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FEDERAL ENVIRONMENTAL ASSESSMENT AND REVIEW PROCESS

Guide for Environmental Screening

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APPENDIX 5

SCREENING EXAMPLES

Introduction

Two project proposals were screened. The first involved an upgrading of the sewage system in Waterton Lakes National Park, Alberta. Information was provided on the physical setting, the recommended system and steps taken to ameliorate adverse environmental impact. The screening outcome was "no adverse environmental effects likely".

The second proposal involved the abandonment and removal of a multi-product pipeline between Haines, Alaska and Fairbanks, Alaska. A portion of the line traversed Northern British Columbia and the Yukon Territory. Information was provided on the physical setting and on the recommended abandonment and removal procedure. The screening outcome was "an initial environmental evaluation is recommended".

The screening examples outline the step-by-step procedure used. Ordinarily, screening will require only that screening decisions (other than no effects) and the reasons for those decisions be recorded. The length of time required to do this will depend on:

1. project size - generally, the bigger the project the greater the number of activities and impact areas that must be examined,
2. screener's familiarity with the project and the accessibility of information about it,
3. screener's familiarity with the "screening guide" and its proper use.

E X A M P L E 2

PROJECT TITLE

Haines - Fairbanks Pipeline
Removal and Clean-up
British Columbia, Yukon Territory

1. BACKGROUND

The Haines - Fairbanks Pipeline is a deactivated eight-inch pressure multi-product pipeline that begins at the warm-water port of Haines and extends northward a distance of 626 miles to the city of Fairbanks. Most of the line is surface laid (478 miles) and generally follows the Haines Highway to Haines Junction and then along the Alaska Highway to Fairbanks.

The Pipeline was designed in 1952 by Flour Corporation of Los Angeles, California. Because it passed through 250 miles of Canadian Territory, a country-to-country agreement was signed on June 30, 1953 in which the Government of Canada granted permission to the Government of the United States to -"construct, own and operate the proposed pipeline". The termination date for the agreement was June 30, 1973.

The present proposal is to remove the pipe, dismantle and remove the pumping stations and ancillary structures and perform restoration work where it is deemed necessary.

The topography along the pipeline route is generally rolling hills, valley bottom or flood plain.

The pipeline right-of-way from the British Columbia/Alaska border (pipeline milepost 221) is generally well drained following along the side hills and crossing normal to most water-courses.

From Burwash Landing (milepost 221) to the Yukon/Alaska border (milepost 337) the route is not as well-drained. The right-of-way lies in the valley bottom for most of this route and parallels the drainage pattern over considerable length. Burwash Flats, areas adjacent to the Koidern River and the area near Beaver Creek are very poorly drained. There are however several locations north of the Donjek River and between the White River and Dry Creek where the right-of-way lies on side hills.

2. HIGHLIGHTS OF THE PROPOSED PROJECT

1. All surface lain sections of the pipeline are to be removed. Buried pipe in the beds of rivers and larger creeks may be left in place.

2. All block valves and similar surface installations are to be removed.

3. Pumping stations will be dismantled and removed including tanks, piping, buildings and equipment supports.

4. Rehabilitation of pipe facility locations will include suitable regrading, removal of dykes, culverts, concrete floors, foundations and other facilities of a similar nature, so that the land is restored as nearly as possible to its original conditions.

5. All areas where the surface soil has been disturbed will be reseeded and revegetated to conform to the adjacent terrain.

3. PROJECT SCREENING

1. Level 1 Matrix was used to help focus in on those activity/impact combinations felt to be relevant to this project (Fig. 4).

2. Activity/impact area combinations identified in Level 1 Matrix were examined in greater detail in Level 2 Matrix (Fig. 5). Reasons for identifying them as such, e.g. for saying that abandonment would have an unknown and potential adverse effect on animals and vegetation diversity were given (below).

3. The initial list of unknown and potential significant activity - impact area combinations was lengthy (Fig. 5) because of incomplete information on activities, on impact areas, on design solutions and on the value attached to the various impact areas by the public/professional community. It was also lengthy because of the cautious approach taken - if there was the slightest possibility of a significant adverse environmental effect from a project activity, then it was listed.

4. Additional information was sought to justify reducing the number of unknowns on the list - to change "unknown and potential adverse effect" "?" to either "not significant" "X", "design solution" "\" or "significant" "■". Most of the additional information in this case specified environmental design solutions to potential problems, e.g. buried portions of pipeline would be left in place to minimize environmental damage to streams and other sensitive areas (Section 5 page 73 and Fig. 5 page 71).

LEVEL 1 MATRIX
ACTIVITIES IN VARIOUS STAGES OF PROJECT DEVELOPMENT (APPENDIX 3)
SITE INVESTIGATION AND PREPARATION
CONSTRUCTION
OPERATION AND MAINTENANCE
FUTURE AND RELATED ACTIVITIES
IDENTIFICATION OF ACTIVITIES
AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS (APPENDIX 4)
SOCIAL EFFECTS
AESTHETIC EFFECTS
ECOLOGICAL EFFECTS
PHYSICAL EFFECTS

FIGURE 4

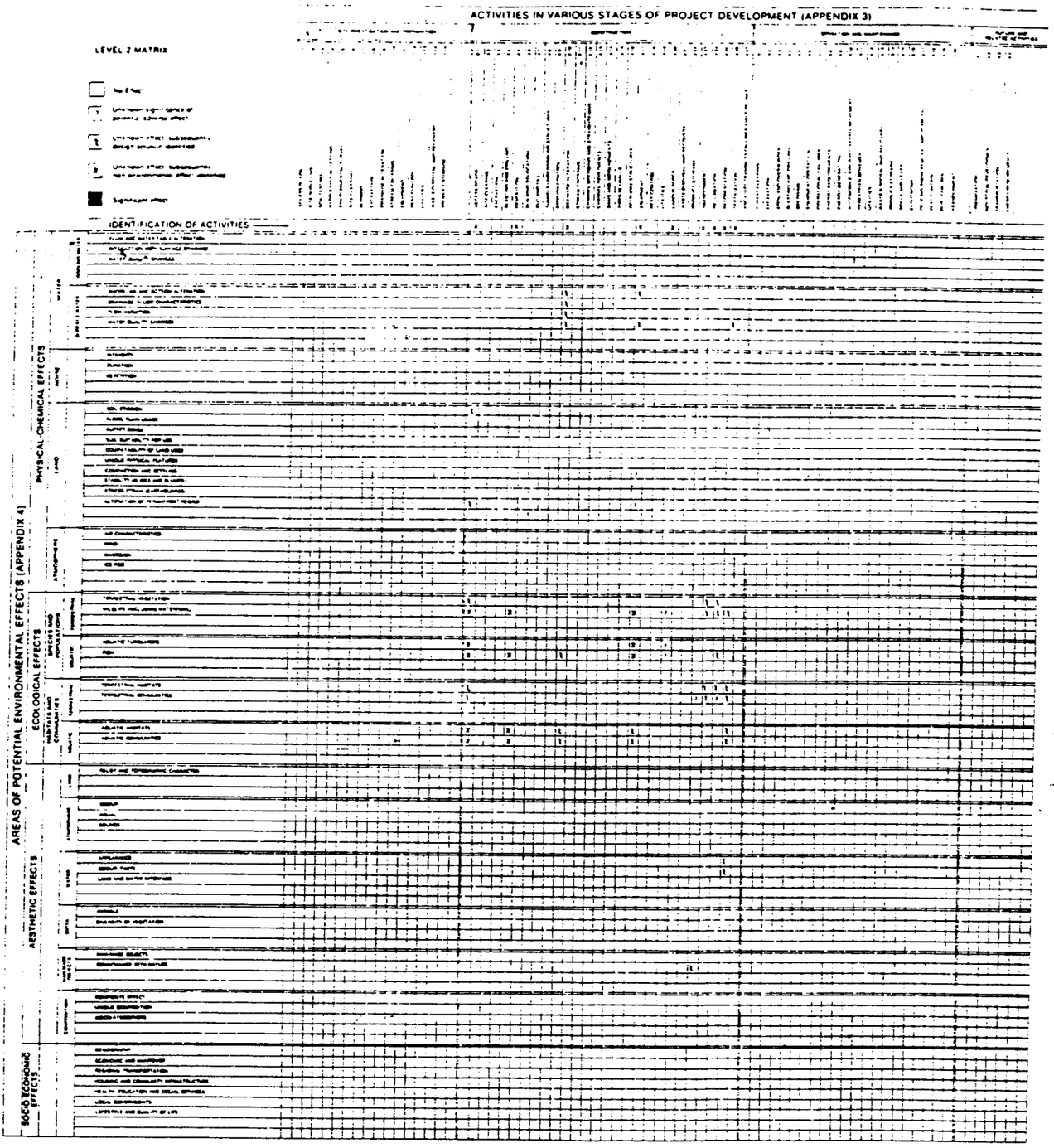
ACTIVITIES IN VARIOUS STAGES OF PROJECT DEVELOPMENT (APPENDIX 3)
LEVEL 2 MATRIX
IDENTIFICATION OF ACTIVITIES
AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS (APPENDIX 4)
PHYSICAL-CHEMICAL EFFECTS
ECOLOGICAL EFFECTS
AESTHETIC EFFECTS
SOCIO-ECONOMIC EFFECTS

