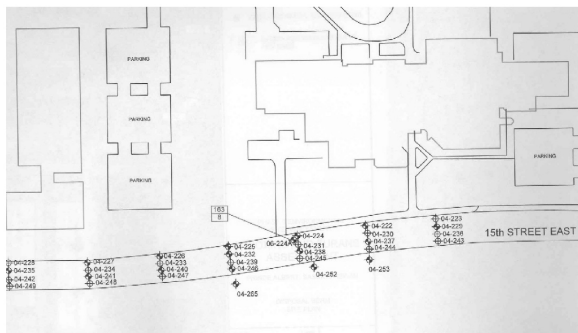


(Figure 3, Location of TH06-110A)



(Figure 4, Location of TH06-224A)



(Figure 5, Location and TEQ values for Berm Samples)

## The Berm

Samples were recovered from 14 random locations along both sides of the berm, within 6 inches of the surface. Results range from TEQ of 62.5 pg/g to 15,300 pg/g.

## Relative Risk - What does it mean?

Although the national guideline is 4.0 pg/g TEQ, it is based on the risk to toddlers from ingesting (eating) contaminated soils. The relative risk to adults or toddlers from contaminated soils at depth, or at surface through skin exposure (being exposed to dirt on the berm) is significantly reduced.

Preliminary risk assessment of the soils at depth (from McCraney Crescent) based on very conservative assumptions, indicates the level of risk is well within the acceptable range.

## Skin Exposure:

Preliminary risk assessment for the berm indicates there is a potential health risk for toddlers through absorption into the skin from daily exposure to those surface soils with dioxin and furan concentrations exceeding 1,600 picograms/gram (pg/g), or parts per trillion. To constitute a potential risk, a toddler would have to contact the soil containing 1,600 pg/g every day for 4.5 years. The 1,600 pg/g concentration was only exceeded at one sample location on the berm. Concentrations at the berm would have to exceed 37,000 pg/g before there is any potential of increased risk from absorption through the skin for adults.

## Soil Ingestion:

Preliminary risk assessment for the berm indicates there remains a potential health risk due to ingestion of soils at the berm. This potential risk is from daily incidental ingestion of soil adhering to the skin from direct physical contact with the soil. It is for this reason that the berm remains fenced off. By restricting access to the berm and therefore preventing any opportunities for the soils to be ingested, the effects can be effectively managed in the short term.

## Next Steps

Saskatchewan Environment has been meeting with a number of potentially responsible parties to address the creosote contamination, and is working towards developing a Remedial Action Plan that will also address the dioxin and furan contamination. The results from this investigation could affect the priorities assigned to the Remedial Action Plan.

## Questions?

Additional information, including a detailed history of the projects, answers to frequently asked questions, plus links to additional information about creosote, dioxins and furans and environmental testing and analysis may be found on the Saskatchewan Environment website at: [http://www.se.gov.sk.ca/environment/protection/land/env\\_mon.asp](http://www.se.gov.sk.ca/environment/protection/land/env_mon.asp)

