Bibliographic Index and Overview

of

Aggregate Resource Publications

(Open File Report 1989-13)

Alberta Forestry Lands and Wildlife Alberta Transportation and Utilities Alberta Geological Survey

BIBLIOGRAPHIC INDEX AND OVERVIEW OF AGGREGATE RESOURCE PUBLICATIONS

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BIBLIOGRAPHIC INDEX AND OVERVIEW OF AGGREGATE RESOURCE PUBLICATIONS BY THE ALBERTA RESEARCH COUNCIL

INTRODUCTION

Production of sand and gravel in Alberta is recorded as early as 1922 when \$229,091 was produced (Research Council of Alberta, 1934). The overall importance and demand for gravel and concern about dwindling supplies has long been understood by the Alberta Research Council (formerly Research Council of Alberta):

"Since the demand for gravel ... is increasing year by year, and since many of the gravel deposits are being worked out, it is imperative that new sources of this material be found. ... It is planned in the future to devote part of the time spent in the field to the study of gravel deposits." Annual Report of the Research Council of Alberta, 1946."

Sand and gravel information published prior to 1970 was included in general geological reports or contained in surficial geology reports. Pre 1970 reports are included in this index only if they contain specific sand and gravel data. The first sand and gravel information published by the Research Council of Alberta was in 1928 (Rutherford). Between 1970 and 1976 several reports specific to sand and gravel resources were produced by the Alberta Research Council and beginning in 1976 an inventory focusing on sand and gravel was started. Support for the sand and gravel inventory comes largely through the Alberta Department of Forestry, Lands and Wildlife. General geology or surficial geology reports are not included in the post 1976 list of publications.

The concept of a systematic inventory is not new:

"It is proposed to survey the province systematically in order to gather information with respect to ... gravel ... and other minerals of economic importance. A unit of coverage is the area included in a map of uniform size called a sectional sheet, which has dimensions approximately 50 by 90 miles." Twenty-Ninth Annual Report of the Research Council of Alberta, 1948."

While the implementation of a systematic inventory took a considerable amount of time, the impact, once started, has been considerable. The total number of publications which contain information on the granular resources is 174. Of this total 150 are the result of the inventory which began in 1976.

This report is a reference to the maps and reports published by the Alberta Research Council (ARC) which contain sand and gravel (aggregate) information. Bibliographic references are keyed to index maps which delineate each study area. References are also grouped into categories, such as the level of detail contained in the publication, the year when the data were gathered, or the type of publication to assist the reader in particular searches.

The relevence of information in the publications available from the Alberta Research Council is reviewed in the final section of this report through a consideration of such factors as the age of the report and the detail of the original study.

ACKNOWLEDGMENTS

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CONTENTS AND USE OF THIS INDEX

This report contains index maps and bibliographic reference lists compiled into five sections. The first section provides a list of sand and gravel publications produced by ARC as arranged by author. The second section categorizes publications by the type of report (open file map, earth science report, etc). The third section groups the references based on the level of information contained in the publication. The fourth section categorizes the publications by the

date when the information was gathered. This chapter describes the content of the first four sections. The fifth section contains a map showing the distribution of relevant aggregate information as described in the chapter 'Review of aggregate information'.

General location of aggregate information and publication list:

- Map 1 provides a geographic reference to the province at the same scale as the index maps that follow. The map shows major rivers, select cities and towns, latitude and longitude and the National Topographic System grid.
- Map 2 shows the overall distribution of aggregate information in Alberta which is available from ARC. If the area of interest is NOT coloured then ARC does not have any published account of aggregate resouces in the area. If the area is coloured red, then ARC has published a report or map which contains sand and gravel information for the area and that publication should be listed in the accompanying index. The accompanying bibliographic reference list contains all 174 references.

Publications categorized by type:

This section contains the same complete list of publications as section one, but divided into groups based on the type of publication. Each reference is linked to its study area on the accompanying index map by a three-digit number which precedes the reference and also is printed on the corresponding map.

- Map 3 shows the distribution of 1:50 000 scale aggregate maps which can be purchased as blue-line copies from ARC Publications. Each of the 110 open file maps can be puchased separately for \$1.00.
- Map 4 shows the distribution of 1:250 000 scale aggregate maps which can be purchased as blue-line copies. Each of the 17 open file maps can be purchased separately for \$1.00.
- Maps 5A show the distribution of the 21 open file reports which and 5B can be purchased as photocopies with blue-line maps. Price is a function of the reproduction cost and varies depending on the number of report pages and the number of maps. Prices in January, 1989 ranged from \$3.00 to \$28.00.
- Maps 6A show the distribution of the 26 Preliminary Reports, Earth and 6B Science Reports, Bulletins and printed maps. Prices range from \$2.00 to \$14.00 and are listed with the reference. These publications are printed and may go out-of-print when

all copies are sold. Out-of-print reports can be obtained as photocopies.

Publications categorized into levels of detail:

Information presented in the various publications was gathered at one of five levels of detail. This level indicates the level of detail used in the mapping or survey program which gathered the data or the level of detail in a previous report used to compile a subsequent report. Maps 7A to 9B show all publications by their level of detail.

Following is a description of each of the five levels.

Level 1

This level indicates the most concentrated level of data gathering. Investigations at this level focus on all or part of a single deposit. The primary aspect of the survey is drill or backhoe testing on a closely-spaced grid (100 m or less) with several samples collected from each test-hole. Results provide accurate reserve figures and detailed material descriptions.

This level of detail is required to locate and define sufficient quantities of particular kinds of aggregate for specific construction or building projects. None of the ARC publications provide this level of detail.

Level 2

This level indicates a detailed investigation of individual sand and gravel deposits. Some drill-hole information or geophysical data, examination of all exposures and sample analyses are used to confirm the presence of sand and/or gravel, determine the approximate limits of the deposit and provide an estimate of the sand and gravel reserves.

Data gathered at this level of detail are useful in planning a level 1 testing program. They also provide a reasonably accurate base of information for resource or land management in high demand or developed areas. None of the ARC publications contain this level of detail.

Level 3

This level of detail is achieved by regional geological mapping supported by limited testing or geophysical surveying of key deposits and sampling of most deposits. Mapping at this level of detail may not discover all potential deposits in the region but does confirm the presence of granular materials in all deposits demarcated. Rough estimates of the amount of sand and gravel

present in each deposit are usually provided for the purpose of comparing the nature, size and origin of deposits over a large area.

Maps and reports produced at this level of detail provide a regional context for understanding and managing the aggregate resource. It is the most regional level which confirms the presence of aggregate. Levels 4 and 5 generally indicate only aggregate potential. This level also provides a useful starting point for more detailed exploration when aggregate supplies become scarce or new construction is anticipated.

Maps 7A show the distribution of all 125 publications containing and 7B level 3 information which are available from ARC.

Level 4

This level of detail is achieved by delineating potential aggregate deposits through airphoto interpretation, then field checking select sites as a control. The limited fieldwork and sampling does confirm the presence of exposed sand and gravel at some sites.

Maps and reports produced at level 4 provide a regional perspective on the potential for aggregate resources. This product may be useful in land management in remote regions or as a guide for gravel prospecting.

Maps 8A show the distribution of the 25 publications containing and 8B level 4 information which are available from ARC.

Level 5

This level of detail is achieved through a airphoto interpretation. No fieldwork or sample collection is undertaken. Maps and reports produced at level 5 delineate potential sand and gravel sites in the area but do not confirm the presence of granular material. Potential deposits commonly can be categorized into probable geological types and ranked on the basis of estimated potential for aggregate resources. Also included in this category are those publications (usually older) which provide only general data.

Maps and reports at this level may provide a starting point for gravel searches or give some indication of granular potential in an otherwise unexplored or remote area.

Maps 9A show the distribution of the 24 publications containing and 9B level 5 information which are available from ARC.

Publications categorized by date of data gathering:

In general the older the aggregate resource data contained in a publication, the less meaningful it will be for current management, planning or exploration. This is primarily because the resource may

have been mined or sterilized during the intervening years or additional deposits discovered in the interim. Maps and bibliographic reference lists 10 to 14 divide the ARC aggregate publications into various time periods based on the initial date of data gathering. Note that the bibliographic reference shows the year of publication, not the date when the data was gathered.

- Map 10 shows the distribution of the 20 publications that contain sand and gravel resource information gathered prior to 1970. These publications bear little significance for current planning or sand and gravel exploration.
- Map 11 shows the distribution of the 4 works containing aggregate resource data gathered from 1970 to 1975.
- Maps 12A show the distribution of the 80 reports and maps which and 12B contain aggregate data gained from 1976 to 1980.
- Maps 13A show the distribution of 63 aggregate reports and maps and 13B which contain data gathered from 1981 to 1985.
- Map 14 shows the location of 7 aggregate reports or maps which contain data gathered from 1986 to 1988.

FIECTRONIC DATABASE INFORMATION AND OTHER SOURCES OF AGGREGATE DATA

The bibliographic references used in this study were compiled on an IBM portable personal computer using PC FILE+. These bibliographic data were then transferred into ARC/INFO running on an IBM Compaq 386/20. Study areas were digitized using ARC/INFO and linked to the bibliographic data by a common index number. The electronic database, either on PC FILE+ or ARC/INFO has the potential for access by other agencies.

In addition to the Alberta Research Council other parties have been active in procuring of sand and gravel data. Some of these data have been published or may be available directly from the source. Some of these sources include Alberta Transportation and Utilities, Alberta Forestry, Lands and Wildlife, Alberta Environment, Alberta Municipal Affairs, Regional Planning Commissions, counties, cities, towns, the Geological Survey of Canada and many private interests.

REVIEW OF AGGREGATE INFORMATION

Sand and gravel information should be current and of appropriate detail for the required use. 'Current' is a relative term: in areas of high aggregate consumption a report five years old can be out dated, whereas a detailed report in an area of low demand may remain adequate for twenty years.

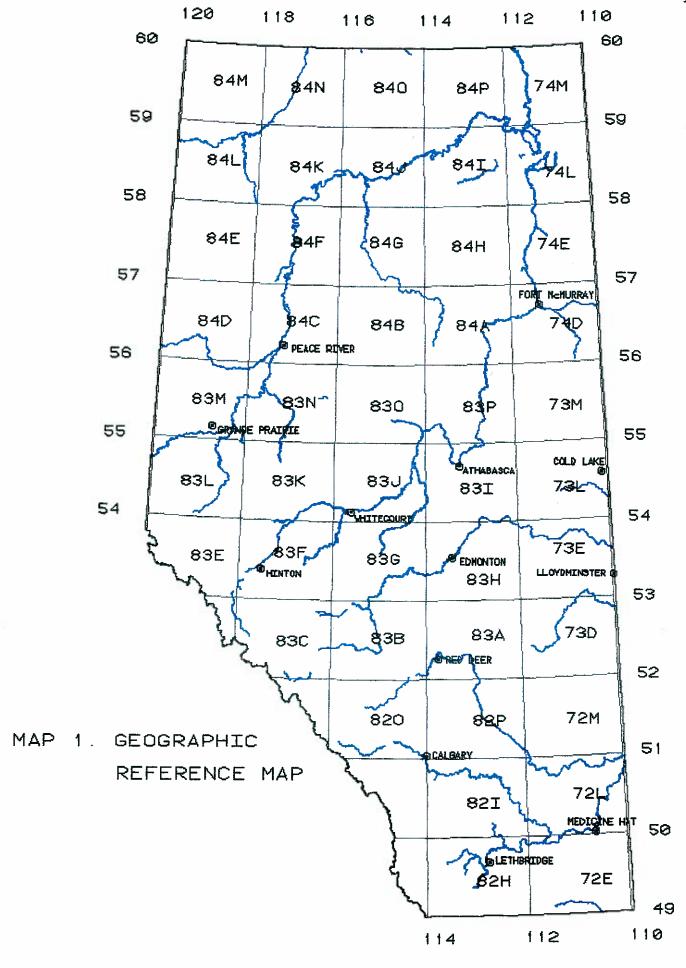
Map 15 shows the distribution of all ARC reports, at levels 3 or 4, completed since 1970. It provides an optimistic overview of the areas of the province where an adequate database may be assumed to exist for regional planning. This mapping covers about 40% of the area in which more than 80% of Alberta's population lives.

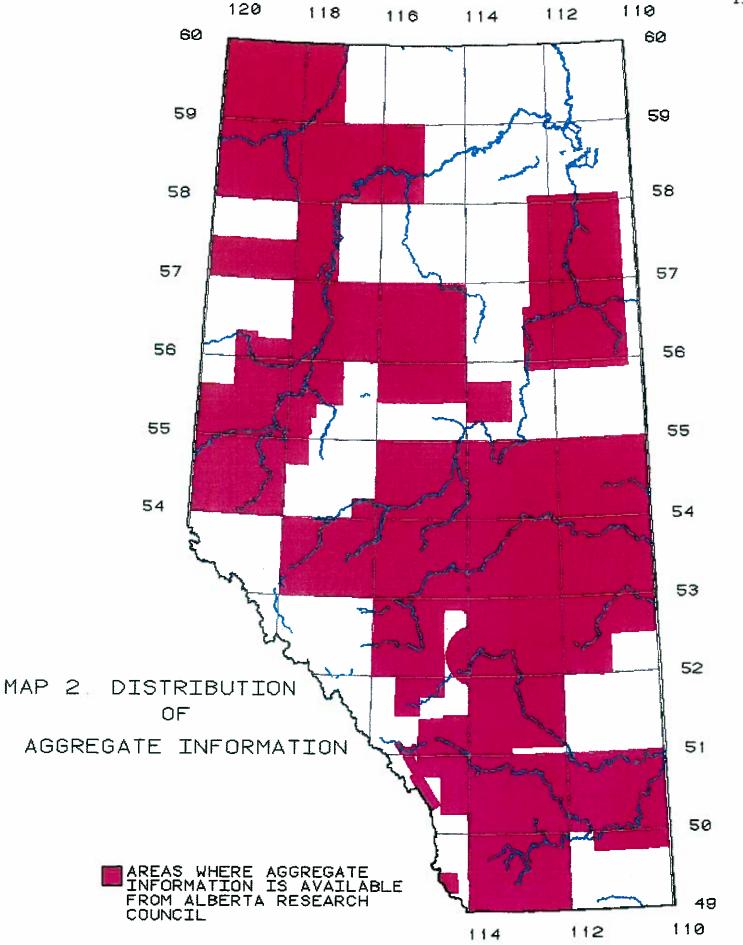
About 40% of the province (shown in red on map 15) has never been mapped for aggregate. Other categories that are essentially devoid of useful information include areas that are covered by publications more than twenty years old and level 5 publications. Level 5 reports are the result of air photo interpretation. These studies have no field component and potential sites identified are unverified. These publications have little direct application except as the starting point for more detailed exploration. The area of old (pre 1970) or very general (level 5) reports amounts to about 20% of the province.

