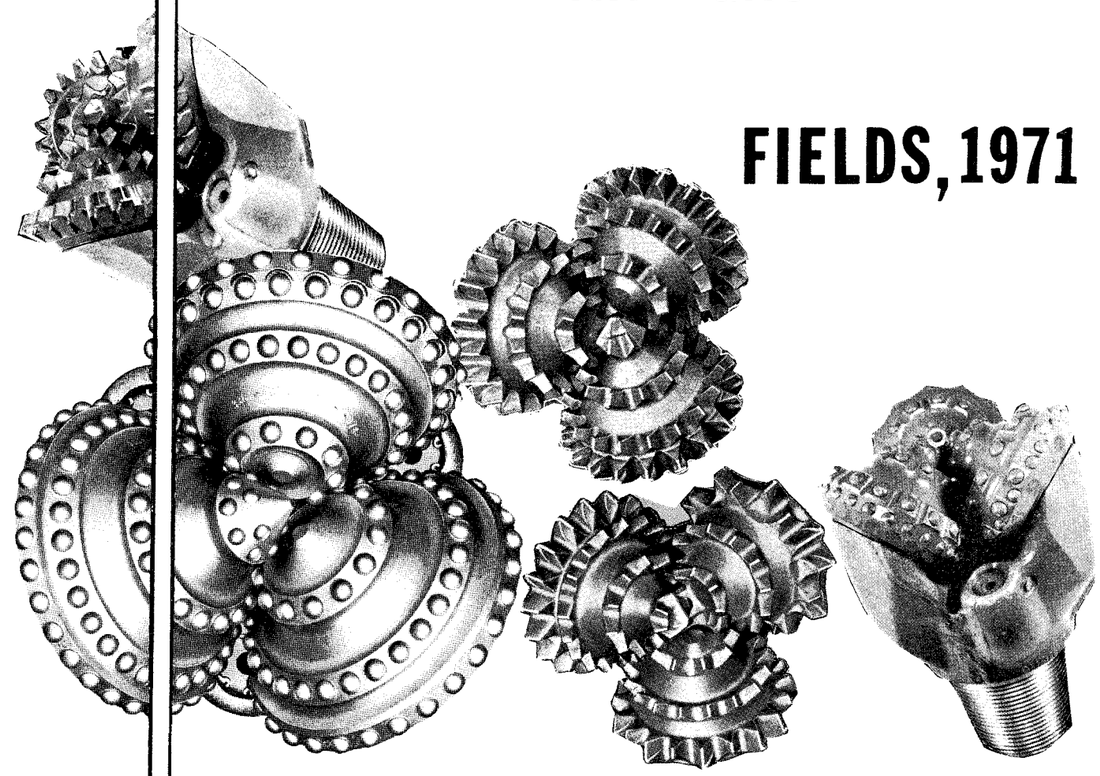
MICHIGAN'S

OIL AND GAS

FIELDS, 1971



ANNUAL STATISTICAL SUMMARY 16

1972

Geological Survey

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DEPARTMENT OF NATURAL RESOURCES
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MICHIGAN'S OIL AND GAS FIELDS, 1971

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PREFACE

The Geological Survey Division, Department of Natural Resources, being charged with the administration of the State's oil and gas laws, has maintained an exceptional collection of oil and gas field records for many years. Michigan's first oil field was discovered at Port Huron, St. Clair County, about 1886, but recognition as an important petroleum province did not start until about 1925 when the Saginaw field was found. Information covering these early activities was published from time to time in various Survey publications. Eventually there evolved a small annual publication devoted solely to oil and gas activities.

The first oil and gas summary was published about 1932. The early issues, from 1932 through 1946, were unbound mimeograph pages summarizing the most significant activities and drilling statistics. They were of limited distribution and few copies are now available. As the petroleum industry grew in importance to the State's economy, the summaries were expanded and improved in response to the needs of industry and government agencies for various kinds of oil and gas field information.

Each year since 1925, new oil and gas pools have been found at various places in the Southern Peninsula. A new cycle of exploration for Silurian reefs is currently underway in several parts of the basin but especially in the sparsely tested Northern District. Exploratory drilling in this region and elsewhere during 1971 resulted in 41 new fields or pools, the highest number since 1946 when 29 were found. General data on the new fields are included in this issue.

This issue brings together under one cover many oil and gas field statistical data not usually found in any other industry or government publication. Oil and gas field data of historical and general interest are included and thus preserved herein for future reference. This summary is, therefore, a source of information most useful in helping to evaluate Michigan's past history and future prospects as an oil and gas province. Furthermore, the gathering, maintenance, and compilation of the many data reflect , in part, the various functions of the Oil and Gas Group of the Geological Survey.

Some of the statistical data and other types of information maintained for incorporation into the summaries is also provided to such groups as the American Assocation of Petroleum Geologists, American Petroleum Institute, U. S. Bureau of Mines, Independent Petroleum Association of America, Interstate Oil Compact Commission and others for incorporation into their respective publications. Data is also frequently furnished to companies and individuals during the year.

The oil and gas summaries are not printed in large quantities. They are distributed to various government agencies in all 50 states, to numerous libraries in the United States and several abroad, and to many individuals and companies engaged in petroleum or other mineral industries. Current and some back issues are available at nominal cost from Publications Room as noted inside the front cover.

ACKNOWLEDGEMENTS

The several Sections of the Oil and Gas Conservation Group, Geological Survey, are responsible for the collection and maintenance of certain kinds of oil and gas field data. The compilation and assembly of the various data into a yearly report is done by the Petroleum Geology Section. Personnel who, under the general supervision of R. M. Acker, Assistant State Geologist, Oil and Gas Conservation Group, directed staff members in the gathering and maintenance of basic records and who contributed specific data are:

V. F. Sargent, Supervisor, Regulatory Control Section and S. L. Alguire, Supervisor of Field Offices. Contribution: All data in columns under the headings "Number of Oil and Gas Wells" and "Brine Production" on Tables 2, 3 and 4.

W. G. Smiley, Supervisor, and J. L. Lorenz, Production and Proration Section. Contribution: All oil and gas production data, oil import figures, monetary valuations, refinery and LPG storage data, secondary recovery data, and oil recovery per acre drilled (Table 2).

G. D. Ells, Supervisor, and B. L. Champion, Petroleum Geology Section. Contribution: General drilling statistics and well completion data, discovery well and deep test data, drilled acreage figures, cumulative records, and all other summary information not specifically provided by those mentioned above.

Inquiries concerning information contained in this summary should be directed to the appropriate personnel as noted above.

Oil and gas production figures cited herein are compiled by the Production and Proration Section from records obtained from the Michigan Department of Revenue. Gas import figures are obtained from the Public Service Commission, Gas Section, compilations. All hydrocarbon production figures are preliminary and subject to correction as warranted.

Manuscript preparation by G. D. Ells, assisted by Beverly L. Champion, Robert A. Dunn and Margaret Schineman, Petroleum Geology Section; Glenna J. Williams, Mineral Wells Section, and Lois J. DeClaire, General Geology Section.

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Lansing, Michigan
June, 1972

MICHIGAN'S OIL AND GAS FIELDS, 1971

INTRODUCTION

Oil and gas are but one of Michigan's important natural resources. The value of these raw products, nearly all of which were refined and used in Michigan, amounted to about $49,293,264 in 1971. In addition, monies spent in leasing, exploration and development and other auxiliary activities contribute substantially to the State's economy each year. Statistical and other data, useful to further development of hydrocarbon resources, have been maintained for many years.

This issue of the oil and gas field statistical summary brings together data on various facets of the State's oil and gas industry during 1971. Certain indices which show the trend of activities from year to year are shown in chart form along with figures for prior years. Other charts show cumulative figures. The summary also contains abundant information of an historical nature, useful in oil and gas field evaluation. Furthermore, the gathering, maintenance and compilation of the many data reflects, in part, the varied functions of the Oil and Gas Section of the Geological Survey.

Certain figures for 1971, such as the number of exploratory, development and service wells drilled, and the number of new field and pool discoveries, may differ from figures reported for the same year by regional or national trade journals, or by industry reporting services. The differences are generally minor and due to methods of gathering and reporting well drilling data, and determining a cut-off date for reporting statistics on a yearly basis.

The kinds of data listed herein are mainly derived from records received and maintained by the Oil and Gas Section, Geological Survey Division. The data contained in this and previous oil and gas summaries have been treated uniformly from year to year and reflect as near as possible the actual figures and other information that should be credited to the year in review.

Part I of this publication summarizes significant statistics on oil and gas field activities during 1971 and related records of the Oil and Gas Section during the year. Part 2 contains specific information on the State's oil and gas fields, gas storage fields and other related subjects. Part 3 contains cumulative records of importance to the petroleum industry. Data for 1971 has been included in cumulative records.

1971 STATISTICAL DATA

* * * OIL AND GAS PERMITS * * *

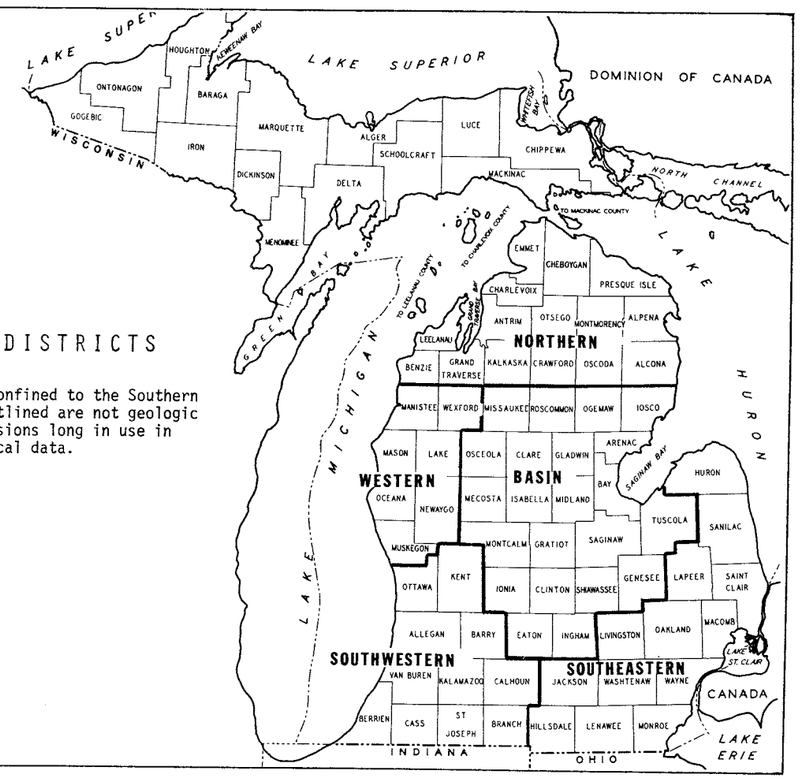
Regular oil and gas permits issued during 1971 began with number 28322 and ended with number 28746. A total of 425 were issued to drill wells classified as follows:

Exploratory wells	173
Development wells	179
Gas storage facility wells .	60
LPG storage operations . .	13

Included in the total were 5 permits issued to reopen and test previously drilled and abandoned dry holes. Also, 6 permits issued in 1971 and included in the yearly total were terminated in 1971 after permittees failed to commence drilling within 6 months after issuance of the permit. In addition to regular permits, 16 deepening permits and 3 BDW permits were issued. No geological test permits were issued during the year.

OIL AND GAS DISTRICTS

All oil and gas fields are confined to the Southern Peninsula. The districts outlined are not geologic provinces but arbitrary divisions long in use in presenting regional statistical data.



