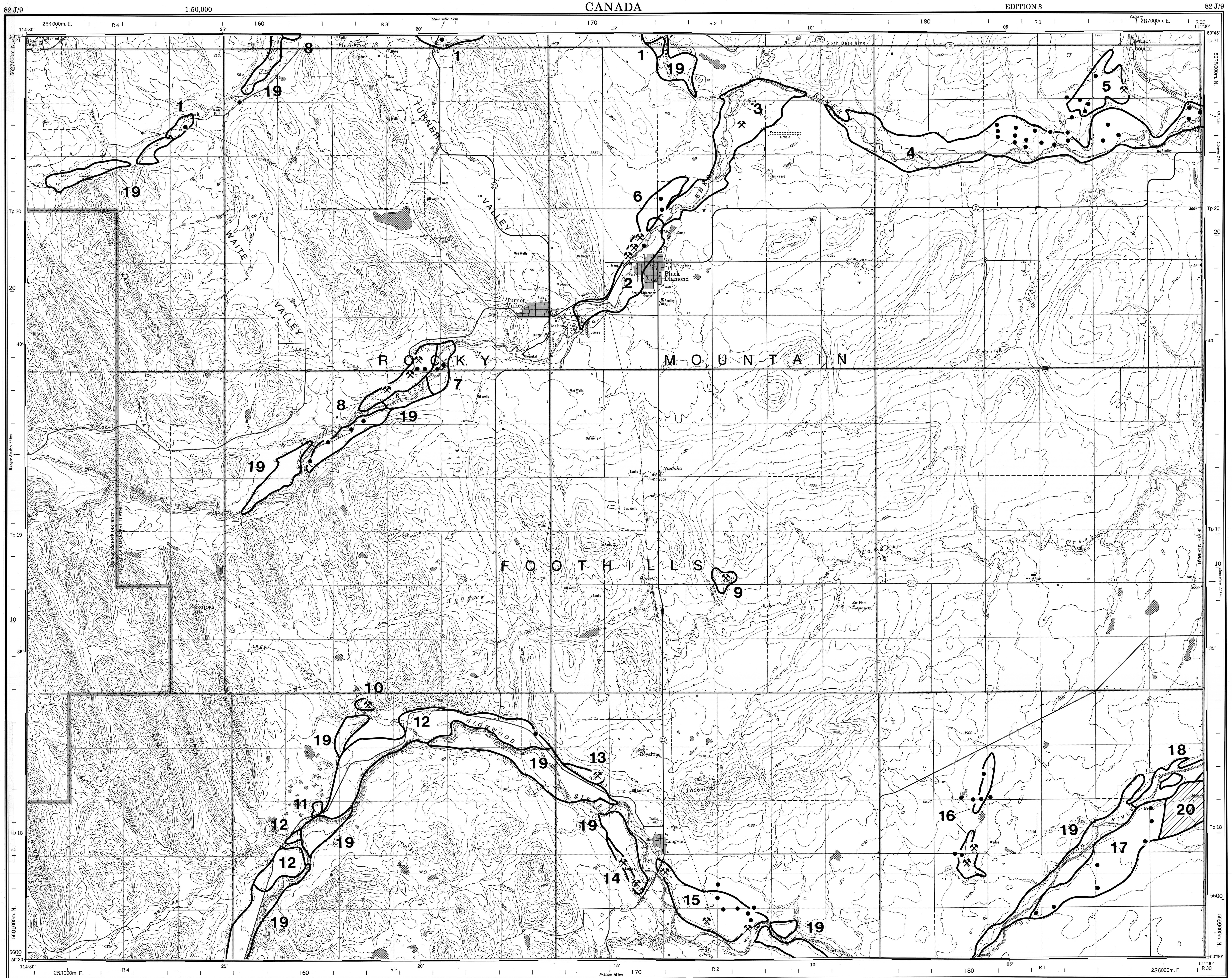
Turner Valley 82 J/9



GENERAL COMMENTS / DEPOSIT CHARACTERISTICS

Deposit Number	Material Description	Reserves (1000 m³) Gravel	Sand	Additional Comments	Texture (%) Gravel	Sand	Fines	(%) Wear	Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
1	Gravel to sandy gravel	150	100	Gr. 50-70%; silty.	-	-	-	-	0.3-0.8	1.3-2.0	25	Fluvial	Overburden of fine sand.
2	Gravel to sandy gravel	130	70	Gr. 50-80%; silty.	82.8	14.1	3.1	-	0.5-1.5	1.5-2.5	10	Fluvial	Overburden of silty sand.
3	Gravel to sandy gravel	4320	1680	Gr. 60-85%; silty.	73.9	24.1	2.0	-	0.0-1.2	more than 2.0	300	Fluvial	-
4	Gravel to sandy gravel	19375	5625	Gr. 60-95%; clean to silty.	81.9	15.7	2.4	-	0.0-1.5	1.5-7.5	700	Fluvial	Overburden of silt and fine sand.
5	Gravel to gravelly sand	902	1243	Gr. 45-85%; clean.	41.0	56.5	2.5	-	0.0-1.0	2.0-3.5	110	Glaciofluvial	Overburden of silt.
6	Gravel	688	104	Gr. 75-85%; clean.	85.9	13.0	1.1	-	0.9	2.3-2.7	40	Glaciofluvial	Overburden of silt.
7	Sandy gravel	130	70	Gr. 55-75%; clean.	-	-	-	-	0.7-0.9	0.9-1.2	20	Fluvial	Overburden of silt.
8	Gravel to sandy gravel	2298	642	Gr. 60-80%; clean.	76.6	21.4	2.0	-	0.0-0.8	2.0-4.0	160	Glaciofluvial	Discontinuous overburden of silt.
