



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

Indian and Northern Affairs Canada — Yukon Region
The Waste Management Program

Keeping Yukon Clean

For your health and the health of the environment



Canada 

For information regarding reproduction rights, please contact Public Works and Government Services Canada at: 613-996-6886 or at: droitdauteur.copyright@tpsgc-pwgsc.gc.ca

Published under the authority of the Minister of Indian Affairs and Northern Development and Federal Interlocutor for Métis and Non-Status Indians. Ottawa, 2010
www.ainc-inac.gc.ca
1-800-567-9604
TTY only 1-866-553-0554

QS-Y360-000-EE-A1
Catalogue: R3-146/2011E
ISBN: 978-1-100-18081-6

© Minister of Public Works and Government Services Canada

Ce document est aussi disponible en français.



Introduction

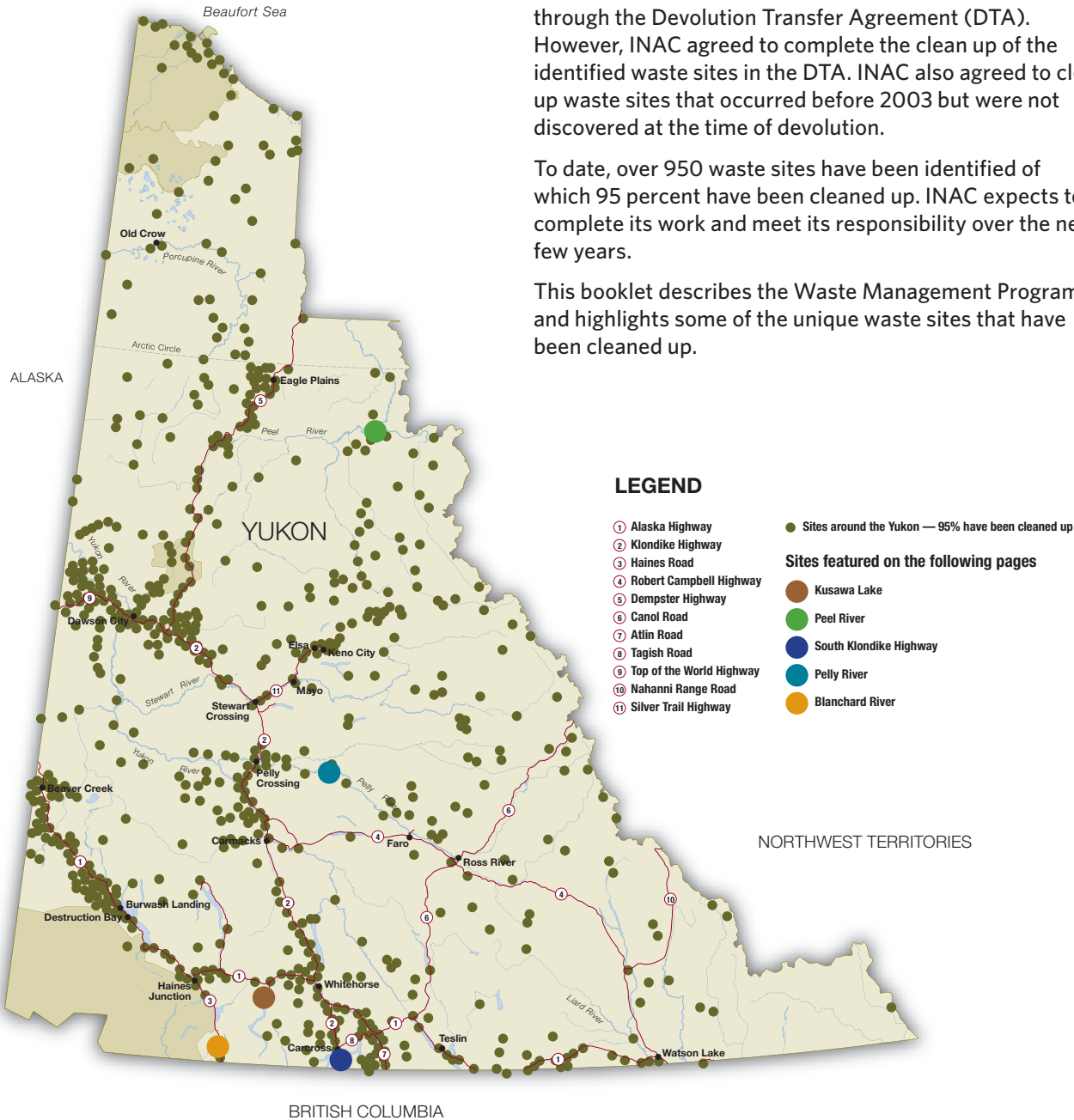
The Yukon has a long history of development ventures such as pipelines, mining, and military activity. This brought change to the territory and influenced the local economy. Many of these historic development projects left waste and environmental contamination that we continue to address today.

