



## Contaminated Site Remediation

# What's HAPPENING in the Sahtu?

2009 in Review



Canada

## About the Contaminants and Remediation Directorate

The Contaminants and Remediation Directorate (CARD) of Indian and Northern Affairs Canada (INAC) is currently managing over 20 contaminated sites in the NWT. These sites are at various stages of the remediation process.

A number of contaminated sites have been identified for further investigation and potential remediation in the Sahtu region and identification and assessment is ongoing. These sites are located on both Sahtu and Crown land. Many of the high priority sites are located within the Délne district.

Délne residents today maintain strong links to their traditional Dene way of life. The following sites were identified by INAC and the Sahtu as priority sites for remediation to allow, to the extent possible, renewed traditional use of the areas.



# 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.

## Step 1: Identify possible sites

Identify potentially contaminated sites based on activities (past or current) on or near the site.

## Step 2: Perform historical review

Assemble and review all historical information pertaining to the site.

## Step 3: Perform initial testing

Determine a preliminary characterization of contamination and site conditions.

## Step 4: Classify site and assign priority

Classify contaminated site using the Canadian Council of Ministers of the Environment (CCME) National Classification System. Prioritize the site for future investigations and/or remediation/risk management actions.

## Step 5: Conduct detailed testing

Test specific areas of concern identified in Step 3 and conduct further in-depth investigations and analysis.

## Step 6: Reclassify site if necessary

Update the ranking based on the results of the detailed investigations, using CCME National Classification System.

## Step 7: Develop remediation/ risk management plan

Develop a site-specific plan to address contamination issues.

## Step 8: Implement remediation/ risk management plan

Implement the site-specific plan that addresses contamination issues.

## Step 9: Conduct confirmatory sampling

Verify and document the success of the remediation/risk management strategy.

## Step 10: Conduct long-term monitoring

If required, ensure that remediation and long-term risk management goals are achieved.

## ASSESSMENT SITES

### Steps 1–7

- Canol Trail
- Sawmill Bay

## SITES IN REMEDIATION\*

### Steps 8–9

- Silver Bear Properties
- Contact Lake Mine
- El Bonanza / Bonanza Mines

## REMEDiation COMPLETED/ MONITORING

### Step 10

- Port Radium Mine

\* these sites have completed step 7 and are awaiting permits to proceed to steps 8 and 9.

# ASSESSMENT SITES

## Steps 1–7

### 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. The NWT portion of the trail is 372 km long and is located in the Sahtu Land Claim region. It stretches southwest from Norman Wells to the Yukon border. During the initial reconnaissance surveys for the trail, Dene from Tulita acted as guides and were essential in establishing the route.

Between 1942 and 1945, the CANOL Project included the construction of the Canol Road, maintenance camps, bridges (65) and culverts (820). The CANOL Project was described by U.S. Military historians as the biggest construction job since the Panama Canal. A four inch crude oil pipeline was laid directly on the ground alongside the road and, in order to keep the oil flowing, six pump stations were constructed consisting of a pumphouse, above ground storage tanks, a generator building, a mess hall and a dormitory.

Three U.S. Army repeater stations were also constructed and a telephone line, following roughly the same route as the pipeline, connected all the pumping stations and terminals. Oil flowed along the route to Whitehorse starting in April 1944, but one year later, the entire project was abandoned. Remnants of the project remain along the 372 km NWT portion of the trail.

During the federal Arctic Environmental Strategy in the early 1990's, INAC completed an initial investigation of 20 sites along the trail. The assessment found areas of soil hydrocarbon contamination and barrels full of oil along the trail. In 1995, the Ernie McDonald Land Corporation removed 313 drums from the trail and shipped them south for disposal.

Between 2007 and 2009, CARD conducted aerial and ground reconnaissance of the entire Canol Trail and compiled an inventory of abandoned waste materials and areas of potential contamination. Phase II Environmental Site Assessments (ESAs) were performed at nine sites along the Canol Trail in 2009. A wire cleanup project was also initiated in 2009 to address communications wire along the Canol Trail which posed an entanglement risk for wildlife. This project was carried out by the Tulita Band though the Community Adjustment Fund administered by the Canadian Northern Economic Development Agency.

