Aboriginal Affairs and Northern Development Canada
Affaires autochtones et Développement du Nord Canada

WHAT'S HAPPENING in the Sahtu Settlement Area?

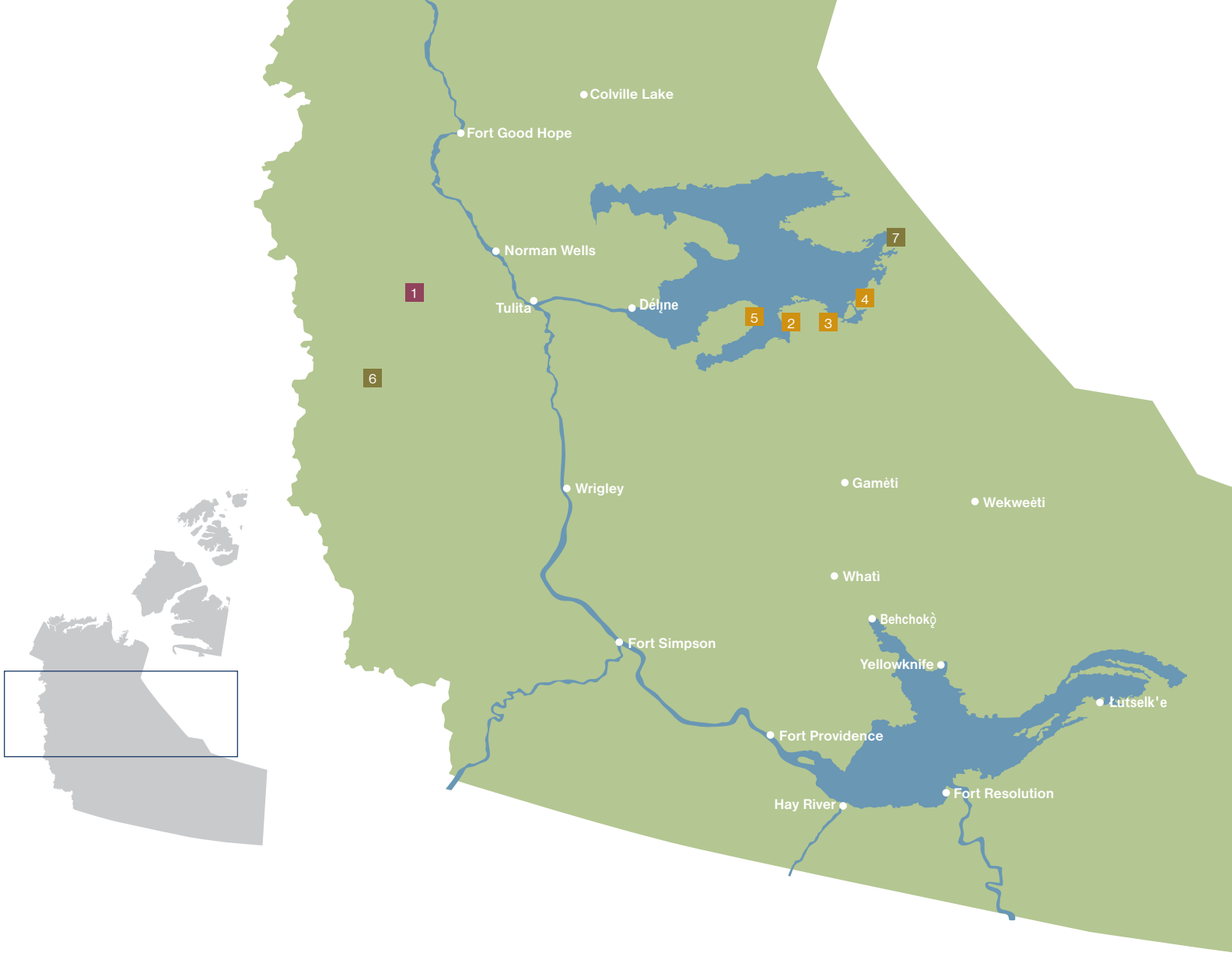
Contaminated Site Remediation

2012 in Review

About The Contaminants And Remediation Directorate

Aboriginal Affairs and Northern Development Canada (AANDC) recognizes the importance of cleaning up contaminated sites and preventing future contamination. The Contaminants and Remediation Directorate (CARD) in the NWT currently manages over 30 contaminated sites at various stages of remediation. Many of these sites became the Government of Canada's responsibility after private owners relinquished their properties according to the legislation of the day, or when companies went bankrupt. The properties then reverted to the Crown, and as representative of the Crown, AANDC became custodian of these properties and related remediation activities.

