THORHILD 83 I/3

CANADA

EDITION 2

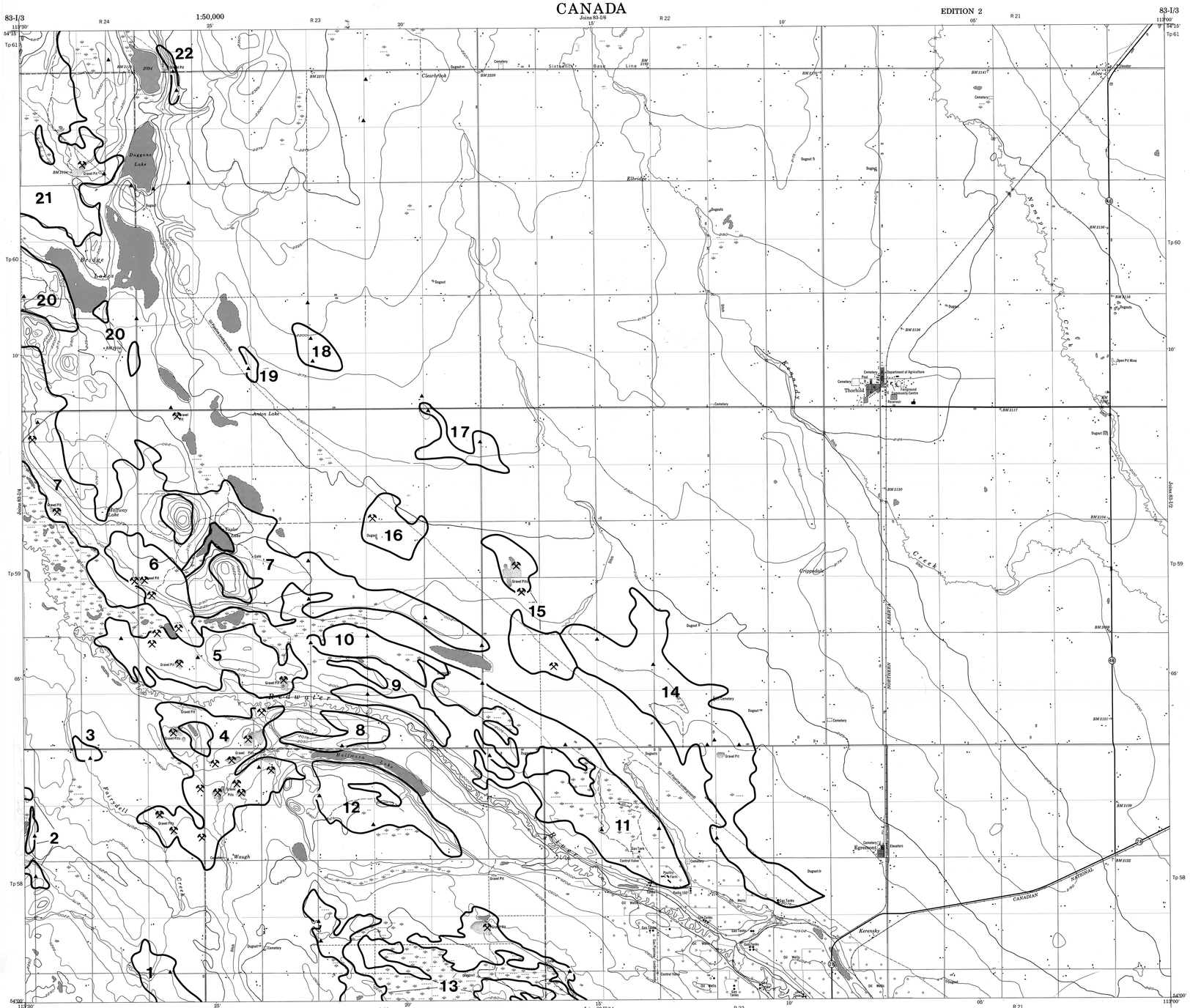
1:50,000

83-I/3

Joins 83-I/6

Joins 83-I/14

Joins 83-I/11



Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, from unrectified aerial photographs taken in 1969. Culture check 1970. Revised 1973.

Copies may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, or your nearest map dealer.

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Roads:	Routes:	dual highway 2 chaussées séparées	more than 2 lanes plus 4 or more plus de 2 voies	Routes:	dual highway 2 chaussées séparées	more than 2 lanes plus 4 or more plus de 2 voies
hard surface, all weather	pavée, toute saison			hard surface, all weather	pavée, toute saison		
loose or stabilized surface, all weather	gravier agglomeré, toute saison			loose surface, dry weather and unclassified streets	de gravier, temps sec et rues hors classe		
cart track	de terre			trail or portage	sentier ou portage		

THORHILD

ALBERTA

WEST OF FOURTH MERIDIAN · OUEST DU QUATRIÈME MÉRIDIEN

Scale 1:50,000 Échelle

Miles 1 0 1 2 3 Miles

Metres 1000 0 1000 2000 3000 4000 Mètres

Yards 1000 0 1000 2000 3000 4000 Yards

This Provisional Map is equivalent to a standard map in accuracy of content.

Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL 25 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

Cette carte provisoire équivaut une carte régulière au point de vue précision de l'information.

Certains noms inscrits sur cette carte ne sont pas encore officiels. La Direction des levés et de la cartographie saurait gré au public de lui signaler corrections et additions.

EQUIDISTANCE DES COURBES 25 PIEDS
Élévations en pieds au-dessus du niveau moyen de la mer
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

Établie par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES. Mise à jour à l'aide de photographies aériennes prises en 1969. Vérification des ouvrages en 1970. Imprimée en 1973.

