is 1,4-dioxane. The concentration of 1,4-dioxane at WC-0002 was 89.2 µg/L – down from 284 µg/L in April 2012 and its lowest level since the first quarter of 2000. At WC-0008, the concentration was 82.9 µg/L – comparable to previous years' concentrations. A regulatory limit for 1,4-dioxane has not been established.

Chem-Nuclear Site submits an annual trending report on whether the tritium plume is getting larger or smaller and whether the levels of tritium are going up or down in certain wells. DHEC reviews the report for accuracy and completeness.

In the 2013 annual trending report, 27 monitoring locations were evaluated for changes in tritium concentrations. The tritium data indicated that 10 monitoring locations showed no evidence of trending either up or down, six locations showed an upward trend and 11 locations showed a downward trend over the most recent five-year period (third quarter 2008 to second quarter 2013). Tritium concentrations at the point of compliance on Mary's Branch Creek have decreased over the five-year period. This is a change from the previous 12 years where tritium levels were stable (i.e., there is no upward or downward trend over the period analyzed). The 2013 annual trending data is available at www.scdhec.gov/radwaste.

Waste Volumes

Since July 2008, the Chem-Nuclear Site only accepts waste from the three member states of the Atlantic Compact: Connecticut; New Jersey; and South Carolina. The monthly waste volume received between July 2008 and October 2013 ranged from 0.0 cubic feet in July 2011 to 27,631.70 cubic feet in March 2010. The table below shows the total waste volume for each fiscal year disposed of from the Atlantic Compact member states since the institution of the Atlantic Compact Act (Act). The Act established the current limits on waste volume and allowed for the receipt of the out-of-compact wastes only through July 2008.

FISCAL YEAR	VOLUME
2008-2009	12,865.57 cubic feet
2009-2010	34,458.36 cubic feet
2010-2011	11,333.01 cubic feet
2011-2012	10,277.64 cubic feet
2012-2013	8737.25 cubic feet
2013-2014 (July 2013 to October 2013)	2203.66 cubic feet

DEFINITIONS

Groundwater – The water found beneath the Earth's surface, usually in aquifers, which supply wells and springs.

Picocuries Per Liter (pCi/L) – A unit of measure of radioactivity.

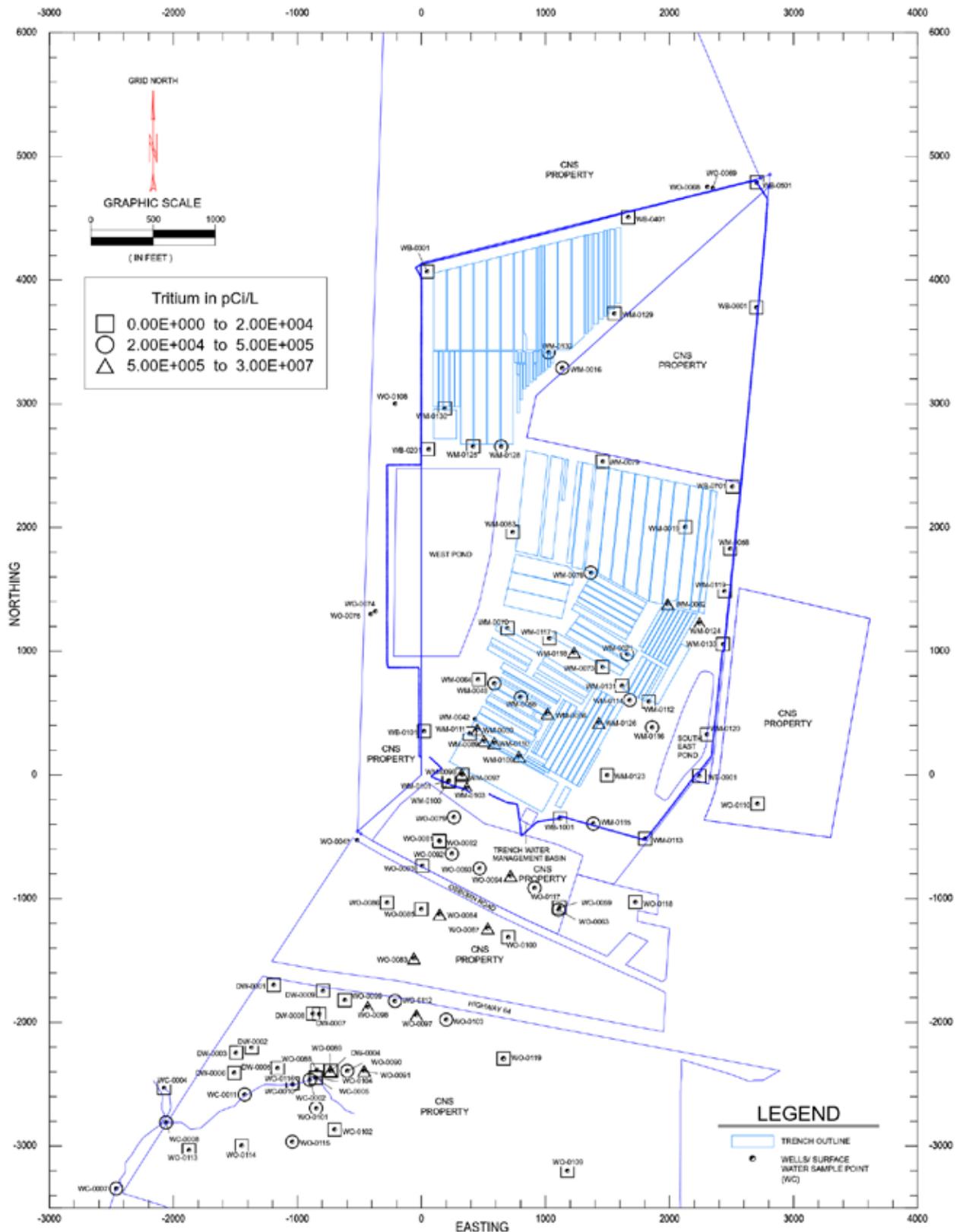
Plume – An area where contamination is detected (or is measurable).

µg/L – A unit of measure for one millionth of a gram per liter or one part per billion (ppb).

Volatile Organic Compounds (or Chemicals) (VOCs) – Chemicals that evaporate readily when exposed to air and are widely used to clean things.

TRITIUM CONCENTRATION MEASURED IN ZONE 2 AND MARY'S BRANCH CREEK

Second Quarter 2013



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