

GENERAL COMMENTS

DEPOSIT CHARACTERISTICS

Deposit Number	Material Description	Reserves (1000 m <sup>3</sup> )		Additional Comments	Texture (%)			Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments	
		Gravel	Sand		Gravel	Sand	Fines					Wear	
1	Sand	-	-	Inactive pit, in Paskapoo sandstone, pepper-colored medium grained sand with some hard blocks	-	-	-	-	-	-	Bedrock		
2	Gravelly sand	-	-	Abandoned pit, contains only very small reserves	-	-	-	-	1-2	-	Meltwater channel		

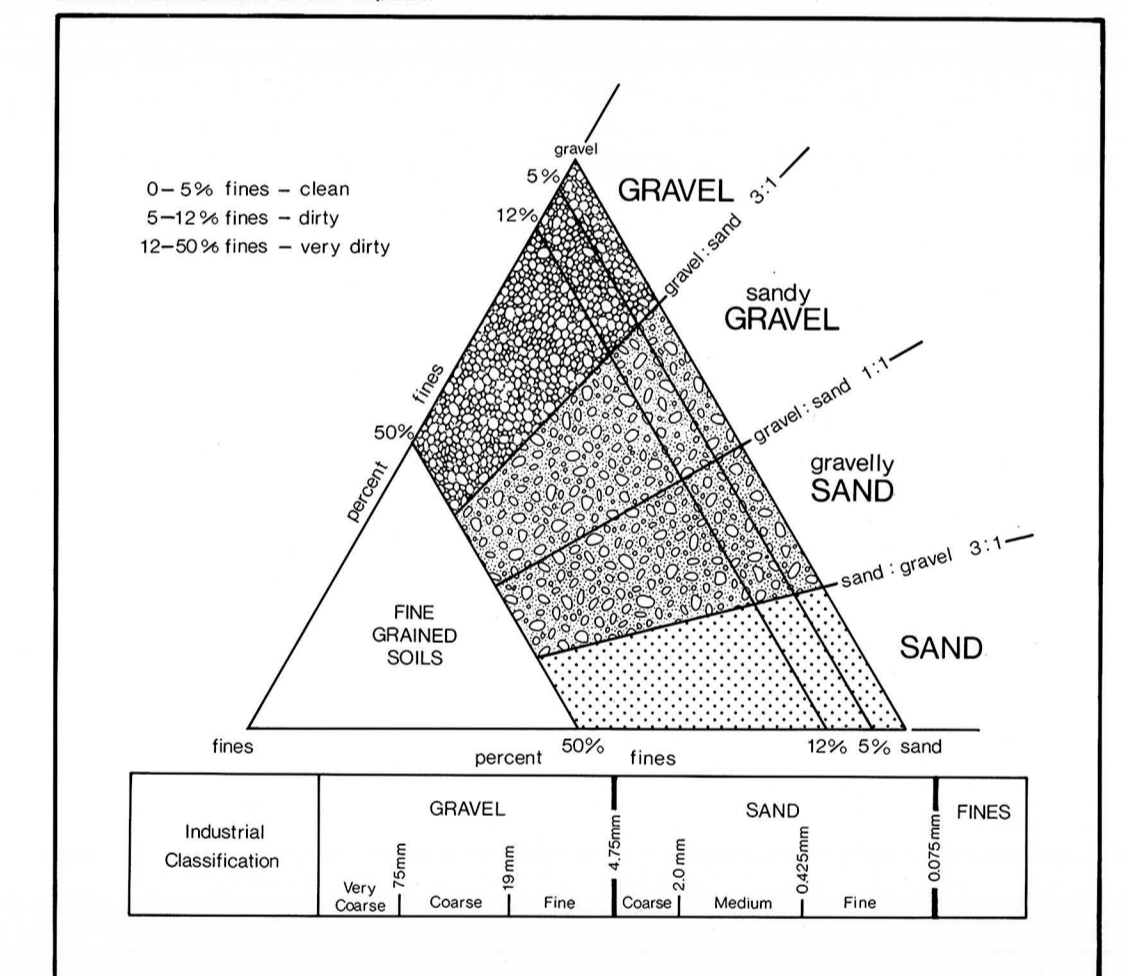
**Deposit Number** — Granular deposits shown on this map may have commercial possibilities. That assumption followed from two criteria used in the mapping process: study of the area considered only granular deposits greater than one metre thick, and covering an area more than one hectare; and it only 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.