The distribution of permits by oil and gas districts through a five-year period including 1971 is as follows:

DRILLING PERMITS BY DISTRICT

DISTRICTS	Permits Issued 1967	1968	1969	1970	1971
Basin	91	88	113	169	138
Northern	11	17	32	52	81
Southeastern	178	143	126	121	130
Southwestern	72	61	41	33	30
Western	53	69	67	50	46
Totals	405	378	379	425*	425**

*The following permits issued in 1970 were terminated in 1971 before drilling commenced:

27913	28140	28221	28228	28248	28282
28120	28181	28226	28234	28270	28313
28125	28218	28227	28239	28273	28314

**The following permits issued in 1971 were also terminated in 1971:

28322	28366	28386	28466
28352	28385	28393	28476

The fluctuation in the number of permits issued for gas storage wells and other service well types over a five-year period is as follows:

TYPE OF SERVICE WELL	1967	1968	1969	1970	1971
Gas storage	24	27	48	115	60
LPG, Wtr. Inj., Brine Disposal, etc.	2	9	10	1	16
Totals	26	36	58	116	76

The distribution of 1971 oil and gas permits by county is shown on Table 1, page 5. In addition to issuance of permits for various types of wells, 120 applications were approved for rework operations on existing wells. Applications for transfer of ownership were received and processed for 870 wells during 1971.

* * * WELL COMPLETIONS * * *

There were 300 new-hole exploratory and development wells which reached total depth and were completed as producers or dry holes during 1971. The figure does not include service wells, old wells drilled to deeper objectives or reworks. The number of new-hole service well completions, mainly facility wells in gas storage reservoirs, amounted to 96 in 1971. The figure does not include reworks or old wells converted to service wells of various types. Well completion figures by county are shown on Table 1, page 5. Fluctuations in the number of new-hole completions and the resulting number of oil, gas or dry holes over a five year period are as follows:

EXPLORATORY AND DEVELOPMENT WELL COMPLETIONS

Year	Exploratory Wells Oil	Gas	Dry	Development Wells Oil	Gas	Dry	Totals
1967	7	2	171	69	38	106	393
1968	9	4	151	61	8	100	333
1969	7	3	148	66	6	91	321
1970	8	6	139	43	9	72	277
1971	28	11	122	55	20	64	300

SERVICE WELL COMPLETIONS

Year	GS	INJ	LPG	SWD	Totals
1967	24	0	0	0	24
1968	27	2	6	0	35
1969	20	5	0	1	26
1970	110	0	3	0	113
1971	81	0	13	2	96

Certain completion data for exploratory, development and other types of wells are provided during the year for the American Petroleum Institute and the American Association of Petroleum Geologists. Statistical data published for Michigan by these agencies are correct but sometimes differ slightly from Geological Survey figures. The differences are primarily due to method of determining a cut-off date for handling statistics on a yearly basis and to internal decisions relating to final year-end status of a completed well as determined by the Survey. The following exploratory and development well statistics have been extracted from the Quarterly Review of Drilling Statistics for the United States, American Petroleum Institute, Vol. V, No. 4, February, 1972, Table II and III, pages 16-17:

API EXPLORATORY AND DEVELOPMENT WELL COMPLETIONS

Year	Exploratory Wells Oil	Gas	Dry	Development Wells Oil	Gas	Dry	Totals
1971	26	13	122	55	20	66	302

* * * DRILLED FOOTAGE * * *

The following figures from Survey records show the total drilled footage for 1971 and the 3 prior years:

Well Class	1968	1969	1970	1971
Exploratory	522,384	544,160	615,952	704,192
Development	564,827	559,936	454,016	554,968
Service Well (All types)	76,026	69,126	162,344	180,418
Totals:	1,163,237	1,173,222	1,232,312	1,439,578

Drilled footage figures extracted from the aforementioned API publication are as follows:

API DRILLED FOOTAGE FIGURES

Exploratory Wells Oil	Gas	Dry	Development Wells Oil	Gas	Dry
135,490	65,486	502,105	227,190	65,428	258,398

The average depth, statewide, of exploratory wells drilled in 1971 was 4,374 feet as compared with 4,025 feet the prior year. Development well depths averaged about 3,993 as compared with 3,661 the prior year. Service well depths averaged about 1,879. Most were completed in shallow Mississippian Stray Sandstone gas storage reservoirs. Drilled footage figures and average well depths for specific counties are shown on Table 1, page 5.

* * * OIL AND GAS PRODUCTION * * *

Oil production amounted to 11,893,411 barrels as compared with 11,693,488 barrels produced in 1970. The small increase reflects production from new fields in the northern District. Gas production decreased from 39,252,013 Mcf in 1970 to 25,930,622 Mcf in 1971. As new 1971 gas fields are brought into production, gas figures should increase in 1972. The Albion-Scipio Trend pools again produced about 40% of the states oil and about 43% of the gas in 1971.

Oil and gas production by individual field and pool is found in Part 2, Table 3. Annual and cumulative production by year and geologic formation and cumulative production by county is found in Part 3.

Oil and gas production for specific counties during 1971 is shown on Table 1, page 5. Production by month and oil and gas districts during 1971 is as follows:

OIL AND GAS PRODUCTION BY MONTH

	Barrels Oil	MCF Gas
January	937,283	2,584,155
February	880,585	1,863,181
March	994,696	2,505,728
April	976,183	2,465,831
May	1,033,095	2,261,334
June	986,566	1,985,579
July	984,192	1,876,683
August	996,524	1,841,740
September	1,009,191	2,116,651
October	1,013,556	2,093,912
November	1,019,298	2,039,459
December	1,062,242	2,296,369
Totals	11,893,411	25,930,622

OIL AND GAS PRODUCTION BY DISTRICT

District	Barrels Oil	MCF Gas
Basin	3,965,826	1,435,055
Northern	1,647,083	3,286,879
Southeastern	4,175,631	16,945,842
Southwestern	1,779,654	4,262,444
Western	325,217	402
Totals	11,893,411	25,930,622

TABLE 1 DRILLING PERMITS, WELL COMPLETIONS, DRILLED FOOTAGE BY COUNTY, 1971

Classification of New Hole Completions
Does not include reworked wells or old wells drilled deeper

COUNTY	OIL/GAS PERMITS ISSUED	OIL AND GAS TESTS Completed Explor.	Devel.	RESULTS Oil Wells	Gas Wells	Dry Holes	SERVICE WELLS Completed G.S.	L.P.G.	TOTAL WELLS DRILLED	TOTAL DRILLED FOOTAGE Explor.	Devel.	Fac.	Average Well Depth
Allegan	4	3	0	1	0	2	0	0	3	7,545	0	0	2515
Alpena	1	1	0	0	0	1	0	0	1	5,260	0	0	5260
Antrim	1	1	0	0	0	1	0	0	1	6,578	0	0	6578
Arenac	4	2	1	0	0	3	0	0	3	6,247	3,220	0	3156
Barry	4	3	0	0	0	3	0	0	3	14,057	0	0	4686
Bay	3	2	1	0	0	3	0	0	3	6,460	3,245	0	3235
Benzie	2	1	0	0	0	1	0	0	1	5,445	0	0	5445
Berrien	1	0	0	0	0	0	0	0	0	0	0	0	0
Branch	1	1	0	0	0	1	0	0	1	3,515	0	0	3515
Calhoun	16	6	7	0	2	11	1	0	14	22,669	30,155	3,301	4009
Charlevoix	2	2	0	0	0	2	0	0	2	8,954	0	0	4477
Clare	20	0	1	1	0	0	18	0	19	0	4,020	26,991	1632
Clinton	1	1	0	0	0	1	0	0	1	2,647	0	0	2647
Crawford	1	1	0	1	0	0	0	0	1	7,300	0	0	7300
Eaton	6	4	3	1	0	6	0	0	7	15,408	14,864	0	4325
Genesee	10	1	8	6	1	2	0	0	9	3,228	20,273	0	2611
Gladwin	13	3	3	2	0	4	0	0	6	11,853	11,738	0	3932
Grand Traverse	8	3	1	1	1	2	0	0	4	18,877	6,486	0	6341
Gratiot	2	2	0	0	0	2	0	0	2	6,315	0	0	3158
Hillsdale	30	6	16	6	0	16	0	0	22	24,539	63,514	0	4002
Ingham	40	11	24	21	1(1)	14	0	0	35	52,789	95,920	0	4249
Ionia	1	0	0	0	0	0	0	0	0	0	0	0	0
Isabella	4	2	1	0	0	3	11	0	14	7,479	4,100	15,554	1938
Jackson	12	8	2	0	0	10	0	0	10	37,385	9,365	0	4675
Kalkaska	31	17(2)	6	14	5	3	0	0	23	119,499	40,355	0	6950
Lake	3	1	1	1	0	1	0	0	2	3,352	3,560	0	3456
Lapeer	8	0	6	5	1	0	0	0	6	0	17,018	0	2836
Lenawee	4	4	1	0	0	5	0	0	5	14,002	1,968	0	3194
Livingston	9	2	9	0	8	3	0	0	11	7,057	36,499	0	3960
Macomb	1	2	0	0	0	2	0	0	2	6,661	0	0	3331
Manistee	3	2	0	0	0	2	0	0	2	9,901	0	0	4951
Mason	1	1	0	0	0	1	0	0	1	5,960	0	0	(3)
Mecosta	7	4	0	0	0	4	0	0	4	10,580	1,250	0	2958
Midland	0	1	0	0	0	1	0	0	1	3,518	0	0	3518
Missaukee	2	0	0	0	0	0	0	0	0	0	0	0	0
Monroe	1	1	0	0	0	1	0	0	1	2,575	0	0	2575
Montcalm	11	2	8	2	0	8	10	0	20	6,757	27,962	11,276	2300
Montmorency	1	1	0	0	0	1	0	0	1	4,833	0	0	4833
Muskegon	0	0	0	0	0	0	0	0	0	0	0	0	0
Newaygo	26	3	0	0	0	3	14	0	17	6,451	0	13,278	1161
Oakland	1	0	6	0	4	2	0	0	6	0	26,036	0	4339
Oceana	11	8	3	4	1	6	0	0	11	15,405	8,720	0	2193
Ogemaw	2	1	1	1	0	1	0	0	2	10,195	2,728	0	6462
Osceola	8	2	3	1	3	1	9	0	14	5,440	8,960	19,883	2449
Oscoda	1	2	0	0	0	2	0	0	2	16,427	0	0	8214
Otsego	32	13	11	11	0	13	0	0	24	80,707	70,216	0	6288
Ottawa	2	2	0	0	0	2	0	0	2	4,373	0	0	2187
Presque Isle	1	1	0	0	0	1	0	0	1	3,153	0	0	3153
St. Clair	55	19	16	4	4	27	18	14	67	60,085	42,796	88,986	2864
Tuscola	4	3	0	0	0	3	0	0	3	10,104	0	0	3368
Van Buren	2	2	0	0	0	2	0	0	2	4,599	0	0	2300
Washtenaw	8	2	0	0	0	2	0	0	2	9,702	0	0	4851
Wayne	1	0	0	0	0	0	0	1	1	0	0	1,149	1149
Wexford	2	1	0	0	0	1	0	0	1	8,306	0	0	8306
Totals 54 Counties	425	161	139	83	31	186	81	15	396	704,192	554,968	180,418	

└ Includes permits which were issued and terminated in 1971

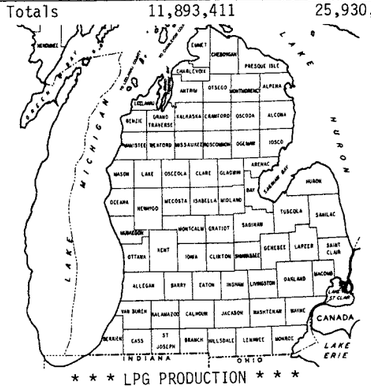
└ Includes 2 BDW connected with LPG Operations.

(1) One well dual discovery Traverse Oil and Niagaran gas.
(2) Includes 1 lost hole which was redrilled from surface.
(3) Drilled footage includes two old wells drilled deeper.

For statistical purposes, a well is considered to be completed if it was drilled to total depth, casing and tubing run, perforated or treated, and was designated as a producer, dry hole, or service well during or at the end of the calendar year.

