

Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, 13247-122 Street, Edmonton, Alberta T6E 6P6. Copies may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, or any regional map dealer. © Canada Copyright Reserved 1989.

**DEADWOOD ALBERTA**  
WEST OF FIFTH MERIDIAN - OUEST DU CINQUIÈME MÉRIDIEN

Scale 1:50,000 Echelle

1:50,000 Scale

0 1000 2000 3000 4000 Metres  
0 1000 2000 3000 4000 Yards

Contours interval 50 feet  
Elevations in feet above Mean Sea Level  
North American Datum 1987  
Niveau Métrique: Projection

Distances in kilometers  
Distances en kilomètres  
Scale of reference geodetic and astronomic, 1987  
Projection: Transverse Mercator

Scale 1:50,000 Echelle

0 1000 2000 3000 4000 Metres  
0 1000 2000 3000 4000 Yards

Contours interval 50 feet  
Elevations in feet above Mean Sea Level  
North American Datum 1987  
Niveau Métrique: Projection

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					
<b>LEVEL 3 - Regional Mapping Study Area</b>												
1	sand	360	910	iron stained, dirty, fine to medium grained	25	62	10	0.3	1	146	fluvial	1220' on helicopter altimeter
2	sand	242	1242	iron stained, fine to medium grained	15	77	3	0.15	0.75	215	fluvial	1400' on helicopter altimeter
3	gravelly sand	2254	3735	iron stained, fine to medium grained	35	58	2	0.15	2	322	fluvial	1300' on helicopter altimeter
4	gravelly sand	1056	2112	iron stained, fine to medium grained	30	60	5	0.15	2	176	fluvial	1500' on helicopter altimeter
5	sand	128	480	heavily iron stained, fine to coarse grained	20	75	2	0.15	1	64	fluvial	1180' on helicopter altimeter
6	sand			fine to medium grained				0.15-0.35	0.75	5	fluvial	gravelly sand lenses
7	sand			fine grained					1	7	fluvial	clasts primarily oversize

**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 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) x thickness (m) x 10,000 x % gravel; the same formula was used for sand.

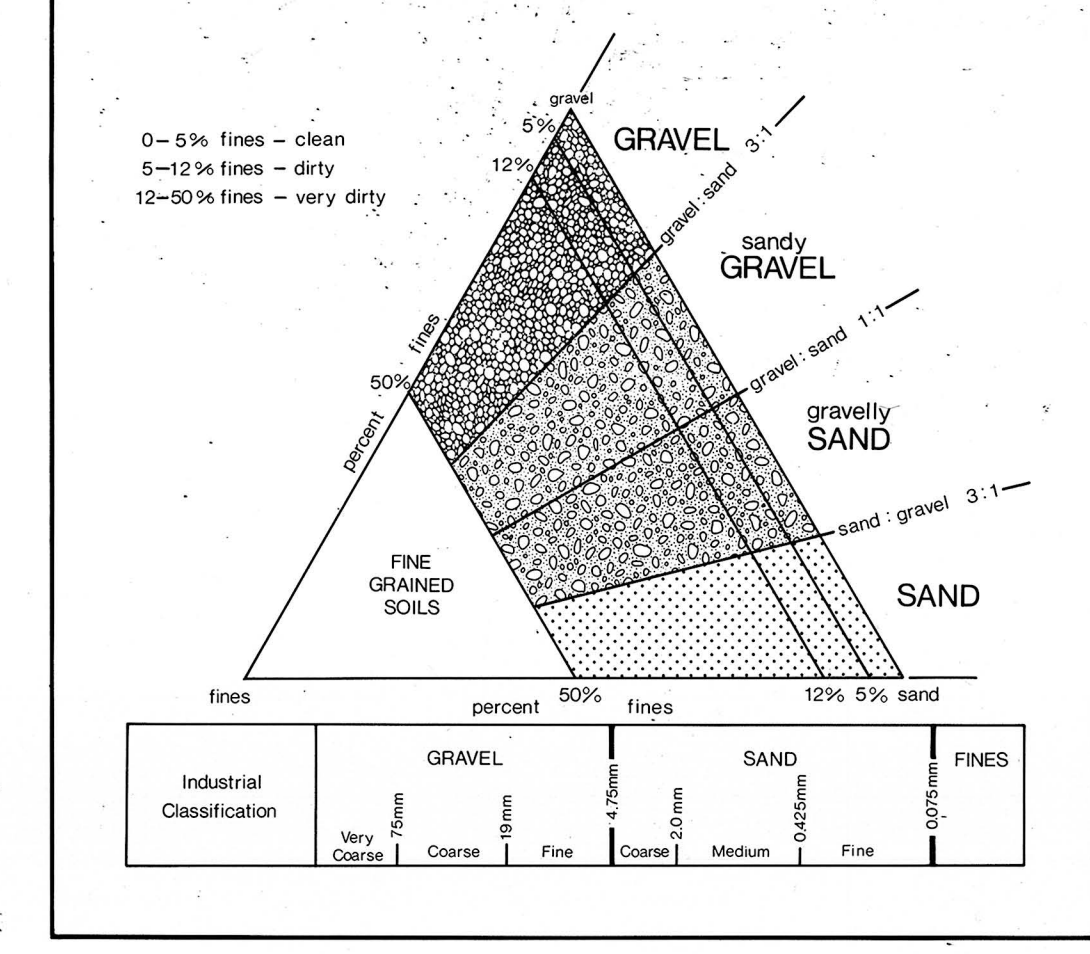
**Texture** — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregates, the most important fractions are the gravel and sand. The actual dimension of the clasts and particles in these fractions are given in the figure. The values given for a particular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

