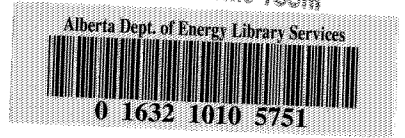


AY 5457
ACK 4432

For Reference
Not to be taken from this room



RESEARCH COUNCIL OF ALBERTA

Preliminary Report 65-3

ATHABASCA OIL SANDS

BIBLIOGRAPHY
(1789 - 1964)

Compiled
by
M. A. Carrigy

Research Council of Alberta
Edmonton, Alberta
1965

PREFACE

The bibliography of the Athabasca Oil Sands published in 1962 as Preliminary Report 62-7 is now out of print. Since its publication so much new work has been published on the oil sands that it seemed desirable to revise the whole report rather than issue a supplement to the 1962 bibliography. The major events contributing to the large increase in volume of literature in such a short time were the filing of applications by several major oil companies to the Oil and Gas Conservation Board for permits to develop the oil sands commercially and the Second Athabasca Oil Sands Conference which was held in Edmonton on October 30th and 31st, 1963. Also, in 1964 permission was granted to Great Canadian Oil Sands Limited to produce 45,000 barrels of oil per day from Lease 4 at Mildred Lake using a hot-water process. Work at the site is progressing rapidly and the plant is expected to be completed by 1967.

This report has two parts; in Part I all of the citations are listed alphabetically under the author's name with full title and publication data; in Part II the same publications are grouped under thirteen subject headings. Each of the thirteen sections of Part II is completely self-contained.

Doubtless, some publications will have been overlooked, and in spite of careful checking some errors will be found in the references. The compiler will be grateful if errors and omissions are brought to his attention.

M. A. Carrigy

Edmonton, 1965.

CONTENTS

	Page
Preface	iii
Abbreviations used in publication citations	vii
Part I. Bibliography	1
Part II. Subject headings	43
1. History	43
2. Geology	44
3. Properties of oil sands	55
(a) Physical	55
(b) Chemical	56
4. Drilling	59
5. Mining	60
6. Recovery methods	61
7. Refining	73
8. Economics	77
9. Utilization	78
10. Patents	80
11. Reports of Royal Commissions and submissions to government agencies	84
12. Government regulations	86
13. News reports	86

ABBREVIATIONS USED IN PUBLICATION CITATIONS

Acad.	Academy
Agr.	Agriculture
Am.	America, American
Ann.	Annual
Assoc.	Association
Bull.	Bulletin
Can.	Canada
Chem.	Chemistry, chemical
Circ.	Circular
Co.	Company
Conf.	Conference
Congr.	Congress
Contrib.	Contribution
Coun.	Council
Dept.	Department
Div.	Division
Econ.	Economic
Ed.	Edition
Eng.	Engineer, engineers, engineering
Geochim.	Geochimica
Geog.	Geography, geographical
Geol.	Geology, geological, geologists
Govt.	Government

Ind.	Industries, industrial
Inst.	Institute
Investig.	Investigation, investigations
Int.	International
Jour.	Journal
Lab.	Laboratory
Ltd.	Limited
Mag.	Magazine
Mem.	Memoir
Memo.	Memorandum
Met.	Metallurgy, metallurgist
Min.	Mining
M. Sc.	Master of Science degree
Natl.	National
No.	Number
Paleont.	Paleontology
Pat.	Patent
Proc.	Proceedings
Prog.	Progress
Pt.	Part
Pub.	Publication
Quart.	Quarterly
Rept.	Report
Res.	Research
Rev.	Review

Roy.	Royal
Sci.	Science
Sec.	Section
Sed.	Sedimentary
Ser.	Series
Soc.	Society
Summ.	Summary
Surv.	Survey
Symp.	Symposium
Trans.	Transactions
Tech.	Technology
U. K.	United Kingdom
Univ.	University
U. S.	United States of America
U. S. S. R.	Union of Soviet Socialist Republics
Vol.	Volume

PART I BIBLIOGRAPHY

Adkins, W. E. (1948): New plant to process Athabaska oil sands;
Petroleum Engr., April 1948, Vol. 19, No. 7, p. 121-126.

————— (1949a): Oil sands demonstration plant; World Petroleum,
Vol. 20, p. 40-45.

————— (1949b): Report to the board of trustees on Oil Sands
Project from inception to December 1948; unpublished
manuscript, Govt. Alberta, Edmonton.

————— (1950a): Report to the Board of Trustees on the Govern-
ment Oil Sands Project from January 1, 1949 to December 31,
1949; unpublished manuscript, Govt. Alberta, Edmonton.

————— (1950b): Novel separation process unlocking Canada's
oil sands; Chem. Eng., Vol. 57, No. 3, p. 103-105.

Alberta, Government (1950): Engineering and economic data from
operation of Bitumount plant - summer 1949; unpublished
manuscript, Oil Sands Project, Govt. Alberta, Edmonton.

————— (1957): The Oil and Gas Conservation Act;
Queens Printer, Edmonton.

————— (1958): Regulations governing disposition of
bituminous sands rights the property of the Crown under The
Mines and Minerals Act; Department of Mines and Minerals
office consolidation of Alberta regulation 333/57 and 195/58.

————— (1959): Alberta Technical Committee report to the
Minister of Mines and Minerals and the Conservation Board
with respect to an experiment proposed by Richfield Oil Corpo-
ration involving an underground nuclear explosion beneath the
McMurray oil sands with the objective of determining the
feasibility of recovering the oil with the aid of the heat
released from such an explosion; 55 pages.

————— (1961a): Regulations to amend the regulations
governing the disposition of bituminous sands rights the property
of the Crown; Alberta Regulation 12/61.

————— (1961b): Regulations governing the disposition of
oil sands rights the property of the Crown; Alberta Regulation
144/61.

- _____ (1962a): Bituminous sand regulations under the Mines and Minerals Act 1962; Alberta Regulation 342/62; Queens Printer, Edmonton.
- _____ (1962b): An Act to amend the Oil and Gas Conservation Act; Queens Printer, Edmonton.
- Alberta Oil and Gas Conservation Board (1960): Report to the Lieutenant Governor in Council with respect to the application of Great Canadian Oil Sands Limited under part VI A of the Oil and Gas Conservation Act; 81 pages.
- _____ (1962): Supplemental Report to the Lieutenant Governor in Council with respect to the application of Great Canadian Oil Sands Limited under part VI A of the Oil and Gas Conservation Act; Oil and Gas Conservation Board, Calgary, 48 pages.
- _____ (1963a): A description and reserve estimate of the oil sands of Alberta; Oil and Gas Conservation Board, Calgary, 60 pages.
- _____ (1963b): Report to the Lieutenant Governor in Council with respect to the applications of Cities Service Athabasca Inc. and Shell Canada Limited under part VI A of the Oil and Gas Conservation Act, October 1963, 258 pages.
- _____ (1964): To the Lieutenant Governor in Council Report on an application of Great Canadian Oil Sands Limited under part VI A of the Oil and Gas Conservation Act; Report 64-3, 81 pages, 4 appendices.
- Alcock, F. J. (1920): The origin of Lake Athabaska; Geog. Rev., Vol. 10, No. 6, p. 400-407.
- Allan, J. A. (1920): The mineral resources of Alberta; Res. Coun. Alberta, Rept. 1, p. 87-102.
- _____ (1924): Salt well No. 2 at Waterways; Res. Coun. Alberta, Rept. 10, p. 48-53.
- _____ (1929): Salt and gypsum in Alberta; Trans. Can. Inst. of Min. Met., Vol. 32, p. 232-254.
- _____ (1938): Salt deposits at McMurray, Alberta; Trans. Can. Inst. Min. Met., Vol. 40, p. 614-628.

- (1943): Rock salt deposits at Waterways, Alberta; Res. Coun. Alberta, Rept. 34, Pt. 2, p. 40-57.
- American Association of Petroleum Geologists (1951): Symposium on possible future petroleum provinces of North America, Amer. Assoc. Petroleum Geol., Tulsa, Northern Alberta Oil Sands, p. 41-44.
- Anikin, P. I. (1957): Recovery of crude oil from tar sands; U.S.S.R. Pat. No. 108,518.
- Ansley, R. W. (1963): Development of the Athabasca Tar Sands; Trans. Eng. Inst. Can. EIC - 63 - Oil and Natural Gas I.
- Ansley, R. W. and Bierlmeier, W. G. (1963): Continuity of bedding within the McMurray Formation; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 55-62.
- Armstrong, H. H. (1926): Method of recovering hydrocarbon oils from oil sands and the like; U.S. Pat. 1,607,977.
- Athabasca Oil Sands Conferences see Proceedings of
- Aylwin, T. C. (1963): Method and apparatus for separating oil from oil-bearing sands; Can. Pat. 657,877.
- Aylwin, T. C. and Gale, C. G. (1963): Method and apparatus for the treatment of bituminous material; Can. Pat. 657,876.
- Badgley, P. C. (1952): Notes on the subsurface stratigraphy and oil and gas geology of the Lower Cretaceous series in central Alberta; Geol. Surv. Can. Paper 52-11, 12 pages.
- Ball, M. W. (1935): Athabaska oil sands: apparent example of local origin of oil; Bull. Am. Assoc. Petroleum Geol., Vol. 19, No. 2, p. 153-171.
- (1941): Development of the Athabaska oil sands; Trans. Can. Inst. Min. Met., Vol. 44, p. 58-91.
- Barendson, M-J. (1923): Procédé de séparation et d'extraction d'huiles minérales, des sables oléagineux, bitumes, craies grasses, schistes, charbons, etc. France, Pat. 563,883.
- Bauer, R. F. and Matthews, H. J. (1948): Process and apparatus for treating bituminous sands; U.S. Pat. 2,453,060.

- Behning, P. D., Glass, E. D. and Rzasa, M. J. (1957): Oil recovery by underground combustion; U.S. Pat. No. 2,803,305.
- Bell, A. F. L. (1879): Apparatus for refining asphaltum; U.S. Pat. 581,457.
- Bell, R. (1884): Report on part of the basin of the Athabaska River, Northwest Territory; Geol. Surv. Can. Rept. Prog., 1882-83-84, Pt. cc, p. 5-35.
- (1908a): The tar sands of the Athabasca River, Canada; Trans. Am. Inst. Min. Eng., Vol. 38, p. 836-848.
- (1908b): The tar sands of the Athabasca River, Canada; Mining World, Vol. 28, p. 753.
- (1908c): The tar sands of the Athabasca River, Canada; Am. Inst. Min. Eng.; Vol. B20, p. 157-169.
- Belyea, H. R. (1952): Notes on the Devonian system of the north-central plains of Alberta; Geol. Surv. Can. paper 52-27, 45 pages.
- Bellows, L. A. and Bohme, V. E. (1963): Athabasca Oil Sands; Jour. Petroleum Techn., Vol. 15, p. 479-483.
- Berg, C. (1951a): Mild hydrogenation of bitumen; Oil in Canada, Vol. 3, No. 51, p. 4491.
- (1951b): Refining of high sulphur stocks by the cobalt molybdate process; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 271-288.
- (1959): Tar sand distillation process and apparatus; U.S. Pat. No. 2,905,595.
- Bergstrom, E. V. (1959): Method and system for producing oil tenaciously held in porous formations using a dredging operation; U.S. Pat. No. 2,880,981.
- Berry, V. J., Jr. and Parrish, D. R. (1960): A theoretical analysis of heat flow in reverse combustion; Jour. Petroleum Techn., Vol. 12, No. 5, p. 15-16.
- Bichard, J. A. (1963a): Additives for use in intergrated process for the recovery of oil from tar sands; Can. Pat. 675,524.
- (1963b): Method of preparation of a surfacing material from tar sands; Can. Pat. 675,521.

- Bichard, J. A. and Wunder, J. W. (1963): Intergrated process for effectively recovering oil from tar sands; Can. Pat. 675,912.
- Bichard, J. A., Bowman, C. W., Butler, R. M. and Tiedje, J. L. (1963): Separation of oil from the Athabasca Oil Sands by sand reduction; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 171-191.
- Bichard, J. A., Butler, R. M., McEachern, J. R. and Wunder, J. W. (1963): Process for efficient removal of oil from tar sands; Can. Pat. 675,916.
- Blair, S. M. (1950): Report on the Alberta bituminous sands; Govt. Alberta, Edmonton, 82 pages.
- (1952): Canada's oil industry; Neil Matheson McWharrie Lecture, Royal School of Arts, London, April 1952, 21 pages.
- Boomer, E. H. (1931): Natural gas research-hydrogenation; Res. Coun. Alberta, Rept. 26, 1930, p. 66-74.
- Boomer, E. H. and Edwards J. (1935): Hydrogenation in a tetralin medium. Destructive hydrogenation of bitumen and pitch; Can. Jour. Res., Vol. 13B, p. 323-330.
- Boomer, E. H. and Saddington, A. W. (1930): On the hydrogenation of bitumen from bituminous sands of Alberta; Can. Jour. Res., Vol. 2, p. 376-383.
- (1931): On the hydrogenation of bitumen from the bituminous sands of Alberta; Can. Jour. Research, Vol. 4, p. 517-539.
- Booth, F. L., Carson, R. E., Bowles, K. W. and Montgomery, D. S. (1958): Low pressure hydrogenation of coker distillate from Athabasca bitumen; Can. Mines Branch Rept. R30, 92 pages.
- Boutin, P. (1964): Extraction of bitumen and oil from Athabaska tar sands; Can. Pat. 680,576.
- Bowles, K. W. and Booth, F. L. (1947): Study of the composition of the separated bitumen from Alberta bituminous sands; Can. Bureau Mines, Fuel Res. Lab., Rept. 76, 32 pages.
- Bowles, K. W. and Warren, T. E. (1948): Hydrogenation of Alberta bitumen; Can. Bureau Mines, Fuel Res. Lab., Rept. 96, 120 pages.

- Boyd, M. L. (1954): Bibliography of the Alberta bituminous sands; Can. Mines Branch, Fuels Research B.R., Report No. 1, 23 pages.
- Boyd, M. L. and Montgomery, D. S. (1961): A study of the Athabasca bitumen from Abasand Quarry, Alberta, Canada, Pt. I. Early history, analysis of bituminous sand, and structural analysis of the asphaltene fraction, Pt. II. The initial chromatographic separation of the pentane extract and the structure and properties of the resinous components; Can. Mines Branch Res. Repts. 78 and 88, 67 pages and 94 pages respectively.
- (1962a): structural group analysis of the asphaltene and resin components of the athabasca bitumen; Fuel, Vol. 41, p. 335-350.
- (1962b): A study of the Athabasca bitumen from the Abasand Quarry, Alberta, Canada, Part III. Chromatographic separation of the oil fraction, and properties and structure of the oil components; Dept. of Mines and Techn. Surv. Ottawa, Mines Branch Research Report R 104, 67 pages.
- (1963a): Composition of Athabasca bitumen fractions as determined by structural-group analysis methods; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 101-108.
- (1963b): A study of the oil component of the Athabasca bitumen; Jour. Inst. Petroleum, Vol. 49, p. 345-352.
- Boyle, F. A. (1959): Treatment of underground formations; U.S. Pat. 2,908,641.
- Bredvold, L. M. (1951): Mass movement of material in open pit iron ore mines; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 108-120.
- Brese, W. G. (1963): Outlook for the Alberta sulphur industry; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 231-238.
- Brooks, B. T. (1949): Active-surface catalysts in formation of petroleum - II; Bull. Am. Assoc. Petroleum Geol., Vol. 33, No. 9, p. 1600-1612.
- (1952): Evidence of catalytic action in petroleum formation; Ind. Eng. Chem., Vol. 44, p. 2570-2577.

- Bruce, W. A. (1957): Method of initiating combustion in an oil reservoir; U.S. Pat. No. 2,796,132.
- Bruce, W. R. and Hodgson, G. W. (1951): Flow characteristics of sand suspensions; Oil in Canada, Vol. 3, No. 51, p. 4490.
- Bruce, W. R., Hodgson, G. W. and Clark, K. A. (1951): Flow characteristics of sand suspensions; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 237-247.
-
- (1952): Hydraulic transportation of oil-sand tailings in small diameter pipes; Trans. Can. Inst. Min. Met., Vol. 55, p. 422-426.
- Bulat, T. J., Logan, J. R. and Kusy, P. F. (1962): Oil separation process (ultrasonic); U.S. Pat. 3,017,342.
- Burwash, R. A. (1957): Reconnaissance of subsurface Precambrian of Alberta; Bull. Am. Assoc. Petroleum Geol., Vol. 41, No. 1, p. 70-103.
- Butler, R. M., Tiedje, J. L. and Bichard, J. A. (1963): Treating Athabasca sands utilizing a flotation gas; Can. Pat. 675,507.
- Bywater, W. McK. (1939): Method for digesting solid carbonaceous minerals; U.S. Pat. 2,174,184.
- Camsell, C. and Malcolm, W. (1921): The MacKenzie River Basin; Geol. Surv. Can. Mem. 108, 151 pages.
- Canada, Government (1949): Drilling and sampling of bituminous sands of northern Alberta, Results of Investigations 1942-1947, 3 volumes, Can. Mines Branch Rept. 826.
- Canadian Chemical Processing Industries(1952a): Canadian firms tackle Alberta Oil Sands, Vol. 36, No. 4, p. 10-12.
-
- (1952b): How the economic "if" was taken out of the Tar Sands, Vol. 36, No. 4, p. 52-54.
-
- (1964): Tar sands: big profits for Sun Oil?; Vol. 48, No. 8, p. 40-45.
- Carpenter, P. G. (1959): Recovery of hydrocarbons from oil-bearing strata; U.S. Pat. No. 2,880,802.
- Carrigy, M. A. (1959a): Geology of the McMurray formation part III. General geology of the McMurray area; Res. Coun. Alberta, Mem. 1, 130 pages.

- (1959b): The significance of a grain size classification of the sands of the McMurray formation, Alberta; Proc. Fifth World Petroleum Congr., Vol. 1, p. 575-590.
- (1962a): Effect of texture on the distribution of oil in the Athabasca oil sands, Alberta, Canada; Jour. Sed. Petrology, Vol. 32, No. 2, p. 312-325.
- (1962b): Bibliography of the Athabasca Oil Sands, Alberta; Res. Coun. Alberta Prelim. Rept. 62-7, 66 pages.
- (1963a): Petrology of coarse-grained sands in the lower part of the McMurray Formation; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 43-54.
- (1963b): Criteria for differentiating the McMurray and Clearwater Formations in the Athabasca Oil Sands; Res. Coun. Alberta Bull. 14, 32 pages.
- (1963c): Paleocurrent directions from the McMurray Formation; Bull. Can. Petroleum Geol., Vol. 11, No. 4, p. 389-395.
- (1963d): Ed. K. A. Clark Volume; Res. Coun. Alberta, Edmonton, 241 pages.
- Carrigy, M. A. and Zamora, W. J. (1960): The Athabasca Oil Sands; Oil Fields of Alberta, Alberta Soc. Petroleum Geol., Calgary, p. 38-49.
- Carson, R. E. and Booth, F. L. (1952): Natural gas requirements for processing Alberta bituminous sands; unpublished manuscript, Can. Mines Branch, Fuel Res. Lab., 8 pages.
- Champlin, J. B. F. and Dunning, H. N. (1958): A geochemical investigation of the Athabasca bituminous sand; Am. Chem. Soc. Div. Pet. Chem., Symp. 3, No. 4, p. C 17-23.
- (1960): A geochemical investigation of the Athabasca bituminous sands; Econ. Geol., Vol. 55, p. 797-804.
- Chandrasekavan, K. and Weingaertner, E. (1956): Application of the phase-exchange method to demineralization of Athabasca tar sands; Jour. Indian Inst. Sci., Vol. 38A, p. 169-176.

- Cities Service Athabasca Inc. (1962): Application under Part VI A of the Oil and Gas Conservation Act by Cities Service Athabasca Inc., Imperial Oil Limited, Richfield Oil Corporation and Royalite Oil Company Limited, May 9, 1962; amended to November 15, 1962, 103 pages.
- Clapp, F. G. and Huntley, L. G. (1913): Petroleum and natural gas resources of Canada; Can. Dept. Mines, Summ. Rept. 1912, p. 48-57.
- Clark, K. A. (1921): The McMurray tar sands; Can. Min. Jour., Vol. 42, No. 48, p. 943-944.
- (1922): The bituminous sand and its commercial development; Res. Coun. Alberta, Rept. 5, 1921, p. 43-59.
- (1923): The bituminous sands of northern Alberta, Their separation and their utilization in road construction; Res. Coun. Alberta, 1922, Rept. 8, p. 42-58.
- (1924): Bituminous sands of northern Alberta; Res. Coun. Alberta, Rept. 10, 1923, p. 59-72.
- (1928a): The availability of the Alberta bituminous sands for production of fuel oil; Trans. Fuel Conf., World Power Conf., London, 1928, Vol. 1, p. 581-584.
- (1928b): Bituminous treatment of gravel roads; Res. Coun. Alberta, Rept. 22, 1927, p. 42-48.
- (1928c): Process and apparatus for separating and treating bituminous sand; Can. Pat. 289,058.
- (1929a): Bituminous sands of Alberta; Pt. III Utilization; Res. Coun. Alberta, Rept. 18, 33 pages.
- (1929b): Asphalt emulsion and gravel road treatment; Res. Coun. Alberta, Rept. 24, 1928, p. 39-48.
- (1930): The separation of the bitumen from Alberta bituminous sands; Can. Min. Met. Bull., No. 212, p. 1385-1395.
- (1931a): Process and apparatus for separating and treating bituminous sands; U.S. Pat. 1,791,797.
- (1931b): Separation of bitumen from bituminous sands; Nature, Vol. 127, p. 199.

- (1935): Recovery of oil from bituminous sands in northern Alberta; *National Petroleum News*, Vol. 27, No. 27, p. 30, 32-36.
- (1944a): Hot-water separation of Alberta bituminous sand; *Trans. Can. Inst. Min. Met.*, Vol. 47, p. 257-274.
- (1944b): Some physical properties of a sample of Alberta bituminous sand; *Can. Jour. Res.*, Vol. 22F, p. 174-180.
- (1945a): Asphaltic road oils from Alberta bituminous sand; *Can. Chem. Process Inds.*, Vol. 29, p. 616-617.
- (1945b): Bituminous Sands of Alberta; *Oil Weekly*, Vol. 118, No. 11, p. 46-51.
- (1948a): The oil-sand separation plant at Bitumount; *Western Miner*, Vol. 21, No. 8, p. 131-134.
- (1948b): Extracting oil from bituminous sands; Canadian Patent 448,231.
- (1949): The Athabasca tar sands; *Scientific American*, Vol. 181, No. 5, p. 52-55.
- (1950): The hot water washing method for the recovery of oil from Alberta tar sands; *Can. Oil Gas Ind.*, Vol. 3, No. 6, p. 46-49.
- (1951a): Guide to the Alberta oil-sands area along the Athabasca River between McMurray and Bitumount and to the oil-sand separation plant of the Alberta Government; *Proc. Athabasca Oil Sands Conf. Oil Sands Project*, Govt. Alberta, Edmonton, 18 pages.
- (1951b): New technique taps Athabasca tar sands; *World Oil*, Vol. 132, No. 2, p. 205-208.
- (1951c): Commercial development feasible for Alberta's bituminous sands; *Can. Oil Gas Ind.*, Vol. 4, No. 10, p. 25-29.
- (1951d): Athabasca bituminous sands; *Fuel*, Vol. 30, p. 49-53.
- (1951e): Guide to the Alberta oil-sands area along the Athabasca River between McMurray and Bitumount and to the oil-sand separation plant of the Alberta Government; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 343-366.