OIL AND GAS PRODUCTION BY COUNTY IN 1971

County	Barrels Oil	MCF Gas
Allegan	121,900	259,667
Arenac	230,749	---
Barry	11,524	---
Bay	233,977	---
Calhoun	1,532,604	3,794,507
Clare	393,954	188,023
Crawford	524,318	495,120
Genesee	68,242	---
Gladwin	278,597	---
Grand Traverse	3,483	---
Gratiot	6,931	3,240
Hillsdale	2,355,817	5,170,583
Huron	440	---
Ingham	347,580	---
Isabella	186,813	2,338
Jackson	848,546	2,365,958
Kalkaska	302,369	368,836
Kent	58,185	10,596
Lake	185,626	---
Lapeer	81,325	52,300
Lenawee	205	3,025
Livingston	---	---
Macomb	4,006	1,323,422
Mason	29,377	---
Mecosta	101,325	80,825
Midland	184,702	---
Missaukee	545,279	561,941
Monroe	2,162	---
Montcalm	122,600	---
Muskegon	19,979	---
Newaygo	16,185	402
Oakland	697	---
Oceana	74,049	---
Ogemaw	345,927	336,744
Osceola	621,562	11,096
Oscoda	1,902	---
Otsego	814,760	2,422,923
Ottawa	50,557	197,675
Presque Isle	251	---
Roscommon	208,597	250,847
Saginaw	21,431	---
Shiawassee	7,356	---
St. Clair	873,238	8,030,554
Tuscola	60,205	---
Van Buren	4,884	---
Washtenaw	4,933	---
Wayne	4,262	---
Totals	11,893,411	25,930,622



* * * LPG PRODUCTION * * *

Total LPG production in 1971 amounted to about 1,451,956 barrels as compared with 1,777,684 barrels produced in 1970. LPG's are stripped from Michigan produced gas and gas imported via pipeline from western sources. Additional details on LPG production and gas plant operations are found in Part 2, page 34.

* * * OIL AND GAS VALUATION * * *

The average price paid at the wellhead for Michigan produced crude, including condensate, was $3.27 per barrel. The value of this mineral resource amounted to $38,858,706 as compared with $36,246,376 in 1970.

The average price of Michigan produced gas sold at the wellhead was about $.26 per Mcf. The value of this product amounted to about $6,775,629 as compared with $10,476,482 in 1970.

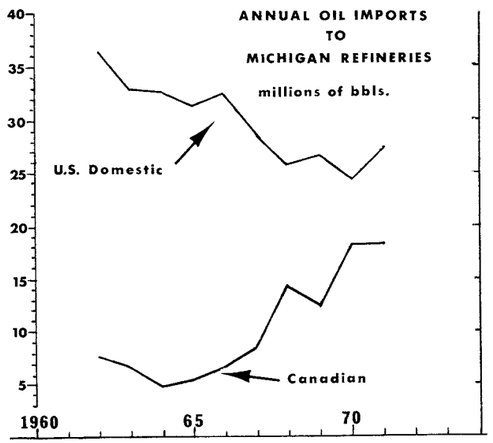
The estimated value of LPG's produced in 1971 was about $2.52 per barrel, or about $.06 per gallon. The value of this product amounted to about $3,658,929 as compared with $4,479,764 in 1970.

* * * OIL AND GAS IMPORTS AND EXPORTS * * *

Imports of domestic crude oil via pipeline from western and midwestern states in 1971 amounted to 27,428,311 barrels, an increase over the 24,462,575 barrels imported in 1970. Imports of Canadian crude via pipeline from western Canada oil fields increased from 17,698,262 barrels in 1970 to 17,723,813 barrels in 1971. Total imports to Michigan refineries amounted to 45,152,124 barrels as compared with 42,160,837 barrels in 1970. Imports by month during 1971 and the trend in imports from 1962 through 1971 are shown below.

1971 CRUDE OIL IMPORTS (Bbls.)

	Domestic	Canadian	Total
January	2,478,742	1,490,972	3,969,714
February	2,295,910	1,316,513	3,612,423
March	2,427,180	1,380,158	3,807,338
April	2,424,979	1,391,395	3,816,374
May	2,719,775	1,286,123	4,005,898
June	2,666,517	1,101,310	3,767,827
July	2,405,565	1,281,206	3,686,771
August	1,598,394	1,585,651	3,184,045
September	2,160,121	1,748,361	3,908,482
October	2,048,049	1,929,721	3,977,770
November	2,180,290	1,558,911	3,739,201
December	2,022,789	1,653,492	3,676,281
Totals	27,428,311	17,723,813	45,152,124



Exports of Michigan produced crude oil to northern Indiana (Ft. Wayne) and Ohio (Cleveland) refineries or terminals amounted to 1,021,228 barrels, an increase over the 512,335 barrels exported in 1970. Oil exports by month are as follows:

1971 CRUDE OIL EXPORTS (Bbls.)

January	90,255
February	82,482
March	97,799
April	97,426
May	78,070
June	84,544
July	75,576
August	72,854
September	90,625
October	91,113
November	73,470
December	87,014
Total	1,021,228

Gas imports to Michigan markets and gas storage fields via pipelines, primarily from Texas, Louisiana, Oklahoma and Kansas fields, increased over 49 billion cubic feet in 1971. Compilations by the Gas Section, Michigan Public Service Commission, show gas imports of 909,209,140 Mcf during 1971 as compared with 860,091,576 Mcf in 1970. Monthly imports of gas during 1971 were as follows:

1971 PIPELINE GAS IMPORTS (Mcf)

January	48,193,404
February	48,747,093
March	59,621,643
April	77,565,343
May	87,577,029
June	95,714,687
July	93,012,738
August	92,886,784
September	93,842,952
October	87,630,623
November	63,802,262
December	60,614,582
Total	909,209,140

* * * EXPLORATORY WELL DRILLING OBJECTIVES * * *

The following chart shows the approximate percentage of exploratory wells (including 2 Precambrian disposal wells) that tested and reached total depth in various rock units in 1970 and 1971. See Stratigraphic Chart for formation succession.

DRILLING OBJECTIVES

System	Formation or Pay	Percentage 1970	Percentage 1971
Pennsylvanian			
Mississippian	"Michigan Stray Ss." "Berea Ss."	1.0	1.5
Devonian	Antrim Shale		
	"Traverse Lime"	10.0	8.0
	Dundee	8.0	9.0
	"Reed City"	8.0	4.0
	Detroit River) "Sour Zone")	1.0	3.0
	Richfield)		
Silurian	Niagaran	57.0	54.0
Ordovician	Trenton-Black River	3.0	9.0
	St. Peter Ss. or Prairie duChien	11.0	10.0
Cambrian	Undifferentiated)		
Precambrian	Undifferentiated)	1.0	1.5

The sizeable percentage of wells drilled only to Niagaran rocks reflects the high interest in Niagaran reef exploration in the northern part of the state and around the southern edge of the basin.

* * * NEW FIELD AND POOL DISCOVERIES * * *

Statewide, the discovery-to-dry hole ratio for all exploratory wells drilled and completed during the year was about 1:3 as compared with 1:10 in 1970. However, nearly 54% of new field discoveries were made in the northern oil and gas district. The discovery ratio in this 15-county area was about 1:3 in 1971, 1:3 in 1970 and about 1:5 in 1969. Nearly all new fields in this district resulted from geophysical surveys, mainly seismic. Reservoir rocks are Niagaran reefs but a few discovery wells were also perforated and completed in the overlying Salina A-1 Carbonate unit as well as the reef. In Ingham County at the southern edge of the basin district, 4 new reef fields were found during the year. Also of significance, a Niagaran reef oil field was found in the northwestern corner of Crawford County, thus opening up another county for Silurian exploration. Elsewhere in the state, new fields and pools were found in well established regions of oil and gas production. The new fields and pools are listed on following pages and included in the comprehensive tables of oil and gas fields, Part 2.

Few of the new discoveries appear to have an ultimate oil or gas yield greater than a Class E field as defined below. Some of the new reef fields have been tentatively rated as Class D. The classifications are based on potential yields as defined by the American Association of Petroleum Geologists, Committee on Statistics of Drilling.

Class A - Over 50 million barrels of oil or 300 BCF gas
Class B - 25-50 million barrels of oil or 150-300 BCF gas
Class C - 10-25 million barrels of oil or 60-150 BCF gas
Class D - 1-10 million barrels of oil or 6-60 BCF gas
Class E - 1 million barrels or less oil or less than 6 BCF gas
Class F - Abandoned as non-profitable

An analysis of discoveries, including field extensions and new pools, according to reservoir formation for a three-year period is shown on the following chart:

ANALYSIS OF DISCOVERY WELLS BY GEOLOGIC SYSTEM

System	Formation or Pay	Number of Discoveries 1969	1970	1971
Pennsylvanian		-	-	-
Mississippian	"Michigan Stray Ss."	-	-	1
	"Berea"	-	2	-
Devonian	Antrim Shale	-	-	-
	"Traverse Lime"	3	-	4
	Dundee	-	1	4
	"Reed City"	-	2	-
	Detroit River "Sour Zone"	1	1	-
	Richfield	1	-	1
Silurian	Salina A-1 or A-2	-	-	-
	Niagaran reef*	4	12	30
Ordovician	Trenton-Black River	1	-	1
	Prairie du Chien	-	-	-
Cambrian	(Gas shows reported in past years)			

* Most reef also have associated Salina A-1 oil or gas pays.

* * * CHANGES IN OIL AND GAS FIELD NAMES * * *

Historically, with few exceptions, Michigan oil and gas fields have been named after nearby geographic entities such as towns, villages, lakes, and township names. Due to numerous Niagaran reef discoveries within relatively small areas and a lack of suitable identifying names for those in the northern part and possibly some areas in the southern part of the basin, the naming system has been modified. Beginning in 1971, most new Niagaran reef fields were named according to township name, followed by the section number wherein the discovery was made, and then by the numerical town and range designation.

The following Northern District reef fields, found in 1969 and 1970, have been renamed as follows:

ORIGINAL NAME (1969 and 1970 Summaries)	NEW FIELD NAME (This Oil and Gas Summary)
Blair	Blair 34-26N-11W
Blue Lake	Blue Lake 28-28N-5W
Cold Springs	Cold Springs 21-28N-6W
Gaylord-Tecon Lake	Hayes 11-29N-4W
Johannesburg	Chester 21-30N-2W
Kalkaska	Kalkaska 28-27N-7W
Kalkaska, North	Kalkaska 5-27N-7W
Mason	Vevay 16-2N-1W
Muncie Lakes	Union 8-26N-9W
Onaway	North Allis 29-35N-2E
Pigeon River	Charlton 4-31N-1W
Rapid River	Rapid River 24-28N-7W
South Boardman	Union 12-26N-9W

* * * STATE ACREAGE UNDER LEASE * * *

State-owned lands under lease for oil and gas development at the end of December 31, 1971 amounted to 919,583 acres. No state-lease oil and gas auctions were held during 1971. Revenue from rentals, royalty, bonus and fees amounted to $1,819,712.92 in 1971. The above figures were provided by the Lands Division of the Department of Natural Resources.