Canada



10-Step Process

In 1999, the Contaminated Sites Management Working Group released the document *A Federal Approach to Contaminated Sites* outlining a 10-step process for addressing a federal contaminated site. These guidelines were developed to ensure that there would be a common approach to the management of contaminated sites.

For more information on the 10-step process, please visit http://www.federalcontaminatedsites.gc.ca/managing-gestion/index-eng.aspx

A number of contaminated sites have been identified in the Sahtu Settlement Area. These sites are assessed and remediated based on level of concern. Many of the high priority sites are abandoned mines located within the Dél̨ne district.

The following sites were identified by AANDC and the Sahtu as priority sites for remediation to allow, to the extent possible, renewed traditional use of the areas.

LEGEND:

Assessment Sites
Steps 1-7

Sites In Remediation
Steps 8-9

Completed/Monitoring
Step 10

1 Canol Trail

2 Silver Bear Properties

3 Contact Lake

4 El Bonanza/Bonanza

5 Sawmill Bay

6 June Lake

7 Port Radium Mine

Assessment Sites

Old buildings along the Canol Trail

1 Canol Trail

The Canol Trail was part of the CANOL (Canadian Oil) Project, a cooperative effort between the United States and Canada during World War II to ensure a continuous supply of oil from Norman Wells, NWT to American Forces stationed in the Pacific. Oil flowed along the route to Whitehorse starting in April 1944, but one year later, the entire project was abandoned. Although several salvage operations were conducted, remnants of the project lay strewn along the NWT portion of the trail.

CONCERNS ALONG THE TRAIL INCLUDE:

- Oil or fuel contaminated soil
- Buildings containing asbestos materials
- Crude oil storage and separator tanks
- Surfaces painted with lead-based paint
- Hazardous fluids and materials
- Physical hazards such as buildings and bridges in disrepair, drums, telephone wire, abandoned pipeline and rusted vehicles

REMEDIATING THE SITE

Due to the complexity of the site, the assessment and remediation of the trail is a long-term initiative.

WORK COMPLETED:

2007-2009 - Aerial and ground review of the entire Trail. Compiled an inventory of abandoned waste materials and areas of potential concern.

2009 - Environmental Site Assessments performed at nine sites along the Canol Trail.

2010 - Environmental Site Assessments performed at 18 more sites.

2012 - Additional Environmental Site Assessment completed at specific locations to find the volume of oil and fuel contamination, and to collect information for the Risk Assessment.

2012 - Human Health and Ecological Risk Assessment conducted.

FUTURE PLANS

Activities planned for 2013-14:

- Finalize Human Health and Ecological Risk Assessment
- Complete Archaeological Impact Assessment
- Develop a Remedial/Risk Management Strategy (Remedial Action Plan)

An Assessment and Remediation Working Group was established to facilitate communication of the project's progress during the assessment phase of the project and to engage with key stakeholders to ensure all interests are identified, discussed, and managed using an acceptable approach. Moving into the next Phase of work (Remedial Action Planning), the function of the Working Group will be reviewed and revised.

Remedial options will be evaluated through consultation with the Government of the Northwest Territories (GNWT), local communities and organizations. The trail's heritage value will be taken into account throughout.

The GNWT has a commitment through the Sahtu Dene and Métis Comprehensive Land Claim Agreement to develop the Canol Heritage Trail as part of the proposed Doi T'oh Territorial Park. Since the majority of the Canol Trail is on Crown Land, a land transfer agreement between the Crown and the territorial government is required prior to park development.

The land transfer is currently being discussed at the Devolution negotiations between the Government of Canada and the GNWT. Negotiations may affect the project's timelines, remediation plans and future land transfer requirements. The Remediation Team meets regularly with the GNWT's Department of Industry, Tourism and Investment to work together and ensure that park development is the end goal. ■

The majority of contaminated sites to be remediated in the Sahtu are located in the eastern region of the Great Bear Lake area. The Great Bear Lake project includes the Silver Bear Properties, Contact Lake, El Bonanza/Bonanza and Sawmill Bay as described below.

Currently the funding is on hold for the remediation of these sites. Discussions are ongoing within AANDC and follow up with the communities will occur once there is information to share.