FIGURE 5

4. PRELIMINARY ASSESSMENT INFORMATION USED TO JUSTIFY SCREENING DECISIONS

4.1 Activity: Access roads, demolition, equipment, labour force, abandonment

Preliminary Assessment Information:

Access road construction through forested areas and abandonment of portions of the pumping station and its machinery might be aesthetically unpleasant to motorists.

Removal of surface laid pipe, dismantling of pumping stations, etc. might frighten away wildlife in the vicinity of the pipeline right-of-way. Aquatic habitat might be adversely affected if heavy equipment is operated through rivers and streams. Wildlife and fisheries resources in the area might be adversely affected if the labour force working on this project is housed in camps established along the pipeline right-of-way thereby increasing the hunting and fishing pressure on this resource.

Preliminary Screening Decisions (Fig. 5):

Access roads	10	"?" Unknown significance
Demoliton	4	"?" Unknown significance
Equipment	9	"?" Unknown significance
Labour Force	3	"?" Unknown significance
Abandonment	2	"?" Unknown significance

4.2 Activity: Drainage Alteration

Preliminary Assessment Information:

There are 25 river crossings on the 251 mile pipeline where, for reasons of safety and the maintenance of pipeline integrity, the line was buried. Excavation of this pipe could cause increased siltation as well as modifications to the hydrological regime both of which would adversely affect spawning runs or spawning success.

Preliminary Screening Decision (Fig. 5):

Drainage Alteration 7 "?" Unknown significance

TERMS OF REFERENCE FOR SAMPLING CONTAMINANTS PROGRAM, AES

BACKGROUND

The Arctic Environment Strategy (AES) is an important part of the federal government's Green Plan, announced by Minister Tom Siddon on May 3, 1991. It is a $100 million, 6 year strategy which has been developed to address some of the major problems in Canada's Arctic.

INAC has been tasked with the delivery of four programs under the AES in the Yukon. They are: 1) Contaminants; 2) Waste Management; 3) Water Management and, 4) Environment/Economy Integration.

Under the Contaminants Program, a 6 month workplan has been developed for the remaining 91/92 fiscal year which addresses immediate concerns, including the contamination of fish in Whitehorse waters. Accordingly, to determine the level and extent of the contamination, a priority under this workplan is to begin the work of sampling and analyzing certain fish species in specific lakes and rivers.

STATEMENT OF WORK

The contractor will undertake to sample food fish from a number of Yukon water bodies as listed. The samples will include domestic and commercial species which may vary from one water body to another by could include; Burbot, Burbot liver, Burbot eggs, Whitefish, Whitefish eggs, Salmon, Lake Trout and Inconnu.

Sampling will take place according to the methods proposed and samples prepared and shipped as per proposal. The contractor will contact the Department of Fisheries and Oceans in Winnipeg (Dr. Rick Muir) and Seakem Oceanography (Dave Thomas) to ensure the methods of collection, preparation and associated QA/QC are in accordance with DFO and Seakem methods.

The contractor with liaise with regional DFO staff in regards to the fish collection component of this project (see notes on sample collections).

As much as possible coordination will take place with YTG agencies so as to reduce logistics costs.

The contractor will liaise with the Department of Environment (EPS-Yukon/Davage) to sample collection to ensure continuity in sample handling and preparation.

...2

...6

4.3 Activity: Reclamation, reforestration/revegetation, fertilization

Preliminary Assessment Information:

Seeding of non-native species of grass coupled with repeated heavy fertilizer application will hinder the natural re-invasion of indigenous species, thus destroying the uniqueness of the landscape. It may also destroy wildlife habitat. The heavy accumulation of dead grass which results can represent a significant fire hazard. Finally, heavy applications of chemical fertilizer on sloping terrain and along streams, rivers, lakes, etc., will increase aquatic nutrient levels. This can adversely affect water quality, odour, appearance, etc. It may also affect species diversity.

Preliminary Screening Decisions (Fig. 5):

Reclamation	4 "?" Unknown significance
Reforestation	5 "?" Unknown significance
Fertilization	8 "?" Unknown significance

5. ADDITIONAL ASSESSMENT INFORMATION ON UNKNOWN AND POTENTIALLY SIGNIFICANT AREAS

Having completed the preliminary screening, it was recognized that additional information would be required to justify reducing the large number of "unknown and potential adverse effect" screening decisions. This was obtained from the Department of Fisheries and the Environment through the appropriate Regional Screening and Coordinating Committee which provided a list of appropriate officials to contact. Screening results, based on this additional information are given below.

5.1 Activity: Access roads, demolition, equipment, labour force, abandonment

Additional Assessment Information:

There are a sufficient number of cleared access roads to the pipeline right-of-way. As a result no new clearing is proposed or anticipated. No travel would occur over those portions of the right-of-way where the line is to be abandoned in place. Buried portions of the pipeline (total length 42 miles) are to be capped and abandoned in place. The sections of the pipeline which were not buried but have subsided into the wet right-of-way would also be abandoned in place. All facilities connected with the pumping stations, all stock piles of pipe and all pipeline mile posts and signs indicating the location of the right-of-way would be salvaged and removed, however, no mention has been made regarding the large quantity of salvageable materials, with very little salvageable value (for example; the concrete slab floors of buildings, broken machinery and used

fuel and lubricant drums and cans). There was no additional information regarding the size of the labour force required and plans for housing this force during removal and clean-up operations. As a result the problems relating to adverse impacts on the wildlife and fisheries resources by increased hunting and fishing pressure still exist.