1971 DISCOVERY WELLS

County Location	Field Name	Operator and Lease	Permit Number	Depth to Pay	Total Depth	Initial Production n=(N)IP BOPD	Initial Production t=(T)IP MCFGPD	Producing Formation	Basis for Loc.	AAPG Pool Class
NEW FIELDS										
Allegan	Lee, Sec. 33	Harris Oil, Inc.	28515	1155	1160	P25^{t}		Trav. Ls.	Sub.	E
33-1N-15W		L. A. Lawson #1								
Calhoun	Clarence	MGU Dev. Co.	28488	3154	3240		Est. 10,000^{n}	Niagaran	Seis.	E
19-1S-4W	19-1S-4W	L. Anderson Unit #1								
Crawford	Frederic	Shell Oil Co.	28489	6964	7300	F560 +802 Mcf.^{t}		Niagaran	Seis.	D
10-28N-4W	10-28N-4W	Kerr #1-10								
Eaton	Eaton Rapids	Amoco Production Co.	28670	3716	4200	42 +1600 Mcf.^{t}		Niagaran	Seis.	E
36-2N-3W	36-2N-3W	Ledergerber #1								
Gladwin	Sage	Trico Oil Co.	28162	3864	3869	F200^{t}		Dundee	Sub.	E
12-19N-2W		Guy Thurlow #1								
Grand Traverse	Grant	Shell Oil Co.	28523	5625	6383	F136 +227 Mcf.^{t}		Niagaran	Seis.	E
26-25N-12W	26-25N-12W	Coates #1-26								
Grand Traverse	Whitewater	Amoco Production Co.	28354	6560	6750		F216 Cond. +5400^{t}	Niagaran	Seis.	E
36-27N-9W	36-27N-9W	St.-Whitewater #1-36								
Hillsdale	Reading	Anderson Oil Co.	28336	3100	3478	F25 +160 Mcf.^{t}		Trenton	Sub.	E
29-7S-4W		R. & D. Whitaker #1								
Ingham	Aurelius	Mobil Oil Corp.	28689	3942	4395	F200^{t}		Niagaran	Seis.	E
35-2N-2W	35-2N-2W	Hawkins Brothers #1								
Ingham	Onondaga	Mobil Oil Corp.	28355	3784	5744	F180^{t}		Niagaran	Seis.	D
10-1N-2W	10-1N-2W	Lenore Davis #1								
Ingham	Onondaga	Mobil Oil Corp.	28486	3629	4125	F534 +273 Mcf.^{t}		Niagaran	Seis.	E
21-1N-2W	21-1N-2W	R. L. Comstock #1								
Ingham	Vevay	Mobil Oil Corp.	28277	2141	4600	P72^{t}		Trav. Ls.	Seis.	E
19-2N-1W	19-2N-1W	Alexander Imlay #1								
Ingham	Vevay	Mobil Oil Corp.	28277	3942	4600		7419^{t}	Niagaran	Seis.	E
19-2N-1W	19-2N-1W	Alexander Imlay #1								
Kalkaska	Blue Lake	Amoco Production Co.	28325	6468	6980	715 +429 Mcf.^{t}		Niagaran	Seis.	E
1-28N-5W	1-28N-5W	State-Blue Lake #2-1								
Kalkaska	Blue Lake	Amoco Production Co.	28342	6852	7079	F241 +270 Mcf.^{t}		Niagaran	Seis.	E
12-28N-5W	12-28N-5W	State-Blue Lake #1-12								
Kalkaska	Blue Lake	Amoco Production Co.	28660	7350	7610		F40 Cond. +1900^{t}	Niagaran	Seis.	E
33-28N-5W	33-28N-5W	Simpson "C" #1-33								
Kalkaska	Cold Springs	Amoco Production Co.	28479	6596	6874	F211 +250 Mcf.^{t}		Niagaran	Seis.	E
19-28N-6W	19-28N-6W	Simpson #4								
Kalkaska	Cold Springs	Amoco Production Co.	28624	6737	6970	14 BOPH^{t}		Niagaran	Seis.	E
20-28N-6W	20-28N-6W	Thelma J. Yeulett #1								
Kalkaska	Cold Springs	Amoco Production Co.	28246	6734	7383		1800 +Cond.^{t}	Niagaran	Seis.	E
25-28N-6W	25-28N-6W	Simpson "B" #1								
Kalkaska	Kalkaska	Northern Mich. Explor.	28403	6572	6856	F63 BOPH +1500 Mcf.^{n}		Niagaran	Seis.	D
21-27N-8W	21-27N-8W	State-Kalkaska #1-21								
Kalkaska	Kalkaska	Rovsek et al	28657	6717	6813	F196^{t}		Niagaran	Seis.	E
28-27N-8W	28-27N-8W	Schoch #1								
Kalkaska	Kalkaska	Shell Oil Co.	28408	6828	7366		6050 +Cond.^{t}	Niagaran	Seis.	D
32-27N-7W	32-27N-7W	Murphy #1-32								
Kalkaska	South Boardman	Shell Oil Co.	28573	6616	6990		F168 Cond. +3270^{t}	Niagaran	Seis.	E
5-26N-8W	Unit, Pool A	St.-Boardman Unit #1-5								
Kalkaska	South Boardman	Shell Oil Co.	28570	6778	6925		5500 +98 Cond.^{t}	Niagaran	Seis.	E
4-26N-8W	Unit, Pool B	St.-Boardman Unit #1-4								
Montcalm	Day, Sec. 13	Charles Moskowitz	28412	3414	3429	F115^{t}		Dundee	Sub.	E
13-11N-6W		Lee Jacquays #2								
Oceana	Crystal Valley	Flory Drilling Co.	28284	1689	1691	P30^{n}		Trav. Ls.	Sub.	E
19-16N-16W	Sec. 19	Lewis Kokx #2								
Osceola	Hersey	Madlou, Inc.	28365	1510	1518		1000^{t}	Mich. Stray	Sub.	E
36-17N-9W		Edith Thompson #1								
Otsego	Chester	Amoco Production Co.	28459	5782	6005	F218 +43 Mcf.^{t}		Niagaran	Seis.	E
2-30N-2W	2-30N-2W	Perry J. Cargas #1								
Otsego	Chester	Miller Brothers	28159	5760	6213	F50 BOPH^{n}		Niagaran & A-1 Carb.	Sub.	E
16-30N-2W	16-30N-2W	Gaylord Mortgage #1								
Otsego	Chester	Shell Oil Co.	28375	5930	6329	F422^{t}		Niagaran	Seis.	D
18-30N-2W	18-30N-2W	Jaruzel #1-18								
Otsego	Chester	Amoco Production Co.	28586	6054	6548	F310 +306 Mcf.^{n}		Niagaran	Seis.	E
19-30N-2W	19-30N-2W	B. & F. Pewinski #1								
Otsego	Otsego Lake	Amoco Production Co.	28274	6272	6702	F624 +1250 Mcf.^{t}		Niagaran	Seis.	E
3-29N-3W	3-29N-3W	State-Otsego Lake #1-3								
St. Clair	Columbus,	D. J. Hall & Woods Oil	28402	2798	3046	F7 BOPH^{t}		Niagaran	Sub.	E
2-5N-15E	Sec. 2	E. & N. Stell #1								
St. Clair	Port Huron	Southeastern Mich. Gas	28483	3160	3185		Est. 250^{t}	Niagaran	Sub.	E
33-7N-17E	33-7N-17E	Country Club etal #1								
EXTENSION DISCOVERIES										
Ingham	Onondaga	Mobil Oil Corp.	28592	3666	4129	F216 +212 Mcf.^{t}		Niagaran	Seis.	E
16-1N-2W	21-1N-2W	D. Bienz #1								
Kalkaska	Kalkaska	Amoco Production Co.	28429	6522	6764	F114 +1450 Mcf.^{t}		Niagaran	Seis.	E
33-28N-7W	5-27N-7W	St.-Rapid Riv. B #1-33								
Kalkaska	Kalkaska	Northern Mich. Explor.	28676		6765			Niagaran	Seis.	E
22-27N-8W	21-27N-8W	State-Kalkaska #1-22								
Oceana	Gilbert Lake	Frank Vandenbark	28373	2020	2021	P40^{n}		Trav. Ls.	Sub.	E
35-16N-15W		Williams Comm. #1								
NEW POOL DISCOVERIES										
Lapeer	Marathon	D. & G. Oil Co.	28379	3102	3172	F200^{t}		Richfield	Sub.	E
18-9N-9E		L. Kader, H. McComb #1								
Oceana	Crystal Valley	Flory Drilling Co.	28382	2222	2233		SIGW	Dundee	Sub.	E
19-16N-16W	Sec. 19	L. Kokx #3								
Washtenaw	Freedom	Earl C. Majeske	28349	1038	1300		See below	Trav. Ls.	Sub.	E
8-3S-4E		C. W. & L. M. Buss. #1								
Washtenaw	Freedom	Earl C. Majeske	28349	1198	1300		4900^{t} Trav. & Dd.	Dundee	Sub.	E
8-3S-4E		C. W. & L. M. Buss. #1								

NOTE: t=(T)IP refers to initial production after acid, sand-fracture, or a combination of well stimulation methods.
n=(N)IP refers to natural potential or production.

IMPORTANT DEEP TESTS

County Location	Permit Number	Operator and Lease	System and Formation	Total Depth	Basis for Loc.	Explo. Class	Remarks
Alpena	28583	Union Oil Co., California	Sil., Clinton	5260		NFW	S.G. on D.S.T. in Al Carbonate
32-31N-5E		G. C. Smith #1					
Antrim	28324	Shell Oil Co.	Sil., Niagaran	6578		NFW	
27-29N-6W		Elkins #1-27					
Benzie	28341	Amoco Production Co.	Sil., Niagaran	5445		NFW	
28-25N-13W		State-Colfax #1-28					
Charlevoix	28474	Union Oil Co., California	Sil., Clinton	4347		NFW	
35-33N-5W		P. F. Jankowski #1					
Charlevoix	28438	Union Oil Co., California	Sil., Clinton	4607		NFW	
15-32N-6W		A. J. Valler #1					
Grand Traverse	28564	Northern Mich. Explor. Co.	Sil., Niagaran	5744		NFW	
11-26N-11W		Holbrook #1-11					
Ingham	28654	Don Scott Drlg. Co., Inc.	Sil., Niagaran	3910		NFW	
10-1N-1W		Osborn-Deming et al #1					
Ingham	28607	Mobil Oil Corp.	Precambrian	7866		NFW	
29-2N-1W		Walter Kranz, Jr. #1					
Kalkaska	28631	Miller Brothers	Sil., Niagaran	7062		NFW	
3-28N-5W		A. E. Atwood #1					
Kalkaska	28679	Shell Oil Co.	Sil., Clinton	6900		NFW	S. Sour gas on D.S.T. in Niag.
8-26N-8W		State-Boardman Unit #2-8					
Kalkaska	28622	Shell Oil Co.	Sil., Clinton	7080		NFW	
2-27N-7W		State-Kalkaska #1-2					
Manistee	28522	Shell Oil Co.	Sil., Niagaran	4771		NFW	S.S.G.
25-24N-15W		Lagomarcino #1-25					
Manistee	28513	Shell Oil Co.	Sil., Clinton	5125		NFW	Recovered wtr.
30-24N-14W		Lagomarcino #1-30					
Mason	28202	R. J. Gorman	Dev., Reed City	2354		DPT	S.S.O.
26-17N-17W		Helenius #4					
Mecosta	28539	D. J. Hall & Century Oil	Dev., Reed City	3635		DPT	
18-16N-10W		Todd & Fed. Land Bank #1					
Montmorency	28695	McClure Oil Co.	Sil., Niagaran	4833		NFW	
22-32N-2E		State-Montmorency #1-22					
Oceana	28552	J. R. Barwick	Sil., Niagaran	4078		DPT	
26-16N-18W		State-Pentwater #1					
Ogemaw	28456	Amoco Production Co.	Ord., St. Peter	10,195		NFW	
28-23N-3E		A.B.G. Hunt Club #1					
Oscoda	28546	Amoco Production Co.	Sil., Clinton	7573		NFW	
16-28N-1E		Garland #1					
Otsego	28376	Southern Ill. Oil Prod.	Sil., Niagaran	6500		NFW	S.G. in A2 Carb.
36-30N-3W		State-Bagley #1-36					
Otsego	28636	Shell Oil Co.	Sil., Niagaran	6254		NFW	
11-30N-1W		Black #1-11					
Otsego	28576	Woody's Oil & Gas, Inc.	Sil., Niagaran	5580		NFW	
29-31N-1W		A. Williams #1					
Otsego	28463	H. H. Gungoll & Assoc.	Sil., Niagaran	6325		NFW	
17-30N-2W		Schmitz & Condello #1-17					
Otsego	28343	Southern Ill. Oil Prod.	Sil., Niagaran	6442		NFW	
29-30N-2W		State-Chester #1-29					
Otsego	28656	North American Drlg. Co.	Sil., Niagaran	4883		NFW	S.G. in Antrim
19-32N-1W		Song of Morning Ranch #1-19					
Otsego	28518	A. G. Hill	Sil., Niagaran	5604		NFW	
23-31N-2W		N. & B. Schrader #1					
St. Clair	BD #151	Consumers Power Co.	Precambrian	4732		Brine Disposal	
7-5N-17E		C.P.C. #1-7 BDW					
St. Clair	BD #152	Consumers Power Co.	Precambrian	4700		Brine Disposal	
7-5N-17E		C.P.C. #2-7 BDW					
Tuscola	28551	Petrotech, Inc.	Dev., Richfield	3200		DPT	
13-10N-9E		R. Brown et ux #1					
Van Buren	28590	Miller Brothers	Ord., St. Peter	3422		DPT	
16-1S-14W		Donald & Sylvia Jolicoeur #1					
Washtenaw	28620	William R. Albers	Ord., Black River	5008		DPT	V.S.S.O. & G. in Trenton
6-1S-3E		Hannawald #1					
Wexford	28535	Shell Oil Co.	Ord., Cincinnatian	8304		NFW	
31-24N-9W		Stoll #1-31					