- (1955): Athabasca Oil Sands; Part of Govt. Alberta brief for Gordon Royal Commission.
- (1957a): The Athabasca oil sands; Edmonton Geol. Soc. Quart., Vol. 1, No. 1, p. 3.
- (1957b): The Athabasca oil sands; unpublished manuscript; Res. Coun. Alberta, Edmonton.
- (1957c): Bulk densities, porosities and liquid saturations of good grade Athabasca oil sands; Res. Coun. Alberta, Mimeographed Circ. 22, 22 pages.
- (1959a): Permeabilities of the Athabasca Oil Sands; Trans. Can. Inst. Min. Met., Vol. 63, p. 151-156.
- (1959b): Monthly analyses of Athabasca river water, sampled at and near McMurray, Alberta; Res. Coun. Alberta, Mimeo. Circ. No. 28.
- Clark Volume (1963): A collection of papers on the Athabasca Oil Sands presented to K. A. Clark on the 75th anniversary of his birthday, M. A. Carrigy Ed., Res. Coun. Alberta, Edmonton, 241 pages.
- Clark, K. A. and Alexander, E. L. (1951): Some laboratory results related to mining oil sands by block caving; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 158-161.
- Clark, K. A. and Blair, S. M. (1925): The bituminous sands of northern Alberta; Res. Coun. Alberta, Rept. 12, 1924, p. 46-65.
- (1926): Bituminous sand separation; Earth road treatments; Res. Coun. Alberta, Rept. 16, 1925, p. 47-61.
- (1927a): Bituminous sand separation; cracking tests on McMurray bitumen and on Wainwright crude oil. Bituminous sands, rock asphalts and road oiling in the United States; Res. Coun. Alberta, Rept. 20, 1926, p. 39-50.
- (1927b): The bituminous sands of Alberta Pt. I Occurrence, Pt. II Separation, Res. Coun. Alberta, Rept. 18, 1927, 74 and 26 pages.
- Clark, K. A. and Donvito, S. (1943): Asphaltic road oils from Abasand diluted crude; unpublished manuscript, Res. Coun. Alberta, Edmonton, 22 pages.

- Clark, K. A. and Pasternack, D. S. (1930): Separation plant at Dunvegan yards; Separation plant at Waterways; Laboratory studies; Res. Coun. Alberta, Rept. 25, 1929, p. 48-60.
- _____ (1931a): Operation of the separation plant on the Clearwater River, Waterways; Res. Coun. Alberta, Rept. 26, 1930, p. 41-62.
- _____ (1931b): Developing the use of bituminous sands; Contract Record Eng. Rev. Vol. 45, p. 1270-1273, 1489-1492.
- _____ (1932): Hot water separation of bitumen from Alberta bituminous sand; Ind. Eng. Chem., Vol. 24, p. 1410-1416.
- _____ (1947): Elimination of water from wet crude oil obtained from bituminous sand by the hot water washing process, Pt. I, Continuous settling at atmospheric pressure; Can. Chem. Process. Inds., Vol. 31, p. 1007-1011.
- _____ (1948): Elimination of water from wet crude oil obtained from bituminous sand by the hot water washing process. Pt. II, Continuous settling under pressure; evaporation; Can. Chem. Process. Inds., Vol. 32, p. 32-36.
- _____ (1949): The role of very fine mineral matter in the hot water separation process as applied to Athabaska bituminous sand; Res. Coun. Alberta, Rept. 53, 22 pages.
- Clark, K. A. and Shea, G. B. (1954): Tar sands; Encyclopedia of Chemical Technology, Vol. 13, p. 633-645.
- Clark, L. (1962): Hot water oil sand separation process; U.S. Pat. 3,052,621.
- Clarke, N. S. (1926): Process for the separation of oil from oil sands and other like material; U.S. Pat. 1,592,179.
- Coogan, J. (1924): Apparatus and method of extracting the petroleum content from petroleum bearing sand or shale; U.S. Pat. 1,487,541.
- Corbett, C. S. (1955): In situ origin of McMurray oil of northeastern Alberta and its relevance to general problem of origin of oil; Bull. Am. Assoc. Petroleum Geol., Vol. 39, No. 8, p. 1601-1649.

- Cottrell, J. H. (1963): Development of an anhydrous process for oil-sand extraction; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 193-206.
- Coulson, G. R. (1953): Process for separating oil from bituminous sand shales, etc., Can. Pat. 491,955.
- (1956): Recovery of crude oil from bituminous sands and shales; German Pat. 945,586.
- (1958): Separation of oil from bituminous sands shales, etc.; U.S. Pat. 2,825,677.
- (1959): Extraction of oil from shales and like oil bearing material; U.S. Pat. 2,911,349.
- Coulson, G. R. and Clark, L. (1959): Recovery of oil from oil bearing sands; U.S. Pat. 2,885,339.
- Crawford, P. B. (1955): Recovery by combustion of petroleum oil from partially depleted subterranean reservoirs; U.S. Pat. 2,722,277.
- (1957): Oil recovery from partially depleted reservoirs; U.S. Pat. 2,804,146.
- Crickmay, C. H. (1954): Paleontological correlation of Elk Point and equivalents; in Ralph Leslie Rutherford Memorial Volume, Western Canada Sedimentary Basin, Symp., Amer. Assoc. Petroleum Geol., Tulsa, p. 143-148.
- (1957): Elucidation of some western Canada Devonian formations; published by the author, Imperial Oil Ltd., Calgary, 15 pages.
- Davis, C. M. (1951a): Electrovolatilization of oil in situ; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 141-152.
- (1951b): Athabasca oil, in situ recovery by electrovolatilization; Can. Oil and Gas Ind., Vol. 3, No. 11, p. 54-55.
- Dawson, G. M. (1897): Boring at Athabasca Landing; Geol. Surv. Can. Ann. Rept., 1895, Vol. 8, Pt. A, p. 8-16.
- (1898): Boring at Athabasca Landing; Geol. Surv. Can. Ann. Rept. 1896, Vol. 9, Pt. A, p. 13-18.

————— (1899): Experimental borings in northern Alberta; Geol. Surv. Can. Ann. Rept. 1897, Vol. 10, Pt. A, p. 18-27.

————— (1901): Experimental borings in northern Alberta and Athabasca; Geol. Surv. Can. Ann. Rept., 1898, Vol. 11, Pt. A, p. 28-34.

————— (1902): Experimental borings in northern Alberta; Geol. Surv. Can. Summ. Rept. 1899, Vol. 12, Pt. A, p. 11-15.

Day, D. T. (1923): Process for the combined solvent and destructive distillation treatment of oil containing earthy material; U.S. Pat. 1,447,297.

Djingheuzian, L. E. (1950a): The cold-water method applied to separation of oil from Alberta bituminous sands; Can. Oil and Gas Ind., Vol. 3, No. 2, p. 32-34.

————— (1950b): Pilot plant investigation on cold water separation of bitumen from Alberta tar sands; unpublished manuscript, Can. Mines Branch, Rept. MD 70, 85 pages.

————— (1951a): Cold-water method of separation of bitumen from Alberta bituminous sand; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 185-199.

————— (1951b): Cold-water separation; Oil in Canada; Vol. 3, No. 51, p. 4486-4487.

————— (1952a): Cold water separation process; Trans. Can. Inst. Min. Met., Vol. 55, p. 1-14.

————— (1952b): Preliminary notes on tailing disposal at a plant treating, 20,000 to 100,000 cubic yards of Alberta bituminous sand per day; Can. Mines Branch, Fuels Div., Mimeographed report.

————— (1953): Tailing disposal problems of Alberta tar sands; Can. Min. Jour., Vol. 74, No. 5, p. 69-75.

Djingheuzian, L. E. and Warren, T. E. (1951): A study of cold-water separation of bitumen from Alberta bituminous sand on a pilot-plant scale; Can. Jour. Techn., Vol. 26, p. 170-189.

Dolbear, S. H. (1924): Method of concentrating oil shales; U.S. Pat. 1,510,983.

- Doscher, T. M. and Reisberg, J. (1959): Recovery of oil from tar sands; U.S. Pat. 2,882,973.
- Doscher, T. M., Labelle, R. W., Sawatsky, L. H. and Zwicky, R. W. (1963): Steam-drive — a process for in-situ recovery of oil from the Athabasca Oil Sands; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 123-141.
- Dyck, W. J. (1944): Rapid laboratory and field method for the determination of bitumen content of bituminous sands; Can. Bureau Mines, Memorandum Ser., No. 87, 9 pages.
- Egloff, G. (1937): Treatment of hydrocarbons; U.S. Pat. 2,091,354.
- Egloff, G. and Morrell, J. C. (1926): The cracking of bitumen from Canadian Alberta Tar Sands; Trans. Amer. Inst. Chem. Engineers, Vol. 18, p. 347-363.
- (1927a): Cracking of bitumen from tar sand; Oil and Gas Jour., Vol. 25, No. 32, p. 192.
- (1927b): Cracking of bitumen derived from Alberta tar sands; Can. Chem. Met., Vol. 11, p. 33.
- Elkins, L. E. (1956): Oil production from bituminous sands; U.S. Pat. 2,734,579.
- Ellison, A. H. (1957): Some operational notes for the McMurray area; Jour. Alberta Soc. Petroleum Geol., Vol. 5, No. 5, p. 107-108.
- (1959): Evidence of supersaturated zones in the Athabasca oil sands; Jour. Alberta Soc. Petroleum Geol., Vol. 7, No. 8, p. 177-178.
- Ells, S. C. (1914a): Summary report on bituminous sands of northern Alberta; Can. Mines Branch, Summ. Rept. 1913, Rept. 285, p. 54-62.
- (1914b): Preliminary report on the bituminous sands of northern Alberta; Can. Mines Branch, Report 281, 88 pages.
- (1915a): Notes on clay deposits near McMurray, Alberta; Can. Mines Branch, Bull. 10, 15 pages.
- (1915b): Bituminous sands of northern Alberta; Can. Mines Branch, Summ. Rept. 346, 1914, p. 60-73.

- (1916a): Investigation of bituminous sands of northern Alberta; Can. Mining Jour., Vol. 37, p. 73-74.
- (1916b): Investigations of bituminous sands of northern Alberta; Can. Mines Branch, Rept. 421, Summ. Rept. 1915, p. 67-76.
- (1917a): Bituminous sands of northern Alberta; Trans. Can. Inst. Min. Met., Vol. 20, p. 447-459.
- (1917b): Investigation of bituminous sands of northern Alberta; Can. Mines Branch, Rept. 454, Summ. Rept. 1916, p. 56-58.
- (1919): The bituminous sands of northern Alberta; Geol. Mag. New Ser., Vol. 6, p. 142.
- (1922): Bituminous sands of Alberta; Can. Mines Branch, Rept. 574, Summ. Rept. 1920, p. 19-22.
- (1924a): Bituminous sands of northern Alberta; Can. Mines Branch, Rept. 605, Summ. Rept. 1922, p. 44-46.
- (1924b): Extent and characteristics of northern Alberta bituminous sands; National Petroleum News, Vol. 16, No. 15, p. 69-73.
- (1924c): Bituminous sands and their use for road surfacing material II; National Petroleum News, Vol. 16, No. 17, p. 75-80, 82.
- (1924d): Bituminous sands of northern Alberta; Can. Mines Branch, Rept. 625, 35 pages.
- (1924e): Mineral resources and the mining industry, 1923 III, Bituminous sands of northern Alberta; Can. Mines Branch, Rept. 616, p. 4-11.
- (1924f): Bituminous sands of Alberta; Can. Min. Jour., Vol. 45, p. 298-304 and 400-403.
- (1924g): The bituminous sands of northern Alberta; Can. Min. Jour., Vol. 10, p. 358-359, p. 710-717.
- (1924h): Bituminous sands of northern Alberta; Petroleum World, Vol. 21, p. 152.
- (1926): Bituminous sands of northern Alberta; Occurrence and economic possibilities; Report on investigations to the end of 1924; Can. Mines Branch, Rept. 632, 239 pages.

- (1927): Use of Alberta bituminous sands for surfacing highways; Can. Mines Branch, Rept. 684, 31 pages.
- (1928a): Bituminous sands of northern Alberta; Can. Inst. Min. Met. Trans., Vol. 30, p. 646-670. Also 2nd Triennial Empire Min. Met. Congr. Canada 1927, Proc. Pt. 3, p. 130-154.
- (1928b): Investigation of mineral resources and the mining industry, 1927, Pt. I, Bituminous sands of northern Alberta experimental drilling and paving operations, 1927; Can. Mines Branch, Rept. 694, 45 pages.
- (1929): Core drilling bituminous sands of northern Alberta; Can. Mines Branch, Rept. 710, 26 pages.
- (1930): Bituminous sands of northern Alberta, operations during 1929; Can. Mines Branch, Rept. 719, p. 28-42.
- (1931a): Bituminous sands of northern Alberta operations during 1930; Can. Mines Branch, Rept. 723, p. 1-11.
- (1931b): Fossil wood discovered in Alberta bituminous sands; Can. Min. Jour., Vol. 52, No. 7, p. 171-172.
- (1932a): Recent progress in the commercial separation of bitumen from bituminous sand; Can. Mines Branch, Rept. 727, Pt. VI, p. 135-139.
- (1932b): Estimated cost of producing solid and liquid hydrocarbons from bituminous sand; Can. Mines Branch, Rept. 727, p. 140-145.
- (1932c): Exploration of bituminous sand areas in northern Alberta; Can. Mines Branch, Rept. 727, p. 107-134.
- (1934): Some economic aspects of the bituminous sands of northern Alberta; Can. Mines Branch, Rept. 735, p. 10-29.
- (1936): Bituminous sands in northern Alberta; Min. Mag., Vol. 54, p. 329-341.
- (1942): Research touches the north; Canadian Geographical Jour., p. 256-267.
- (1962): Recollections of the development of the Athabasca Oil Sands; Can. Mines Branch, Information Circ., IC 139, 114 pages.

- Ells, S. C. and Swinnerton, A. A. (1937): Bituminous sands of Alberta; Can. Inst. Min. Met., Vol. 40, p. 629-648.
- Eyre, R. T. (1957): Recovery of oil from bituminous sands; U.S. Pat. 2,790,750.
- Eurenius, M. O. (1959): Sätt för upphettning in situ av i marken förekommande avalagringar, företrädesvis bränsle förande sådana; Swedish Pat. 168,683.
- (1959): Underground combustion of liquid or gaseous fuels; Swedish Pat. 168,683.
- Falconer, W. L. (1951a): Stratigraphy of McMurray formation; Oil in Canada, Vol. 3, No. 50, p. 4440-4443.
- (1951b): Stratigraphy of McMurray formation; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 26-29.
- Fawcett, T. (1889): Exploratory survey of Athabasca and Churchill rivers; Rept. Dept. Interior Can., 1888, p. 72-82.
- Ferguson, J. C. and Adkins, W. E. (1952): Apparatus for the recovery of tar sands; Can. Pat. 488,928.
- Fischer, P. W., Kenny, V. and Scheffel, J. W. (1959): Recovery of hydrocarbons from tar sand; U.S. Pat. 2,903,407.
- Fitzsimmons, R. C. (1953): Process for recovering bitumen from tar sands; Can. Pat. 493,081.
- Franklin, John (1828): Narrative of a second expedition to the shores of the polar sea in the years 1825, 1826 and 1827, including an account of the progress of a detachment to the eastward by John Richardson; John Murray, London, 477 pages.
- Fraser, A. W. (1895): Report on boring at Athabasca Landing, Alberta; Geol. Surv. Can., Summ. Rept. 1894, Ann. Rept. 7, Pt. A, p. 6-14.
- Friedman, L. D. (1963): Method for recovering oil from oil-bearing minerals; U.S. Pat. 3,074,877.
- Fyleman, M. E. (1921): A process for separating mineral oils or the like from sand or rock; U.K. Pat. 163,519.

- (1922): Separation of adherent oil or bitumen from rock; Jour. Soc. Chem. Ind., Vol. 41, p. 14T-16T.
- (1927): Process for separating mineral oils or the like from sand or rock; U.S. Pat. 1,615,121.
- Gallup, W. B. (1960): Current exploratory techniques in the Athabasca bituminous sands area; Trans. Can. Inst. Min. Met., Vol. 63, p. 157-161.
- Garland, G. D. and Bower, M. E. (1959): Interpretation of aeromagnetic anomalies in northeastern Alberta; Proc. 5th World Petroleum Congr., Vol. 1, p. 787-800.
- Garrison, A. D. and Kunetka, R. E. (1959): In situ combustion; U.S. Pat. 2,871,942.
- Gershinowitz, H. (1958): Present and future sources and compositions; in Advances in Petroleum Chemistry and Refining, Vol. 1, p. 49-77, Interscience, New York, 641 pages.
- Gibbon, A. (1957): Is this the answer to the Athabasca tar sand riddle; World Oil, Dec. 1957, p. 171-177.
- Gilmore, R. E., Rosewarne, P. V. and Swinnerton, A. A. (1926): Canadian shale oil and bitumen from bituminous sands as sources of gasoline and fuel by pressure cracking; Can. Mines Branch, Invest. of Fuel and Fuel Testing, 1926, Rept. 689.
- Gilmore, R. E., Swinnerton, A. A. and Connell, G. P. (1929): The assay of bituminous sands; Can. Mines Branch, Invest. of Fuel and Fuel Testing, Rept. 696, 1927, p. 83-103.
- Gishler, P. E. (1949): The fluidization technique applied to direct distillation of oil from bituminous sand; Can. Jour. Res., Vol. 27F, p. 104-111.
- Gishler, P. E. and Peterson, W. S. (1949): The fluidized solids technique applied to the production of oil from Alberta bituminous sand; Can. Oil and Gas Ind., Vol. 3, No. 1, p. 26-30.
- (1956): Treatment of bituminous sand; Can. Pat. 530,920.
- Glass, K. G. (1960): Extracting oil from oil-bearing sands; Can. Pat. 629,047.

- Glinka, C. (1959): Method of extraction of oil from oil-containing minerals; U.S. Pat. 2,881,126.
- Goodman, A. J. (1935): Notes on the petroleum geology of Western Canada; *Inst. Petroleum Techn.*, Vol. 21, p. 221-273.
- Goodspeed, F. E. and Montgomery, D. S. (1962): The determination of methyl and methylene groups in the oil and resin fractions of Athabasca bitumen using infrared spectroscopy; *Dept. Mines, Techn. Surv., Mines Branch Res. Rept. 98*, 25 pages.
- Gordon, A. G. (1932): The anatomical structure of Mesozoic plants from the bituminous sands of the McMurray formation; unpublished M.Sc. thesis, Univ. of Alberta, Edmonton.
- Greiner, H. R. (1956): Methy dolomite of northeastern Alberta; Middle Devonian reef formation; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 40, No. 9, p. 2057-2080.
- Guseinov, É. A. (1958): Processed oil-bearing sand waste as raw material for the manufacture of building materials; *Materialy Ob'edin Nauchn. Sesii. Inst. Stroit. Materialov i Sooruzh. Zakavkazsk. Resp. Akad. Nauk. Gruz. SSR. Inst. Stroit. Dela*, p. 133-142. Pub. 1961. [Chem. abstr. 12547d (1962)].
- Gussow, W. C. (1955): Time and migration of oil and gas; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 39, No. 5, p. 547-574.
- (1956): Athabasca bituminous sands; 20th Int. Geol. Cong. Mexico, Vol. 3, p. 68-70.
- Haanel, B. F. and Gilmore, R. E. (1933): Experiments on the hydrogenation of Alberta bitumen and on the effects of pressure on the pyrolysis of methane; *Can. Mines Branch, Rept. 725*, p. 112-114.
- Haensel, V. (1956): Separating and cracking of oil from oil-bearing sands; U.S. Pat. 2,733,193.
- Haliburton, J. (1947): Liquid diffusion in porous media, with specific reference to the Athabasca tar sands; unpublished M.Sc. thesis, University of British Columbia, Vancouver, 19 pages.
- Hall, H. H. (1951a): Pipeline transport from oil sands; *Oil in Canada*, Vol. 3, No. 50, p. 4460-4461.
- (1951b): Pipelines from the bituminous sands of Alberta; *Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton*, p. 330-333.

- Hall, P. B. (1951a): Coring bituminous sands; *Oil in Canada*, Vol. 3, No. 50, p. 4454.
- (1951b): Coring of the bituminous sands in the Fort McMurray district of Alberta; *Proc. Athabasca Oil Sands Conf. Govt. Alberta, Edmonton*, p. 101-107.
- Hampton, W. H. (1930): Art of treating shale or the like; U.S. Pat. 1,778,515.
- Hardel, J. A. (1924): Les grès bitumineux de Madagascar; *Chimie et Industrie*, Vol. 11, p. 31-44.
- Hardy, R. M. and Hemstock, R. A. (1963): Shearing strength characteristics of Athabasca oil sands; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 109-122.
- Hartley, F. L. and Brinegar, C. S. (1957): Oil shale and bituminous sand; *Sci. Monthly*, Vol. 84, p. 275-289.
- Heilman, W. O. and Ogorzaly, H. J. (1955): Underground retorting for secondary oil recovery; U.S. Pat. 2,718,263.
- Hemminger, C. E. (1960): Water washing of tar sands; U.S. Pat. 2,940,919.
- Hill, T. W. (1952): Electro-thermal recovery of petroleum; *Producers Monthly*, Vol. 16, No. 11, p. 14-20.
- Hitchon, B. (1963): Composition and movement of formation fluids in strata above and below the pre-Cretaceous unconformity in relation to the Athabasca Oil Sands; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 63-74.
- Hitzman, D. O. (1959): Recovery of petroleum from oil sands and the like; U.S. Pat. 2,907,389.
- Hodgson, G. W. (1954a): The McMurray oil field; *Alberta Soc. Petroleum Geol., News Bull.*, Vol. 2, No. 3, p. 1-3.
- (1954b): Vanadium, nickel and iron trace metals in crude oils of Western Canada; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 38, No. 12, p. 2537-2554.
- (1959): Tar sands; *Petroleum Refiner*, Vol. 38, No. 1, p. 199-200.

