



Indian and Northern
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WHAT'S HAPPENING

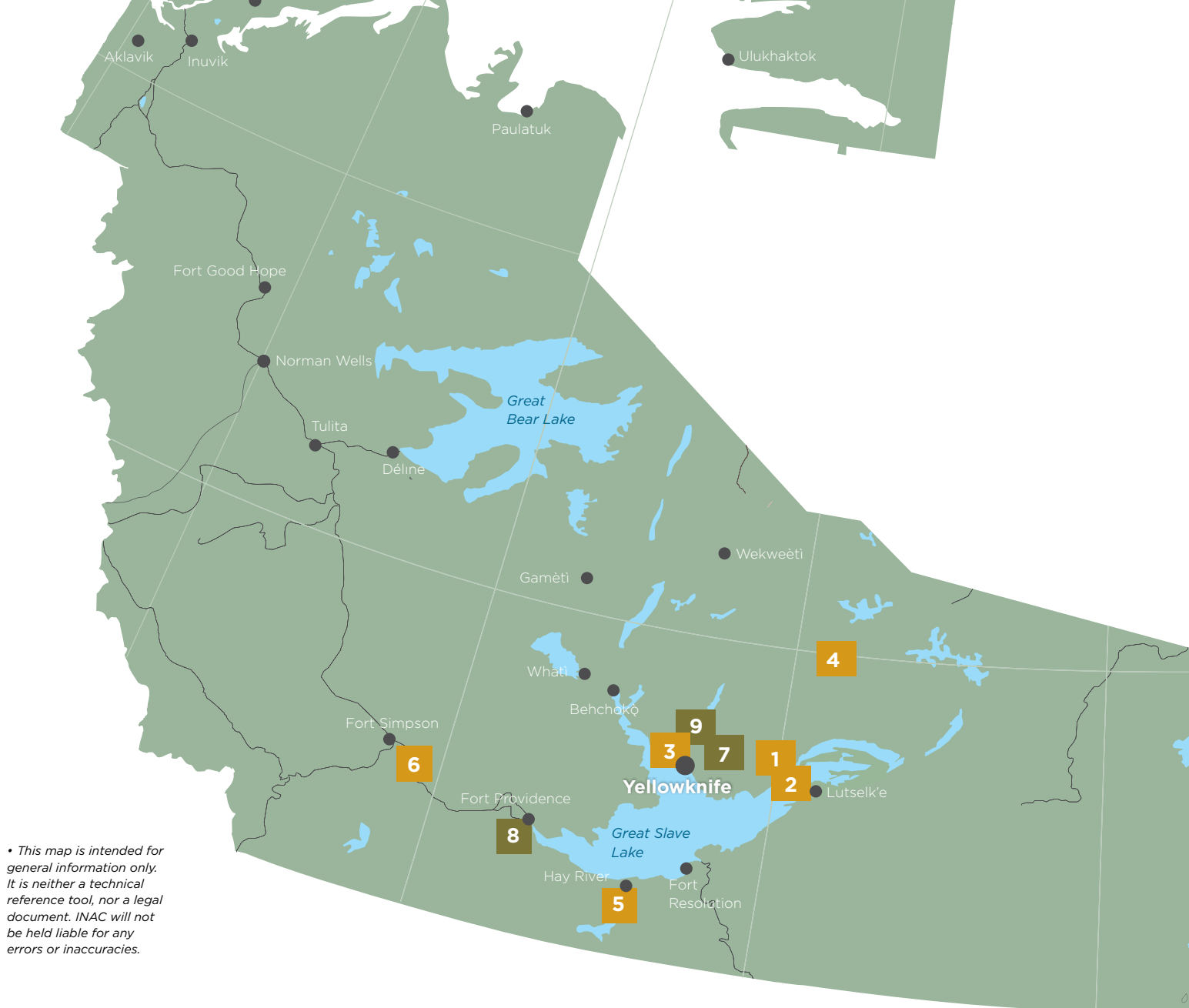
in areas subject to
on-going negotiations?

Contaminated Site Remediation

2010 in Review

About the Contaminants and Remediation Directorate

Indian and Northern Affairs Canada (INAC) 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, INAC became custodian of these properties and related remediation activities.