Designation of a dry-hole exploratory well as an important deep test is most often based on the geologic age of the strata penetrated in reference to the location of the test within the basin, and the relative abundancy of similar tests in the area. Actual drilled depth is not the determining factor. For example, most of the 1356 wells drilled to date in St. Clair County have reached total depth in Silurian-Niagaran age rocks. These wells are scattered throughout the county, so it is unlikely that any future test reaching total depth in Silurian rocks would be designated. However, only a few wells in St. Clair County have penetrated Ordovician or older rocks. Any exploratory well drilled to strata older than Silurian would probably qualify as a deep test until Ordovician or deeper tests become fairly common in the county and the distribution of these tests widespread. Deeper pool tests in designated fields may also qualify as deep tests. Table 2, Michigan Oil and Gas Fields, shows the deepest depth and formation or pool penetrated and tested beneath the field area.

PART 2
EXPLANATION

Part 2 brings together general information on Michigans oil and gas fields, gas storage reservoirs, LPG storage facilities, gas plant operations, refinery facilities and other items.

TABLE 2, MICHIGAN OIL AND GAS FIELDS. The symbol on the left margin of the table indicates the official classification of fields and pools at the end of the year. Classifications may be changed as warranted. Official field names are listed alphabetically in the first column and the producing pool, or pools, are shown under the heading Producing Formation or Pool. Most fields consist of one pool with oil or gas production coming from a single reservoir within a formation. Some fields have two or more separate pools, each producing from a different formation or stratigraphic interval and at a different depth. Most multi-pool fields are associated with a common structural feature. A few of the listed fields actually consist of two or more hydrocarbon accumulations which for administrative purposes have been consolidated under one field name.

Location of fields according to township, range and sections are found at the bottom of the field block. The listed sections are those which have, or have had, producing wells assigned to the field or pool. The geographic location of fields and pools can be found by township and range on the center-spread oil and gas field map. Due to space limitations, all field names are not shown on the map.

The Pay Zone part of the table generally refers to data for the discovery well for the field or pool. The indicated pay thickness relates to the amount of pay opened or perforated in the discovery well and does not necessarily indicate total net or gross pay for the reservoir.

The Deepest Formation or Pool Tested column indicates the stratigraphically oldest formation penetrated and the deepest total depth reached beneath the field area. Data in these columns are updated periodically.

The Number of Wells column indicates the number of successful field wells drilled in the field to the end of the specified year, the number completed as producing wells during the specified year, the number abandoned during the year and the number of active wells at the end of the specified year.

The Drilled Acres column indicates the total number of acres assigned to the field or pool according to individual well drilling units assigned to each producing well completed in the field or pool. A field may have a 10 or 20-acre drilling unit for one pool and a 40-acre unit for a deeper formation pool. During the development of a field or pool the drilling unit size may change. Subsequent wells are assigned acreage values in accordance with the new unit size. In past years drilling units have been 10, 20 or 40 acres. Reef reservoirs, especially in the Northern District, have been assigned 40, 80, 160 and 640-acre units. Gas well units, especially for Michigan Stray Sandstone reservoirs, have generally been 160-acre units. Other sizes currently in use for gas wells are 40, 80, 320 and 640-acre units. Changes in drilling units off-pattern wells, etc. complicate the maintainance of accurate acreage figures during the lifetime of a given field or pool. Though figures cited in the column are not entirely accurate, they do provide as near as possible an indication of the areal size of the field. The figures do not indicate the areal extent of the oil or gas reservoir.

Recovery Per Acre Drilled figure for oil pools are derived by dividing the cumulative production figure by the drilled acres figure.

GAS FIELDS. Because of slow field development, small reserves or lack of marketing facilities, some fields are listed as "shut-in" and show no production figures. Other fields, not considered to have commercial size gas accumulations, produce small quantities of unmetered gas which is used for domestic purposes and in some cases, lease fuel.

GAS STORAGE RESERVOIRS. Most gas storage reservoirs were originally classified as gas fields or pools. Upon depletion or near depletion of native gas they were converted to storage reservoirs. Undeveloped gas storage reservoirs are gas pools that have been designated to become storage reservoirs at some future time. The producing sections listed on gas storage reservoir tables do not necessarily relate to current gas storage area or boundaries. The sections or parts of sections listed are those which contained at least one producible oil or gas well assigned to the field or pool prior to conversion to storage operations. Further, the listed sections do not necessarily relate to potential or future gas storage area or boundary.

LPG STORAGE. Surface and underground storage facilities for liquified petroleum gas.

OIL WELL GAS. This is casinghead gas produced incidental to the production of oil from pools or fields generally classified as oil accumulations.

NATURAL GAS LIQUIDS (CONDENSATE). Natural gas liquids are those portions of reservoir gas which are liquified at the surface in lease separators, field facilities, or gas processing plants. These liquids include but are not limited to: ethane, propane, butanes, pentanes, natural gasoline and condensate. On Table 3 of this report, condensates from Michigan gas-condensate fields are shown under the oil production column.

WELL SAMPLE SETS. Well cuttings for over 9,000 wells are available for inspection at the Geological Survey, Lansing, Michigan. Samples are contained in glass vials arranged in open trays. In addition, several thousand shallow geological test samples are also available for inspection. The Survey does not maintain a core collection. Other sample and core repositories, not connected with the Survey, are located at: Subsurface Laboratory, Department of Geology, The University of Michigan, Ann Arbor, Michigan.

Department of Geology, Wayne State University, Detroit, Michigan.

Department of Geology, Western Michigan University, Kalamazoo, Michigan.

Department of Geology, Michigan State University, East Lansing, Michigan.

Department of Geology, Central Michigan University, Mt. Pleasant, Michigan.

OIL AND GAS WELL RECORDS. Descriptive geological logs and drillers logs are available for over 28,500 oil and gas tests, including exploratory, development, facility and other types of wells. Individual logs may be purchased at small cost from the Geological Survey Division. Electric or radiation logs of any type are not available for distribution or sale.

OIL AND GAS FIELD MAPS. Blueprint copies of county oil and gas field maps are available for every county in the Southern Peninsula. The maps show locations of oil and gas tests but do not show geological data or structural contour lines. County map scales are 1" = 1 mile. Blueprint field maps are available for many oil and gas fields. These maps show well locations, well permit numbers, operators and lease names. They do not show geological data or structural contour lines. Field map scales are mainly 4" = 1 mile. All manuscript maps from which blueprint copies are made are posted on a regular basis. An oil and gas field maps list may be obtained from the Geological Survey upon request.

TABLE 2 MICHIGAN OIL AND GAS FIELDS

POOL CLASSIFICATION: ● ACTIVE OIL FIELD OR POOL; ● ABANDONED OIL FIELD OR POOL; ☼ ACTIVE GAS FIELD OR POOL; ☼ ABANDONED GAS FIELD OR POOL; ☼ GAS-CONDENSATE FIELD OR POOL; ☼ ABANDONED GAS-CONDENSATE FIELD OR POOL; ⊕ GAS STORAGE RESERVOIR; ⊖ UNDEVELOPED GAS STORAGE RESERVOIR