9	Sandy gravel to sand	74	126	Gr. 20-55%; silty; clay layers.	-	-	-	-	0.0	4.0	5	Glaciofluvial	-
10	Gravel	230	62	Gr. 75%; clay layers.	76.8	20.9	2.3	-	0.0	5.0	7	Glaciofluvial	-
11	Gravel	56	10	Gr. 80%; clay layers.	-	-	-	-	0.0	more than 3.0	2	Glaciofluvial	-
12	Gravel to sandy gravel	3250	1750	Gr. 50-80%;	-	-	-	-	0.0-1.5	2.0	400	Fluvial	Overburden of silt and silty sand.
13	Gravel to sand	182	216	Gr. 20-75%; clean to dirty.	74.0	26.0	-	-	0.0	4.0	12	Glaciofluvial	-
14	Gravel to sandy gravel	196	95	Gr. 48-82%; silty.	65.5	31.7	2.8	-	0.0	5.0	7	Glaciofluvial	Sandstone boulders.
15	Gravel to sand	2467	1001	Gr. 30-90%; clean.	70.5	28.6	0.9	-	0.0	0.5-3.0	160	Glaciofluvial	-
16	Sandy gravel	311	170	Gr. 50-70%; clean to silty.	62.2	34.1	3.7	-	0.0-1.0	1.5-8.0	30	Glaciofluvial	Thickness decreases to the north.
17	Gravel to sandy gravel	3565	1245	Gr. 65-80%; silty.	71.3	24.9	3.8	-	0.0-1.7	1.8-4.8	300	Glaciofluvial	Overburden of silt.
18	Gravel to sandy gravel	195	100	Gr. 50-80%; silty.	-	-	-	-	0.0-0.5	1.0-2.5	25	Fluvial	Overburden of silty sand.
19	Sand and gravel	-	-	Identified on aerial photos.	-	-	-	-	-	-	-	Fluvial	Little information available.
20	Sand and gravel	-	-	Identified on aerial photos.	-	-	-	-	-	-	-	Glaciofluvial	Little information available.

