MID-CANADA LINE

INVENTORY

Submitted to: Department of National Defence
Ministry of Environment Quebec
Ministry of Environment Canada

Prepared by: Daniel Berrouard - Environment Quebec
Normand Lysotte - Quebec Department of Recreation, Fish and Game
Gérald Girouard - Environment Canada

February 10, 1986

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INTRODUCTION

The Mid-Canada Line, which stretches along the entire length of the 55th parallel, was built between 1950 and 1955 for North American air defence purposes. In all, 91 Doppler radar stations were set up across Canada. These stations were operated between 1955 and 1965 and abandoned in 1966.

National Defence then put these facilities up for sale. Most of the sites were subsequently used for other purposes or dismantled and closed down at the discretion of their new owners.

However, the sites located in Quebec and Labrador met a slightly different fate and were either abandoned, vandalized or partially salvaged. Since we were not familiar with the current condition of these sites, we decided to conduct this survey.

We received assistance from National Defence, Environment Canada, Environment Quebec, the Quebec Department of Recreation, Fish and Game and the Quebec Department of Energy and Resources.

National Defence and the Quebec Department of Energy and Resources provided us with our basic data, which indicated the presence and location of 24 radar facilities between the Quebec-Labrador border and James Bay. National Defence is still searching its archives to identify the current owners of these sites.

The following survey was based on this data.

1- MANDATE

Our task force was given the mandate to conduct a complete survey of the facilities, equipment and waste remaining on the sites, and to make recommendations regarding the scope of any clean-up required to protect the environment.

The survey was to be submitted to the steering committee - comprising National Defence, Environment Canada and Environment Quebec representatives - responsible for assessing the scope of the problem, and the results were to contain all the information needed for a decision regarding appropriate remedial action.

2- METHODS

The sites in question were visited between July 11 and 18, 1985, by the following persons:

Daniel Berrouard: Environment Quebec
Normand Lysotte : Quebec Department of Recreation, Fish and Game
Gérald Girouard : Environment Canada

Transportation was by helicopter because of the inaccessibility of the sites.

Two survey checklists were used, one for the supply sites and another for the Doppler detection sites (see Appendix 1).

During the course of the visits, all buildings were inspected, all storage tank levels gauged, and all drums counted and their contents checked. An environmental analysis was conducted at each site and the nature of the soil, amount of cover material and proximity of sensitive environments were noted.

It was also determined whether the sites were accessible by seaplane, helicopter or other means.

Finally, each site was photographed.

A priority with regard to remedial action was assigned to each site during the completion of the survey checklists, on the following basis:

Priority I : Site where spillage could occur in a sensitive environment.

Priority II : Site where spillage could occur in a less sensitive environment and/or where unstable structures present a hazard

Priority III: Site presenting an esthetic problem.

(See Table I)

TABLE I

SITES BY ASSIGNED PRIORITY

PRIORITY	NO OF SITES	LIST OF SITES
1	8	306A- 312A- 324- 330- 336- 339- 321A- 410
2	16	212A- 218- 218A- 221A- 227A- 306- 309- 309A- 312- 315- 315A- 318- 318A- 321- 327- 333
3	20	212- 215- 221- 224- 224A- 227- 303- 303A- 324A- 327A- 330A- 333A- 336A- 339A- 342- 403- 403A- 406- 406A- 409A

Priority I : Site where spillage could occur in a sensitive environment.

Priority II : Site where spillage could occur in a less sensitive environment and/or where unstable structures present a hazard

Priority III: Site presenting an esthetic problem.

3- OBSERVATIONS

3.1 Sites

3.1.1 Location

The Mid-Canada Line sites in question are distributed over a distance of 1,050 km along the 55th parallel in the taïga bioclimatic region (see map of station locations).

Our survey revealed the existence of 44 sites, which may be divided into two categories:

(1) Doppler detection sites (total of 23)
(2) Supply sites (total of 21)

The 55th parallel acts as a boundary for the separate environmental jurisdictions established under the James Bay and Northern Quebec Agreement. Five stations are located to the south of the 55th parallel and 39 to the north (see map of station locations).

Note also that two of the stations to the north of the 55th parallel are part of the Category II lands awarded to the Cree of Great Whale River.

3.1.2 Detection sites

The detection sites are about 50 km apart. They are usually situated on high ground and consequently accessible mainly by helicopter.

The sites are usually covered with bare rocky outcrops, with no trees or even shrubs.

They usually cover a few hectares and include a few buildings, radar towers that were taken down for safety reasons and now lie on the ground, fuel tanks and various pieces of equipment once used to construct or operate the stations.

The detection sites differ from the supply sites in that they contain more equipment of all types. A photograph of a typical detection site (309) is presented on the following page, and the typical layout of a main building interior is shown in Appendix IV.

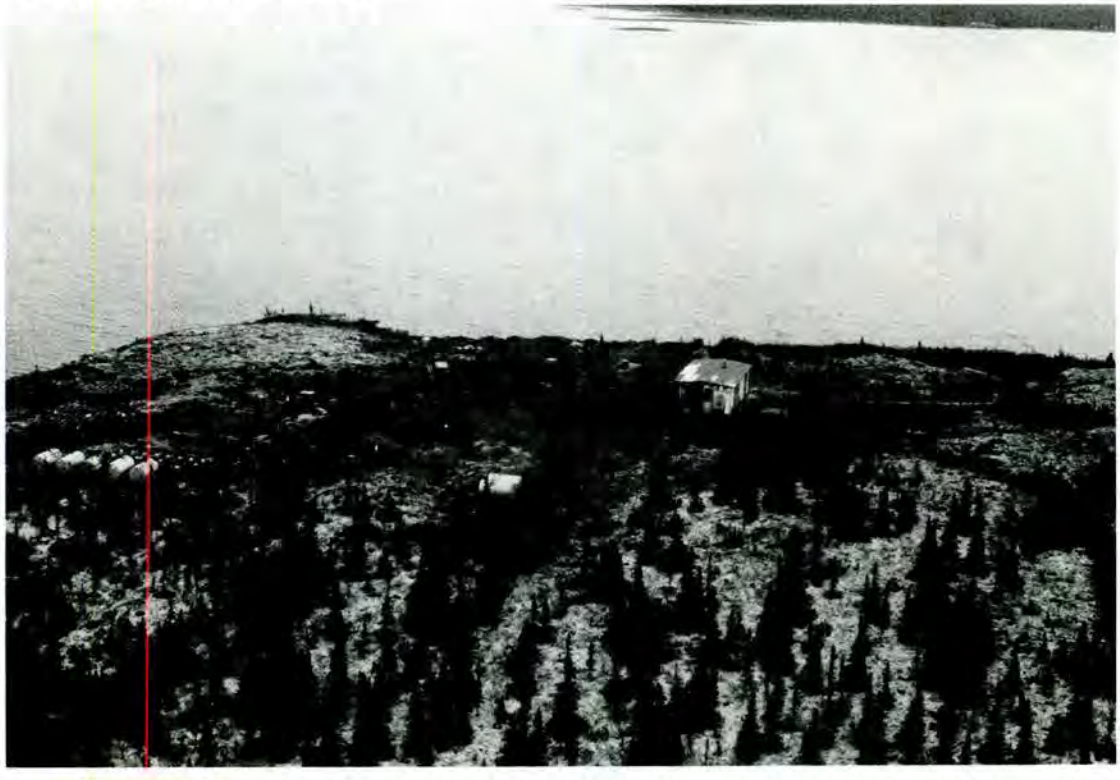
However, detection site 410 at Pointe Louis XIV differs from the others in that it includes many buildings and a landing strip and is located in an area with special ecological characteristics.

3.1.3 Supply sites

When the Mid-Canada Line was in operation, the detection sites were supplied mainly by supply sites located nearby (0 to 20 km) and accessible by seaplane or skiplane.

Because of their proximity to the aquatic environment, the supply sites are much more sensitive from an environmental point of view.

The 21 supply sites cover about the same area as the detection sites but their facilities are limited mainly to fuel storage tanks and a dwelling hut. A photograph of a typical supply site (318A) is presented below.



However, site 212A, located on the Quebec-Labrador border, differs from the other supply sites in that it includes many buildings and a landing strip.

3.2 Products and equipment

3.2.1 Buildings

The detection sites usually include two types of buildings, an 18 m x 8.5 m building (Doppler) with galvanized siding, and a 4.8 mx6 m plywood survival hut.

As for the supply sites, the single building on each is similar to the survival hut on the detection sites, but larger (6 m x 12 m).

The buildings are prefabricated and can therefore be partially dismantled. The quality of the materials used in their construction means that their value is far from insignificant, especially in the case of the main buildings.

For example, the main buildings on the detection sites were built by ARMCO and are of approximately the same design as those being built by the same company today.

On the 23 detection sites we visited, we found 16 main buildings and about the same number of survival huts in good condition.

With regard to the buildings on the supply sites, we found that ten still had some value. However, they will require attention over the short or medium term if they are to be preserved because their foundations are already showing the effects of time.

These buildings could therefore be salvaged to a certain extent, either on-site or in a new location, but the costs involved in preparing them for other uses would present a problem at this time.

As for incineration, this would be impractical in the case of the main buildings. The situation at station 212, where the main building burned down either accidentally or by design, supports this conclusion very eloquently because the site now presents an even more obvious esthetic problem.

However, incineration might be an appropriate solution in the case of the other types of buildings.

Finally, it would be advisable in most cases to clean the buildings that were looted or closed up.

3.2.2 Equipment

The equipment is located mainly at the detection sites and most of it is obsolete and/or probably inoperable.

It includes pumps, electronic or mechanical equipment, caterpillar tractors, compressors, Herman-Nelson block heaters and various other equipment used for routine operations.

However, it should be mentioned that certain items, such as 20 Kw diesel generators, alternators, metal shelving, pipes, antennae and certain pieces of furniture might perhaps be worth recovering.

In addition, a certain amount of material has never been used or even unpacked. Such equipment includes 100 rolls of Frost fencing with metal posts, which could be transported fairly easily as well.

Here again, it will be necessary to clean the buildings and premises in order to prevent such equipment from deteriorating the quality of the environment.

3.2.3 Domestic waste

The domestic waste produced when the sites were operational consisted mainly of tin cans and some construction debris, which were usually confined to a particular area of the site.

In general, this waste has rusted away and does not present any particular problem.

For these reasons, and in light of the scarcity of cover material, we believe that it would be preferable to let nature take its course with regard to the domestic waste remaining on site.

3.2.4 Hydrocarbons and storage tanks

Of the approximately 275,000 litres of hydrocarbons remaining on the Mid-Canada Line, about 75% are located on the detection sites (see Table II).

Although the supply sites contain smaller quantities of hydrocarbons, the problems is just as important at those sites because of the sensitivity of their environments.

Most of the hydrocarbons are in the form of diesel fuel, but there is some aircraft fuel (100-130) and furnace oil stored in 2,800-litre and 3,800-litre containers.

As for the 170-litre drums, the effects of time have made them unidentifiable.

Note that none of the storage tanks or containers is diked so as to contain the contents in case of spillage. During our visit, minor but active leaks were identified.

With regard to the quality of the fuel, a brief analysis of a few 170-litre drums and a few storage tanks showed that they contained up to 50% water and that the quality of the fuel was similar to that of heating oil, with a flash point above 40° C (see Table III).

Much of the fuel appears to be contaminated and only the fuel in the few tanks that remain full (about 55,000 l) at sites 324, 330, 336 and 339 may be of sufficiently good quality for normal use.

TABLE II

HYDROCARBONS AND CONTAINERS
MID-CANADA LINE - 1985

SITE NO	Drums (170 litres)		tanks (2800 litres)		TOTAL REMAINING
	(N)*	Remaining (l)*	(N)	Remaining (l)	
212 A	2200	1200	13	12400	13600
212	100	4250	-	-	4250
215	70	-	9	-	-
218 A	490	1200	10	-	1200
218	250	1325	6	-	1325
221 A	560	200	7	-	200
221	180	50	17	-	50
224	70	850	9	-	850
224 A	690	-	7	-	-
227 A	250	850	5	-	850
227	180	-	2	-	-
303 A	780	200	4	-	200
303	70	500	1	-	500
306 A	520	13900	2	-	13900
306	140	1900	9	7575	9475
309 A	580	950	16	1325	2275
309	170	1900	17	3400	5300
312 A	750	3600	7	9450	13050
312	50	950	9	8500	9450
315	130	1500	9	7200	8700
315 A	590	1700	7	6250	7950
318	160	2550	9	9675	12225
318 A	760	2650	7	950	3600
321	120	375	16	6050	6425
321 A	580	5675	9	3600	9275
324	480	14775	9	19925	34700
324 A	240	375	7	1325	1700
327 A	20	-	-	-	-
327	880	7950	14	7200	15150
330 A	960	-	7	-	-
330	380	5100	9	18000	23100
333	440	2850	15	400	3250
333 A	420	-	11	950	950
336	930	19300	9	23650	42950
336 A	270	200	7	-	200
339	1250	3600	9	24225	27825
339 A	140	950	4	-	950
342	350	-	-	-	-
403 A	350	-	13	-	-
403	550	200	6	200	400
406	1110	-	8	-	-
406 A	210	-	-	-	-
409 A	440	-	4	-	-
410	-	-	5	?*	-
TOTAUX	19860	103575	344	172250	275825

(N)* Number
(l)* Litre
? * See checklist for site 410 (Appendix 1)

In addition to these hydrocarbons, about 1,000 litres of lubricating oil were abandoned here and there in small containers (38-l), most of which are located in the electrical rooms of the main buildings.

A large quantity of containers accumulated on the sites during the years when the Mid-Canada Line was operational. We counted almost 20,000 drums (170-l) and 350 tanks (over 2,800-l).