Revised Screening Decisions (Fig. 5):

Access Roads	5 "✓" Design solution	5 "✗" No effect identified
Demolition	4 "✗" No effect identified	
Equipment	2 "?" Unknown sigificance	4 "✓" Design solution
	3 "✗" No effect	
Labour Force	3 "?" Unknown significance	
Abandonment	2 "?" Unknown significance	

5.2 Activity: Drainage alteration

Additional Assessment Information:

Buried pipe in the beds of rivers and larger creeks is to be abandoned in place with plates of steel welded securely over the ends of the pipe and the pipe end is to be below the ground surface. No machinery is to be operated in or through active stream or river channels.

Revised Screening Decision (Fig. 5):

Drainage alteration 7 "✓" Design solution

5.3 Activity: Reclamation, reforestation/revegetation, fertilization

Additional Assessment Information:

In permafrost-free locations where erosion by flowing water is not expected to be a significant problem, natural revegetation by indigenous species would be permitted to occur. On slopes which are subject to water or thermal erosion the following measures would be taken:

a) grading of the slope as close to the angle of repose of the substrata as feasible.

b) elimination of concentrated flow of runoff and rainwater through properly constituted sandbag (or similar) breakers, oriented transversely across the entire face of the right-of-way slope, and

c) manual seeding of deep-rooting grasses over the slope, and planting of willow or alder cuttings, immediately following the main spring runoff. This step would be repeated until a continuous vegetative cover was obtained. Fertilizer would not be used on slopes, river banks and along the shores in order to avoid unacceptable increases in aquatic nutrient levels.

Revised Screening Decisions (Fig. 5):

Reclamation 4 "?" Design solution
Reforestation/Revegetation 5 "?" Design solution
Fertilization 3 "?" Design solution

6. CONCLUSION

On the basis of the information available to evaluate the impact of this particular project, it is concluded that there are several activities producing unknown but potentially adverse affects. Therefore an Initial Environmental Evaluation (IEE) is recommended. The IEE should focus on those activities and impact areas which are identified on the screening matrix as being of unknown consequence.

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Northern Affairs Program
200 Range Road
Whitehorse, YT
Y1A 3V1

Your file / Votre référence

Our file / Notre référence

28 May, 1987

MEMORANDUM

TO: RERC MEMBERS

FROM: BOB FRIESEN,
CHAIRMAN, RERC

SUBJECT: HAINES-FAIRBANKS PIPELINE

Attached please find a copy of "An Overview Environmental Evaluation of the Disturbance Levels Associated with Salvage of the Canadian Portion of the Haines-Fairbanks Pipeline", for your information.

To update you on this project, DPW has been approached with respect to the disposal of assets at the pump stations as well as the pipeline. At this time we are awaiting a decision on the possibility of disposal of the pump stations in the Kluane Tribal council land claims area to the band. Once this decision has been made, work will proceed on disposal of the pump stations. A decision is still to be made as to whether DPW is interested in undertaking the disposal of the pipeline also. However, it is unlikely that it will be done as one contract. Removal is more likely to be piecemeal on request by private individuals wanting "x" feet or miles of pipeline for their own use.

I will keep you informed as to the ongoing status of this project.

Bob

ATTACH

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of this document
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Canada

Haines-Fairbanks Pipeline

An Overview Environmental Evaluation of Disturbance Levels Associated with Salvage of the Canadian Portion of the Pipeline (mile 42 to mile 335)

INTRODUCTION

Historical Overview

The Haines-Fairbanks Pipeline was built in the 1950's by the United States Army Corps. of Engineers to serve the military needs of the Fairbanks, Alaska area (1). Approximately 295 miles of this 626 mile pipeline passes through Canada - approximately 45 miles in northern British Columbia and 250 miles in Yukon. The Government of Canada granted permission on June 30, 1953 to the Government of the United States to construct, own and operate that portion of the pipeline that would pass through Canada in an agreement known as the "United States-Canada Haines-Fairbanks Pipeline Agreement". Amongst the terms and conditions of this agreement was one stating all lands would remain in the title of Canada, one giving title to the pipeline and installations to the United States until termination of the agreement and one providing for a 20 year term of tenure at the end of which either government could terminate the agreement (2).

Design work on the Haines-Fairbanks Pipeline was done by Fluor Corporation of Los Angeles during the period 1950-1952. Field construction started in early 1954 and was essentially completed that year before the onset of winter. The majority of the line was surface laid (478 miles) with small sections buried in areas of congestion and/or heavy vehicle traffic, at major river crossings, at highway crossings and other points where it was thought necessary for the protection of the line. Station and storage facilities were constructed during the 1955 season, with the pipeline tested and operational by October 12, 1955.

The pipeline was designed to transport a variety of petroleum products, including diesel fuel, jet fuel, motor gasoline and aviation gasoline. However once in the pipeline these products were exposed to great variations in temperature which caused their expansion and contraction and thus a continuous buildup and reduction of pressure. This made it necessary to pump at maximum rates at all times to prevent laminar flow of the products in the line. An evaluation in 1968 indicated a need to bury the pipeline if these temperature related problems were to be corrected (3).

In 1971 the pipeline was shutdown for good and cleared of all petroleum products. A two phase approach was used to clean the pipeline (i) Phase I displaced the petroleum products with alcohol, followed by water; (ii) Phase II displaced the water using a displacement pig propelled by compressed air (4).

In 1972 discussions were initiated between the United States and Canada to determine a method for disposal of the pipeline and related facilities. Three methods were proposed:

1. to sell the pipeline as an operating entity and thus continue its use;
2. to sell individual components of the pipeline;
3. to let a salvage contract for the removal of the pipeline and restoration of the right of way.

It would appear from correspondence from 1972 that the salvage option, either in it's entirety or by component parts, was the preferred option. In preparation for a request for the land use and environmental terms and conditions which would pertain to a salvage operation, the Department of Indian Affairs and Northern Development undertook an inspection of the Yukon portion of the pipeline and prepared a report on:

(i) vegetation and possibilities of revegetation on the right of way;

(ii) access to the right of way and conditions under which heavy salvage equipment could operate;

(iii) condition of existing facilities which may be of use for Departmental purposes;

(iv) schedule of work to minimize terrain damage (6).

There was apparently no further follow-up on the matter of disposal of the pipeline until 1978 when the Permanent Joint Board of Defense discussed this matter in their Oct. 11-14 meeting. They agreed that there was no further need for the Haines-Fairbanks Pipeline. This allowed either government to terminate the original agreement. On January 12, 1979 the Government of Canada gave notice to the Government of the United States of it's intention to terminate the Haines-Fairbanks Pipeline Agreement of June 30, 1953, 12 months from that date - i.e. January 12, 1980 (7). Under the terms of the 1953 agreement the United States Government had another 2 years from the date of the termination of the agreement to remove the pipeline and restore the right of way. As no such action was taken within this time limit, the Canadian Government has taken the position that the pipeline and related facilities have reverted to Canadian ownership.

Current Activity

In April of 1984, the Yukon Government expressed interest in obtaining the use of the Blanchard River pump station site as a Highways Maintenance Camp. Based on the decision that the assets of the pipeline had reverted to the Canadian Government, this site was transferred to the Commissioner of the Yukon by Order in Council, January 17, 1985. This was followed in early 1985 by an expression of interest by Mr. J. Reid in salvaging some of the assets of the pipeline system.

