

GENERAL COMMENTS

DEPOSIT CHARACTERISTICS

Deposit Number	Material Description	Reserves (1000 m <sup>3</sup> )	Gravel	Sand	Additional Comments	Texture (%)			Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
						Gravel	Sand	Fines					
1	Clean sand	5,000	-	100	Fine sand.	100	-	-	0	2.0	250	Glaciofluvial modified by eolian	Sand plain with 10% of the area sand dunes up to 4 m.
2	Clean sand	49	828	-	Fine sand.	5	85	10	0.5	2.5	39	Glaciofluvial	Outwash delta. Clean sand with patches of dirty medium sand and 15% gravel.
3	Clean sandy gravel	504	338	-	Sand is coarse. Active pit.	60	40	-	1	3.0	35	Glaciofluvial.	Outwash delta. Maximum clast size 1 m. Dominant clast size 10 cm.
4	Clean sand	11,900	-	-	Fine sand and very fine sand.	85	15	-	0.5	2.0	700	Glaciofluvial	Outwash deposit. Very fine sand dominates.
5	Clean sand	1,785	-	-	Fine and very fine sand.	85	15	-	0	2.0	105	Glaciofluvial	Outwash deposit covered by a few dunes up to 3 m in height.
6	Clean gravelly sand	994	1,754	-	Medium and coarse sand with subrounded clasts up to 8 cm.	35	65	-	0	2.0	135	Glaciofluvial	Outwash deposit.
7	Clean sand	2,040	-	-	Fine and very fine sand.	85	15	-	0	1.5	160	Glaciofluvial	Outwash deposit. Major part of deposit is on NTS 831/7.
8	Clean sand	10,830	-	-	Fine sand becoming dirtier to the southeast.	95	5	-	0	2.5	456	Glaciofluvial	Patches of medium and coarse sand. Outwash terrace deposit.
9	Clean sand	810	-	-	Fine sand.	90	10	-	0	2.0	45	Glaciofluvial	Outwash terrace deposit.
10	Clean sand	282	2,538	-	Pit presently used as dump. Fine to coarse sand which coarsens with depth. Coarse sand dominates.	10	90	-	0.5	3.0	96	Glaciofluvial	Outwash terrace deposit. Deposit continues on NTS 831/1.
11	Clean sand	1,344	-	-	Fine and very fine sand.	85	15	-	0	2.0	82	Glaciofluvial	Outwash terrace deposit.

**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 if 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 aggregate 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.

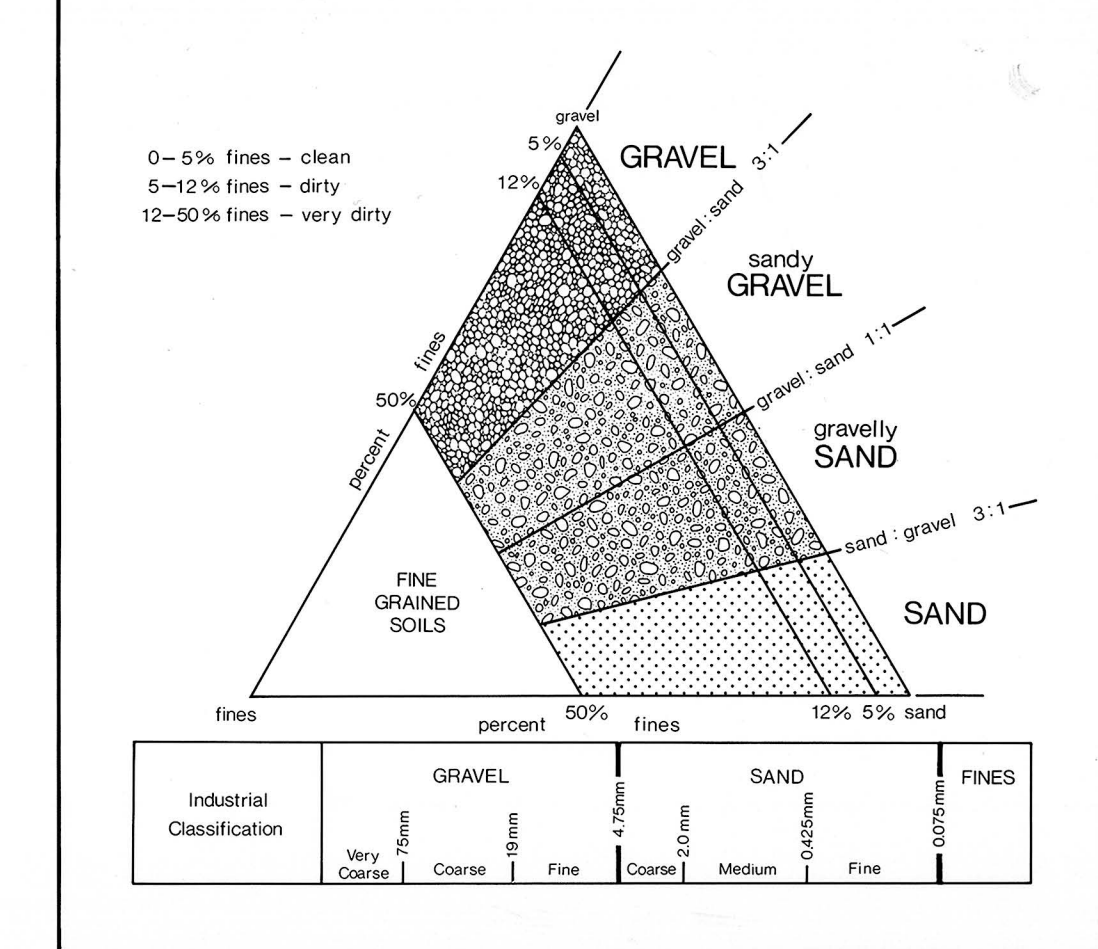
**Texture** — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular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