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

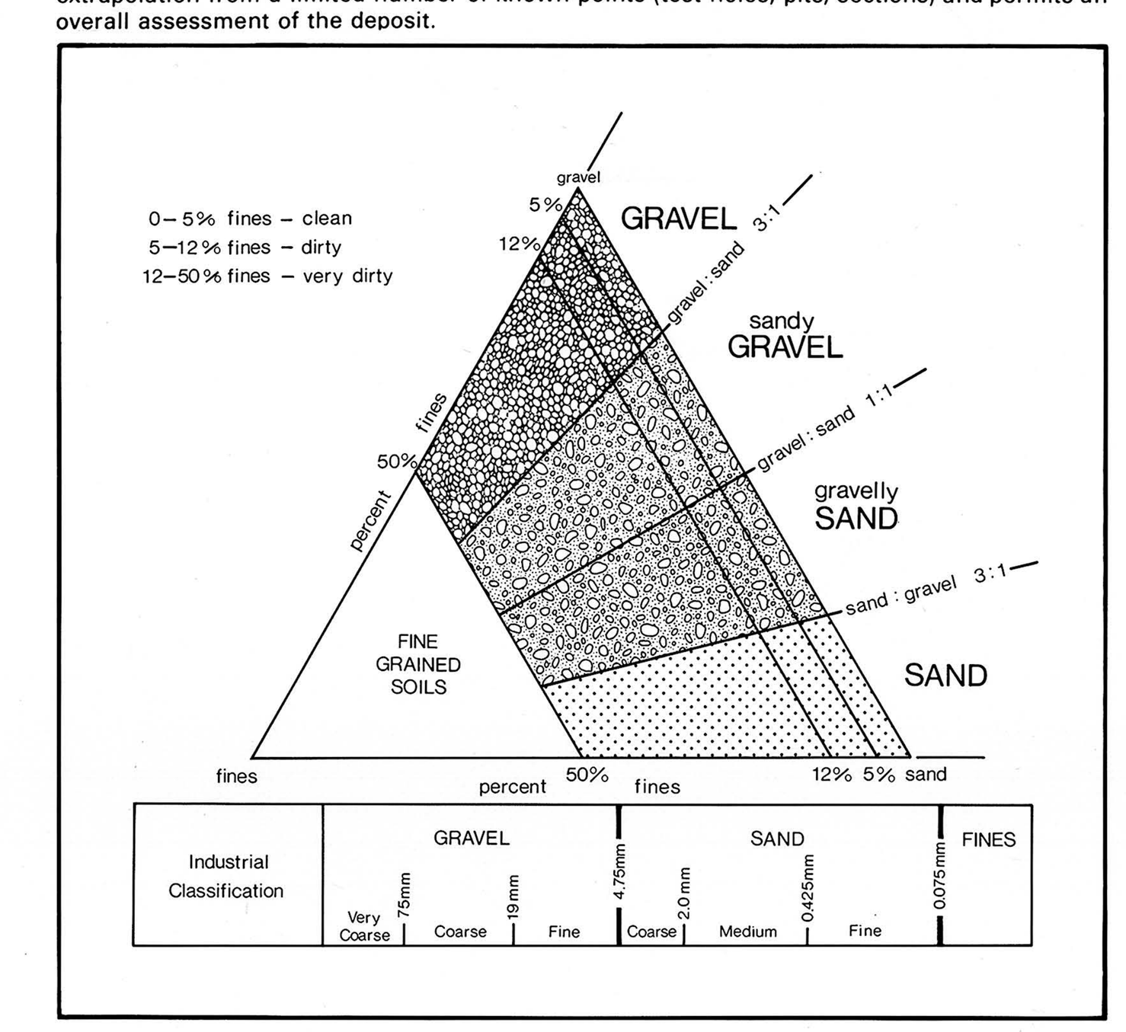
Texture — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit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

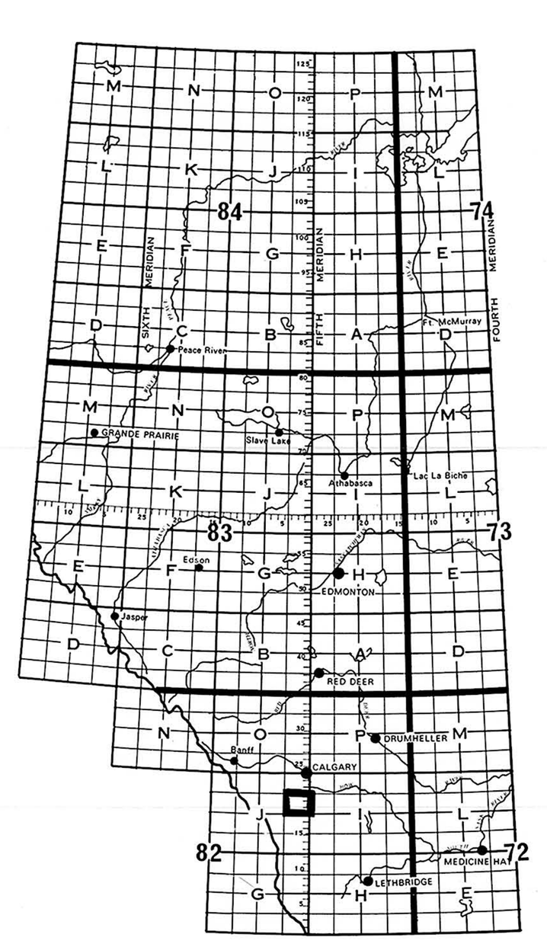
Wear — The resistance of gravel-size clasts to wear or abrasion can be measured in a laboratory test (ASTM-C131, Los Angeles Abrasion Testing). The amount of material that breaks down into smaller sizes is measured and related to the original sample weight in terms of percent wear. The higher the percentage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

Aggregate Resources

82 J/9 Turner Valley

I. Shetson

Geology 1981

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. Alberta Energy and Natural Resources provides financial support for the Aggregate Inventory.

Cartography by Alberta Research Council, Graphic Services, J.K. Matthie.

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Natural Resources Division
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82 J/9