10 Step Process

In 1999, the Contaminated Sites Management Working Group (CSMWG) 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 www.ainc-inac.gc.ca/ai/scr/nt/cnt/cln/fcsap/fcsap-10/index-eng.asp.

LEGEND:

- Assessment Phase**
Steps 1 to 7
- Remediation Phase**
Steps 8 and 9
- Complete / Monitoring**
Step 10

- 1 Bullmoose Mine/Ruth Mine ¹**
- 2 Great Slave Lake area sites ²**
- 3 Giant Mine**
- 4 Tundra Mine**
- 5 Hay River Sour Gas Wells**
- 6 Checkpoint Highway Maintenance Yard**
- 7 Hidden Lake Mine**
- 8 Axe Point Mine**
- 9 Discovery Mine**

- ¹ Storm, Joon, Beaulieu, Spectrum Lake, Chipp Lake Mine
- ² Blanchet Island Mine, Outpost Island Mine, Copper Pass Mine, Destaffany Mine)

Sites in areas subject to ongoing negotiations

Approximately 34 sites underwent reconnaissance in 2010

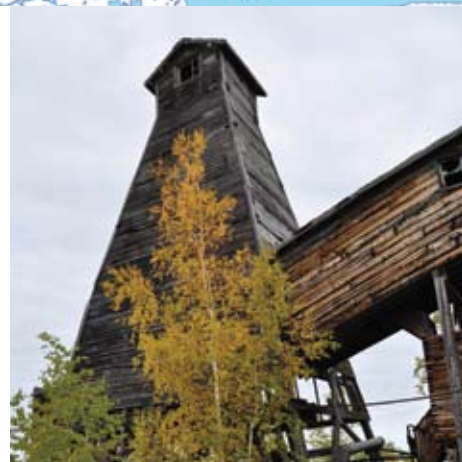


1 Bullmoose Mine/Ruth Mine Area
Bullmoose, Ruth, Storm, Joon, Beaulieu, Spectrum Lake, Chipp Lake Mines

These sites are being assessed together due to their close proximity. The sites are located between 74 and 90 km east of Yellowknife and the majority of activity at these sites was gold exploration and mining. Operations at each of the sites occurred on and off between the 1940s and 1980s.

CONCERNS AT THE SITE

- Hydrocarbon contamination
- Waste rock and tailings with metal contamination
- Physical hazards such as old buildings, debris and mine shaft openings.



WORK COMPLETED

2009 Site investigations were carried out at Bullmoose and Ruth mines
2010 Development of draft Remedial Action Plans began for Bullmoose and Ruth mines
2010 Site investigations were carried out at the other sites

FUTURE PLANS

In 2011, once the additional assessment information for the other sites is collected, a draft Remedial Action Plan will be prepared and will be available for review by interested parties. ■



2 Great Slave Lake Area

Blanchet Island, Outpost Island, Copper Pass, Destaffany Mines

These mine sites are located near or within the East Arm of Great Slave Lake. The sites are being assessed together due to their close proximity to one another.

CONCERNS AT THE SITE

- Hydrocarbon contamination
- Waste rock and tailings
- Physical hazards such as old structures, unsealed mine openings, drums and camp debris.

WORK COMPLETED

2009 Site investigations were carried out at Outpost and Blanchet mines

2010 Site investigations were carried out at DeStaffany and Copper Pass Mines

FUTURE PLANS

Assessment work will be completed at all sites in 2011. Upon completion of this work, a draft Remedial Action Plan will be developed and available for review by interested parties. ■

3 Giant Mine

For more information on Giant Mine check out the *What's Happening at Giant Mine?* newsletter available at <http://www.ainc-inac.gc.ca/ai/scr/nt/ntr/pubs/wh10-eng.asp>. ■

4 Tundra Mine

Tundra Mine is a former gold mine located 240 km northeast of Yellowknife. Mine operations began in 1964. This is one of three mines that reverted to the Crown in 1999 when the owner of the mine at the time, Royal Oak Mines Inc., went into receivership. Royal Oak used the site to process ore and to dispose of tailings from nearby Salmita Mine (remediated in the late 1980s).