Sites in Remediation

2 Silver Bear Properties

Silver Bear Properties is a collection of former silver, copper and bismuth mines located in the Camsell River area. Terra, Northrim, Norex, Graham Vein, and Smallwood make up the Silver Bear Properties.

Terra Mine is the main Silver Bear site and has a large camp and mill complex. Ore was processed and tailings were deposited into the HoHum tailings pond. There is also a group of large fuel tanks that led to significant fuel contamination in the soil.

CONCERNS AT THE SITE INCLUDE:

- Elevated levels of metals in surface waters in some waste rock and two tailings ponds, including HoHum Pond at Terra Mine and Hermandy Pond at Northrim
- Hazardous waste materials including asbestos, lead paint, residual mill reagents and waste fuels
- Hydrocarbon contaminated soils associated with past fuel handling activities
- Old buildings, mine structures and openings on the site that pose safety hazards ■

3 Contact Lake

The Contact Lake Mine is a former silver and uranium mine located on Contact Lake. The Contact Lake Mine is much smaller than the Silver Bear Mines but still has environmental concerns.

WORK COMPLETED:

2010-11 – Phase I remediation complete. Old buildings – asbestos was removed from buildings and the wooden buildings were burned. Debris was consolidated so that it can be removed during Phase II remediation.

OUTSTANDING CONCERNS:

- Waste rock and processed tailings deposited downslope of the mine site, located in and around a small tailings pond
- Elevated levels of metals in surface waters limited to the tailings pond
- A fuel storage site associated with the mine located in the east arm of Echo Bay, approximately five kilometres away by road
- Mine openings on site that pose safety hazards ■

4 El Bonanza/ Bonanza

The El Bonanza and Bonanza sites are former silver mines located on the Dowdell Peninsula on the eastern end of Great Bear Lake.

WORK COMPLETED:

2010-11 – Phase I remediation complete. Old buildings – asbestos was removed from buildings and the wooden buildings were burned. Debris was consolidated so that it can be removed during Phase II remediation.

OUTSTANDING CONCERNS:

- A limited amount of soil containing hydrocarbons
- Drums of diesel
- Waste rock extending into Silver Lake
- Mine openings on the site that pose safety hazards
- Scrap metal and general debris ■

The Sawmill Bay site as seen from the air during a site visit in June 2011.

5 Sawmill Bay

The Sawmill Bay site was originally developed to support timber requirements for the Port Radium mine and is located on the northern part of the Leith Peninsula on the eastern end of Great Bear Lake. The Sawmill Bay site is a relatively small site compared to the Silver Bear Mines but has historical significance as part of the uranium ore transportation route from Port Radium.

From the mid 1940s, Sawmill Bay was used as a uranium ore transfer point. Spillages during transfer operations resulted in the contamination of a few small areas at the site. Licensable material associated with these operations was removed from the site during a 1997 clean-up led by the Low-Level Radioactive Waste Management Office (LLRWMO) of Natural Resources Canada (NRCan). The remaining contaminated soil at the site is at concentrations marginally above the levels that occur naturally for uranium in soil at the site. The site continues to be the responsibility of the federal government.

AANDC and NRCan continue to work together to make sure remaining clean-up efforts at Sawmill Bay are coordinated.

WORK COMPLETED:

2010-11 – Phase I remediation complete. Approximately 12,000 barrels were cleaned and crushed. Debris was consolidated so that it can be removed during Phase II remediation. Hazardous materials were consolidated and containerized.

OUTSTANDING CONCERNS:

- Small amounts of hydrocarbon and asbestos residue
- Old buildings, scrap metal and general debris
- Approximately 1,500 m^3 of uranium ore-contaminated soil ■

Remediating the Great Bear Lake sites

Remediation activities completed in the past three years have addressed a number of the components.

WORK COMPLETED:

2004-10 – Phase I, II and III Environmental Site Assessment work and ongoing water monitoring at all of the sites.

2007-08 – Human Health and Ecological Risk Assessments completed for all sites but Sawmill Bay.

2008-09 – Phased approach to addressing sites was developed during community meetings.

2009-10 – Land Use Permit and Water License applications submitted to the Sahtu Land and Water Board.

2010-11 – Land Use Permit and Water License issued, Phase I remediation begun, Sawmill Bay Remedial Action Plan finalized, Traditional Knowledge studies completed for Contact Lake, El Bonanza, and Sawmill Bay.