- Hodgson, G. W., Matchen, B., Peterson, W. S. and Gishler, P. E. (1952): Oil from Alberta bitumen. Simultaneous dehydration and coking using fluidized solids; *Ind. Eng. Chem.*, Vol. 44, p. 1492-1496.
- Hodgson, G. W., Peake, E. and Baker, B. L. (1963): The origin of petroleum porphyrins: the position of the Athabasca Oil Sands; in K. A. Clark Volume, *Res. Coun. Alberta*, Edmonton, p. 75-100.
- Hodgson, G. W., Peterson, W. S. and Gishler, P. E. (1951): The flash distillation of wet bituminous sand oil in a fluidized solids still; unpublished manuscript, *Nat. Res. Coun.*, Ottawa.
- Hoffman, G. C. (1883): Chemical contributions to the geology of Canada from the Laboratory of the Survey; *Geol. Surv. Can. Rept. Prog.* 1880-1882, p. 3H.
- Holloway, H. L. (1960): Oil sands of Alberta; *Min. Mag.* Vol. 102, p. 337.
- Hopper, D. A. (1945): A liquid diffusion in porous media referring in particular to the Athabasca tar sands; unpublished M.Sc. thesis, Univ. of British Columbia, Vancouver.
- Horwitz, W. (1924): Process for the recovery of petroleum; U.S. Pat. 1,520,752.
- Hoskins, A. D. (1964): How hydrogen will be used to upgrade Athabasca tar to sweet crude oil; *Oil and Gas Journal*, May 18, 1964, Vol. 62, No. 20, p. 122-124.
- Hubbard, R. L. and Stanfield, K. E. (1949): Laboratory study of asphalt from bitumens and bituminous sandstone; U.S. Bureau of Mines, *Rept. Invest.*, No. 4523, 22 pages.
- Hume, G. S. (1924): Clay deposits on Athabaska River, Alberta; *Geol. Surv. Can.*, *Summ. Rept.* 1923, Pt. B, p. 16-20.
- (1933): Oil and gas in Western Canada; *Geol. Surv. Can.*, 2nd Ed., *Econ. Geol. Ser.*, No. 5, p. 229-237.
- (1944): Petroleum Geology of Canada; *Geol. Surv. Can.*, *Econ. Geol. Ser.* No. 14, p. 30-34.
- (1947a): Results and significance of drilling operations in the Athabasca bituminous sands; *Trans. Can. Inst. Min. Met.*, Vol. 50, p. 298-333.

- (1947b): The Interior Plains, in *Geology and Economic Minerals of Canada*, 3rd Ed., Geol. Surv. Can., Econ. Geol. Ser., No. 1, p. 189-219.
- (1951a): Possible Lower Cretaceous origin of bitumen in bituminous sands of Alberta; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 66-75.
- (1951b): Possible Lower Cretaceous origin; *Oil in Canada*, Vol. 3, No. 50, p. 4450.
- (1951c): Outline of drilling program; *Oil in Canada*, Vol. 3, No. 50, p. 4452.
- (1951d): Drilling and sampling bituminous sand deposits; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 98-100.
- Huntley, L. G. (1915): Oil gas and water content of Dakota Sand in Canada and United States; *Trans. Am. Inst. Min. Met. Eng.*, Vol. 52, p. 329-352.
- Isbister, A. K. (1885): On the geology of the Hudson's Bay Territories, and portions of the Arctic and North-western Regions of North America; *Quart. Jour. Geol. Soc. London*, Vol. 11, p. 497-520.
- Katz, M. (1934): Alberta bitumen. 1. The composition of blown Alberta bitumen; *Can. Jour. Res.*, Vol. 10, p. 435-451.
- Kelley, A. E. (1961): Process and apparatus for bituminous sand treatment; U.S. Pat. 2,980,600.
- Kidd, F. A. (1951): Geology of the bituminous sand deposits of the McMurray area Alberta; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 30-38.
- Knight, C. (1927): Tar sand recovery process; *Can. Pat.* 278,861.
- Koch, R. L. (1957): Initiation of combustion in a subterranean petroleum reservoir; U.S. Pat. 2,818,117.
- Koch, R. L., Gleason, J. F. and Boston, W. G. (1954): In situ combustion field tested again; *Oil and Gas Jour.*, Feb., p. 102.

- Kriebel, V. K. and Seyer, W. F. (1921): A chemical investigation of the asphalt in the tar sands of northern Alberta; *Jour. Am. Chem. Soc.*, Vol. 43, Pt. 1, p. 1337-1349.
- Kuhn, C. S. and Koch, R. L. (1953): In-situ combustion - newest method of increasing oil recovery; *Oil and Gas Jour.*, Aug., p. 92-96, 113-114.
- Kupsch, W. O. (1954): Bituminous sands in till of Peter Pond Lake area, Saskatchewan; *Govt. Saskatchewan, Dept. Mineral Resources, Geol. Surv.*, Rept. 12, 35 pages.
- Langford, C. T. and Teplitz, A. J. (1931): Method for separating bitumen from bituminous sands and similar bituminous materials; *U.S. Pat.* 1,820,917.
- Latham, R. H. (1951a): Proposed mining methods; *Oil in Canada*, Vol. 3, No. 50, p. 4456-4457.
- (1951b): Proposed methods of mining Alberta oil sands; *Proc. Athabasca Oil Sands Conf.*, *Govt. Alberta, Edmonton*, p. 121-130.
- Lilge, E. O. (1945): Purification of silica sand Alberta tar sands suitable for glass manufacturing; *Can. Chem. Process. Ind.*, Vol. 29, p. 480-482.
- Link, T. A. (1931): The Alberta syncline; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 15, No. 5, p. 491-507.
- (1951a): Source of oil in oil sands of Athabasca River, Alberta, Canada; *Proc. Athabasca Oil Sands Conf.*, *Govt. Alberta, Edmonton*, p. 55-65.
- (1951b): Possible Devonian origin of bitumen; *Oil in Canada*, Vol. 3, No. 50, p. 4448.
- (1951c): Source of oil in "Tar Sands" of the Athabasca River, Alberta, Canada; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 35, No. 4, p. 854-864.
- Lipson, J. (1958): Potassium-argon dating of sedimentary rocks; *Bull. Geol. Soc. Amer.*, Vol. 69, p. 137-150.
- Ljungström, F. (1956a): Verfahren zum Gewinnen von Öl und Gas aus unkonsolidierten, bituminösen, geologischen Vorkommen; *German Pat.* 954,721.

- (1956b): Recovery of oil from shale in situ by electric heating; U.S. Pat. 2,732,195.
- (1957): Recovery of oil and gases from non-consolidated bituminous geological formations by heating treatment in situ; U.S. Pat. 2,780,450.
- Logan, H. A. (1951): Discussion of blasting; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 131-134.
- McClave, J. M. (1926): Process for the separation of hydrocarbons from earthy matter; U.S. Pat. 1,594,625.
- (1936): The recovery of oil from Athabaska Oil Sands; Can. Min. Jour., Vol. 56, Dec. 1936, p. 317-323.
- (1938): Process of separating minerals, hydrocarbons and the like from associated materials; U.S. Pat. 2,130,144.
- McConnell, R. G. (1891): Tar sands on Athabasca River; Geol. Surv. Can. Ann. Rept. 5, Part S, p. 144-147.
- (1893a): Report on a portion of the district of Athabasca, comprising the country between Peace River and Athabasca River north of Lesser Slave Lake; Geol. Surv. Can., Ann. Rept. 1890-1891, Vol. 5, Pt. D, p. 5-67.
- (1893b): Summary report on the Athabasca region, Alberta; Geol. Surv. Can., Vol. 5, Pt. 1, Ann. Rept. 1890-1891, p. 21-26 A.
- MacDonald, W. D. (1947): A comparative study of the Waterways and older formations of the McMurray area; unpublished M.Sc. thesis, Univ. Alberta, Edmonton.
- (1955): The Waterways formation in the subsurface at McMurray, Alberta; Jour. Alberta, Soc. Petroleum Geol., Vol. 3, No. 7, p. 105-107.
- McGehee, J. R. (1949): Pre-Waterways Paleozoic stratigraphy of Alberta plains; Bull. Am. Assoc. Petroleum Geol., Vol. 33, No. 4, p. 603-613.
- MacKenzie, A. (): Voyages from Montreal through the continent of North America to the frozen and Pacific oceans in 1789 and 1793; 2 Vols., Courier Press, Toronto, 355 and 360 pages, pub. (1911).

- McLearn, F. H. (1917): Athabasca River section, Alberta; Geol. Surv. Can., Summ. Rept. 1916, p. 145-151.
- (1918): Peace River Section, Alberta; Geol. Surv. Can., Summ. Rept. 1917, Pt. C, p. 14-21.
- (1932): Problems of the Lower Cretaceous of the Canadian interior; Trans. Roy. Soc. Can., Vol. 26, Sec. 4, p. 157-175.
- (1933): Pelecypods of the Lower Cretaceous Clearwater formation, Northern Alberta; Trans. Roy. Soc. Can., Ser. 3, Vol. 27, Sec. 4, p. 139-156.
- (1945): Revision of the Lower Cretaceous of the western interior of Canada; Geol. Surv. Can. Paper 44-17, 2nd Ed., 14 pages.
- McMurray Asphaltum and Oil Limited (1924): Bituminous sand research by McMurray Asphaltum Oil Limited and Draper Manufacturing Company; Can. Min. Jour., Vol. 45, p. 1270-1271.
- McNab, J. R., Smith, P. V. and Betts, R. L. (1952): The evolution of petroleum; Industrial and Eng. Chem., Vol. 44, Pt. 3, p. 2556-2563.
- McNicholas, F. S. (1951a): Block caving of oil sands; Oil in Canada, Vol. 3, No. 50, p. 4458.
- (1951b): Block caving; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 136-140.
- Macoun, J. (1877): Geological and topographical notes on the lower Peace and Athabaska Rivers; Geol. Surv. Can. Rept. Prog. 1875-1876, p. 87-95.
- Malcolm, W. (1913): Oil and gas prospects of the Northwest Provinces of Canada; Geol. Surv. Can., Mem. 29-E, 98 pages.
- Martin, L. J. (1954): Clearwater shale foraminifera, Athabasca River, Alberta; unpublished M.Sc. thesis, Univ. of Alberta, Edmonton.
- Martin, R. and Jamin, F. G. S. (1963): Paleogeomorphology of the buried Devonian landscape in northeastern Alberta; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 31-42.
- Marx, J. W. and Tek, M. R. (1958): Oil recovery by in-situ combustion; U.S. Pat. 2,853,137.

Marx, J. W., Trantham, J. C. and Schleicher, A. R. (1956): Verfahren zur Gewinnung von Kohlenwasserstoffen aus einem gasdurchlässigen unterirdischen Lager; German Pat. 1,036,432.

_____ (1956): Recovery of hydrocarbons from tar sands or viscous crude oil deposits; German Pat. 1,036,432.

Matchen, B. and Gishler, P. E. (1951): A study of the oil produced by flash distillation of bituminous sand in a fluidized bed; unpublished manuscript No. C51-51S, Nat. Res. Coun., Ottawa.

Meek, F. B. (1868): Remarks on the geology of the valley of the Mackenzie River, with figures and descriptions of the fossils from that region, in the Museum of the Smithsonian Institution, chiefly collected by the late Robert Kennicott Esq.; Trans. Chicago Acad. Sci., Vol. 1, p. 61-114.

Mellon, G. B. (1955): Age and origin of the McMurray formation; unpublished M.Sc. thesis, Univ. of Alberta, Edmonton.

Mellon, G. B. and Wall, J. H. (1956): Geology of the McMurray formation, Pts. I and II; Res. Coun. Alberta, Rept. 72, 43 pages.

Mjolsness, W. E. and Stewart, J. H. (1952): A proposed low-cost method for oil sands extraction; Northwest Oil Jour., Vol. 1, p. 101-109.

Montgomery, D. S. (1951): On the origin of the Athabasca oil; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 76-87.

_____ (1956a): Our valuable research ally in Ottawa The Fuels Division; Can. Oil and Gas Industries, Vol. 9, No. 1, p. 37-40.

_____ (1956b): The hydrodesulphurization of Coker distillate derived from Athabasca bitumen; Can. Mines Branch, Fuels Div., Rept. F.R.L. - 237, 14 pages.

Montgomery, D. S. and Pleet, M. P. (1960): The cold water process for the recovery of bitumen from bituminous sands of Alberta, III, The evaluation of surface-active agents for use in the cold-water separation process; Am. Chem. Soc. Petrol. Chem. Preprints 5, No. 2, p. A5-A13.

- Moore, T. V. and Hottel, H. C. (1958): Process for the recovery of oil from subterranean reservoirs; U.S. Pat. 2,853,136.
- Morse, R. A. (1957): Oil recovery by underground combustion; U.S. Pat. 2,793,696.
- Muir, W. L. G. (1951): Some suggestions for mining the Athabaska bituminous sands; *Western Miner*, Vol. 24, No. 10, pages 44-46.
- Nagy, B. and Lugay, J. (1960): Natural chromatography and the accumulation of petroleum in rocks in view of analyses of bitumen from the Athabasca deposit in Canada; *Experientia*, Vol. 17, p. 207-212.
- Nagy, B. and Gagnon, G. C. (1961): The geochemistry of the Athabasca petroleum deposit, I, Elution and spectroscopic analysis of the petroleum from the vicinity of McMurray, Alberta; *Geochim. et Cosmochim. Acta*, Vol. 23, p. 155-185.
- Narin, F. (1919): Art of separating the petroleum contents from petroleum-bearing sands; U.S. Pat. 1,312,266.
- Natland, M. L. (1963): Project Oilsand; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 143-155.
- Nauss, A. W. (1945): Cretaceous stratigraphy of Vermilion area, Alberta, Canada; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 29, No. 11, p. 1605-1629.
- Ness, R. C. (1951): Results of Oil Sands Project discussed by technical group, *Can. Oil and Gas Ind.*, Vol. 3, No. 1, Oct. 1951.
- Nickle, C. O. (1947): Dominion's liquid bitumen find of great importance; *Oil Weekly*, Vol. 124, No. 10, p. 23-27.
- Oil in Canada (1951): Bituminous sands stratigraphy; *Oil in Canada*, Vol. 3, No. 50, p. 4444.
- (1959): Alberta okays oil sand explosion; *Oil in Canada*, Vol. 11, No. 47, p. 14-15.
- (1963a): Well drilling feature of tar sand plan; Vol. 15, No. 13, p. 32576-32581.
- (1963b): Can-Amara to sell tar sand oil outside; Vol. 15, No. 13, p. 32562.

Oilweek (1959a): Study committee finds no danger in sands A-blast;
Oilweek, Vol. 10, No. 28, p. 20.

—————(1959b): Buried tar sand treasures still defy exploiters; Oilweek,
Vol. 10, No. 28, p. 21-23.

—————(1959c): Alberta committee urges okay for oil sands A-blast;
Oilweek, Vol. 10, No. 31, p. 18-19.

—————(1960): In situ combustion proposed for Athabasca; Vol. 11,
No. 23, p. 13-14.

—————(1963a): Oil sands breakthrough doubles world reserves; Vol. 13,
No. 49, p. 19-21.

—————(1963b): World implications for new oil sands process; Vol. 13,
No. 49, p. 22-23.

—————(1963c): How Shell's process works; Vol. 13, No. 49, p. 24-27.

—————(1964): Varying pays make for tricky Athabasca reserve
estimates; Vol. 15, No. 34, p. 25.

Oil and Gas Journal (1960): Four-Company Team Tackles Athabasca;
Oil and Gas Jour., Vol. 58, No. 3, p. 44-45.

Parker, H. W. (1959): Initiating in situ combustion in a stratum; U.S.
Pat. 2,880,803.

Pasternack, D. S. (1949): Report on operations at Bitumount during 1949;
unpublished manuscript, Res. Coun. Alberta, Edmonton.

—————(1951): Hot water separation; Oil in Canada, Vol. 3,
No. 51, p. 4485.

—————(1953): Alberta oil sands; Petroleum Engineer, Vol. 25,
No. 2, p. 58-68.

—————(1960): Petroleum substitutes from tar sands; Chem.
Engr. Prog., Vol. 56, No. 4, p. 72-75.

—————(1963): Low-ash asphalt and coke from Athabasca
oil-sands oil; in K. A. Clark Volume, Res. Coun. Alberta,
Edmonton, p. 207-229.

—————(1964): Thermal cracking of Athabasca Oil-sands oil,
Pt. I, Changes in some properties of the oil and its components;
Jour. Can. Petroleum Techn., Vol. 3, p. 39-45.

- Pasternack, D. S. and Clark, K. A. (1951): The components of the bitumen in Athabasca bituminous sand and their significance in the hot water separation process; Res. Coun. Alberta, Rept. 58, 14 pages.
- Pasternack, D. S., Hodgson, G. W. and Clark, K. A. (1951): Oil recovery from Alberta oil sands by the hot water washing method; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 200-206.
- Peck, E. B. (1949): Two-zone fluidized destructive distillation process; U.S. Pat. 2,480,670.
- Peebles, A. A. (1953): Bituminous sands of Alberta; Eng., Vol. 175, p. 229-231 and 260.
- Pelzer, H. L. (1957): Oil recovery from underground reservoirs; U.S. Pat. 2,788,071.
- Pengelley, M. (1960): The enigma of Athabasca; Imperial Oil Review, April 1960, p. 15-18.
- Perry, R. H. Jr., Green, D. W. and Campbell, J. M. (1960): Reverse combustion. A new oil recovery technique; Jour. Petroleum Techn., Vol. 12, No. 5, p. 11-12.
- Peterson, W. S. and Gishler, P. E. (1950): A small fluidized solids pilot plant for the direct distillation of oil from Alberta bituminous sands; Can. Jour. Res., Vol. 28F, p. 62-70.
- _____ (1951a): The fluidized solids technique applied to Alberta oil sands problem; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 207-236.
- _____ (1951b): Fluidized solids separation; Oil in Canada, Vol. 3, No. 51, p. 4488-4489.
- _____ (1951c): Oil from Alberta bituminous sands; Petroleum Eng., Vol. 239, No. 4, p. 66-74.
- Peterson, W. S., Keller, H., and Gishler, P. E. (1955): Fluidized solids coking of Canadian heavy crude oils; Contrib. Div. of Applied Chem., Nat. Res. Coun., Ottawa.
- Petroleum Week (1960): Mining and ore disposal complicate tar sands development; Petroleum Week, August 5, 1960, p. 20-21.

- Plewes, A. C. (1951): Removal of sulphur from Alberta bitumen; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 306-329.
- Pow, J. R., Fairbanks, G. H. and Zamora, W. J. (1963): Descriptions and reserve estimates of the oil sands of Alberta; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 1-14.
- Pratt, W. E. (1943): Oil in the earth; University of Kansas press, Lawrence, p. 41, 110 pages.
- Preble, E. A. (1908): A biological investigation of the Athabaska-Mackenzie Region; U.S. Dept. Agric. North American fauna, No. 27, p. 54-124.
- Proceedings - Athabasca Oil Sands Conference (1951): Board of Trustees Oil Sands Project, Govt. Alberta, Edmonton, 371 pages.
- Proceedings Second Athabasca Oil Sands Conference (1963): See Clark Volume.
- Quant, J. T., Schonebaum, R. C. and Tadema, H. J. (1958): Recovery of oil by underground combustion; Dutch Pat. 88,302.
- Reed, R. L., Reed, D. W., and Tracht, J. H. (1960): Experimental aspects of reverse combustion on tar sands; Jour. Petroleum Techn., Vol. 12, No. 5, p. 13-14.
- Rees, H. V. (1957): Process for the recovery of oil from oil-bearing minerals; U.S. Pat. 2,793,104.
- (1959): Process for the recovery of oil from oil-bearing minerals; U.S. Pat. 2,885,275.
- Reilly, W. J. (1925): Apparatus for separating oil from oil bearing sands and rocks; U.S. Pat. 1,529,505.
- Richardson, J. (1851): Arctic searching expedition, a journal of a boat voyage through Rupert's land and the Arctic sea, in search of the discovery ships under command of Sir John Franklin, with an appendix on the physical geography of North America; 2 vols., Longman, Brown, Green, and Longmans, London, 413 and 426 pages.
- Riecker, R. E. (1962): Hydrocarbon fluorescence and migration of petroleum; Bull. Am. Assoc. Petroleum Geol., Vol. 46, No. 1, p. 60-75.

- Rosewarne, P. V. and Connell, G. P. (1928): Report of experiments on the dehydration of bitumen emulsion from Alberta bituminous sands; Can. Mines Branch, Inv. of Fuel and Fuel Testing, Rept. 689-2, p. 96-103.
- Rosewarne, P. V. and Swinnerton, A. A. (1948): Report of laboratory investigations on the cold water separation of bitumen from Alberta bituminous sand; Can. Bureau Mines, Fuel Research Lab. Rept. 90, 12 pages.
- Rosewarne, P. V., Chantler, H. McD. and Swinnerton, A. A. (1936): Analyses of Canadian crude oils, naphthas, shale oil and bitumen; Can. Mines Branch Rept. 765, 21 pages.
- Round, G. F. (1960): The shear strength of McMurray oil sands; Trans. Can. Inst. Min. Met., Vol. 63, p. 145-150.
- Rowland, L. O. (1951): Major companies study processes for mining and treating Athabasca bituminous sands to produce good refinery charge stock; Oil in Canada, Vol. 3, No. 50, p. 4438.
- Royal Commission on the Development of Northern Alberta, Report (1958): Govt. Alberta, Edmonton, 115 pages.
- Royalite Oil Company Limited (1958): Submission to the Royal Commission on energy re Athabasca bituminous sands; unpublished manuscript, 3 pages.
- Rühl, W. (1951): Oil Mining in Germany; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 162-165.
- (1952): Die Athabasca-Oelsande-geologische technische und wirtschaftliche Entwicklung Ver. Schweizerische Petroleum-Geologen, u Ingenieure, Vol. 19, No. 57, p. 48-49.
- Ruskin, S. L. (1959): Process for recovery of petroleum (irradiation); U.S. Pat. 2,906,680.
- Russell, L. S. (1932): Mollusca from the McMurray formation of northern Alberta; Trans. Roy. Soc. Can., 3rd Ser., Vol. 26, Sec. 4, p. 37-43.
- (1964): Cretaceous non-marine faunas of northwestern North America; Roy. Ontario Museum Contrib. 61, 24 pages.
- Ryan, H. D. (1920): Process of recovering bituminous matter from shale; U.S. Pat. 1,327,572.