## Those with questions may also contact:

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Saskatchewan Environment

Dioxin and Furan Sample Results

Prince Albert Contaminated Site

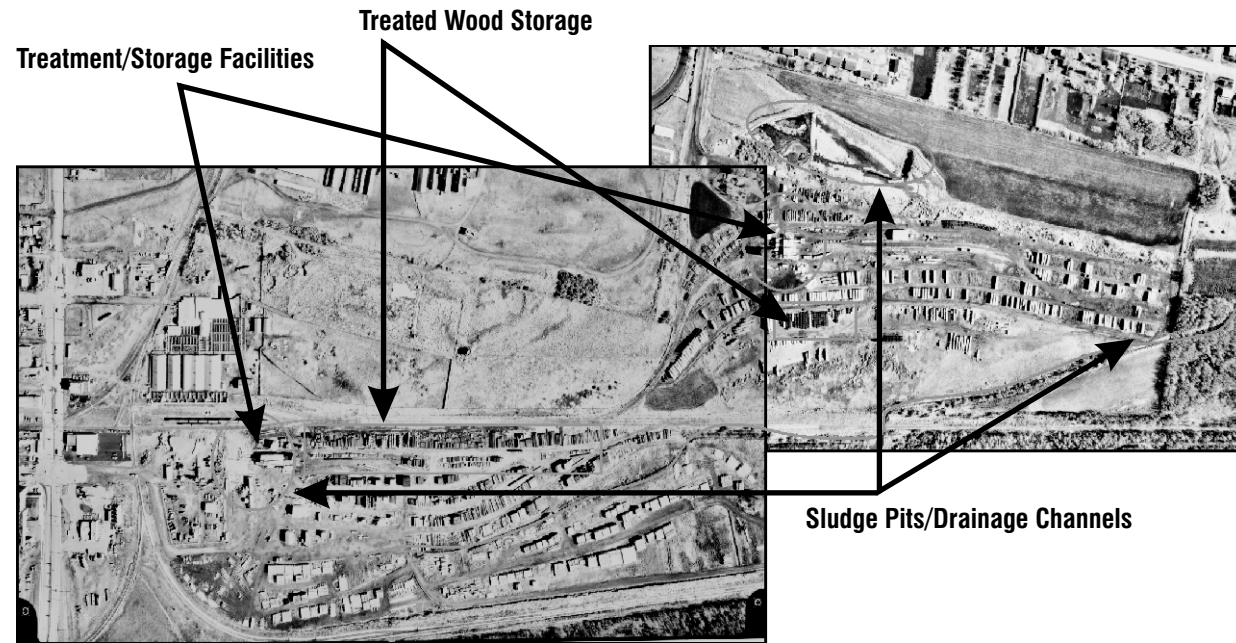


Saskatchewan Environment

## Site History

Two wood preserving plants operated in the area from the late 1930's to mid 1970's (see Figure 1). Sources of contamination from wood treating chemicals on the sites include the former treatment and storage areas, spills, waste disposal operations and site drainage/runoff events.

(Figure 1)



## Dioxins and furans: What are they?

Dioxins and furans are in the same family of chemicals. They are created through low-temperature or incomplete burning of organic compounds. At these sites, the dioxins and furans were likely byproducts of one of the wood treatment chemicals, pentachlorophenol (PCP).

Dioxins and furans include hundreds of different chemicals. 2,3,7,8 tetrachloro-dibenzo-para-dioxin (TCDD) is the most toxic of these chemicals. Dioxin/furan results are reported as a single total value called a TEQ (toxic equivalent) equivalent to the toxicity of TCDD.

The activities that primarily result in the release of dioxins/furans to the environment include: waste incineration, chemical manufacturing, petroleum refining, wood burning, metallurgical processes, fuel combustion, and electric power generation. The primary exposure route for dioxins and furans to get into the body is through eating of contaminated food products, primarily meat, fish and dairy. Some levels may get into the body by ingesting contaminated soil, or absorbing the dioxins and furans through our skin when in contact with contaminated material, although ingestion (eating) is a far more direct exposure route.

## National Guideline

The national guideline for dioxins and furans in soils is a TEQ of 4.0 pg/g (picograms per gram) or parts per trillion. This concentration corresponds to 4 grains of salt in an Olympic-sized swimming pool. The guideline is based on the Canadian national average soil concentration, and is established to prevent any additional exposure in infants and toddlers to dioxins and furans over background exposures, including breast milk and food sources.

## The Drainage Channel

Results for samples recovered from three locations in the drainage channel are shown in Table 1:

Sample Number	Location	Depth from Surface	Result (TEQ pg/g)
TH06-143A	McCraney Crescent	3.8 meters	367
TH06-110A	SIASST Lawn	5.3 meters	974
TH06-224A	15 <sup>th</sup> Street	6.9 meters	163

(Table 1)

Locations of these samples are shown on Figures 2, 3 and 4.



(Figure 2, Location of TH06-143A)