Pool Classification	Field Name	Producing Formation or Pool	Year of Disc.	County Township / Producing Sections	Pay Zone: Depth in Feet	Pay Zone: Thickness and Lithology	Pay Zone: Oil Gravity A.P.I.	Deepest Formation or Pool Tested	Depth in Feet	Number of Wells 1971: To End	Comp. In	Aband. In	Active at End	Drilled Acres	Oil Production – Bbls.: Produced in 1971	Oil Production – Bbls.: Cumulative Through 1971	Gas Production – Mcf: Produced in 1971	Gas Production – Mcf: Cumulative Through 1971	Recovery Per Acre Drilled (Bbls.)	Total Barrels Brine Per Day
●	ADAIR	SALINA-NIAGARAN	1961	ST. CLAIR	2,719	10 D	41.4	NIAGARAN	2,755	15	0	0	12	560	8,753	299,602	0	468,773	535	155
				CHINA TWP., 4N-16E, SECTION 7 CASCO TWP., 4N-15E, SECTION 12, 13						3 OF ORIGINAL 18 WELLS TRANSFERRED TO PUTTYGUT										
●	ADAMS	TRAVERSE	1937	ARENAC-BAY	2,032	15 L	37.0	BOIS BLANC	5,079	24	0	0	8	240						22
●		DUNDEE	1937		2,958	15 L	34.7			31	0	0	17	310						18
●		DETROIT RIVER SZ	1956		3,943	5 L	39.6 }								PRODUCTION FROM ALL POOLS COMBINED					
●		RICHFIELD	1941		4,278	5 L	35.5 }			31	0	0	8	1,080	17,334	1,479,851			908	3
				ADAMS TWP., 19N-3E, SECTIONS 21, 23 THROUGH 27, 34, 35, 36 DEEP RIVER TWP., 19N-4E, SECTION 31 GIBSON TWP., 18N-3E, SECTIONS 1, 2										THE 8 WELLS INCLUDE 5 RICHFIELD, 1 SOUR ZONE, AND 2 DUAL COMPLETIONS, RICHFIELD & SOUR ZONE						
☼	ADAMS, NORTH	BEREA	1942	ARENAC	1,605	1 S		DUNDEE	3,101	1	ABANDONED 1948			40				1,280		
●		DUNDEE	1940		2,905	15 D	32.0	DETROIT RIVER	4,489	49	0	0	19	470	25,247	9,277,028			19,738	4,006
				ADAMS TWP., 19N-3E, SECTIONS 11, 14, 15, 22, 23, 27 BEREA PRODUCTION - SECTION 4																
☼	ADAMS, SEC. 8	TRAVERSE	1962	HILLSDALE	1,420	4 L		PRAIRIE DU CHIEN	4,169	1	ABANDONED 1965			20				18,919		
				ADAMS TWP., 6S-2W, SECTION 8																
●	AKRON	DUNDEE	1936	TUSCOLA	2,678	17 L	37.3	NIAGARAN	7,941	50	0	0	34	1,100						139
●		DETROIT RIVER SZ	1938		3,422	11 D	35.9 }			27	0	0	19	500	37,840	1,887,103			1,179	42
●		RICHFIELD	1954		3,774	6 D	39.2 }							THE 19 WELLS INCLUDE 2 RICHFIELD, 13 SOUR ZONE AND 4 DUAL COMPLETIONS - SZ & DD						
				AKRON TWP., 14N-8E, SECTIONS 19, 20, 21, 28, 29, 30 WISNER TWP., 14N-7E, SECTIONS 22, 23, 24, 25, 26																
●	ALAMO	TRAVERSE	1949	KALAMAZOO	1,310	2 L		TRAVERSE	1,420	16	ABANDONED 1962			160		27,545			172	
				ALAMO TWP., 1S-12W, SECTIONS 19, 29, 30																
☼	ALBION	TRAVERSE	1941	CALHOUN	1,610	7 L		PRAIRIE DU CHIEN	4,623	4	ABANDONED 1948			120				6,114		
				ALBION TWP., 3S-4W, SECTIONS 14, 15																
	ALBION-PULASKI-SCIPIO TREND: FIELD AND PRODUCTION DATA LISTED BY TOWNSHIP AND COUNTY																			
☼	CAL-LEE	NIAGARAN	1962	CALHOUN	3,036	8 D		PRAIRIE DU CHIEN	4,912	7	1	3	4	360			41,544	875,994		
				LEE TWP., 1S-5W, SECTIONS 9, 15, 16, 17, 22																
●	LEE TWP.	NIAGARAN	1961	CALHOUN	3,060	20 D	24.2	PRAIRIE DU CHIEN	4,926	1	0	0	1	80	0	5,269			66	
●		TRENTON-BLK. RIVER	1960		4,600	24+ D				27	0	1	19	410	292,459	1,979,524			4,828	328
				LEE TWP., 1S-5W, SECTIONS 17, 22, 23, 25, 26, 36																
●	SHERIDAN TWP.	TRENTON-BLK. RIVER	1960	CALHOUN	4,179	10+ D	40.0	PRAIRIE DU CHIEN	4,791	45	0	0	38	810	262,168	4,208,049	455,200	2,200,590	5,195	1,042
				SHERIDAN TWP., 2S-4W, SECTIONS 17, 18, 19, 20, 21, 28, 33																
●	ALBION TWP.	TRENTON-BLK. RIVER	1958	CALHOUN	3,952	? D	44.0	PRAIRIE DU CHIEN	4,623	143	0	1	136	2,760	888,959	20,382,907	2,527,154	33,522,111	7,385	2,671
				ALBION TWP., 3S-4W, SECTIONS 3, 4, 10, 11, 14, 15, 22, 23, 26, 27, 35, 36																
●	PULASKI-HOMER TWPS.	TRENTON-BLK. RIVER	1959	JACKSON-CALHOUN	3,766	66+ D	39.6	PRAIRIE DU CHIEN	4,395	140	0	1	134	2,680	917,129	23,346,630	2,998,875	32,447,948	8,711	7,571
				PULASKI TWP., 4S-3W, SECTIONS 6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 32, 33, 34 HOMER TWP., 4S-4W, SECTIONS 1, 12																
●	SCIPIO-FAYETTE-MOSCOW TWPS.	TRENTON-BLK. RIVER	1957	HILLSDALE	3,576	50+ D	41.4	PRAIRIE DU CHIEN	4,202	203	3	1	187	3,630	2,092,958	41,625,306	4,094,024	41,092,504	11,467	3,339
				SCIPIO TWP., 5S-3W, SECTIONS 3, 4, 10 THROUGH 15, 23, 24, 25, 26 FAYETTE TWP., 5S-3W, SECTIONS 35, 36 MOSCOW TWP., 5S-2W, SECTIONS 19, 31, 32																
●	ADAMS TWP.	TRENTON-BLK. RIVER	1959	HILLSDALE	3,984	6+ D	42.0	PRAIRIE DU CHIEN	4,162	55	0	0	44	930	259,196	6,607,837	1,076,559	7,812,640	7,105	910
				ADAMS TWP., 6S-2W, SECTIONS 3, 4, 5, 6, 8, 10, 16, 17																
	TREND TOTAL ----------									614	3	4	559	11,220	4,712,905	98,150,253	11,151,812	117,075,793	8,748	15,861
				SEE CENTER SPREAD MAP FOR TOWNSHIPS ASSOCIATED WITH ALBION-SCIPIO TREND																
☼	ALGONAC	ANTRIM	1947	ST. CLAIR	302	6 SH		CABOT HEAD	2,504	2	ABANDONED 1951			80				7,830		
				CLAY TWP., 3N-16E, SECTIONS 20, 29																
●	ALLEGAN	TRAVERSE	1937	ALLEGAN	1,563	2 L	38.0	CINCINNATIAN	2,987	19	1	0	1	180	827	16,404	FIELD REACTIVATED - 1971		91	
				ALLEGAN TWP., 2N-13W, SECTIONS 2, 5, 9, 10, 13, 22, 23, 26, 27, 34, 35, 36																
☼	ALPINE	NIAGARAN	1963	ST. CLAIR	3,151	25 D		CLINTON	3,470	3	0	0	3	120			125,667	803,225		2
				WALES TWP., 6N-15E, SECTION 32																
●	ARBELA	DUNDEE	1946	TUSCOLA	2,557	7 L	35.3	DETROIT RIVER	3,375	35	0	0	2	350	2,997	328,203			938	
				ARBELA TWP., 10N-7E, SECTIONS 28, 33, 34																
●	ASHLAND, SEC. 8	TRAVERSE	1959	NEWAYGO	2,238	1 L		TRAVERSE	2,239	1	ABANDONED 1962			10		267			27	
				ASHLAND TWP., 11N-13W, SECTION 8																
☼	ASHTON	MICHIGAN STRAY	1946	OSCEOLA	1,215	2 S		DETROIT RIVER	3,779	3	0	0	1	400			0	205,680		
●		TRAVERSE	1945		2,950	4 L	42.0			4	0	0	3	80						700
●		DUNDEE	1945		3,645	5 L	40.0			4	0	0	4	200	8,557	455,832			1,628	
				LINCOLN TWP., 18N-10W, SECTIONS 5, 6																
☼	ASHTON, EAST	MICHIGAN STRAY	1962	OSCEOLA	1,297	5 S		REED CITY	3,750	1	ABANDONED 1970			160						
				LINCOLN TWP., 18N-10W, SECTION 3																
●	ATLANTA	DETROIT RIVER	1945	MONTMORENCY	2,183	5 D	36.2	DETROIT RIVER	2,550	3	0	0	1	30	0	7,688			256	
				AVERY TWP., 30N-3E, SECTIONS 10, 15																
●	AU GRES	DETROIT RIVER SZ	1956	ARENAC	3,822	14 L	31.4	RICHFIELD	4,315	DETROIT RIVER SZ COMBINED WITH RICHFIELD										
●		RICHFIELD	1953		4,152	11 L	36.5			4	0	0	3	160	1,744	50,498			316	
				AU GRES TWP., 19N-6E, SECTIONS 2, 3, 10, 11										THE 3 WELLS INCLUDE 2 RICHFIELD AND 1 RICHFIELD AND SOUR ZONE						
●	AURELIUS 35-2N-2W	NIAGARAN REEF	1971	INGHAM	3,942	60 D	37.3	NIAGARAN	4,395	1	1	0	1	80	1,463	1,463			18	
				AURELIUS TWP., 2N-2W, SECTION 35																
⊕	AUSTIN	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE: DEPTH IN FEET	PAY ZONE: THICKNESS AND LITHOLOGY	PAY ZONE: OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS: TO END	NUMBER OF WELLS: COMP. IN 1971	NUMBER OF WELLS: ABAND. IN 1971	NUMBER OF WELLS: ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS.: PRODUCED IN 1971	OIL PRODUCTION—BBLS.: CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf.: PRODUCED IN 1971	GAS PRODUCTION—Mcf.: CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	BANGOR	TRAVERSE	1939	VAN BUREN	1,002	2	L	29.5	TRENTON	2,552	65	ABANDONED 1959		610		933,965			1,531	
	BANGOR TWP., 2S-16W, SECTIONS 4, 5, 9, 10, 14, 15, 16, 21, 28, 29																			
●	BARD	DUNDEE	1949	GLADWIN	3,933	6	L	42.8	DUNDEE	4,017	17	0	0	3	170	170	572,685		3,369	
	BEAVERTON TWP., 17N-2W, SECTIONS 5, 6 GROUT TWP., 18N-2W, SECTIONS 31, 32																			
●	BARTON	TRAVERSE	1947	NEWAYGO	3,097	1	L	30.0	DETROIT RIVER	3,745	3	ABANDONED 1963		50		20,227			405	
	BARTON TWP., 16N-11W, SECTION 16																			
●	BEAVER, SEC. 31	BEREA	1954	BAY	2,413	16	SL		SYLVANIA	4,754	1	ABANDONED 1961		10		1,053			105	
	BEAVER TWP., 15N-3E, SECTION 31																			
●	BEAVER CREEK UNIT	RICHFIELD	1947	CRAWFORD-KALKASKA	4,160	20	D	44.7	ST. PETER	10,142	105	0	0	52	4,240	612,402	8,559,365	495,118	17,766,964	2,019	708
	BEAVER CREEK TWP., 25N-4W, SECTIONS 7, 8, 16 THROUGH 21, 27, 28, 29 GARFIELD TWP., 25N-5W, SECTIONS 12, 13																			
●	BEAVERTON	DUNDEE	1934	GLADWIN	3,929	12	L	41.3	RICHFIELD	5,225	26	0	0	4	330	3,952	876,993			2,658	85
	BEAVERTON TWP., 17N-2W, SECTIONS 2, 3, 11, 13																			
●	BEAVERTON, SOUTH	TRAVERSE	1956	GLADWIN	3,231	6	L	41.0	DETROIT RIVER	4,977	TRAVERSE COMBINED WITH DUNDEE									
●		DUNDEE	1936		3,845	12	L	34.5			33	0	0	19	700	17,765	1,665,680			2,380	67
	BEAVERTON TWP., 17N-2W, SECTIONS 26, 27, 35, 36 TOBACCO TWP., 17N-1W, SECTION 31 THE 19 WELLS INCLUDE 18 DUNDEE & 1 DUNDEE & TRAVERSE																			
●	BEAVERTON, WEST	DUNDEE	1943	GLADWIN	3,876	2	L	41.2	DETROIT RIVER	5,094	7	0	0	4	260	9,285	176,019			677	12
	BEAVERTON TWP., 17N-2W, SECTION 19																			
⊕	BELLE RIVER MILLS REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																			
●	BELLY ACHERS	DUNDEE	1944	MONTCALM	3,470	1.3	D	48.2	DUNDEE	3,615	7	0	0	3	220	1,810	336,905			1,531	200
	HOME TWP., 12N-6W, SECTIONS 11, 14																			
●	BENONA, SEC. 13	TRAVERSE	1949	OCEANA	1,640	3	L		DETROIT RIVER	2,276	2	ABANDONED 1956		20		4,951			248	
	BENONA TWP., 14N-18W, SECTION 13																			
●	BENTLEY	TRAVERSE	1952	GLADWIN	2,855	6	L	34.1	SYLVANIA	5,114	TRAVERSE COMBINED WITH DUNDEE & RICHFIELD									
●		DUNDEE	1937		3,510	13	L	42.1			87	0	0	40							123
●		RICHFIELD	1952		4,440	14	L	40.0			1	0	0	1	1,920	33,780	2,868,056			1,494	
	BENTLEY TWP., 17N-2E, SECTIONS 16 THROUGH 21, 27, 28, 29, 34, 35 THE 41 WELLS INCLUDE 40 DUNDEE AND 1 MULTIPLE COMPLETION TRAVERSE, DUNDEE, & RICHFIELD																			
●	BERLIN	NIAGARAN	1960	ST. CLAIR	3,800	25	D	42.8	CINCINNATIAN	4,310	4	0	0	3	140	1,208	340,664			2,433	
	BERLIN TWP., 6N-13E, SECTIONS 32, 33																			
☼	BEVENS LAKE	MICHIGAN STRAY	1952	MECOSTA	1,244	6	S		REED CITY	3,731	3	ABANDONED 1969						515,405		
●		TRAVERSE	1951		2,997	1	L	44.2			4	0	0	1	40	1,235	91,792			2,295	90
☼		DUNDEE	1951		3,536	11	L				3	0	0	1	320			65,222	888,635		
	GREEN TWP., 16N-10W, SECTION 13																			
●	BIG HAND	NIAGARAN	1961	ST. CLAIR	2,898	5+	D	39.5	CLINTON	3,097	10	1	0	10	200	39,995	714,595	73,902	173,038	3,573	37
	COLUMBUS TWP., 5N-15E, SECTION 24																			
☼	BIG PRAIRIE	MICHIGAN STRAY	1944	NEWAYGO	1,030	5	S		REED CITY	3,322	1	ABANDONED 1961		160					152,864		
	BIG PRAIRIE TWP., 13N-11W, SECTION 16																			
☼	BIG PRAIRIE, SEC. 33	DUNDEE	1947	NEWAYGO	2,896	2	L		DUNDEE	2,900	1	ABANDONED 1952		40					62,324		
	BIG PRAIRIE TWP., 13N-11W, SECTION 33																			
☼	BIG RAPIDS	MICHIGAN STRAY	1943	MECOSTA	1,145	7	S		REED CITY	3,595	9	ABANDONED 1969		1,440					2,393,033		
☼		DUNDEE	1965		3,420	6	L				1	0	0	1	160				0	44,498		
	BIG RAPIDS TWP., 15N-10W, SECTIONS 3, 9, 10, 11, 13																			
●	BILLINGS	DUNDEE	1949	GLADWIN	3,549	6	L	39.7	RICHFIELD	4,995	20	0	0	19	400						2
●		DETROIT RIVER	1950		4,070	7	D	43.5			10	0	0	9	200	12,489	785,998			1,310	
	BILLINGS TWP., 17N-1E, SECTIONS 2, 3, 10, 11																			
●	BILLINGS, SOUTH	DUNDEE	1957	GLADWIN	3,540	5	?	39.5	DETROIT RIVER	4,152	8	0	0	8	70	8,869	160,898			2,299	1
	BILLINGS TWP., 17N-1E, SECTIONS 12, 13 BENTLEY TWP., 17N-2E, SECTION 18																			
●	BIRCH-BELA	DUNDEE	1951	SAGINAW-TUSCOLA	2,504	7	L	36.0	DETROIT RIVER	3,263	30	0	0	30	340	17,190	290,680			855	8
	BIRCH RUN TWP., 10N-6E, SECTIONS 25, 36 ARBELA TWP., 10N-7E, SECTIONS 30, 31, 32																			
●	BIRCH RUN	BEREA	1934	SAGINAW	1,530	5	S	43.3	DUNDEE	2,646	26	ABANDONED 1951		250		215,876				864	
●		DUNDEE	1954		2,536	10	L	36.2	DUNDEE	2,716	34	0	0	32	480	14,128	524,371			1,092	
	BIRCH RUN TWP., 10N-6E, SECTIONS 19, 20, 21 (BEREA) BIRCH RUN TWP., 10N-6E, SECTIONS 19, 20, 29 TAYMOUTH TWP., 10N-5E, SECTION 13 (DUNDEE)																			
●	BISHOP	TRAVERSE	1950	NEWAYGO	2,226	3	L		TRAVERSE	2,238	7	ABANDONED 1952		110		33,327				303	
	GARFIELD TWP., 12N-13W, SECTIONS 19, 20, 30																			
☼	BLAIR 34-26N-11W (BLAIR)	NIAGARAN REEF	1970	GRAND TRAVERSE	5,826	124	D	60 COND.	CLINTON	6,316	1	0	0	1	160	SHUT-IN FOR MARKET					
	BLAIR TWP., 26N-11W, SECTION 34																			
☼	BLISSFIELD	TRENTON-BLK. RIVER	1963	LENAWEE	2,686	9	O		GLENWOOD	3,251	1	0	0	1	40	72	567	3,025	49,735		
	BLISSFIELD TWP., 7S-5E, SECTION 5															GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL					
●	BLOOMER	TRAVERSE	1944	MONTCALM-IONIA	2,640	3.3	L	42.3	DETROIT RIVER	3,271	29	0	0	4	530	5,235	1,949,356			3,678	738
	BLOOMER TWP., 9N-5W, SECTIONS 31, 32 BUSHNELL TWP., 9N-6W, SECTION 36 NORTH PLAINS TWP., 8N-5W, SECTIONS 5, 6																			
●	BLOOMER, SEC. 18	TRAVERSE	1936	MONTCALM	2,717	6	L		DUNDEE	3,138	1	ABANDONED 1936		10		814				81	
	BLOOMER TWP., 9N-5W, SECTION 18																			
●	BLOOMINGDALE	TRAVERSE	1938	VAN BUREN	1,244	4	L	42.0	ST. PETER SS.	3,422	431	0	0	24	4,040	4,297	9,991,640			2,473	255
	BLOOMINGDALE TWP., 1S-14W, SECTIONS 1, 2, 3, 6 THROUGH 18, 24 COLUMBIA TWP., 1S-15W, SECTIONS 1, 2, 10 THROUGH 16, 23, 24 PINE GROVE TWP., 1S-13W, SECTION 18																			
●	BLUE LAKE 1-28N-5W	NIAGARAN REEF	1971	KALKASKA	6,481	43	D	43.0	NIAGARAN	6,980	1	1	0	1	80	51,948	51,948			649	
	BLUE LAKE TWP., 28N-5W, SECTION 1																			

