

# Creosote Contamination From Two Former Wood Preserving Facilities

From the Old Industrial Area  
Of Prince Albert, SK

15<sup>th</sup> Street - 6<sup>th</sup> to 13<sup>th</sup> Avenues East

Prepared By: Saskatchewan Environment  
Environmental Protection Branch

# The Nature of Creosote

- Creosote is derived from coal tar and is a complicated mixture of chemicals.
- It can be either heavier or lighter than water, depending on how it is mixed with other chemicals for treating lumber.
- Creosote has a very strong attraction for organic compounds, and tends to stay closely associated with any soils it comes in contact with.
- Creosote is not very soluble in water.

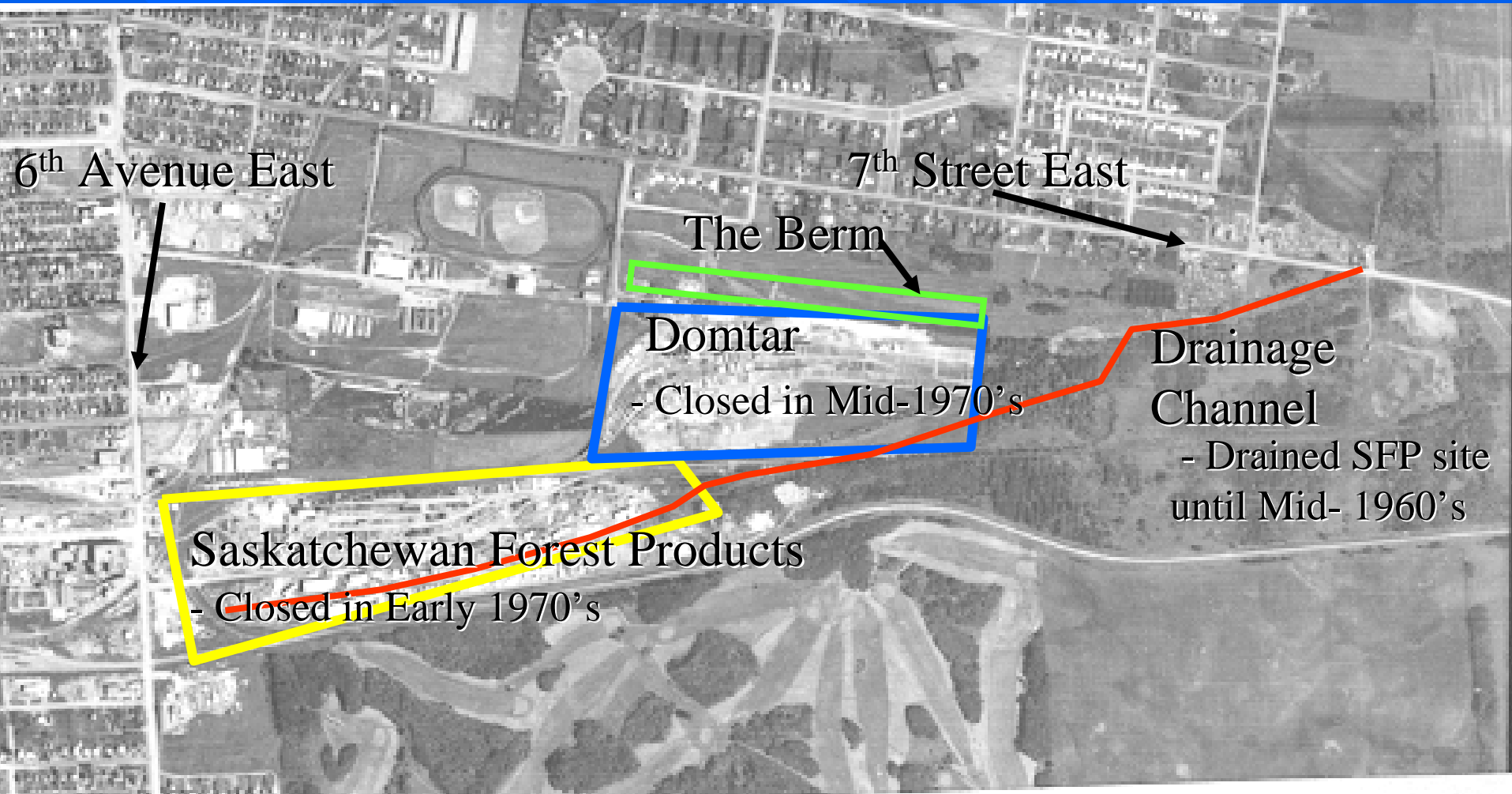
# The Nature of Creosote

- What these properties of creosote mean for Prince Albert is that the contamination from the former treatment operations does not migrate very far within the underground or groundwater spaces where it has been spilled, and is mainly isolated to those areas where spillage or run-off contamination occurred.

