

Deposit Number	Material Description	Reserves (1000 m ³)		Additional Comments	Texture (%)			Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments	
		Gravel	Sand		Gravel	Sand	Fines					Wear	Additional
1	Clean gravelly sand	100	120	Present pits are almost depleted, and are now only semi-active.	45-50	50	<5	0.1-1.3	0.3-2.9	15.1	Outwash	Parts of deposit are fine to medium sand with no gravel. No coarse or very coarse gravel.	
2	Clean sand	17	570	Limited uses.	5-10	90	<5	0.1	3.0-3.9	17.0	Esker	Principally fine to medium sand. No coarse or very coarse gravel.	
3	Clean sandy gravel	1400	1250	Shallow, discontinuous deposition. Very high water table.	50-55	45	<5	0.1	2.0-3.0	110.9	Outwash	Relatively thin. Petrographic #150; principally hard sandstones and granites.	
4	Very dirty gravelly sand	70	280	High water table. Limited uses unless washed and screened.	15	65	20	0.0-4.8	0.0-4.2	22.7	Outwash	Thick overburden. Extremely dirty. No very coarse gravel.	
5	Sand	0	1200	Limited uses.	0.0	94	6	0.1	5.0-9.0	21.7	Esker	Principally fine sand.	
6	Clean sandy gravel	525	360	Thin and discontinuous therefore difficult to extract.	60	35	5	0.4	0.6-3.0	60.4	Outwash	Variable texture. Some areas have more sand than gravel. Principally coarse gravel and medium sand.	
7	Very dirty gravelly sand	57	85	Abandoned pit. Variable thickness. Generally poor quality.	30	45	25	0.1	0.0-2.0	19.2	Outwash	Extremely dirty.	
8	Dirty sand	30	215	Limited uses. Variable thickness and texture.	10	80	10	0.1	2.0-4.0	9.1	Esker	Alternating beds of fine sand and gravelly sand. Estimates based on gravelly beds only.	
9	Clean gravelly sand	100	1200	Discontinuous; difficult to extract. Inactive pits.	5-25	70-90	5	0.0-1.5	1.0-3.0	68.9	Kames	Most of the deposit is fine to coarse, well graded, sand with little or no gravel. However, one pit has ~ 25% gravel.	
10	Clean sandy gravel	35	20	Inactive pit. This is a small localized deposit, but other similar deposits occur in this general area.	60	35	5	0.1	0.0-3.0	2.0	Kame	Variable thickness and texture. Very limited area.	
11	Clean gravelly sand	110	270	Inactive pit. Poor access.	30	65	<5	0.5	0.5-1.5	38.6	Outwash	No very coarse gravel. Shallow, discontinuous deposit.	
12	Dirty sand	350	1700	High water table. Semi-active pits. High percent of coal present.	15	75	10	0.1	0.5-3.0	155.9	Glacial/fluviol Outwash	Irregular and thin, therefore difficult to work. Mainly medium to coarse sand.	

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 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.

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.

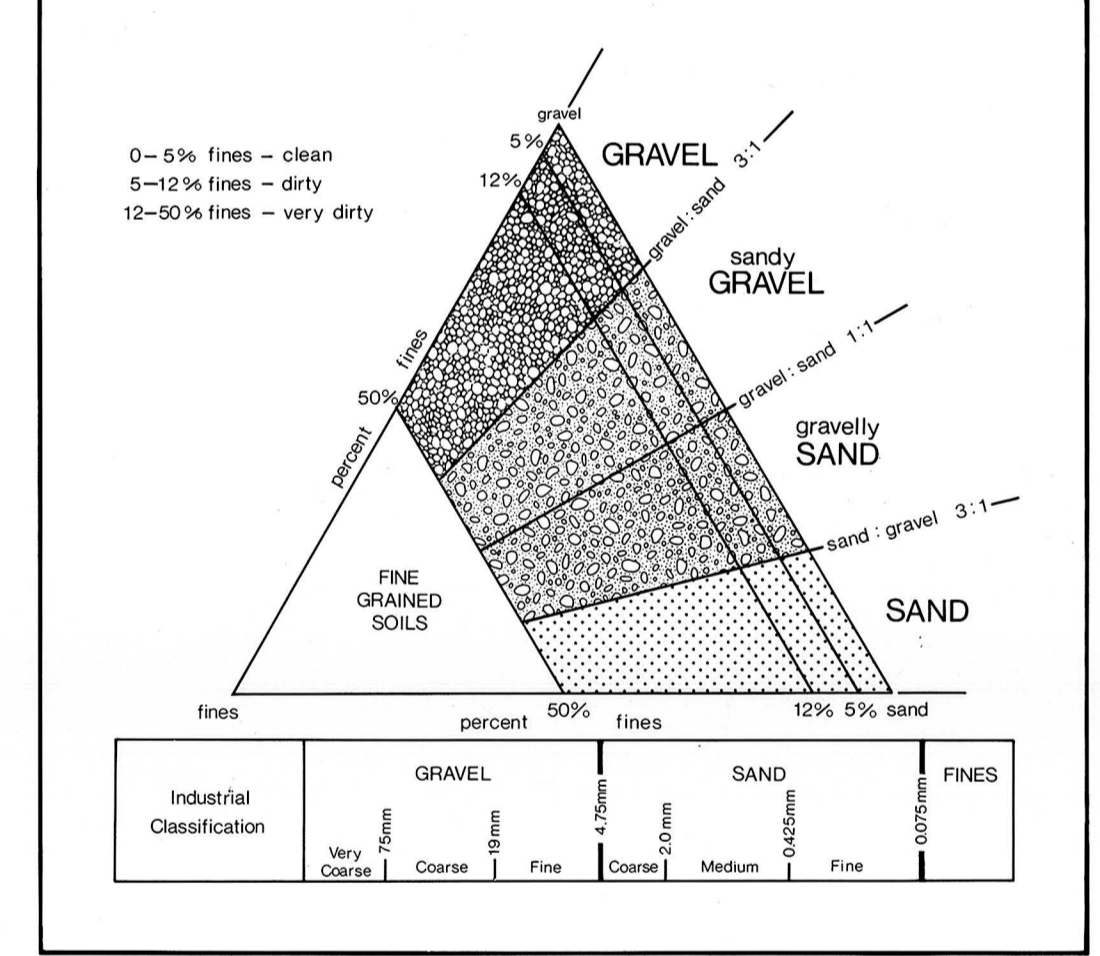
Texture — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit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