3.2.5 Hazardous products

The hazardous products we found were generally present in very small quantities and should therefore be fairly easy to dispose of. They include:

- Carbolic acid 4 l
- Antifreeze 22 l
- CC14 0.3 l
- DDT (5%) 10 l
- Methyl hydrate 2 l
- Molybdenum disulfide 1.2 l

Appendix III describes these hazardous products and the threat they present to the environment.

With regard to PCBs, no transformers that used dielectric fluids were found, except at station 410. Oil and soil samples taken at this site were analysed and found to contain mineral oil that was slightly contaminated and presented only a minimal threat to the environment (see Table III).

The situation regarding the cylinders of CO2 stored at the detection sites should be mentioned as well.

There are 12 cylinders at each site, and they are fitted with explosive charges to be detonated in the event of fire in order to free their contents.

During our visit, we noted that usually only four of the 12 cylinders at each site had been emptied and that consequently the charges on the other cylinders remained live.

TABLE III

ANALYSIS RESULTS

SAMPLING SITE	SOURCE	HEATING OIL FLASH POINT *	TRANSFORMER OIL PCB **
212	45-gal drum	43°C	-
224	45-gal drum	51°C	-
306A	45-gal drum	63°C	-
312A	1,000-gal tank	57°C	-
410-1	G E transformer oil & sand	-	1.1 ppm
410-2	Building floor oil & sand	-	3.5 ppm
410-3	N E transformer oil	-	UD

* The minimum flash point for heating oil is 40°C.
** The PCBs are in the form of aroclor 1254
UD Undetectable
ppm Parts per million

4- ENVIRONMENTAL IMPACT

The abandonment of the Mid-Canada Line sites has created a problem of an esthetic nature. But even more important, it has created a situation where products that are potentially harmful to the environment may still cause serious local damage.

We have therefore concentrated on studying the actual threat to the environment rather than describing the environment in detail in order to make a qualitative assessment of the potential impact of the situation.

4.1 Buildings

The impact of the buildings is mainly esthetic. In some cases, however, the dilapidated condition of the buildings could present a safety hazard to the rare users who pass through.

All the buildings are remote from inhabited areas and visible only to the small number of people who use the airspace above the sites.

Two areas are used more frequently by hunters and fishermen, both Native and non-Native: the area northeast of Schefferville is used for caribou hunting and sport fishing, and the area near the shore of Hudson Bay is still used regularly for hunting and trapping by Native people.

Ideally, all the buildings should be removed or salvaged in one way or another.

However, if the buildings were to be removed, special efforts would be required because:

(1) The Doppler buildings cannot be destroyed effectively by incineration.

(2) The sites would have to be cleaned afterward.

Turning the buildings to other uses on-site is the option that would produce the most positive impact. However, the new users would have to accept responsibility for maintaining the sites and the buildings on them.

Some buildings on the supply sites, notably sites 324A, 330A, 336A and 409A, have already been converted more or less officially for hunting and fishing purposes.

The local communities and the various agencies concerned should obviously be consulted before any plan to reuse the buildings is implemented.

4.2 Equipment

The impact of the equipment littering the sites is mainly esthetic.

However, some of the equipment, such as the antennas on sites 212A and 410, presents a hazard to air navigation.

Although some parts undeniably have economic value, most of the equipment left behind is now obsolete and would be difficult to salvage.

An effort should nevertheless be made to salvage some of the equipment and, here again, the local community should be consulted.

The remaining equipment should be placed in a corner of the sitesso as to be hidden from view insofar as possible.

4.3 Domestic waste

As mentioned above, the impact of the domestic waste left behind is marginal and does not require any specific action.

4.4 Hydrocarbons

The worst environmental hazard is presented by the 275,000 litres of hydrocarbons abandoned here and there on the sites under precarious conditions.

The effects of the spillage we observed indicate that the environment regenerates slowly and that action is required.

Based on current knowledge, the half-life in nature of the fuel on the Mid-Canada Line sites is two to five years.

Although the impact of the spillage has been mainly local, in certain cases the persistent effects may have created major environmental problems. This applies especially to spills that occurred near the aquatic environment.

The remaining products should therefore be salvaged or destroyed.

However, salvage operations would appear to be advisable only in certain specific cases where the products can be recovered and transported or recycled with complete safety. The advanced state of deterioration of the drums and some storage tanks obviously limits the use of this option.

The destruction of these products by incineration on site under the direction of Environment Quebec remains a plausible alternative.

However, it would first be necessary to consider the impact of this option, ie contamination of the local atmosphere in the short term and possible contamination of the aquatic or terrestrial environment.

4.5 Containers (hydrocarbons)

The drums and storage tanks left behind present an esthetic problem that only adds to existing problems of this nature in the North.

On the basis of the information at our disposal, the contents of the 20,000 drums and 350 storage tanks remaining on the sites represent the largest quantity of hydrocarbons to have been abandoned in the region by a single organization.

Any cleaning or upgrading of the sites should at the very least include the collection of these containers and the eventual reduction of their volume by means of compaction.

4.6 Hazardous products

The quantity of products defined as hazardous is relatively small and their disposal presents no serious problems in terms of the environment.

However, special attention should be paid to defusing the live explosive charges on most of the CO2 cylinders.

4.7 Special sites

Two of the sites, 321A and 410, are located in areas of special ecological value.

Site 321A:

Site 321A, situated in the immediate vicinity of Bienville Lake, includes slightly more than 9,000 litres of fuel in containers, more than half of it in drums that are in poor condition.

The Bienville Lake region is one of the largest nesting areas for Canada Geese in Quebec.

A large spill of hydrocarbons near the lake could seriously interfere with the activities of this population.

Site 410:

Site 410 is a major detection site with numerous facilities in dilapidated condition, including two immense radar towers of about 75 m.

The facilities also include fuel storage tanks whose levels were not gauged because of their size but probably still contain about 60,000 litres of bunker fuel that could spill into the sea at any moment.

This situation is particularly deplorable because Pointe Louis XIV, where station 410 is located, is considered a major staging area for wildfowl and a breeding ground for polar bears. In addition, the local plant types are unique because at this latitude the site is in a tundra area in the midst of the taïga.

5- OPTIONS

Taking into account the environment of the region and the condition of the sites, we propose two options for remedial action. The first involves salvaging the remaining products and equipment and the second destroying them.

Salvage

This option involves putting the sites to other uses or moving the equipment so that it can be reused by the local communities.

Using the sites for other purposes would entail finding new users to take over the facilities. Under the present circumstances, the chances of finding new users would appear to be good only in the very few cases where the facilities could be used for hunting or fishing purposes. It would also entail making an offer to the local communities in this regard.

Nevertheless, we believe that the few sites already being used for these purposes should be turned over officially to their current occupants, where the occupants are prepared to accept responsibility for them, and that consultation be carried out as described above.

As for removing the products and equipment so they may be used by the community, we believe that this would be the best solution from a strictly ecological point of view.

However, although this procedure has the advantage of being adaptable at all of the sites, it would result in direct costs that would probably exceed the cost of destroying all products and equipment on-site.

A thorough cost/benefit analysis of such a salvage operation should nevertheless be carried out because this may emerge as an attractive solution in certain cases.

Any salvage operation would involve abandoning certain equipment or products that were deemed impossible to salvage or transport and such items would have to be destroyed properly on-site.

Destruction

The on-site destruction of the products and equipment remaining on the sites is a viable option. It would entail dismantling any buildings that had not been salvaged, incinerating all combustible products and laying out the inert materials on the ground in an appropriate location.

Although this option offers certain economic benefits, it would have more residual impact, especially of an esthetic nature, than a salvage operation.

6- CONCLUSION

On the basis of the survey conducted under our present mandate, we find that the major impact resulting from the abandonment of the Mid-Canada Line is the presence of the hydrocarbons that were left on-site. Although we did not identify any case where clean-up was required on an emergency basis, short-term action is required nevertheless.

Regardless of the option chosen for remedial action, the effectiveness of any clean-up and/or restoration of the environment will depend on the amount of energy and funds the parties concerned are prepared to spend.

Nevertheless, a minimum amount of remedial action is required. The hydrocarbons liable to spill at any moment must be destroyed or recovered, and appropriate action must be taken with regard to the buildings and equipment deemed hazardous to man and the environment.

Salvage remains a viable option with regard to various elements of the sites. Indeed, some equipment has already been salvaged by local communities (Native people and outfitters) and it would obviously be appropriate to consult with these parties concerning the future of the sites.

Each site is an individual case and any remedial action must be adapted to the particular context of the site in question and followed up thoroughly.

Finally, whatever action is taken must be approved in advance by Environment Quebec.

7- RECOMMENDATIONS

1- Once the steering committee has decided on a course of action for cleaning the Mid-Canada Line sites, it should submit its proposal to the Deputy Minister of Environment Quebec. In this way, it will ensure that the Native communities concerned are consulted in accordance with Chapter II of the Quebec Environment Quality Act (RSQ, c Q-2).

2- The hydrocarbons remaining on the sites should be salvaged or destroyed as soon as possible, and under no circumstances should this operation be delayed by a lengthy search to identify the legal owners of the sites.

3- Regardless of the general option chosen, the methods for clean-up will need to be adapted to the environmental particularities of each site.

4- The environment is fragile and should not be disturbed unnecessarily by the removal of the topsoil for landfilling or soil-decontamination purposes.

5- Work on Priority I sites should begin in 1986 and, regardless of the option chosen for cleaning the sites, work on all sites should be completed by 1990.

6- If it is decided to incinerate the hydrocarbons on-site, this operation should be carried out in accordance with applicable regulations at a time when there is low risk of the fire spreading.

7- The local communities should be consulted in every case to promote the salvaging rather than the destruction of the equipment remaining on the Mid-Canada Line sites.

ANNEXE I

FICHES SUR LES SITES

DE LA LIGNE MID-CANADA

Appendix I

Check Lists

Mid-Canada Line Sites

SITE DE DÉTECTION 212

Date de visite: 85-07-12 | Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Brûlé (es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Brûlé (es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : Brûlé (es)
1.4.2- Banque(s) de batterie: "
1.4.3- Diesel(s) 20 Kw : "
1.4.4- Alternateur(s) : "
1.4.5- Réservoir pression : "

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-		- X 3800 l	- à résiduel de			1		
4.2-		- X 2800 l	"	"	"	1		
4.3-	100	X 170 l	"	"	"	4250	1	(25)*
4.4-		X	"	"	"		1	

5 : Autres produits: -

6 : Autres équipements: -

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques: Suite aux constatations faites sur place, la solution du brûlage du bâtiment principal ne représente pas une solution valable puisqu'elle ne règle en rien les problèmes environnementaux liés à l'abandon du bâtiment. On a pu se rendre compte que même si un incendie avait détruit le bâtiment, celui-ci était demeuré debout, inutilisable et avec un aspect esthétique des plus décevant.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	212 A
Date de visite: 85-07-12	Priorité: 2

1 : Édifice de survie

1.1 - Structure : Intacte
1.2 - Mobilier : Vandalisé

2 : Remise - Station de pompage: (voir remarques)

3 : Autres bâtiments: (voir remarques)

4 : Réservoirs de carburant:

4.1 -	10 X	3800 l	- à résiduel de	1700	l		
4.2 -	3 X	2800 l	- " " " "	100	l		
4.3 -	2200 X	170 l	- " " " "	1200	l	(7)*	
4.4 -	1 X	110 000 l	" " " "	10600	l		

5 : Autres produits : 22 cylindres de propane avec résiduel
4 l de kérosène

6 : Autres équipements : 1 transformateur (Dry type) Mar Electric
4 antennes radio, 1 diesel 20 Kw; 1 alternateur

7 : Accessibilité :- Piste d'atterrissage d'environ 1500m en gravier
- Hydravion

8 : Nature du sol : Sable

9 : Remarques : Ce site d'approvisionnement réutilisé dans les années 1960 par Environnement-Canada comme base météo, en est un de grande envergure par rapport aux autres visités dans ce secteur. On y retrouve aujourd'hui 2 bâtiments-résidences et 2 garages.

La structure de ces bâtiments est encore en bon état mais l'intérieur de ceux-ci a été vandalisé de façon quasi-incroyable.

Ce site est encore utilisé aujourd'hui puisque Environnement-Canada y possède une station-météo automatique et que la Défense Nationale y a entreposé en barils de 170 l, une réserve d'environ 5000 l de carburant pour hélicoptère en cas d'urgence.

Un nettoyage important est à prévoir dans ce secteur, ne serait-ce qu'en ce qui concerne la quantité de barils vides qu'on y a accumulé et les déchets domestiques qu'on a déversés près d'un étang.

(voir suite...)

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT		212 A
Date de visite: 85-07-12	Priorité:	2

(remarques suite)

Du point de vue sécurité, l'état intérieur des bâtiments et la présence d'un puits d'absorption mal identifié sur le terrain, présentent des risques certains d'accidents. De même, les antennes radio qui sont toujours en place peuvent présenter un risque pour la navigation aérienne lors de mauvaise condition de visibilité.

Les quantités restantes de carburant ajoutent évidemment à cette problématique, puisque les digues de sable construites sur place ne pourront de toute évidence , contenir celui-ci en cas de déversement.