Thus, map 15 shows two major components: the area (green) where sand and gravel data less than twenty years old are available and the area (red colour) where sand and gravel data are inadequate.

SECTION 1: GENERAL INDEX MAPS OF AGGREGATE INFORMATION AND PUBLICATIONS LIST

- Map 1 provides a geographic reference to the province at the same scale as the index maps that follow. The map shows major rivers, select cities and towns, latitude and longitude and the National Topographic System grid.
- Map 2 shows the overall distribution of aggregate information in Alberta which is available from ARC. If the area of interest in is NOT coloured then ARC does not have any published account of aggregate resouces in the area. If the area is coloured red, then ARC has published a report or map which contains sand and gravel information for the area and that publication should be listed in the accompanying index.
- Note: In the bibliographic reference list Bull refers to ARC Bulletin, ESC refers to ARC Earth Science Report, OFR refers to ARC Open File Report, OFM refers to ARC Open File Map and PR refers to Preliminary Report.





ALLAN J.A. and CARR J.L. 1946

Geology and Coal Occurrences of the Wapiti-Cutbank area, NTS 83L,M Research Council of Alberta PR 48, 43 p.

ALLAN J.A. and CARR J.L. 1947

Geology of the Highwood-Elbow area, Alberta, NTS 82J Research Council of Alberta PR 49, 75 p.

ALLAN J.A. and SANDERSON J.O.G. 1945

Geology of the Red Deer and Rosebud sheets, NTS 82P,83A Research Council of Alberta PR 13, 109 p.

BAYROCK L.A. 1955

Glacial geology of an area in east-central Alberta, NTS 73E, H Alberta Research Council PR 55-2, 46 p.

BAYROCK L.A. 1958

Glacial geology, Alliance-Brownfield district, Alberta, NTS 73D/5,6 Alberta Research Council PR 57-2, 43 p.

BAYROCK L.A. 1958

Glacial geology, Galahad-Hardisty district, Alberta, NTS 73D/11 Alberta Research Council PR 57-3, 35 p.

BAYROCK L.A. and HUGHES G.M. 1962

Surficial geology of the Edmonton district, Alberta, NTS 83H/5,6 Alberta Research Council PR 62-6, 40 p.

CLOW W.H. and CROCKFORD M.B. 1951

Geology of the Carbondale River area, Alberta, NTS 82G Research Council of Alberta PR 59, 70 p.

COLLINS G.A. and SWAN A.G. 1955

Glacial geology, St. Ann area, Alberta, NTS 83G Research Council of Alberta PR 67, 18 p.

CROCKFORD M.B. 1949

Geology of the Ribbon Creek area, Alberta, NTS 82J,830 Research Council of Alberta PR 52, 64 p.

EDWARDS W.A.D. 1979

Sand and Gravel Resources in the Canmore Corridor area, NTS 820 Alberta Research Council ESR 79-2, 30 p.

EDWARDS W. A. D. 1980

Sand and Gravel Resources of the Onoway area, NTS 83G/9 Alberta Research Council OFR 1984-25, 8 p.

EDWARDS W.A.D. 1980

Sand and Gravel Resources of the St. Paul/Bonnyville areas, NTS 73E,L Alberta Research Council OFR 1980-3, 43 p.

EDWARDS W.A.D. 1984

Aggregate Resources of the Camrose map area, NTS 83H/2 Alberta Research Council OFM 1984-16b, 1:50,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the Chip Lake map area, NTS 83G/11 Alberta Research Council OFM 1984-15k, 1:50,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the Cooking Lake map area, NTS 83H/6 Alberta Research Council OFM 1984-16f, 1:50,000 map

EDWARDS W. A. D. 1984

Aggregate Resources of the Elk Island Park map area, NTS 83H/10 Alberta Research Council OFM 1984-16j, 1:50,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the Irvine map area, NTS 72E/16 Alberta Research Council OFM 1984-08p, 1:50,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the Lamont map area, NTS 83H/15 Alberta Research Council OFM 1984-160, 1:50,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the Onoway map area, NTS 83G/9 Alberta Research Council OFM 1984-15i, 1:50,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the Sand River map area, NTS 73L Alberta Research Council OFM 1984-03, 1:250,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the St. Albert map area, NTS 83H/12 Alberta Research Council OFM 1984-161, 1:50,000 map

EDWARDS W.A.D. 1984

Aggregate Resources of the Suffield map area, NTS 72L/3 Alberta Research Council OFM 1984-09c, 1:50,000 map

EDWARDS W. A. D. 1984

Aggregate Resources of the Tofield map area, NTS 83H/7 Alberta Research Council OFM 1984-16g, 1:50,000 map

EDWARDS W.A.D. and FOX J.C. 1980

Sand and Gravel Resources of the Cold Lake region, NTS 73E, L Alberta Research Council OFR 1980-8, 45 p.

EDWARDS W. A. D. and RICHARDSON R. J. H. 1984

Aggregate Resources of the Tawatinaw map area, NTS 83I Alberta Research Council OFM 1983-19, 1:250,000 map

EDWARDS W. A.D. and SHAM P. 1986

Aggregate Resources of the Carrot Creek map area, NTS 83G/12 Alberta Research Council OFM 1986-08, 1:50,000 map

EDWARDS W. A. D. and STEELE K. G. 1984

Aggregate Resources of the Barrhead map area, NTS 83J/1 Alberta Research Council OFM 1984-18a, 1:50,000 map

EDWARDS W.A.D., FOX J.C. and RICHARDSON R.J.H. 1984 Aggregate Resources of the Medicine Hat map area, NTS 72L/2 Alberta Research Council OFM 1984-09b, 1:50,000 map

EDWARDS W.A.D., HUDSON R.B. and SCAFE D.W. 1985 Aggregate Resources of the Edmonton/Lloydminster region, NTS 73D,83A Alberta Research Council Bull 47, 64 p.

FOX J.C. 1980

Sand and Gravel Resources of the Athabasca Oil Sands region, NTS 74D, E Alberta Research Council OFR 1980-7, 31 p.

FOX J.C. 1984

Aggregate Resources of the Bison Lake map area, NTS 84F Alberta Research Council OFM 1985-22, 1:250,000 map

FOX J.C. 1984

Aggregate Resources of the Cadomin map area, NTS 83F/3 Alberta Research Council OFM 1984-14c, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Edmonton map area, NTS 83H/11 Alberta Research Council OFM 1984-16k, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Edson map area, NTS 83F Alberta Research Council OFM 1984-05, 1:250,000 map

FOX J.C. 1984

Aggregate Resources of the Erith map area, NTS 83F/7 Alberta Research Council OFM 1984-14g, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Foothills map area, NTS 83F/2 Alberta Research Council OFM 1984-14b, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Genesee map area, NTS 83G/8 Alberta Research Council OFM 1984-15h, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Gleichen map area, NTS 82I Alberta Research Council OFM 1983-18, 1:250,000 map

FOX J.C. 1984

Aggregate Resources of the Holden map area, NTS 83H/1 Alberta Research Council OFM 1984-16a, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Lac La Nonne map area, NTS 83G/16 Alberta Research Council OFM 1984-15p, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Leduc map area, NTS 83H/5 Alberta Research Council OFM 1984-16e, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Many Island Lake map area, NTS 72L/1 Alberta Research Council OFM 1984-09a, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Morinville area, NTS 83H/13 Alberta Research Council OFM 1984-16m, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Mount Watt map area, NTS 84K Alberta Research Council OFM 1985-21, 1:250,000 map

FOX J.C. 1984

Aggregate Resources of the Pedley map area, NTS 83F/6 Alberta Research Council OFM 1984-14f, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Redwater map area, NTS 83H/14 Alberta Research Council OFM 1984-16n, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Ryley map area, NTS 83H/8 Alberta Research Council OFM 1984-16h, 1:50,000 map

FOX J.C. 1984

Aggregate Resources of the Vermilion Chutes map area, NTS 84J Alberta Research Council OFM 1985-23, 1:250,000 map

FOX J.C. 1984

Aggregate Resources of the Viking map area, NTS 73E/4 Alberta Research Council OFM 1984-11d, 1:50,000 map

FOX J.C. 1986

Aggregate Resources of the Ruth Lake map area, NTS 74D/13 Alberta Research Council OFM 1986-06, 1:50,000 map

FOX J.C. 1986

Sand and Gravel Resources of the Bistcho Lake area, NTS 84M Alberta Research Council OFM 1986-6, 1:250,000 map

FOX J.C. 1986

Sand and Gravel Resources of the Bistcho Lake/Steen River area, NTS 84M, N Alberta Research Council OFR 1986-9, 24 p.

FOX J.C. 1986

Sand and Gravel Resources of the Steen River area, NTS 84N Alberta Research Council OFM 1986-6, 1:250,000 map

FOX J.C. 1987

Aggregate Resources of the Moose Creek map area, NTS 83F/8 Alberta Research Council OFM 1984-14h, 1:50,000 map

FOX J.C. and EDWARDS W.A.D. 1988 Aggregate Resources of the Bickerdike map area, NTS 83F/10 Alberta Research Council OFM 1984-14j, 1:50,000 map FOX J.C. and EDWARDS W.A.D. 1988 Aggregate Resources of the Entrance map area, NTS 83F/5 Alberta Research Council OFM 1984-14e, 1:50,000 map

FOX J.C. and RICHARDSON R.J.H. 1984 Red Earth Area Aggregate Search, NTS 84B Alberta Research Council OFR 1984-35, 5 p.

FOX J.C., RICHARDSON R.J.H. and SHAM P. 1987 Aggregate Resource of the Peace River/High Level area, NTS 84C,F,J Alberta Research Council Map 210, 1:500,000 map

GRAVENOR C.P. 1955

Glacial geology of Castor district, Alberta, NTS 73D/4 Alberta Research Council PR 56-2, 23 p.

GRAVENOR C.P. and BAYROCK L.A. 1955 Glacial geology of Coronation district, NTS 73D/3,4 Alberta Research Council PR 55-1, 38 p.

GRAVENOR C.P. and ELLWOOD R.B. 1957 Glacial geology of Sedgewick district, NTS 73D/13 Alberta Research Council PR 57-1, 43 p.

HESTER B. 1984

Aggregate Resources of the Buffalo Creek map area, NTS 73E/3 Alberta Research Council OFM 1984-11c, 1:50,000 map

HESTER B. 1984

Aggregate Resources of the Paradise Valley map area, NTS 73E/1 Alberta Research Council OFM 1984-11a, 1:50,000 map

HOLTER M.E. 1975

Gravel Resources of the Red Deer Area, NTS 82A, B Alberta Research Council ESR 75-3, 54 p.

HOLTER M.E., KATHOL C.P. and WATERMAN C. 1972 Gravel and Sand Resources of the Grande Prairie region, NTS 83K, N Alberta Research Council OFR 1972-14, 35 p.

HUDSON B. 1984

Aggregate Resources of the Medicine Hat map area, NTS 72L Alberta Research Council OFM 1984-02, 1:250,000 map

JONES N.K. 1984

Aggregate Resources of the Chauvin map area, NTS 73D/9 Alberta Research Council OFM 1984-10i, 1:50,000 map

JONES N.K. 1984

Aggregate Resources of the Marwayne map area, NTS 73E/9 Alberta Research Council OFM 1984-11i, 1:50,000 map

JONES N.K. 1984

Aggregate Resources of the Mclaughlin map area, NTS 73D/16 Alberta Research Council OFM 1984-10p, 1:50,000 map

JONES N.K. 1984

Aggregate Resources of the Wabamun Lake map area, NTS 83G Alberta Research Council OFM 1984-06, 1:250,000 map

JONES N.K. 1984

Aggregate Resources of the Wainwright map area, NTS 73D/15 Alberta Research Council OFM 1984-100, 1:50,000 map

KATHOL C.P. and McPHERSON R.A. 1975 Urban geology of Edmonton, NTS 83H Alberta Research Council BULL 32, 61 p.

McPHERSON R.A. and KATHOL C.P. 1973 Sand and Gravel Resources of the Edmonton area, NTS 83H Alberta Research Council ESR 73-2 (out of print), 11 p.

McPHERSON R.A. and MELLON G.B. 1971

Geologic Features and Mineral Resources of Wapiti-Grande Cache, NTS 83L, E Alberta Research Council OFR 1971-2, 32 p.

PETERSON B.N. 1980

Sand and Gravel Resources of the Grande Prairie region, NTS 83L, M Alberta Research Council OFR 1980-9, 38 p.

PETERSON B.N. 1980

Sand and Gravel Resources of the Whitecourt area, NTS 83J,K Alberta Research Council OFR 1980-4, 40 p.

