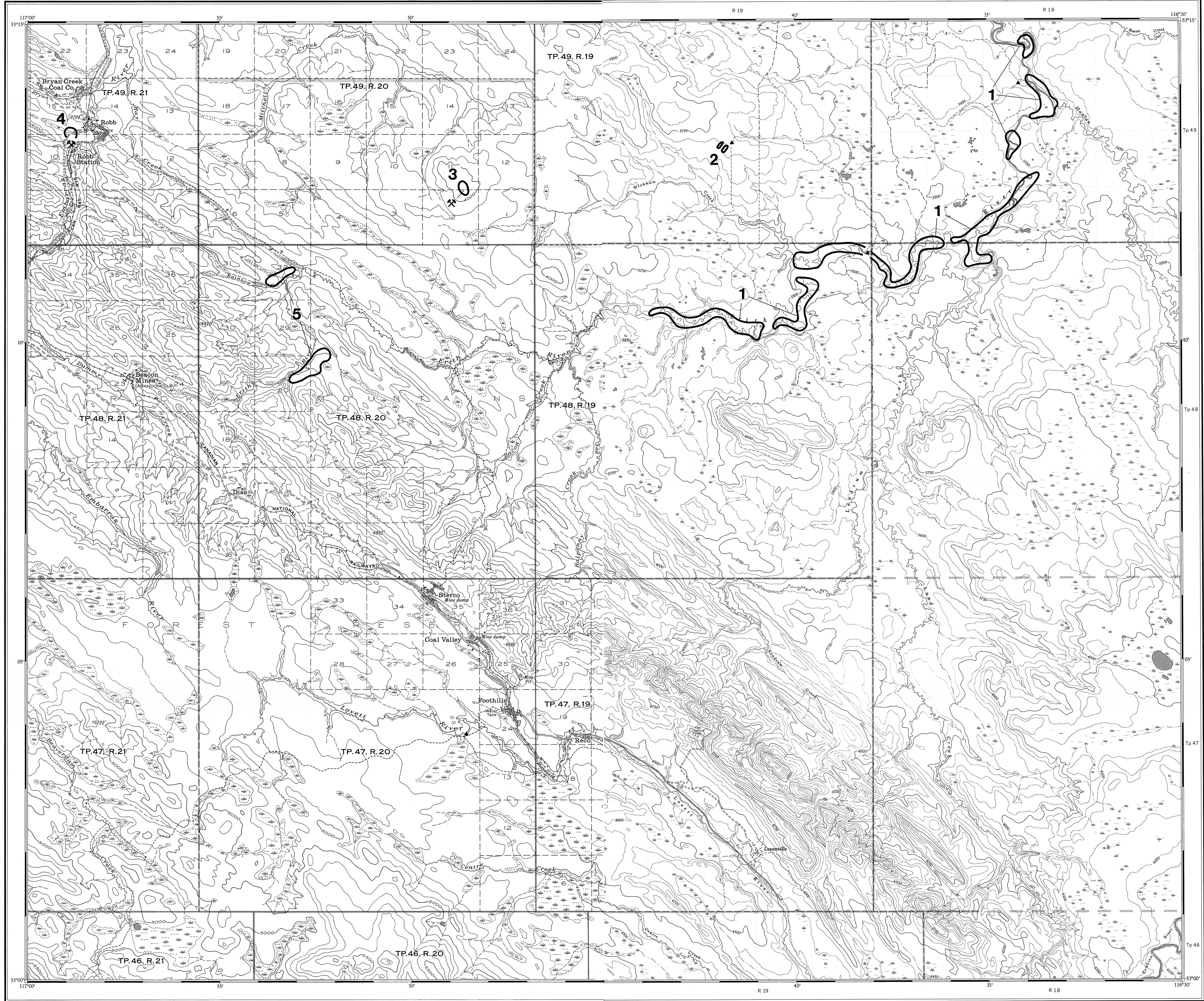
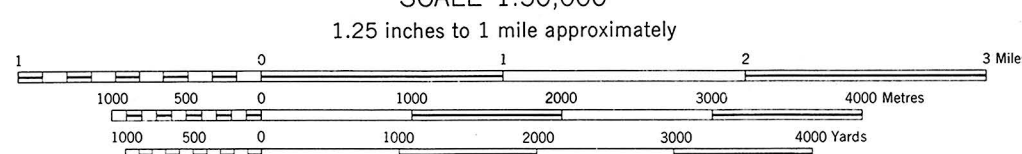


Foothills 83 F/2



Produced and printed by the Surveys and Mapping Branch, Department of Mines and Technical Surveys. Converted from the First Edition of the 1:63,360 map to 1:50,000 in 1955.