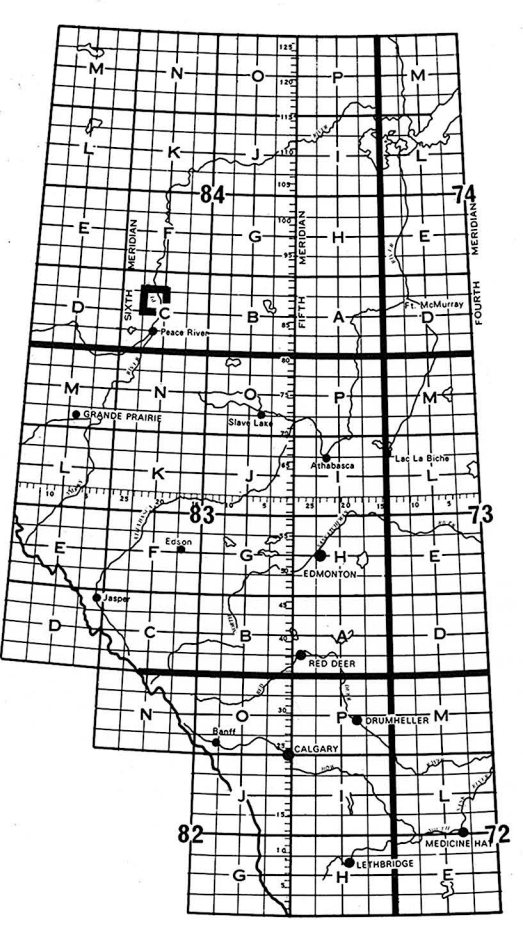
**Overburden Thickness** — The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface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



84C/11 OFR 1991-21



**Map Legend**

- 3 Deposit number
- Assumed boundary from air photo interpretation
- Active or inactive pit
- Sample and/or description site

Aggregate Resources

84C/11 Deadwood

D.W. Scafe, W.A.D. Edwards, D.R. Boisvert  
Published 1989  
Figure 8

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, sand management or aggregate exploration. Please note that the determination of deposits and calculation of reserves are approximations only. Alberta Energy and Natural Resources provides financial support for the Aggregate Inventory.

Alberta Research Council  
Natural Resources Division  
Alberta Geological Survey