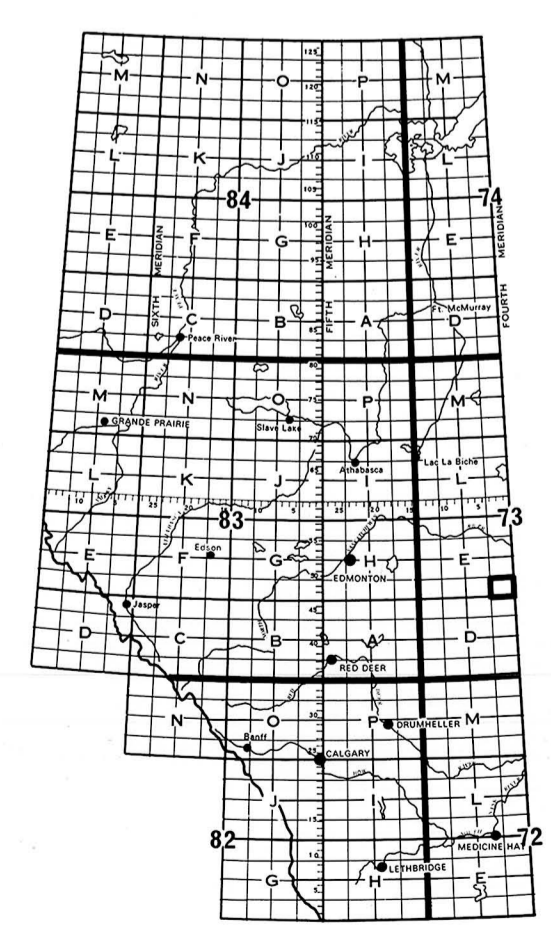
Overburden Thickness — The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface testing.

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



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.

REFERENCES
Geology by B. Hester, 1979. Compilation by N.K. Jones, 1980. Additional information from R.B. Ellwood, 1960.

AGGREGATE RESOURCES
PARADISE VALLEY 73E/1

Prepared by the SURVEY AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND TECHNICAL SERVICES. Updated from aerial photographs taken in 1976. Culture check 1978. Revised 1978.

Coastal maps obtained from the Canada Map Office, Department of Geology, Mines and Resources, Ottawa.

Roads: hard surface, all weather; gravel, four season; dirt/gravel; gravel, four season; loose or stabilized surface, all weather; loose surface, dry weather and unstabilized roads; cart track.

Water: ponds, four season; ponds, four season; green or agricultural; four season; dry gravel; temps sec et non hors saison; de terre.

Other: rail or portage; canter ou portage.

PARADISE VALLEY
ALBERTA-SASKATCHEWAN

Scale 1:50,000 Échelle

Miles 0 1 2
Mètres 0 1000 2000 3000 4000
Yards 0 1000 2000 3000 4000

Carte par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, Ottawa en 1976. Révisé en 1978. Culture check en 1978. Révisé en 1978.

Ces cartes sont en vente au Bureau du Cartage de Canada, Ministère de l'Énergie, des Mines et des Ressources, Ottawa, ou chez le vendeur le plus près.

© Canada 1978. Tous droits réservés.

COURSIER BREVETÉ 25 FEET
Échelle de 1:50,000 en mètres et en pieds
North America Datum 1927

ÉQUIVALENCES DES COULEURS 25 FEET
Échelle de 1:50,000 en mètres et en pieds
North America Datum 1927