This renewed interest in the pipeline and it's assets has given rise to the initiation of another study to examine the environmental, engineering and cost implications of salvage of the pipeline system. This information will be used in making the decision to proceed or not proceed with partial or complete removal of the pipeline.

Environmental Evaluation

An evaluation of the environmental concerns arising from dismantling and removal of the pipeline is one component of the overall study on salvage of the Haines-Fairbanks Pipeline. A two-staged approach is being used:

(i) Stage 1 - This stage involves an overview look at the pipeline based on existing information. This overview provides a breakout of the pipeline right of way according to the level of environmental disturbance/environmental sensitivity likely to be associated with salvage of the pipeline, a general description of site characteristics and recommendations.

- While the Stage 1 review addresses both the British Columbia and the Yukon portions of the pipeline, available information allowed for the breakout of the pipeline right of way into categories of disturbance and the provision of site description on a mileage basis only for the Yukon portion. Discussions are required with the B.C. Government to clarify if they wish removal of all that portion of the pipeline which lies in B.C. or only those portions which will result in minimal environmental disturbance and/or which prove cost effective. If the former a stage 2 analysis need only be done. If the latter a field inspection will be required to determine those areas for which the Stage 2 analysis should be undertaken.

(ii) Stage 2 - This stage will include an analysis of potential environmental problems associated with those sections proposed for removal and the preparation of an operational management plan. This plan will indicate areas of environmental and engineering concern and proposed mitigation and salvage methods to alleviate these concerns. It will include a monitoring program if required.

STAGE I - AN ENVIRONMENTAL OVERVIEW OF THE CANADIAN PORTION OF THE HAINES - FAIRBANKS PIPELINE

General Description

The Haines-Fairbanks pipeline is 626 miles in length, with 295 miles of the pipeline located in British Columbia and Yukon. Its route generally follows the Haines Road from Haines, Alaska to Haines Junction, Yukon - of this 148 miles, 42 miles are in Alaska, 44 miles in British Columbia and 62 miles in Yukon. The pipeline then follows the general route of the Alaska Highway, (see map 1) crossing the Alaska border 189 miles northwest of Haines Junction.

The elevation along this route is varied, (see map 2) with the pipeline starting at an elevation of 30' above sea level (ASL) at the Haines terminal and raising to a high of 3750' ASL at mp. 57 as it crosses over the Coastal Mountains in British Columbia. It remains above 3000'ASL until just before it crosses into Yukon and then gradually, with numerous reversals in gradient, drops to 2000'ASL in the vicinity of Haines Junction. It then raises steeply again to an elevation of 3350' at mp. 162, followed by another slow drop to 2000' ASL by the time it reaches the Alaskan border. There are two major reversals of gradient during this general decline, to 3000' ASL in the vicinity of mp. 260 and again at mp. 275. The terrain along this route varies from dry rolling side hills, to valley bottoms, flood plains, muskeg and swamp areas. It is these variations in environmental site conditions which determine the level of environmental disturbance which would be associated with salvage of the pipe.

Identification of Levels of Disturbance

An overview look was taken of the pipeline route to identify those segments of the pipeline which could be salvaged with minimal environmental disturbance, as well as those segments where removal would result in medium to high levels of environmental disturbance.

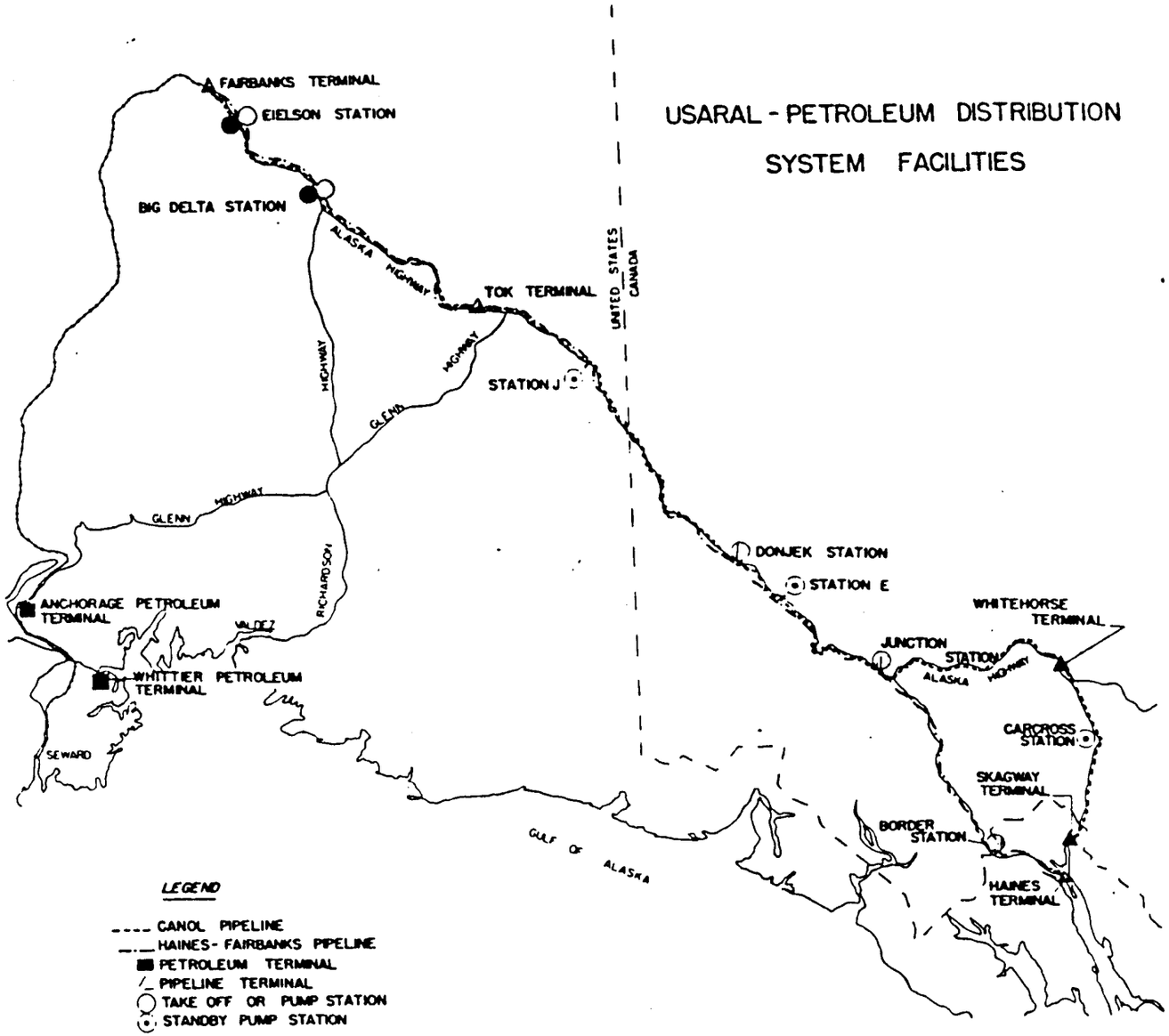
Two main levels of environmental disturbance have been identified for the unburied portion of the pipe - "high" based on adverse site conditions, mainly due to poor drainage characteristics and "low" based on dry site conditions characterized by good drainage. These two categories - unburied, adverse site conditions and unburied, good site conditions - account for approximately 245 miles of the pipeline right of way. Erosion sensitivity is another environmental condition which can affect the level of environmental disturbance associated with salvage. However as it is more likely to affect the degree and type of reclamation required than initial disturbance levels, it has not been treated as a seperate category in this overview.

