

GENERAL COMMENTS

DEPOSIT CHARACTERISTICS

Deposit Number	Material Description	Reserves (1000 m³) Gravel	Reserves (1000 m³) Sand	Additional Comments	Texture (%)			Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
					Gravel	Sand	Fines					
1	Sand and gravel	-	-	Nearing depletion	-	-	-	-	-	65	Fluvial-terrace	-
2	Clean to dirty sand and gravel	3,450	10,800	2 terrace levels - upper terrace of sand, lower terrace of sandy gravel to gravelly sand	23	72	5	1	8	550	Fluvial-terrace	Ironstone, clay balls and coal present in the sand and gravel. Deposit almost depleted.
3	Clean gravelly sand	4,500	7,300	Reserve based on sections in 2 pits. Overburden of silty sand is not included in the reserve estimates	38	61	1	2.5	4.0	440	Fluvial-terrace	Generalized texture percent.
4	Clean sandy gravel	24,500	12,000	Due to high extraction rates, reserve figures may be much changed since data gathering	66	32	2	4.5	5.0	950	Fluvial-terrace	Coal fragments and iron staining are common. No data for Sec. 1, 12, 13 Twp. 54, R23 W4.
5	Clean sandy gravel	1,131	900	Over 50% of the deposit is depleted	55	44	1	3.0	5.0	104	Fluvial-terrace	Recent alluvial sand and gravel over-lying preglacial sand and gravel.
6	Sand and gravel	-	-	Two deposits. Good potential.	-	-	-	-	-	275	Fluvial-terrace	No available information.
7	Clean sandy gravel	5,600	2,400	Reserves based on 1 sample. Potential reserves will be less than stated as a village, roads and a railway line occupy a portion of the terrace.	68	30	2	2	4.5	186	Fluvial-terrace	Little available information.
8	Dirty sand	-	1,270	Reserves calculated for 0.5 m depth.	-	-	-	0	-	254	Outwash	Little data available.
9	Very dirty sand	-	-	Thin, irregular veneer of medium to coarse grained sand	-	-	-	0	-	73	Outwash	Numerous coal fragments, silt and clay lenses.
10	Sand	-	-	The sand occurs as pockets.	-	-	-	0	-	33	Outwash	Little data available.
11	Sand	-	400	Generally thin.	-	-	-	0	-	42	Outwash	Minor gravel.
12	Sand	-	140	Deposit continuous with deposit 6 on NTS 83H/14.	-	-	-	0	2+	17	Eolian	No data available. Dunes.
13	Sand	-	180	Two deposits.	-	-	-	0	2+	87	Eolian	No data available. Dunes.
14	Sand	<3,000	>72,000	The boundary of the deposit is tenuous and based upon limited drilling data (McPherson & Kathol 1972)	-	-	-	0	0.5	216	Glaciofluvial-outwash	Coarse to fine sand; very thin; occasional fine gravel up to 10%.
15	Sand	-	1,000	Deposit continuous with deposit 7 on NTS 83H/14.	-	-	-	6	9	900	Fluvial-terrace	Mainly sand; coal fragments; high water table; general stratigraphy - 7 m of sand over 2 m of sand and gravel; see Urban Geology of Edmonton (Kathol & McPherson, 1975).
16	Sand	3,800	14,800	The boundary of the deposit is tenuous and based upon limited drilling data (McPherson & Kathol, 1972)	20	78	2	5	7	600	Fluvial-terrace	The southern and eastern portions of the deposit are of sand (90% logs). Extraction of sand and gravel occurs in the Clover Bar area and this area appears to be nearing depletion.
17	Clean sandy gravel	124	114	Continuous with deposit 5 on NTS 83H/14.	51	48	1	3	3	10	Fluvial-terrace	Coal fragments present in the deposit.
18	Sand(?)	-	-	Continuous with deposit 10, NTS 83H/14. Reserves not estimated.	-	-	-	0.5	-	32	Glaciofluvial-pitted delta	The deposit consists of fine sand, silt, clay and till in varying proportions.

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 aggregate for roads, gravel and sand for road surfaces, and pit run for fill. Gr 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 (m³) = area (ha) x thickness (m) x 10,000 x % gravel; the same formula was used for sand.