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE: DEPTH IN FEET	PAY ZONE: THICKNESS AND LITHOLOGY	PAY ZONE: OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS: TO END	NUMBER OF WELLS: COMP. IN 1971	NUMBER OF WELLS: ABAND. IN 1971	NUMBER OF WELLS: ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS.: PRODUCED IN 1971	OIL PRODUCTION—BBLS.: CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf.: PRODUCED IN 1971	GAS PRODUCTION—Mcf.: CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	BLUE LAKE 12-28N-5W	NIAGARAN REEF	1971	KALKASKA	6,852	20	D	45.0	NIAGARAN	7,079	1	1	0	1	80	7,709	7,709			96	
	BLUE LAKE TWP., 28N-5W, SECTION 12																			
☼	BLUE LAKE 28-28N-5W (BLUE LAKE)	NIAGARAN REEF	1970	KALKASKA	7,105	30	D	60 COND.	CLINTON	7,450	1	0	0	1	160	89 BBLS. CONDENSATE	89 BBLS. CONDENSATE				
	BLUE LAKE TWP., 28N-5W, SECTION 28																			
☼	BLUE LAKE 33-28N-5W	LOWER NIAGARAN	1971	KALKASKA	7,350	25	D		CLINTON	7,610	1	1	0	1	160	SHUT-IN FOR MARKET					
	BLUE LAKE TWP., 28N-5W, SECTION 33																			
●	BOYD	SALINA-NIAGARAN	1958	ST. CLAIR	2,459	292	D	37.7	PRECAMBRIAN	4,634	49	0	0	41	1,840	67,417	1,751,572	604,013	13,874,150	952	316
	CASCO TWP., 4N-15E, SECTIONS 29, 31, 32, WH 28, WH 33 IRA TWP., 3N-15E, SECTIONS 5, 6																			
●	BREEDSVILLE	TRAVERSE	1943	VAN BUREN	1,061	2	L	33.0	DETROIT RIVER	1,445	32	ABANDONED 1961			300		285,584			952	
	GENEVA TWP., 1S-16W, SECTIONS 23, 24, 25, 26																			
●	BRINTON	DUNDEE	1967	ISABELLA	4,082	3	D		DUNDEE	4,085	1	0	0	1	40	1,851	19,046			451	200
	COLDWATER TWP., 16N-6W, SECTION 5																			
⊖	BROOMFIELD-DEERFIELD	REFER TO TABLE 4 UNDEVELOPED GAS STORAGE RESERVOIRS																		
●	BUCKEYE, NORTH	DUNDEE	1936	GLADWIN	3,615	14	L	39.0	SYLVANIA	5,351	287	0	4	54	3,030	91,880	19,247,232		9,834	6,352	2,030
	BUCKEYE TWP., 18N-1W, SECTIONS 1, 2, 3, 4, 9, THROUGH 15 HAY TWP., 18N-1E, SECTIONS 15, 16, 21, 22																			
●	BUCKEYE, SOUTH	TRAVERSE	1956	GLADWIN	2,891	3	D	42.0	DETROIT RIVER	4,802	7	ABANDONED 1960 - PRODUCTION COMBINED WITH BUCKEYE, SOUTH DUNDEE									
●		DUNDEE	1936		3,570	11	L	39.0			197	0	0	27	2,270	16,970	4,999,146			2,202	46
●		DETROIT RIVER SZ	1964		4,481	14	D	46.0			1	0	0	1	40	4,694	82,096			2,052	
	BUCKEYE TWP., 18N-1W, SECTIONS 22 THROUGH 27, 35, 36 HAY TWP., 18N-1E, SECTION 33 BILLINGS TWP., 17N-1E, SECTIONS 4, 9, 10 TOBACCO TWP., 17N-1W, SECTION 1																			
●	BURDELL	DUNDEE	1959	OSCEOLA	3,678	4	L		REED CITY	3,804	6	0	0	2	120	2,612	151,465			1,262	210
●		REED CITY	1960		3,802	2	D				1	ABANDONED 1969			40						
	BURDELL TWP., 20N-10W, SECTION 19																			
●	BUSHNELL	DUNDEE	1935	MONTCALM	3,105	2	L	33.9	DUNDEE	3,125	1	ABANDONED 1939			10		4,035			403	
	BUSHNELL TWP., 9N-6W, SECTION 1																			
●	BUTMAN	TRAVERSE	1950	GLADWIN	2,789	2	L		SYLVANIA	5,027	1	ABANDONED 1953 - PRODUCTION COMBINED WITH BUTMAN RICHFIELD									
●		DUNDEE	1949		3,596	6	L	41.4			1	ABANDONED 1963 - PRODUCTION COMBINED WITH BUTMAN RICHFIELD									
●		RICHFIELD	1949	GLADWIN	4,921	10	D	41.6			5	0	0	5	240	5,834	308,865			1,287	25
	BUTMAN TWP., 20N-1W, SECTION 12 (TRAVERSE); BUTMAN TWP., 20N-1W, SECTIONS 11, 12, 13, 14 (DUNDEE & RICHFIELD)																			
☼	CAL-LEE	REFER TO ALBION-PULASKI-SCIPIO TREND																		
☼	CANNON CREEK	TRAVERSE	1950	MISSAUKEE-KALKASKA	2,695	11	L		RICHFIELD	4,810	21	ABANDONED 1956			3,360				851,369		
	NORWICH TWP., 24N-6W, SECTIONS 6, 7, 18 PIONEER TWP., 24N-7W, SECTIONS 1, 2, 12, 13 GARFIELD TWP., 25N-6W, SECTION 31 GARFIELD TWP., 25N-7W, SECTIONS 25, 36																			
☼	CAPAC	NIAGARAN	1961	ST. CLAIR	4,505	6	D		MT. SIMON SS.	6,337	54	0	0	48	9,120	297	5,826	2,025,484	17,817,518		5
	MUSSEY TWP., 7N-13E, SECTIONS 4, 5, 8, 9, 16, THROUGH 21, 28, 29, 30, 32, 33 LYNN TWP., 8N-13E, SECTIONS 21, 27, 28, 29, 32, 33, 34 GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL																			
●	CAREY LAKE	REED CITY	1966	NEWAYGO	3,411	2	D		REED CITY	3,413	2	0	0	2	80	0	19,021			238	
	GOODWELL TWP., 14N-11W, SECTION 26																			
●	CASCO	TRAVERSE	1940	ALLEGAN-VAN BUREN	1,095	1.5	L	38.6	TRAVERSE	1,115	9	ABANDONED 1959			50		17,382			348	
	CASCO TWP., 1N-16W, SECTIONS 34, 35 GENEVA TWP., 1S-16W, SECTION 4																			
●	CAT CREEK	DUNDEE	1968	OSCEOLA	3,696	4	L		DUNDEE	3,890	8	1	0	8	300	74,961	309,072			1,030	1,575
	HERSEY TWP., 17N-9W, SECTIONS 4, 9																			
●	CATO	REED CITY	1944	MONTCALM-MECOSTA	3,542	3	D	44.7	DETROIT RIVER	3,731	21	0	0	10	630	24,899	1,023,056			1,624	2,050
	CATO TWP., 12N-8W, SECTIONS 3, 4, 6, 8, 9 DEERFIELD TWP., 13N-9W, SECTION 36																			
☼	CEDAR	MICHIGAN STRAY	1945	OSCEOLA	1,490	7	S		SYLVANIA	5,165	5	0	0	4	800				1,402,820	LEASE OPERATION	
●		DUNDEE	1943		3,810	2	L	46.0			10	0	1	6	400						1,130
●		RICHFIELD	1945		5,060	6	L	44.7			2	0	0	2	60	9,920	1,116,284			2,427	
	CEDAR TWP., 18N-9W, SECTIONS 27, 28, 32, 33 (MICHIGAN STRAY) CEDAR TWP., 18N-9W, SECTIONS 10, 27, 28, 33, 34 (DUNDEE AND RICHFIELD)																			
☼	CEDAR CREEK	"BEREA"	1940	MUSKEGON	1,125	7	D		DUNDEE	2,252	7	ABANDONED 1960			1,120				624,528		
	CEDAR CREEK TWP., 11N-15W, SECTIONS 7, 17, 18, 19, 20, 32																			
●	CEDAR CREEK, SEC. 23	TRAVERSE	1949	MUSKEGON	1,951	2	L		DUNDEE	2,453	2	ABANDONED 1968			50		2,652			53	
	CEDAR CREEK TWP., 11N-15W, SECTION 23																			
●	CHARLTON 4-31N-1W (PIGEON RIVER)	NIAGARAN REEF	1970	OTSEGO	4,766	116	D	55	CLINTON	5,270	1	0	0	1	80	108,036	163,295	12,391	12,391	2,041	
	CHARLTON TWP., 31N-1W, SECTION 4																			
●	CHASE	"BEREA"	1943	LAKE	2,460	4	SL		DETROIT RIVER	3,734	2	0	0	1	20	0	8,165			408	
	CHASE TWP., 17N-11W, SECTIONS 19, 29																			
●	CHERRY GROVE	TRAVERSE	1952	WEXFORD	3,145	4	D		DUNDEE	3,998	1	ABANDONED 1953			10		4,814			481	
	CHERRY GROVE TWP., 21N-10W, SECTION 27																			
☼	CHERRY GROVE, SEC. 13	MICHIGAN STRAY	1957	WEXFORD	1,326	35	S		DUNDEE	4,080	5	0	0	1	640			0	924,719		
	CHERRY GROVE TWP., 21N-10W, SECTION 13 CLAM LAKE TWP., 21N-9W, SECTIONS 7, 18																			
●	CHESHIRE	TRAVERSE	1947	ALLEGAN	1,289	2	L	35	TRAVERSE	1,348	3	ABANDONED 1958			30		9,290			310	
	CHESHIRE TWP., 1N-14W, SECTIONS 26, 27																			
☼	CHESTER	ANTRIM	1965	OTSEGO	1,360	?	SH		NIAGARAN	6,870	16	0	0	16	640			119,719	406,877		207
	CHESTER TWP., 29N-2W, SECTIONS 10, 11, 14, 15, 16																			
●		A2 CARBONATE & LOWER NIAGARAN	1951	OTSEGO	6,610	5	O	41.0	NIAGARAN	6,870	2	1	0	1	80	15,229	17,981	(REACTIVATED 1971)		225	
	CHESTER TWP., 29N-2W, SECTION 15, 22																			
☼	CHESTER	NIAGARAN REEF	1970	OTSEGO	5,930	348	D	COND.	CLINTON	6,697	1	0	0	1	160	97,101 BBLS CONDENSATE	115,310 BBLS CONDENSATE	1,888,568	2,185,465	721	
	CHESTER TWP., 29N-2W, SECTION 15																			