- Safonov, V. A., Indyukov, N. M., Loginova, S. M. and Shevtsov, I. S. (1959): Development of the technology of treating oil-bearing sands, and utilization of the oil thus produced; Sb. Tr. Inst. Neftekhim Protessov, Akad. Nauk Azerb. SSR, No. 4, p. 272-290. [Chem. abstr. No. 15721a, Vol. 56, (1962)].
- Safonov, V. A., Indyukov, N. M., Shevtsov, I. S., Markaryan, S. M. and Rustamov, M. I. (1958): Utilization of a fluidized-bed thermal conversion process for oil-bearing Kirmak sands; Sbornik Trudov, Azerbaidzhan Nauch-Issledovatel. Inst. Neftpepererabat, Prom. im. V. V. Kuibysheva, No. 2, p. 288-307. [Chem. abstr. No. 10456c, Vol. 56, (1962)].
- Salmonsson, G. J. W. (1959): Recovery of oil and gas from tar sands; U.S. Pat. 2,914,309.
- Scheffel, J. W. and Fischer, P. W. (1963): Processing of bituminous sands; U.S. Pat. 3,075,913.
- Schellhorn, H.-W. (1963): Some aspects of high-capacity production with bucket-wheel excavators in open pits; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 157-170.
- Schleicher, A. R. (1959): Oil recovery by in-situ combustion; U.S. Pat. 2,889,882.
- Schneider, K. (1924): Verfahren und Einrichtung zur Aufberetung von Ölsanden; German Pat. 402,544, Class 23, Group 1.
- Scotland, W. A. and Benthin, H. (1954): Core logs and analysis results (1952-1954); unpublished manuscript, Calvin Consolidated Oil and Gas Co., Calgary.
- Scott, J., Collins, G. A. and Hodgson, G. W. (1953): Trace metals in the McMurray oil sands and other Cretaceous reservoirs of Alberta; Can. Oil Gas Ind., Vol. 6, p. 53-55.
- _____ (1954): Trace metals in the McMurray oil sands and other Cretaceous reservoirs of Alberta; Trans. Can. Inst. Min. Met., Vol. 57, p. 34-40.
- Seyer, W. F. (1933): Conversion of fatty waxy substance into petroleum hydrocarbons; Bull. Am. Assoc. Petroleum Geol., Vol. 17, No. 1, p. 1251-1267.
- Shea, G. B. and Higgins, R. V. (1948): Laboratory study of the hot-water process for separating hydrocarbons from surface deposits of bituminous sandstones near Edna, California; U.S. Bureau Mines, Rept. of Invest. 4246, 31 pages.

- _____ (1952): Separation and utilization studies of bitumens from bituminous sandstones of the Vernal and Sunnyside, Utah, deposits; Pt. I - Laboratory hot-water separation tests; U.S. Bureau Mines, Rept. of Invest. 4871, p. 1-10.
- Shell Oil Company of Canada (1962): In the matter of the Oil and Gas Conservation Act being Chapter 63 of the statutes of Alberta, 1957, and in the matter of an application by Shell Oil Company of Canada Limited pursuant to part VI A of the said act for the approval of a scheme or operation for the recovery of oil or a crude hydrocarbon product from the oil sands, Application dated 6th September 1962, 116 pages.
- Sherborne, J. E. (1960): Apparatus for the recovery of hydrocarbons from bituminous sands; U.S. Pat. 2,921,010.
- Simm, C. N. (1956): Method of oil recovery by in situ combustion; U.S. Pat. 2,771,951.
- Simm, C. N. and DePriester, C. L. (1957): Method of re-establishing in situ combustion in petroliferous formations; U.S. Pat. 2,793,697.
- Singh, Ch. (1964): Microflora of the lower Cretaceous Mannville Group, east-central Alberta; Res. Coun. Alberta, Bull. 15, 239 pages.
- Slipper, S. E. (1935): Natural gas in Alberta; Geology of Natural Gas, Am. Assoc. Pet. Geol., Tulsa, p. 1-57.
- Smith, R. L. and Watson, K. M. (1953): Oil recovery process; U.S. Pat. 2,642,943.
- Smith, L. B., Mason, R. B., Blanding, F. H. and Hemminger, C. E. (1954): Distillation of oil-bearing minerals in two stages in the presence of hydrogen; U.S. Pat. 2,694,035.
- Smoley, E. R. and Schutte, A. H. (1951): Continuous contact coking; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 251-256.
- Sproule, J. C. (1938): Origin of McMurray oil sands, Alberta; Bull. Am. Assoc. Petroleum Geol., Vol. 22, No. 9, p. 1133-1152.
- _____ (1939): The Pleistocene geology of the Cree Lake Region, Saskatchewan; Trans. Roy. Soc. Can., 3rd Ser., Vol. 33, Sec. 4, p. 101-110.

- (1951): The McMurray formation in its relation to oil occurrences; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 6-25.
- Sproule, J. C. and Lloyd, G. V. (1963): A note on the comparison of McMurray and Melville Island oil sands; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 27-29.
- Stegemeier, R. J. and Fischer, P. W. (1960): Recovery of oil from bituminous sands; U.S. Pat. 2,924,565.
- Sterba, M. J. (1951a): Thermal coking of oil; Oil in Canada, Vol. 3, p. 4491 and 4498.
- (1951b): Thermal coking of oil from Alberta bituminous sand; Proc. Athabasca Oil Sand Conf., Govt. Alberta, Edmonton, p. 257-270.
- Stewart, G. A. (1963): Geological controls on the distribution of Athabasca oil sand reserves; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 15-26.
- Stewart, J., Fulton, S. C. and Langer, A. W. (1956): Recovery of oil from bituminous sands; U.S. Pat. 2,772,209.
- Streppel, A. (1920): Separating of oil from sand; U.S. Pat. 1,497,607.
- Swinnerton, A. A. (1944): Properties of asphalt made from Athabaska bituminous sand; Can. Bureau Mines, Memo. Ser. 88, 17 pages.
- Tadema, H. J. (1959): Petroleum production by underground combustion; U.S. Pat. 2,874,777.
- Tadema, H. J. and Quant, J. Th. (1957): Subterranean ignition of petroleum or oil residues; Dutch Pat. 85,837.
- Tanner, N. E. (1951): Government policy regarding oil-sand leases and royalties; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 169-182.
- (1952): The oil sands - waste or wealth; Northwest Oil Jour., Vol. 1, p. 99.
- Tek, M. R. and Marwil, S. J. (1959): Separation and recovery of oil from oil sands; U.S. Pat. 2,910,424.
- Tipman, E. and Hodgson, G. W. (1956): Sedimentation in emulsions of water in petroleum; Jour. Petroleum Techn., Note 366, Vol. 8, No. 9, p. 91-93.

- Trantham, J. C. and Dixon, H. O. (1959): Oil recovery by in-situ combustion; U.S. Pat. 2,889,881.
- Tyrrell, J. B. (1916): Thompson's narrative of his explorations in Western America; Champlain Soc. Toronto, Pub. 12, 582 pages.
- Vagvolgyi, A. (1964): Palynology of type McMurray Formation; M.Sc. thesis, Univ. of Alberta, Edmonton, 133 pages.
- Van Tuyl, F. M. and Parker, B. H. (1941): The time of origin and accumulation of petroleum; Colorado School of Mines Quarterly, Vol. 36, No. 2, p. 134-140.
- Voorhis, E. (1930): Historic forts and trading posts of the French regime and of the English fur trading companies; Dept. Interior, Ottawa, 188 pages.
- Walter, H. (1958): Oil recovery with in-situ combustion; U.S. Pat. 2,839,141.
- Ward, S. H. and Clark, K. A. (1947): Examination of the possibilities of water-drive as a means of recovery of oil from Alberta bituminous sand; unpublished manuscript, Res. Coun. Alberta, Edmonton, 17 pages.
- (1950): Determination of the viscosities and specific gravities of the oils in samples of Athabasca bituminous sand; Res. Coun. Alberta, Rept. 57, 22 pages.
- Warren, J. E., Reed, R. L. and Price, H. S. (1960): Theoretical considerations of reverse combustion in tar sands; Jour. Petroleum Techn., Vol. 12, No. 5, p. 14-15.
- Warren, P. S. (1933): The age of the Devonian limestone at McMurray, Alberta; Can. Field Naturalist, Vol. 47, No. 8, p. 148-149.
- (1951): Some stratigraphic features of the Upper Devonian sequence of the Canadian western plains; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 46-54.
- Warren, T. E. (1933): Report of hydrogenation and pressure cracking experiments on Alberta bitumen for the production of motor fuel; Can. Mines Branch, Rept. 725, p. 115-128.
- (1934): Report of experimental work in the hydrogenation of Canadian coal, coal tar and bitumen for the production of motor fuel; Can. Mines Branch, Rept. 737, p. 1-31.

- _____ (1950): An outline of field operations for processing Alberta bituminous sands; *Oil in Canada*, Vol. 2, No. 5, p. 24.
- _____ (1951a): The distribution of heat liberated from a well in bituminous sand; *Oil in Canada*, Vol. 3, No. 51, p. 4484.
- _____ (1951b): Distribution of heat liberated from a well in bituminous sand; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 153-157.
- Warren, T. E. and Bowles, K. W. (1934): Description of an apparatus for continuous hydrogenation and experiments on coal tar, bitumen, and suspension of powdered coal in coal tar; *Can. Mines Branch, Invest. of Fuels and Fuel Testing, 1932, Rept. 737*, p. 86-106.
- _____ (1947a): The bituminous sands of Alberta as a source of liquid fuels; *Eng. Jour.*, Vol. 30, p. 597-600.
- _____ (1947b): The bituminous sands of Alberta, Canada, as a source of liquid fuels; *Trans. Fuel Economy Conf., World Power Conf., Sec. A3, Paper No. 5*, 10 pages.
- _____ (1948): Hydrogenation of Alberta bitumen; *Can. Mines Branch, Memo. Series No. 96*, 120 pages.
- Warren, T. E., Burroughs, E. J. and Djingheuzian, L. E. (1950): The cold water method applied to separation of oil from Alberta bituminous sand; *Can. Oil Gas Ind.*, Vol. 3, No. 2, p. 32-34.
- Warren, T. E., Reed, R. L. and Price, H. S. (1960): Theoretical considerations of reverse combustion in tar sands; *Jour. Petroleum Techn.*, Vol. 12, p. 14.
- Warren, T. E., Booth, F. L., Carson, R. E. and Bowles, K. W. (1951a): Hydrogenation sulfur removal; *Oil in Canada*, Vol. 3, No. 51, p. 4492 and 4498.
- _____ (1951b): Hydrodesulfurization of coker distillate from Athabasca bitumen; *Proc. Athabasca Oil Sand Conf.*, Govt. Alberta, Edmonton, p. 289-305.

- Waterman, H. I. and Brakel, A. (1952): Report on bituminous sand of Alberta; *Ingenieur*, Vol. 64, No. 8, p. 12-24.
- Watson, K. M. (1958): Oil recovery by subsurface thermal processing; U.S. Pat. 2,825,408.
- Weingaertner, E. Von (1960): Über die Demineralisierung von Athabasca - Bitumen - Sand mit Hilfe der Phasen - Trennungsmethode; *Erdöl und Kohle*, Vol. 13, p. 549-555.
- Weingaertner, E. Von, Chandrashekar, K. and Raman, A. K. S. (1957): Anwendung der Phasen - Trennungsmethode auf die Entmineralisierung von Athabasca - Bitumen - Sand; *Erdöl und Kohle*, Vol. 10, p. 584-587.
- Wenger, W. J., Hubbard, R. L. and Whisman, M. L. (1952): Separation and utilization studies of bitumens from bituminous sandstones of the Vernal and Sunnyside, Utah, deposits, Pt. II, Analytical data on asphalt properties and cracked products of the separated bitumens; U.S. Bureau Mines Rept. Invest., 4871, p. 11-28.
- White, E. W. (1962): Screen separation of tar sand; U.S. Pat. 3,068,167.
- Whiteaves, J. F. (1891): The fossils of the Devonian rocks of the McKenzie River Basin; *Geol. Surv. Can., Contrib. to Can. Paleo.*, Vol. 1, Pt. 3, p. 197-253.
- (1893): Notes on the Ammonites of the Cretaceous rocks of the district of Athabasca, with description of four new species; *Trans. Roy. Soc. Can., Ser. 3, Vol. 10, Sec. 4*, p. 111-121.
- Wickenden, R. T. (1949): Some Cretaceous sections along the Athabasca River from the mouth of the Calling River to below Grand Rapids, Alberta; *Geol. Surv. Can., Paper 49-15*, 31 pages.
- (1951a): Lower Cretaceous stratigraphy; *Oil in Canada*, Vol. 3, No. 50, p. 4439.
- (1951b): Regional correlations of the Lower Cretaceous formations of the McMurray oil-sand area; *Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton*, p. 39-45.
- (1957): The interior plains; *Geology and Economic Minerals of Canada*, 4th Ed., *Geol. Surv. Can., Econ. Geol. Ser. 1*, p. 247-282.

- Williams, G. D. (1960): The Mannville Group Central Alberta; Ph.D. thesis, Univ. of Alberta, Edmonton, 106 pages, Appendix, 114 pages.
- Williams, G. D., Baadsgaard, H. and Steen, G. (1962): Potassium-Argon mineral dates from the Mannville group; Alberta Soc. Petroleum Geol., Vol. 10, No. 6, p. 320-325.
- Williams, M. Y. (1949): Whence the oil of the Athabasca tar sands?; Trans. Roy. Soc. Can., 3rd Ser., Vol. 43, Sec. 4, p. 149-156.

PART II

SUBJECT HEADINGS

1. HISTORY

- Boyd, M. L. and Montgomery, D. S. (1961): A study of the Athabasca bitumen from Abasand Quarry, Alberta, Canada, Pt. I. Early history, analysis of bituminous sand, and structural analysis of the asphaltene fraction; *Can. Mines Branch Res. Rept.* 78, 67 pages.
- Clark, K. A. (1957a): The Athabasca oil sands; *Edmonton Geol. Soc. Quart.*, Vol. 1, No. 1, p. 3.
- (1957b): The Athabasca oil sands; unpublished manuscript; *Res. Coun. Alberta, Edmonton.*
- Ells, S. C. (1962): Recollections of the development of the Athabasca Oil Sands; *Can. Mines Branch, Information Circ.*, IC 139, 114 pages.
- Fawcett, T. (1889): Exploratory survey of Athabasca and Churchill rivers; *Rept. Dept. Interior Can.*, 1888, p. 72-82.
- Franklin, John (1828): Narrative of a second expedition to the shores of the polar sea in the years 1825, 1826 and 1827, including an account of the progress of a detachment to the eastward by John Richardson; John Murray, London, 477 pages.
- Isbister, A. K. (1855): On the geology of the Hudson's Bay Territories, and portions of the Arctic and North-western Regions of North America; *Quart. Jour. Geol. Soc. London*, Vol. 11, p. 497-520.
- MacKenzie, A. (): Voyages from Montreal through the continent of North America to the frozen and Pacific oceans in 1789 and 1793; 2 Vols., Courier Press, Toronto, 355 and 360 pages, pub. (1911).
- Macoun, J. (1877): Geological and topographical notes on the lower Peace and Athabaska Rivers; *Geol. Surv. Can. Rept. Prog.* 1875-1876, p. 87-95.
- Meek, F. B. (1868): Remarks on the geology of the valley of the Mackenzie River, with figures and descriptions of the fossils from that region, in the Museum of the Smithsonian Institution, chiefly collected by the late Robert Kennicott Esq.; *Trans. Chicago Acad. Sci.*, Vol. 1, p. 61-114.
- Preble, E. A. (1908): A biological investigation of the Athabaska-Mackenzie Region; *U.S. Dept. Agric. North American fauna*, No. 27, p. 54-124.

- Richardson, J. (1851): Arctic searching expedition, a journal of a boat voyage through Rupert's land and the Arctic sea, in search of the discovery ships under command of Sir John Franklin, with an appendix on the physical geography of North America; 2 Vols., Longman, Brown, Green, and Longmans, London, 413 and 426 pages.
- Tyrrell, J. B. (1916): Thompson's narrative of his explorations in Western America; Champlain Soc. Toronto, Pub. 12, 582 pages.
- Voorhis, E. (1930): Historic forts and trading posts of the French regime and of the English fur trading companies; Dept. Interior, Ottawa, 188 pages.

2. GEOLOGY

- Alcock, F. J. (1920): The origin of Lake Athabaska; *Geog. Rev.*, Vol. 10, No. 6, p. 400-407.
- Allan, J. A. (1920): The mineral resources of Alberta; *Res. Coun. Alberta*, Rept. 1, p. 87-102.
- (1924): Salt well No. 2 at Waterways; *Res. Coun. Alberta*, Rept. 10, p. 48-53.
- (1929): Salt and gypsum in Alberta; *Trans. Can. Inst. of Min. Met.*, Vol. 32, p. 232-254.
- (1938): Salt deposits at McMurray, Alberta; *Trans. Can. Inst. Min. Met.*, Vol. 40, p. 614-628.
- (1943): Rock salt deposits at Waterways, Alberta; *Res. Coun. Alberta*, Rept. 34, Pt. 2, p. 40-57.
- American Association of Petroleum Geologists (1951): Symposium on possible future petroleum provinces of North America, *Amer. Assoc. Petroleum Geol.*, Tulsa, Northern Alberta Oil Sands, p. 41-44.
- Ansley, R. W. and Bierlmeier, W. G. (1963): Continuity of bedding within the McMurray Formation; in K. A. Clark Volume, *Res. Coun. Alberta*, Edmonton, p. 55-62.
- Badgley, P. C. (1952): Notes on the subsurface stratigraphy and oil and gas geology of the Lower Cretaceous series in central Alberta; *Geol. Surv. Can. Paper* 52-11, 12 pages.

- Ball, M. W. (1935): Athabaska oil sands: apparent example of local origin of oil; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 19, No. 2, p. 153-171.
- (1941): Development of the Athabaska oil sands; *Trans. Can. Inst. Min. Met.*, Vol. 44, p. 58-91.
- Bell, R. (1884): Report on part of the basin of the Athabaska River, Northwest Territory; *Geol. Surv. Can. Rept. Prog.*, 1882-83-84, Pt. cc, p. 5-35.
- (1908a): The tar sands of the Athabasca River, Canada; *Trans. Am. Inst. Min. Eng.*, Vol. 38, p. 836-848.
- (1908b): The tar sands of the Athabasca River, Canada; *Mining World*, Vol. 28, p. 753.
- (1908c): The tar sands of the Athabasca River, Canada; *Am. Inst. Min. Eng.*, Vol. B 20, p. 157-169.
- Belyea, H. R. (1952): Notes on the Devonian system of the north-central plains of Alberta; *Geol. Surv. Can. paper 52-27*, 45 pages.
- Burwash, R. A. (1957): Reconnaissance of subsurface Precambrian of Alberta; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 41, No. 1, p. 70-103.
- Camsell, C. and Malcolm, W. (1921): The MacKenzie River Basin; *Geol. Surv. Can. Mem.* 108, 151 pages.
- Canada, Government (1949): Drilling and sampling of bituminous sands of northern Alberta, Results of Investigations 1942-1947; 3 volumes, *Can. Mines Branch Rept.* 826.
- Carrigy, M. A. (1959a): Geology of the McMurray formation, Pt. III, General geology of the McMurray area; *Res. Coun. Alberta, Mem.* 1, 130 pages.
- (1959b): The significance of a grain size classification of the sands of the McMurray formation, Alberta; *Proc. Fifth World Petroleum Congr.*, Vol. 1, p. 575-590.
- (1962a): Effect of texture on the distribution of oil in the Athabasca oil sands, Alberta, Canada; *Jour. Sed. Petrology*, Vol. 32, No. 2, p. 312-325.
- (1962b): Bibliography of the Athabasca Oil Sands, Alberta; *Res. Coun. Alberta Prelim. Rept.* 62-7, 66 pages.

- (1963a): Petrology of coarse-grained sands in the lower part of the McMurray Formation; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 43-54.
- (1963b): Criteria for differentiating the McMurray and Clearwater Formations in the Athabasca Oil Sands; Res. Coun. Alberta Bull. 14, 32 pages.
- (1963c): Paleocurrent directions from the McMurray Formation; Bull. Can. Petroleum Geol., Vol. 11, No. 4, p. 389-395.
- (1963d): Ed. K. A. Clark Volume; Res. Coun. Alberta, Edmonton, 241 pages.
- Carrigy, M. A. and Zamora, W. J. (1960): The Athabasca Oil Sands; Oil Fields of Alberta, Alberta Soc. Petroleum Geol., Calgary, p. 38-49.
- Clapp, F. G. and Huntley, L. G. (1913): Petroleum and natural gas resources of Canada; Can. Dept. Mines, Summ. Rept. 1912, p. 48-57.
- Clark, K. A. (1921): The McMurray tar sands; Can. Min. Jour., Vol. 42, No. 48, p. 943-944.
- (1949): The Athabasca tar sands; Scientific American, Vol. 181, No. 5, p. 52-55.
- (1951a): Guide to the Alberta oil-sands area along the Athabasca River between McMurray and Bitumont and to the oil-sand separation plant of the Alberta Government; Proc. Athabasca Oil Sands Conf., Oil Sands Project, Govt. Alberta, Edmonton, 18 pages.
- (1951b): Athabasca bituminous sands; Fuel, Vol. 30, p. 49-53.
- (1957a): The Athabasca oil sands; Edmonton Geol. Soc. Quart., Vol. 1, No. 1, p. 3.
- (1957b): The Athabasca oil sands; unpublished manuscript; Res. Coun. Alberta, Edmonton.
- Clark, K. A. and Blair, S. M. (1925): The bituminous sands of northern Alberta; Res. Coun. Alberta, Rept. 12, 1924, p. 46-65.