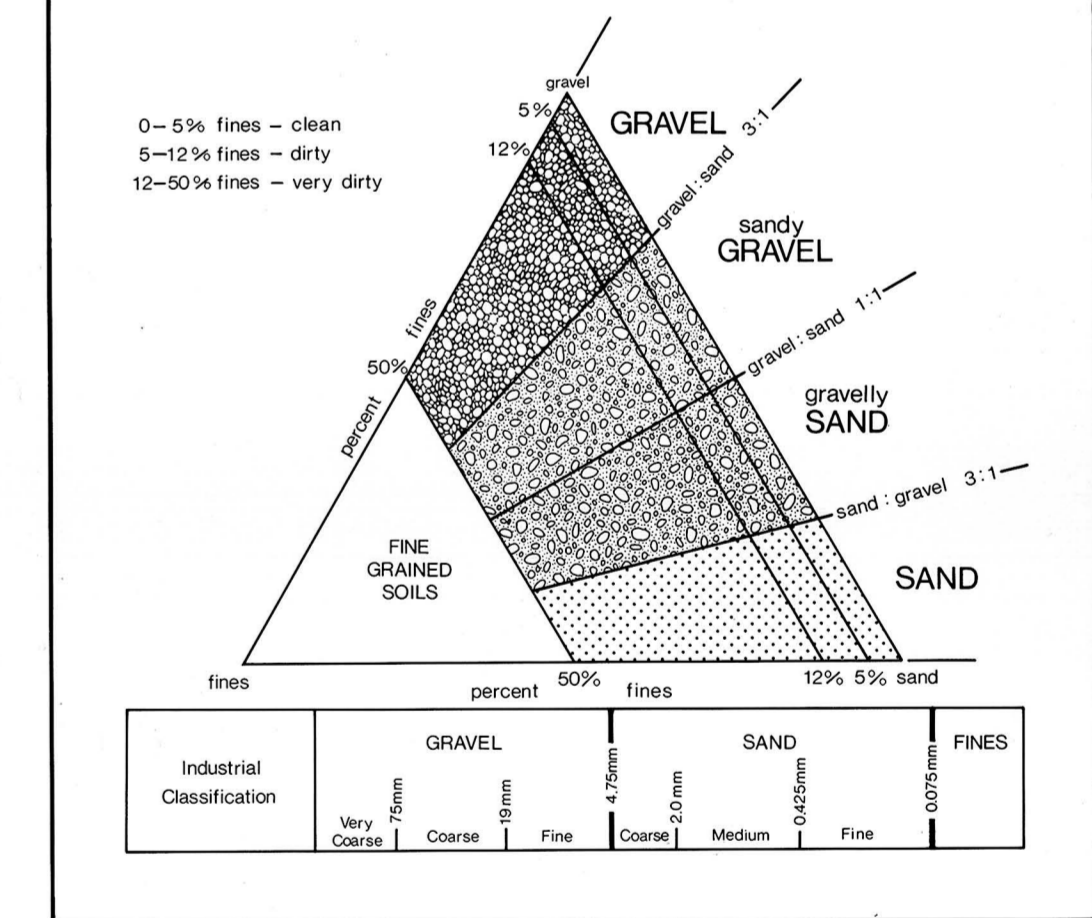
Texture - The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit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

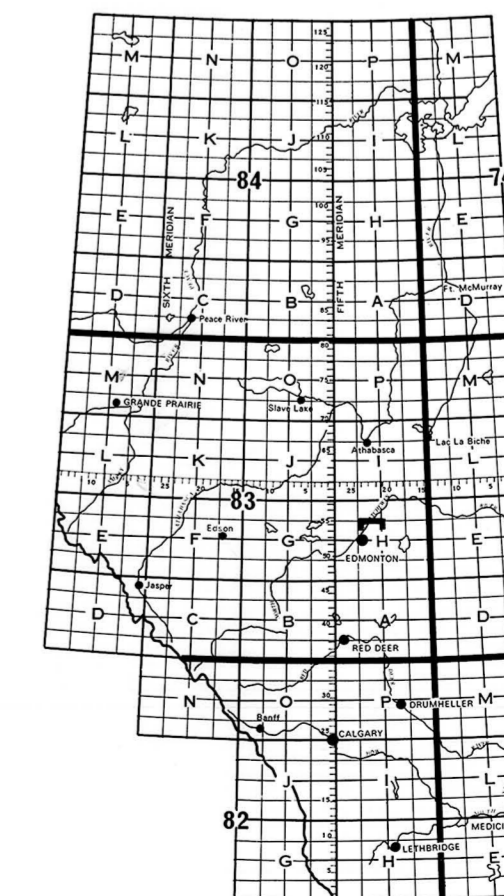
Overburden Thickness - The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface testing.

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



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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 J.C. Fox, 1979 and 1981. Additional information from L.A. Bayrock, 1972; R.A. McPherson and C.P. Kathol, 1972; and C.P. Kathol and R.A. McPherson, 1975.

AGGREGATE RESOURCES
EDMONTON 83H/11

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EDMONTON ALBERTA
WEST OF FOURTH MERIDIAN - OUEST DU QUATRIÈME MÉRIDIAN
Scale 1:50,000 Echelle
Meters 0 1000 2000 3000 4000
Yards 0 1000 2000 3000 4000

Scale 1:50,000
Meters 0 1000 2000 3000 4000
Yards 0 1000 2000 3000 4000