**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.

**Material Description** — Sand and gravel has a variety of applications, such as concrete for construction, asphalt concrete, subbase and base course aggregate for roads, gravel and sand for road surfaces, and pit run for fill. Gradation, rock hardness, and bedding 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.

**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.

**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 (m<sup>3</sup>) = area (ha) × thickness (m) × 10,000 × % gravel; the same formula was used for sand.



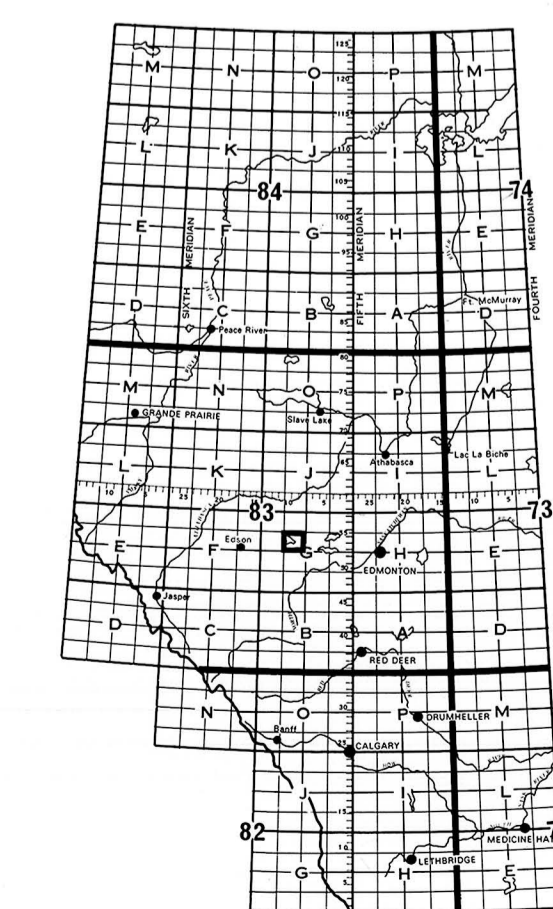
**Texture** — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular 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.

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

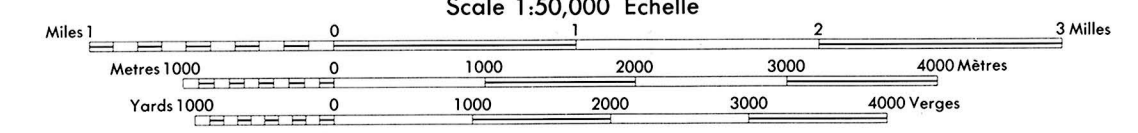


Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND REVENUE, 1972. Printed 1974. Copies may be obtained from the Canada Map Office, Department of Energy, Mines and Revenues, Ottawa, or your nearest map dealer. © Canada Copyright Referred 1974.

Roads:  
 hard surface, all weather: 1  
 hard surface, all weather: 2  
 loose or stabilized surface, all weather: 3  
 loose surface, dry weather and undisturbed: 4  
 cart track: 5  
 trail, cutline or path: 6

CHIP LAKE ALBERTA

WEST OF FIFTH MERIDIAN - OUEST DU CINQUIÈME MÉRIDIEN  
 Scale 1:50,000 Échelle



This Provisional Map is equivalent to a standard map in accuracy of control.  
 Some names on this map are not yet official. Corrections or additions are invited by the Survey and Mapping Branch.

Cette carte provisoire équivaut à une carte régulière au point de vue précision de contrôles.  
 Certains noms inscrits sur cette carte ne sont pas encore officiels. La Direction des levés et de la cartographie vous invite à lui adresser des suggestions de corrections et d'ajouts.

Détails par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, Mars 1974. Imprimé en 1974. Révisé le 1974.  
 Ce plan provisoire est équivalent au Bureau des Levés et des Ressources, Ministère de l'Énergie, des Mines et des Ressources, Ottawa, ou directement à son agent.

This is a sand and gravel resource map prepared by the Alberta Geological Survey as part of a series 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 exploration. 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.

REFERENCES  
 Geology and compilation by W.A.D. Edwards, 1982. Additional information from Penon, Andriashak and Root, 1979.

AGGREGATE RESOURCES

CHIP LAKE 83G/11



Alberta Geological Survey