PETERSON B.N. 1984

Aggregate Resources of the Carson Lake map area, NTS 83J/5 Alberta Research Council OFM 1984-18e, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Clandonald map area, NTS 73E/10 Alberta Research Council OFM 1984-11j, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Debolt map area, NTS 83M/1 Alberta Research Council OFM 1984-20a, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Grande Prairie map area, NTS 83M/2 Alberta Research Council OFM 1984-20b, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Hughenden map area, NTS 73D/10 Alberta Research Council OFM 1984-10j, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the La Glace map area, NTS 83M/6 Alberta Research Council OFM 1984-20f, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Lloydminster map area, NTS 73E/8 Alberta Research Council OFM 1984-11h, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Mannville map area, NTS 73E/6 Alberta Research Council OFM 1984-11f, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Sexsmith map area, NTS 83M/7 Alberta Research Council OFM 1984-20g, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Smoky Heights map area, NTS 83M/8 Alberta Research Council OFM 1984-20h, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Vermilion map area, NTS 73E/7 Alberta Research Council OFM 1984-11g, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Wembley map area, NTS 83M/3 Alberta Research Council OFM 1984-20c, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Whitecourt map area, NTS 83J/4 Alberta Research Council OFM 1984-18d, 1:50,000 map

PETERSON B.N. 1984

Aggregate Resources of the Windfall Creek map area, NTS 83K/1 Alberta Research Council OFM 1984-19d, 1:50,000 map

PETERSON B.N. and HESTER B. 1984

Aggregate Resources of the Grizzly Bear Creek map area, NTS 73E/2 Alberta Research Council OFM 1984-11b, 1:50,000 map

PETERSON B.N. and JONES N.K. 1984

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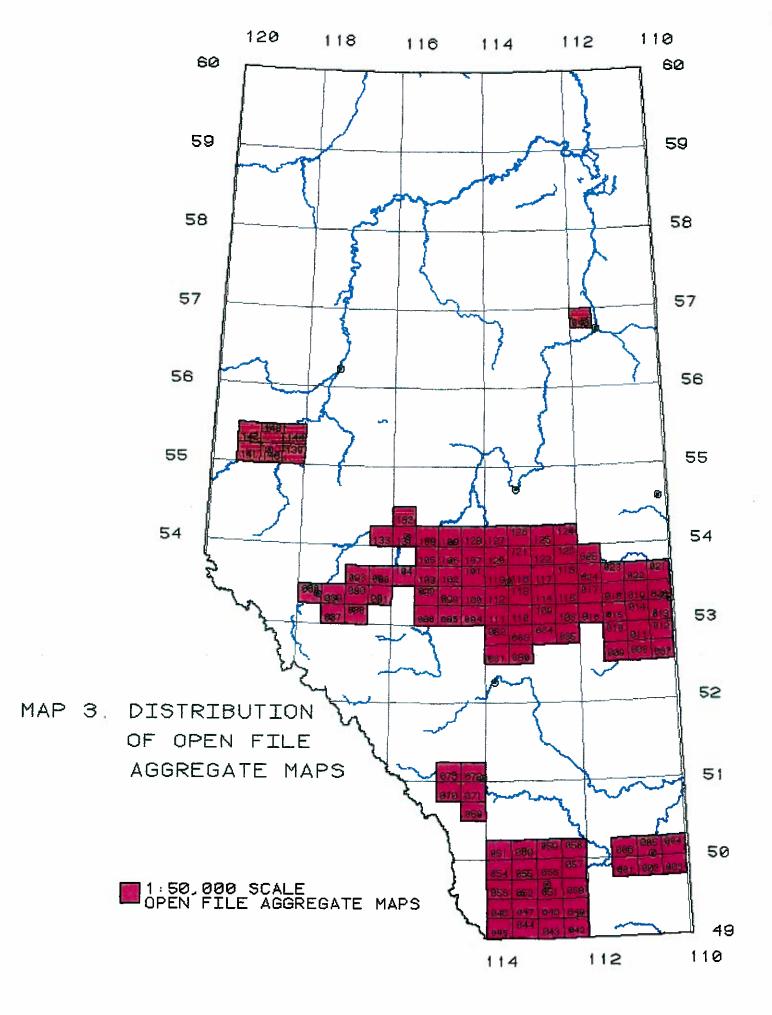
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- Map 3 shows the distribution of 1:50 000 scale aggregate maps which can be purchased as blue-line copies from ARC Publications. Each of these open file maps can be puchased separately for \$1.00.
- Map 4 shows the distribution of 1:250 000 scale aggregate maps which can be purchased as blue-line copies. Each open file map can be purchased separately for \$1.00.
- Maps 5A show the distribution of open file reports which can be purchased as photocopies with blue-line maps. Price is a function of the reproduction cost and varies depending on the number of report pages and the number of maps. Prices in January, 1989 ranged from \$3.00 to \$28.00.
- Maps 6A show the distribution of Preliminary Reports, Earth Science Reports, Bulletins and printed maps. Prices range from \$2.00 to \$14.00 of and are listed with the reference. These publications are printed and may go out-of-print when all copies are sold. Out of print reports can be obtained as photocopies. At the beginning of 1989 ESR 73-2 and all PR were out of print.
- Note: In the bibliographic reference list Bull refers to ARC Bulletin, ESC refers to ARC Earth Science Report, OFR refers to ARC Open File Report, OFM refers to ARC Open File Map and PR refers to Preliminary Report.



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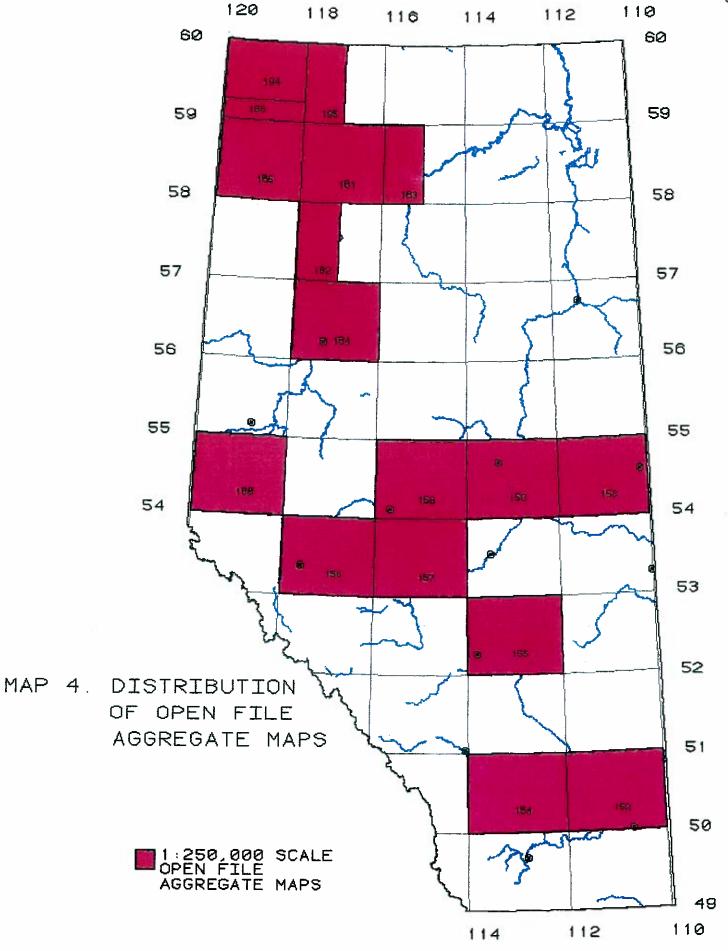
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- 107 FOX J.C. 1984
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- 108 FOX J.C. 1984
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- 109 EDWARDS W.A.D. 1984
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- 110 SHAM P. and EDWARDS W.A.D. 1984
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- 111 SHAM P. 1984
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- 113 EDWARDS W.A.D. 1984
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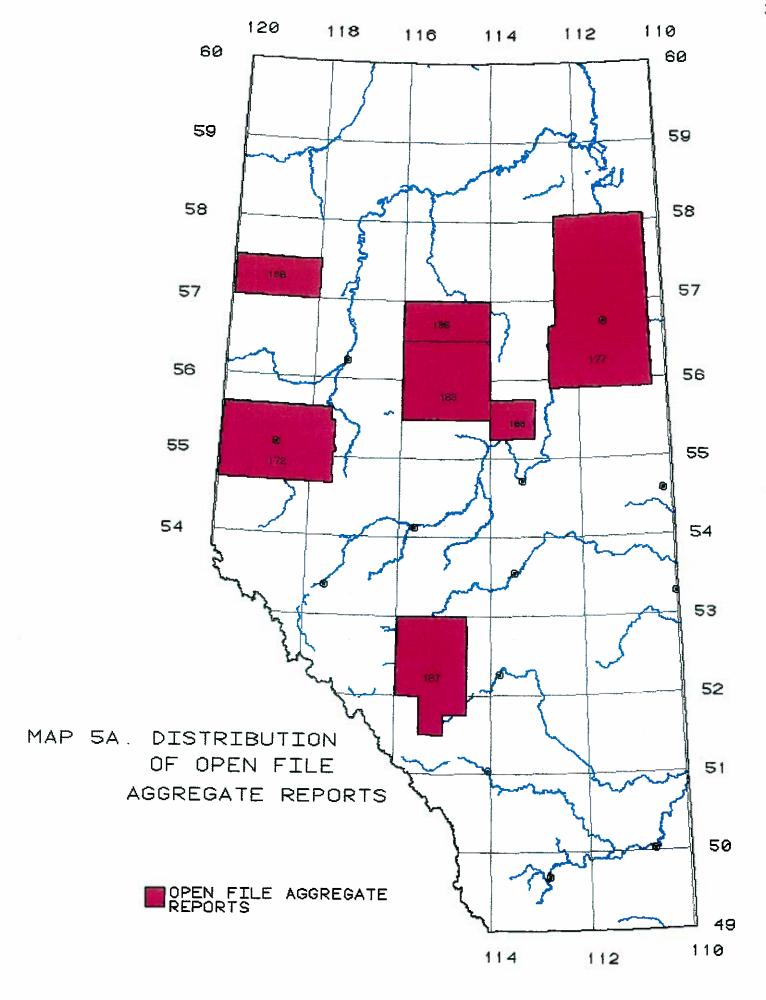
- 114 EDWARDS W.A.D. 1984
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- 118 FOX J.C. 1984
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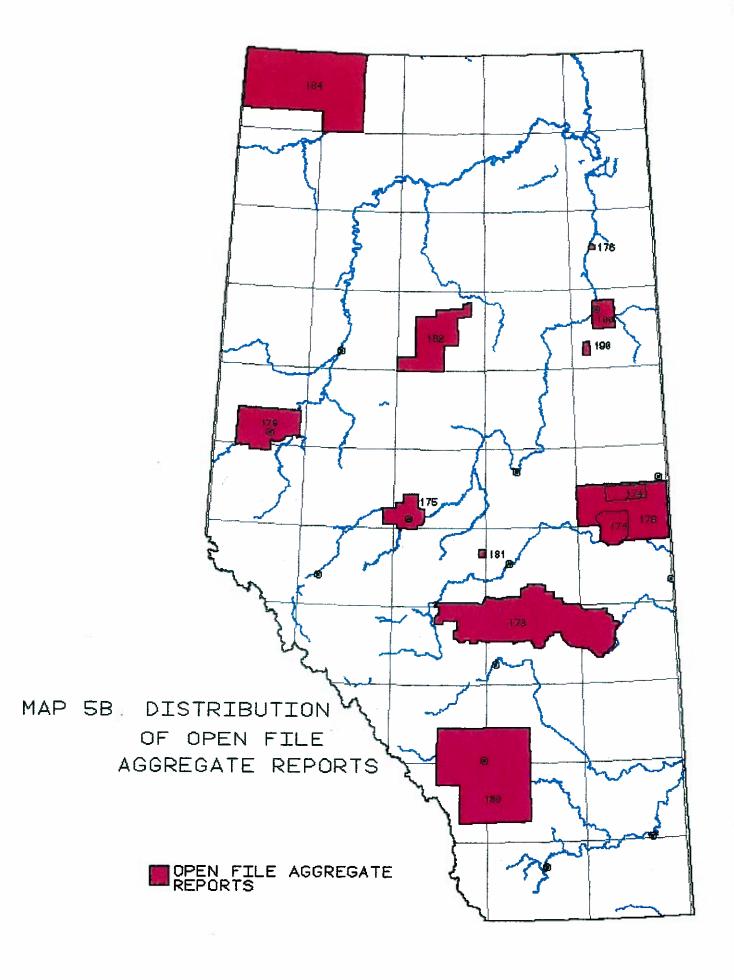
- 128 EDWARDS W.A.D. and STEELE K.G. 1984
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- 132 PETERSON B.N. 1984
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- 133 PETERSON B.N. 1984
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- 140 PETERSON B.N. 1984
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- 155 SHAM P. 1984
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- 159 SHAM P. 1984
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- 165 RICHARDSON R.J.H. 1984
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- 166 RICHARDSON R.J.H. 1984
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- 194 FOX J.C. 1986
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- 195 FOX J.C. 1986
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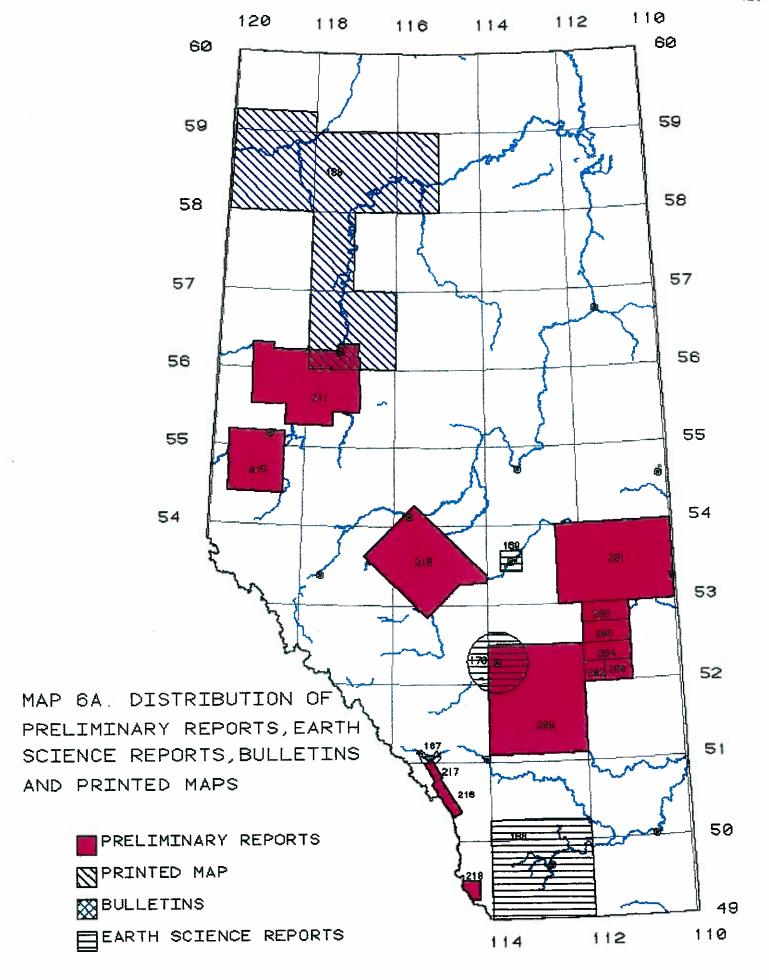