FOOTHILLS  
WEST OF THE FIFTH MERIDIAN  
ALBERTA



MAGNETIC DECLINATION 87° 22' EAST  
AT CENTRE OF MAP 1957  
Annual magnetic change 4° 30' westerly

GENERAL COMMENTS

DEPOSIT CHARACTERISTICS

Deposit Number	Material Description	Reserves (1000 m <sup>3</sup> )		Additional Comments	Texture (%)			Wear	Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments	
		Gravel	Sand		Gravel	Sand	Fines							
1	Sand	-	-	Mainly fine to medium sand, clean. Less than 20% gravel.	-	-	-	-	0.0 - 0.5	-	460	Fluvial flood plain	Little information available. Sand derived from local bedrock.	
2	Sand	0.5	4	Sand — clean, fine; gravel — less than 10%.	-	-	-	-	0.0	1.0	1	Glacioluvial-estuary		
3	Sandy gravel	150	34	Entrance conglomerate (bedrock), cemented.	80	17(1)	3(1)	-	1.0	3.0+	7	Bedrock	Used locally for roads, unsuitable for concrete. Gravels are mainly quartzites up to 15 cm.	
4	Sand	-	180	Sand — fine, clean, thin layers of silty sand and coal fragments.	-	-	-	-	1.0	3.0	9	Glacioluvial	Overburden of silt.	
5	-	-	-	Possibility of containing sand and gravel.	-	-	-	-	-	-	60	Glacioluvial	No information available.	

**Deposit Number** — Granular deposits shown on this map may have commercial possibilities. That assumption followed from two criteria used in the mapping process: study of the area considered only granular deposits greater than one metre thick, and covering an area more than one hectare, and it only considered deposits where the mineral aggregate thickness was greater than the overburden thickness. Although the scale of mapping did not permit investigation of all small deposits, many small deposits containing existing pits are indicated.

**Material Description** — Sand and gravel has a variety of applications, such as concrete for construction, asphalt concrete, subbase and base course aggregates for roads, gravel and sand for road surfaces, and pit run for fill. Gradation, rock hardness, and binding characteristics, are some of the specific qualities that are considered in aggregate towards determining its end use. This map indicates these, and other, geological qualities of the sand and gravel within each deposit, but does not indicate their potential uses. The terms used in the table are defined in the figure below.

**Reserves** — The method of calculating in cubic metres the aggregate reserves of deposits took four basic steps. First, the area, in hectares, of each deposit was determined using aerial photographs. Second, geological interpretation, sometimes supported by subsurface information, was assumed in determining the geometry of each deposit, to estimate an overall, average deposit thickness in metres. Third, geological study and limited sample analyses determined the texture (gradation) of sediments in the deposit, and an overall average percentage of gravel and sand. Finally, the volume was calculated as follows: reserve gravel (m<sup>3</sup>) = area (ha) × thickness (m) × 10,000 × % gravel; the same formula was used for sand.