- (1927): The bituminous sands of Alberta, Pt. I, Occurrence, Pt. II, Separation; Res. Coun. Alberta, Rept. 18, 1927, 74 and 26 pages.
- Clark, K. A. and Shea, G. B. (1954): Tar sands; Encyclopedia of Chemical Technology, Vol. 13, p. 633-645.
- Corbett, C. S. (1955): In situ origin of McMurray oil of northeastern Alberta and its relevance to general problem of origin of oil; Bull. Am. Assoc. Petroleum Geol., Vol. 39, No. 8, p. 1601-1649.
- Crickmay, C. H. (1954): Paleontological correlation of Elk Point and equivalents; in Ralph Leslie Rutherford Memorial Volume, Western Canada Sedimentary Basin, Symp., Amer. Assoc. Petroleum Geol., Tulsa, p. 143-148.
- (1957): Elucidation of some western Canada Devonian formations; published by the author, Imperial Oil Ltd., Calgary, 15 pages.
- Dawson, G. M. (1897): Boring at Athabasca Landing; Geol. Surv. Can. Ann. Rept., 1895, Vol. 8, Pt. A, p. 8-16.
- (1898): Boring at Athabasca Landing; Geol. Surv. Can. Ann. Rept. 1896, Vol. 9, Pt. A, p. 13-18.
- (1899): Experimental borings in northern Alberta; Geol. Surv. Can. Ann. Rept. 1897, Vol. 10, Pt. A, p. 18-27.
- (1901): Experimental borings in northern Alberta and Athabasca; Geol. Surv. Can. Ann. Rept. 1898, Vol. 11, Pt. A, p. 28-34.
- (1902): Experimental borings in northern Alberta; Geol. Surv. Can. Summ. Rept. 1899, Vol. 12, Pt. A, p. 11-15.
- Ellison, A. H. (1957): Some operational notes for the McMurray area; Jour. Alberta Soc. Petroleum Geol., Vol. 5, No. 5, p. 107-108.
- (1959): Evidence of supersaturated zones in the Athabasca oil sands; Jour. Alberta Soc. Petroleum Geol., Vol. 7, No. 8, p. 177-178.
- Ells, S. C. (1914a): Summary report on bituminous sands of northern Alberta; Can. Mines Branch, Summ. Rept. 1913, Rept. 285, p. 54-62.

- (1914b): Preliminary report on the bituminous sands of northern Alberta; Can. Mines Branch, Rept. 281, 88 pages.
- (1915a): Notes on clay deposits near McMurray Alberta; Can. Mines Branch, Bull. 10, 15 pages.
- (1915b): Bituminous sands of northern Alberta; Can. Mines Branch, Summ. Rept. 346, 1914, p. 60-73.
- (1916a): Investigation of bituminous sands of northern Alberta; Can. Mining Jour., Vol. 37, p. 73-74.
- (1916b): Investigations of bituminous sands of northern Alberta; Can. Mines Branch, Rept. 421, Summ. Rept. 1915, p. 67-76.
- (1917a): Bituminous sands of northern Alberta; Trans. Can. Inst. Min. Met., Vol. 20, p. 447-459.
- (1917b): Investigation of bituminous sands of northern Alberta; Can. Mines Branch, Rept. 454, Summ. Rept. 1916, p. 56-58.
- (1919): The bituminous sands of northern Alberta; Geol. Mag. New Ser., Vol. 6, p. 142.
- (1922): Bituminous sands of Alberta; Can. Mines Branch, Rept. 574, Summ. Rept. 1920, p. 19-22.
- (1924a): Bituminous sands of northern Alberta; Can. Mines Branch, Rept. 605, Summ. Rept. 1922, p. 44-46.
- (1924b): Extent and characteristics of northern Alberta bituminous sands; National Petroleum News, Vol. 16, No. 15, p. 69-73.
- (1924c): Bituminous sands and their use for road surfacing material II; National Petroleum News, Vol. 16, No. 17, p. 75-80, 82.
- (1924d): Bituminous sands of northern Alberta; Can. Mines Branch Rept. 625, 35 pages.
- (1924e): Mineral resources and the mining industry, 1923, III, Bituminous sands of northern Alberta; Can. Mines Branch, Rept. 616, p. 4-11.
- (1924f): Bituminous sands of Alberta; Can. Min. Jour., Vol. 45, p. 298-304 and 400-403.

- (1924g): The bituminous sands of Northern Alberta; *Can. Min. Jour.*, Vol. 10, p. 358-359, p. 710-717.
- (1926): Bituminous sands of northern Alberta; Occurrence and economic possibilities; Report on investigations to the end of 1924; *Can. Mines Branch, Rept.* 632, 239 pages.
- (1928a): Bituminous sands of northern Alberta; *Can. Inst. Min. Met. Trans.*, Vol. 30, p. 646-670. Also 2nd triennial Empire Min. Met. Congr. Canada 1927, Proc. Pt. 3, p. 130-154.
- (1928b): Investigation of mineral resources and the mining industry, 1927. I. Bituminous sands of northern Alberta experimental drilling and paving operations; 1927, *Can. Mines Branch, Rept.* 694, 45 pages.
- (1929): Core drilling bituminous sands of northern Alberta; *Can. Mines Branch, Rept.* 710, 26 pages.
- (1930): Bituminous sands of northern Alberta, operations during 1929; *Can. Mines Branch, Rept.* 719, p. 28-42.
- (1931a): Bituminous sands of northern Alberta operations during 1930; *Can. Mines Branch, Rept.* 723, p. 1-11.
- (1931b): Fossil wood discovered in Alberta bituminous sands; *Can. Min. Jour.*, Vol. 52, No. 7, p. 171-172.
- (1932): Exploration of bituminous sand areas in northern Alberta; *Can. Mines Branch, Rept.* 727, p. 107-134.
- (1934): Some economic aspects of the bituminous sands of northern Alberta; *Can. Mines Branch, Rept.* 735, p. 10-29.
- (1936): Bituminous sands in northern Alberta; *Min. Mag.*, Vol. 54, p. 329-341.
- Ells, S. C. and Swinnerton, A. A. (1937): Bituminous sands of Alberta; *Can. Inst. Min. Met.*, Vol. 40, p. 629-648.
- Falconer, W. L. (1951a): Stratigraphy of McMurray formation; Oil in Canada, Vol. 3, No. 50, p. 4440-4443.
- (1951b): Stratigraphy of McMurray formations; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 26-29.

- Fraser, A. W. (1895): Report on boring at Athabasca Landing, Alberta; Geol. Surv. Can. Summ. Rept. 1894, Ann. Rept. 7, Pt. A, p. 6-14.
- Gallup, W. B. (1960): Current exploratory techniques in the Athabasca bituminous sands area; Trans. Can. Inst. Min. Met., Vol. 63, p. 157-161.
- Garland, G. D. and Bower, M. E. (1959): Interpretation of aeromagnetic anomalies in northeastern Alberta; Proc. 5th World Petroleum Congr., Vol. 1, p. 787-800.
- Goodman, A. J. (1935): Notes on the petroleum geology of Western Canada; Inst. Petroleum Techn., Vol. 21, p. 221-273.
- Gordon, A. G. (1932): The anatomical structure of Mesozoic plants from the bituminous sands of the McMurray formation; unpublished M.Sc. thesis, Univ. of Alberta, Edmonton.
- Greiner, H. R. (1956): Methy dolomite of northeastern Alberta; Middle Devonian reef formation; Bull. Am. Assoc. Petroleum Geol., Vol. 40, No. 9, p. 2057-2080.
- Gussow, W. C. (1955): Time and migration of oil and gas; Bull. Am. Assoc. Petroleum Geol., Vol. 39, No. 5, p. 547-574.
- (1956): Athabasca bituminous sands; 20th Int. Geol. Cong. Mexico, Vol. 3, p. 68-70.
- Hitchon, B. (1963): Composition and movement of formation fluids in strata above and below the pre-Cretaceous unconformity in relation to the Athabasca Oil Sands; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 63-74.
- Hodgson, G. W. (1954a): The McMurray oil field; Alberta Soc. Petroleum Geol., News Bull., Vol. 2, No. 3, p. 1-3.
- Hume, G. S. (1924): Clay deposits on Athabaska River, Alberta; Geol. Surv. Can., Summ. Rept. 1923, Pt. B, p. 16-20.
- (1933): Oil and gas in Western Canada; Geol. Surv. Can., 2nd Ed., Econ. Geol. Ser. No. 5, p. 229-237.
- (1944): Petroleum Geology of Canada; Geol. Surv. Can., Econ. Geol. Ser. No. 14, p. 30-34.
- (1947a): Results and significance of drilling operations in the Athabasca bituminous sands; Trans. Can. Inst. Min. Met., Vol. 50, p. 298-333.

- (1947b): The Interior Plains, in *Geology and Economic Minerals of Canada*; 3rd Ed., Geol. Surv. Can., Econ. Geol. Ser. No. 1, p. 189-219.
- (1951a): Possible Lower Cretaceous origin of bitumen in bituminous sands of Alberta; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 66-75.
- (1951b): Possible Lower Cretaceous origin; *Oil in Canada*, Vol. 3, No. 50, p. 4450.
- (1951c): Outline of drilling program; *Oil in Canada*, Vol. 3, No. 50, p. 4452.
- (1951d): Drilling and sampling bituminous sand deposits; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 98-100.
- Huntley, L. G. (1915): Oil gas and water content of Dakota Sand in Canada and United States; *Trans. Am. Inst. Min. Met. Eng.*, Vol. 52, p. 329-352.
- Isbister, A. K. (1855): On the geology of the Hudson's Bay Territories, and portions of the Arctic and North-western Regions of North America; *Quart. Jour. Geol. Soc. London*, Vol. 11, p. 497-520.
- Kidd, F. A. (1951): Geology of the bituminous sand deposits of the McMurray area Alberta; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 30-38.
- Kupsch, W. O. (1954): Bituminous sands in till of Peter Pond Lake area, Saskatchewan; *Govt. Saskatchewan, Dept. Mineral Resources, Geol. Surv.*, Rept. 12, 35 pages.
- Link, T. A. (1931): The Alberta syncline; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 15, No. 5, p. 491-507.
- (1951a): Source of oil in oil sands of Athabasca River, Alberta, Canada; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 55-65.
- (1951b): Possible Devonian origin of bitumen; *Oil in Canada*, Vol. 3, No. 50, p. 4448.
- (1951c): Source of oil in "Tar Sands" of the Athabasca River, Alberta, Canada; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 35, No. 4, p. 854-864.

- Lipson, J. (1958): Potassium-argon dating of sedimentary rocks; *Bull. Geol. Soc. Amer.*, Vol. 69, p. 137-150.
- McConnell, R. G. (1891): Tar sands on Athabasca River; *Geol. Surv. Can., Ann. Rept. 5, Part 5*, p. 144-147.
- (1893a): Report on a portion of the district of Athabasca, comprising the country between Peace River and Athabasca River north of Lesser Slave Lake; *Geol. Surv. Can., Ann. Rept. 1890-1891, Vol. 5, Pt. D*, p. 5-67.
- (1893b): Summary report on the Athabasca region, Alberta; *Geol. Surv. Can., Vol. 5, Pt. 1, Ann. Rept. 1890-1891*, p. 21-26A.
- MacDonald, W. D. (1947): A comparative study of the Waterways and older formations of the McMurray area; unpublished M.Sc. thesis, Univ. of Alberta, Edmonton.
- (1955): The Waterways formation in the subsurface at McMurray, Alberta; *Jour. Alberta Soc. Petroleum Geol.*, Vol. 3, No. 7, p. 105-107.
- McGehee, J. R. (1949): Pre-Waterways Paleozoic stratigraphy of Alberta plains; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 33, No. 4, p. 603-613.
- McLearn, F. H. (1917): Athabasca River section, Alberta; *Geol. Surv. Can., Summ. Rept. 1916*, p. 145-151.
- (1918): Peace River Section, Alberta; *Geol. Surv. Can., Summ. Rept. 1917, Pt. C*, p. 14-21.
- (1932): Problems of the Lower Cretaceous of the Canadian interior; *Trans. Roy. Soc. Can.*, Vol. 26, Sec. 4, p. 157-175.
- (1933): Pelecypods of the Lower Cretaceous Clearwater formation, Northern Alberta; *Trans. Roy. Soc. Can., Ser. 3, Vol. 27, Sec. 4*, p. 139-156.
- (1945): Revision of the Lower Cretaceous of the western interior of Canada; *Geol. Surv. Can., Paper 44-17, 2nd Ed.*, 14 pages.
- Macoun, J. (1877): Geological and topographical notes on the lower Peace and Athabaska Rivers; *Geol. Surv. Can. Rept. Prog. 1875-1876*, p. 87-95.

- Malcolm, W. (1913): Oil and gas prospects of the Northwest Provinces of Canada; Geol. Surv. Can., Mem. 29-E, 98 pages.
- Martin, L. J. (1954): Clearwater shale foraminifera, Athabasca River, Alberta; unpublished M.Sc. thesis, Univ. of Alberta, Edmonton.
- Martin, R. and Jamin, F. G. S. (1963): Paleogeomorphology of the buried Devonian landscape in northeastern Alberta; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 37-42.
- Meek, F. B. (1868): Remarks on the geology of the valley of the Mackenzie River, with figures and descriptions of the fossils from that region, in the Museum of the Smithsonian Institution, chiefly collected by the late Robert Kennicott Esq.; Trans. Chicago Acad. Sci., Vol. 1, p. 61-114.
- Mellon, G. B. (1955): Age and origin of the McMurray formation; unpublished M.Sc. thesis, Univ. of Alberta, Edmonton.
- Mellon, G. B. and Wall, J. H. (1956): Geology of the McMurray formation, Pts. I and II; Res. Coun. Alberta, Rept. 72, 43 pages.
- Nauss, A. W. (1945): Cretaceous stratigraphy of Vermilion area, Alberta, Canada; Bull. Am. Assoc. Petroleum Geol., Vol. 29, No. 11, p. 1605-1629.
- Pow, J. R., Fairbanks, G. H. and Zamora, W. J. (1963): Descriptions and reserve estimates of the oil sands of Alberta; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 1-14.
- Pratt, W. E. (1943): Oil in the earth; University of Kansas press, Lawrence, p. 41, 110 pages.
- Riecker, R. E. (1962): Hydrocarbon fluorescence and migration of petroleum; Bull. Am. Assoc. Petroleum Geol., Vol. 46, No. 1, p. 60-75.
- Russell, L. S. (1932): Mollusca from the McMurray formation of northern Alberta; Trans. Roy. Soc. Can., 3rd Ser., Vol. 26, Sec. 4, p. 37-43.
- (1964): Cretaceous non-marine faunas of northwestern North America; Roy. Ontario Museum Contrib. 61, 24 pages.
- Scotland, W. A. and Benthin, H. (1954): Core logs and analysis results (1952-1954); unpublished manuscript, Calvin Consolidated Oil and Gas Co., Calgary.

- Singh, Ch. (1964): Microflora of the lower Cretaceous Mannville Group, east-central Alberta; Res. Coun. Alberta, Bull. 15, 239 pages.
- Slipper, S. E. (1935): Natural gas in Alberta; Geology of Natural Gas, Am. Assoc. Petroleum Geol., Tulsa, p. 1-57.
- Sroule, J. C. (1938): Origin of McMurray oil sands, Alberta; Bull. Am. Assoc. Petroleum Geol., Vol. 22, No. 9, p. 1133-1152.
- (1939): The Pleistocene geology of the Cree Lake Region, Saskatchewan; Trans. Roy. Soc. Can., 3rd Ser., Vol. 33, Sec. 4, p. 101-110.
- (1951): The McMurray formation in its relation to oil occurrences; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 6-25.
- Sroule, J. C. and Lloyd, G. V. (1963): A note on the comparison of McMurray and Melville Island oil sands; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 27-29.
- Stewart, G. A. (1963): Geological controls on the distribution of Athabasca oil sand reserves; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 15-26.
- Vagvolgyi, A. (1964): Palynology of type McMurray Formation; M. Sc. thesis, Univ. of Alberta, Edmonton, 133 pages.
- Van Tuyl, F. M. and Parker, B. H. (1941): The time of origin and accumulation of petroleum; Colorado School of Mines Quarterly, Vol. 36, No. 2, p. 134-140.
- Warren, P. S. (1933): The age of the Devonian limestone at McMurray, Alberta; Can. Field Naturalist, Vol. 47, No. 8, p. 148-149.
- (1951): Some stratigraphic features of the Upper Devonian sequence of the Canadian western plains; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 46-54.
- Whiteaves, J. F. (1891): The fossils of the Devonian rocks of the McKenzie River Basin; Geol. Surv. Can., Contrib. to Can. Paleo., Vol. 1, Pt. 3, p. 197-253.
- (1893): Notes on the Ammonites of the Cretaceous rocks of the district of Athabasca, with description of four new species; Trans. Roy. Soc. Can., Ser. 3, Vol. 10, Sec. 4, p. 111-121.
- Wickenden, R. T. (1949): Some Cretaceous sections along the Athabasca River from the mouth of the Calling River to below Grand Rapids, Alberta; Geol. Surv. Can., Paper 49-15, 31 pages.

- (1951a): Lower Cretaceous stratigraphy; *Oil in Canada*, Vol. 3, No. 50, p. 4439.
- (1951b): Regional correlations of the Lower Cretaceous formations of the McMurray oil-sand area; *Proc. Athabasca Oil Sands Conf.*, Govt. Alberta, Edmonton, p. 39-45.
- (1957): The interior plains; *Geology and Economic Minerals of Canada*, 4th Ed., *Geol. Surv. Can.*, *Econ. Geol. Ser. 1*, p. 247-282.
- Williams, G. D. (1960): The Mannville Group Central Alberta; Ph.D. thesis, Univ. of Alberta, Edmonton, 106 pages, Appendix, 114 pages.
- Williams, G. D., Baadsgaard, H. and Steen, G. (1962): Potassium-Argon mineral dates from the Mannville group; *Alberta Soc. Petroleum Geol.*, Vol. 10, No. 6, p. 320-325.
- Williams, M. Y. (1949): Whence the oil of the Athabasca tar sands?; *Roy. Soc. Can.*, 3rd Ser., Vol. 43, Sec. 4, p. 149-156.

3. PROPERTIES OF THE OIL SANDS

(a) Physical

- Clark, K. A. (1944): Some physical properties of a sample of Alberta bituminous sand; *Can. Jour. Res.*, Vol. 22F, p. 174-180.
- (1951): Athabasca bituminous sands; *Fuel*, Vol. 30, p. 49-53.
- (1957): Bulk densities, porosities and liquid saturations of good grade Athabasca oil sands; *Res. Coun. Alberta*, Mimeo. Circ. 22, 22 pages.
- (1959): Permeabilities of the Athabasca Oil Sands; *Trans. Can. Inst. Min. Met.*, Vol. 63, p. 151-156.
- Haliburton, J. (1947): Liquid diffusion in porous media, with specific reference to the Athabasca tar sands; unpublished M.Sc. thesis, Univ. of British Columbia, Vancouver, 19 pages.
- Hardy, R. M. and Hemstock, R. A. (1963): Shearing strength characteristics of Athabasca oil sands; in K. A. Clark Volume, *Res. Coun. Alberta*, Edmonton, p. 109-122.

- Hopper, D. A. (1945): A liquid diffusion in porous media referring in particular to the Athabasca tar sands; unpublished M.Sc. thesis, Univ. of British Columbia, Vancouver.
- Round, G. F. (1960): The shear strength of McMurray oil sands; *Trans. Can. Inst. Min. Met.*, Vol. 63, p. 145-150.
- Ward, S. H. and Clark, K. A. (1950): Determination of the viscosities and specific gravities of the oils in samples of Athabasca bituminous sand; *Res. Coun. Alberta, Rept. 57*, 22 pages.

(b) Chemical

- Bowles, K. W. and Booth, F. L. (1947): Study of the composition of the separated bitumen from Alberta bituminous sands; *Can. Bureau Mines, Fuel Res. Lab., Rept. 76*, 32 pages.
- Boyd, M. L. and Montgomery, D. S. (1961): A study of the Athabasca bitumen from Abasand Quarry, Alberta, Canada, Pt. I. Early history, analysis of bituminous sand, and structural analysis of the asphaltene fraction, Pt. II. The initial chromatographic separation of the pentane extract and the structure and properties of the resinous components; *Can. Mines Branch Res. Repts. 78 and 88*, 67 pages and 94 pages respectively.
- _____ (1962a): Structural group analysis of the asphaltene and resin components of the Athabasca bitumen; *Fuel*, Vol. 41, p. 335-350.
- _____ (1962b): A study of the Athabasca bitumen from the Abasand Quarry, Alberta, Canada, Pt. III. Chromatographic separation of the oil fraction, and properties and structure of the oil components; *Dept. of Mines and Techn. Surv. Ottawa, Mines Branch Res. Rept. R 104*, 67 pages.
- _____ (1963a): Composition of Athabasca bitumen fractions as determined by structural-group analysis methods; in K. A. Clark Volume, *Res. Coun. Alberta, Edmonton*, p. 101-108.
- _____ (1963b): A study of the oil component of the Athabasca bitumen; *Jour. Inst. Petroleum*, Vol. 49, p. 345-352.
- Brooks, B. T. (1949): Active-surface catalysts in formation of petroleum - II; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 33, No. 9, p. 1600-1612.

- Champlin, J. B. F. and Dunning, H. N. (1958): A geochemical investigation of the Athabasca bituminous sand; *Am. Chem. Soc. Div. Pet. Chem., Symp. 3, No. 4*, p. C 17-23.
- (1960): A geochemical investigation of the Athabasca bituminous sands; *Econ. Geol., Vol. 55*, p. 797-804.
- Gershinowitz, H. (1958): Present and future sources and compositions; in *Advances in Petroleum Chemistry and Refining, Vol. 1*, p. 49-77, Interscience, New York, 641 pages.
- Goodspeed, F. E. and Montgomery, D. S. (1962): The determination of methyl and methylene groups in the oil and resin fractions of Athabasca bitumen using infrared spectroscopy; *Dept. Mines, Techn. Surv., Mines Branch Res. Rept. 98*, 25 pages.
- Hodgson, G. W. (1954): Vanadium, nickel and iron trace metals in crude oils of Western Canada; *Bull. Am. Assoc. Petroleum Geol., Vol. 38, No. 12*, p. 2537-2554.
- Hodgson, G. W., Peake, E. and Baker, B. L. (1963): The origin of petroleum porphyrins: the position of the Athabasca Oil Sands; in *K. A. Clark Volume, Res. Coun. Alberta, Edmonton*, p. 75-100.
- Hubbard, R. L. and Stanfield, K. E. (1949): Laboratory study of asphalt from bitumens and bituminous sandstone; *U.S. Bureau of Mines, Rept. Invest., No. 4523*, 22 pages.
- Katz, M. (1934): Alberta bitumen. 1. The composition of blown Alberta bitumen; *Can. Jour. Res., Vol. 10*, p. 435-451.
- Krieble, V. K. and Seyer, W. F. (1921): A chemical investigation of the asphalt in the tar sands of northern Alberta; *Jour. Am. Chem. Soc., Vol. 43, Pt. 1*, p. 1337-1349.
- Montgomery, D. S. (1951): On the origin of the Athabasca oil; *Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton*, p. 76-87.
- Nagy, B. and Lugay, J. (1960): Natural chromatography and the accumulation of petroleum in rocks in view of analyses of bitumen from the Athabasca deposit in Canada; *Experientia, Vol. 17*, p. 207-212.