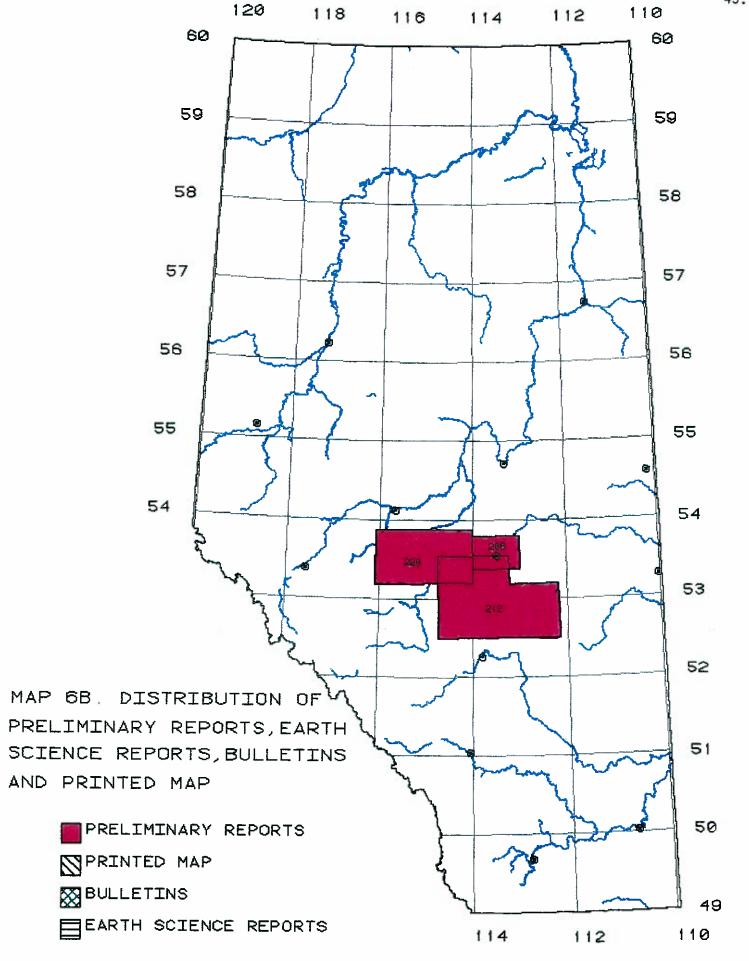


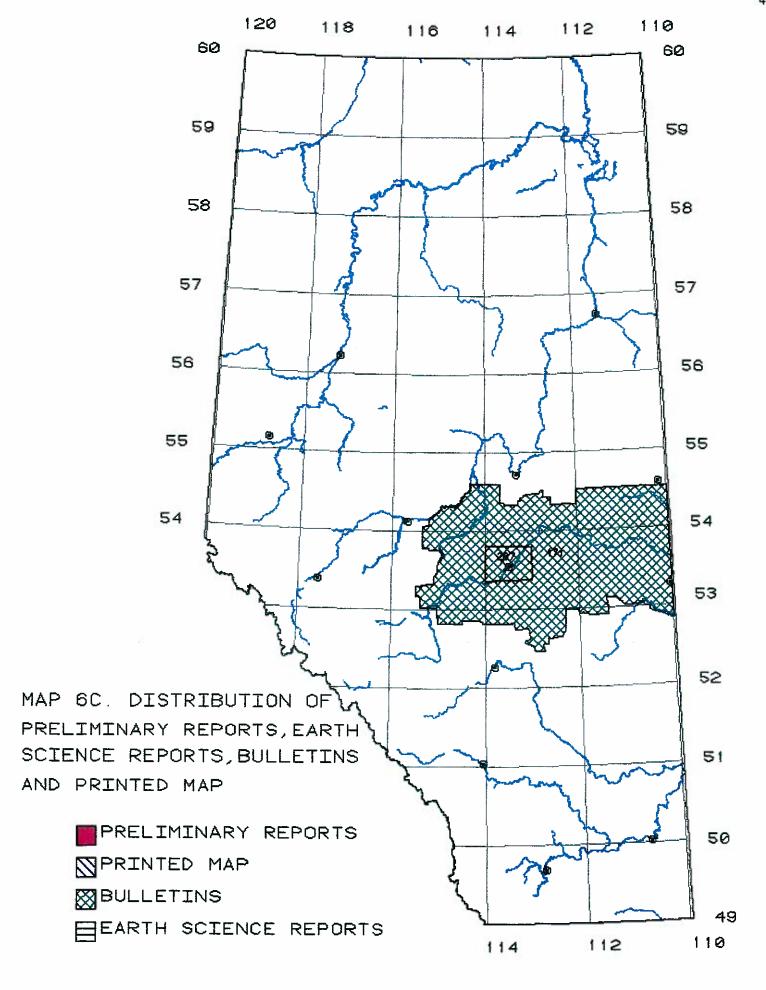
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- 175 PETERSON B.N. 1980
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- 176 SHETSEN I. 1980
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- 177 FOX J.C. 1980
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- 178 EDWARDS W.A.D. and FOX J.C. 1980 Sand and Gravel Resources of the Cold Lake region, NTS 73E,L Alberta Research Council OFR 1980-8, 45 p..
- 179 PETERSON B.N. 1980
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- 180 SHETSEN I. 1980
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- 181 EDWARDS W.A.D. 1980
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- 182 FOX J.C. and RICHARDSON R.J.H. 1984
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- 183 SCAFE D.W. and SHAM P. 1986 Sand and Gravel Resources of Peerless/Lesser Slave Lakes area, NTS 84B, Alberta Research Council OFR 1986-5, 26 p..
- 184 FOX J.C. 1986
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- 187 SCAFE D.W and SHAM P. 1987 Sand and Gravel Resources of the Rocky Mountain House/Calgary, NTS 83B. Alberta Research Council OFR 1987-3, 232 p..
- 189 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1988 Sand and Gravel Resources of the Chinchaga River map area, NTS 84E Alberta Research Council OFR 1988-15, 28 p..
- 190 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1988 Sand and Gravel Resources in the Ft. McMurray area, NTS 74D/4,5 Alberta Research Council OFR 1988-16, 78 p..
- * 192 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1989
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- * 193 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1989 Sand and Gravel Resources of the Wandering River area, NTS 73M,83P Alberta Research Council OFR (in prep.), .
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* Area not shown on accompanying map.







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- 168 SHETSEN I. 1982
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- 169 McPHERSON R.A. and KATHOL C.P. 1973
 Sand and Gravel Resources of the Edmonton area, NTS 83H
 Alberta Research Council ESR 73-2 (out of print), 11 p...
- 170 HOLTER M.E. 1975
 Gravel Resources of the Red Deer Area, NTS 82A, B
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- 171 EDWARDS W.A.D., HUDSON R.B. and SCAFE D.W. 1985
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- 188 FOX J.C., RICHARDSON R.J.H. and SHAM P. 1987
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- 200 GRAVENOR C.P. and BAYROCK L.A. 1955 Glacial geology of Coronation district, NTS 73D/3,4 Alberta Research Council PR 55-1, 38 p..
- 201 BAYROCK L.A. 1955 Glacial geology of an area in east-central Alberta, NTS 73E,H Alberta Research Council PR 55-2, 46 p..
- 202 GRAVENOR C.P. 1955 Glacial geology of Castor district, Alberta, NTS 73D/4 Alberta Research Council PR 56-2, 23 p..
- 203 GRAVENOR C.P. and ELLWOOD R.B. 1957 Glacial geology of Sedgewick district, NTS 73D/13 Alberta Research Council PR 57-1, 43 p..
- 204 BAYROCK L.A. 1958
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- 206 BAYROCK L.A. and HUGHES G.M. 1962
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- 207 KATHOL C.P. and McPHERSON R.A. 1975 Urban geology of Edmonton, NTS 83H Alberta Research Council BULL 32, 61 p..

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- 210 RUTHERFORD R.L. 1928
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- 211 RUTHERFORD R.L. 1930 Geology & Water Resources in part of Peace River & Gr. Prairie, NTS 83M. Research Council of Alberta PR 21, 80 p..
- 212 Research Council of Alberta 1928
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- * 213 Research Council of Alberta 1944
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- * 214 Research Council of Alberta 1945 Annual Report of the Research Council of Alberta for 1945, NTS N/A Research Council of Alberta PR 47, 21 p..
 - 215 ALLAN J.A. and CARR J.L. 1946 Geology and Coal Occurrences of the Wapiti-Cutbank area, NTS 83L,M Research Council of Alberta PR 48, 43 p..
 - 216 ALLAN J.A. and CARR J.L. 1947 Geology of the Highwood-Elbow area, Alberta, NTS 82J Research Council of Alberta PR 49, 75 p..
 - 217 CROCKFORD M.B. 1949 Geology of the Ribbon Creek area, Alberta, NTS 82J,830 Research Council of Alberta PR 52, 64 p..
 - 218 CLOW W.H. and CROCKFORD M.B. 1951 Geology of the Carbondale River area, Alberta, NTS 82G Research Council of Alberta PR 59, 70 p..
- * 219 Research Council of Alberta 1951 Annual Report of the Research Council of Alberta for 1951, NTS N/A Research Council of Alberta PR 62, 31 p..
 - 220 COLLINS G.A. and SWAN A.G. 1955 Glacial geology, St. Ann area, Alberta, NTS 83G Research Council of Alberta PR 67, 18 p..

* Area not shown on accompanying map.

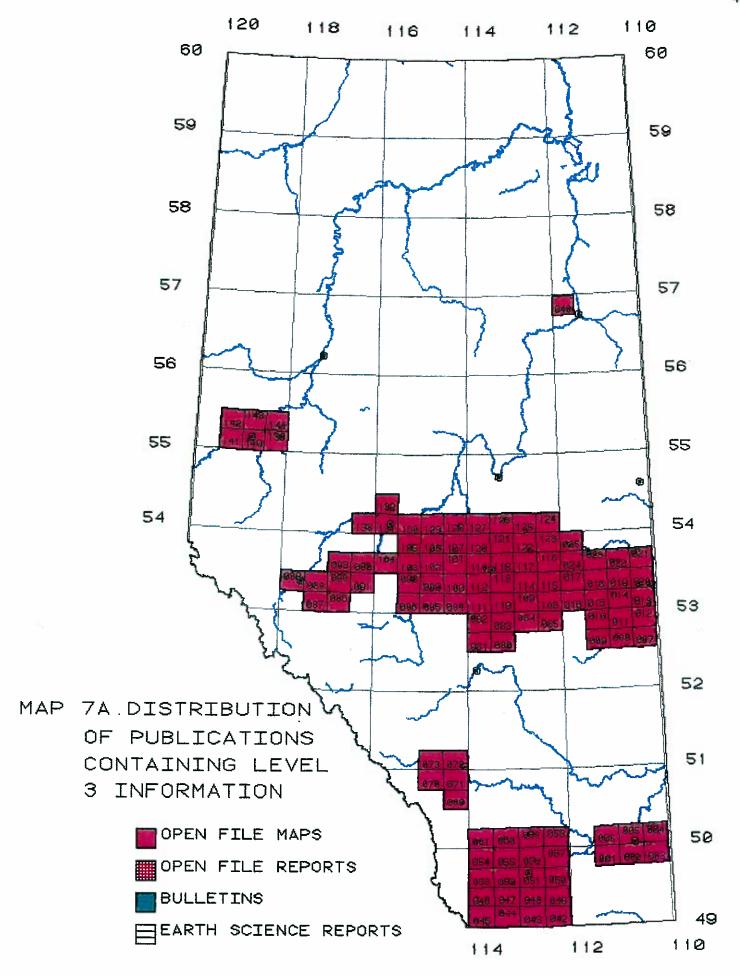
SECTION 3: INDEX MAPS AND PUBLICATIONS LISTS CATEGORIZED INTO LEVELS OF DETAIL

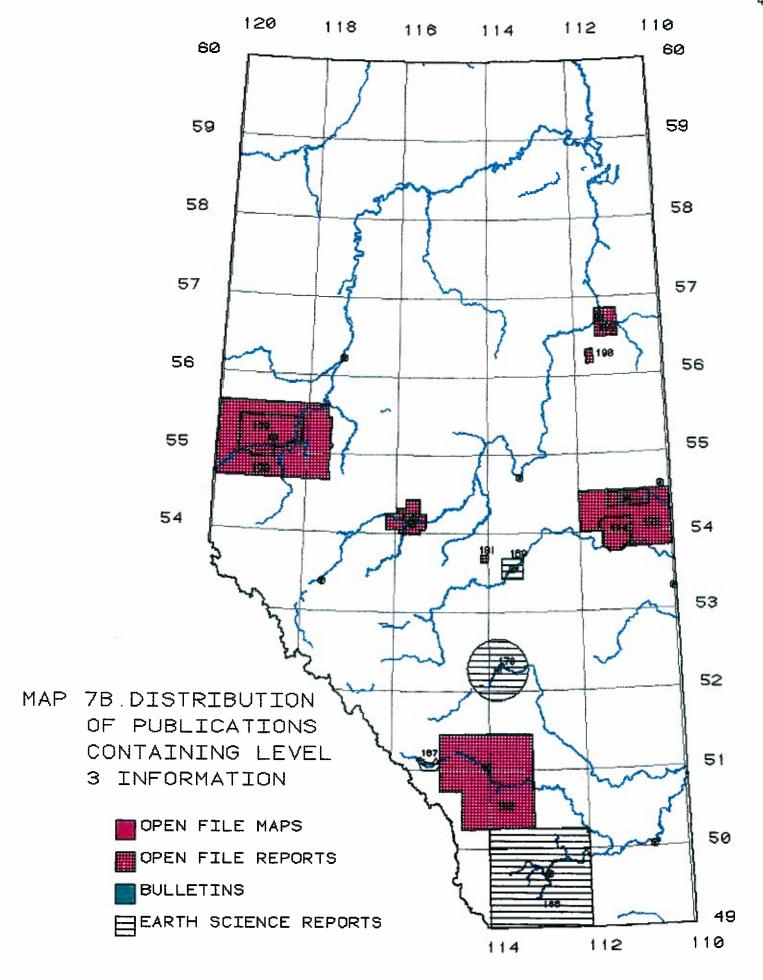
Maps 7A show the distribution of all publications containing and 7B level 3 information which are available from ARC.