In the 1990s, Canada committed to cleaning up waste material abandoned on northern land under its responsibility — a commitment that continues to this day. Indian and Northern Affairs Canada (INAC) is responsible for this clean up.

In 2003, most of our responsibilities for the land and its resources were transferred to the Government of Yukon through the Devolution Transfer Agreement (DTA). However, INAC agreed to complete the clean up of the identified waste sites in the DTA. INAC also agreed to clean up waste sites that occurred before 2003 but were not discovered at the time of devolution.

To date, over 950 waste sites have been identified of which 95 percent have been cleaned up. INAC expects to complete its work and meet its responsibility over the next few years.

This booklet describes the Waste Management Program and highlights some of the unique waste sites that have been cleaned up.



How? A few details of the program

In the Yukon, Indian and Northern Affairs Canada (INAC) established the Waste Management Program to list, assess and clean up waste sites in the territory.

INAC Yukon Waste Management Program aims to safeguard the health and safety of Northerners and the environment for present and future generations.

Under this program, waste sites can include unwanted threatening or non-threatening material, equipment and/or buildings that have been abandoned.

The cost of waste site clean-up can range from a few thousand dollars to a few million, depending on the size and complexity. The current program has a \$20 million budget and a 10-year period to assess and clean up the remaining sites identified in the DTA.

The clean-up activities follow Yukon legislation and regulations, such as the *Environment Act*, *Water Act* and the *Yukon Environmental and Socio-economic Assessment Act*.

What? A few examples of waste sites cleaned up

There are many challenges to cleaning up waste sites in the Yukon, including the territory's extreme climate, short field seasons, and the remote location of most of the sites.

Each clean-up project had its own particular characteristics and challenges which often led to innovative northern solutions. The following are a few of the 950-plus clean-up stories.

1. Removing mercury — an innovative solution for remote locations

For many years, Environment Canada and INAC funded the operation of Yukon stations that recorded water levels of rivers and lakes (hydrometric stations). These stations housed a measuring tool (manometer) containing mercury. Over time, harsh weather and vandalism resulted in many of these tools breaking and releasing mercury in and around the stations. Mercury is known to be dangerous to human health and the environment.

Sixty-six of these stations were assessed and cleaned up. Approximately 15 tonnes of soil was removed and shipped for treatment.

Because these stations were in remote areas, it was a major challenge to clean them to the required level. Analysis of soil and air samples in real-time is very difficult. To address this issue, INAC staff researched many types of tools from around the world that would be portable and provide credible results.

They were successful in finding a tool that let them analyse the soil and sample air on site and in real-time. This greatly reduced the time and cost of helicopters, labour and laboratory work. It took four field seasons to clean up the 66 hydrometric sites.



KUSAWA LAKE

2. Peel and Caribou rivers area — working with the polluter

During the 1960s, in a remote area where the Peel and Caribou rivers meet, Shell Resources Canada conducted seismic exploration and oil and gas drilling. In 1975, the company did a final clean-up of the site, removing reusable material and burying remaining waste in a pit on site.



Over the years, the Peel River changed its course and, in 1994, the river encroached on the waste pit. INAC, Shell Canada and the Gwich'in Tribal Council initiated a clean-up project and tested for contaminants at the waste site. They found that there were high levels of the insecticide DDT. There was an estimated 2000 m³ of debris in the waste pit (enough to almost fill an Olympic-size swimming pool).



The work could not be done during the summer months due to unpredictable and changing water levels, and was therefore planned as a winter project. Working in the winter also meant that the contaminated material was frozen and contained. In January 2002, a 160-kilometre winter road was built to the site, following an existing path cut for seismic testing. Once dug up, the soil was transported out to a licensed landfill outside of the territory.



Most of the clean-up work was done in three months. INAC and Shell Canada each paid half of the cost. The Gwich'in First Nations Development Corporation provided the construction work, including excavation, transportation and disposal services. This created job opportunities for Yukoners.



