LEGEND

Peat, fen; peat-fen complex; commonly ORGANIC TERRAIN occuring as a cover on Units II, IX (including muskeg) and X; flat to moderately sloping. Clay and silt, commonly surfaced by SILT-CLAY PLAINS sand or silty sand, with discontinuous (marine and lake deposits) organic cover (see Unit I). Principally forming plains bordering rivers and coastal areas. Highly unstable in eroded slopes. Clay, silt, peat, and local sand on low III THERMOKARST LAKE BEDS flat areas formerly occupied by tundra ponds. These materials generally less than ten feet thick over till or sand. Pingos generally confined to this unit. Gravel and/or sand ridges or flat areas BEACHES along present or former shorelines. (marine and lake) Silt and silty sand in river channels, RIVER DEPOSITS-FINE floodplains, low terraces adjoining rivers, and alluvial fans; includes organic silt, peat and minor gravel. Gravel and sand in river channels. VI RIVER DEPOSITS-COARSE floodplains, low terraces adjoining rivers and alluvial fans. Includes some silt, peat, and organic silt. Gravel, sand and some silt. Includes VII GRAVEL-SAND HILLS, RIDGES AND TERRACES eskers, and other glaciofluvial deposits, river terraces, sand dunes, and moraines consisting of deformed gravelly-sandy strata. VIII SILT-CLAY HILLS AND RIDGES Mainly silt and clay with minor sand and gravel in moraines, strata tilted and folded. Till, occurring as ground moraine IX TILL PLAIN with low rolling relief or parallel drumlin ridges. Large areas are clayey to silty till as a thin veneer on shale; locally forms a thin veneer on other kinds of bedrock. Includes undifferentiated areas of Unit I. Clayey to gravelly-sand till, local X HUMMOCKY TILL gravel, forming rolling to hilly moraine composed of individual and coalescent hummocks. Local contrast: in material and ground ice between well drained hills and poorly drained depressions. Includes small undifferentiated areas of Unit I. XI UPLAND AND PIEDMONT COMPLEXES Areas of moderate to low slope, in part hilly, surfaced by till, disintegrated bedrock, and local clay, silt, sand, or gravel. Unconsolidated deposits generally form a thin veneer over rock but in places they are thick (>100 feet). Rock outcrop or rock thinly covered by XII MOUNTAINOUS AND ROCKY AREAS rubble or drift. Moderate to steep slopes. Various unconsolidated materials on XIII ERODED AND/OR ERODING RIVER BANKS, COASTAL CLIFFS, AND moderate to steep slopes, generally with surface veneer of slope debris; VALLEY WALLS (UNCONSOLIDATED includes unstable areas. MATERIAL) XIIIR ERODED AND/OR ERODING RIVER BANKS, COASTAL CLIFFS, AND Bedrock outcrops or bedrock partly covered by rock detritus or ◆◆◆◆ VALLEY WALLS (BEDROCK) unconsolidated materials; slopes commonly steep; includes unstable Note: Detailed unit descriptions of terrain sensitivity, climatically significant zones, and the performance rating table are presented on a seperate sheet which accompanies this map. SOURCES OF INFORMATION Rutter, N.W., Boydell, A.N., Minning, G.V., Netterville, J.A., March 1973: Unpublished preliminary Surficial Geology Maps of NTS 95N (Dahadinni River), NTS 950 (Wrigley), NTS 95K (Root River), NTS 95J (Camsell Bend), NTS 95I (Bulmer Lake), NTS 95G (Sibbeston Lake), NTS 95H (Fort Simpson), NTS 95B (Fort Liard), NTS 95A (Trout Lake), NTS 85E (Mills Lake). and NTS 85D (Kakisa River).

Douglas, R.J.W., MacLean B. 1963: "Geology, Yukon Territory and Northwest Territories", Map 30-1963 Geological Survey of Canada.

Tarnocai, C., 1972: <u>Soils of the Mackenzie River Area</u>, Canada Soil Survey, Winnipeg Manitoba.