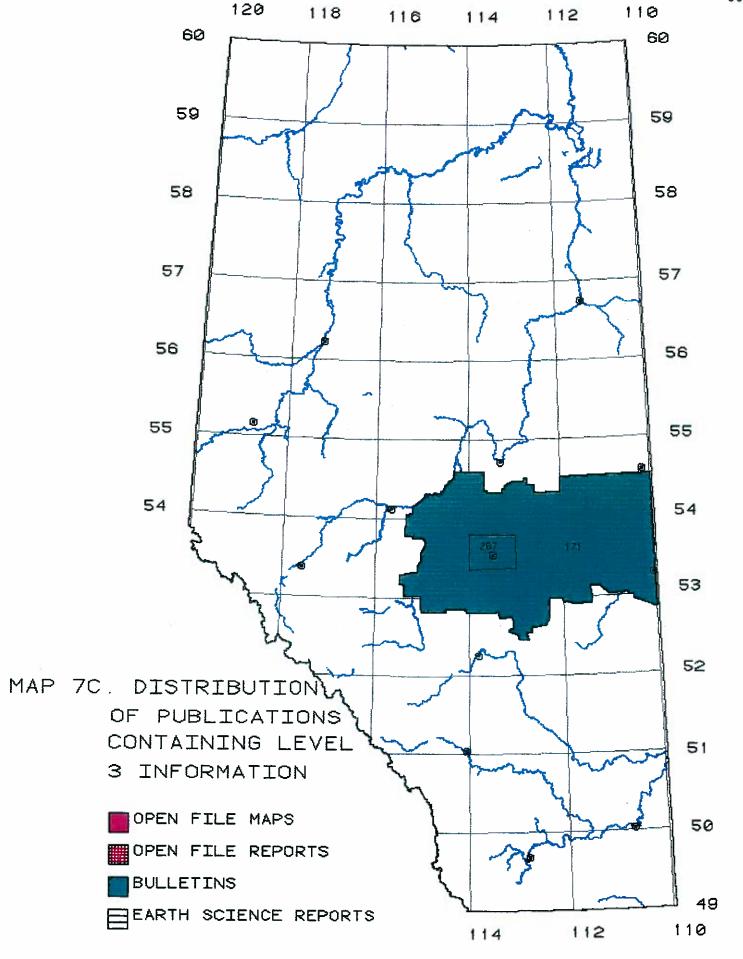
Maps 8A show the distribution of all publications containing and 8B level 4 information which are available from ARC.

Maps 9A show the distribution of all publications containing and 9B level 5 information which are available from ARC.

Note: In the bibliographic reference list Bull refers to ARC Bulletin, ESC refers to ARC Earth Science Report, OFR refers to ARC Open File Report, OFM refers to ARC Open File Map and PR refers to Preliminary Report.







- 001 SHAM P. 1984
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- 002 RICHARDSON R.J.H. 1984
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- 003 EDWARDS W.A.D. 1984
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- 004 FOX J.C. 1984
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- OO5 EDWARDS W.A.D., FOX J.C. and RICHARDSON R.J.H. 1984 Aggregate Resources of the Medicine Hat map area, NTS 72L/2 Alberta Research Council OFM 1984-09b, 1:50,000 map.
- 006 EDWARDS W.A.D. 1984
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- OO7 JONES N.K. 1984
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- 008 PETERSON B.N. 1984
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- 073 SHETSEN I. 1986
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- 080 SHAM P. 1984
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- 081 SHAM P. 1984
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- O82 SHAM P. 1984
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- 083 SHAM P. 1984
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- 084 SHAM P. 1986
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- O85 SHAM P. and STEELE K.G. 1984
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- 086 FOX J.C. 1984
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- 087 FOX J.C. 1984
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- 088 FOX J.C. and EDWARDS W.A.D. 1988
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- 089 FOX J.C. 1984
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- 090 FOX J.C. 1984
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- 091 FCX J.C. 1987
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- 092 SHAM P. 1987
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- 093 FCX J.C. and EDWARDS W.A.D. 1988
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- 094 SHAM P. 1984
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- 095 RICHARDSON R.J.H. 1984
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- 096 RICHARDSON R.J.H. 1984
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- 098 RICHARDSON R.J.H. 1984
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- 099 RICHARDSON R.J.H. 1984
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- 100 FOX J.C. 1984
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- 104 EDWARDS W.A.D. and SHAM P. 1986
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- 105 SHAM P. 1984
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- 107 FOX J.C. 1984
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- 108 FOX J.C. 1984
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- 109 EDWARDS W.A.D. 1984
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- 110 SHAM P. and EDWARDS W.A.D. 1984
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- 111 SHAM P. 1984
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- 112 FOX J.C. 1984
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- 113 EDWARDS W.A.D. 1984
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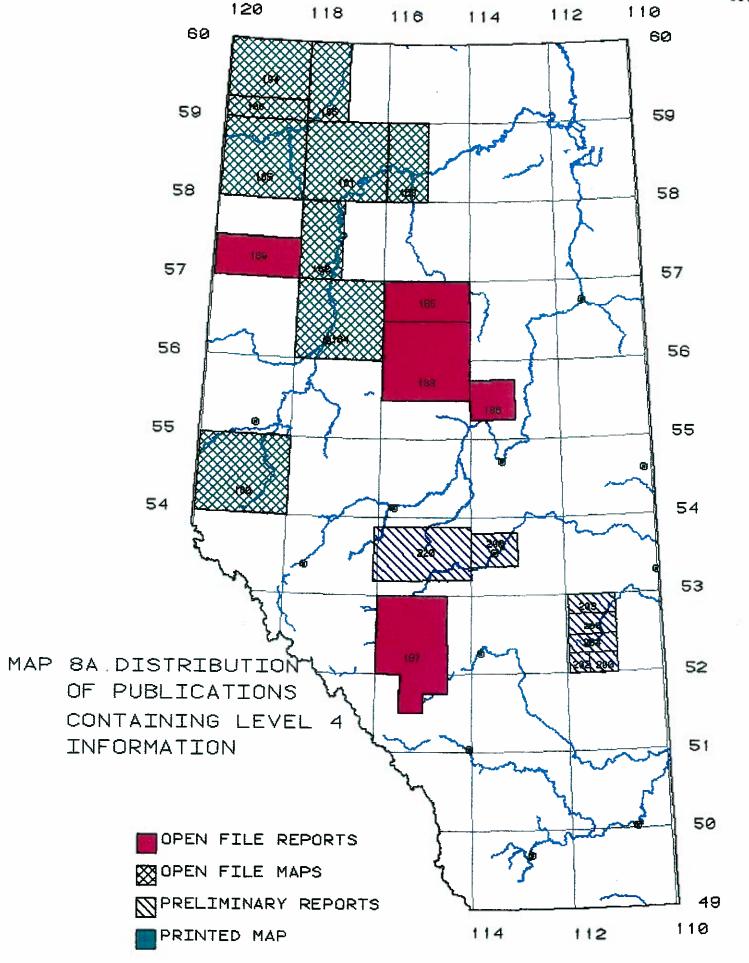
- 114 EDWARDS W.A.D. 1984 Aggregate Resources of the Tofield map area, NTS 83H/7 Alberta Research Council OFM 1984-16g, 1:50,000 map.
- 115 FOX J.C. 1984
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- 116 RICHARDSON R.J.H. 1984
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- 117 EDWARDS W.A.D. 1984
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- 118 FOX J.C. 1984
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- 120 FOX J.C. 1984
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- 121 FOX J.C. 1984
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- 122 EDWARDS W.A.D. 1984
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- 125 STEELE K.G. 1984
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- 126 STEELE K.G. 1984

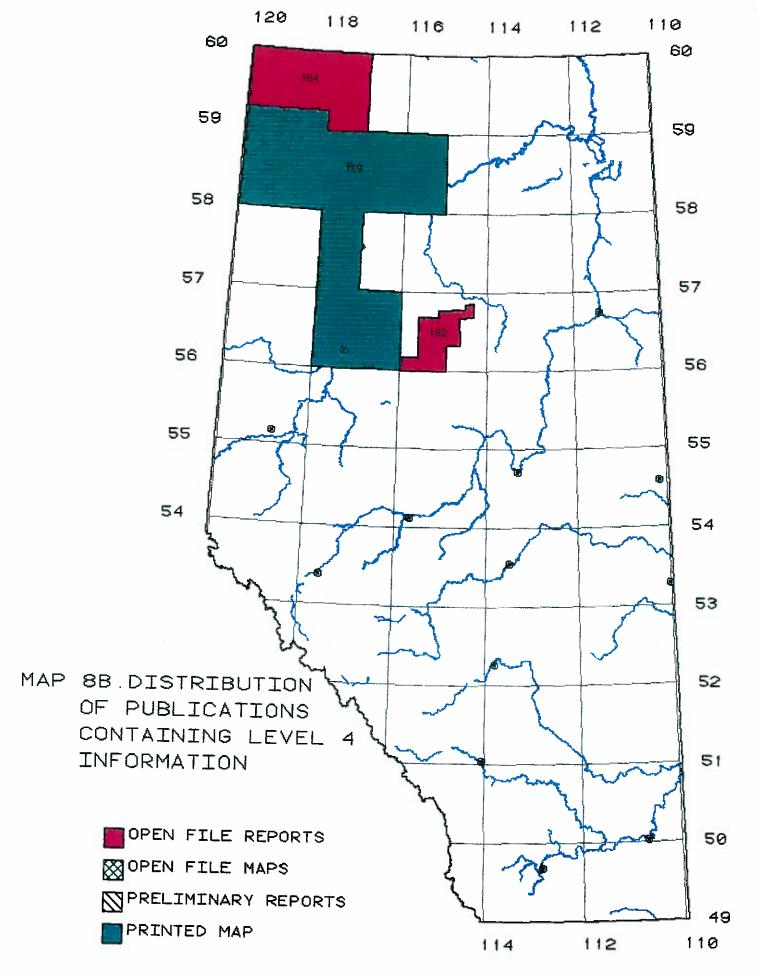
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- 127 STEELE K.G. 1984
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- 128 EDWARDS W.A.D. and STEELE K.G. 1984
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- 129 SHAM P. 1984
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- 130 SHAM P. 1984
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- 131 PETERSON B.N. 1984
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- 139 PETERSON B.N. 1984
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- 140 PETERSON B.N. 1984
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- 141 PETERSON B.N. 1984
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- 143 PETERSON B.N. 1984
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- 167 EDWARDS W.A.D. 1979
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- 168 SHETSEN I. 1982
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- 169 McPHERSON R.A. and KATHOL C.P. 1973
 Sand and Gravel Resources of the Edmonton area, NTS 83H
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- 171 EDWARDS W.A.D., HUDSON R.B. and SCAFE D.W. 1985 Aggregate Resources of the Edmonton/Lloydminster region, NTS 73D,83A Alberta Research Council Eull 47, 64 p..
- 172 HOLTER M.E., KATHOL C.P. and WATERMAN C. 1972 Gravel and Sand Resources of the Grande Prairie region, NTS 83K,N Alberta Research Council OFR 1972-14, 35 p..
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- 175 PETERSON B.N. 1980
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- 178 EDWARDS W.A.D. and FOX J.C. 1980 Sand and Gravel Resources of the Cold Lake region, NTS 73E,L Alberta Research Council OFR 1980-8, 45 p..
- 179 PETERSON B.N. 1980 Sand and Gravel Resources of the Grande Prairie region, NTS 83L,M Alberta Research Council OFR 1980-9, 38 p..
- 180 SHETSEN I. 1980
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- 181 EDWARDS W.A.D. 1980 Sand and Gravel Resources of the Onoway area, NTS 83G/9 Alberta Research Council OFR 1984-25, 8 p..
- 190 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1988 Sand and Gravel Resources in the Ft. McMurray area, NTS 74D/4,5 Alberta Research Council OFR 1988-16, 78 p..
- * 192 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1989
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 - 207 KATHOL C.P. and McPHERSON R.A. 1975 Urban geology of Edmonton, NTS 83H Alberta Research Council BULL 32, 61 p..

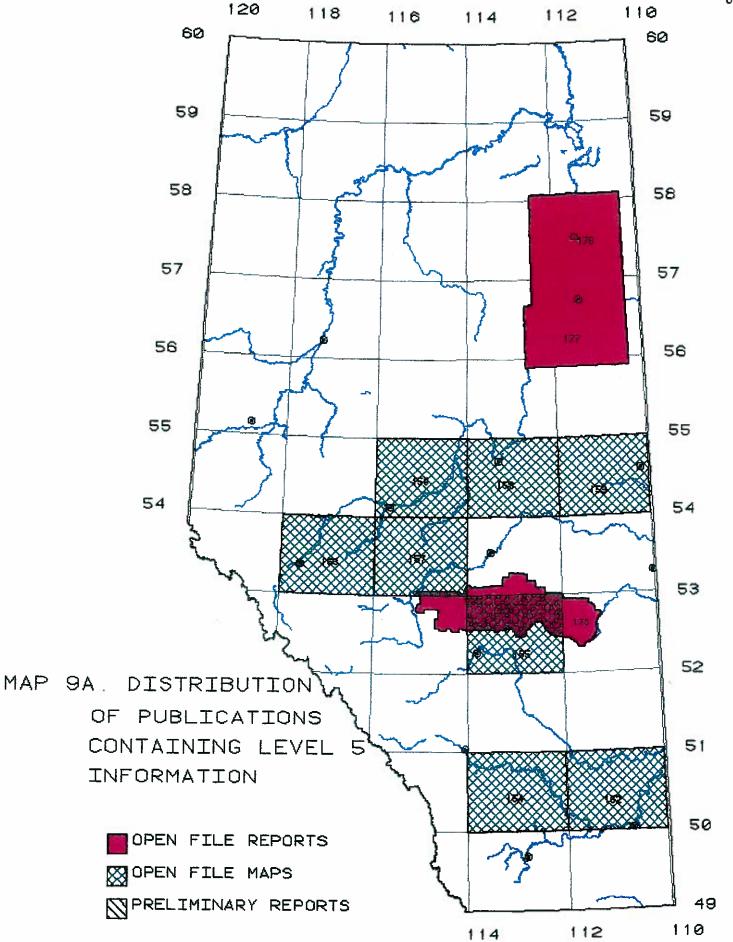
Area not shown on accompanying map.