3. Venus Mine — removing a danger to people and wildlife

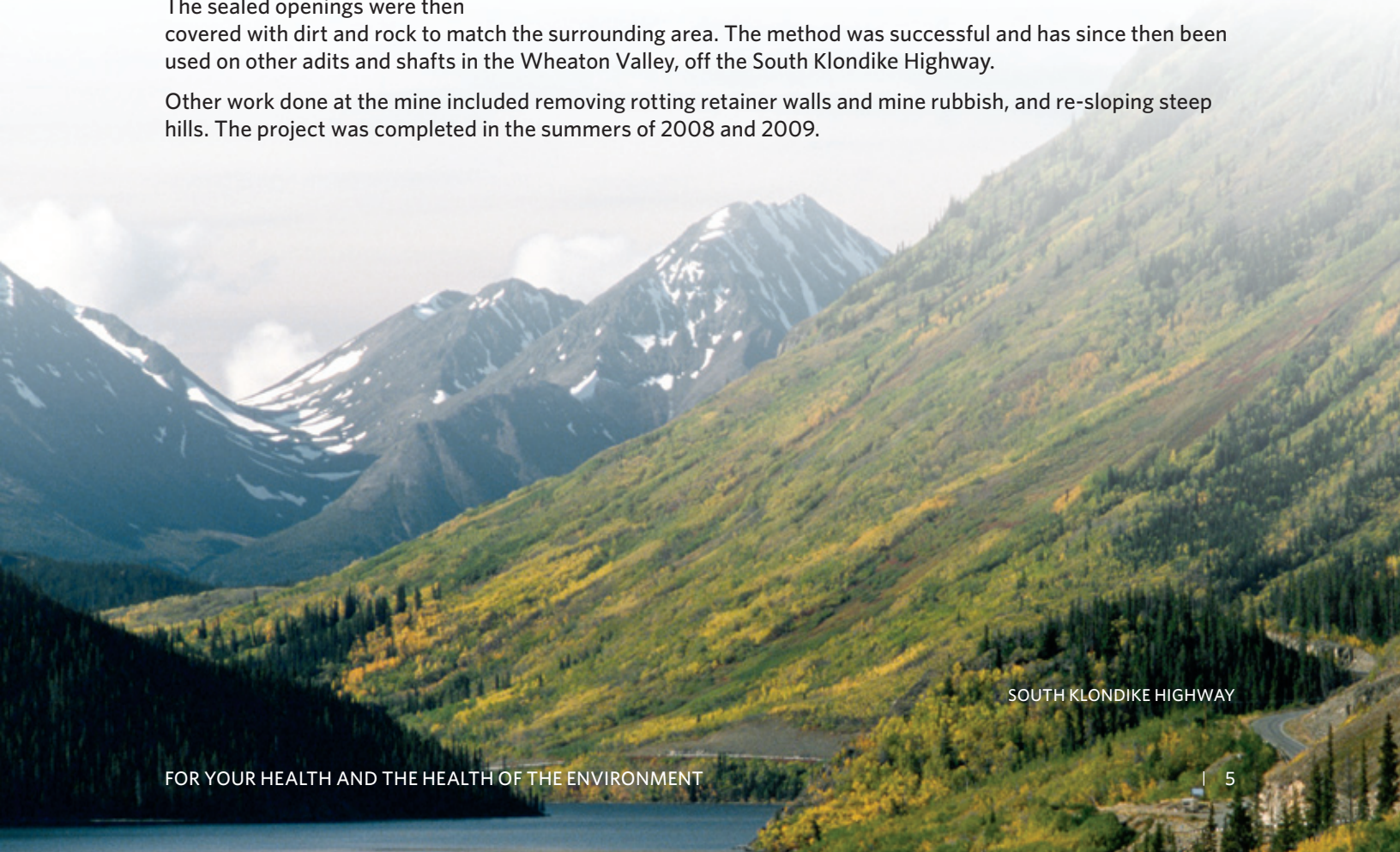
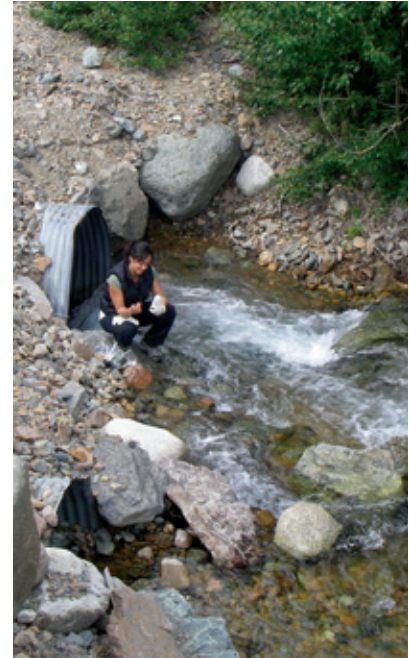
The Venus Mine was a gold and silver mine near Carcross in southern Yukon, 100km southwest of Whitehorse that closed in 1981.