2011-12 – Phase I remediation was completed. The winter road route application submitted for consideration to the Mackenzie Valley Land and Water Board.

WHAT'S NEXT FOR THE GREAT BEAR LAKE SITES?

The funding for the remediation of the Great Bear Lake Sites is currently on hold. Discussions are on-going and updates will be provided to the community when they are available. ■

Remediation Completed/Monitoring

6 June Lake

The June Lake site is a former fuel cache on the edge of June Lake in the Mackenzie Mountains.

CONCERNS AT THE SITE INCLUDED:

- Physical hazards such as fuel drums and camp debris
- Possible hydrocarbon contamination in soil

WORK COMPLETED:

2012-13 – Phase II Environmental Site Assessment conducted and all drums and waste from the site were removed during the 2012-13 field season.

WHAT'S NEXT?

The site is now cleaned up and no further work is required. ■

7 Port Radium Mine

Port Radium is a former radium, uranium, and silver mine located along the eastern shore of Great Bear Lake, 440 km north of Yellowknife and 265 km east of the Dene community of Dél̨ne. The site was decommissioned to silver mine standards in 1982. Beginning in 2000, the site was reassessed and further studied, due to concerns raised by the community of Dél̨ne. All studies and recommendations on how to address the site were developed jointly by Canada and Dél̨ne. Remediation of the site was completed in 2007/08, followed by a long-term monitoring program.

Long-term monitoring is a very important commitment in the Port Radium Remediation Plan. In 2012, the fifth year of the monitoring program, scientists completed a more detailed study of the site. They looked at the health of fish in the Great Bear Lake area around Port Radium, as well as the plants and the soil. They also examined the lake bottom and the aquatic invertebrates that live in the sediments close to the site. Finally, they completed a gamma survey of the entire Port Radium site, to make sure that the radiation covers are working properly.

FUTURE PLANS

Following the 2012 detailed site study, the results will be used to assess the future requirements of the second phase of long-term monitoring. AANDC will visit Dél̨ne in 2013 to update the community on the results of the long-term monitoring program.

The Canadian Nuclear Safety Commission will be conducting a site inspection at Port Radium in 2013 as per the requirements of the Waste Nuclear Substance Licence for the site to confirm the remediation works are functioning properly. ■

AANDC Donates Artifacts from Port Radium

In the summer of 2012, AANDC donated artifacts to the Prince of Wales Northern Heritage Centre in Yellowknife and the NWT Mining Heritage Society. Unused ore bags from the 1930s were recovered as part remediation work at Port Radium, NWT in 2008. Items like this are an important part of the North's mining heritage and the preservation of them helps to preserve the North's cultural geoheritage. ■

The Port Radium site, as seen from the air during the 2011 monitoring program.

Northern Contaminants Program

The Northern Contaminants Program (NCP) was established in 1991 in response to concerns about human exposure to elevated levels of contaminants in wildlife species that are important to the traditional diets of northern Aboriginal peoples. Early studies found a wide variety of substances, many of which had no arctic or Canadian sources, but which were, nevertheless, reaching unexpectedly high levels in the arctic ecosystem.

Each year, NCP researchers test various traditional foods in order to determine contaminant level trends. This research is a very important part of the Contaminants and Remediation Directorate Program as it is the primary research used to determine community diets and potential impacts caused by contaminants at a site.

The NCP is represented in the Northwest Territories by a regional committee called the Northwest Territories Regional Contaminants Committee. The committee develops and coordinates research priorities for the NWT and its membership includes Aboriginal organizations, government departments and health boards. It provides information to the public about the presence and possible effects of contaminants and, in association with the Government of the NWT - Department of Health, information is also provided to the public on the risks and benefits of consuming traditional foods.

The NCP allocates funds for research and related activities in five main areas:

Human Health, Environmental Monitoring and Research, Community Based Monitoring and Research, Communications, Capacity, and Outreach, and National/Regional/International Coordination and Aboriginal Partnerships.

Research in the Sahtu Settlement Area this year has included:

- Examining benefits and risks of traditional and market food
- Analysis of new and emerging contaminants in burbot from Fort Good Hope, NWT

For results or additional information on these subjects, please contact the AANDC NT Region NCP representative at 867-669-2665.

If you see a Contaminated Site or have questions about sites in your area, contact us:

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This Publication is also available in French under the tilte: Que se passe-t-il dans la région visée par le Règlement du Sahtu?