SITE DE DÉTECTION	215
Date de visite: 85-07-12	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Disparues
1.2.1- App. ménagers: Vandalisés
1.2.3- Mobilier : Disparu

1.3 - Salle de travail

1.3.1- Panneaux élect : Vandalisé
1.3.2- Bombonnes CO_2 : Intactes
1.3.3- Pièces rechange: Vandalisées
1.3.4- Étagères : Disparues
1.3.5- Table travail : Intacte

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 1
1.4.2- Banque(s) de batterie: 0
1.4.3- Diesel(s) 20 Kw : 0
1.4.4- Alternateur(s) : 0
1.4.5- Réservoir pression : -

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	7	X 3800 l	- à résiduel de		1		
4.2-	2	X 2800 l	"	"	1		
4.3-	70	X 170 l	"	"	1	(	)*
4.4-		X	"	"	1		

5 : Autres produits: 30 l huile SAE-30

6 : Autres équipements: - 2 rouleaux clôture "Frost" avec poteaux;
- 1 Herman-Nelson; 1 rouleau (3m) câble d'acier

7 : Accessibilité: Hydravion au bas de la colline

8 : Nature du sol: Roc

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	218 A
Date de visite: 85-07-12	Priorité: 2

1 : Édifice de survie

1.1 - Structure : Disparu (e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	10	X	3800	l	-	à résiduel	de	-	1
4.2	-	-	X	2800	l	-	" "	" "	-	1
4.3	-	490	X	170	l	-	" "	" "	1200	1 (7)*
4.4	-						" "	" "		

5 : Autres produits : -

6 : Autres équipements : 18 rouleaux de clôture "Frost"

7 : Accessibilité : L'enrochement aux abords du lac rend difficile l'accès par hydravion

8 : Nature du sol : Zone humide et gravier

9 : Remarques : -

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	218
Date de visite: 85-07-11	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Disparues
1.2.1- App. ménagers: Vandalisés
1.2.3- Mobilier : Disparu

1.3 - Salle de travail

1.3.1- Panneaux élect : Intactes
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: Vandalisés
1.3.4- Étagères : Intactes
1.3.5- Table travail : Disparue

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 0
1.4.2- Banque(s) de batterie: 2
1.4.3- Diesel(s) 20 Kw : Vandalisés
1.4.4- Alternateur(s) : "
1.4.5- Réservoir pression : 0

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	2	X 3800 1	- à résiduel de		-	1	
4.2-	4	X 2800 1	"	"	-	1	
4.3-	250	X 170 1	"	"	1325	1	(8)*
4.4-		X	"	"		1	

5 : Autres produits: -

6 : Autres équipements: 1 buldozer; 25 rouleaux clôture "Frost"

7 : Accessibilité: Hydravion, via une route d'environ 2 Km

8 : Nature du sol: Roc

9 : Remarques: On dénombre 147 barils à proximité d'un lac en contrebas du du site. De ce nombre, 8 sont pleins.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	221 A
Date de visite: 85-07-11	Priorité: 2

1 : Édifice de survie

1.1 - Structure : Disparu (e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	7	X	3800	l	-	à résiduel	de	-	1	
4.2	-	-	X	2800	l	-	" "	" "	-	1	
4.3	-	560	X	170	l	-	" "	" "	200	1	( )*
4.4	-						" "	" "			

5 : Autres produits : -

6 : Autres équipements : 1 antenne radio 20 m.

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : L'examen fait sur place démontre une contamination récente de la zone écotone.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	221
Date de visite: 85-07-11	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Disparues
1.2.1- App. ménagers: Vandalisés
1.2.3- Mobilier : Disparu

1.3 - Salle de travail

1.3.1- Panneaux élect : Vandalisés
1.3.2- Bombonnes CO_2 : Intactes
1.3.3- Pièces rechange: Vandalisées
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 1
1.4.4- Alternateur(s) : 1
1.4.5- Réservoir pression : 0

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	17	X 3800 l	- à résiduel de		-	l		
4.2-	-	X 2800 l	"	"	"	-	l	
4.3-	180	X 170 l	"	"	"	50	l	( )*
4.4-		X	"	"	"		l	

5 : Autres produits: 5 l viscosine (air filter oil); 5 l huile SAE-30

6 : Autres équipements: -

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	224
Date de visite: 85-07-12	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Vandalisé(es)
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Disparus
1.3.2- Bombonnes CO_2 : Intactes
1.3.3- Pièces rechange: Vandalisées
1.3.4- Étagères : Disparu(es)
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 1
1.4.2- Banque(s) de batterie: 0
1.4.3- Diesel(s) 20 Kw : 0
1.4.4- Alternateur(s) : 0
1.4.5- Réservoir pression : 0

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	9	X	3800 l	- à résiduel de	-	1		
4.2-	-	X	2800 l	" " "	-	1		
4.3-	70	X	170 l	" " "	250	1	(5)*	
4.4-		X		" " "		1		

5 : Autres produits: 4 l acide carbolic; 50 l huile SAE-30

6 : Autres équipements: 150 poteaux métalliques (clôture); bulldozer (en pièce)

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	224 A
Date de visite: 85-07-12	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Vandalisé(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1 -	7 X	3800 l -	à résiduel de	o l
4.2 -	- X	2800 l -	" " " "	- l
4.3 -	690 X	170 l -	" " " "	- l ( )*
4.4 -	X	l	" " " "	l

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : La structure de l'édifice de survie apparaît comme dangereuse et devrait disparaître.
The structure of the building appears to be dangerous ([illegible]) and should be [illegible] [illegible].

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	227 A
Date de visite: 85-07-12	Priorité: 2

1 : Édifice de survie

1.1 - Structure : Disparu(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: Campement en bois rond en mauvais état

4 : Réservoirs de carburant:

4.1	-		5	X	3800	l	- à résiduel de	-	1	
4.2	-		-	X	2800	l	- " " " "	-	1	
4.3	-		250	X	170	l	- " " " "	850	1	(5)*
4.4	-			X		l	" " " "		1	

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : -

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	227
Date de visite: 85-07-12	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Vandalisée

1.2 - Commodités

1.2.1- Armoires : Disparu(es)
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: Vandalisées
1.3.4- Étagères : Disparues
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 0
1.4.3- Diesel(s) 20 Kw : 0
1.4.4- Alternateur(s) : Vandalisés
1.4.5- Réservoir pression : 0

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	2	X 3800 l	- à résiduel de		- 1			
4.2-	-	X 2800 l	"	"	"	- 1		
4.3-	180	X 170 l	"	"	"	- 1	(	)*
4.4-		X	"	"	"	- 1		

5 : Autres produits: -

6 : Autres équipements: -

7 : Accessibilité: Une route relie le site d'approvisionnement 227-A

8 : Nature du sol: Roc

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	303 A
Date de visite: 85-07-13	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Disparu(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	4	X	3800	l	-	à résiduel de	-	1	
4.2	-	-	X	2800	l	-	" " " "	-	1	
4.3	-	780	X	170	l	-	" " " "	200	1	( )*
4.4	-		X	1	"	"	" "		1	

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : 160 barils sont empilés du côté opposé du lac où est situé le site.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	303
Date de visite: 85-07-13	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Disparu(es)
1.2.1- App. ménagers: Vandalisés
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Vandalisés
1.3.2- Bombonnes CO_2 : Intactes
1.3.3- Pièces rechange: Vandalisées
1.3.4- Étagères : Disparu(es)
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 0
1.4.2- Banque(s) de batterie: 0
1.4.3- Diesel(s) 20 Kw : 0
1.4.4- Alternateur(s) : 0
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	1	X 3800 l	- à résiduel de		-	1		
4.2-	-	X 2800 l	"	"	"	-	1	
4.3-	70	X 170 l	"	"	"	500	1	(2)*
4.4-		X	"	"	"		1	

5 : Autres produits: 75 l huile SAE-30

6 : Autres équipements: -

7 : Accessibilité: A partir du lac du site 303 A via une route qui devait surtout être utilisée en hiver

8 : Nature du sol: Roc

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	306 A
Date de visite: 85-07-13	Priorité: 1

1 : Édifice de survie

1.1 - Structure : Disparu(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: 1 cabanon de bois rond

4 : Réservoirs de carburant:

4.1	-	2	X	3800	l	-	à résiduel de	-	1	
4.2	-	-	X	2800	l	-	" " " "	-	1	
4.3	-	520	X	170	l	-	" " " "	13900	1	(70)*
4.4	-		X	1	"	"	" "		1	

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : Les barils sont particulièrement en mauvais état et la situation actuelle des lieux laisse présumer des fuites fréquentes.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	306
Date de visite: 85-07-13	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intacte(s)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intacte
2.2 Mobilier : Vandalisé

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	9	X 3800 l	- à résiduel de	7575	1		
4.2-	-	X 2800 l	" " "	-	1		
4.3-	140	X 170 l	" " "	1900	1	(11)*	
4.4-		X	" " "		1		

5 : Autres produits: 75 l huile SAE-30

6 : Autres équipements: 1 Norman-Nelson

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	309 A
Date de visite: 85-07-13	Priorité: 2

1 : Édifice de survie

1.1 - Structure : Disparu(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Intacte

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	16	X	3800	l	- à	résiduel	de	1325	l
4.2	-	-	X	2800	l	- "	"	"	-	l
4.3	-	580	X	170	l	- "	"	"	950	l (5)*
4.4	-		X		l	"	"	"		l

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : Evidence de nombreux déversements à s'être produits dans le passé.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	309
Date de visite: 85-07-13	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intact(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	17	X 3800 l	- à résiduel de		3400	l		
4.2-	-	X 2800 l	"	"	"	-	l	
4.3-	170	X 170 l	"	"	"	1900	l	(10)*
4.4-		X	"	"	"		l	

5 : Autres produits: 55 l huile SAE-30

6 : Autres équipements: 6 rouleaux clôture "Frost", 1 hélicoptère (débris)

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques:

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	312 A
Date de visite: 85-07-13	Priorité: 1

1 : Édifice de survie

1.1 - Structure : Intacte
1.2 - Mobilier : Vandalisée

2 : Remise - Station de pompage: Vandalisée

3 : Autres bâtiments: 1 campement en bois rond (entrepôt)

4 : Réservoirs de carburant:

4.1	-	7	X	3800	l	- à résiduel de		9450	l	
4.2	-	-	X	2800	l	- " " " "		-	l	
4.3	-	750	X	170	l	- " " " "		3600	l	(16)*
4.4	-		X		l	" " " "			l	

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : Un des réservoirs de 3800 l fuit au niveau de la valve située à sa base au rythme 1goutte/min. Des mesures temporaires ont été prises sur place pour contenir le produit.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	312
Date de visite: 85-07-13	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intact(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intacte
2.2 Mobilier : Vandalisé

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	9	X 3800 1	- à résiduel de	8500	1			
4.2-	-	X 2800 1	" " "	-	1			
4.3-	50	X 170 1	" " "	950	1	(	)*	
4.4-		X	" " "		1			

5 : Autres produits: 10 l de DDT(5%); 7 l d'antigel; 110 l huile SAE-30

6 : Autres équipements: 1 bulldozer

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	315
Date de visite: 85-07-14	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intact(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	4	X 3800 l	- à résiduel de		1150	l		
4.2-	5	X 2800 l	"	"	"	6050	l	
4.3-	130	X 170 l	"	"	"	1500	l	( )*
4.4-		X	"	"	"		l	

5 : Autres produits: 0.3 l de CCl_4 ; 0.2 l de Molybdénum disulfide; 4 l d'huile SAE-30

6 : Autres équipements: -

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques: Evidence d'un déversement qui se poursuit lentement à partir des réservoirs de grande capacité.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	315 A
Date de visite: 85-07-14	Priorité: 2

1 : Édifice de survie

1.1 - Structure : Intacte
1.2 - Mobilier : Vandalisé

2 : Remise - Station de pompage: Intacte

3 : Autres bâtiments: 1 cabanon en bois rond

4 : Réservoirs de carburant:

4.1	-	7	X	3800	l	- à résiduel de	6250	l		
4.2	-	-	X	2800	l	- " " " "	-	l		
4.3	-	590	X	170	l	- " " " "	1700	l	(9)*	
4.4	-		X	1		" " " "		l		

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Gravier

9 : Remarques : La valeur du paysage est particulièrement intéressante à cet endroit et les installations actuelles pourraient assez facilement être récupérées à des fins halieutiques.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	318
Date de visite: 85-07-14	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intact(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : "
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	4	X 3800	1	- à résiduel	de	4925	1	
4.2-	5	X 2800	1	"	"	4750	1	
4.3-	160	X 170	1	"	"	2550	1	(15)*
4.4-		X		"	"		1	

5 : Autres produits: 95 l d'huile SAE-30; 11 Kg. graisse "beacon Lubrican"

6 : Autres équipements: 1 bulldozer; 1 hutte de survie empilée en section

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc et sable

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	318 A
Date de visite: 85-07-14	Priorité: 2

1 : Édifice de survie

1.1 - Structure : Intacte
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	7	X	3800	l	- à résiduel de		950	l	
4.2	-	-	X	2800	l	- " " " "		-	l	
4.3	-	760	X	170	l	- " " " "		2650	l	(13)*
4.4	-		X	1	"	" " "			l	

5 : Autres produits : -

6 : Autres équipements : 1 antenne-radio

7 : Accessibilité : Hydravion

8 : Nature du sol : Gravier

9 : Remarques : La nature du site rend ses installations intéressantes à des fins d'exploitation halieutique.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	321
Date de visite: 85-07-14	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intact(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	10	X 3800	1	- à résiduel de		3025	1	
4.2-	6	X 2800	1	"	"	3025	1	
4.3-	120	X 170	1	"	"	375	1	(2)*
4.4-		X		"	"		1	

5 : Autres produits: 75 l d'huile SAE-30

6 : Autres équipements: 42 rouleaux clôture "Frost" avec piquet de métal

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc et gravier

9 : Remarques: -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	321 A
Date de visite: 85-07-14	Priorité: 1

1 : Édifice de survie

1.1 - Structure : Intact(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	9	X	3800	1	- à résiduel de		3600	1	
4.2	-	-	X	2800	1	- " " " "		-	1	
4.3	-	580	X	170	1	- " " " "		5675	1	(33)*
4.4	-		X		1	" " " "			1	

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide

9 : Remarques : La région du lac Bienville constitue l'une des plus importantes aire de nidification de la bernache située à l'intérieur du territoire québécois. Ce site pourrait être récupéré au profit d'activités de faible envergure se déroulant dans le secteur du lac Bienville. La désafectation totale de ce site est obligatoire advenant la construction du complexe Grande-Baleine dans sa version actuelle.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	324
Date de visite: 85-07-14	Priorité: 1

1 : Bâtiment principal

1.1 - Structure : Intact(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 1

4 : Réservoirs de carburant:

4.1-	4	X 3800 l	- à résiduel de	15200	l		
4.2-	5	X 2800 l	" " "	4725	l		
4.3-	480	X 170 l	" " "	14775	l	(86)*	
4.4-		X	" " "		l		

5 : Autres produits: 2 l d'hydrate de méthyl; 15 l d'antigel; 75 l d'huile SAE-30

6 : Autres équipements: 1 Herman-Nelson; 1 compresseur; 1 tracteur-chenille

7 : Accessibilité: Hydravion. Route en milieu humide menant à un lac

8 : Nature du sol: Roc et gravier

9 : Remarques: Lors de notre visite, 3 barils (170 l) laissaient couler leur produit par le dessus du couvercle sous l'effet de la chaleur.