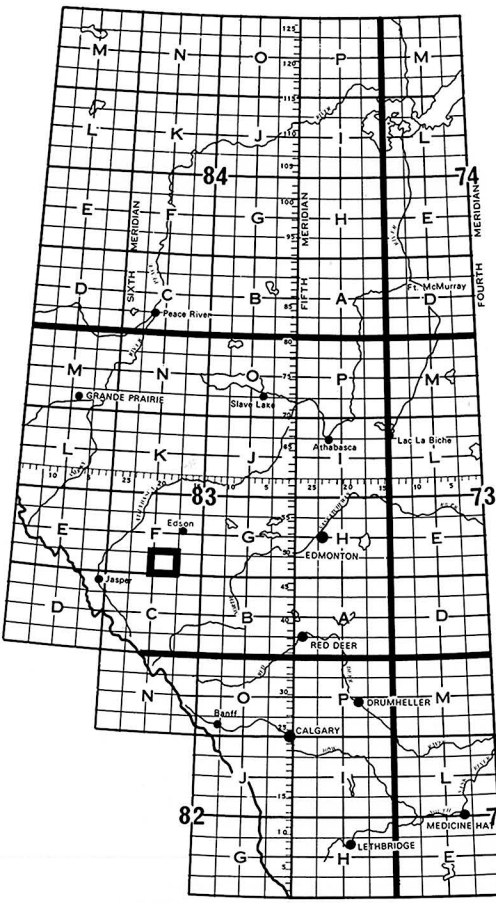
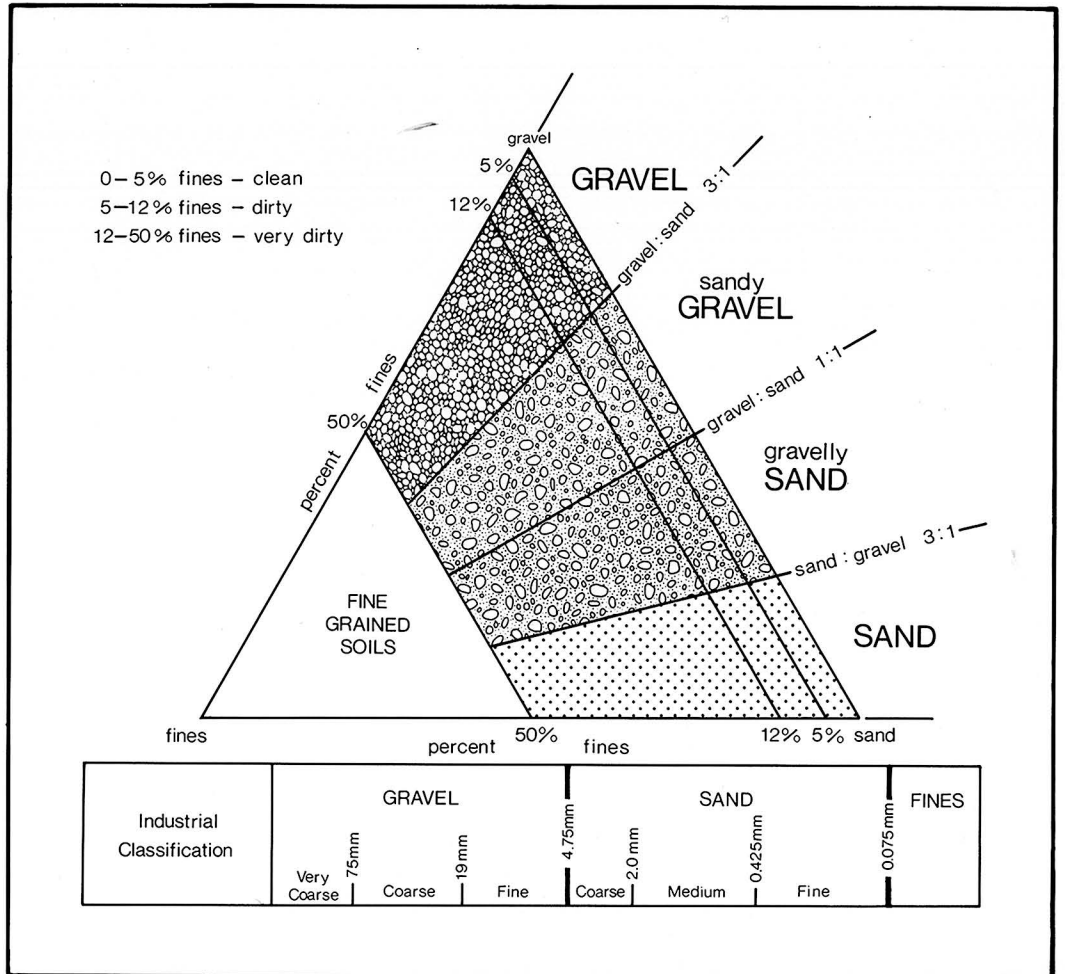
**Texture** — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit were determined from a field estimate, or from laboratory analysis, of one or more samples from that deposit. Where more than one sample is taken the tabulated number is the mean value.

**Wear** — The resistance of gravel-size clasts to wear or abrasion can be measured in a laboratory test (ASTM-C131, Los Angeles Abrasion Testing). The amount of material that breaks down into smaller sizes is measured and related to the original sample weight in terms of percent wear. The higher the percentage wear the more susceptible the gravel is to breakdown under stress. Gravel with a percentage wear of less than 40 is considered very resistant.

**Overburden Thickness** — The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface testing.

**Deposit Area** — Deposits in this study were delineated by interpretation of aerial photographs and the contacts should be considered approximate. Information is precise only where test holes, or geological sections, are indicated.

**Deposit Genesis** — The genesis, or formation, of deposits is vital to the understanding of the gradational nature, extent and geometry of the deposit. This understanding forms the basis for extrapolation from a limited number of known points (test holes, pits, sections) and permits an overall assessment of the deposit.



Map Legend

- 3 Deposit number
- Assumed boundary
- Active or inactive pit
- Alberta Geological Survey test hole
- Sand or gravel exposure
- Buried sand or Gravel deposit

Aggregate Resources

83 F/2 Foothills

J.C. Fox  
Published 1984.  
Geology and compilation 1982 and 1983. Additional information from L.A. Bayrock and T.H.F. Reinchen, 1980 and M.A. Reed, 1970.  
This is a sand and gravel resource map prepared by the Alberta Geological Survey as part of a series of maps at a scale of 1:50,000. The series represents an ongoing aggregate inventory of Alberta which provides data for general land-use planning, land management or aggregate exploitation. Please note that the delineation of deposits and calculation of reserves are approximations only. Alberta Energy and Natural Resources provides financial support for the Aggregate Inventory.

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