The pump stations and road maintenance camps represent the greatest perceived risk to the environment and human health and safety. Concerns at the sites include hydrocarbon contamination, asbestos-containing materials, crude oil storage



and separator tanks, potential lead-containing paint, hazardous fluids and materials associated with abandoned vehicles and physical debris such as dilapidated buildings and bridges, drums, communication wire, abandoned pipeline and rusty vehicles.

### Community Involvement

The Canol Trail is still in the early assessment stages and in 2010/11 Sahtu community members will be asked to take part in a traditional knowledge study. A Canol Trail remediation working group will also be established to inform the public of preliminary assessment efforts and to encourage the exchange of information regarding the future direction of the project. The working group will be made up of various stakeholder groups including representatives from the communities, GNWT Department of Industry, Tourism and Investment and the Prince of Wales Northern Heritage Centre.

### What's Next?

In 2010/11, Phase II ESAs will be conducted at a further 17 sites along the Canol Trail. Consultations are planned for communities to present the results of last year's ESAs and to outline activities planned for 2010/11. The Canol Trail traditional knowledge study will also be conducted with communities in the Sahtu.

The Government of the Northwest Territories has indicated an interest in developing a Canol Heritage Trail as part of plans for the proposed Doi T'oh Territorial Park. Talks between INAC and GNWT senior management are ongoing regarding site remediation and future land transfer requirements. The trail's heritage value will be taken into account when developing assessment and remediation plans and, once remediation is complete, the area will be transferred to the GNWT.



## ASSESSMENT SITES (continued)

### SAWMILL BAY

The Sawmill Bay site is located on the northern part of the Leith Peninsula on the eastern end of Great Bear Lake and was originally developed to support timber requirements for Port Radium mine. Sawmill Bay also served as an intermediate site along the northern transportation route for the Port Radium Mine. Ore from Port Radium was barged down to Sawmill Bay and from there, the majority of the ore was transported further south by air.

The site has had a varied history with other known uses including: air fields and base camp for Royal Canadian Air Force's operations (late 40-50s), the construction of a Loran Navigation System (50s), a staging area for the construction of the Distant Early Warning (DEW) Line (late 50s) and a commercial fishing lodge (late 50s till 1987). It is now considered an abandoned site.

Environmental concerns at the site include gamma contamination associated with historical support to Port Radium. All licensable material was removed from the site during a 1997 clean-up led by Natural Resources Canada (NRCAN). The remaining material at site is at a concentration moderately above the naturally occurring levels, but well below levels used in the clean-up criteria for Port Radium, and the site continues to be an NRCAN responsibility. INAC and NRCAN are working together to ensure remaining cleanup efforts occur concurrently.

#### Additional concerns include:

- Elevated metal concentrations in soils impacted by historical Port Radium support activities
- Approximately 12,000 abandoned barrels from various site users
- Small amounts of hydrocarbons and asbestos residue
- Old buildings, scrap metal and general debris

#### What's Next?

Provided outstanding community concerns are addressed and the required permits are issued, remediation activities will move forward at the Great Bear Lake sites.

A three-phased approach to the remediation of the Great Bear Lake sites was developed in consultation with community representatives. The first phase includes consolidation of waste material (surface debris and barrels) at Sawmill Bay and activities are anticipated to begin in 2010/11. The tendering process for the remaining phases will begin soon after, and once the remediation contract is awarded, mobilization of equipment to the sites will follow.

#### Community Involvement

Community involvement is an important part of the remediation process and engagement with members from the Sahtu region has been ongoing. In the environmental assessment phase, community members assisted with sample collection and camp support services during onsite activities. They also took part in traditional knowledge studies and provided key information used to guide both the environmental assessment and development of Remedial Action Plans (RAPs). Community representatives are also part of the remediation team providing information towards the development of site RAPs. Since 2006, Orlena Modeste has been the Délne Community Liaison and this year she will continue in this role, connecting the community with the ongoing remediation process.