CONCERNS AT THE SITE

- The water in the Tailings Containment Area (TCA) has elevated levels of arsenic and water downstream from the TCA has been affected
- Old buildings
- Hazardous waste
- Hydrocarbon impacted soils

WORK COMPLETED

1999 Care and maintenance of the site included dam repairs, landfill repairs, geotechnical inspections of dams, and water management and water quality monitoring

2007 The initial remediation was completed and included the removal of buildings and hazardous waste, construction of a non-hazardous landfill and the capping of mine openings

2009-10 Water treatment was carried out on-site to treat the water in the Tailings Containment Area

2010 The contract for remaining remediation was awarded and water treatment of the tailings containment area continued

FUTURE PLANS

The contractor will fully mobilize to site using the winter road in 2011. The remediation work will take three to four years to complete and will include treating water in the tailings containment area, treating hydrocarbon impacted soils, covering tailings and waste rock, and decommissioning dams. Following site closure, long-term monitoring will begin. A monitoring plan for the site has been developed and includes monitoring fish health and the water quality on-site and downstream of the tailings containment area. ■

5 Hay River (Frobisher) Sour Gas Wells

There are seven abandoned gas wells near the Hay River Golf Course/Ski Club, approximately 12 km outside the Town of Hay River. In 1922, and again in the 1940s, test wells were drilled in the area by the Frobisher Exploration Company Limited of Yellowknife. Although some gas was discovered at first, there was no actual oil found and the wells were abandoned.

CONCERNS AT THE SITE

- There is a potential for the wells to discharge sour gas
- The gas wells could pose a physical hazard

WORK COMPLETED

2005 The wells were tested for hydrogen sulphide and overall stability, and options were considered for closing the wells

2010 A design/build contractor was hired to design and close the wells.

FUTURE PLANS

Closure of the wells will be complete in 2011 and final site clean-up and inspection of the closed wells is planned for 2011/12. ■

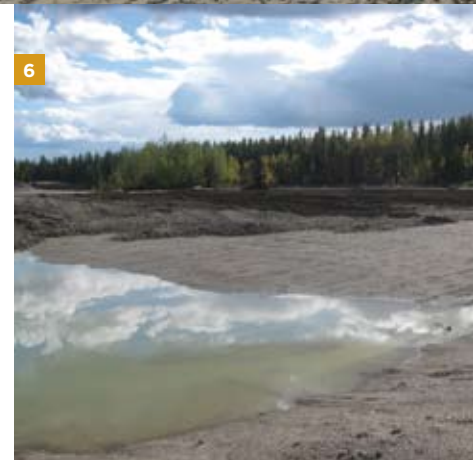


6 Checkpoint Highway Maintenance Yard

The former Checkpoint Highway Maintenance Yard was originally a highway maintenance area built in the 1970s and was later used as a logging and milling operation in the 1990s. It is located 63 km south of Fort Simpson, in the Northwest Territories. Remediation of the site is being carried out by the Government of the Northwest Territories Department of Transportation with funding support from INAC.

CONCERNS AT THE SITE

- Elevated levels of hydrocarbons and metals in groundwater at the site; however, there was no indication of contamination of Jean Marie River from these sources
- A dump at the site which contains buried waste, crushed fuel drums, tires, wood, fibreglass insulation, metal debris, a culvert and a vehicle
- Surface domestic debris including appliances, tires, empty drums and scrap building materials



WORK COMPLETED

2010 Contaminated soils were excavated and treated; buried hazardous and non-hazardous waste was dug up and will be disposed of at a licensed waste disposal facility.

FUTURE PLANS

The excavation of hydrocarbon-impacted soils and buried waste will continue for two to three years. Water quality monitoring will continue at the site until remediation is complete. ■



7 Hidden Lake Mine

Hidden Lake Mine is a former underground gold mine located 45 km northeast of Yellowknife in the Northwest Territories. The mine opened in 1959 with most of the mining production taking place in 1968. Since closure in 1969, there has been very limited activity at the site.

HISTORICAL CONCERNS AT THE SITE

- Tailings with metals and hydrocarbon contamination
- Surface fuel contamination around the sites of old buildings and fuelling areas
- Physical hazards such as abandoned mining equipment, unsecured mine openings, scattered metal debris and drums, and buried scrap metal
- Submerged metal drums near the dock area

WORK COMPLETED

2009 The Remedial Action Plan was finalized



2010 Remediation was completed and included the removal of tailings and hydrocarbon impacted soils, backfilling of the west shaft, capping of the east shaft, debris collection, and final site grading

FUTURE PLANS

On-site remediation is complete and demobilization from site occurred in February 2011 on the winter road. A final round of water quality sampling will take place in the spring of 2011 to confirm the remediation was successful, followed by long-term monitoring of the mine cap as required. ■

8 Axe Point Mine

Axe Point is located on the Mackenzie River, 60 km west of Fort Providence. The site was in operation for several years as an airstrip, staging area and camp along the winter road to Norman Wells for the American military during World War II.