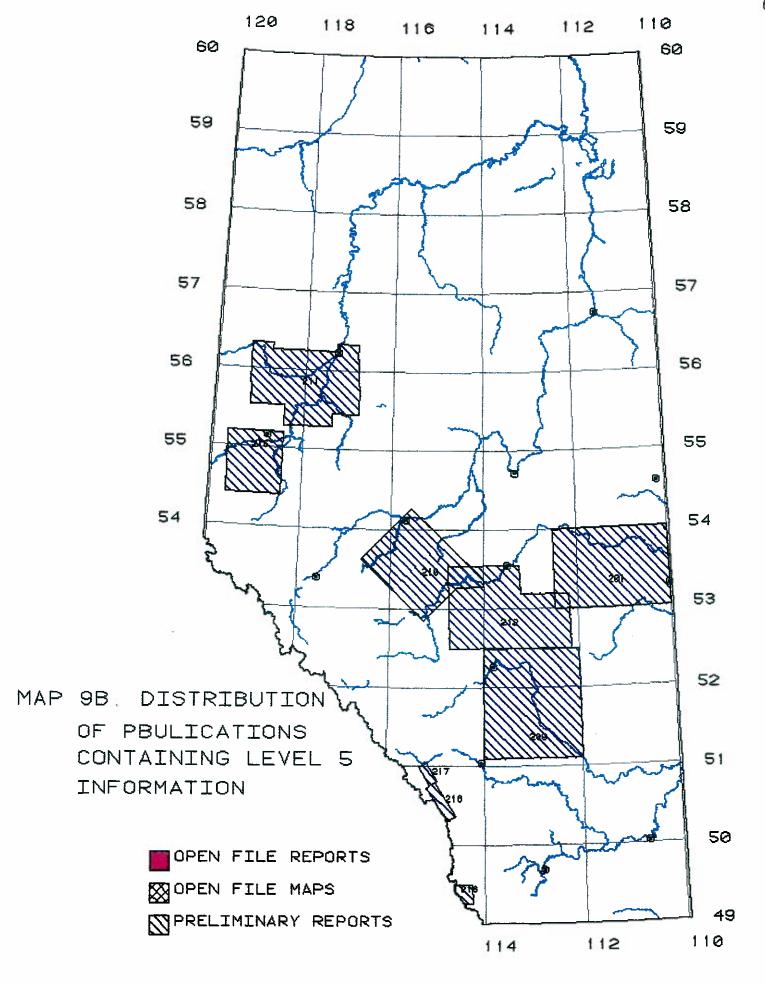




- 160 RICHARDSON R.J.H. 1984
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- 161 FOX J.C. 1984
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- 162 FOX J.C. 1984
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- 163 FOX J.C. 1984
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- 164 RICHARDSON R.J.H. and SHAM P. 1984
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- 165 RICHARDSON R.J.H. 1984
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- 166 RICHARDSON R.J.H. 1984
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- 182 FOX J.C. and RICHARDSON R.J.H. 1984 Red Earth Area Aggregate Search, NTS 84B Alberta Research Council OFR 1984-35, 5 p..
- 183 SCAFE D.W. and SHAM P. 1986 Sand and Gravel Resources of Peerless/Lesser Slave Lakes area, NTS 84B, & Alberta Research Council OFR 1986-5, 26 p..
- 184 FOX J.C. 1986
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- 185 SCAFE D.W., RAY C.M. and SHAM P. 1987
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- 186 SCAFE D.W., SHAM P. and RAY C.M. 1987 Sand and Gravel Resources of the Pelican map area, NTS 83P Alberta Research Council OFR 1987-2, 53 p..
- 187 SCAFE D.W and SHAM P. 1987
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- 188 FOX J.C., RICHARDSON R.J.H. and SHAM P. 1987
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- 189 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1988 Sand and Gravel Resources of the Chinchaga River map area, NTS 84E Alberta Research Council OFR 1988-15, 28 p..
- * 193 SCAFE D.W., EDWARDS W.A.D. and BOISVERT D.R. 1989 Sand and Gravel Resources of the Wandering River area, NTS 73M,83P Alberta Research Council OFR (in prep.), .
 - 194 FOX J.C. 1986 Sand and Gravel Resources of the Bistcho Lake area, NTS 84M Alberta Research Council OFM 1986-6, 1:250,000 map.
 - 195 FOX J.C. 1986
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 - 200 GRAVENOR C.P. and BAYROCK L.A. 1955 Glacial geology of Coronation district, NTS 73D/3,4 Alberta Research Council PR 55-1, 38 p..
 - 202 GRAVENOR C.P. 1955 Glacial geology of Castor district, Alberta, NTS 73D/4 Alberta Research Council PR 56-2, 23 p..
 - 203 GRAVENOR C.F. and ELLWOOD R.B. 1957 Glacial geology of Sedgewick district, NTS 73D/13 Alberta Research Council PR 57-1, 43 p..
 - 204 BAYROCK I.A. 1958
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 - 205 BAYROCK L.A. 1958 Glacial geology, Galahad-Hardisty district, Alberta, NTS 73D/11 Alberta Research Council PR 57-3, 35 p..
 - 206 BAYROCK L.A. and HUGHES G.M. 1962 Surficial geology of the Edmonton district, Alberta, NTS 83H/5,6 Alberta Research Council PR 62-6, 40 p..
 - 220 COLLINS G.A. and SWAN A.G. 1955 Glacial geology, St. Ann area, Alberta, NTS 83G Research Council of Alberta PR 67, 18 p..





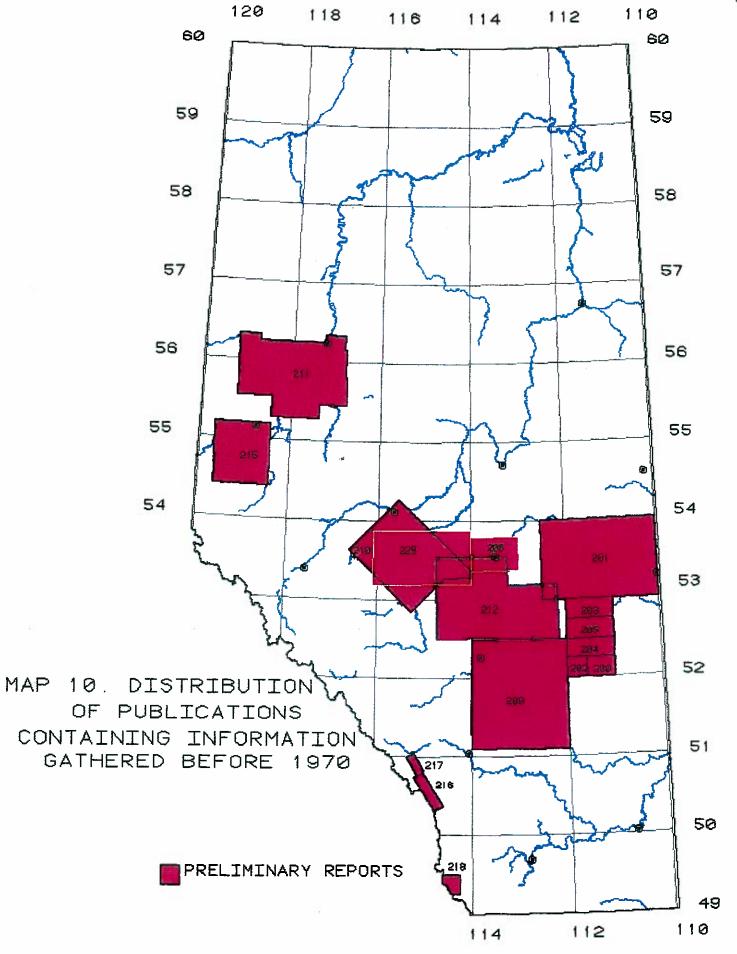
- 152 HUDSON B. 1984
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- 153 EDWARDS W.A.D. 1984 Aggregate Resources of the Sand River map area, NTS 73L Alberta Research Council OFM 1984-03, 1:250,000 map.
- 154 FOX J.C. 1984
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- 155 SHAM F. 1984
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- 156 FOX J.C. 1984
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- 157 JONES N.K. 1984
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- 158 EDWARDS W.A.D. and RICHARDSON R.J.H. 1984
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- 159 SHAM P. 1984
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- 173 SHETSEN I. 1976
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- 176 SHETSEN I. 1980
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- 177 FOX J.C. 1980
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- 201 BAYROCK I.A. 1955 GGlacial geology of an area in east-central Alberta, NTS 73E, HAlberta Research Council FR 55-2, 46 p..
- * 208 McPHERSON R.A. and MELLON G.B. 1971 Geologic Features and Mineral Resources of Wapiti-Grande Cache, NTS 83L, Alberta Research Council OFR 1971-2, 32 p..
 - 209 ALLAN J.A. and SANDERSON J.O.G. 1945 Geology of the Red Deer and Rosebud sheets, NTS 82P,83A Research Council of Alberta PR 13, 109 p..
- * Area not shown on accompanying map.

- 210 RUTHERFORD R.L. 1928 Geology of the area between North Saskatchewan and McLeod Rivers, NTS & Research Council of Alberta PR 19, 37 p..
- 211 RUTHERFORD R.L. 1930 Getlogy & Water Resources in part of Peace River & Gr. Prairie, NTS 83M, Research Council of Alberta PR 21, 80 p..
- 212 Research Council of Alberta 1928
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- * 213 Research Council of Alberta 1944 Annual Report of the Research Council of Alberta for 1944, NTS N/A Research Council of Alberta PR 45, 18 p..
- * 214 Research Council of Alberta 1945 Annual Report of the Research Council of Alberta for 1945, NTS N/A Research Council of Alberta PR 47, 21 p..
 - 215 ALLAN J.A. and CARR J.L. 1946 Geology and Coal Occurrences of the Wapiti-Cutbank area, NTS 83L,M Research Council of Alberta PR 48, 43 p..
 - 216 ALLAN J.A. and CARR J.L. 1947 Geology of the Highwood-Elbow area, Alberta, NTS 82J Research Council of Alberta PR 49, 75 p..
 - 217 CROCKFORD M.B. 1949
 Geology of the Ribbon Creek area, Alberta, NTS 82J,830
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 - 218 CLOW W.H. and CROCKFORD M.B. 1951 Geology of the Carbondale River area, Alberta, NTS 82G Research Council of Alberta PR 59, 70 p..
- * 219 Research Council of Alberta 1951 Annual Report of the Research Council of Alberta for 1951, NTS N/A Research Council of Alberta PR 62, 31 p..

* Area not shown on accompanying map.

SECTION 4: INDEX MAPS AND PUBLICATIONS LISTS CATEGORIZED BY DATE OF DATA GATHERING

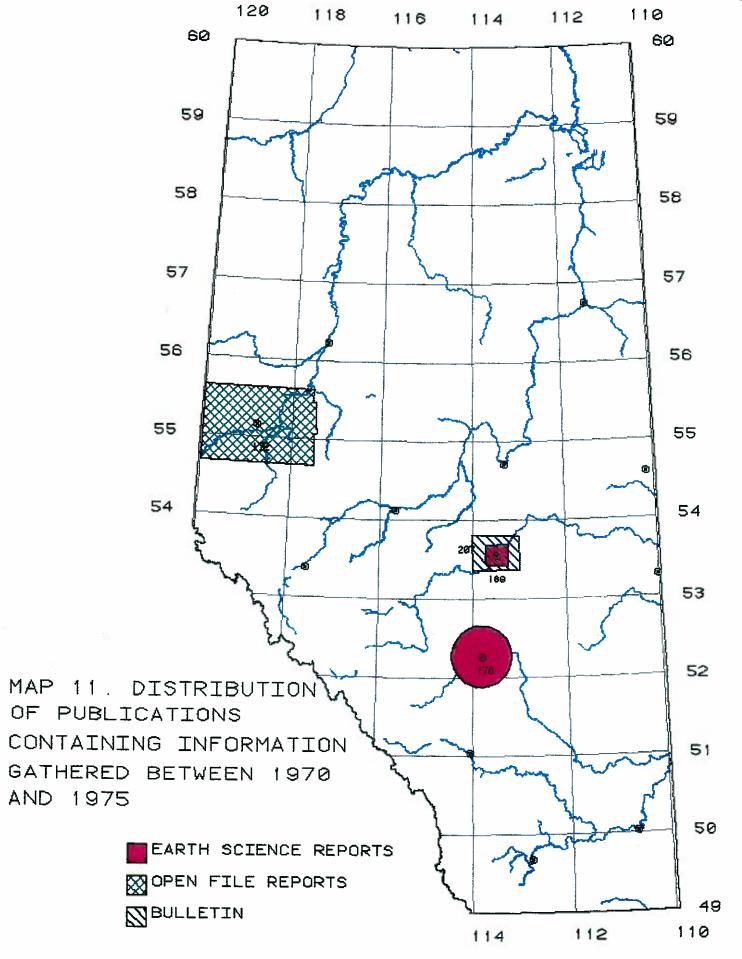
- Map 10 shows the distribution of the 20 publications that contain sand and gravel resource information gathered prior to 1970. These publications bear little significance for current planning or sand and gravel exploration.
- Map 11 shows the distribution of the 4 works containing aggregate resource data which was gathered from 1970 to 1975.
- Maps 12A show the distribution of the 80 reports and maps which and 12B contain aggregate data gained from 1976 to 1980.
- Maps 13A show the distribution of 63 aggregate reports and maps and 13B which contain data gathered from 1981 to 1985.
- Map 14 shows the location of the 7 aggregate reports or maps which contain data gathered from 1986 to 1988.
- Note: In the bibliographic reference list Bull refers to ARC Bulletin, ESC refers to ARC Earth Science Report, OFR refers to ARC Open File Report, OFM refers to ARC Open File Map and PR refers to Preliminary Report.