A phased approach to the remediation of the Great Bear Lake sites was developed in consultation with Sahtu (Délne) and Tłı́chǫ (Gamètı) community representatives. When tendering the remediation work, an Aboriginal Opportunities Considerations package will be designed to ensure the objective of maximizing local and regional employment and business opportunities to beneficiaries is met. During remediation activities a community representative will be onsite as an environmental monitor and an oversight committee will be established.



# SITES IN REMEDIATION

## Steps 8–9

The majority of contaminated sites to be remediated in the Sahtu are located in the eastern region of the Great Bear Lake area.

Please note that although the Great Bear Lake sites are advancing through the 10-step process, ongoing engagement with the community of

Délne, to address items of concern, is expected to take place before these sites proceed to the remediation phase. CARD will continue to work with the Délne leadership and the established Délne remediation team to address these concerns in efforts to move forward with the remediation of these sites.

## 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. Concerns at the sites include:

- Affected areas localized in two tailings ponds, including HoHum Lake at Terra Mine and Hermandy Lake at Northrim
- Elevated metals in some waste rock and in the tailings areas
- Hazardous waste, including waste fuels
- Hydrocarbon contaminated soils
- Unsealed mine openings and deteriorating buildings



## CONTACT LAKE

The Contact Lake Mine is a former silver and uranium mine located on Contact Lake. Concerns at the site include:

- 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
- Old buildings, mine structures and openings on the site that pose safety hazards
- A fuel storage site associated with the mine located in the east arm of Echo Bay, approximately five km away by road

## 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. Areas of concern include:

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





# REMEDIATION COMPLETED/ MONITORING

## Step 10

### PORT RADIUM MINE

Port Radium was a former radium, uranium and silver mine located along the eastern shore of Great Bear Lake. Remediation work completed on the site to reduce the risks to human health and the environment in the Sahtu region included:

- Improving drainage to reduce leaching of metals into soils and surface water around the immediate site
- Reducing gamma level exposures by covering waste rock and tailings
- Removing minimal amounts of hydrocarbons and asbestos residue
- Covering exposed waste materials, or moving them to a landfill onsite
- Closing mine openings

Remediation of the Port Radium site was completed during the 2007/2008 season. Studies and recommendations were developed and carried out by the Canadian Déline Uranium Team (CDUT) where Canada and Déline worked closely together. The remediation of Port Radium was carried out based on these studies and recommendations.



### Monitoring

Long-term monitoring is a very important commitment in the Port Radium Remediation Plan. For the first four years of monitoring, environmental and engineering inspectors will travel to the site twice a year to make sure that the site remains in a stable condition, and that the remediation solutions are working. As well, water will be sampled at the site once a year.

In year five of the monitoring program, inspectors and researchers will do a more detailed study of the site. They will look at the health of fish in the Great Bear Lake area around Port Radium, as well as the plants and the soil. They will also examine sediments in Great Bear Lake close to the site. Finally, researchers will do a complete gamma survey of the entire Port Radium site, to make sure that the radiation covers are working the way they are supposed to.

### Community Update Meeting

A community update meeting was held in Déline in January 2009. At that meeting, the Déline community wellness coordinator talked about what work is being done to address the remaining 26 recommendations in the CDUT final report. Throughout 2009, INAC met with the Déline community to introduce new faces and to discuss past challenges and ways of moving forward.

Recently, a contribution agreement was put in place to assess the work that has been done and to develop a plan of action in addressing what the desired outcomes and approaches are for the community on the remaining recommendations. The workplan and its desired outcomes will be presented in a report to INAC in spring 2010. This report will contribute to a better understanding between INAC and the community on the nature of the recommendations and ultimately set forth a plan for closure.

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Cette publication est aussi disponible en français sous le titre :  
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**If you see a contaminated site or have  
questions about sites in your area, contact us:**

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