On notait d'ailleurs sur place l'évidence de nombreux déversements. À cette problématique s'ajoute le fait que quatre (4) des réservoirs de 3800 l étaient pleins.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	324 A
Date de visite: 85-07-14	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Intact(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: La structure d'un ancien camp de toile est encore présente.

4 : Réservoirs de carburant:

4.1	-	7	X	3800	1	- à résiduel de		1325	1	
4.2	-	-	X	2800	1	- " " " "		-	1	
4.3	-	240	X	170	1	- " " " "		375	1	(2)*
4.4	-		X		1	" " " "			1	

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide, le sol environnant le campement est cependant relativement sec

9 : Remarques : Le site semble avoir déjà été utilisé par des chasseurs ou des pêcheurs mais semble avoir été abandonné récemment.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	327 A
Date de visite: 85-07-15	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Disparu(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-		-	X	3800	1	-	à	résiduel	de		-	1	
4.2	-		-	X	2800	1	-	"	"	"	"	-	1	
4.3	-		20	X	170	1	-	"	"	"	"	-	1	( )*
4.4	-			X		1		"	"	"	"		1	

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Zone humide et sable

9 : Remarques : Ce site, à l'exception de quelques barils, a été complètement désaffecté.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION 327

Date de visite: 85-07-15 | Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intact(e)

1.2 - Commodités

1.2.1- Armoires : Vandalisées
1.2.1- App. ménagers: Disparu(s)
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	9	X 3800 l	- à résiduel de	6250	l		
4.2-	5	X 2800 l	" " "	950	l		
4.3-	880	X 170 l	" " "	7950	l	(47)*	
4.4-		X	" " "		l		

5 : Autres produits: 19 l d'huile SAE-30

6 : Autres équipements: -

7 : Accessibilité: Hydravion via la station 327 A

8 : Nature du sol: Roc et sable

9 : Remarques: Le lieu d'entreposage des réservoirs est imbibé d'huile. Un des réservoirs de 2900 l dégoute d'ailleurs à un rythme de 4 gouttes/mn (125 l/an). Un site d'entreposage de 270 barils a été aménagé près d'un lac en contrebas du site 327. Un feu de forêt d'origine inconnue (environ 30 ha) a incendié à l'été 1985 le secteur où était entreposés ces barils.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	330 A
Date de visite: 85-07-15	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Intact(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Intacte

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	7	X	3800	l	-	à	résiduel	de	-	1
4.2	-	-	X	2800	l	-	"	"	"	-	1
4.3	-	960	X	170	l	-	"	"	"	-	1 ( )*
4.4	-		X	1	"	"	"	"	"		1

5 : Autres produits : 3 bombonnes de propane avec résiduel
2 l de goudron

6 : Autres équipements : 1 toilette fosse-sèche en bon état

7 : Accessibilité : Hydravion

8 : Nature du sol : Sable et gravier

9 : Remarques : Ce site a vraisemblablement été entretenu depuis son abandon par des pêcheurs sportifs et/ou par des autochtones.
Le site est relativement propre si ce n'est la quantité importante de barils laissés sur place.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	330
Date de visite: 85-07-15	Priorité: 1

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Vandalisées
1.2.1- App. ménagers: Intact(es)
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	2	X 3800 l	- à résiduel de	7600	l		
4.2-	7	X 2800 l	" " "	10400	l		
4.3-	380	X 170 l	" " "	5100	l	(30)*	
4.4-		X	" " "		l		

5 : Autres produits: 110 l d'huile SAE-30

6 : Autres équipements: 1 coupolle radar (emballée); 2 Herman-Nelson

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc et sable

9 : Remarques: L'un des réservoirs de 2800 l (interconnecté aux autres) est sur le point de tomber de son socle.

Deux (2) de 3800 l sont pleins alors que deux (2) des réservoirs de 2800 l sont pleins.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	333
Date de visite: 85-07-15	Priorité: 2

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Vandalisées
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 0
1.4.3- Diesel(s) 20 Kw : 0
1.4.4- Alternateur(s) : 2
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 1

4 : Réservoirs de carburant:

4.1-	4	X 3800 l	- à résiduel de		200	l		
4.2-	11	X 2800 l	"	"	200	l		
4.3-	440	X 170 l	"	"	2850	l	(16)*	
4.4-		X	"	"		l		

5 : Autres produits: 1 l de molybdénum disulfide

6 : Autres équipements: -

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques:

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT		333 A
Date de visite: 85-07-15	Priorité:	3

1 : Édifice de survie

1.1 - Structure : Vandalisé
1.2 - Mobilier : Disparue

2 : Remise - Station de pompage: Intacte

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	1·1	X	3800	1	- à résiduel de	950	1		
4.2	-	-	X	2800	1	- " " " "	-	1		
4.3	-	425	X	170	1	- " " " "	-	1	(	)*
4.4	-		X		1	" " " "		1		

5 : Autres produits : -

6 : Autres équipements : 2 tracteurs chenille

7 : Accessibilité : Hydravion

8 : Nature du sol : Sable

9 : Remarques : Le site est relativement propre.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	336
Date de visite: 85-07-16	Priorité: 1

1 : Bâtiment principal

1.1 - Structure : Intacte

1.2 - Commodités

1.2.1- Armoires : Vandalisé(es)
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 2
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 1

4 : Réservoirs de carburant:

4.1-	4	X 3800 l	- à résiduel de		13250	l		
4.2-	5	X 2800 l	"	"	"	10400	l	
4.3-	930	X 170 l	"	"	"	19300	l	(113)*
4.4-		X	"	"	"		l	

5 : Autres produits: 38 l d'huile SAE-30

6 : Autres équipements: -

7 : Accessibilité: Hydravion

8 : Nature du sol: Roc

9 : Remarques: Trois (3) des réservoirs de 3800 l sont pleins.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	336 A
Date de visite: 85-07-16	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Intacte
1.2 - Mobilier : Disparu

2 : Remise - Station de pompage: Disparu

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	7	X	3800	l	- à résiduel de	-	1		
4.2	-	-	X	2800	l	- " " " "		1		
4.3	-	270	X	170	l	- " " " "	200	1	(1)*	
4.4	-		X	1		" " " "		1		

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Sable

9 : Remarques : Le bâtiment principal a été réaménagé par des autochtones. On retrouve sur la porte d'entrée l'inscription "Cree Trappers Association." Suivant la version qui serait retenue pour le projet Grande-Baleine, le site actuel risque éventuellement d'être inondé, et advenant cette éventualité, devrait être complètement désafecté.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	339
Date de visite: 85-07-16	Priorité: 1

1 : Bâtiment principal

1.1 - Structure : Vandalisé(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Intact(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: Disparues
1.3.4- Étagères : Intactes
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 3
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 1

2 : Hutte de survie

2.1 Structure: Intact(e)
2.2 Mobilier : "

3 : Tour(s) de radar: 1

4 : Réservoirs de carburant:

4.1-	9	X 3800 l	- à résiduel de		24225	l		
4.2-	-	X 2800 l	"	"	"	-	l	
4.3-	1250	X 170 l	"	"	"	3600	l	(21)*
4.4-		X	"	"	"		l	

5 : Autres produits: 38 l d'huile SAE-30

6 : Autres équipements: -

7 : Accessibilité: Hélicoptère

8 : Nature du sol: Roc

9 : Remarques: Un des réservoirs de 3800 l dégoutte à 1 goutte/5min.
Quatre (4) des réservoirs de 3800 l sont pleins.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	339 A
Date de visite: 85-07-16	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Intacte
1.2 - Mobilier : Disparu

2 : Remise - Station de pompage: Disparu

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	4	X	3800	l	- à résiduel de	-	1		
4.2	-	-	X	2800	l	- " " " "	-	1		
4.3	-	140	X	170	l	- " " " "	950	1	(4)*	
4.4	-		X	1	"	" " "		1		

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion

8 : Nature du sol : Sable

9 : Remarques : L'édifice principal est utilisé par les autochtones.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	342
Date de visite: 85-07-17	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Disparu(es)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : Disparu(es)
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 0
1.4.2- Banque(s) de batterie: 0
1.4.3- Diesel(s) 20 Kw : 0
1.4.4- Alternateur(s) : 0
1.4.5- Réservoir pression : 0

2 : Hutte de survie

2.1 Structure: Disparu (e)
2.2 Mobilier : "

3 : Tour(s) de radar: 0

4 : Réservoirs de carburant:

4.1-		-	X 3800 1	- à résiduel de		-	1		
4.2-		-	X 2800 1	"	"	-	1		
4.3-	350	X	170 1	"	"	-	1	(	)*
4.4-			X	"	"		1		

5 : Autres produits: -

6 : Autres équipements: -

7 : Accessibilité: Hélicoptère, moto-neige

8 : Nature du sol: Roc

9 : Remarques: Même si les structures principales ont été enlevées, le site demeure jonché de débris de toutes sortes.

( )* Nombre de barils de 170 1 pleins

SITE D'APPROVISIONNEMENT	403 A
Date de visite: 85-07-17	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Disparu(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	13	X	3800	l	-	à résiduel	de	-	1
4.2	-	-	X	2800	l	-	" "	"	-	1
4.3	-	350	X	170	l	-	" "	"	-	1 ( )*
4.4	-		X	1	"	"	"	"		1

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion, bateau, moto-neige

8 : Nature du sol : Sable

9 : Remarques : L'air salin a considérablement affecté l'état de la plupart des barils au point où certains sont aujourd'hui presque disparus.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	403
Date de visite: 85-07-17	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Vandalisée

1.2 - Commodités

1.2.1- Armoires : Disparu(es)
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect :Vandalisé(es
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : 2
1.4.2- Banque(s) de batterie: 2
1.4.3- Diesel(s) 20 Kw : 3
1.4.4- Alternateur(s) : 3
1.4.5- Réservoir pression : 0

2 : Hutte de survie

2.1 Structure: Intacte
2.2 Mobilier : Vandalisé

3 : Tour(s) de radar: 2

4 : Réservoirs de carburant:

4.1-	6	X	3800	l	- à résiduel de	200	l		
4.2-	-	X	2800	l	" " "	-	l		
4.3-	550	X	170	l	" " "	200	l	(	)*
4.4-		X			" " "		l		

5 : Autres produits: -

6 : Autres équipements: 1 Herman-Nelson

7 : Accessibilité: Hélicoptère; moto-neige

8 : Nature du sol: Roc

9 : Remarques: En enlevant une des poutres d'acier qui se trouvait sous le bâtiment, des personnes qui sont passées par là ont considérablement endommagé celui-ci. L'inspection faite sur place démontre par ailleurs l'évidence de nombreux déversements.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	406
Date de visite: 85-07-17	Priorité: 3

1 : Bâtiment principal

1.1 - Structure : Disparu(e)

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect :Vandalisé(es)
1.3.2- Bombonnes CO_2 :Intactes
1.3.3- Pièces rechange:Vandalisées
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : Vandalisé(es)
1.4.2- Banque(s) de batterie: "
1.4.3- Diesel(s) 20 Kw : "
1.4.4- Alternateur(s) : "
1.4.5- Réservoir pression : "

2 : Hutte de survie

2.1 Structure: Disparu(es)
2.2 Mobilier : "

3 : Tour(s) de radar: 1

4 : Réservoirs de carburant:

4.1-	8	X 3800 l	- à résiduel de			-	1	
4.2-	-	X 2800 l	"	"	"	-	1	
4.3-	1110	X 170 l	"	"	"	-	1	( )*
4.4-		X	"	"	"		1	

5 : Autres produits: -

6 : Autres équipements: Station de pompage à flanc de montagne

7 : Accessibilité: Hélicoptère, bateau

8 : Nature du sol: Roc

9 : Remarques: Malgré que les bâtiments soient disparus, beaucoup de déchets de toutes sortes jonchent le sol. C'est le cas des bombonnes de CO_2. Une particularité à cette station est le fait qu'on y avait installé une station de pompage à flanc de colline. On retrouve à cet endroit 4 réservoirs de 3800 l.