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83I/3

GENERAL COMMENTS

DEPOSIT CHARACTERISTICS

Deposit Number	Material Description	Reserves (1000 m³) Gravel	Reserves (1000 m³) Sand	Additional Comments	Texture (%) Gravel	Texture (%) Sand	Texture (%) Fines	(%) Wear	Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
1	Dirty sand	-	1,976	Very fine sand	-	85	15	-	0	1.5	155	Glaciofluvial	Deposit continues on NTS 83 H/14.
2	Clean sand	-	1,192	Fine sand.	-	90	10	-	0	2.5	53	Ice-contact	Deposit continues on NTS 83 I/4.
3	Clean sand	16	313	Medium sand.	5	95	-	-	0.5	1.0	33	Glaciofluvial	Occasional small pebbles.
4	Clean gravelly sand	10,512	14,454	Medium to coarse sand. Watertable at 3 m. Deposit has 2 active and 5 inactive pits.	40	55	5	-	0.5	3.0	955	Glaciofluvial — outwash	Patches of fine sand and dirty sand common. Clasts up to 20 cm.
5	Clean sand	4,326	17,304	Medium sand. Watertable at 3 m. 3 inactive pits.	20	80	-	-	0	3.0	737	Glaciofluvial — outwash	Patches of dirty sand and coarse sand.
6	Clean sand	3,186	7,434	Medium sand. 3 inactive pits.	30	70	-	-	0	3.0	371	Glaciofluvial	Clasts maximum size 8 cm.
7	Clean sand	3,325	59,859	Fine, medium and coarse sand. Medium sand dominates in east, fine sand dominates in west and north.	5	90	5	-	0	3.0	2230	Glaciofluvial — outwash	Deposit thinnest in central area. Deposit continues on NTS 83I/4.
8	Clean sand	360	1,350	Fine sand with patches of sandy gravel.	20	75	5	-	0.5	1.0	180	Glaciofluvial — outwash	Thin deposit, a veneer over a till knob.
9	Clean sand	-	3,510	Fine sand.	-	90	10	-	0	2.0	195	Glaciofluvial	Outwash deposit.
10	Clean sand	747	2,801	Fine, medium and coarse sand.	20	75	5	-	0	1.5	249	Glaciofluvial — outwash	Frequent granules and pebbles up to 8 cm.
11	Clean sand	398	18,914	Fine and medium sand.	2	95	3	-	0	2.5	1,244	Glaciofluvial modified by eolian.	Outwash plain, 60% of which has been modified by wind into dunes up to 5 m height.
12	Clean sand	306	9,180	Fine and medium sand.	3	90	7	-	0.5	2.0	510	Glaciofluvial	Deposit thins to west.
13	Clean sand	-	13,494	Fine and medium sand with occasional small pebbles. Watertable at 6 m. One inactive pit.	-	100	-	-	0	3.0	775	Eolian	Six m deep pit in northeast area of deposit. 70% of area is dunes up to 5 m in height, remaining 30% is sand plain.
14	Clean sand	-	27,930	Very fine, fine and medium sand. Small areas of dunes on sand plain.	-	95	5	-	0	2.0	1470	Glaciofluvial — outwash	
15	Clean gravelly sand	2,445	5,297	Medium and coarse sand with granules and small pebbles. One active and 1 inactive pit.	30	65	5	-	1	2.5	354	Glaciofluvial — outwash	Patches of dirty materials. Watertable at 3 m.
16	Dirty gravelly sand	520	1,352	Fine, medium and coarse sand. One inactive pit.	25	65	10	-	0.5	1.0	211	Glaciofluvial — outwash	Clasts up to 50 cm.
17	Clean sand	-	2,214	Fine sand.	-	90	10	-	0	1.5	164	Glaciofluvial	Outwash deposit.
18	Clean sand	118	1,003	Medium and coarse sand with clasts up to 2 cm.	10	85	5	-	0	1.0	118	Glaciofluvial — outwash	
19	Clean sand	-	294	Fine and medium sand.	-	95	5	-	0	1.0	31	Glaciofluvial	Outwash deposit.
20	Clean sand	350	6,345	Fine and medium sand.	5	90	5	-	0	2.5	282	Glaciofluvial — outwash	Deposit continues on NTS 83I/4.
21	Clean sand	2,952	26,568	Fine to coarse sand. Clast content increases to the southeast. One abandoned pit.	10	90	-	-	0	3.0	990	Glaciofluvial — outwash	Clasts up to 15 cm. Deposit continues on NTS 83I/4 and 83I/6.
22	Clean sand	-	1,292	Very fine and fine sand.	-	95	5	-	0	4.0	34	Glaciofluvial	Outwash terrace deposit.

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.

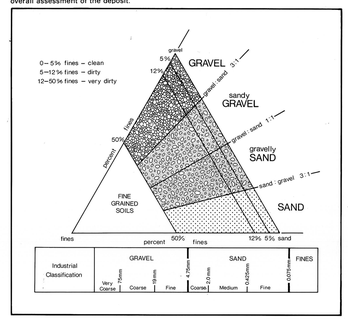
Texture — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit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

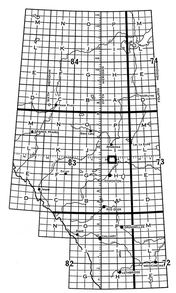
Deposit Area — Deposits in this study were delineated by interpretation of aerial photographs and the contacts should be considered approximate. Information is precise only where test holes, or geological sections, are indicated.

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



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 only.

References:

Geology and compilation by K.G. Steele, 1982. Additional information from S.H. Richard, 1979.

AGGREGATE RESOURCES

THORHILD 83I/3