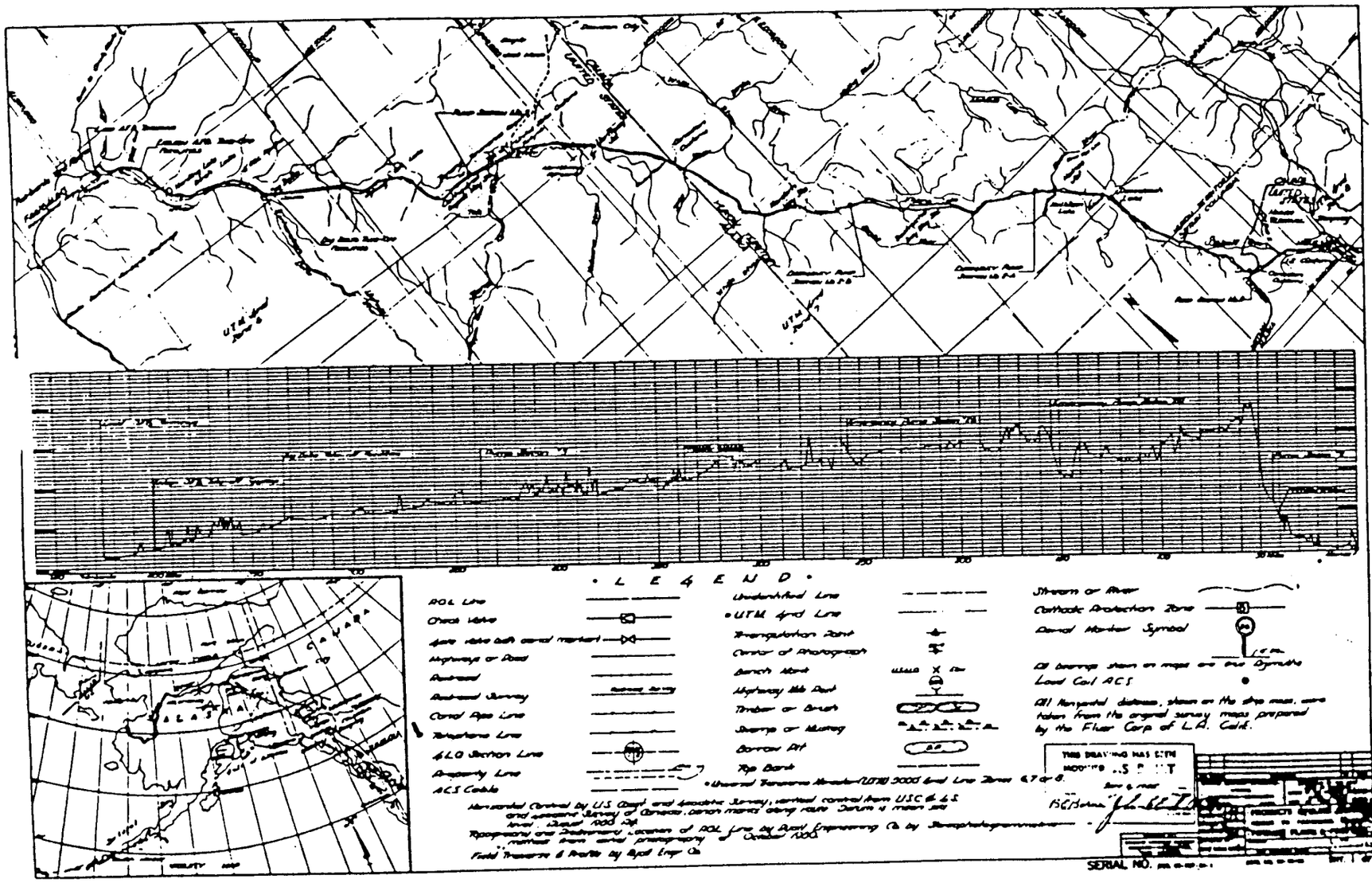
A third category - buried, varied site conditions - has been identified to cover approximately 50 miles of pipeline which is buried. A "high" level of environmental disturbance has been identified as being associated with salvage of these segments of the pipe. While the disturbance level associated with the salvage of buried pipe may be higher under adverse site conditions than in dry site conditions, it was felt that disturbance levels would be high regardless due to the need to excavate the pipe.

This overview was based on available information--primarily a 1972 field investigation of the Yukon portion of the pipeline undertaken by Dr. A. B. Hollingshead and other Federal and Territorial personnel. Thus it will require a field check in the spring to verify the present condition of those segments recommended for removal as well as their actual lengths.

Tables III and IV provide a breakout by mileage indicating the length of pipe in each identified segment. For those desiring more detailed information a mile by mile analysis is provided in Appendix I. This breaks out Hollingshead field information into 16 categories. A colour coded map, at a scale of 1:30,000 is included with this report to provide an illustrated viewof locations and relative length of pipe by section in each category.

USARAL - PETROLEUM DISTRIBUTION SYSTEM FACILITIES

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POL Line
Check Valve
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Railroad
Railroad Survey
Canal Pipe Line
Telephone Line
GLO Section Line
Property Line
ACS Cable
Underbrush Line
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Corner of Photograph
Bench Mark
Highway Mile Post
Timber or Brush
Swamp or Muskeg
Borrow Pit
Pipe Bank
Stream or River
Cathodic Protection Zone
Canal Marker Symbol
All bearings shown on maps are true Azimuths Local Col ACS
All Horizontal distances shown on this strip map, were taken from the original survey maps prepared by the Flour Corp of L.A. Calif.
SERIAL NO.

Description of Pipeline Categories

Category I - Unburied - Adverse Site Conditions

The unburied adverse site conditions category includes those portions of the pipeline which are located in areas characterized by poor drainage, erosion, or other hazards. Poor drainage is by far the most common of the adverse conditions, with the pipe actually having subsided into the underlying foundation materials in many locations. In some instances natural revegetation has occurred over the pipe making it invisible to the eye. Salvage of the pipe in these areas would result in considerable disturbance not only to the overlying vegetation, but also to the underlying soils due to both the actual removal of the pipe and the movement of equipment in the pipeline right of way during this operation. Due to generally poor drainage throughout these areas fairly extensive disturbance would likely result from the use of access trails into the pipe line right of way and from the use of staging areas. If salvage was to occur in these areas it would require special equipment and special environmental operating conditions - including extensive restoration work upon completion.

There are approximately 76 miles of unburied pipeline on this type of terrain, with 69 miles being located in the portion of the line between the Duke River and the Yukon/Alaska border.

At this stage it is not felt that the environmental disturbance and the extra operating costs warrant removal of these segments. If it is felt to be cost effective to remove some or all of these segments, a more detailed look could be taken.

