

significant threat to water quality. For example, one teaspoon of benzene (0.005 ppm) can contaminate 260,660 gallons of water. The US-EPA enforceable water quality standard for drinking water allows no more than 0.005 ppm concentration of benzene in both surface water and groundwater. Benzene exposure can cause anemia or a decrease in blood platelets and may result in an increased risk of cancer. Toluene in excess of EPA standards can cause problems with the nervous system, kidneys and liver. Ethylbenzene can cause problems with the liver and kidneys. Xylene can cause damage to the nervous system.

### Oil Spill – What Are The Odds Of An Oil Leak In South Dakota ?

An "Oil Spill Frequency Volume Study" filed by TransCanada with the federal government in 2006 acknowledged that oil spills do occur on oil pipelines. Release of crude oil can occur during transport through a pipeline and pose a significant risk of soil and water contamination surrounding the area of the spill. The TransCanada Study estimated that a 1,000 barrel (42,000 gallons) oil spill may occur anywhere along the TransCanada Keystone Pipeline once in 12 years; a 10,000 barrels (420,000 gallons) oil spill may occur once in 39 years; and a spill of more than 10,000 barrels might occur once in 50 years (TC Pipeline Risk Assessment, pg 3-2). The projections are theoretical based on historical data of pipeline operation. The extent of environmental damage would depend on the location and quantity of the oil spill, the type of soil and water resources in the area of the spill, and the topography of the land area. In a study independent of the oil industry, the United States Geological Survey (USGS) estimated that an average of 83 crude-oil spills occurred in the United States during the three year period of 1994-1996, with each spilling about 50,000 barrels (2,100,000 gallons) of crude-oil. The British Petroleum (BP) pipeline failure and spill on March 3, 2003 at Prudhoe Bay, Alaska dumped 200,000 gallons of crude oil. BP is recognized as having years of oil pipeline operations experience, and they had a major pipe failure and oil spill. TransCanada doesn't even own or operate a crude oil pipeline and has no experience or track record operating a high pressure crude oil pipeline.

### Oil Spill -Impact On Farm Land and Soils

According to the information filed by TransCanada with the U.S. State Department, the clean-up of a 84,000 gallon spill (2,000 barrels) from the TransCanada pipeline spill could require the removal of up to the equivalent land area of 3 feet in depth over 400 acres or about 2,001,277 cubic yards of soil (Pipeline Risk Assessment, pg 4-4). A summary of TransCanada's record of gas spills from 2000 through 2005 is shown on page 20. TransCanada had 576 spills in the past 6 years, for an average of 96 spills per year. The crude oil is extracted from Alberta oil sands, called "bitumen", is described as "black and thick oil". TransCanada refuses to release the makeup of the crude-oil claiming "proprietary information". Crude-oil released into soils will disperse both vertically and horizontally. Soil reports published by the U.S. Department of Agriculture -Natural Resources Conservation Service (NRCS) show a large quantity of sandy soils and shallow ground water areas that will be crossed by the TransCanada-Keystone Pipeline in Brown, Marshall and Day County (9). Sandy soils found throughout much of the TransCanada-Keystone Pipeline route could enhance the dispersion of crude-oil. Soil moisture and precipitation could also increase the dispersion of a crude-oil spill. Clean-up of soil contaminated by crude oil can require significant time, effort and cost. Required remedial actions may range from excavation and removal of contaminated soil to allow the contaminated soil to recover through natural environmental fate process (evaporation, biodegradation, etc). State and federal programs mandate notification and initiation of response actions "in a timeframe and on a scale commensurate with the threats posed" (TransCanada Construction Mitigation & Reclamation Plan, 2-50). What about the loss of crop production, property values and future earnings to farmers as a result of contamination by an oil spill? A crude oil pipeline leak near Bemidji, MN in 1979 was never fully cleaned up and soils remain sterile 28 years later.

### Risk Of Large Crude Oil Spill

The TransCanada-Keystone Oil Pipeline plan calls for a wide separation between mainline automated valves and manual valves. For example, the distance between the pump station at the North Dakota-South Dakota state line and the next pumping station near Ferney, SD is about 42 miles of 30 inch pipe which would hold about 156,660,000 gallons of crude-oil (3,728,571 barrels). The distance between the Ferney pump station and the next pump station near Carpenter, SD is about 47 miles of 30 inch pipe which would hold about 175,312,000 gallons of crude oil (4,174,000 barrels). In addition to the 4 automated valves at compressor pump stations, the TransCanada-Keystone Pipeline will have 7 to 10 manually operated valves on the 220 miles of pipeline in South Dakota, with some valves being 20 to 30 miles apart. In the event of a major pipe failure, there may not be time to reach valves to stop the crude-oil from draining out of the pipeline on to productive farm land and into wetlands. Manually operated valves won't do much good if the TransCanada operations staff are hundreds of miles away in Alberta or Omaha. A pipe failure at a low elevation point on either the 42 mile reach between North Dakota and Ferney, SD or the 47 mile reach between Ferney and Carpenter, SD could result in a spill of millions of gallons of crude oil. By way of comparison, the 155 mile WEB water mainline has 31 valves, with each valve located every 5 miles, and six pump stations and control points which are m