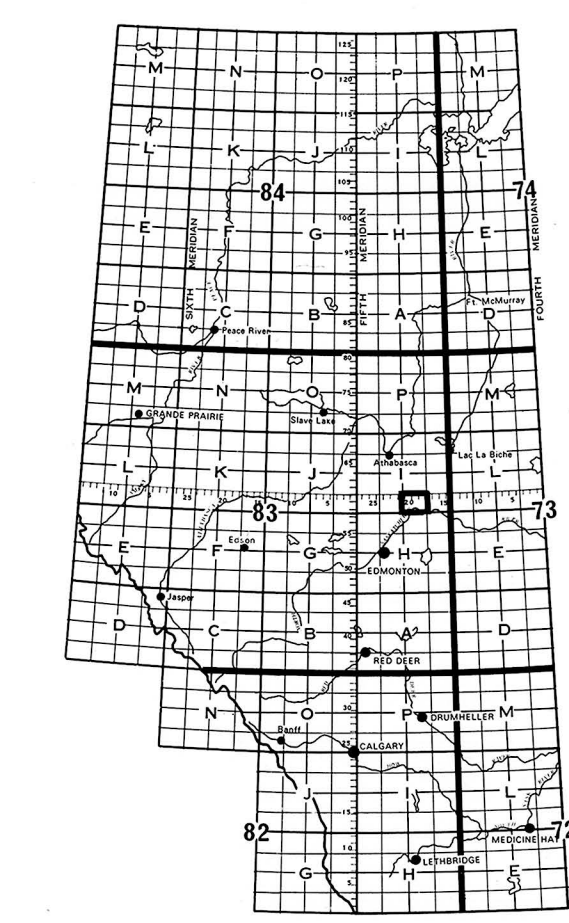
**Overburden Thickness** — The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface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



Alberta  
RESEARCH COUNCIL  
Natural Resources Division

Alberta Geological Survey

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.

References:  
Geology and compilation by K.G. Steele, 1982.

AGGREGATE RESOURCES  
WASKATENU 831/2

831/2

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WASKATENU  
ALBERTA  
WEST OF FOURTH MERIDIAN - OUEST DU QUATRIÈME MÉRIDIEN  
Scale 1:50,000 Echelle

This Provisional Map is equivalent to a standard map in accuracy of content.

Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL: 25 FEET  
Échelle: 1:50,000  
North American Datum: 1957  
Système de référence géodésique nord-américain 1957  
Projections: Méridienne Française

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