CONCERNS AT THE SITE

- Elevated levels of hydrocarbons and metals in soils and groundwater
- Buried materials
- Physical hazards such as collapsed buildings, equipment and metal debris
- Elevated levels of arsenic, lead and uranium in some soil at the site

WORK COMPLETED

2007 Remediation work concluded with the removal of surface and hazardous debris, filling in and grading of cellars, and monitoring of water quality.

FUTURE PLANS

With remediation complete and all contamination removed, no additional site specific monitoring is required. ■

9 Discovery Mine

Discovery Mine was an abandoned gold mine located on the west shore of Giauque Lake, approximately 80 km northeast of Yellowknife. The mine operated from 1949 to 1969 and at the time was one of the most profitable gold mines in the country.

CONCERNS AT THE SITE

- Approximately 1.1 million tonnes of acid-generating tailings containing mercury
- Asbestos
- Lead-based paint
- Physical hazards such as old buildings, mine structures, unsealed mine openings
- Soils containing hydrocarbons

WORK COMPLETED

2008 Remediation was completed

FUTURE PLANS

Short-term monitoring began in 2009 and in 2010-11, INAC will complete a performance assessment of the remedial conditions to compare the monitoring results to the remedial objectives. Based on the outcome of this evaluation further monitoring requirements will be determined. ■



Community Involvement

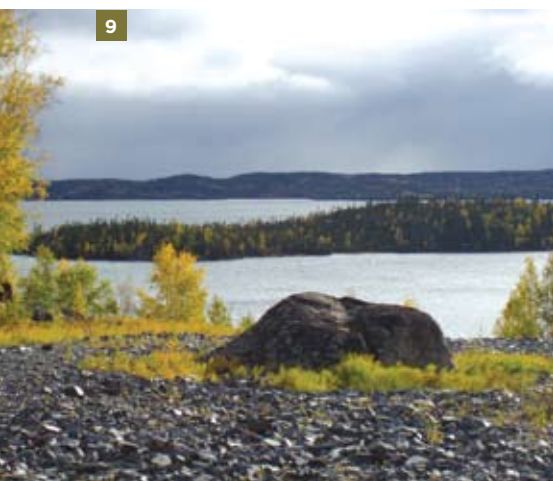
Engagement with nearby communities is an essential part of the remediation process. INAC commits to working collaboratively to ensure community concerns and input are taken into consideration throughout each project. Community information sessions are held each year to update the nearby communities on the progress of remediation, assessment and monitoring of the sites.

Success of remediation projects is due, in large part, to the participation of those who use the land traditionally. Elders, in particular, play an important role in the remediation of these sites. They participate in site tours, and provide

valuable knowledge, experience and suggestions in determining remedial options for the sites. Traditional knowledge studies provided data on the historical and traditional uses of the site, as well as information on soil and groundwater quality.

In 2010, information events were held in Yellowknife and Hay River. Concerns and suggestions raised at these meetings have helped guide the assessment work and remediation plans for the sites.

In 2011, CARD will continue to engage communities regarding contaminated sites currently being addressed in the NWT. ■





Northern Contaminants Program

photo credit: Paul Vecsei

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.

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:

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

Research in Areas Subject to On-going Negotiations has included:

- Mercury levels in trout at Cli Lake and Trout Lake.
- Contaminant levels (Mercury, PCBs, Persistent Organic Pollutants) in trout and burbot on Great Slave Lake near Lutsel K'e and Fort Resolution

For results or additional information on these subjects, contact the INAC NT Region NCP representative at (867) 669-2416. ■



**If you see a
contaminated site,
or have questions
about sites in your
area, contact us:**

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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-Y324-002-EE-A1
ISSN 1918-9427

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Government Services Canada

Cette publication est aussi disponible en
français sous le titre : Que se passe-t-il dans
la région visée par le règlement du Sahtu?
Retour sur 2010