# History of the Sites



# Operations, 1964



6<sup>th</sup> Avenue East

7<sup>th</sup> Street East

The Berm

Domtar

- Closed in Mid-1970's

Drainage Channel

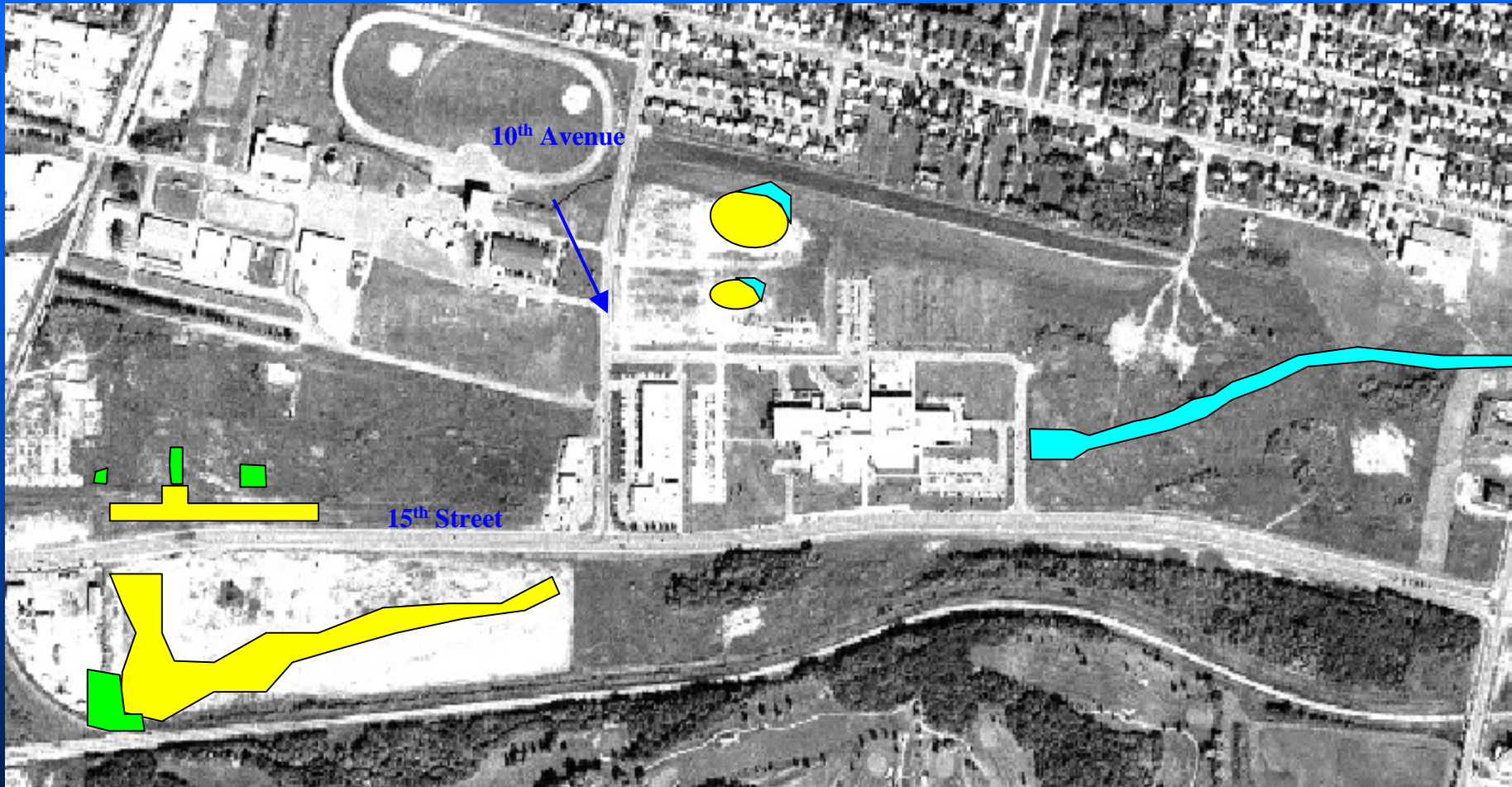
- Drained SFP site until Mid-1960's

Saskatchewan Forest Products

- Closed in Early 1970's



# Multiple Clean-ups

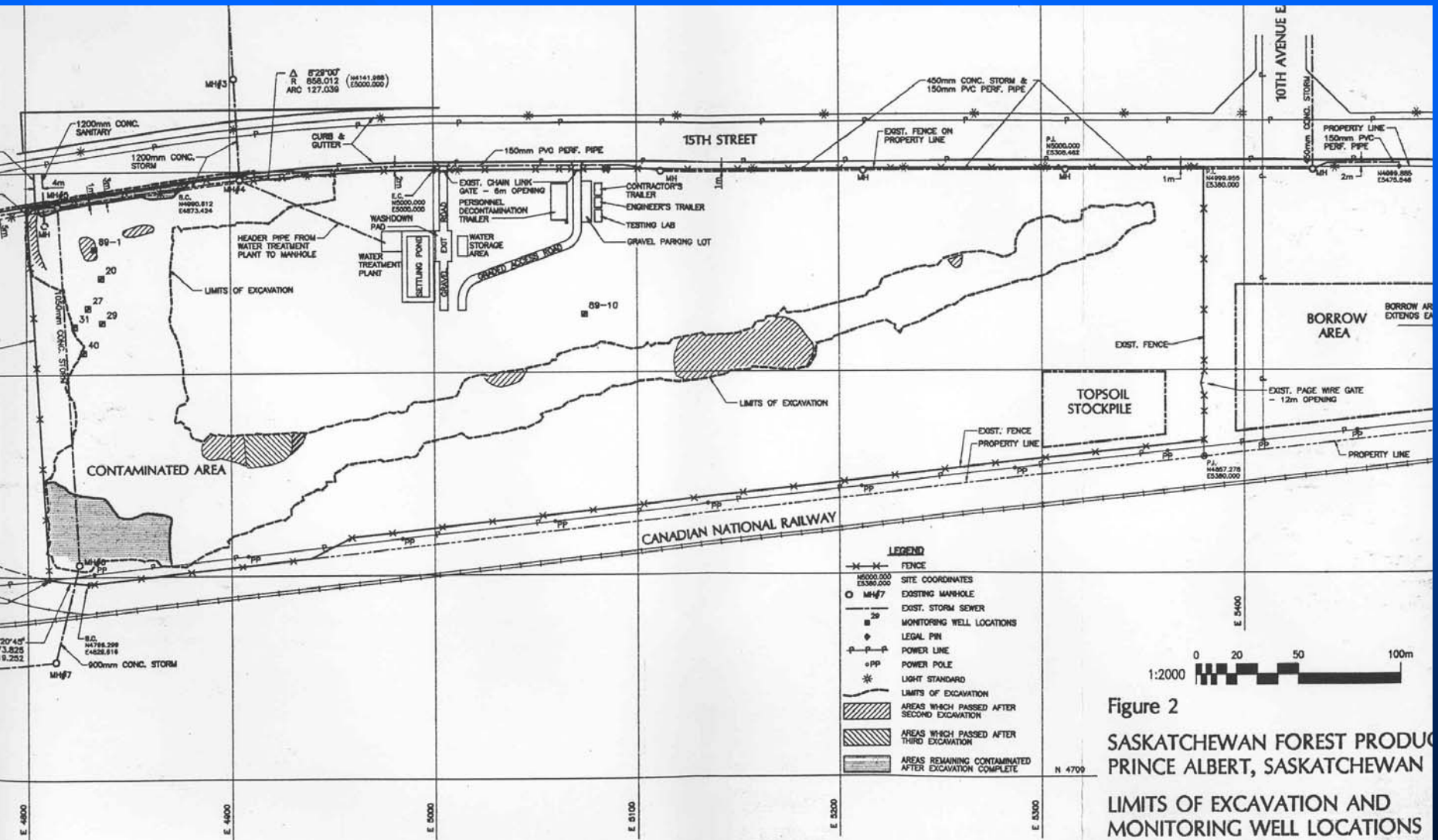


 1994 Clean up - (SFP, City of PA, CN Rail)

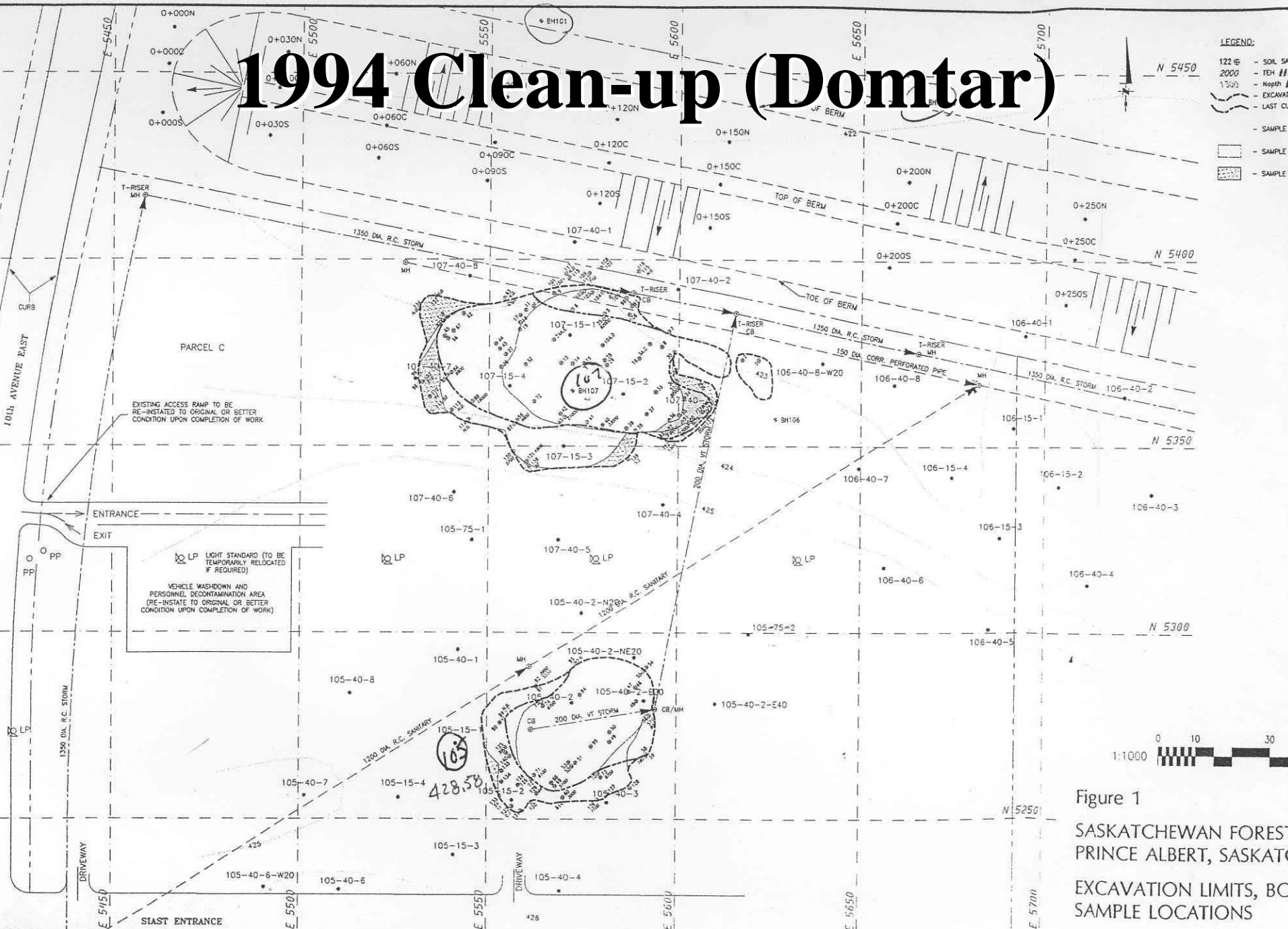
 City of PA Clean up - 1999 – 2000

 Centenary Fund Clean up - 2001-2004

# 1994 Clean-up (SFP)



# 1994 Clean-up (Domtar)



- LEGEND:**
- 122 S - SOIL SAM
  - 2000 - TCH #
  - 1300 - Neph #
  - - - - - EXCAVATION LIMITS