- 200 GRAVENOR C.P. and BAYROCK L.A. 1955 Glacial geology of Coronation district, NTS 73D/3,4 Alberta Research Council PR 55-1, 38 p..
- 201 BAYROCK L.A. 1955 Glacial geology of an area in east-central Alberta, NTS 73E, H Alberta Research Council PR 55-2, 46 p..
- 202 GRAVENOR C.F. 1955 Glacial geology of Castor district, Alberta, NTS 73D/4 Alberta Research Council PR 56-2, 23 p..
- 203 GRAVENOR C.F. and ELLWOOD R.B. 1957 Glacial geology of Sedgewick district, NTS 73D/13 Alberta Research Council PR 57-1, 43 p..
- 204 BAYROCK L.A. 1958 Glacial geology, Alliance-Brownfield district, Alberta, NTS 73D/5,6 Alberta Research Council PR 57-2, 43 p..
- 205 BAYROCK L.A. 1958
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 Alberta Research Council PR 57-3, 35 p..
- 206 BAYROCK L.A. and HUGHES G.M. 1962 Surficial geology of the Edmonton district, Alberta, NTS 83H/5,6 Alberta Research Council PR 62-6, 40 p..
- *208 McFHERSON R.A. and MELLON G.B. 1971 Geologic Features and Mineral Resources of Wapiti-Grande Cache, NTS 83L Alberta Research Council OFR 1971-2, 32 p..
 - 209 ALLAN J.A. and SANDERSON J.O.G. 1945 Geology of the Red Deer and Rosebud sheets, NTS 82P,83A Research Council of Alberta PR 13, 109 p..
 - 210 RUTHERFORD R.L. 1928
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 - 211 RUTHERFORD R.L. 1930
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 - 212 Research Council of Alberta 1928
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- * 213 Research Council of Alberta 1944
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- *214 Research Council of Alberta 1945 Annual Report of the Research Council of Alberta for 1945, NTS N/A Research Council of Alberta PR 47, 21 p..
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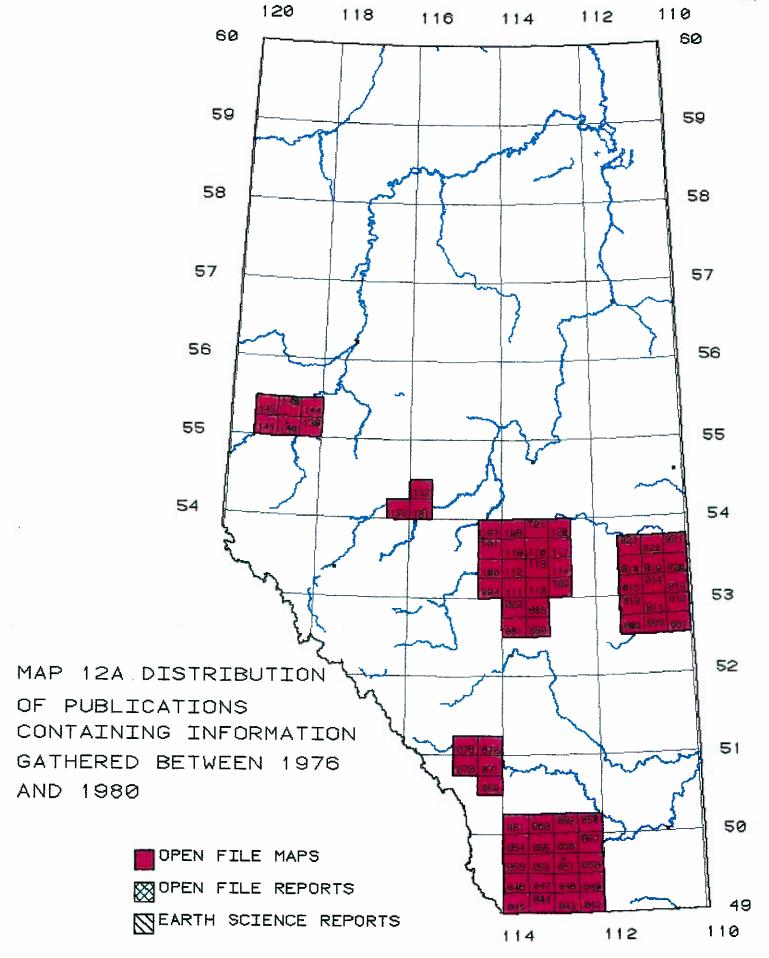
- 215 ALLAN J.A. and CARR J.L. 1946 Geology and Coal Occurrences of the Wapiti-Cutbank area, NTS 83L,M Research Council of Alberta PR 48, 43 p..
- 216 ALLAN J.A. and CARR J.L. 1947 Geology of the Highwood-Elbow area, Alberta, NTS 82J Research Council of Alberta PR 49, 75 p..
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- 218 CLOW W.H. and CROCKFORD M.B. 1951 Geology of the Carbondale River area, Alberta, NTS 82G Research Council of Alberta PR 59, 70 p..
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 - 220 COLLINS G.A. and SWAN A.G. 1955 Glacial geology, St. Ann area, Alberta, NTS 83G Research Council of Alberta PR 67, 18 p..

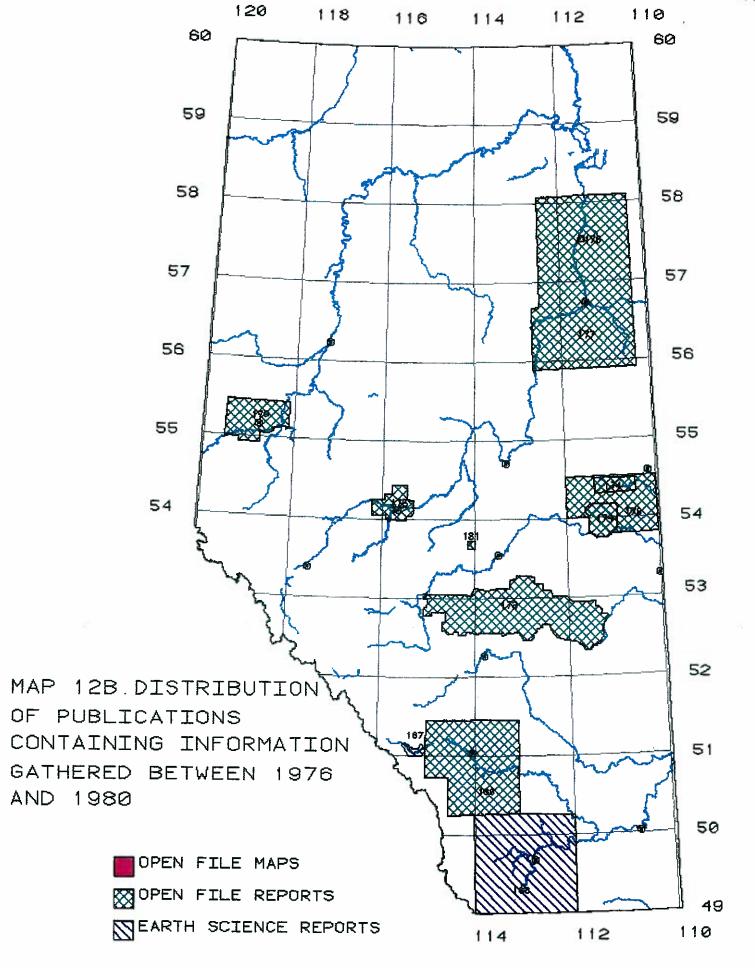
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- 169 McPHERSON R.A. and KATHOL C.P. 1973
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- 170 HOLTER M.E. 1975 Gravel Resources of the Red Deer Area, NTS 82A,B Alberta Research Council ESR 75-3, 54 p..
- 172 HOLTER M.E., KATHOL C.P. and WATERMAN C. 1972 Gravel and Sand Resources of the Grande Prairie region, NTS 83K,N Alberta Research Council OFR 1972-14, 35 p..
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- 007 JONES N.K. 1984
 Aggregate Resources of the Chauvin map area, NTS 73D/9
 Alberta Research Council OFM 1984-10i, 1:50,000 map.
- 008 PETERSON B.N. 1984
 Aggregate Resources of the Hughenden map area, NTS 73D/10
 Alberta Research Council OFM 1984-10j, 1:50,000 map.
- 009 PETERSON B.N. and JONES N.K. 1984
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- 010 PETERSON B.N. and JONES N.K. 1984
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- O11 JONES N.K. 1984
 Aggregate Resources of the Wainwright map area, NTS 73D/15
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- 012 JONES N.K. 1984
 Aggregate Resources of the Mclaughlin map area, NTS 73D/16
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- 013 HESTER B. 1984
 Aggregate Resources of the Paradise Valley map area, NTS 73E/1
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- 014 PETERSON B.N. and HESTER B. 1984 Aggregate Resources of the Grizzly Bear Creek map area, NTS 73E/2 Alberta Research Council OFM 1984-11b, 1:50,000 map.
- 015 HESTER B. 1984
 Aggregate Resources of the Buffalo Creek map area, NTS 73E/3
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- 018 PETERSON B.N. 1984
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- 019 PETERSON B.N. 1984
 Aggregate Resources of the Vermilion map area, NTS 73E/7
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- O20 PETERSON B.N. 1984
 Aggregate Resources of the Lloydminster map area, NTS 73E/8
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- O21 JONES N.K. 1984
 Aggregate Resources of the Marwayne map area, NTS 73E/9
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- O22 PETERSON B.N. 1984
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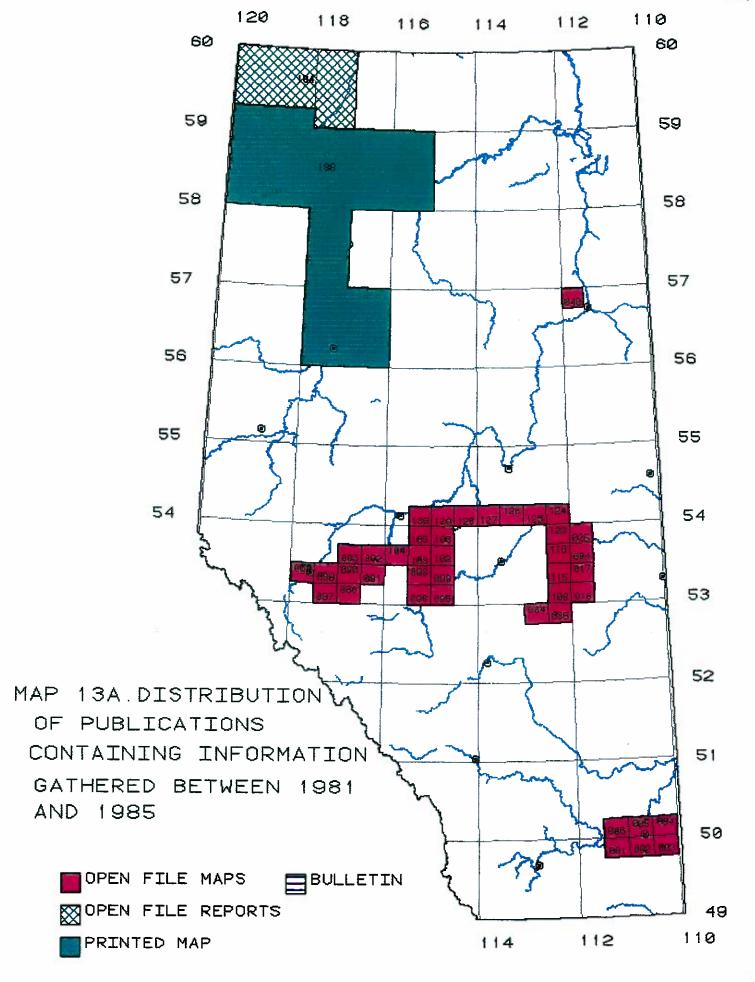
- 023 FETERSON B.N. and JONES N.K. 1984
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- 042 SHETSEN I. 1984
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- O43 SHETSEN I. 1984
 Aggregate Resources of the Shanks Lake map area, NTS 82H/2
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- O44 SHETSEN I. 1984
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- O45 SHETSEN I. 1984
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- O46 SHETSEN I. 1984
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- O47 SHETSEN I. 1984
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- O48 SHETSEN I. 1984
 Aggregate Resources of the Raymond map area, NTS 82H/7
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- O49 SHETSEN I. 1984
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- O50 SHETSEN I. 1984
 Aggregate Resources of the Chin Coulee map area, NTS 82H/9
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- O51 SHETSEN I. 1984
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 Alberta Research Council OFM 1981-07j, 1:50,000 map.
- O52 SHETSEN I. 1984
 Aggregate Resources of the Fort Macleod map area, NTS 82H/11
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- O53 SHETSEN I. 1984
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- O54 SHETSEN I. 1984
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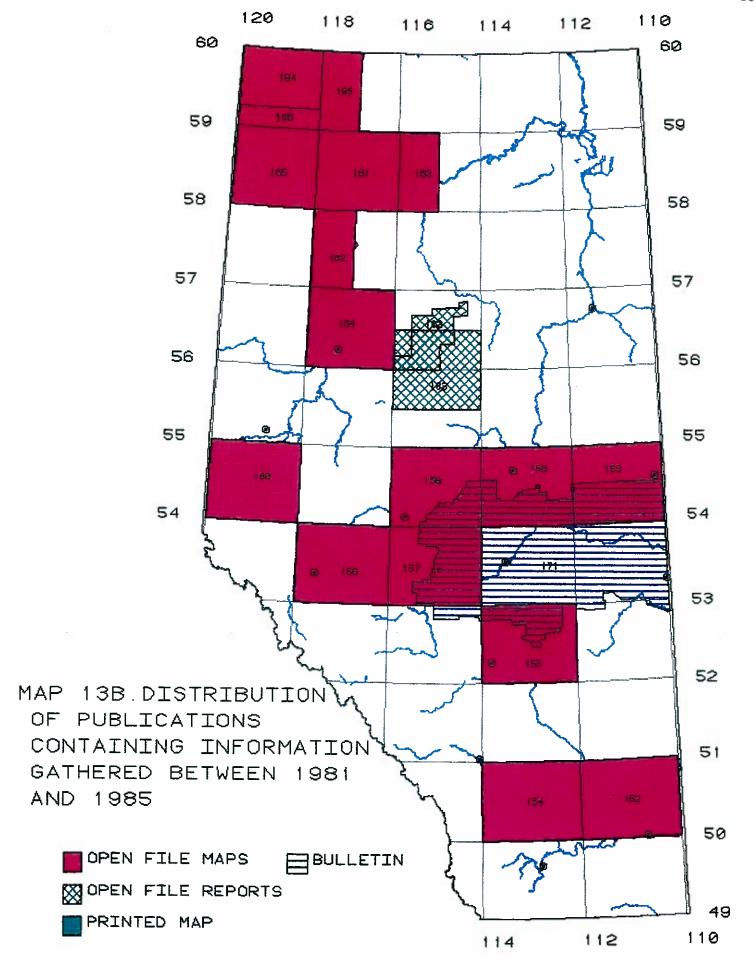
- 055 SHETSEN I. 1984
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- 056 SHETSEN I. 1984
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 Alberta Research Council OFM 1981-070, 1:50,000 map.
- O57 SHETSEN I. 1984
 Aggregate Resources of the Taber map area, NTS 82H/16
 Alberta Research Council OFM 1981-07p, 1:50,000 map.
- O58 SHETSEN I. 1984
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- O59 SHETSEN I. 1984
 Aggregate Resources of the Travers map area, NTS 82I/2
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- O60 SHETSEN I. 1984
 Aggregate Resources of the Carmangay map area, NTS 821/3
 Alberta Research Council OFM 1984-12c, 1:50,000 map.
- O61 SHETSEN I. 1984
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 Alberta Research Council OFM 1984-12d, 1:50,000 map.
- 069 SHETSEN I. 1986
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- O70 SHETSEN I. 1986
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 Alberta Research Council OFM 1986-17b, 1:50,000 map.
- 071 SHETSEN I. 1986
 Aggregate Resources of the Priddis map area, NTS 82J/16
 Alberta Research Council OFM 1986-17c, 1:50,000 map.
- 072 SHETSEN I. 1986
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- 073 SHETSEN I. 1986
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- 080 SHAM P. 1984
 Aggregate Resources of the Chain Lakes map area, NTS 83A/11
 Alberta Research Council OFM 1984-13k, 1:50,000 map.
- 081 SHAM P. 1984
 Aggregate Resources of the Ponoka map area, NTS 83A/12
 Alberta Research Council OFM 1984-131, 1:50,000 map.