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	406 A
Date de visite: 85-07-17	Priorité: 3

1 : Édifice de survie

1.1 - Structure : Disparu(e)
1.2 - Mobilier : "

2 : Remise - Station de pompage: Disparue

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-		-	X	3800	l	-	à résiduel	de	-	1
4.2	-		-	X	2800	l	-	"	"	-	1
4.3	-	210	X		170	l	-	"	"	-	1 ( )*
4.4	-			X	1	"	"	"	"		1

5 : Autres produits : -

6 : Autres équipements : -

7 : Accessibilité : Hydravion, bateau

8 : Nature du sol : Sable

9 : Remarques : -

( )* Nombre de barils de 170 l pleins

SITE D'APPROVISIONNEMENT	409 A
Date de visite: 85-07-17	Priorité: 3

1 : Édifice de survie

1.1 - Structure : voir remarques
1.2 - Mobilier : "

2 : Remise - Station de pompage: -

3 : Autres bâtiments: -

4 : Réservoirs de carburant:

4.1	-	4	X	3800	l	-	à résiduel	de	-	1
4.2	-	-	X	2800	l	-	" "	"	-	1
4.3	-	440	X	170	l	-	" "	"	-	1 ( )*
4.4	-		X	1	"	"	"	"		1

5 : Autres produits : -

6 : Autres équipements : 1 camion; 2 tracteurs-chenille; 1 tracteur; 1 remorque à l'intérieur d'un garage

7 : Accessibilité : Bateau

8 : Nature du sol : Zone humide et sable

9 : Remarques : Ce site comprend 5 bâtiments principaux soit 2 dortoirs (7 chambres), 1 cafétéria, 1 hangar, 1 garage, tous en bon ordre. L'équipement en place semble avoir été utilisé au début des années 80 à des fins de pourvoirie par les Cris. La présence de 3 tombes démontre d'ailleurs une utilisation récente des lieux.

( )* Nombre de barils de 170 l pleins

SITE DE DÉTECTION	410
Date de visite: 85-07-17	Priorité: 1

1 : Bâtiment principal

1.1 - Structure : voir remarques

1.2 - Commodités

1.2.1- Armoires : "
1.2.1- App. ménagers: "
1.2.3- Mobilier : "

1.3 - Salle de travail

1.3.1- Panneaux élect : "
1.3.2- Bombonnes CO_2 : "
1.3.3- Pièces rechange: "
1.3.4- Étagères : "
1.3.5- Table travail : "

1.4 Salle électrique

1.4.1- Réservoir(s) diesel : -
1.4.2- Banque(s) de batterie: -
1.4.3- Diesel(s) 20 Kw : -
1.4.4- Alternateur(s) : -
1.4.5- Réservoir pression : -

2 : Hutte de survie

2.1 Structure: -
2.2 Mobilier : "

3 : Tour(s) de radar: 2 tours avec coupolle grande dimension

4 : Réservoirs de carburant:

4.1-	- X 3800 l	- à résiduel de		- 1		
4.2-	- X 2800 l	"	"	- 1		
4.3-	- X 170 l	"	"	- 1	(	)*
4.4-	2 X18900 l voir remarques	"	"	- 1		

5 : Autres produits: -

6 : Autres équipements: 5 transformateurs Norelco (110 l) dont 1 plein

7 : Accessibilité: Bateau

8 : Nature du sol: Roc et sable

9 : Remarques: Ce site est de loin le plus important des sites de détection visité.

La présence des deux immenses tours (75m) avec coupole, les rendent visibles à de grandes distances. Les bâtiments qu'on y retrouve (1 hangar, 1 garage-3 portes, 1 bâtiment-résidence et autres) sont en assez piètre état et probablement difficilement récupérables. Le site est jonché de déchets de toutes sortes.

( )* Nombre de barils de 170 l pleins

voir suite...

SITE DE DÉTECTION		410
Date de visite: 85-07-17	Priorité:	2

(remarques suite)

Dû au fait que des transformateurs ont été retrouvés sur place, un soin particulier fut donné à l'inspection des lieux.

Cinq (5) réservoirs dont quatre (4) d'environ 200,000 l et un autre d'environ 400,000 l sont encore présents sur le site. Ceux-ci n'ont pu être jaugés étant donné leur taille, mais il y a tout lieu de croire étant donné la position des valves de vidange, que ceux-ci pourraient contenir encore quelques dizaines de millier de litres de carburant.

Cette situation est d'autant plus déplorable que la pointe Louis XIV où l'on retrouve la station 410 est considérée comme une aire de repos importante pour la sauvagine et serait une aire de mise bas de l'ours blanc. De plus les séquences végétales y sont particulières et uniques puisqu'il s'agit à cette latitude, d'une zone de toundra en pleine taïga.

(

ANNEXE II

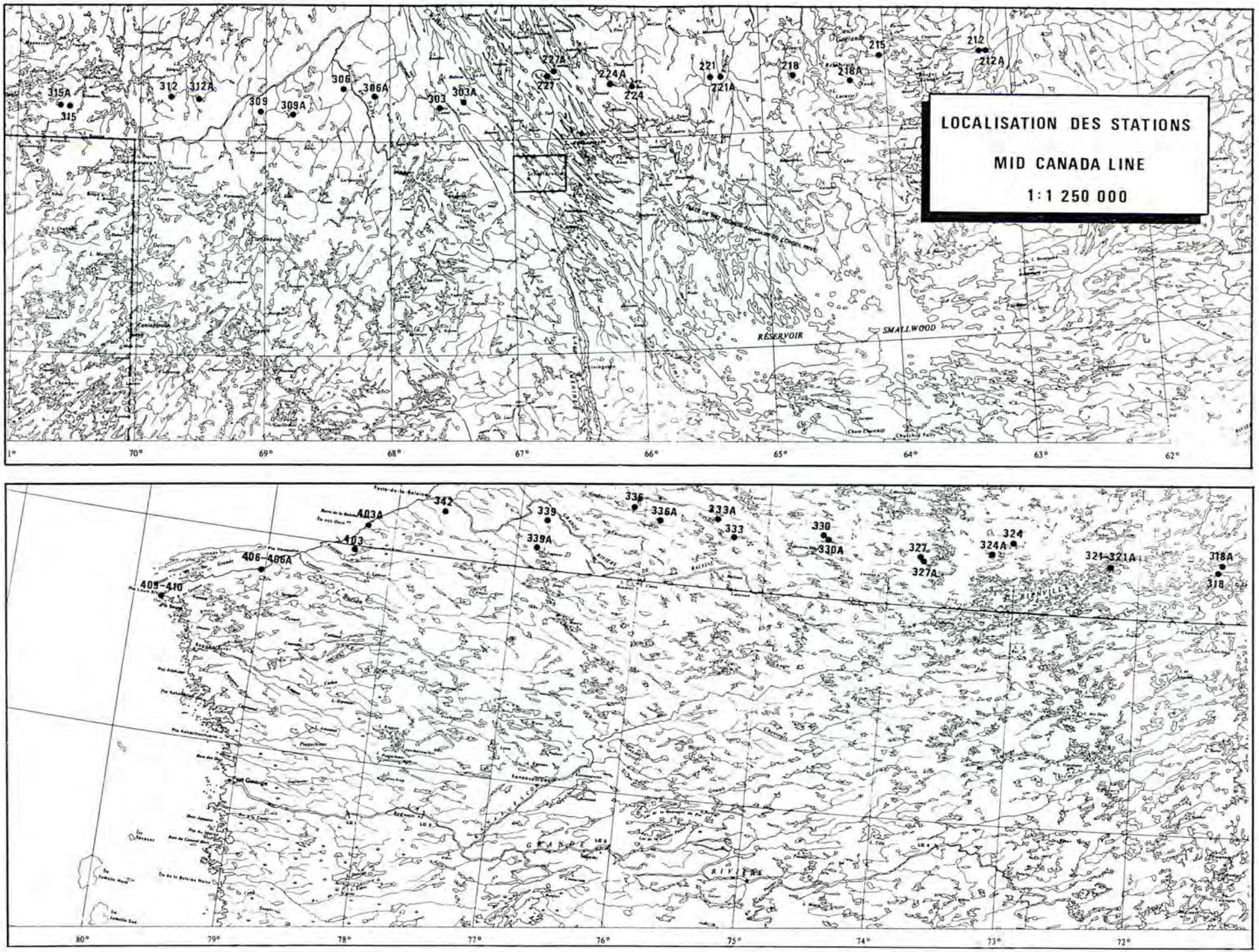
CARTE DE LOCALISATION

DES STATIONS

Appendix II

Map of

Station Locations


LOCALISATION DES STATIONS
MID CANADA LINE
1:1 250 000
315A
315
312
312A
309
309A
306
306A
303
303A
227A
227
224A
224
221
221A
218
218A
215
212
212A
RÉSERVOIR
SMALLWOOD
342
403A
403
406
406A
409-410
339
339A
336
336A
333A
333
330
330A
327
327A
324
324A
321-321A
318A
318
GRANDE
RIVIÈRE
1°
70°
69°
68°
67°
66°
65°
64°
63°
62°
80°
79°
78°
77°
76°
75°
74°
73°
72°

ANNEXE III

DESCRIPTION

DES PRODUITS DANGEREUX

Appendix III

Description

of Hazardous Products

Acide carbolique

- Nom d'étiquette légal pour Phenol

Formule chimique: $C_6 H_5 OH$

Propriété physique: aiguilles incolores devenant roses si le produit n'est pas parfaitement pur; déliquescentes, saveur brûlante, odeur forte. Si le produit est parfaitement pur, il ne s'oxyde pas et ne s'hydrate pas.

Poids moléculaire:		94.11
Densité	:	1.07
Point de fusion	:	43°C
Point d'ébulition:		182°C

Soluble : alcool, glycérine, chloroforme, éther, benzène, sulfure de carbone, huiles, eau, acide acétique, éther de pétrole, acétone.

Danger : Caustique.

Utilisation: thérapeutique, désinfectant, matières colorantes, préparation de l'acide picrique, l'acide salicylique, la phénacétine, explosifs, conservateur des encres, parfumerie, résines synthétiques, masses plastiques, caoutchouc synthétiques, tanerie, photographie, solvant pour rafiner des huiles lubrifiantes, inhibiteur de formation de boue dans les huiles.

Toxicité : toxique par ingestion, inhalation et absorption cutanée. Irritant des tissus.

Tolérance : 5 ppm dans l'air.

Toxicité : 1.5 ppm / 48 hrs / truite arc-en-ciel / T Lm / eau douce

Antigel

Produits dont les solutions aqueuses possèdent la propriété de ne pas se transformer en glace entre 0 et -5 et -10°C.

- Acétate de méthyl - cellosolve
- Acétate de méthyl - glycol
- Glycols
- Alcool dénaturé
- Méthanol
- Isapropanol

Note: Ici, il nous a été impossible d'identifier de quel type d'antigel is s'agissait.

$C CL_4$

Synonyme: Tétrachlorure de Carbone

Propriété physique: liquide incolore, odeur sucrée.

Poids moléculaire : 153.8
Densité : 1.59
Point de fusion : 76.5°C
Point de congélation: 283°C

Miscible : alcohol, éther, chloroforme, benzène et la plupart des huiles.

Insoluble dans l'eau.
Ininflammable.

Danger : produit des vapeurs toxiques.

Utilisation: réfrigérant, dégraissant pour le métal, production de semi-conducteurs, solvant (gras, huile, caoutchouc).

Toxicité : toxique par inhalation, ingestion.

Tolérance : TLV 10 ppm
0.5 à 5 g / kg (rat) LD_{50}

Toxicité air : 25 ppm pour 30 min.

DDT (5%)

Synonyme: Dichlorodiphénytrichloroéthane

Formule chimique: $(p.ClC_6H_4)_2CHCCl_3$

Propriété physique: cristaux incolores ou poudre blanche. Inodore. Insoluble dans l'eau.

Poids moléculaire : 354.5
Densité : 1.56

Soluble : acétone, éther, benzène, tétrachlorure de carbone, kérozène, dioxane et pyridine.

Danger : persistant, non biodégradable, s'accumule dans la chaîne alimentaire.

Utilisation: insecticides, pecticides.

Toxicité : toxique par ingestion.

Tolérance : 50 à 500 mg / kg (rat) LD_{50}

Toxicité : 0.0039 ppm / 24 hrs / achigan / TL_{50} / eau douce.
eau

Hydrate de Méthyl

Synonyme: Méthy alcohol, alcohol de bois, etc.

Formule chimique: CH_3OH

Propriété physique : liquide incolore.

Poids moléculaire : 32.05
Densité : 0.79
Point d'ébulition : 64.5°C

Miscible : eau, alcohols et éther.

Danger : inflammable.

Utilisation: production de formaldihyde, antigel, solvant pour nitrocellulose, éthylcellulose, résines, etc.

Toxicité : toxique par ingestion, agit sur le système nerveux.

Tolérance : 200 ppm dans l'air.

Molybdénum disulfide

Formule chimique: MoS_2

Propriété physique : poudre crystaline noire. Insoluble dans l'eau.

Densité : 4.8
Point de fusion : 1,185°C

Soluble : acide sulfurique.

Danger : à haute température, se décompose pour former des gaz toxiques SO_x.

Utilisation: lubrifiant de graisses, dispersion d'huile.