Category II - Unburied - Good Site Conditions

The unburied, good site conditions category includes those portions of the pipeline which are located in areas characterized by good drainage and low erosion and/or other hazard potential. Salvage of the pipe in these areas should be relatively easy and cause minimal environmental disturbance. There are approximately 129 miles of unburied pipeline on this type of terrain: 97 miles in the Yukon border to Duke River stretch and 32 miles in the Duke River to Alaska border stretch. The sections of pipe vary from .25 miles in length to 13 miles in length with sections of buried and unburied, adverse site conditions pipe in between.

In general it is recommended that these sections of pipeline be salvaged. However it may not be cost effective to salvage small sections of pipe in good site conditions which are at distance from other such sections and/or which are at distance from the centre of operation. This may be especially true in the stretch of pipe north west of the Duke River where the 35 miles of pipe in good site conditions are found in 13 sections, with only two sections being more than three miles in length.

These sections should be field checked to verify actual site conditions and to determine the cost effectiveness of their removal. A Stage II review will be required for these sections to determine the conditions prior to their removal.

Category 111 - Buried

The buried category includes stream crossings, highway crossings and areas characterized by poor drainage, erosion and hazards, as well as some areas characterized by good site conditions such as the highway right of way. There are approximately 46 miles of buried pipeline characterized mainly by short sections of 1/4 mile or less at highway crossings and stream crossings. These sections may be up to 1/2 mile at some of the larger river crossings. There are also several longer stretches of buried pipeline. These include approximately 12 miles along the edge of Dezadeash Lake; ten miles at the south end of Kluane Lake in the Silver Creek, Slims River area; and several sections one to three miles in length.

In general it is recommended that the buried portions of the pipeline be abandoned in place, as removal would result in a high level of environmental disturbance regardless of site conditions. However, some of the longer stretches which run along the highway right of way may be able to be removed with minimal environmental disturbance. The actual status of these stretches should be verified in the field.

Table 1: Pipeline Categories

Category	Pipeline Status	Environmental Site Characteristics	Environmental Disturbance Level	Recommendations
1	unburied	adverse (wet)	high	abandon in place
11	unburied	good (dry)	low	remove with conditions
111	buried	varied	high	abandon in place

General Environmental Site Characteristics

To provide an overview of the pipeline right of way a generalized description is provided in this section. It is based on administrative boundaries and on general environmental site conditions:

(i) British Columbia* - pipeline mile 42.75 to 86.75

(ii) Yukon border to Duke River - pipeline mile 86.75 to 226

(iii) Duke River to Alaska border - pipeline mile 226 to 337

* While there has been no field investigation of the British Columbia portion of the pipeline right of way, a general description can be provided based on available information for this area. To provide the detailed mileage breakout shown in Tables III and IV for the Yukon portion of the pipeline will require a field investigation.

General Environmental Site Characteristics

British Columbia

The pipeline route in British Columbia follows the highway and the Kleheni River from the border (mile 42.75) to approximately mile 48. It then ascends 2400' over a distance of 10 miles, from 1350' ASL at Rainy Hollow (mile 47.5) to 3750' ASL (mile 57.5) at Three Guardsmen Pass. From Three Guardsmen Pass it traverses a series of subalpine valleys as it gradually descends to an altitude of 2725' ASL shortly before it crosses the B.C.-Yukon border (mile 86.75).

There is a history of slope instability associated with the Rainy Hollow portion of the Shakwak Highway. It is possible that the combination of steep slopes, poorly consolidated soils and high moisture content in this section of the right of way will result in slope instability and erosion problems if there is surface disturbance associated with salvage operations. This should be field checked to determine if this section of the pipeline should be left in situ.

In this 44 mile section the pipeline right of way passes through two river drainages - the Chilkat and the Alsek - and crosses ten creeks and four rivers. The Blanchard River and Goat Creek in the Alsek drainage are both known as important salmon producing streams. The other four crossings in the Alsek drainage area are all on tributaries to the Tatschenshini River which are either salmon bearing or which run into salmon bearing streams.

The eight crossings of tributaries in the Chilkat drainage while not involving salmon bearing streams do involve streams which contain sizeable populations of other species such as Dolly Varden. Salvage operations at any of these crossings would result in sedimentation of these streams. It is recommended that where the pipe is buried at these crossings it be left in situ.

Due to recent highway realignment through this B.C. section, a field check will be required to determine the proximity of the highway to the pipeline and the ease of access especially in the Rainy Hollow area. The location of those sections of pipe which were removed during this reconstruction will have to be field checked, as well the exact breakout of buried pipe, in adverse site conditions and unburied pipe in dry site conditions. Table II provides an initial breakout of highway and stream crossing mileage points for this section. This shows approximately 5.5 miles of buried pipeline, assuming all river crossings are buried and includes six highway crossings, 14 river crossings and one pump station.

Yukon Border to Duke River

The pipeline right of way is generally well drained from the B.C. - Yukon border (mile 86.75) through to the vicinity of the Duke River (mile 226) with the pipe generally following along sidehills and crossing perpendicular to most water courses. Most of the pipeline is within 1/4 mile of the highway with access from the highway being generally good. In general salvage of the 97.25 miles of unburied pipeline located in good well-drained site conditions in this portion of the line should be

relatively easy resulting in minimal environmental disturbance. There are another 35 miles of buried pipeline and 7.75 miles of unburied pipeline located in adverse site conditions where salvage could cause considerable environmental disturbance.

Table III provides a breakout of this portion of the pipeline by mileage indicating the status of the pipe, the environmental site conditions, the disturbance level associated with salvage and the length of pipe in each individual segment. Map Sheets #1, 2 and 3, at a scale of 1:30,000 provide a colour coded illustrated view of these segments.

Duke River to Alaska Border

From the Duke River north to the border (mile 337) the right of way is not as well drained, being in valley bottoms over much of its length and often parallelling drainage systems. While the right of way is generally within 1/4 mile of the highway (though it is up to two miles away near the border) and there are relatively frequent points of access, many of these access trails are in poor condition due to poor local drainage. Salvage operations will be more difficult for this portion of the line and will likely cause more environmental damage. In total there are 68.75 miles of unburied pipeline located in adverse site conditions - mainly areas of poor drainage. There are another 11 miles of buried pipeline including 16 highway crossings and nine stream crossings. This leaves only 31.5 miles of unburied pipeline in relatively good site conditions where removal should result in minimal environmental disturbance. This 31.5 miles is broken up into 13 sections from .25 miles in length to 9.25 miles in length.

Table IV provides a breakout of this portion of the pipeline by mileage indicating the status of the pipe, environmental site conditions, the disturbance level associated with salvage and the length of pipe in each individual segment. Map Sheets #3, 4 and 5 provide an illustrated view of these segments.

Recommendations

.1 Pipeline Removal

Unburied - Adverse Site Conditions

- Those sections of the pipe which were surface laid but which are located in areas characterized by poor drainage, high erosion potential or other hazards should be abandoned in place.

- If it is felt to be cost-effective to remove some sections, a detailed field check will be required to determine the environmental operating conditions, equipment requirements and timing restrictions.

- It should be ensured that all oil and residue are removed from sections of unburied pipe to be left in place. The ends must be properly capped and the sections left in a condition that will ensure there will be no future release of pollutants and that they will not be a public hazard or distract from future land use.

- A notation should be made of the location of those sections of unburied pipe left in place.

Unburied - Good Site Conditions

- The sections of unburied pipe which are located in areas of good site conditions should be salvaged. This should include any sections suspended over streams (if they have not already been removed).

