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Safety Survey Thawing Operations, Haines-
Fairbanks Pipeline, 25 - 26 February 1956

Colonel Farrell

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THRU: Chief, Construction Division

1. The undersigned was accompanied on subject survey by Mr. Jack Spangler, Project Engineer Haines-Fairbanks Pipeline, this office; Mr. W. J. Wilson, Forest Engineer, Department of Northern Affairs and Natural Resources, and Mr. Joe Langavin, Park Warden, Yukon Forestry Division.
2. The prime purpose of this survey was to determine the safest method of disposal of fuels that were being spilled on the ground during ice removal operations of the Haines-Fairbanks Pipeline. Several sites where the line had been cut and flushed were visited, including one location (Milepost 195) where dumped jet fuel had been fired immediately following repair of the line.
3. It was found that if the fuel laid for a period of two or more days, it became very difficult to ignite, and only by removing the snow and scarifying the soil were we able to set fire to the saturated areas. It is recognized that this was in part due to the low ambient temperatures and ground temperatures at the time of the visit. The one location that was fired the same day that the fuel was flushed onto the ground showed evidence of intense heat over a considerable area, consuming green spruce timber 5" to 6" DBH. It was discovered that in this particular location there was active peat fire in barn and muskeg. We were informed that this area had been checked and all peat fires extinguished the preceding week. It was then concluded that from a fire hazard viewpoint the areas where the fuel had been spilled would be during the coming summer season very little more hazardous than the surrounding terrain. It was evident that the burning of fuels was greatly increasing the possibility of hang-fires in peat resulting in forest fires come spring and summer.
4. Also while visiting the sites, the possibility of stream and lake pollution was seriously considered, and it was the consensus of the Canadian officials that due to the rapid evaporation of surface water in the spring, likewise any fuel products remaining on the surface would essentially remove the probability of the fuels being carried into the streams or lakes by the runoff. They further informed us that due to the flat terrain and light snowfall in this area there was very little runoff during the spring thaws. The possibility of fuel laying on the top of the permafrost close to the surface and later creating a serious explosive hazard as was encountered at Eielson AFB, does not exist due to the fact that permafrost starts at a depth of 6 or 7 feet below the surface of the ground. Between the seasonal frost limits or at the lower part of the seasonal frost zone, there is normally a silty material which in all probability would be where the fuels that leach into the ground would come to rest.

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5. From observation of the operation and taking into consideration all aspects, it is recommended:

- a. That none of the spilled fuels be burned.
- b. That spilled fuels be restricted to as small an area as possible. Every effort should be made to make cuts and flush lines not closer than 300 feet from public roads or inhabited areas, guarding against pollution of streams, lakes and wells by diversion of the spilled fuels.
- c. That peat fires that exist at Milepost 195 on the Pipeline be extinguished.
- d. That a complete check before the snow melts of all locations where fires have been known to have been started, including thawing fires along the line.
- e. That a follow-up check for peat and berm fires be made again just following the spring breakup and just before the onset of warm weather. It is also believed that a representative of the Safety Branch should accompany field personnel on this latter inspection and that if possible the assistance of the Canadian forestry officials be obtained.

WARDIE W. KING
Chief, Safety Branch
cc-Safety Br

COMMUNICATIONS SECTION

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