ANNEXE IV

SCHÉMA-TYPE D'UN BÂTIMENT

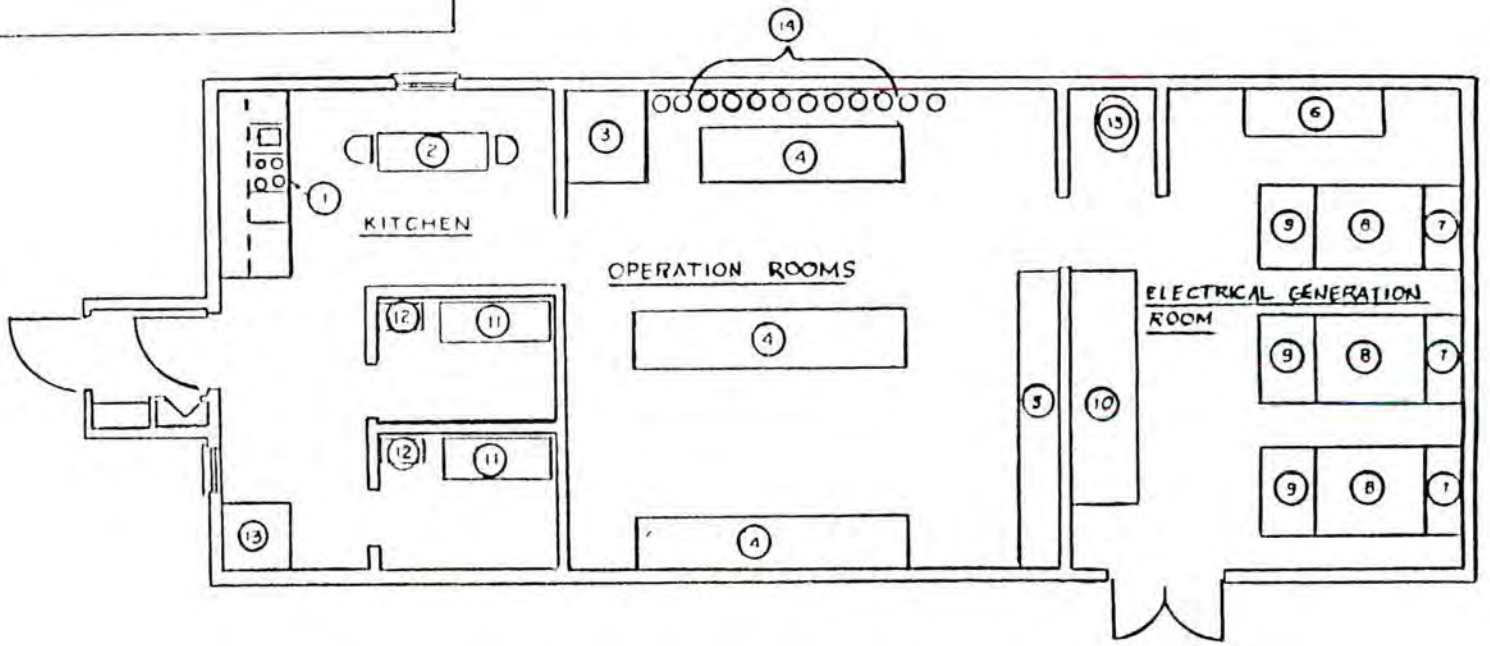
DE DÉTECTION DOPPLER

Appendix IV

Typical Layout of a

Doppler Detection Building

1. KITCHEN SHELVES AND COMBINED STOVE, FRIDGE, SINK & OVEN
2. KITCHEN TABLE
3. WORK BENCH
4. ELECTRONIC PANELS
5. ELECTRONIC EQUIPMENT AND SPARE PARTS SHELVE
6. DIESEL STORAGE TANK
7. BATTERY BANKS
8. DORMAN DIESEL
9. GENERAL ELECTRIC ALTERNATOR AND EXCITER
10. WORK BENCH
11. BED
12. LOCKERS
13. SHOWERS
14. CO_2 CYLINDERS
15. TOILET



AUXILLARY SITES OF MID CANADA LINE IN NORTHERN QUEBEC

TYPICAL LAYOUT OF DOPPLER DETECTION BUILDING

SCALE : N T S

Detection site 227

Location:	55°17'N, 66°43'W
Distance from Schefferville:	55 km
General state of the facilities:	The main building is damaged, and there is almost nothing inside.

Supply site 227A

Location:	55°18'N, 66°41'W
Distance from Schefferville:	57 km
General state of the facilities:	There is no building on this site which is located in a wet area. The log cabin is in bad condition.
Recommendations:	The site should be cleaned, and approximately 250 barrels need to be piled.

Detection site 303 45 litres of SAE-30

Location:	55°09'N, 67°34'W
Distance from Schefferville:	60 km
General state of the facilities:	The main building is undamaged, but the equipment and the electric appliances have been broken.
Recommendations:	The building and the site should be cleaned, and approximately 70 barrels need to be piled.

Supply site 303A Float Plane

Location:	55°11'N, 67°25'W
Distance from Schefferville:	54 km
General state of the facilities:	There is no building on this site which is located in a wet area. 160 barrels are piled on the other side of the lake.

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3 sets of batteries
3 - Generator
140 Barrels
1 Norman nelson
75 litre SAE-30

Detection site 306 Helicopter.

Location:	55°15'N, 68°20'W
Distance from Schefferville:	105 km
General state of the facilities:	The main building, the equipment and the electric appliances are undamaged. The survival shelter is also intact, but the furniture has been damaged. Many empty barrels and metal debris are scattered in the surroundings. One Norman-Nelson is sitting on the site.
Recommendations:	The major part of the work will consist of gathering and piling barrels on the site. The main building also needs to be cleaned a bit.

Supply site 306A Float Plane 520 barrels on site.

Location:	55°13'N, 68°06'W
Distance from Schefferville:	89 km
General state of the facilities:	There is no building on this site which is located in a wet area, except a log cabin used for storage. Many barrels scattered on the lake shore were leaking, but they have been piled at a distance from the water.
Recommendations:	The site needs to be cleaned a bit.

Detection site 309 Helicopter

3- sets of batteries
3- Generators
170 - Barrels
55 litre SAE-30

Location:	55°10'N, 69°00'W
Distance from Schefferville:	142 km
General state of the facilities:	The main building, the survival shelter, the equipment and the electric appliances are undamaged. Six rolls of fencing, and the debris from an helicopter are still on the site.
Recommendations:	Most of the barrels have already been piled, and only the inside of the building remains to be cleaned.

MID-CANADA LINE – CLEAN-UP PROJECT

List of material left at Kuujjuaraapik on 15 September, 2000

- 9 bags of lime (15 kg each);
- 2 bags of Bio-Lawn (around 20 kg + 10 kg);
- 1 roll of rope (0.07 feet; a quarter inch);
- 2 foam mattresses;
- 1 flat shovel;
- 1 long handle shovel;
- 2 industrial brooms;
- around 150 heavy duty bags;
- 6 Naphta (4 litres each);
- 3 Coleman (one needs a needle valve);
- 1 plastic container, containing:
  - 1 pair of rubber boots, size 12;
  - 1 pair of rubber boots, size 8;
  - 1 repair kit for rubber boots;
  - 4 rolls of duck tape;
  - 1 can of spray can, fluorescent;
  - 2 small funnels;
- 1 plastic container, containing:
  - 1 large metal funnel;
  - chain oil;
  - 1 Naphta (4 litres);
  - 2 tarps;
- 1 cooler (cool bag?) containing :
  - camping plates and cups;
  - ziplock bags, aluminum foil;
  - 1 thermos, etc.
- 1 plastic container containing:
  - 7 hard hats;
  - 1 pair of security glasses;
  - 1 marker;
- 1 plastic container containing:
  - camping dishes, tea pot, pots.
- 3 x 20 liters water containers (2 are rigid; 1 is foldable);
- 2 x 5-gallons container for gasoline;
- 1 pair of chest waders, size 8 or 10;
- 2 axes, 1 sledgehammer, 1 manual saw;
- 9 plastic containers (not sure about total number of plastic containers)
- 2 pairs of new gloves; 2 pair of used gloves
- raingear: 3 pants (2 x Medium,1 x Large); 1 coats (1 x Medium, 1 x Large).

Note: One long handle shovel was lost on site 342. To be found.

MID-CANADA RADAR LINE – CLEAN-UP

LIST OF MATERIAL LEFT AT THE McGILL RESEARCH STATION, SCHEFFERVILLE ON 29 JUNE, 2000

Clothing

Chest waders; 3 pairs (size 9, 10, and 12);
Working gloves: 77 pairs
Repair kit for rubber boots: 3
Rain gear: 4 new, and 2 used ones
Leather boots: 3 pairs (size 7, 9, and 12)
Hard hat: 15
Security glasses: 10 pairs

Camping

Metal cups for camping:12
Coleman stove: 3
Rubber boots: 3 pairs (size 8, 12, and 12)
First Aid kits: 10?
Kitchen supply
Water container, 5 gallons capacity: 3
Water container, 20 gallons capacity: 1

Tools

Tool box: 1 with various tools
Axe: 2

Work on/inside buildings

Lexan 3/16" thickness: 4 rolls, total of about 590 m^2
Silicone: 24 tubes
Flat shovel: 3
Industrial broom: 4
Gaz container, 5 gallons capacity: 3
Ruler 36" length: 2 (lost?)

Bio-remediation

Fertilizer Bio-Lawn 8-3-3: 2 bags of 20 kg and 1 bag of 10 kg

Dolomitic Lime: 25 bags of 15 kg
Measuring cup, capacity 1 litre: 2
Long handle shovel: 4
Moisture meter: 2
Wood poles: 20 ?
Forestry flag: 2 rolls

Miscellaneous

Empty plastic container: 5 medium size, 1 small size, 1 big size
Plastic container: 3 medium size contain lime and fertilizers
Funnel: 1
Systems of pipe for barrel decantation: 2
Paint in spray, fluo: 2
Plastic cutters: 2
Nail set (poinçon à clous): 3
Permanent marker: 3
Duck tape: 8 rolls

To be picked up in Shefferville

Chest waders; 3 pairs (size 9, 10, and 12 bring only the size 12);
Working gloves: 77 pairs bring twenty four pairs
Repair kit for rubber boots: 3
Rain gear: 4 new, and 2 used ones to be checked
Leather boots: 3 pairs (size 7, 9, and 12)
Hard hat: 15 bring 8
Security glasses: 10 pairs

Metal cups for camping:12
Coleman stove: 3 bring two
Rubber boots: 3 pairs (size 8, 12, and 12)
First Aid kits: 10?
Water container, 5 gallons capacity: 3 bring two

Tool box: 1 with various tools
Axe: 2

Lexan 3/16" thickness: 4 rolls, total of about 590 m^2
Silicone: 24 tubes bring 12
Flat shovel: 3 bring one
Industrial broom: 4 bring 2
Gaz container, 5 gallons capacity: 3
Ruler 36" length: 2 (lost?)

Fertilizer Bio-Lawn 8-3-3: 2 bags of 20 kg and 1 bag of 10 kg bring one gag of 20 kg
Dolomitic Lime: 25 bags of 15 kg bring ten bags
Measuring cup, capacity 1 litre: 2
Long handle shovel: 4
Moisture meter: 2
Forestry flag: 2 rolls

Empty plastic container: 5 medium size, 1 small size, 1 big size
Plastic container: 3 medium size contain lime and fertilizers
Funnel: 1
Paint in spray, fluo: 2

Plastic cutters: 2
Nail set (poinçon à clous): 3
Permanent marker: 3
Duck tape: 8 rolls

Supply site 309A Float plane 580-Barrels.

Location: 55°08'N, 68°47'W

Distance from Schefferville: 128 km

General state of the facilities: There is no building on this site which is located in a wet area. The pumping-station is intact; however, the pump and the pipes should be dismantled in order to avoid water contamination.

Recommendations: Most of the barrels have been piled, and only the site remains to be cleaned. Important traces of fuel have been observed.

Detection site 312 Helicopter

3-sets of batteries
3-Generators
50-Barrels 45gal.
10 litres DDT(5%)
7 " " Antifreeze
110 litres SAE-30

Location: 55°13'N, 69°44'W

Distance from Schefferville: 188 km

General state of the facilities: The main building, the equipment and the electric appliances are undamaged. The survival shelter is also in good condition, but the furniture has been damaged. One bulldozer is still sitting on the site.

Recommendations: Most of the barrels have been piled, the main building and the site remain to be cleaned.

Supply site 312A Float plane 750-Barrels

Location: 55°11'N, 69°32'W

Distance from Schefferville: 174 km

General state of the facilities: The survival building is intact, but the furniture has been damaged. This building seems to be used by fishermen or hunters, because it has been repaired a few times. There is also a log cabin used for storage. The pumping-station is not in good condition, so the pump and the pipes should be dismantled in order to avoid water contamination. The access to the site is not easy since it is located in a marshy area.

Recommendations: It must be determined who uses the premises. Also, the site needs a good cleaning and some barrels have to be piled. In 1985, one of the reservoirs was leaking. It was fixed temporarily, but it might have to be repaired again, if not dismantled.

CCl4

3 - sets of batteries
3 - Generators
130 - Barrels (45 gal)
0.3 L CCl4
0.2 L Molybdénum disulfide
4L SAE-30

Detection site 315 Helicopter

Location: 55°09'N, 70°34'W

Distance from Schefferville: 239 km

General state of the facilities: The main building, the survival shelter, the equipment and the electric appliances are undamaged.

Recommendations: The building and the site in general need to be cleaned, and many barrels should be piled. Leaking of the reservoirs have been observed.

Supply site 315A Float plane 590 Barrels

Location: 55°09'N, 70°40'W

Distance from Schefferville: 243 km

General state of the facilities: The survival building is intact, but the furniture has been damaged. A log cabin is also used for storage.

Recommendations: Most of the barrels have already been piled, but the site and the survival shelter need to be cleaned. Since, the scenery is particularly nice around there, the existing facilities could be used by outfitters.