- Nagy, B. and Gagnon, G. C. (1961): The geochemistry of the Athabasca petroleum deposit, I, Elution and spectroscopic analysis of the petroleum from the vicinity of McMurray, Alberta; *Geochim. et Cosmochim. Acta*, Vol. 23, p. 155-185.
- Pasternack, D. S. (1960): Petroleum substitutes from tar sands; *Chem. Engr. Prog.*, Vol. 56, No. 4, p. 72-75.
- (1963): Low-ash asphalt and coke from Athabasca oil-sands oil; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 207-229.
- (1964): Thermal cracking of Athabasca oil-sands oil, Pt. I, Changes in some properties of the oil and its components; *Jour. Can. Petroleum Techn.*, Vol. 3, p. 39-45.
- Pasternack, D. S. and Clark, K. A. (1951): The components of the bitumen in Athabasca bituminous sand and their significance in the hot water separation process; *Res. Coun. Alberta, Rept. 58*, 14 pages.
- Rosewarne, P. V., Chantler, H. McD. and Swinnerton, A. A. (1936): Analyses of Canadian crude oils, naphthas, shale oil and bitumen; *Can. Mines Branch Rept. 765*, 21 pages.
- Scott, J., Collins, G. A. and Hodgson, G. W. (1953): Trace metals in the McMurray oil sands and other Cretaceous reservoirs of Alberta; *Can. Oil Gas Ind.*, Vol. 6, p. 53-55.
- (1954): Trace metals in the McMurray oil sands and other Cretaceous reservoirs of Alberta; *Trans. Can. Inst. Min. Met.*, Vol. 57, p. 34-40.
- Seyer, W. F. (1933): Conversion of fatty waxy substance into petroleum hydrocarbons; *Bull. Am. Assoc. Petroleum Geol.*, Vol. 17, No. 1, p. 1251-1267.
- Swinnerton, A. A. (1944): Properties of asphalt made from Athabaska bituminous sand; *Can. Bureau Mines, Memo. Ser. 88*, 17 pages.

4. DRILLING

- Ansley, R. W. and Bierlmeier, W. G. (1963): Continuity of bedding within the McMurray Formation; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 55-62.
- Canada, Government (1949): Drilling and sampling of bituminous sands of northern Alberta; Results of Investigations 1942-1947, 3 volumes, Can. Mines Branch Rept. 826.
- Ells, S. C. (1928): Investigation of mineral resources and the mining industry, 1927. I. Bituminous sands of northern Alberta experimental drilling and paving operations, 1927; Can. Mines Branch, Rept. 694, 45 pages.
- (1929): Core drilling bituminous sands of northern Alberta; Can. Mines Branch, Rept. 710, 26 pages.
- Gallup, W. B. (1960): Current exploratory techniques in the Athabasca bituminous sands area; Trans. Can. Inst. Min. Met., Vol. 63, p. 157-161.
- Hall, P. B. (1951a): Coring bituminous sands; Oil in Canada, Vol. 3, No. 50, p. 4454.
- (1951b): Coring of the bituminous sands in the Fort McMurray district of Alberta; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 101-107.
- Hume, G. S. (1947): Results and significance of drilling operations in the Athabasca bituminous sands; Trans. Can. Inst. Min. Met., Vol. 50, p. 298-333.
- (1951a): Outline of drilling program; Oil in Canada, Vol. 3, No. 50, p. 4452.
- (1951b): Drilling and sampling bituminous sand deposits; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 98-100.
- Oil in Canada (1963a): Well drilling feature of tar sand plan; Vol. 15, No. 13, p. 32576-32581.
- Scotland, W. A. and Benthin, H. (1954): Core logs and analysis results (1952-1954); unpublished manuscript, Calvin Consolidated Oil and Gas Co., Calgary.

5. MINING

- Bredvold, L. M. (1951): Mass movement of material in open pit iron ore mines; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 108-120.
- Clark, K. A. and Alexander, E. L. (1951): Some laboratory results related to mining oil sands by block caving; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 158-161.
- Djingheuzian, L. E. (1952): Preliminary notes on tailing disposal at a plant treating, 20,000 to 100,000 cubic yards of Alberta bituminous sand per day; Can. Mines Branch, Fuels Div., Mimeo. Rept.
- (1953): Tailing disposal problems of Alberta tar sands; Can. Min. Jour., Vol. 74, No. 5, p. 69-75.
- Latham, R. H. (1951a): Proposed mining methods; Oil in Canada, Vol. 3, No. 50, p. 4456-4457.
- (1951b): Proposed methods of mining Alberta oil sands; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 121-130.
- Logan, H. A. (1951): Discussion of blasting; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 131-134.
- McNicholas, F. S. (1951a): Block caving of oil sands; Oil in Canada, Vol. 3, No. 50, p. 4458.
- (1951b): Block caving; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 136-140.
- Muir, W. L. G. (1951): Some suggestions for mining the Athabaska bituminous sands; Western Miner, Vol. 24, No. 10, p. 44-46.
- Petroleum Week (1960): Mining and ore disposal complicate tar sands development; Petroleum Week, August 5, 1960, p. 20-21.
- Rühl, W. (1951): Oil Mining in Germany; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 162-165.
- Schellhorn, H.-W. (1963): Some aspects of high-capacity production with bucket-wheel excavators in open pits; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 157-170.

6. RECOVERY METHODS

- Adkins, W. E. (1948): New plant to process Athabaska oil sands; Petroleum Engr., April 1948, Vol. 19, No. 7, p. 121-126.
- (1949): Oil sands demonstration plant; World Petroleum, Vol. 20, p. 40-45.
- (1950): Novel separation process unlocking Canada's oil sands; Chem. Eng., Vol. 57, No. 3, p. 103-105.
- Alberta, Government (1959): Alberta Technical Committee report to the Minister of Mines and Minerals and the Conservation Board with respect to an experiment proposed by Richfield Oil Corporation involving an underground nuclear explosion beneath the McMurray oil sands with the objective of determining the feasibility of recovering the oil with the aid of the heat released from such an explosion; 55 pages.
- Anikin, P. I. (1957): Recovery of crude oil from tar sands; U.S.S.R. Pat. 108,518.
- Armstrong, H. H. (1926): Method of recovering hydrocarbon oils from oil sands and the like; U.S. Pat. 1,607,977.
- Aylwin, T. C. (1963): Method and apparatus for separating oil from oil-bearing sands; Can. Pat. 657,877.
- Aylwin, T. C. and Gale, C. G. (1963): Method and apparatus for the treatment of bituminous material; Can. Pat. 657,876.
- Barendson, M-J. (1923): Procédé de séparation et d'extraction d'huiles minérales, des sables oléagineux, bitumes, craies grasses, schistes, charbons, etc. France, Pat. 563,883.
- Bauer, R. F. and Matthews, H. J. (1948): Process and apparatus for treating bituminous sands; U.S. Pat. 2,453,060.
- Behning, P. D., Glass, E. D. and Rzasa, M. J. (1957): Oil recovery by underground combustion; U.S. Pat. 2,803,305.
- Bell, A. F. L. (1879): Apparatus for refining asphaltum; U.S. Pat. 581,457.
- Berg, C. H. (1959): Tar sand distillation process and apparatus; U.S. Pat. 2,905,595.

- Bergstrom, E. V. (1959): Method and system for producing oil tenaciously held in porous formations using a dredging operation; U.S. Pat. 2,880,981.
- Berry, V. J., Jr. and Parrish, D. R. (1960): A theoretical analysis of heat flow in reverse combustion; Jour. Petroleum Techn., Vol. 12, No. 5, p. 15-16.
- Bichard, J. A. (1963a): Additives for use in intergrated process for the recovery of oil from tar sands; Can. Pat. 675,524.
- (1963b): Method of preparation of a surfacing material from tar sands; Can. Pat. 675,521.
- Bichard, J. A. and Wunder, J. W. (1963): Intergrated process for effectively recovering oil from tar sands; Can. Pat. 675,912.
- Bichard, J. A., Bowman, C. W., Butler, R. M. and Tiedje, J. L. (1963): Separation of oil from the Athabasca Oil Sands by sand reduction; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 171-191.
- Bichard, J. A., Butler, R. M., McEachern, J. R. and Wunder, J. W. (1963): Process for efficient removal of oil from tar sands; Can. Pat. 675,916.
- Boutin, P. (1964): Extraction of bitumen and oil from Athabaska tar sands; Can. Pat. 680,576.
- Boyle, F. A. (1959): Treatment of underground formations; U.S. Pat. 2,908,641.
- Bruce, W. A. (1957): Method of initiating combustion in an oil reservoir; U.S. Pat. 2,796,132.
- Bulat, T. J., Logan, J. R. and Kusy, P. F. (1962): Oil Separation process (ultrasonic) U.S. Pat. 3,017,342.
- Butler, R. M., Tiedje, J. L. and Bichard, J. A. (1963): Treating Athabasca sands utilizing a flotation gas; Can. Pat. 675,507.
- Bywater, W. McK. (1939): Method for digesting solid carbonaceous minerals; U.S. Pat. 2,174,184.
- Carpenter, P. G. (1959): Recovery of hydrocarbons from oil-bearing strata; U.S. Pat. 2,880,802.

- Chandrasekavan, K. and Weingaertner, E. (1956): Application of the phase-exchange method to demineralization of Athabasca tar sands; Jour. Indian Inst. Sci., Vol. 38A, p. 169-176.
- Clark, K. A. (1923): The bituminous sands of northern Alberta, Their separation and their utilization in road construction; Res. Coun. Alberta, 1922, Rept. 8, p. 42-58.
- (1928): Process and apparatus for separating and treating bituminous sand; Can. Pat. 289,058.
- (1930): The separation of the bitumen from Alberta bituminous sands; Can. Min. Met. Bull., No. 212, p. 1385-1395.
- (1931a): Separation of bitumen from bituminous sands; Nature, Vol. 127, p. 199.
- (1931b): Process and apparatus for separating and treating bituminous sands; U.S. Pat. 1,791,797.
- (1935): Recovery of oil from bituminous sands in northern Alberta; National Petroleum News, Vol. 27, No. 27, p. 30, 32-36.
- (1944): Hot-water separation of Alberta bituminous sand; Trans. Can. Inst. Min. Met., Vol. 47, p. 257-274.
- (1948a): The oil-sand separation plant at Bitumont; Western Miner, Vol. 21, No. 8, p. 131-134.
- (1948b): Extracting oil from bituminous sands; Can. Pat. 448,231.
- (1950): The hot water washing method for the recovery of oil from Alberta tar sands; Can. Oil Gas Ind., Vol. 3, No. 6, p. 46-49.
- (1951): New technique taps Athabasca tar sands; World Oil, Vol. 132, No. 2, p. 205-208.
- Clark, K. A. and Blair, S. M. (1927): The bituminous sands of Alberta, Pt. I, Occurrence, Pt. II, Separation; Res. Coun. Alberta, Rept. 18, 1927, 74 and 26 pages.
- Clark, K. A. and Pasternack, D. S. (1930): Separation plant at Dunvegan yards; Separation plant at Waterways; Laboratory studies; Res. Coun. Alberta, Rept. 25, 1929, p. 48-60.

- _____ (1931): Operation of the separation plant on the Clearwater River, Waterways; Res. Coun. Alberta, Rept. 26, 1930, p. 41-62.
- _____ (1932): Hot water separation of bitumen from Alberta bituminous sand; Ind. Eng. Chem., Vol. 24, p. 1410-1416.
- _____ (1947): Elimination of water from wet crude oil obtained from bituminous sand by the hot water washing process, Pt. I, Continuous settling at atmospheric pressure; Can. Chem. Process. Inds., Vol. 31, p. 1007-1011.
- _____ (1948): Elimination of water from wet crude oil obtained from bituminous sand by the hot water washing process, Pt. II, Continuous settling under pressure; evaporation; Can. Chem. Process. Inds., Vol. 32, p. 32-36.
- _____ (1949): The role of very fine mineral matter in the hot water separation process as applied to Athabaska bituminous sand; Res. Coun. Alberta, Rept. 53, 22 pages.
- Clark, L. (1962): Hot water oil sand separation process; U.S. Pat. 3,052,621.
- Clarke, N. S. (1926): Process for the separation of oil from oil sands and other like material; U.S. Pat. 1,592,179.
- Coogan, J. (1924): Apparatus and method of extracting the petroleum content from petroleum bearing sand or shale; U.S. Pat. 1,487,541.
- Cottrell, J. H. (1963): Development of an anhydrous process for oil-sand extraction; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 193-206.
- Coulson, G. R. (1953): Process for separating oil from bituminous sand, shales, etc.; Can. Pat. 491,955.
- _____ (1956a): Process for separating oil from bituminous sands, shales, etc.; Can. Pat. 529,888.
- _____ (1956b): Recovery of crude oil from bituminous sands and shales; German Pat. 945,586.
- _____ (1958): Separation of oil from bituminous sands, shales, etc.; U.S. Pat. 2,825,677.

- (1959): Extraction of oil from shales and like oil bearing material; U.S. Pat. 2,911,349.
- Coulson, G. R. and Clark, L. (1959): Recovery of oil from oil bearing sands; U.S. Pat. 2,885,339.
- Crawford, P. B. (1955): Recovery by combustion of petroleum oil from partially depleted subterranean reservoirs; U.S. Pat. 2,722,277.
- (1957): Oil recovery from partially depleted reservoirs; U.S. Pat. 2,804,146.
- Davis, C. M. (1951a): Electrovolatilization of oil in situ; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 141-152.
- (1951b): Athabasca oil, in situ recovery by electrovolatilization; Can. Oil and Gas Ind., Vol. 3, No. 11, p. 54-55.
- Day, D. T. (1923): Process for the combined solvent and destructive distillation treatment of oil containing earthy material; U.S. Pat. 1,447,297.
- Djïngheuzian, L. E. (1950a): The cold-water method applied to separation of oil from Alberta bituminous sands; Can. Oil and Gas Ind., Vol. 3, No. 2, p. 32-34.
- (1950b): Pilot plant investigation on cold water separation of bitumen from Alberta tar sands; unpublished manuscript, Can. Mines Branch, Rept. MD 70, 85 pages.
- (1951a): Cold-water method of separation of bitumen from Alberta bituminous sand; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 185-199.
- (1951b): Cold-water separation; Oil in Canada, Vol. 3, No. 51, p. 4486-4487.
- (1952): Cold-water separation process; Trans. Can. Inst. Min. Met., Vol. 55, p. 1-14.
- Djïngheuzian, L. E. and Warren, T. E. (1951): A study of cold-water separation of bitumen from Alberta bituminous sand on a pilot-plant scale; Can. Jour. Techn., Vol. 26, p. 170-189.
- Dolbear, S. H. (1924): Method of concentrating oil shales; U.S. Pat. 1,510,983.

- Doscher, T. M. and Reisberg, J. (1959): Recovery of oil from tar sands; U.S. Pat. 2,882,973.
- (1962): Oil recovery from tar sands; Can. Pat. 639,050.
- Doscher, T. M., Labelle, R. W., Sawatsky, L. H. and Zwicky, R. W. (1963): Steam-drive — a process for in-situ recovery of oil from the Athabasca Oil Sands; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 123-141.
- Egloff, G. (1937): Treatment of hydrocarbons; U.S. Pat. 2,091,354.
- Elkins, L. E. (1956): Oil production from bituminous sands; U.S. Pat. 2,734,579.
- Ells, S. C. (1932): Recent progress in the commercial separation of bitumen from bituminous sand; Can. Mines Branch, Rept. 727, Pt. VI, p. 135-139.
- Eyre, R. T. (1957): Recovery of oil from bituminous sands; U.S. Pat. 2,790,750.
- Eurenius, M. O. (1959): Sätt för upphettning in situ av i marken förekommande avalagringar, företrädesvis bränsle förande sådana; Swedish Pat. 168,683.
- (1959): Underground combustion of liquid or gaseous fuels; Swedish Pat. 168,683.
- Ferguson, J. C. and Adkins, W. E. (1952): Apparatus for the recovery of tar sands; Can. Pat. 488,928.
- Fischer, P. W., Kenny, V. and Scheffel, J. W. (1959): Recovery of hydrocarbons from tar sand; U.S. Pat. 2,903,407.
- Fitzsimmons, R. C. (1953): Process for recovering bitumen from tar sands; Can. Pat. 493,081.
- Friedman, L. D. (1963): Method for recovering oil from oil-bearing minerals; U.S. Pat. 3,074,877.
- Fyleman, M. E. (1921): A process for separating mineral oils or the like from sand or rock; U.K. Pat. 163,519.
- (1922): Separation of adherent oil or bitumen from rock; Jour. Soc. Chem. Ind., Vol. 41, p. 14T-16T.

- _____ (1927): Process for separating mineral oils or the like from sand or rock; U.S. Pat. 1,615,121.
- Garrison, A. D. and Kunetka, R. E. (1959): In situ combustion; U.S. Pat. 2,871,942.
- Gishler, P. E. (1949): The fluidization technique applied to direct distillation of oil from bituminous sand; Can. Jour. Res., Vol. 27F, p. 104-111.
- Gishler, P. E. and Peterson, W. S. (1949): The fluidized solids technique applied to the production of oil from Alberta bituminous sand; Can. Oil and Gas Ind., Vol. 3, No. 1, p. 26-30.
- _____ (1956): Treatment of bituminous sand; Can. Pat. 530,920.
- Glass, K. G. (1960): Extracting oil from oil-bearing sands; Can. Pat. 629,047.
- Glinka, C. (1959): Method of extraction of oil from oil-containing minerals; U.S. Pat. 2,881,126.
- Haensel, V. (1956): Separating and cracking of oil from oil-bearing sands; U.S. Pat. 2,733,193.
- Hampton, W. H. (1930): Art of treating shale or the like; U.S. Pat. 1,778,515.
- Heilman, W. O. and Ogorzaly, H. J. (1955): Underground retorting for secondary oil recovery; U.S. Pat. 2,718,263.
- Hemminger, C. E. (1960): Water washing of tar sands; U.S. Pat. 2,940,919.
- Hill, T. W. (1952): Electro-thermal recovery of petroleum; Producers Monthly, Vol. 16, No. 11, p. 14-20.
- Hitzman, D. O. (1959): Recovery of petroleum from oil sands and the like; U.S. Pat. 2,907,389.
- Hodgson, G. W., Peterson, W. S. and Gishler, P. E. (1951): The flash distillation of wet bituminous sand oil in a fluidized solids still; unpublished manuscript, Nat. Res. Coun., Ottawa.
- Hodgson, G. W., Matchen, B., Peterson, W. S. and Gishler, P. E. (1952): Oil from Alberta bitumen. Simultaneous dehydration and coking using fluidized solids; Ind. Eng. Chem., Vol. 44, p. 1492-1496.

- Horwitz, W. (1924): Process for the recovery of petroleum; U.S. Pat. 1,520,752.
- Kelley, A. E. (1961): Process and apparatus for bituminous sand treatment; U.S. Pat. 2,980,600.
- Knight, C. (1927): Tar sand recovery process; Can. Pat. 278,861.
- Koch, R. L. (1957): Initiation of combustion in a subterranean petroleum reservoir; U.S. Pat. 2,818,117.
- Koch, R. L., Gleason, J. F. and Boston, W. G. (1954): In situ combustion field tested again; Oil and Gas Jour., Feb., p. 102.
- Kuhn, C. S. and Koch, R. L. (1953): In situ combustion - newest method of increasing oil recovery; Oil and Gas Jour., Aug., p. 92-96, 113-114.
- Langford, C. T. and Teplitz, A. J. (1931): Method for separating bitumen from bituminous sands and similar bituminous materials; U.S. Pat. 1,820,917.
- Leary, T. S. and Cottrell, J. H. (1962): Recovery of bitumen from bituminous sand; Can. Pat. 639,769.
- Ljungström, F. (1956a): Verfahren zum Gewinnen von Öl und Gas aus unkonsolidierten, bituminösen, geologischen Vorkommen; German Pat. 954,721.
- (1956b): Recovery of oil from shale in situ by electric heating; U.S. Pat. 2,732,195.
- (1957): Recovery of oil and gases from non-consolidated bituminous geological formations by heating treatment in situ; U.S. Pat. 2,780,450.
- McClave, J. M. (1926): Process for the separation of hydrocarbons from earthy matter; U.S. Pat. 1,594,625.
- (1936): The recovery of oil from Athabaska Oil Sands; Can. Min. Jour., Vol. 56, Dec. 1936, p. 317-323.
- (1938): Process of separating minerals, hydrocarbons, and the like from associated materials; U.S. Pat. 2,130,144.
- McMurray Asphaltum and Oil Limited (1924): Bituminous sand research by McMurray Asphaltum Oil Limited and Draper Manufacturing Company; Can. Min. Jour., Vol. 45, p. 1270-1271.

- Marx, J. W. and Tek, M. R. (1958): Oil recovery by in-situ combustion; U.S. Pat. 2,853,137.
- Marx, J. W., Trantham, J. C. and Schleicher, A. R. (1956): Verfahren zur Gewinnung von Kohlenwasserstoffen aus einem gasdurchlässigen unterirdischen Lager; German Pat. 1,036,432.
- (1956): Recovery of hydrocarbons from tar sands or viscous crude oil deposits; German Pat. 1,036,432.
- Mjolsness, W. E. and Stewart, J. H. (1952): A proposed low-cost method for oil sands extraction; Northwest Oil Jour., Vol. 1, p. 101-109.
- Montgomery, D. S. and Pleet, M. P. (1960): The cold-water process for the recovery of bitumen from bituminous sands of Alberta, III, The evaluation of surface-active agents for use in the cold-water separation process; Am. Chem. Soc. Petrol. Chem. Preprints 5, No. 2, p. A5-A13.
- Moore, T. V. and Hottel, H. C. (1958): Process for the recovery of oil from subterranean reservoirs; U.S. Pat. 2,853,136.
- Morse, R. A. (1957): Oil recovery by underground combustion; U.S. Pat. 2,793,696.
- Narin, F. (1919): Art of separating the petroleum contents from petroleum-bearing sands; U.S. Pat. 1,312,266.
- Oilweek (1960): In situ combustion proposed for Athabasca; Vol. 11, No. 23, p. 13-14.
- (1963a): World implications for new oil sands process; Vol. 13, No. 49, p. 22-23.
- (1963b): How Shell's process works; Vol. 13, No. 49, p. 24-27.
- Parker, H. W. (1959): Initiating in situ combustion in a stratum; U.S. Pat. 2,880,803.
- Pasternack, D. S. (1951): Hot water separation; Oil in Canada, Vol. 3, No. 51, p. 4485.
- Pasternack, D. S., Hodgson, G. W. and Clark, K. A. (1951): Oil Recovery from Alberta oil sands by the hot water washing method; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 200-206.