- A field check should be undertaken to determine present field conditions and to verify the accuracy of the designation and the length of sections identified for salvage.

- An environmental management plan should be prepared to outline operating conditions for salvage of these sections of pipeline.

- Before removal of any pipe it should be ensured that all oil and residue have been removed.

- If sections of unburied pipe located in good site conditions are left in place for reasons of cost, it should be ensured that all oil and residue are removed. The ends must be properly capped and the sections left in a condition that will ensure there will be no future release of pollutants, and that they will not be a public hazard or distract from future land use.

- A notation should be made of the location of any sections left in place.

- There should be consultation with affected individuals, the relevant Band and/or the Council for Yukon Indians with respect to removal of any sections of pipe which lie adjacent to selected areas or which would require to be accessed through selected areas. Potentially affected sections are located at:

mile 97	S-52
mile 101.78	S-12
mile 108.25	S-47
mile 154	S-5
mile 169.25	R-5
mile 220	R-1
mile 224.75	C-1
mile 261.5	S-13
mile 317	S-18

Buried Section

- In general, buried sections of the pipeline should be abandoned in place. In particular those sections at river crossings and along the shoreline of Dezadeash and Kluane Lakes should be left undisturbed. Specified sections buried along the highway right of way should be field checked to determine if they can be removed with minimal environmental disturbance.

- It should be ensured that all oil and residue are removed from sections of buried pipe to be left in place. The ends must be capped and buried and the sections left in a condition that will ensure there will be no future release of pollutants, and that they will not be a public hazard or distract from future land use.

- All river crossings should be field checked to ensure that erosion or bed degradation has not occurred exposing the pipe to air or water.

- A notation should be made of the location of those sections of buried pipe left in place.

2. Access Trails

- Existing access trails should be used for access to the pipeline right of way for salvage purposes.

- No new access should be created for purpose of salvage unless reviewed and approved in the environmental plan.

- The right of way should not be used as an access trail, especially in those areas where the pipe is to be abandoned in place.

3. Staging Areas

- Staging areas for equipment and salvaged pipe should be designated in the environmental protection plan.

- New clearing should be avoided where possible.

4. Signs/Mileage Posts

- All signs indicating the right of way location and pipeline mileposts should be removed unless otherwise directed by Historical Resources. YTG.

- This recommendation is contingent on minimal environmental disturbance associated with the removal.

5. Stockpiles

- Any remaining stockpiles of pipe should be removed. This will include those sections removed and stockpiled during reconstruction of the Shakwak highway.

- Areas having stockpiles in 1972 include:

mile 84.5

mile 225

mile 256

mile 291

6. Pump Stations

- General

  - Facilities connected with the pump stations should be offered for purchase and/or use by private or government agencies.

  - Facilities not disposed as above should be salvaged and removed. from where to where?

  - Sites should be cleaned up and reestablished in accordance with the Environmental Management Plan.

- PCB's and Other Contaminants

  - A field inspection of pump stations to determine the presence of PCB's or other contaminants should be undertaken before any disposal of facilities or equipment and before any onsite removal or restoration activity. This inspection should include not only the facilities and related equipment, but also any disposal sites.

  - Areas to be field checked should include:

    mile 47.3 - Border pump station (pump station No. 2)

    114 - valve

    126 - valve

    156.5 - four large bulk storage tanks

166.2 - valve

209.3 - Destruction Bay pump station

211 - Destruction Bay valves bypass

248 - Donjek River pump station and old dump area

323 - Beaver Creek pump station

- A qualified staff member from EPS, Environment Canada should be a part of the field inspection team.

- Recommendations for removal and/or containment of equipment containing or soil contaminated by PCB's should be requested from Environment Canada or a recommended consultant and undertaken as per their instructions prior to any other salvage operations at the pump stations.

- General

  - A component of the field inspection should be the determination of areas requiring special attention due to past erosion activity or due to sensitivity to disturbance during salvage operations.

  - In areas of low erosion sensitivity, restoration of disturbed areas and the application of fertilizer where required, should be sufficient for reclamation purposes. The environmental management plan should deal with site specific requirements.

- Erosion Areas

  - Areas where erosion has been occurring along the pipeline right of way should be restored with special attention paid to assure successful revegetation and stabilization of the site.

  - Areas to be field checked to determine if reclamation work is required include:

    mile 120

    mile 159.8

    mile 184 to 185

    mile 270

    mile 322.5

References Cited

(1) Products Pipeline - Haines to Fairbanks, Alaska: Operating Manual, Fluor Corp. Ltd., Los Angeles. May, 1955.

(2) Haines-Fairbanks Pipeline: Agreement between Canada and the United States of America. Treaty Series 1953, No. 20. Effected by Exchange of Notes Signed at Ottawa June 30, 1953.

(3) General Description of Facilities: Haines-Fairbanks Pipeline, Whittier-Anchorage Pipeline. Headquarters Petroleum Distribution Office, USARAL Support Command Pamphlet 360-1. December, 1968.

(4) Displacing Pipeline Fuels with Alcohol, Water and Air. Department of the Army, Headquarters, USARAL Supply Control Center, Petroleum Directorate, Seattle.

(5) letter A. B. Yates, Director, Northern Economic Development Branch to B. J. Trevor, Regional Director of Resources, Whitehorse. June 20, 1972.

(6) Haines-Fairbanks Pipeline, Yukon Territory. Dept. of Indian Affairs and Northern Development. September 18, 1972.

(7) note #15 to Dept. of State from the Canadian Embassy, Washington, D. C. January 12, 1979.

NORTHERN AFFAIRS PROGRAM
200 Range Road
Whitehorse, Yukon
Y1A 3V1

Your file Votre référence

Our file Notre référence

RERC Members

August 13, 1985

The Engineering and Architecture section of NAP is looking at the salvage of the Haines/Fairbanks pipeline. It has submitted the project to RERC for screening.

I have enclosed some draft terms of reference for preparation of an initial environmental evaluation and management plan. You will notice the format differs from our past requests for IEE's. We are hoping this will provide us with a more useful document that can bridge the gap between the screening process and the actual permitting and contracting process. I would appreciate your comments on the content of this document as soon as possible, as there is a desire to get a consultant working on the environmental components of this project this field season.

I would like to arrange a meeting to discuss this project for August 21, 1985 at 1:30 p.m. in the NAP boardroom if this is agreeable. Could you please phone in any major concerns before then and provide written comments at the meeting.

Thank you.

Bob Friesen
Chairman
RERC

Enc:
/lv

Canada

REGIONAL ENVIRONMENTAL REVIEW COMMITTEE

MEETING

1:30 P.M.

AUGUST 21/1985

NAP Boardroom

AGENDA

1) Haines-Fairbanks Pipeline

2) Silverhart Mine

Terms of Reference for the Preparation of an Initial Environmental Evaluation and Management Plan for Salvage of the Haines-Fairbanks Pipeline and Associated Facilities.

I. Background

II. Parallel Work

III. Study Area

IV. Scope of Study

V. Tasks

1. Inventory + Data Compilation
2. Scoping
3. Management Procedures - Mitigation Measures
4. Monitoring Program
5. Residual Impacts

VI. Schedule

VII. Reporting Procedure

I. Background

The Haines-Fairbanks Pipeline has been abandoned since approximately 1972. At the time of abandonment all petroleum products were removed and the pipe cleaned with a "pig". However the pipe itself and the pumping stations were left in place - this involves 251 miles of 8 inch pipe within the Yukon and 5 pumping stations.