Detection site 318 Helicopter

3-sets of batteries
3-Generators
160 - Barrels
95L SAE-30
11 KG Bacon ~~lubricant~~ Lubricant

Location: 55°14'N, 71°20'W

Distance from Schefferville: 288 km

General state of the facilities: The main building, the survival shelter, the equipment and the electric appliances are undamaged. A bulldozer and the parts of a survival shelter (piled up) are sitting on the site.

Recommendations: The building and the site in general need to be cleaned, and some barrels should be piled.

Supply site 318A Float plane

Location: 55°16'N, 71°19'W

Distance from Schefferville: 287 km

General state of the facilities: The survival shelter and the furniture are intact. A radio-antenna is still on the site.

Recommendations: Some cleaning has already been done, but metal debris near the lake still need to be picked up. The site could be used for fishing activities.

Detection site 321 Helicopter

3-sets of batteries
3-Generators
120- Barrels
75 L SAE-30

Location: 55°15'N, 72°12'W

Distance from: Schefferville: 341 km
Kuujjuaraapik: 350 km

General state of the facilities: The main building, the survival shelter, the equipment and the electric appliances are undamaged.

Recommendations: As much as possible, the 42 rolls of fencing and the metal pegs should be recuperated. The main building and the site have to be cleaned.

Supply site 321A Float plane

580- Barrels

Location: 55°15'N, 72°10'W

Distance from: Schefferville: 341 km
Kuujjuaraapik: 350 km

General state of the facilities: The survival building and the furniture are undamaged. The facilities are located in a wet area.

Recommendations: This site needs a good clean-up because there are several types of metal debris and barrels scattered throughout the area. It could then be used for hunting and fishing activities since it is located on the shore of Lake Bienville, an area occupied by Canada geese.

Detection site 324 Float plane.

3-sets of Batteries
3-Generators
480- Barrels
2L methyl hydrate
15L Anti-freeze
75L SAE-30

Location: 55°19'N, 73°01'W

Distance from Kuujjuaraapik: 299 km

General state of the facilities: The main building, the survival shelter, the equipment and electric appliances are undamaged. A compressor, a caterpillar-tractor and a Herman-Nelson are still sitting on the site.

Recommendations: The building and the site in general need to be cleaned, and some barrels should be piled. Important traces of leaking have been observed where the barrels were left.

Location of Mid-Canada Sites

- 22 Detection Sites
- 20 Supply Sites

1- Detection site 215
Location: 55°22'N, 64°01'W

2- Detection site 218
Location: 55°13'N, 64°49'W

3- Supply site 218A
Location: 55°15'N, 64°15'W

4- Detection site 221
Location: 55°18'N, 65°25'W

5- Supply site 221A
Location: 55°18'N, 65°20'W

6- Detection site 224
Location: 55°14'N, 66°02'W

7- Supply site 224A
Location: 55°16'N, 66°14'W

8- Detection site 227
Location: 55°17'N, 66°43'W

9- Supply site 227A
Location: 55°18'N, 66°41'W

10- Detection site 303
Location: 55°09'N, 67°34'W

11- Supply site 303A
Location: 55°11'N, 67°25'W

12- Detection site 306
Location: 55°15'N, 68°20'W

13- Supply site 306A
Location: 55°13'N, 68°06'W

14- Detection site 309
Location: 55°10'N, 69°00'W

15- Supply site 309A
Location: 55°08'N, 68°47'W

16- Detection site 312
Location: 55°13'N, 69°44'W

17- Supply site 312A
Location: 55°11'N, 69°32'W

18- Detection site 315
Location: 55°09'N, 70°34'W

19- Supply site 315A
Location: 55°09'N, 70°40'W

20- Detection site 318
Location: 55°14'N, 71°20'W

21- Supply site 318A
Location: 55°16'N, 71°19'W

22- Detection site 321
Location: 55°15'N, 72°12'W

23- Supply site 321A
Location: 55°15'N, 72°10'W

24- Detection site 324
Location: 55°19'N, 73°01'W

25- Supply site 324A
Location: 55°17'N, 73°11'W

26- Detection site 327
Location: 55°14'N, 73°44'W

27- Supply site 327A
Location: 55°13'N, 73°43'W

28- Detection site 330
Location: 55°18'N, 74°34'W

29- Supply site 330A
Location: 55°17'N, 74°33'W

30- Detection site 333
Location: 55°17'N, 75°16'W

31- Supply site 333A
Location: 55°20'N, 75°25'W

32- Detection site 336
Location: 55°21'N, 76°05'W

33- Supply site 336A
Location: 55°16'N, 75°59'W

34- Detection site 339
Location: 55°15'N, 76°49'W

35- Supply site 339A
Location: 55°15'N, 76°50'W

36- Detection site 342
Location: 55°15'N, 77°38'W

37- Detection site 403
Location: 54°59'N, 78°18'W

38- Supply site 403A
Location: 55°06'N, 78°13'W

39- Detection site 406
Location: 54°49'N, 79°01'W

40- Supply site 406A
Location: 54°48'N, 79°03'W

41- Supply site 409A
Location: 54°38'N, 79°45'W (Cape Jones)

42- Detection site 410
Location: 54°38'N, 79°45'W (Cape Jones)

2208

327
Building intact
2 - Reservoirs (Generator)
3 sets of Ballonis
2 - radars.
9 - 3800 litres tanks.
5 - 2800 " "
880 - 45 gal drums.
19 litres of SAE-30 oil.

327-A. float plane.
? = 3800 litres
? = 2800 litres.
20 - 45 gal drums.

324-A float plane.
7 - 3800 litres.
? - 2800 " "
240 - 45 gal drums.

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.132

4451 - 3224 0226

324 float plane.
2 - Reservoir (Generator)
3 - sets of Batteries.
3 - Generators.
4 = 3800 litres. tank
5 = 2800 " " tank
480 = 45 gal drums.
other products
÷ 21 litres methyl hydrates.
15 litres Anti Freeze
75 litres - SAE 30

321-A float plane.

9 - 3800 L tanks.
580 - 45 gal drums.

321 Helicopter
2 - Reservoir for Generator.
3 - sets of Batteries
3 - Diesel Generator.
10 - 3800 L tanks.
6 - 2800 L " "
120 - 45 gal drums.
75 L SAE-30 oil

318 A Float plane.
1 - 3800L tanks.
760 - 45 gal drums.

318 Helicopter.

2 - Reservoir (Generator)
3 - sets of Batteries
3 - Generator.
4X 3800L tanks.
5X 2800L " "
160X 45 gal drums.
95 L SAE 30 oil.
11 Kg. beacon Lubricant.

315 - A Float plane.

7 X 3800 L tanks.
590 X 45 gal drums.

315 Helicopter.

2X Diesel Reservoir (Generator).
3 - sets of batteries.
3 - Generators.
4X 3800L tanks.
5X 2800L tanks.
130X 45 gal drums.
4 Liter SAE - 50
0.3 L CCl_4
0.2 L molybdenum ~~disulfide~~ Disulfide.

312 Helicopter.
2x diesel reservoir (Generator)
3 - sets of Batteries
3. Generators.
9x 3800 L tanks.
50 x 45 gal drums.
10 Litres DDT (5%)
7 " " Anti-Freeze
110 L SAE-30 oil.
1- Bulldozer.

312-A Float plane.
7x 3800 L tanks.
750 x 45 gal drums.

309 Helicopter.
2x Diesel Reservoir tanks (Generators)
3 - sets of batteries
3 - Generators.
17x 3800 Litres tanks.
170 x 45 gal drums.
55 L SAE-30 (oil).

309 A Float plane.
16x 3800 L tanks.
580 x 45 gal drums.

306 Helicopter

2x Diesel Reservoir (tanks)
3 x sets of batteries
3 x Generator.
9X 3600 Litre tanks.
140 x ~~45~~ 45 gal drums
75 L SAE-30 (oil)
1- Norman - Nelson

306-A float plane.

2x 3800 L tanks.
~~520~~ ~~540~~ x 45 gal drums.

303 Road from 303A.
0- Diesel Reservoir
0- Generator.
1X 3800 L tank.
70 x ~~30~~ 45 gal drums.
1 x 75 l SAE-30 oil.

Copy 303
303A.
224
224-A.
227
227-A

303 A Float plane.
4X 3800 L tanks.
780 x 45 gal drums.

2. Problem Statement

2.1 General

The sites that are part of the Mid-Canada Line situated in Quebec have been abandoned for over thirty years. The hydrocarbons that were left have been eliminated in the Phase I cleanup in 1987. No other cleanup was ever performed at the sites, apart from the collection and piling up of barrels during Phase I where time allowed.

As a result, these sites are in general in dismal condition; miscellaneous physical debris are ubiquitous and abundant. In some instances, these debris represent a safety and environmental threat. Limited soil contamination by hydrocarbons have been observed. Finally, vandalism compounded by harsh weather conditions and neglect have made some of the buildings unstable, rendering the sites prone to accidents.

2.2 Chemical Contamination

The information available with respect to the type of chemical products used at supply and detection sites, together with results obtained from the chemical analysis of samples (soil, surface water and construction material) collected this summer (1998), indicate that the chemical contamination of the Mid-Canada Line sites situated in Quebec is minimal and mostly confined to localized areas. Water samples were taken in surface water bodies downstream from tank farms and burning sites where hydrocarbons were burnt during Phase I of the Mid-Canada Line Cleanup in 1987. Extensive chemical analysis did not reveal any detectable level of contaminants in the surface water.

However, several soil samples displayed high concentration of hydrocarbons (C10-C50). This result was somewhat expected as several samples were collected at burning sites and in the vicinity of fuel reservoirs. The high heat of combustion at the burning sites, that is over an area of approximately 2 to 4 square meters, has modified the structural nature of the soil and is responsible for the growth inhibition that was observed on the burning sites. In other words, the lack of organic material and bacterial flora in those localized zones has impeded natural biodegradation of the hydrocarbons.

2.3 Construction Materials

Construction materials were analyzed for presence of asbestos and PCB's. It was found that asbestos was not used for the insulation of the building but may however be present in wall panels since they are made of "Fibrociment". Although asbestos is not considered a dangerous material in Quebec, its presence warrants that precautionary measures be taken to insure the health of the workers during dismantling operations.

PCB's were found in floor tiles and in the paint used for side panels. PCB's were often used at the time as plasticizer, improving both the elasticity and the wear resistance of the paint. As for the floor tiles, they were made to meet military specifications and PCB's was added as fire retardant. The tiles were often referred to as *battleship tiles*.

2.4 More Information

A detailed description of the field sampling performed in July 1998 at selected Mid-Canada Line sites and the results of the chemical analysis can be found in the Final Report by Environment Canada (September 23 1998).

3. Mandate

3.1 General

As aforementioned, only minimal chemical contamination of the soil is foreseen on most of the sites. Therefore, the collection and adequate on-site storage of the debris will be the main challenge of the cleanup operation on the Mid-Canada Line sites and the work plan does reflect this reality.

3.2 Soil

Work for bio-remediation of the soil will nevertheless be carried out on a number of sites to provide soil conditions conducive to bacterial growth and hence biological degradation of the hydrocarbons and re-growth of the vegetation. The choice of the techniques to be used will be based upon the results obtained from bio-treatment tests, which will be carried out this coming winter (1998/1999).

3.3 Buildings

Dismantling unstable structures will also be an integral part of the cleanup project. Buildings on sites 224A, 403, and 410 have already been identified for dismantling to insure the safety of future site users. With respect to survival huts, Plexiglas may be installed to replace broken windows so that they can still serve their purpose as emergency shelters.

3.4 Site 410 (Cape Jones)

Site 410 represents a special case both in terms of the scope of the work required and the importance of the surrounding area for wildlife. Although a work crew has been assigned to this site for each of the three years of the project, there is little doubt that more work will be required at this site at a later stage.

3.5 Work Plan and Budget

The work assigned at each site was based on the following sources:

- Consultation meetings held in the weeks of July 6th and *** with Cree, Inuit and Naskapis Communities.
- Data collected during the inspection made to selected sites on July 08-09 1998.
- Phase I Cleanup report by Audette (1988).
- Mid-Canada Line Inventory report (1986).

The work plan for the entire cleanup project and the associated budget are in the following section. The work plan includes a description of the work to be performed and a yearly schedule. Work will be performed simultaneously in different sections of the Line, which has been roughly divided in two sections. Work at sites belonging to the eastern section will be performed by people from the Naskapis Community of Kawawachikamack while the working crews for the western section will involve the Cree from Chisasibi and Whapmagoostui, and the Inuit of Kuujjuaraapik. As for the budget, it was broken down into separate columns to reflect yearly expenses for the duration of the entire project.

As a final word, it must be said that all parties involved in this project acknowledge the fact that the information currently available for several sites is outdated. However, to carry out a special survey to update the data would have been prohibitively expensive. Unexpected situations will therefore be dealt with as they arise, and modifications to the work plan will be made accordingly to the satisfaction of all parties.

It is believed that this course of action will allow for better use of the public funds for this project.

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4. Work Plan

4.1 General

- Dates and number of days at each site are indicative and subject to change.
- A safety course will be given to all workers.
- Soil samples will be collected in the first year of work and used for soil bio-treatment tests.
- Each site with a building in good condition will be supplied with an emergency aid kit, including first aid.