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 Aggregate Resources of the Bearhills Lake map area, NTS 83A/13
 Alberta Research Council OFM 1984-13m, 1:50,000 map.
- 083 SHAM P. 1984
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 Alberta Research Council OFM 1984-13n, 1:50,000 map.
- 094 SHAM P. 1984
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 Alberta Research Council OFM 1984-15a, 1:50,000 map.
- 100 FOX J.C. 1984
 Aggregate Resources of the Genesee map area, NTS 83G/8
 Alberta Research Council OFM 1984-15h, 1:50,000 map.
- 101 EDWARDS W.A.D. 1984
 Aggregate Resources of the Onoway map area, NTS 83G/9
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- 107 FOX J.C. 1984
 Aggregate Resources of the Lac La Nonne map area, NTS 83G/16
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- 109 EDWARDS W.A.D. 1984
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- 110 SHAM P. and EDWARDS W.A.D. 1984
 Aggregate Resources of the Bittern Lake map area, NTS 83H/3
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- 113 EDWARDS W.A.D. 1984
 Aggregate Resources of the Cooking Lake map area, NTS 83H/6
 Alberta Research Council OFM 1984-16f, 1:50,000 map.
- 114 EDWARDS W.A.D. 1984
 Aggregate Resources of the Tofield map area, NTS 83H/7
 Alberta Research Council OFM 1984-16g, 1:50,000 map.
- 117 EDWARDS W.A.D. 1984
 Aggregate Resources of the Elk Island Park map area, NTS 83H/10
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- 118 EDWARDS W.A.D. 1984 Aggregate Resources of the St. Albert map area, NTS 83H/12 Alberta Research Council OFM 1984-161, 1:50,000 map.
- 120 FOX J.C. 1984
 Aggregate Resources of the Morinville area, NTS 83H/13
 Alberta Research Council OFM 1984-16m, 1:50,000 map.
- 121 FOX J.C. 1984
 Aggregate Resources of the Redwater map area, NTS 83H/14
 Alberta Research Council OFM 1984-16n, 1:50,000 map.
- 122 EDWARDS W.A.D. 1984
 Aggregate Resources of the Lamont map area, NTS 83H/15
 Alberta Research Council OFM 1984-160, 1:50,000 map.
- 13: FETERSON B.N. 1984
 Aggregate Resources of the Whitecourt map area, NTS 83J/4
 Alberta Research Council OFM 1984-18d, 1:50,000 map.
- 132 FETERSON B.N. 1984
 Aggregate Resources of the Carson Lake map area, NTS 83J/5
 Alberta Research Council OFM 1984-18e, 1:50,000 map.
- 133 FETERSON B.N. 1984
 Aggregate Resources of the Windfall Creek map area, NTS 83K/1
 Alberta Research Council OFM 1984-19d, 1:50,000 map.
- 139 FETERSON B.N. 1984
 Aggregate Resources of the Debolt map area, NTS 83M/1
 Alberta Research Council OFM 1984-20a. 1:50,000 map.
- 140 FETERSON B.N. 1984
 Aggregate Resources of the Grande Prairie map area, NTS 83M/2
 Alberta Research Council OFM 1984-20b, 1:50,000 map.
- 141 FETERSON B.N. 1984
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 Alberta Research Council OFM 1984-20c, 1:50,000 map.
- 142 PETERSON B.N. 1984
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 Alberta Research Council OFM 1984-20f, 1:50,000 map.
- 143 FETERSON B.N. 1984
 Aggregate Resources of the Sexsmith map area, NTS 83M/7
 Alberta Research Council OFM 1984-20g, 1:50,000 map.
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- OO2 RICHARDSON R.J.H. 1984
 Aggregate Resources of the Seven Persons map area, NTS 72E/15
 Alberta Research Council OFM 1984-080, 1:50,000 map.
- 003 EDWARDS W.A.D. 1984
 Aggregate Resources of the Irvine map area, NTS 72E/16
 Alberta Research Council OFM 1984-08p, 1:50,000 map.
- 004 FOX J.C. 1984
 Aggregate Resources of the Many Island Lake map area, NTS 72L/1
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- 005 EDWARDS W.A.D., FOX J.C. and RICHARDSON R.J.H. 1984
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- O06 EDWARDS W.A.D. 1984

 Aggregate Resources of the Suffield map area, NTS 72L/3

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- 016 FOX J.C. 1984
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- O17 RICHARDSON R.J.H. 1984

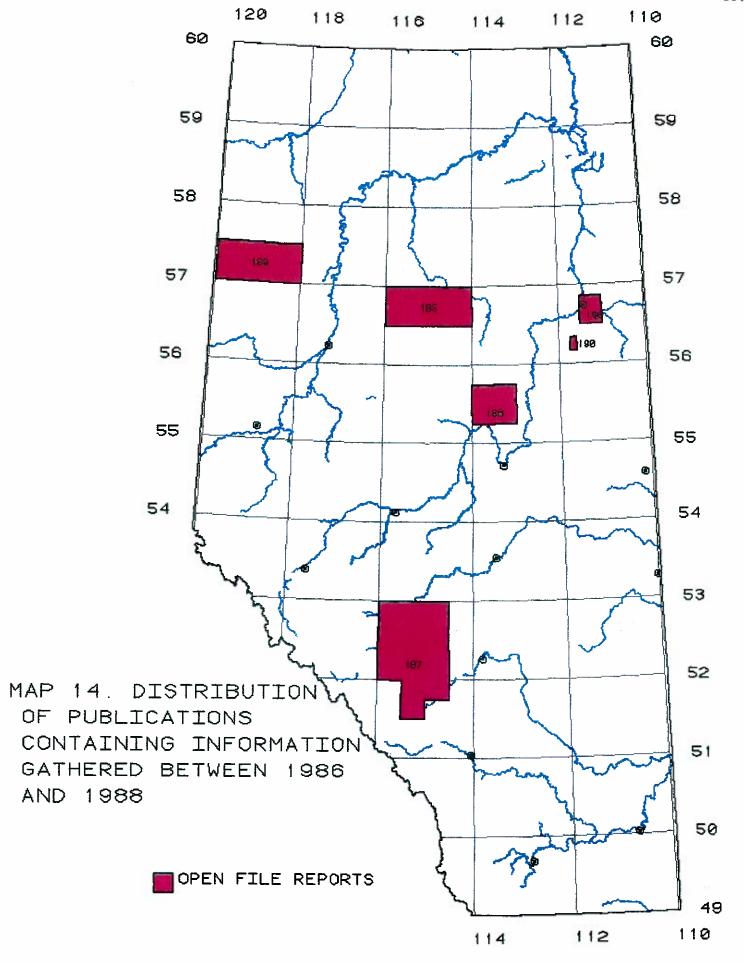
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- 024 RICHARDSON R.J.H. 1984
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- O25 SHAM P. 1984
 Aggregate Resources of the Hairy Hill map area, NTS 73E/13
 Alberta Research Council OFM 1984-11m, 1:50,000 map.
- 040 FOX J.C. 1986
 Aggregate Resources of the Ruth Lake map area, NTS 74D/13
 Alberta Research Council OFM 1986-06, 1:50,000 map.
- 084 SHAM P. 1986
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- O85 SHAM P. and STEELE K.G. 1984
 Aggregate Resources of the Daysland map area, NTS 83A/16
 Alberta Research Council OFM 1984-13p, 1:50,000 map.
- O86 FOX J.C. 1984
 Aggregate Resources of the Foothills map area, NTS 83F/2
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- 087 FOX J.C. 1984
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- 088 FOX J.C. and EDWARDS W.A.D. 1988
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- 089 FOX J.C. 1984
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- 090 FOX J.C. 1984
 Aggregate Resources of the Erith map area, NTS 83F/7
 Alberta Research Council OFM 1984-14g, 1:50,000 map.
- 091 FOX J.C. 1987
 Aggregate Resources of the Moose Creek map area, NTS 83F/8
 Alberta Research Council OFM 1984-14h, 1:50,000 map.
- 092 SHAM P. 1987
 Aggregate Resources of the Edson map area, NTS 83F/9
 Alberta Research Council OFM 1984-14i, 1:50,000 map.
- 093 FOX J.C. and EDWARDS W.A.D. 1988
 Aggregate Resources of the Bickerdike map area, NTS 83F/10
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- 095 RICHARDSON R.J.H. 1984
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- O96 RICHARDSON R.J.H. 1984
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- 098 RICHARDSON R.J.H. 1984
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- 099 RICHARDSON R.J.H. 1984
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- 102 RICHARDSON R.J.H. 1984
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- 103 EDWARDS W.A.D. 1984
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- 104 EDWARDS W.A.D. and SHAM P. 1986 Aggregate Resources of the Carrot Creek map area, NTS 83G/12 Alberta Research Council OFM 1986-08, 1:50,000 map.

- 105 SHAM P. 1984
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- 106 SHAM P. 1984
 Aggregate Resources of the Sangudo map area, NTS 83G/15
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- 108 FOX J.C. 1984
 Aggregate Resources of the Holden map area. NTS 83H/1
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- 115 FOX J.C. 1984
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- 116 RICHARDSON R.J.H. 1984
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- 123 SHAM P. 1984
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- 124 SHAM P. 1984
 Aggregate Resources of the Smoky Lake map area, NTS 83I/1
 Alberta Research Council OFM 1984-17a, 1:50,000 map.
- 125 STEELE K.G. 1984
 Aggregate Resources of the Waskatenau map area, NTS 831/2
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- 126 STEELE K.G. 1984
 Aggregate Resources of the Thorhild map area, NTS 831/3
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- 127 STEELE K.G. 1984
 Aggregate Resources of the Westlock map area, NTS 83I/4
 Alterta Research Council OFM 1984-17d, 1:50,000 map.
- 128 EDWARDS W.A.D. and STEELE K.G. 1984
 Aggregate Resources of the Barrhead map area, NTS 83J/1
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- 129 SHAM P. 1984
 Aggregate Resources of the Thunder Lake map area, NTS 83J/2
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- 130 SHAM P. 1984
 Aggregate Resources of the Green Court map area, NTS 83J/3
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- 154 FCX J.C. 1984
 Aggregate Resources of the Gleichen map area, NTS 821
 Alberta Research Council OFM 1983-18, 1:250,000 map.
- 155 SHAM P. 1984
 Aggregate Resources of the Red Deer map area, NTS 83A
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- 156 FCX J.C. 1984
 Aggregate Resources of the Edson map area, NTS 83F
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 Aggregate Resources of the Wabamun Lake map area, NTS 83G
 Alberta Research Council OFM 1984-06, 1:250,000 map.
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 Aggregate Resources of the Whitecourt map area, NTS 83J
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- 160 RICHARDSON R.J.H. 1984
 Aggregate Resources of the Wapiti map area, NTS 83L
 Alberta Research Council OFM 1983-17, 1:250,000 map.
- 161 FOX J.C. 1984
 Aggregate Resources of the Mount Watt map area, NTS 84K
 Alberta Research Council OFM 1985-21, 1:250,000 map.
- 162 FGX J.C. 1984
 Aggregate Resources of the Bison Lake map area, NTS 84F
 Alberta Research Council OFM 1985-22, 1:250,000 map.
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 Aggregate Resources of the Vermilion Chutes map area, NTS 84J
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SECTION 5: CLASSIFICATION OF AGGREGATE INFORMATION BY DATE AND LEVEL

Map 15 classifies published aggregate information by date and level.