- Peck, E. B. (1949): Two-zone fluidized destructive distillation process; U.S. Pat. 2,480,670.
- Pelzer, H. L. (1957): Oil recovery from underground reservoirs; U.S. Pat. 2,788,071.
- Perry, R. H. Jr., Green, D. W. and Campbell, J. M. (1960): Reverse combustion. A new oil recovery technique; Jour. Petroleum Techn., Vol. 12, No. 5, p. 11-12.
- Peterson, W. S. and Gishler, P. E. (1950): A small fluidized solids pilot plant for the direct distillation of oil from Alberta bituminous sands; Can. Jour. Res., Vol. 28F, p. 62-70.
- (1951a): The fluidized solids technique applied to Alberta oil sands problem; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 207-236.
- (1951b): Fluidized solids separation; Oil in Canada, Vol. 3, No. 51, p. 4488-4489.
- (1951c): Oil from Alberta bituminous sands; Petroleum Eng., Vol. 239, No. 4, p. 66-74.
- Peterson, W. S., Keller, H. and Gishler, P. E. (1955): Fluidized solids coking of Canadian heavy crude oils; Contrib. Div. of Applied Chem., Nat. Res. Coun., Ottawa.
- Quant, J. T., Schonebaum, R. C. and Tadema, H. J. (1958): Recovery of oil by underground combustion; Dutch Pat. 88,302.
- Reed, R. L., Reed, D. W. and Tracht, J. H. (1960): Experimental aspects of reverse combustion on tar sands; Jour. Petroleum Techn., Vol. 12, No. 5, p. 13-14.
- Rees, H. V. (1957): Process for the recovery of oil from oil-bearing minerals; U.S. Pat. 2,793,104.
- (1959): Process for the recovery of oil from oil-bearing minerals; U.S. Pat. 2,885,275.
- Reilly, W. J. (1925): Apparatus for separating oil from oil-bearing sands and rocks; U.S. Pat. 1,529,505.
- Rosewarne, P. V. and Swinnerton, A. A. (1948): Report of laboratory investigations on the cold water separation of bitumen from Alberta bituminous sand; Can. Bureau Mines, Fuel Res. Lab. Rept. 90, 12 pages.

- Ruskin, S. L. (1959): Process for recovery of petroleum (irradiation); U.S. Pat. 2,906,680.
- Ryan, H. D. (1920): Process of recovering bituminous matter from shale; U.S. Pat. 1,327,572.
- Safonov, V. A., Indyukov, N. M., Loginova, S. M. and Shevtsov, I. S. (1959): Development of the technology of treating oil-bearing sands, and utilization of the oil thus produced; Sb. Tr. Inst. Neftekhim Protsessov, Akad. Nauk Azerb. SSR, No. 4, p. 272-290. [Chem. abstr. 15721a, Vol. 56, (1962)].
- Safonov, V. A., Indyukov, N. M., Shevtsov, I. S., Markaryan, S. M. and Rustamov, M. I. (1958): Utilization of a fluidized-bed thermal conversion process for oil-bearing Kirmak sands; Sbornik Trudov, Azerbaidzhan Nauch-Issledovatel. Inst. Neftepererabat, Prom. im. V. V. Kuibysheva, No. 2, p. 288-307. [Chem. abstr. 10456c, Vol. 56, (1962)].
- Salmonsson, G. J. W. (1959): Recovery of oil and gas from tar sands; U.S. Pat. 2,914,309.
- Scheffel, J. W. and Fischer, P. W. (1963): Processing of bituminous sands; U.S. Pat. 3,075,913.
- Schleicher, A. R. (1959): Oil recovery by in-situ combustion; U.S. Pat. 2,889,882.
- Schneider, K. (1924): Verfahren und Einrichtung zur Aufbereitung von Ölsanden; German Pat. 402,544, Class 23, Group 1.
- Shea, G. B. and Higgins, R. V. (1948): Laboratory study of the hot-water process for separating hydrocarbons from surface deposits of bituminous sandstones near Edna, California; U.S. Bureau Mines, Rept. of Invest. 4246, 31 pages.
- (1952): Separation and utilization studies of bitumens from bituminous sandstones of the Vernal and Sunnyside, Utah, deposits, Pt. I - Laboratory hot-water separation tests; U.S. Bureau Mines, Rept. of Invest. 4871, p. 1-10.
- Sherborne, J. E. (1960): Apparatus for the recovery of hydrocarbons from bituminous sands; U.S. Pat. 2,921,010.
- Simm, C. N. (1956): Method of oil recovery by in situ combustion; U.S. Pat. 2,771,951.

- Simm, C. N. and DePriester, C. L. (1957): Method of re-establishing in situ combustion in petroliferous formations; U.S. Pat. 2,793,697.
- Smith, R. L. and Watson, K. M. (1953): Oil recovery process; U.S. Pat. 2,642,943.
- _____ (1954): Oil recovery process; Can. Pat. 506,004.
- Smith, L. B., Mason, R. B., Blanding, F. H. and Hemminger, C. E. (1954): Distillation of oil-bearing minerals in two stages in the presence of hydrogen; U.S. Pat. 2,694,035.
- Smoley, E. R. and Schutte, A. H. (1951): Continuous contact coking; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 251-256.
- Stegemeier, R. J. and Fischer, P. W. (1960): Recovery of oil from bituminous sands; U.S. Pat. 2,924,565.
- Stewart, J., Fulton, S. C. and Langer, A. W. (1956): Recovery of oil from bituminous sands; U.S. Pat. 2,772,209.
- Streppel, A. (1920): Separating of oil from sand; U.S. Pat. 1,497,607.
- Tadema, H. J. (1959): Petroleum production by underground combustion; U.S. Pat. 2,874,777.
- Tadema, H. J. and Quant, J. Th. (1957): Subterranean ignition of petroleum or oil residues; Dutch Pat. 85,837.
- Tek, M. R. and Marwil, S. J. (1959): Separation and recovery of oil from oil sands; U.S. Pat. 2,910,424.
- Trantham, J. C. and Dixon, H. O. (1959): Oil recovery by in-situ combustion; U.S. Pat. 2,889,881.
- Walter, H. (1958): Oil recovery with in-situ combustion; U.S. Pat. 2,839,141.
- Ward, S. H. and Clark, K. A. (1947): Examination of the possibilities of water-drive as a means of recovery of oil from Alberta bituminous sand; unpublished manuscript, Res. Coun. Alberta, Edmonton, 17 pages.
- Warren, J. E., Reed, R. L. and Price, H. S. (1960): Theoretical considerations of reverse combustion in tar sands; Jour. Petroleum Techn., Vol. 12, No. 5, p. 14-15.

- Warren, T. E. (1950): An outline of field operations for processing Alberta bituminous sands; *Oil in Canada*, Vol. 2, No. 50, p. 24.
- (1951a): The distribution of heat liberated from a well in bituminous sand; *Oil in Canada*, Vol. 3, No. 51, p. 4484.
- (1951b): Distribution of heat liberated from a well in bituminous sand; *Proc. Athabasca Oil Sands Conf., Govt. Alberta*, Edmonton, p. 153-157.
- Warren, T. E., Burroughs, E. J. and Djingheuzian, L. E. (1950): The cold water method applied to separation of oil from Alberta bituminous sand; *Can. Oil Gas Ind.*, Vol. 3, No. 2, p. 32-34.
- Warren, T. E., Reed, R. L. and Price, H. S. (1960): Theoretical considerations of reverse combustion in tar sands; *Jour. Petroleum Techn.*, Vol. 12, p. 14.
- Watson, K. M. (1958): Oil recovery by subsurface thermal processing; *U.S. Pat.* 2,825,408.
- Weingaertner, E. Von (1960): Über die Demineralisierung von Athabasca - Bitumen - Sand mit Hilfe der Phasen - Trennungsmethode; *Erdöl und Kohle*, Vol. 13, p. 549-555.
- Weingaertner, E. Von, Chandrashekar, K. and Raman, A. K. S. (1957): Anwendung der Phasen - Trennungs - Methode auf die Entmineralisierung von Athabasca - Bitumen - Sand; *Erdöl und Kohle*, Vol. 10, p. 584-587.
- Wenger, W. J., Hubbard, R. L. and Whisman, M. L. (1952): Separation and utilization studies of bitumens from bituminous sandstones of the Vernal and Sunnyside, Utah, deposits, Pt. II, Analytical data on asphalt properties and cracked products of the separated bitumens; *U.S. Bureau Mines Rept. Invest.*, 4871, p. 11-28.
- White, E. W. (1962): Screen separation of tar sand; *U.S. Pat.* 3,068,167.

7. REFINING

- Adkins, W. E. (1948): New plant to process Athabaska oil sands; *Petroleum Engr.*, April 1948, Vol. 19, No. 7, p. 121-126.
- Alberta, Government (1950): Engineering and economic data from operation of Bitumount plant - summer 1949; unpublished manuscript, Oil Sands Project, Gov. Alberta, Edmonton.

- Bell, A. F. L. (1879): Apparatus for refining asphaltum; U.S. Pat. 581, 457.
- Berg, C. (1951a): Mild hydrogenation of bitumen; Oil in Canada, Vol. 3, No. 51, p. 4491.
- (1951b): Refining of high sulphur stocks by the cobalt molybdate process; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 271-288.
- Bichard, J. A. (1953): Method of preparation of a surfacing material from tar sands; Can. Pat. 675,521.
- Boomer, E. H. (1931): Natural gas research-hydrogenation; Res. Coun. Alberta, Rept. 26, 1930, p. 66-74.
- Boomer, E. H. and Edwards J. (1935): Hydrogenation in a tetralin medium. Destructive hydrogenation of bitumen and pitch; Can. Jour. Res., Vol. 13B, p. 323-330.
- Boomer, E. H. and Saddington, A. W. (1930): On the hydrogenation of bitumen from bituminous sands of Alberta; Can. Jour. Res., Vol. 2, p. 376-383.
- (1931): On the hydrogenation of bitumen from the bituminous sands of Alberta; Can. Jour. Research, Vol. 4, p. 517-539.
- Booth, F. L., Carson, R. E., Bowles, K. W. and Montgomery, D. S. (1958): Low pressure hydrogenation of coker distillate from Athabasca bitumen; Can. Mines Branch Rept. R30, 92 pages.
- Bowles, K. W. and Warren, T. E. (1948): Hydrogenation of Alberta bitumen; Can. Bureau Mines, Fuel Res. Lab., Rept. 96, 120 pages.
- Brooks, B. T. (1952): Evidence of catalytic action in petroleum formation; Ind. Eng. Chem., Vol. 44, p. 2570-2577.
- Carson, R. E. and Booth, F. L. (1952): Natural gas requirements for processing Alberta bituminous sands; unpublished manuscript, Can. Mines Branch, Fuel Res. Lab., 8 pages.
- Clark, K. A. (1945): Asphaltic road oils from Alberta bituminous sand; Can. Chem. Process Inds., Vol. 29, p. 616-617.
- Clark, K. A. and Blair, S. M. (1927): Bituminous sand separation: cracking tests on McMurray bitumen and on Wainwright crude oil. Bituminous sands, rock asphalts and road oiling in the United States; Res. Coun. Alberta, Rept. 20, 1926, p. 39-50.

- Egloff, G. and Morrell, J. C. (1927a): Cracking of bitumen from tar sand; *Oil and Gas Jour.*, Vol. 25, No. 32, p. 192.
- (1927b): Cracking of bitumen derived from Alberta tar sands; *Can. Chem. Met.*, Vol. 11, p. 33.
- Gilmore, R. E., Rosewarne, P. V. and Swinnerton, A. A. (1926): Canadian shale oil and bitumen from bituminous sands as sources of gasoline and fuel by pressure cracking; *Can. Mines Branch, Invest. of Fuel and Fuel Testing, 1926, Rept. 689.*
- Haanel, B. F. and Gilmore, R. E. (1933): Experiments on the hydrogenation of Alberta bitumen and on the effects of pressure on the pyrolysis of methane; *Can. Mines Branch, Rept. 725, p. 112-114.*
- Hodgson, G. W. (1959): Tar sands; *Petroleum Refiner*, Vol. 38, No. 1, p. 199-200.
- Hoskins, A. D. (1964): How hydrogen will be used to upgrade Athabasca tar to sweet crude oil; *Oil and Gas Journal*, May 18, 1964, Vol. 62, No. 20, p. 122-124.
- Matchen, B. and Gishler, P. E. (1951): A study of the oil produced by flash distillation of bituminous sand in a fluidized bed; unpublished manuscript No. C51-51S, Nat. Res. Coun., Ottawa.
- Montgomery, D. S. (1956): The hydrodesulphurization of Coker distillate derived from Athabasca bitumen; *Can. Mines Branch, Fuels Div., Rept. F.R. L. - 237, 14 pages.*
- Pasternack, D. S. (1960): Petroleum substitutes from tar sands; *Chem. Engr. Prog.*, Vol. 56, No. 4, p. 72-75.
- (1963): Low-ash asphalt and coke from Athabasca oil-sands oil; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 207-229.
- (1964): Thermal cracking of Athabasca Oil-sands oil, Pt. 1, Changes in some properties of the oil and its components; *Jour. Can. Petroleum Techn.*, Vol. 3, p. 39-45.
- Plewes, A. C. (1951): Removal of sulphur from Alberta bitumen; *Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 306-329.*
- Rosewarne, P. V. and Connell, G. P. (1928): Report of experiments on the dehydration of bitumen emulsion from Alberta bituminous sands; *Can. Mines Branch, Inv. of Fuel and Fuel Testing, Rept. 689-2, p. 96-103.*

- Rosewarne, P. V., Chantler, H. McD. and Swinnerton, A. A. (1936): Analyses of Canadian crude oils, naphthas, shale oil and bitumen; Can. Mines Branch Rept. 765, 21 pages.
- Scott, J., Collins, G. A. and Hodgson, G. W. (1953): Trace metals in the McMurray oil sands and other Cretaceous reservoirs of Alberta; Can. Oil Gas Ind., Vol. 6, p. 53-55.
- (1954): Trace metals in the McMurray oil sands and other Cretaceous reservoirs of Alberta; Trans. Can. Inst. Min. Met.; Vol. 57, p. 34-40.
- Smoley, E. R. and Schutte, A. H. (1951): Continuous contact coking; Proc. Athabasca Oil Sands Conf., Govt. Alberta, Edmonton, p. 251-256.
- Sterba, M. J. (1951a): Thermal coking of oil; Oil in Canada, Vol. 3, p. 4491 and 4498.
- (1951b): Thermal coking of oil from Alberta bituminous sand; Proc. Athabasca Oil Sand Conf., Govt. Alberta, Edmonton, p. 257-270.
- Swinnerton, A. A. (1944): Properties of asphalt made from Athabasca bituminous sand; Can. Bureau Mines, Memo. Ser. 88, 17 pages.
- Ward, S. H. and Clark, K. A. (1950): Determination of the viscosities and specific gravities of the oils in samples of Athabasca bituminous sand; Res. Coun. Alberta, Rept. 57, 22 pages.
- Warren, T. E. (1933): Report of hydrogenation and pressure cracking experiments on Alberta bitumen for the production of motor fuel; Can. Mines Branch, Rept. 725, p. 115-128.
- (1934): Report of experimental work in the hydrogenation of Canadian coal, coal tar and bitumen fro the production of motor fuel; Can. Mines Branch, Rept. 737, p. 1-31.
- Warren, T. E. and Bowles, K. W. (1934): Description of an apparatus for continuous hydrogenation and experiments on coal tar, bitumen, and suspension of powdered coal in coal tar; Can. Mines Branch, Invest. of Fuels and Fuel Testing, 1932, Rept. 737, p. 86-106.
- (1947): The bituminous sands of Alberta as a course of liquid fuels; Eng. Journ., Vol. 30, p. 597-600.

- _____ (1948): Hydrogenation of Alberta bitumen; Can. Mines Branch, Memo. Series No. 96, 120 pages.
- Warren, T. E., Booth, F. L., Carson, R. E. and Bowles, K. W. (1951a): Hydrogenation sulfur removal; Oil in Canada, Vol. 3, No. 51, p. 4492 and 4498.
- _____ (1951b): Hydrodesulfurization of coker distillate from Athabasca bitumen; Proc. Athabasca Oil Sand Conf., Govt. Alberta, Edmonton, p. 289-305.

8. ECONOMICS

- Alberta Oil and Gas Conservation Board (1960): Report to the Lieutenant Governor in Council with respect to the application of Great Canadian Oil Sands Limited under part VI A of the Oil and Gas Conservation Act; 81 pages.
- _____ (1962): Supplemental Report to the Lieutenant Governor in Council with respect to the application of Great Canadian Oil Sands Limited under part VI A of the Oil and Gas Conservation Act; Oil and Gas Conservation Board, Calgary, 48 pages.
- _____ (1963): Report to the Lieutenant Governor in Council with respect to the applications of Cities Services Athabasca Inc. and Shell Canada Limited under part VI A of the Oil and Gas Conservation Act, October 1963, 258 pages.
- _____ (1964): To the Lieutenant Governor in Council Report on an application of Great Canadian Oil Sands Limited under part VI A of the Oil and Gas Conservation Act; Report 64-3, 81 pages, 4 appendices.
- Blair, S. M. (1950): Report on the Alberta bituminous sands; Govt. Alberta, Edmonton, 82 pages.
- Brese, W. G. (1963): Outlook for the Alberta sulphur industry; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 231-238.
- Canadian Chemical Processing Industries (1952): How the economic "if" was taken out of the Tar Sands, Vol. 36, No. 4, p. 52-54.
- _____ (1964): Tar sands: big profits for Sun Oil?; Vol. 48, No. 8, p. 40-45.

Cities Service Athabasca Inc. (1962): Application under Part VI A of the Oil and Gas Conservation Act by Cities Service Athabasca Inc., Imperial Oil Limited, Richfield Oil Corporation and Royalite Oil Company Limited, May 9, 1962 amended to November 15, 1962, 103 pages.

Clark, K. A. (1922): The bituminous sand and its commercial development; Res. Coun. Alberta, Rept. 5, 1921, p. 43-59.

(1951): Commercial development feasible for Alberta¹ bituminous sands; Can. Oil Gas Ind., Vol. 4, No. 10, p. 25-29.

Ells, S. C. (1926): Bituminous sands of northern Alberta; Occurrence and economic possibilities; Report on investigations to the end of 1924; Can. Mines Branch, Rept. 632, 239 pages.

————— (1932): Estimated cost of producing solid and liquid hydrocarbons from bituminous sand; Can. Mines Branch, Rept. 727, p. 140-145.

————— (1934): Some economic aspects of the bituminous sands of northern Alberta; Can. Mines Branch, Rept. 735, p. 10-29.

Lilge, E. O. (1945): Purification of silica sand. ... Alberta tar sands suitable for glass manufacturing; Can. Chem. Process. Ind., Vol. 29, p. 480-482.

Shell Oil Company of Canada (1962): In the matter of the Oil and Gas Conservation Act being Chapter 63 of the statutes of Alberta, 1957, and in the matter of an application by Shell Oil Company of Canada Limited pursuant to part VI A of the said act for the approval of a scheme or operation for the recovery of oil or a crude hydrocarbon product from the oil sands, Application dated 6th September 1962, 116 pages.

Tanner, N. E. (1951): Government policy regarding oil-sand leases and royalties; Proc. Athabasca Oil Sands Conf., Gov't. Alberta, Edmonton, p. 169-182.

9. UTILIZATION

Bichard, J. A. (1963): Method of preparation of a surfacing material from tar sands; Can. Pat. 675,521.

Clark, K. A. (1923): The bituminous sands of northern Alberta, Their separation and their utilization in road construction; Res. Coun. Alberta, 1922, Rept. 8, p. 42-58.

- (1928a): The availability of the Alberta bituminous sands for production of fuel oil; *Trans. Fuel Conf., World Power Conf., London, 1928, Vol. 1, p. 581-584.*
- (1928b): Bituminous treatment of gravel roads; *Res. Coun. Alberta, Rept. 22, 1927, p. 42-48.*
- (1929a): Bituminous sands of Alberta; Pt. III Utilization; *Res. Coun. Alberta, Rept. 18, 33 pages.*
- (1929b): Asphalt emulsion and gravel road treatment; *Res. Coun. Alberta, Rept. 24, 1928, p. 39-48.*
- (1945): Asphaltic road oils from Alberta bituminous sand; *Can. Chem. Process Inds., Vol. 29, p. 616-617.*
- Clark, K. A. and Blair, S. M. (1926): Bituminous sand separation; Earth road treatments *Res. Coun. Alberta., Rept. 16, 1925, p. 47-61.*
- Clark, K. A. and Donvito, S. (1943): Asphaltic road oils from Abasand diluted crude; unpublished manuscript, *Res. Coun. Alberta, Edmonton, 22 pages.*
- Clark, K. A. and Pasternack, D. S. (1931): Developing the use of bituminous sands; *Contract Record Eng. Rev. Vol. 45, p. 1270-1273, 1489-1492.*
- Ells, S. C. (1924): Bituminous sands and their use for road surfacing material II; *National Petroleum News, Vol. 16, No. 17, p. 75-80, 82.*
- (1927): Use of Alberta bituminous sands for surfacing highways; *Can. Mines Branch, Rept. 684, 31 pages.*
- (1928): Investigation of mineral resources and the mining industry, 1927. I. Bituminous sands of northern Alberta . . . experimental drilling and paving operations; 1927; *Can. Mines Branch, Rept. No. 694, 45 pages.*
- Gilmore, R. E., Rosewarne, P. V. and Swinnerton, A. A. (1926): Canadian shale oil and bitumen from bituminous sands as sources of gasoline and fuel by pressure cracking; *Can. Mines Branch, Invest. of Fuel and Fuel Testing, 1926, Rept. 689.*

- Guseinov, E. A. (1958): Processed oil-bearing sand waste as raw material for the manufacture of building materials; *Materialy Ob'edin Nauchn. Sesii. Inst. Stroit. Materialov i Sooruzh. Zakavkazsk. Resp. Akad. Nauk. Gruz. SSR. Inst. Stroit. Dela*, p. 133-142. Pub. 1961. (Chem. abstr. 12547d (1962)).
- Lilge, E. O. (1945): Purification of silica sand. ... Alberta tar sands suitable for glass manufacturing; *Can. Chem. Process. Ind.*, Vol. 29, p. 480-482.
- Pasternack, D. S. (1960): Petroleum substitutes from tar sands; *Chem. Engr. Prog.*, Vol. 56, No. 4, p. 72-75.
- (1963): Low-ash asphalt and coke from Athabasca oil-sands oil; in K. A. Clark Volume, Res. Coun. Alberta, Edmonton, p. 207-229.
- Rowland, L. O. (1951): Major companies study processes for mining and treating Athabasca bituminous sands to produce good refinery charge stock; *Oil in Canada*, Vol. 3, No. 50, p. 4438.
- Safonov, V. A., Indyukov, N. M., Loginova, S. M. and Shevtsov, I. S. (1959): Development of the technology of treating oil-bearing sands, and utilization of the oil thus produced; *Sb. Tr. Inst. Neftekhim Protseessov, Akad. Nauk Azerb. SSR*, No. 4, p. 272-290. (Chem. abstr. 15721a, Vol. 56, (1962)).
- Shea, G. B. and Higgins, R. V. (1952): Separation and utilization studies of bitumens from bituminous sandstones of the Vernal and Sunnyside, Utah, deposits; Pt. I - Laboratory hot-water separation tests; U.S. Bureau Mines, Rept. of Invest. 4871, p. 1-10.
- Warren, T. E. and Bowles, K. W., (1947a): The bituminous sands of Alberta as a source of liquid fuels; *Eng. Journ.*, Vol. 30, p. 597-600.
- (1947b): The bituminous sands of Alberta, Canada, as a source of liquid fuels; *Trans. Fuel Economy Conf., World Power Conf., Sec. A3, Paper No. 5*, 10 pages.