At the abandoned mine, there were unstable tunnel openings (adits) into the underground mine and air openings (ventilation shafts) which were a threat to humans and wildlife. Adits with road access could be sealed using local rock material. Less accessible openings and shafts, however, required a different solution.

A light and portable spray-foam was tested as the possible answer to seal the opening. The foam was sprayed into the openings, and once it expanded and hardened it proved harmless and very strong.

The sealed openings were then covered with dirt and rock to match the surrounding area. The method was successful and has since then been used on other adits and shafts in the Wheaton Valley, off the South Klondike Highway.

Other work done at the mine included removing rotting retainer walls and mine rubbish, and re-sloping steep hills. The project was completed in the summers of 2008 and 2009.



SOUTH KLONDIKE HIGHWAY

4. Pelly River Barrels — a quick response to a newly discovered site

The Selkirk First Nation of Pelly Crossing, Yukon, was instrumental in the discovery and reporting of a waste site that existed prior to 2003.

During the summer of 2009, a member of the Selkirk First Nation found numerous oil barrels on the edge of the Pelly River. The river connects to the Yukon River and it is an area that attracts fishing and water-sport enthusiasts.

INAC assessed the site and found 61 rusting barrels of fuel that had been cached near the river long before 2003. Over time, the river bank eroded and the barrels were exposed. It was important that the barrels be removed as soon as possible.

The barrels were rolled into large nets, lifted by helicopter and taken to a gravel pit 60 kilometres away. There, the fuel was pumped into new barrels. In total, 27 barrels of fuel were recovered, filtered and given to the Selkirk First Nation to be used by the community. The old barrels were crushed for recycling.

The clean-up took 10 days.



5. Blanchard River Pump Station — “soil-farming”, an innovative approach for the North

The Blanchard River Pump Station is located in the Yukon, near the British Columbia border on the Haines Road. It was constructed in 1962, along the Haines-Fairbanks Pipeline route, and was used to pump fuel from the deep-water port at Haines, Alaska to military sites in the state. In 1971, the US Department of Defense closed the pipeline and land title reverted back to Canada. In 1986, the pump station was converted to a highway maintenance camp.



In the 1990s, it was discovered that the soil was contaminated with fuel and oil (hydrocarbons). The hydrocarbons were passing through the soil and picking up additional metals from an old burn pit on the site.

To clean up the area, the contaminated soil was dug up and separated. The soil with metal was shipped to a licensed landfill outside the territory and the soil with fuel was moved to a treatment facility in Whitehorse.



Approximately, 580 m³ (or 75 dump truck loads) of soil was removed. The soil was then turned regularly to expose it to the air. This “soil-farming” breaks down the fuel and oil naturally and the soil is then re-useable for industrial purposes.



In the 1990s, this organic “soil-farming” method was relatively new in northern climates. Successful efforts like this, supported use of this method to clean up other hydrocarbon-contaminated sites in the Yukon.



BLANCHARD RIVER

The Sites at a Glance

Canada is committed to protecting our northern environment and the health and safety of the people who live here. INAC is meeting its obligations to clean up waste sites that are its responsibility.

Modern federal and territorial laws and regulations prevent development waste from being left behind. Standards are higher today and enforcement is stricter. Many governments require an environmental security deposit, which means companies that use the land are required, by law, to provide up-front funding and plans to clean up the land when their activities are complete.



Since devolution in 2003, the Government of Yukon controls most mining and exploration activities in the territory and it is also responsible for ensuring the clean-up of any activities after 2003.

Along with keeping the territory clean, the Waste Management Program has provided many local economic and educational benefits. One such benefit was to increase our knowledge and skills of waste site clean up and management through partnership with Yukon College. Over the past 15 years, the program has hired many science and renewable resource program students for summer field work.

Canada remains committed to cleaning up waste sites that are its responsibility. Together, Northerners are keeping the Yukon clean for our health, the health of our families and our environment.

Number of sites assessed to date	964 total*
Number of sites cleaned up	537
Number of sites not requiring action because of no known health and safety issues	373
Number of sites left to clean up	54
<i>* Includes 15 new sites, newly discovered</i>	

For more information on the Waste Site Management Program:

Click: www.inac-ainc.gc.ca/yt

Visit: Waste Management Program office,
Environment Directorate, Indian and Northern Affairs
Canada - Yukon Region
Room 210 - 419 Range Road, Whitehorse, Yukon

Call: (867) 667-3868 or 1-800-661-0451

Fax: (867) 667-3801

Email: yukon@inac-ainc.gc.ca

Mail: INAC — Environment Directorate
Room 415C - 300 Main Street
Whitehorse, Yukon, Y1A 2B5



BENNETT LAKE



WHEATON RIVER