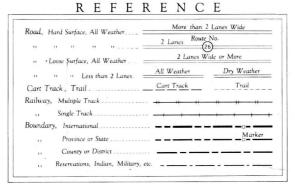
Compiled by R.L. Monroe 1973 Preliminary map prepared for open file, June 1973

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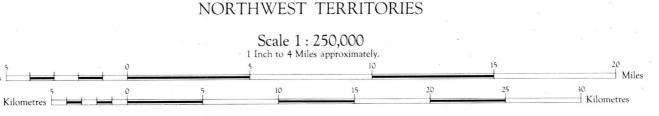
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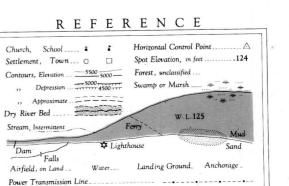
Task Force on Northern Oil Development



ROOT RIVER



Contour Interval 500 Feet Elevations in Feet above Mean Sea Level.

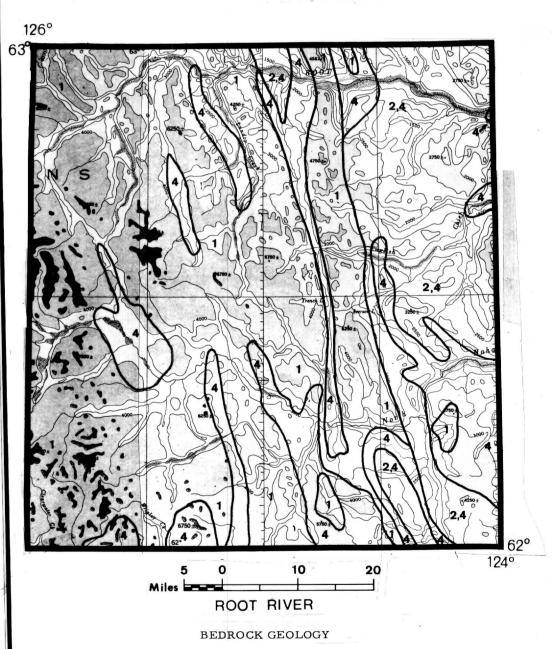


Transverse Mercator Projection North American Datum 1927

Index To Adjoining Sheets

BEDROCK LEGEND

- Resistant and competent rocks; potentially suitable for use as rip-rap. Comprised of Precambrian quartzite and argillite, Ordovician and Silurian limestone and dolomite; also included are Upper Devonian carbonate reefs and beds that border the Mackenzie River on the south side between Hay River and Fort Simpson (Escarpment, Twin Falls, and Kakisa Formations).
- Coherent or moderately competent rocks; fairly resistant to erosion but not strongly cemented; probably would break down rapidly under heavy traffic (e.g., if crushed and used for road surfacing). Devonian, Carboniferous and Cambrian sand-
- Moderately coherent rocks; more resistant than 4 and less easily eroded; capable of maintaining a steep cliff face 150 feet high. Not represented within this mapping area.
- Incoherent rocks; soft, easily eroded, subject to slumping; mostly Devonian shale and siltstone (Tahlina, Hay River, Funeral, Fort Simpson, and Horn River Formations), but includes extensive areas of Cretaceous shale.
- Undivided Precambrian argillite, quartzite, and dolomite.
- Areas of mixed coherence; resistant competent, carbonate rocks consisting of Upper Devonian and Carboniferous (Mississippian) limestone and dolomite (rating 1); occurring with mainly incoherent and easily eroded shale and siltstone of the same ages (rating 4).
- Undivided Devonian sandstone, siltstone, and shale (unnamed)
 Carboniferous and Permian (mainly Pennsylvanian) sandstone, shale, limestone, and Cambrian sandstone, shale and dolomite.
- Undivided Upper and Lower Cretaceous shale, sandstone, and conglomerate (rated 4, 2, in Liard Plateau only).
- Surficial deposits (where obscuring bedrock relationships).



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GEOLOGICAL SURVEY AWATTO

DISTRICT OF MACKENZIE

NORTHWEST TERRITORIES