  - - - - - LAST CU
  - - - - - SAMPLE
  - - - - - SAMPLE
  - - - - - SAMPLE

EXISTING ACCESS RAMP TO BE RE-INSTATED TO ORIGINAL OR BETTER CONDITION UPON COMPLETION OF WORK

VEHICLE WASH-DOWN AND PERSONNEL DECONTAMINATION AREA (RE-INSTATE TO ORIGINAL OR BETTER CONDITION UPON COMPLETION OF WORK)

428.50

Figure 1  
SASKATCHEWAN FOREST  
PRINCE ALBERT, SASKAT  
EXCAVATION LIMITS, BO  
SAMPLE LOCATIONS



# As Things Were Left (1994)

- Due to budget and operational constraints, soils left in Exhibition Grounds' seasonal parking area were 10x CCME guideline. City believed the land-use would never change (managed risk).



# As Things Were Left (1994)

- Also CNR would not allow full excavation of the sludge pit near the railway on the south side of 15<sup>th</sup> Avenue, so the sludge pit was “encapsulated” in clay.
- Entire clean-up was done with goal of reducing the risk to the North Saskatchewan River.

# Centenary Funding

- In 1999, the Premier announced a funding program to celebrate the province's centennial.
- Funding was to go to projects that would provide environmental, economic, or social improvements to the province.
- The City of Prince Albert submitted an application under the Centenary program to remediate contamination at "Woodlands Campus" as the project was called.