4.2 Description of Work on Sites

- Inspection of all buildings to insure they are still safe.
- Building(s) with damaged structure and unsafe will be dismantled. Parts of building, considered as debris, will be reused or stored in an appropriate manner (put in different piles according to the nature of the material).
- Cleanup of building(s) and site in general.
- Collection and storage of domestic waste and other debris in an appropriate location.
- Collection and piling of barrels at an appropriate location. Identification, in as much as possible, of barrels and other contaminated products.
- Installation of information panels in five languages (Cree, Inuktitut, Naskapi, English and French) stating that the Quebec Government is the owner of the site and that it may be used for survival purposes.
- Replacement of broken windows by fiberglass panels to protect the integrity of the building(s).
- Assessment of the volume and area of soil contaminated by hydrocarbons. Soil samples will be taken at the request of the Ministry of the Environment for analysis (C10-C50).
- Addition of organic material at burning sites to promote bio-degradation of hydrocarbons and revegetation.
- Dismantling of the pumping station (supply sites) and recovery of the content to prevent contamination of nearby water bodies.

4.3 Progress Report of Work on Sites.

The representatives for the National Defense and the Ministry of the Environment will be informed of the work progress by an annual report. The latter will be presented in the fall of each year and will summarize work performed during the spring and summer months in accordance with the follow-up terms described in the next section.

In accordance with the Contribution Agreement, the Final Report will be presented no later than October 31, 2001.

4.4 Terms of Follow-up Procedure

- Identification of the site and the period of work.
- Brief description of the site and its surrounding area.
- Summary of work performed.
- Complete inventory: building(s), material stored on site, area and volume of soil contaminated with hydrocarbons, etc.
- All inclusive cost for work performed.
- Photographic or video documentation of the site and work performed.

4.5 Work Plan for 1999

Working Crew from Kawawachikamach

SITE	CREW	# DAYS	DATE	WORK DESCRIPTION
215	5	5	June 07	Cleanup of main building and site. Collect and pile all barrels. Possibility of recycling Frost fences (2 rolls).
218A	5	5	June 12	General cleanup of site and piling of barrels. Possibility of recycling Frost fences (18 rolls).
218	5	5	June 17	Cleanup of main building and site. Collect and pile all barrels away from the lake. Possibility of recycling Frost fences (25 rolls).
227A	5	4	June 22	General cleanup of site and piling of barrels.
227	5	4	June 26	General cleanup of building and site. Collect and pile all barrels.

Working Crews from Chisasibi/Kuujjuarapik/Whapmagoostui

SITE	CREW	# DAYS	DATE	WORK DESCRIPTION
403	5	15	March 01	Dismantling of main operation building.
		10	June 07	General cleanup of site. Collect and pile all barrels.
403A	5	8	March 01	Relocation of barrels further away from the shore.
410 409A*	5	20	May 31	Major work for general cleanup of site. Collect and pile barrels. Dismantle unsafe buildings.
406A	5	2	June 20	General cleanup of site.
406	5	8	June 22	General cleanup of site (lots of debris). Collect and pile barrels.

* Work to be done at this site still to be determined.

4.6 Work Plan for 2000

Working Crew from Kawawachikamach

SITE	CREW	# DAYS	DATE	WORK DESCRIPTION
221A	5	5	June 05	General cleanup of site. Collect and pile all barrels.
221	5	4	June 10	Cleanup of main building and site. Collect and pile all barrels
224A	5	6	June 14	Dismantling the main building. General cleanup of site and piling of barrels.
224	5	4	June 20	Cleanup of building and site. Collect and pile barrels.
303A	5	4	June 24	General cleanup of site. Collection and piling of barrels away from lake.
303	5	4	June 28	Cleanup of building and site. Collect and pile all barrels.

Working Crews from Chisasibi/Kuujjuarapik/Whapmagoostui

SITE	CREW	# DAYS	DATE	WORK DESCRIPTION
333A	5	3	June 05	Cleanup of building and site. Collect and pile barrels.
333	5	4	June 08	Cleanup of building and site. Collect and pile barrels.
336A	5	3	June 12	General cleanup of site. Collect and pile barrels. Main building may have to be dismantled for safety reason.
336	5	5	June 15	Cleanup of main building and site. Collect and pile barrels. Pull Muskeg away from the river (on higher grounds). Collect if possible debris that have been thrown down the cliff.
339A	5	1	June 20	General cleanup of site.
339	5	3	June 21	Cleanup of main building and site. Collect and pile barrels. Survival shelter may have to be dismantled.
342	5	7	June 24	General cleanup of site. Debris to be reused or stored in an appropriate manner.
410 409A*	5	20	May 29	Major work for cleanup of site. Collect and pile barrels. Dismantle unsafe buildings and pipeline network.
318A	5	3	June 18	Cleanup of buildings and site (metal debris near the lake). Collect and pile barrels.
318	5	4	June 21	Cleanup of buildings and site. Collect and pile barrels.

* Work to be done at this site still to be determined.

4.7 Work Plan for 2001

Working Crew from Kawawachikamach

SITE	CREW	# DAYS	DATE	WORK DESCRIPTION
312A	5	5	June 03	Cleanup of buildings and site. Collect and pile barrels.
312	5	3	June 08	Cleanup of buildings and site. Collect and pile barrels. Check for presence of DDT, anti-freeze and oil. (to be brought back for proper disposal).
309A	5	3	June 11	General cleanup of site. Collect and pile barrels.
309	5	3	June 14	Cleanup of buildings and site. Collect and pile barrels.
306A	5	3	June 17	General cleanup of site. Collect and pile barrels away from lake.
306	5	4	June 20	Cleanup of main building and site. Collect and pile barrels.

Working Crews from Chisasibi/Kuujjuarapik/Whapmagoostui

SITE	CREW	# DAYS	DATE	WORK DESCRIPTION
321A	5	5	June 03	Cleanup of building and site (lots of metal debris). Collect and pile barrels.
321	5	4	June 08	Cleanup of buildings and site. Collect and pile barrels.
324A	5	3	June 12	Cleanup of building and site. Collect and pile barrels.
324	5	3	June 15	Cleanup of buildings and site. Collect and pile barrels. Check for presence of methyl hydrate and anti-freeze. (to be brought back for proper disposal).
327A	5	2	June 18	Cleanup of building and site. Collect and pile barrels.
327	5	5	June 20	Cleanup of buildings and site. Collect and pile barrels.
330A	5	4	June 25	Cleanup of building and site. Collect and pile barrels.
330	5	5	June 29	Cleanup of buildings and site. Collect and pile barrels. Put down reservoirs ready to collapse.
410 409A*	5	20	June 03	Site requires major cleanup work. Collect and pile barrels. Dismantle unsafe buildings and pipeline network.
315A	5	3	June 23	Cleanup of building and site. Collect and pile barrels.
315	5	5	June 26	Cleanup of buildings and site. Collect and pile barrels. Check for presence of CCL_4, Molybdenum disulfide and oil. (to be brought back for proper disposal).

* Work to be done at this site still to be determined.

5. Budget

5.1 Overall Budget

Equipment	Details	3-Year Total ($)
ATV	Rental ($50/day)	14,760
ATV Trailer	Rental ($20/day)	5,904
ATV Tires	Purchase ($100/each)	1,200
Snowmobile	Allowance ($60/day + fuel)	3,232
Boat	Rental ($50/day)	9,600
Maintenance & Repairs	For all Vehicules & Equipments	3,470
Generator	Purchase	1,500
HF Radio	Rental (3 @ $500/month))	4,500
Satellite Telephone	Rental (3 @ $1000/month)	9,000
Tools & Welding Equipment	Purchase & Rental	6,000
Camping Gear	Allowance & Purchase	23,985
Food Supplies	Allowance & Purchase	44,280
Fuel (naphta & gas)	Purchase	11,000
Materials	Purchase	5,000
Safety Equipment	Purchase	10,000
Seaplane	Charters	156,857
Helicopter	Charters	175,962
Jet B Fuel	(Helicopter)	38,009
Sub-total (Charters & fuel)		**$370,828**
Manual Laborers	Salary: $125/day	179,025
Specialized Workers	Salary: $200/day	15,000
Site Coordinators (3)	Salary: $175/day	49,700
Camp Cooks	Salary: $100/day	28,400
Logistic Clerk	Salary: $125/day	35,750
Environmental Project Specialist	Salary: $200/day	46,000
Special Project Coordinator	Salary: $350/day	63,000
Sub-total (salaries)		**$416,875**
Employers Contribution	15% of salaries	62,531
Insurance		10,000
Safety (Training Courses)	Airfares + Travel Expenses + Consultatation Fees	18,000
Emergency Charter	Medical Evacuation	30,000
Airfare & Travel Expenses	Consultations & Meetings	24,000
Bio-Treatment Tests	Includes Soil Samplings & Laboratory Work	10,000
Preparation of Project	Initial Work: Env. Assessment, Workplan, Budget, etc.	85,000
Final Report		5,000
Allowances for Extra (10%)	10% of Total Expenditures	118,566
Administration (15%)	15% of Total Expenditures including 10% Allowance	195,635
TOTAL		**1,499,866**

5.2 Yearly Budget

Equipment	3-Year Total ($)	Year 1999 ($)	Year 2000 ($)	Year 2001 ($)
ATV	14,760	4,576	5,166	5,018
ATV Trailer	5,904	1,830	2,066	2,007
ATV Tires	1,200	600	300	300
Snowmobile	3,232	3,232	-	-
Boat	9,600	4,800	2,400	2,400
Maintenance & Repairs	3,470	1,504	993	973
Generator	1,500	1,500	-	-
HF Radio	4,500	1,500	1,500	1,500
Satellite Telephone	9,000	3,000	3,000	3,000
Tools & Welding Equipment	6,000	4,500	750	750
Camping Gear	23,985	8,634.60	7,915.05	7,435.35
Food Supplies	44,280	13,727	15,498	15,055
Fuel (naphta & gas)	11,000	3,410	3,850	3,740
Materials	5,000	3,000	1,000	1,000
Safety Equipment	10,000	7,000	1,500	1,500
Seaplane	156,857	24,024	47,405	85,428
Helicopter	175,962	14,300	70,142	91,520
Jet B Fuel	38,009	3,075	15,129	19,806
Sub-total (Charters & fuel)	**$370,828**	**$41,399**	**$132,675**	**$196,754**
Manual Laborers	179,025	64,625	59,400	55,000
Specialized Workers	15,000	7,000	4,000	4,000
Site Coordinators (3)	49,700	17,500	16,800	15,400
Camp Cooks	28,400	10,000	9,600	8,800
Logistic Clerk	35,750	13,125	11,000	11,625
Environmental project Specialist	46,000	20,000	12,000	14,000
Coordinator	63,000	21,000	21,000	21,000
Sub-total (salaries)	**$416,875**	**$153,250**	**$133,800**	**$129,825**
Employers Contribution	62,531	22,988	20,070	19,474
Insurance	10,000	4,000	3,000	3,000
Safety (Training Courses)	18,000	9,000	4,500	4,500
Emergency Charter	30,000	10,000	10,000	10,000
Airfare & Travel Expenses	24,000	10,000	7,000	7,000
Soil Sampling & Bio-Treatment Tests	10,000	10,000	-	-
Preparation of Project (Initial Work)	85,000	-	-	-
Preparation of Final Report	5,000	-	-	5,000
Allowances for Extra (10%)	118,566	32,345	35,698	42,023
Administration (15%)	195,635	53,369	58,902	69,338
TOTAL	**$1,499,866**	**$409,163**	**$451,585**	**$531,593**

MID-CANADA LINE - PHASE 2
Category "A" Sites

Table 1.0 Data for Work on Category "A" Sites

SITE	TYPE	LONGITUDE	LATITUDE	DISTANCE	ACCESSIBILITY	ACTIVITY (1)	DAY/PERSON OF WORK	BUILDING CONDITION
215	Detection	55°22'N	64°01'W	S: 191 km	Sea-plane	C	42	Vandalized, but structure intact
218	Detection	55°13'N	64°49'W	S: 140 km	Sea-plane via 2 km road	C	42	Vandalized, but structure intact
218A	Supply	55°15'N	64°15'W	S: 170 km	Sea-plane (difficult)	D	42	No building
221	Detection	55°18'N	65°25'W	S: 108 km	Helicopter	C	42	Vandalized, but structure intact
221A	Supply	55°18'N	65°20'W	S: 111 km	Sea-plane	C	42	No building
224	Detection	55°14'N	66°02'W	S: 69 km	Helicopter	C	42	Vandalized, but structure intact
224A	Supply	55°16'N	66°14'W	S: 65 km	Sea-plane	A	42	Structure in very bad conditions
321	Detection	55°15'N	72°12'W	K: 350 km	Helicopter	B	26	Structure is intact
321A	Supply	55°15'N	72°10'W	K: 350 km	Sea-plane	B	34	Structure is intact
330	Detection	55°18'N	74°34'W	K: 201 km	Helicopter	C	16	Vandalized, but structure intact
330A	Supply	55°17'N	74°33'W	K: 202 km	Sea-plane	C	34	Structure is intact
342	Detection	55°15'N	77°38'W	K: 8 km	Helicopter, snowmachine	B	42	No building
403	Detection	54°59'N	78°18'W	K: 46 km	Helicopter, snowmachine	A	126	Very damaged
403A	Supply	55°06'N	78°13'W	K: 34 km	Sea-plane, boat, snowmachine	D	16	No building
406	Detection	54°49'N	79°01'W	K: 94 km	Helicopter, boat	B	40	No building
406A	Supply	54°48'N	79°03'W	K: 96 km	Sea-plane, boat	D	8	No building

Total: 16 Sites and 636 Day/Person of Work

(W) = Whapmagoostui; (K) = Kuujjuaraapik; (S) = Schefferville

(1)
ACTIVITY "A": Building is unstable and must be dismantled. Other work includes cleaning up site & building and piling of barrels.
ACTIVITY "B": Main structures of building have been removed but site is littered with miscelleneous debris and requires careful cleaning.
ACTIVITY "C": Building is intact and will be kept as emergency shelter. Other work includes cleaning up site & building.
ACTIVITY "D": Building is gone. General cleanup of site.