10. PATENTS

Chapter VI of EIs (1926) contains a description of the following patents issued prior to 1924.

Canadian Patents

165,468	194,436	222,951	236,455	238,222
185,181	199,451	230,423	237,127	238,772
188,034	202,622	230,622	237,128	241,237
188,035	203,676	234,272	237,286	241,238
188,036	207,590	234,961	237,508	241,240
188,464	212,908	235,114	237,770	244,540
194,319	214,551	235,611	237,773	245,317

German Patents

99,566
204,256

United Kingdom Patent

163,519

United States of America Patents

452,764	581,546	722,500	1,394,481
469,777	596,468	757,387	1,396,173
505,416	617,226	779,198	1,396,174
507,885	617,712	821,323	1,409,388
549,399	652,594	918,628	1,424,998
580,592	655,416	1,060,010	1,432,170
581,451	655,430	1,190,633	1,514,162

Citations to the following patents are listed in the bibliography under the inventor's name.

Canadian Patents

278,861	Knight, C. (1927)
289,058	Clark, K. A. (1928)
448,231	(1948b)
488,928	Ferguson, J. C. and Adkins, W. E. (1952)
491,955	Coulson, G. R. (1953)
493,081	Fitzsimmons, R. C. (1953)
506,004	Smith, R. L. and Watson, K. M. (1954)
529,888	Coulson, G. R. (1956a)
530,920	Gishler, R. E. and Peterson, W. S. (1956)
629,047	Glass, K. G. (1960)
639,050	Doscher, T. M. and Reisberg, J. (1962)
639,769	Leary, T. S. and Cottrell, J. H. (1962)
657,876	Aylwin, T. C. and Gale, C. (1963)
657,877	Aylwin, T. C. (1963)
675,507	Butler, R. M. Tiedje, J. L. and Bichard, J. A. (1963)
675,521	Bichard, J. A. (1963b)
675,524	Bichard, J. A. (1963a)

- 675,912 Bichard, J. A. and Wunder, J. W. (1963)
 675,916 Bichard, J. A., Butler, R. M., McEachern, J. R. and
 Wunder, J. W. (1963)
 680,576 Boutin, P. (1964)

Dutch Patents

- 85,837 Tadema, H. J. and Quant, J. Th. (1957)
 88,302 Quant, J. T., Schonebaum, R. C. and Tadema, H. J. (1958)

French Patents

- 563,883 Barendson, M-J. (1923)

German Patents

- 402,544 Schneider, K. (1924)
 945,586 Coulson, G. R. (1956)
 954,721 Ljungström, F. (1956a)
 1,036,432 Marx, J. W., Trantham, J. C. and Schleicher, A. R. (1956)

Swedish Patents

- 168,683 Eurenus, M. O. (1959)

United Kingdom Patents

- 163,519 Fyleman, M. E. (1921)

United States of America Patents

- 581,457 Bell, A. F. L. (1879)
 1,312,266 Narin, F. (1919)
 1,327,572 Ryan, H. D. (1920)
 1,447,297 Day, D. T. (1923)
 1,487,541 Coogan, J. (1924)
 1,497,607 Streppel, A. (1920)
 1,510,983 Dolbear, S. H. (1924)
 1,520,752 Horwitz, W. (1924)
 1,529,505 Reilly, W. J. (1925)
 1,592,179 Clarke, N. S. (1926)
 1,594,625 McClave, J. M. (1926)
 1,607,977 Armstrong, H. H. (1926)
 1,615,121 Fyleman, M. E. (1927)
 1,778,515 Hampton, W. H. (1930)
 1,791,797 Clark, K. A. (1931)
 1,820,917 Langford, C. T. and Teplitz, A. J. (1931)

- 2,091,354 Egloff, G. (1937)
2,130,144 McClave, J. M. (1938)
2,174,184 Bywater, W. McK. (1939)
2,453,060 Bauer, R. F. and Matthews, H. J. (1948)
2,480,670 Peck, E. B. (1949)
2,642,943 Smith, R. L. and Watson, K. M. (1953)
2,694,035 Smith, L. B. Mason, R. B., Blanding, F. H.
and Hemminger, C. E. (1954)
2,718,263 Heilman, W. O. and Ogorzaly, H. J. (1955)
2,722,277 Crawford, P. B. (1955)
2,732,195 Ljungström, F. (1956b)
2,733,193 Haensel, V. (1956)
2,734,579 Elkins, L. E. (1956)
2,771,951 Simm, C. N. (1956)
2,772,209 Stewart, J., Fulton, S. C. and Langer, A. W. (1956)
2,780,450 Ljungström, F. (1957)
2,788,071 Pelzer, H. L. (1957)
2,790,750 Eyre, R. T. (1957)
2,793,104 Rees, H. V. (1957)
2,793,696 Morse, R. A. (1957)
2,793,697 Simm, C. N. and DePriester, C. L. (1957)
2,796,132 Bruce, W. A. (1957)
2,803,305 Behning, P. D., Glass, E. D. and Rzasa, M. J. (1957)
2,804,146 Crawford, P. B. (1957)
2,818,117 Koch, R. L. (1957)
2,825,408 Watson, K. M. (1958)
2,825,677 Coulson, G. R. (1958)
2,839,141 Walter, H. (1958)
2,853,136 Moore, T. V. and Hottel, H. C. (1958)
2,853,137 Marx, J. W. and Tek, M. R. (1958)
2,871,942 Garrison, A. D. and Kunetka, R. E. (1959)
2,874,777 Tadema, H. J. (1959)
2,880,802 Carpenter, P. G. (1959)
2,880,803 Parker, H. W. (1959)
2,880,981 Bergstrom, E. V. (1959)
2,881,126 Glinka, C. (1959)
2,882,973 Doscher, J. M. and Reisberg, J. (1959)
2,885,275 Rees, H. V. (1959)
2,885,339 Coulson, G. R. and Clark, L. (1959)
2,889,881 Trantham, J. C. and Dixon, H. O. (1959)
2,889,882 Schleicher, A. R. (1959)
2,903,407 Fischer, P. W., Kenny, V. and Scheffel, J. W. (1959)
2,905,595 Berg, C. H. (1959)
2,906,680 Ruskin, S. L. (1959)
2,907,389 Hitzman, D. O. (1959)
2,908,641 Boyle, F. A. (1959)

- 2,910,424 Tek, M. R. and Marwil, S. J. (1959)
 2,911,349 Coulson, G. R. (1959)
 2,914,309 Salmonsson, G. J. W. (1959)
 2,921,010 Sherborne, J. E. (1960)
 2,924,565 Stegemeier, R. J. and Fischer, P. W. (1960)
 2,940,919 Hemminger, C. E. (1960)
 2,980,600 Kelley, A. E. (1961)
 3,017,342 Bulat, T. J., Logan, J. R. and Kusy, P. F. (1962)
 3,052,621 Clark, L. (1962)
 3,074,877 Friedman, L. D. (1963)
 3,075,913 Scheffel, J. W. and Fischer, P. W. (1963)

U. S. S. R. Patents

108,518 Anikin, P. I. (1957)

11. REPORTS OF ROYAL COMMISSIONS, AND SUBMISSIONS TO
 GOVERNMENT AGENCIES

Adkins, W. E. (1949): Report to the board of trustees on Oil Sands
 Project from inception to December 1948; unpublished
 manuscript, Govt. Alberta, Edmonton.

—————(1950): Report to the Board of Trustees on the Govern-
 ment Oil Sands Project from January 1, 1949 to December
 31, 1949; unpublished manuscript, Govt. Alberta, Edmonton.

Alberta, Government (1950): Engineering and economic data from
 operation of Bitumount plant - summer 1949; unpublished
 manuscript, Oil Sands Project, Govt. Alberta, Edmonton.

—————(1959): Alberta Technical Committee report to the
 Minister of Mines and Minerals and the Conservation Board
 with respect to an experiment proposed by Richfield Oil
 Corporation involving an underground nuclear explosion
 beneath the McMurray oil sands with the objective of
 determining the feasibility of recovering the oil with the aid
 of the heat released from such an explosion; 55 pages.

Alberta Oil and Gas Conservation Board (1960): Report to the Lieutenant
 Governor in Council with respect to the application of Great
 Canadian Oil Sands Limited under part VI of the Oil and Gas
 Conservation Act; 81 pages.

—————(1962): Supplemental Report
 to the Lieutenant Governor in Council with respect to the
 application of Great Canadian Oil Sands Limited under part
 VI A of the Oil and Gas Conservation Act; Oil and Gas
 Conservation Board, Calgary, 48 pages.

- (1963a): A description and reserve estimate of the oil sands of Alberta; Oil and Gas Conservation Board, Calgary, 60 pages.
- (1963b): Report to the Lieutenant Governor in Council with respect to the applications of Cities Service Athabasca Inc. and Shell Canada Limited under part VI A of the Oil and Gas Conservation Act, October 1963, 258 pages.
- (1964): To the Lieutenant Governor in Council Report on an application of Great Canadian Oil Sands Limited under part VI A of the Oil and Gas Conservation Act; Report 64-3, 81 pages, 4 appendicies.
- Blair, S. M. (1950): Report on the Alberta bituminous sands; Govt. Alberta, Edmonton, 82 pages.
- Boyd, M. L. (1954): Bibliography of the Alberta bituminous sands; Can. Mines Branch, Fuels Research B.R., Report No. 1, 23 pages.
- Cities Service Athabasca Inc. (1962): Application under Part VI A of the Oil and Gas Conservation Act by Cities Service Athabasca Inc., Imperial Oil Limited, Richfield Oil Corporation and Royalite Oil Company Limited, May 9, 1962 amended to November 15, 1962, 103 pages.
- Clark, K. A. (1955): Athabasca Oil Sands; Part of Govt. Alberta brief for Gordon Royal Commission.
- (1959): Monthly analyses of Athabasca river water, samples at and near McMurray, Alberta; Res. Coun. Alberta, Mimeo. Circ. No. 28.
- Dyck, W. J. (1944): Rapid laboratory and field method for the determination of bitumen content of bituminous sands; Can. Bureau Mines, Memorandum Ser., No. 87, 9 pages.
- Pasternack, D. S. (1949): Report on operations at Bitumount during 1949; unpublished manuscript, Res. Coun. Alberta, Edmonton.
- Royal Commission on the Development of Northern Alberta, Report (1958): Govt. Alberta, Edmonton, 115 pages.
- Royalite Oil Company Limited (1958): Submission to the Royal Commission on energy re Athabasca bituminous sands; unpublished manuscript, 3 pages.

Shell Oil Company of Canada (1962): In the matter of the Oil and Gas Conservation Act being Chapter 63 of the statutes of Alberta, 1957, and in the matter of an application by Shell Oil Company of Canada Limited pursuant to part VI A of the said act for the approval of a scheme or operation for the recovery of oil or a crude hydrocarbon product from the oil sands, Application dated 6th September 1962, 116 pages.

Ward, S. H. and Clark, K. A. (1947): Examination of the possibilities of water-drive as a means of recovery of oil from Alberta bituminous sand; unpublished manuscript, Res. Coun. Alberta, Edmonton, 17 pages.

Warren, T. E. and Bowles, K. W. (1948): Hydrogenation of Alberta bitumen; Can. Mines Branch, Memo. Series No. 96, 120 pages.

12. GOVERNMENT REGULATIONS

Alberta Government (1957): The Oil and Gas Conservation Act; Queens Printer, Edmonton.

—————(1958): Regulations governing disposition of bituminous sands rights the property of the Crown under The Mines and Minerals Act; Department of Mines and Minerals office consolidation of Alberta regulation 333/57 and 195/58.

—————(1961a): Regulations to amend the regulations governing the disposition of bituminous sands rights the property of the Crown; Alberta Regulation 12/61.

—————(1961b): Regulations governing the disposition of oil sands rights the property of the Crown; Alberta regulation 144/61.

—————(1962a): Bituminous sand regulations under the Mines and Minerals Act 1962; Alberta Regulation 342/62; Queens Printer, Edmonton.

—————(1962b): An Act to amend the Oil and Gas Conservation Act; Queens Printer, Edmonton.

13. NEWS REPORTS

Adkins, W. E. (1948): New plant to process Athabasca oil sands; Petroleum Engr., April 1948, Vol. 19, No. 7, p. 121-126.

- (1949): Oil sands demonstration plant; *World Petroleum*, Vol. 20, p. 40-45.
- (1950): Novel separation process unlocking Canada's oil sands; *Chem. Eng.*, Vol. 57, No. 3, p. 103-105.
- Bell, R. (1908): The tar sands of the Athabasca River, Canada; *Mining World*, Vol. 28, p. 753.
- Berg, C. (1951a): Mild hydrogenation of bitumen; *Oil in Canada*, Vol. 3, No. 51, p. 4491.
- Blair, S. M. (1952): Canada's oil industry; Neil Matheson McWharrie Lecture, Royal School of Arts, London, April 1952, 21 pages.
- Bruce, W. R. and Hodgson, G. W. (1951): Flow characteristics of sand suspensions; *Oil in Canada*, Vol. 3, No. 51, p. 4490.
- Canadian Chemical Processing Industries (1952a): Canadian firms tackle Alberta Oil Sands, Vol. 36, No. 4, p. 10-12.
- (1952b): How the economic "if" was taken out of the Tar Sands, Vol. 36, No. 4, p. 52-54.
- (1964): Tar sands: big profits for Sun Oil?; Vol. 48, No. 8, p. 40-45.
- Clark, K. A. (1935): Recovery of oil from bituminous sands in northern Alberta; *National Petroleum News*, Vol. 27, No. 27, p. 30, 32-36.
- (1945): Bituminous Sands of Alberta; *Oil Weekly*, Vol. 118, No. 11, p. 46-51.
- (1948): The oil-sand separation plant at Bitumount; *Western Miner*, Vol. 21, No. 8, p. 131-134.
- (1949): The Athabasca tar sands; *Scientific American*, Vol. 181, No. 5, p. 52-55.
- (1950): The hot water washing method for the recovery of oil from Alberta tar sands; *Can. Oil Gas Ind.*, Vol. 3, No. 6, p. 46-49.
- (1951a): New technique taps Athabasca tar sands; *World Oil*, Vol. 132, No. 2, p. 205-208.
- (1951b): Commercial development feasible for Alberta's bituminous sands; *Can. Oil Gas Ind.*, Vol. 4, No. 10, p. 25-29.

- Clark, K. A. and Pasternack, D. S. (1931): Developing the use of bituminous sands; *Contract Record Eng. Rev.* Vol. 45, p. 1270-1273, 1489-1492.
- Djingheuzian, L. E. (1951): Cold-water separation; *Oil in Canada*; Vol. 3, No. 51, p. 4486-4487.
- Ells, S. C. (1924a): Extent and characteristics of northern Alberta bituminous sands; *National Petroleum News*, Vol. 16, No. 15, p. 69-73.
- (1924b): Bituminous sands of northern Alberta; *Petroleum World*, Vol. 21, p. 152.
- (1942): Research touches the north; *Canadian Geographical Jour.*, p. 256-267.
- Falconer, W. L. (1951): Stratigraphy of McMurray formation; *Oil in Canada*, Vol. 3, No. 50, p. 4440-4443.
- Gibbon, A. (1957): Is this the answer to the Athabasca tar sand riddle; *World Oil*, Dec. 1957, p. 171-177.
- Hall, H. H. (1951): Pipeline transport from oil sands; *Oil in Canada*, Vol. 3, No. 50, p. 4460-4461.
- Hall, P. B. (1951): Coring bituminous sands; *Oil in Canada*, Vol. 3, No. 50, p. 4454.
- Hartley, F. L. and Brinegar, C. S. (1957): Oil shale and bituminous sand; *Sci. Monthly*, Vol. 84, p. 275-289.
- Hodgson, G. W. (1954): The McMurray oil field; *Alberta Soc. Petroleum Geol., News Bull.*, Vol. 2, No. 3, p. 1-3.
- (1959): Tar sands; *Petroleum Refiner*, Vol. 38, No. 1, p. 199-200.
- Holloway, H. L. (1960): Oil sands of Alberta; *Min. Mag.* Vol. 102, p. 337.
- Hoskins, A. D. (1964): How hydrogen will be used to upgrade Athabasca tar to sweet crude oil; *Oil and Gas Journal*, May 18, 1964, Vol. 62, No. 20, p. 122-124.
- Hume, G. S. (1951): Possible Lower Cretaceous origin; *Oil in Canada*, Vol. 3, No. 50, p. 4450.
- (1951b): Outline of drilling program; *Oil in Canada*, Vol. 3, No. 50, p. 4452.

- Koch, R. L., Gleason, J. F. and Boston, W. G. (1954): In situ combustion field tested again; *Oil and Gas Jour.*, Feb., p. 102.
- Kuhn, C. S. and Koch, R. L. (1953): In-situ combustion - newest method of increasing oil recovery; *Oil and Gas Jour.*, Aug., p. 92-96, 113-114.
- Latham, R. H. (1951): Proposed mining methods; *Oil in Canada*, Vol. 3, No. 50, p. 4456-4457.
- Link, T. A. (1951): Possible Devonian origin of bitumen; *Oil in Canada*, Vol. 3, No. 50, p. 4448.
- McClave, J. M. (1936): The recovery of oil from Athabasca Oil Sands; *Can. Min. Jour.*, Vol. 56, Dec. 1936, p. 317-323.
- McMurray Asphaltum and Oil Limited (1924): Bituminous sand research by McMurray Asphaltum Oil Limited and Draper Manufacturing Company; *Can. Min. Jour.*, Vol. 45, p. 1270-1271.
- McNicholas, F. S. (1951): Block caving of oil sands; *Oil in Canada*, Vol. 3, No. 50, p. 4458.
- Montgomery, D. S. (1956): Our valuable research ally in Ottawa. . . The Fuels Division; *Can. Oil and Gas Industries*, Vol. 9, No. 1, p. 37-40.
- Muir, W. L. G. (1951): Some suggestions for mining the Athabasca bituminous sands; *Western Miner*, Vol. 24, No. 10, pages 44-46.
- Ness, R. C. (1951): Results of Oil Sands Project discussed by technical group, *Can. Oil and Gas Ind.*, Vol. 3, No. 1, Oct. 1951.
- Nickle, C. O. (1947): Dominion's liquid bitumen find of great importance; *Oil Weekly*, Vol. 124, No. 10, p. 23-27.
- Oil in Canada* (1951): Bituminous sands stratigraphy; *Oil in Canada*, Vol. 3, No. 50, p. 4444.
- (1959): Alberta okays oil sand explosion; *Oil in Canada*, Vol. 11, No. 47, p. 14-15.
- (1963a): Well drilling feature of tar sand plan; Vol. 15, No. 13, p. 32576-32581.
- (1963b): Can-Amara to sell tar sand oil outside; Vol. 15, No. 13, p. 32562.

- Oilweek (1959a): Study committee finds no danger in sands A-blast;
Oilweek, Vol. 10, No. 28, p. 20.
- (1959b): Buried tar sand treasures still defy exploiters;
Oilweek, Vol. 10, No. 28, p. 21-23.
- (1959c): Alberta committee urges okay for oil sands A-blast;
Oilweek, Vol. 10, No. 31, p. 18-19.
- (1960): In situ combustion proposed for Athabasca; Vol. 11,
No. 23, p. 13-14.
- (1963a): Oil sands breakthrough doubles world reserves; Vol.
13, No. 49, p. 19-21.
- (1963b): World implications for new oil sands process; Vol. 13,
No. 49, p. 22-23.
- (1963c): How Shell's process works; Vol. 13, No. 49, p. 24-27.
- (1964): Varying pays make for tricky Athabasca reserve
estimates; Vol. 15, No. 34, p. 25.
- Oil and Gas Journal (1960): Four-Company Team Tackles Athabasca,
Oil and Gas Journ., Vol. 58, No. 3, p. 44-45.
- Pasternack, D. S. (1951): Hot water separation. Oil in Canada,
Vol. 3, No. 51, p. 4485.
- Pengelly, M. (1960): The enigma of Athabasca; Imperial Oil Review,
April 1960, p. 15-18.
- Peterson, W. S. and Gishler, P. E. (1951): Fluidized solids separation;
Oil in Canada, Vol. 3, No. 51, p. 4488-4489.
- Petroleum Week (1960): Mining and ore disposal complicate tar sands
development; Petroleum Week, August 5, 1960, p. 20-21.
- Rowland, L. O. (1951): Major companies study processes for mining
and treating Athabasca bituminous sands to produce good
refinery charge stock; Oil in Canada, Vol. 3, No. 50,
p. 4438.
- Rühl, W. (1952): Die Athabasca-Oelsande-geologische technische und
wirtseh'af tliche, Entwicklung Ver. Schweizerische Petroleum-
Geologen, u Ingenieure, Vol. 19, No. 57, p. 48-49.
- Sterba, M. J. (1951): Thermal coking of oil; Oil in Canada, Vol. 3,
p. 4491 and 4498.

Tanner, N. E. (1952): The oil sands - waste or wealth; Northwest Oil Jour., Vol. 1, p. 99.

Warren, T. E. (1950): An outline of field operations for processing Alberta bituminous sands; Oil in Canada, Vol. 2, No. 50, p. 24.

————— (1951): The distribution of heat liberated from a well in bituminous sand; Oil in Canada, Vol. 3, No. 51, p. 4484.

Warren, T. E., Booth, F. L., Carson, R. E. and Bowles, K. W. (1951): Hydrogenation sulfur removal; Oil in Canada, Vol. 3, No. 51, p. 4492 and 4498.

Waterman, H. I., and Brakel, A. (1952): Report on bituminous sand of Alberta; Ingenieur, Vol. 64, No. 8, p. 12-24.

Wickenden, R. T. (1951): Lower Cretaceous stratigraphy; Oil in Canada, Vol. 3, No. 50, p. 4439.