# Centenary Funding

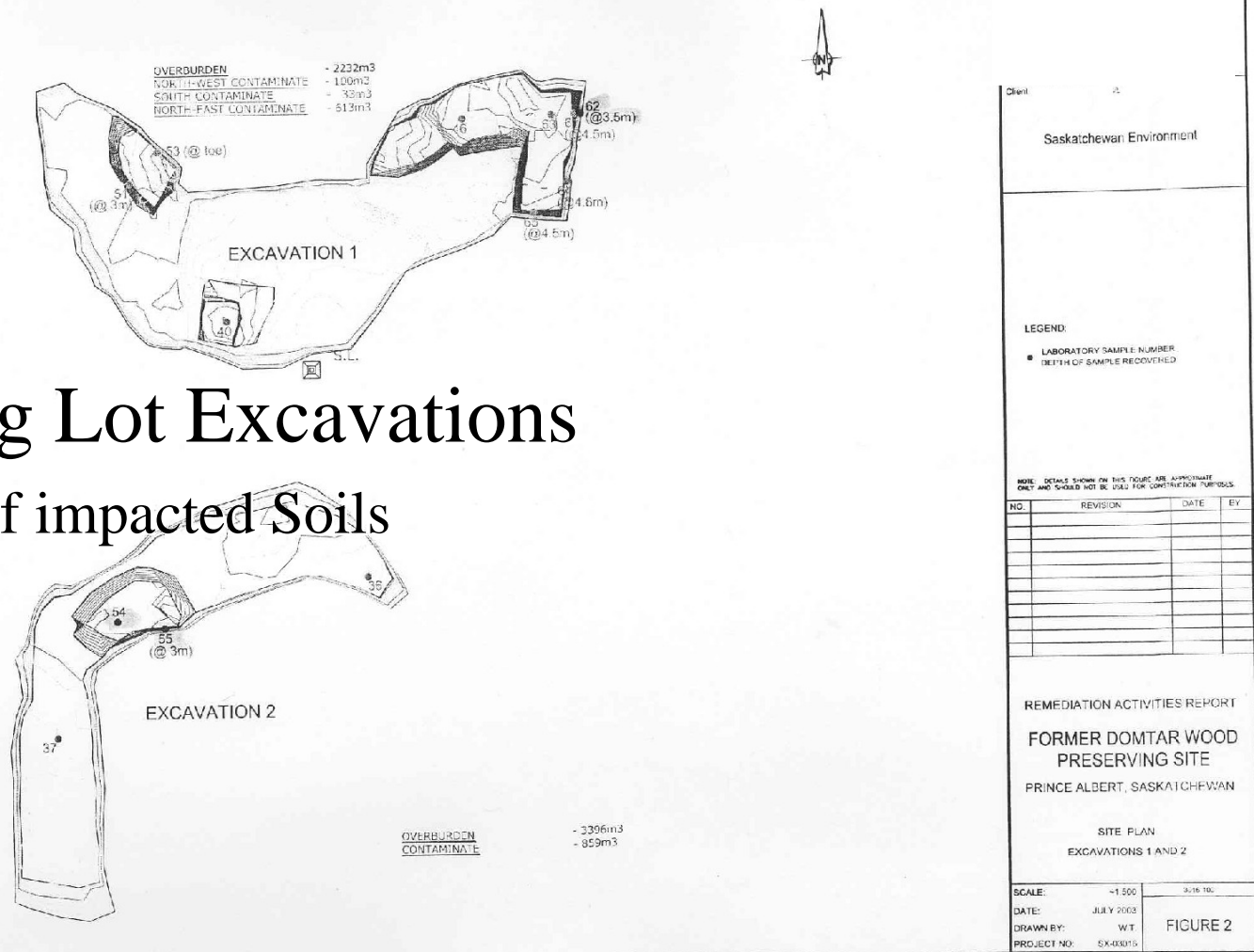
- Budget for the city project was \$1,000,000.00.
  - \$300,000 for 2001-2002.
  - \$350,000 for 2002-2003.
  - \$350,000 for 2003-2004.
- City is required to commit in-kind funding through labour, machinery, etc.



