GENERAL COMMENTS DEPOSIT CHARACTERISTICS

Deposit Number	Material Description		erves O m³) Sand	Additional Comments	Gravel	Texture (%) Sand		(%) Wear	Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
1	Clean sandy gravel	10,300	4,300	Reserve estimates based on pit samples. Drilling indicates much textural variation in the deposit.	69	28	3	-	3.5	5.7	430		Watertable depth is 2 m at valley wall to 5 m at river edge. Gravels are mainly quartzite with small quantities of shale and sandstone.
2	Clean sandy gravel	115	35	Reserves based on pit observations and samples	74	22	4	-	-	1.5	11	Fluvial-terrace	High watertable
3	Clean sandy gravel	9,990	3,820	-	71	27	2	-	2.5	4.5	310	Fluvial-terrace	Watertable 2.0 m to 3.5 m. Overburden thickens towards the river.
4	Sand and gravel	,—	-	Based on two drill holes reserves are 17 million m³. The drill holes indicated a greater than 1:1 ratio of overburden to aggregate for the southern part of the deposit.	_		,-	-	6.0	3.5	500	Fluvial-terrace	Watertable at 3 to 5 m. North part of the deposit was not drilled.
5	Clean sandy gravel	4,950	3,135	-	60	38	2	-	1.0	7.5	113	Fluvial terrace	Watertable at 3.0 m.
6	Clean gravel	10,200	2,800	The eastern part of the deposit has a greater ratio of overburden to aggregate than 1:1.	77	21	2	-	7.0	3.0	540	Fluvial-terrace	Percent texture refers to pit samples
7	Sand and gravel	_	-	Total reserves are 17 million m³. Two drill holes show a ratio of overburden to aggregate of greater than 1:1	-	-	-	-	5.0	4.0	490	Fluvial-terrace	Overburden is thickest (7.3m) on the east side of the deposit.
8	Sand and gravel	_	_	Proportion of sand to gravel is likely to be highly variable.	-	- ,	_	-	_	-	40	Glaciofluvial ice- contact	No data available
9	Sand and gravel	_	_	Estimated reserves at 2 million m³.	-	-	-	-	5.0	2.5	93	Fluvial-terrace	Overburden and aggregate thicknesses may vary over the deposit
10	Sand and gravel	-	-	-	_	-	_	_	_	_	32	Fluvial-terrace	No data available
11	Clean gravelly sand and sandy gravel	1,450	2,600	Reserves based on pit sections only.	35	63	2		1.0	1.0	414	Glaciofluvial- outwash	Little data available. Deleterious ironstone and coal present.
12	Clean sandy gravel	92	45	Sand and gravel extend below the watertable. Reserves probably larger than stated.	65	33	2	-	3.5	1.5	14	Fluvial-terrace	Watertable at 5-6m. Overburden thins towards the river. Deleterious coal present. Gravels mainly of quartzite.
13	Clean sand	-	1,000	Deposit continuous with deposit 14, NTS 83H/5.	-	98	2	-	0.0	2.0	130	Eolian	Dunes interspersed with organic, high watertable areas.
14	_	_	-	Nine deposits having potential for aggregate.	-	-	_	-	-	-	322	Fluvial-terrace	No information available.
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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.

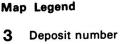
Material Description — Sand and gravel has a variety of applications, such as concrete for construction, asphalt concrete, subbase and base course aggregate for roads, gravel and sand for road surfaces, and pit run for fill. Gradation, rock hardness, and binding characteristics, are some of the specific 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^3) = area (m^3) = area (m^3) × thickness (m^3) × 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.

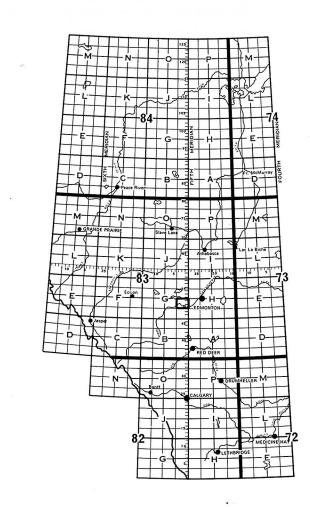
Wear — The resistance of gravel-size clasts to wear or abrasion can be measured in a laboratory test (ASTM-C131, Los Angeles Abrasion Testing). The amount of material that breaks down into smaller sizes is measured and related to the original sample weight in terms of percent wear. The higher the percentage 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.



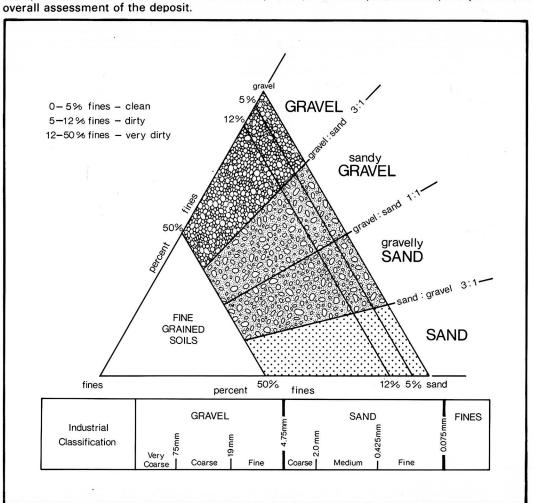
- Assumed boundary
- Active or inactive pit
- Alberta Geological Survey test hole
- ▲ Sand or gravel exposure

 Buried sand or Gravel deposit



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





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 J.C. Fox, 1979 and 1981. Additional information from L.D. Andriashek; M.M. Fenton and J.D. Root, 1979.

AGGREGATE RESOURCES

GENESEE 83G/8