In 1972 there was an inspection of the pipeline route within the Yukon Territory by Federal and Territorial personnel. This was undertaken to assess the conditions along the right-of-way and to provide quidelines for the dismantling and removal of the pipeline and facilities in case it was decided to salvage the pipeline. No decision was made at that time. Since then there has been no change in the status of the pipeline except for the transfer of the Blanchard River pumping station site to the Yukon Government.

In the fall of 1984 the subject of salvage of the pipeline was raised again. This project has been initiated to examine the environmental, engineering and cost implications of removal of the pipeline and to develop an operational plan that would ensure environmental concerns were effectively managed. The required work is to be based on existing knowledge and information augmented by field checks where necessary.

This project includes 3 major components:

1. An inventory of the pipeline and related facilities to determine their condition, their potential use/market and a rough estimate of their value.
2. An examination of the pipeline to determine the possible method of, as well as the equipment requirements for, dismantling and removing it.
3. An initial evaluation of the environmental concerns arising from dismantling and removal of the pipeline and development of a management plan to ensure any residual impacts are insignificant.

The products will be used in the decision making process to aid in determining whether the pipeline should be salvaged and if so how and under what terms and conditions. A part of this decision making process will be a review by the Regional Environmental Review Committee as to the significance of any impacts resulting from such an operation.

II. Parallel Work

1) Inventory of Pipeline and Related Facilities
2) Engineering Implications and Requirements

III. Study Area

The study area is shown on Figure 1. The pipeline follows the Haines Road for 64 miles from the B.C.-Yukon border to Haines Junction. It then follows the Alaska Highway for 187 miles to where it crosses the Yukon-Alaska border north of Snag. There are 5 pumping stations - these are located at Blanchard River, Haines Junction, Destruction Bay, Donjek River and Beaver Creek. The major areas of interest are the pipeline and ROW area, the pumping stations, access roads and landing areas required to successfully remove the pipeline. Any regional implications must also be considered.

IV. Scope of Study

(i) to compile all available, existing data on the study area relevant to preparing an initial evaluation and operational management plan;

(ii) to complete an initial analysis of potential environmental problems;

(iii) to prepare an operational management plan indicating areas of environmental and engineering concern, type of concern, proposed mitigation and construction methods to alleviate concern;

(iv) to assess the risk factor associated with proposed mitigation measures; and to prepare a monitoring program to test the effectiveness of any proposed management procedures for which there is concern raised or limitations to their effectiveness;

(v) to outline any residual impacts after mitigation and to assess their significance.

V. Tasks

1. Inventory and Data Compilation

This task should use available existing information, augmented by field trips for familiarization purposes. Any major data gaps which will affect the outcome of the evaluation should be outlined and provided to the contract manager before Meeting No. #2. Data to be compiled should focus on that required to complete an initial environmental evaluation of the proposed project and to prepare an operational management plan. Maps of appropriate scale should be used to illustrate the resources and areas of environmental concern.

Data to be considered should include but not necessarily be restricted to the following:

1. climate - conditions or factors that could have a bearing on any aspect of the salvage operation, including reclamation and other mitigation measures.
2. terrain - this should include terrain sensitivity, recognized or anticipated areas of instability, unique features, presence of permafrost.
3. hydrology - information on ground and surface waters that could be directly or indirectly affected by the operation, including any required for use during the operation.
4. terrestrial flora/fauna - information on animal and plant populations that could be altered by the operation, their importance on a local and regional level, their sensitivity to disturbance, critical times and areas.
5. aquatic - information on fish populations and habitat that could be affected directly or indirectly by the operation, their importance on a local and regional level, their sensitivity, critical times and areas.
6. existing land holdings and land use - this should include mineral claims and leases, leased or reserved land, trapping areas, outfitting areas, land use permits and selected areas under land claims.
7. historical and archaeological resources - known or potential sites should be documented, including the historical value of the pipeline itself.

2. Scoping

This task should identify those environmental attributes which are important from a biological, physical and social perspective and which will require management at the operational level. This should be a reiterative process with that of inventory and data compilation. It should identify expected impacts associated with this operation and indicate their impact significance. Impacts should be ~~expressed in the form of testable hypotheses.~~ They should include both direct and indirect impacts.

3. Management Procedures - Mitigation Measures

The product of this task should be an operational management plan for the salvage of the pipeline and pumping stations. It should concentrate on those areas identified in task 2, in conjunction with the information provided by the project engineer in relation to engineering/operational removal implications and requirements. It should include a written and a mapped component. The map should be prepared to a level that will provide field staff and/or contractors with a visual summary of environmental concerns, construction or operational activities which could affect these environmental elements and the mitigation measures proposed to alleviate these concerns. The written component should include a summary of general operation procedures which a contractor would have to adhere to, as well as specific mitigation measures recommended for specific areas of concern including scheduling considerations if relevant. It should be presented on a km by km basis.

4. Monitoring Program

The risk factor associated with the proposed mitigation measures should be clearly indicated - this could be due to uncertainty as to the effectiveness of the mitigative measure, uncertainty related to the data base or uncertainty related to implementation. A monitoring

program should be prepared to test the effectiveness of those elements of the management procedures for which there are perceived risks or limitations. Development of this monitoring program should be reiterative with tasks 1 + 2 to ensure that the accuracy of the impact hypotheses and the adequacy of the mitigative measures can be tested. This program should also include a mechanism to ensure timely alterations to management procedures where required.

5. Residual Impacts

The environmental impacts that will remain after all practical mitigative measures are undertaken should be discussed in this section. The nature, extent, duration and significance of such impacts in both a regional and a local context should be provided.

VI. Schedule

Meeting No. 1
- clarify and finalize terms of reference with consultant

Task 1 - Inventory and Data Compilation
2 - Scoping

Meeting No. 2
- review inventory results and preliminary conclusions from scoping exercise

Task 3 - Management Procedures
4 - Monitoring Program
5 - Residual Impacts

Meeting No. 3
- discuss proposed management procedures and potential areas requiring monitoring

Prepare Draft Report and distribute for comment

Meeting No. 4
- Review Draft Report

Revise and finalize report

Submission of final report

VII. Reporting Procedure

1. The consultant shall allow for weekly contact with the project co-ordinator throughout the project to discuss any difficulties as they arise and to report on progress.

2. The consultant will be expected to participate in a minimum of 4 meetings with the committee:

   (i) at project initiation to review, clarify and finalize the project terms of reference and to obtain information on data sources from Committee members;

   (ii) after initial data compilation and scoping to review inventory results, discuss any important data gaps, and to review preliminary conclusions re: key environmental attributes and potential impacts;

   (iii) after completion of Tasks 3, 4 and 5 to discuss proposed management procedures and potential areas requiring monitoring;

   (iv) after review of draft report by committee members to discuss revisions.

3. A draft written report will be expected after completion of Tasks 1 through 5. It should provide:
   1. a synthesis of the inventory and data collection
   2. a synthesis of the scoping exercise
   3. an operational management plan
   4. a monitoring program
   5. a conclusion on the significance of any expected residual impacts

Fifteen copies of the final report with maps will be submitted to the Department of Indian and Northern Affairs. A reproductible master should also be provided.