# 2002 Work – Parking Lot

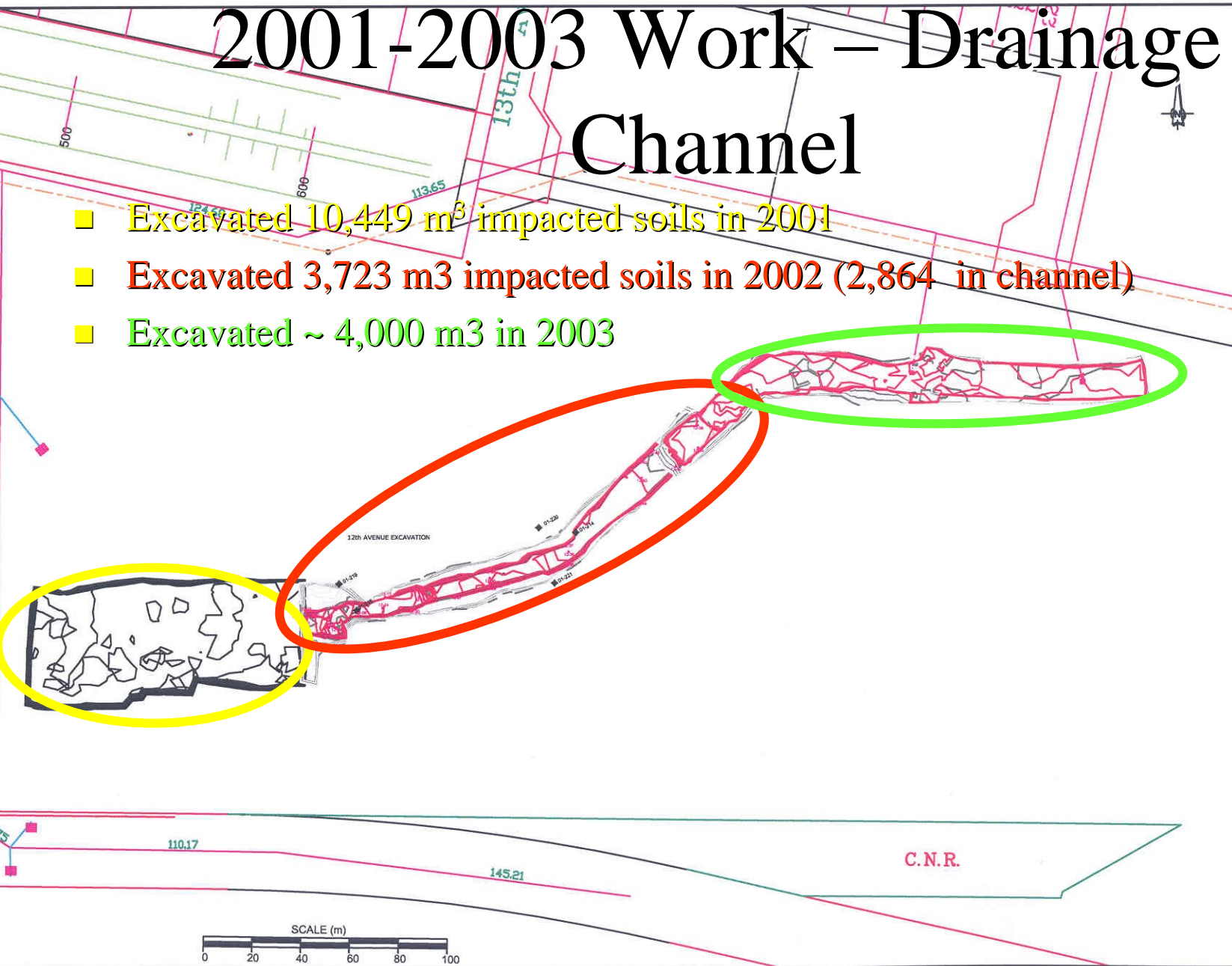
## ■ Parking Lot Excavations

■ 859 m<sup>3</sup> of impacted Soils



# 2001-2003 Work – Drainage Channel

- Excavated 10,449 m<sup>3</sup> impacted soils in 2001
- Excavated 3,723 m<sup>3</sup> impacted soils in 2002 (2,864 in channel)
- Excavated ~ 4,000 m<sup>3</sup> in 2003



LEGEND:

- 04800 SENTAR TEST LOCATION
- ⊕ BH10 CLIFTON TEST LOCATION
- 01-231 PMEL TEST LOCATION
- ⊕ AMEC 2003/2004 MONITOR WELL

NOTE: DETAILS SHOWN ON THIS FIGURE ARE APPROXIMATE ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

NO.	REVISION	DATE

REMEDIAL ACTIVITIES REPORT

FORMER DOMTAR WORKS  
PRESERVING SITE

PRINCE ALBERT, SASKATCHEWAN

12th AVENUE EXCAVATION  
PLAN OF EXCAVATION

SCALE:	-1:1500	3016-EXCA
DATE:	MAY 2004	FIGURE
DRAWN BY:	W.T.	
PROJECT NO.:	SX-03016	

An aerial photograph of a residential neighborhood. A yellow rectangle highlights a specific area in the upper-middle part of the image, which appears to be a grassy or undeveloped area between a road and a residential street. The text "The Berm Area" is overlaid in yellow, centered over the highlighted area. The image is split vertically by a white line.

# The Berm Area



# How the Berm Was Created

- 3 separate events:
  - Decommissioning of SFP and Domtar sites (site leveling).
  - Construction of 15<sup>th</sup> Street.
  - Construction of SIAST Woodland Campus
- Due to the method of creation, the berm is very difficult to characterize.



# Contamination in the Berm

- Because of its structure, the berm is working effectively to isolate any encapsulated contaminants from the environment.
- The mounded shape of the berm, combined with a well established vegetative cover, effectively limit any precipitation from penetrating the berm.
- There is therefore no “motive force” to cause the contaminants to move out of the berm.