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
● CHESTER 2-30N-2W	NIAGARAN REEF	1971	OTSEGO	5,653	247 D		NIAGARAN	6,005	1	1	0	1	40	2,993	2,993			75	
			CHESTER TWP., 30N-2W, SECTION 2																
● CHESTER 16-30N-2W	NIAGARAN REEF	1971	OTSEGO	5,760	300 D		NIAGARAN	6,302	3	3	0	3	240	PRODUCTION COMBINED WITH CHESTER 21					5
			CHESTER TWP., 30N-2W, SECTIONS 16, 21																
● CHESTER 18-30N-2W	NIAGARAN REEF	1971	OTSEGO	5,930	20 D	45	NIAGARAN	6,330	3	3	0	3	240	PRODUCTION COMBINED WITH CHESTER 21					
			CHESTER TWP., 30N-2W, SECTIONS 17, 18																
● CHESTER 19-30N-2W	NIAGARAN REEF	1971	OTSEGO	6,054	30 D		NIAGARAN	6,512	1	1	0	1	80	21,069	21,069			263	
			CHESTER TWP., 30N-2W, SECTION 19																
● CHESTER 21-30N-2W (JOHANNESBURG)	NIAGARAN REEF	1970	OTSEGO	5,772	283 D		CLINTON	6,483	2	1	0	2	160	353,934	412,840	17,943	17,943	645	
			CHESTER TWP., 30N-2W, SECTION 21											PRODUCTION FIGURES INCLUDE CHESTER 16 & 18					
● CHESTERFIELD	NIAGARAN	1962	MACOMB	2,508	7 D	40.3	CLINTON	2,707	7	0	0	2	280	4,007	46,741	0	124,698	167	
			CHESTERFIELD TWP., 3N-14E, SECTION 28, 29																
☼ CHINA BELLE	NIAGARAN	1963	ST. CLAIR	2,365	15 D		NIAGARAN	2,451	3	ABANDONED 1971			120	180	2,227	18,915	461,508	19	
			CHINA TWP., 4N-16E, SECTIONS 34, 35				GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL												
● CHINA, SEC. 12	NIAGARAN	1962	ST. CLAIR	2,509	11 D	39.1	CLINTON	2,631	2	ABANDONED 1970			80		11,895	0	27,721	149	
			CHINA TWP., 4N-16E, SECTION 12																
● CHINA, SEC. 31	SALINA	1959	ST. CLAIR	2,378	13 D		CLINTON	2,641	1	ABANDONED 1964; PRODUCTION COMBINED WITH COTTRELLVILLE IN 1962									
			CHINA TWP., 4N-16E, SECTION 31																
☼ CHINA, SOUTH	SALINA-NIAGARAN	1961	ST. CLAIR	2,324	14 D		CLINTON	2,743	11	0	0	5	440	DOMESTIC USE			523,443		
			CHINA TWP., 4N-16E, SECTIONS 28, 33, 34 COTTRELLVILLE TWP., 3N-16E, SECTIONS 3, 4																
● CHIPPEWA, SEC. 10	TRAVERSE	1961	ISABELLA	3,193	1 L		TRAVERSE	3,220	1	ABANDONED 1964			10		1,250	PRODUCTION CARRIED IN MT. PLEASANT FIELD TOTALS			
			CHIPPEWA TWP., 14N-3W, SECTION 10																
☼ CLARE CITY	MICHIGAN STRAY	1937	CLARE-ISABELLA	1,290	5 S		DUNDEE	3,865	8	0	0	1	720				2,294,990	DOMESTIC USE	
			GRANT TWP., 17N-4W, SECTIONS 25, 26, 35, 36 SHERIDAN TWP., 17N-3W, SECTION 31 WISE TWP., 16N-3W, SECTION 6																
● CLARE CITY	MICHIGAN STRAY	1938	CLARE-ISABELLA	1,303	2 S	30.2	DUNDEE	3,853	7	0	0	4	120	899	77,128				
			GRANT TWP., 17N-4W, SECTIONS 24, 35, 36 WISE TWP., 16N-3W, SECTION 6																
☼ CLARENCE 19-1S-4W	NIAGARAN REEF	1971	CALHOUN	3,154	24 D		NIAGARAN	3,240	1	1	0	1	160			48,784	48,784		
			CLARENCE TWP., 1S-4W, SECTION 19																
☼ CLAYTON	BEREA	1936	ARENAC	1,180	10 S		SYLVANIA	4,163	31	0	0	17	1,560				5,111,048	DOMESTIC USE & LEASE OPERATION	
			CLAYTON TWP., 20N-4E, SECTIONS 4, 5, 8, 9, 10, 11, 14, 15																
● CLAYTON	DUNDEE	1935	ARENAC-OGEMAW	2,465	12 DL	34.2	SYLVANIA	4,163	80	0	0	47	1,290	PRODUCTION COMBINED WITH DETROIT RIVER					1,456
●	DETROIT RIVER	1953		3,507	9 D	45.9	}												
●	RICHFIELD	1947		3,790	9 D	36.2	}		5	0	0	5	200	43,255	6,380,703			4,282	
			CLAYTON TWP., 20N-4E, SECTIONS 3, 4, 5, 8, 9, 10, 11 RICHLAND TWP., 21N-4E, SECTION 31 MILLS TWP., 21N-3E, SECTION 36 THE 5 WELLS INCLUDE 3 RICHFIELD, 1 SZ & 1 DUAL COMPLETION RICHFIELD & SZ																
● CLEAR LAKE	TRAVERSE	1950	VAN BUREN	1,380	1 L		TRAVERSE	1,399	14	ABANDONED 1953			140		17,490			125	
			PINE GROVE TWP., 1S-13W, SECTIONS 3, 4, 9, 10																
● CLINTON	TRAVERSE	1953	WASHTENAW	986	2 D		TRENTON	3,606	2	ABANDONED 1962			20		2,093			105	
			BRIDGEWATER TWP., 4S-4E, SECTION 28																
● COFFEE LAKE	TRAVERSE	1946	VAN BUREN	1,128	1 L		TRAVERSE	1,130	11	ABANDONED 1954			110		34,649			315	
			COLUMBIA TWP., 1S-15W, SECTIONS 17, 18																
● COLD SPRINGS 19-28N-6W	NIAGARAN REEF	1971	KALKASKA	6,596	8 D	44.9	CLINTON	6,897	2	2	0	2	160	40,744	40,744			255	
			COLD SPRINGS TWP., 28N-6W, SECTIONS 19, 30																
● COLD SPRINGS 20-28N-6W	NIAGARAN REEF	1971	KALKASKA	6,737	35 D		NIAGARAN	6,970	1	1	0	1	80	9,136	9,136			114	
			COLD SPRINGS TWP., 28N-6W, SECTION 20																
● COLD SPRINGS 21-28N-6W (COLD SPRINGS)	NIAGARAN REEF	1970	KALKASKA	6,764	45 D	45.6	CLINTON	7,315	1	0	0	1	80	21,305	72,041	60,634	60,634	901	21
			COLD SPRINGS TWP., 28N-6W, SECTION 21																
☼ COLD SPRINGS 25-28N-6W	NIAGARAN REEF	1971	KALKASKA	6,734	544 D		NIAGARAN	7,383	1	1	0	1	160	27 BBLS. CONDENSATE	27 BBLS. CONDENSATE				
			COLD SPRINGS TWP., 28N-6W, SECTION 25																
⊖ COLDWATER	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
● COLDWATER	DUNDEE	1944	ISABELLA	3,692	25 L	48.0	DETROIT RIVER	5,090	81	0	0	52	3,200	77,053	21,850,708		6,311,307	6,828	27,192
			COLDWATER TWP., 16N-6W, SECTIONS 19, 20, 21, 28 THROUGH 34 SHERMAN TWP., 15N-6W, SECTIONS 5, 6																
● COLDWATER, SOUTH	DUNDEE	1951	ISABELLA	3,739	4 D		DUNDEE	3,743	1	ABANDONED 1959			20		10,941			547	
			SHERMAN TWP., 15N-6W, SECTION 8																
● COLE LAKE	TRAVERSE	1968	NEWAYGO	2,928	8 L		TRAVERSE	2,938	2	0	0	2	40	3,689	27,936			698	70
			BARTON TWP., 16N-11W, SECTIONS 29, 30																
☼ COLFAX	MICHIGAN STRAY	1945	MECOSTA	1,240	8 S		DETROIT RIVER	4,043	4	0	0	1	640				485,844	DOMESTIC USE	
●	DUNDEE	1964		3,503	25 L	43.0			2	ABANDONED 1967			40		2,260			57	
☼	DUNDEE-REED CITY	1957		3,474	9 D				1	0	0	1	160				5,121	DOMESTIC USE	
			COLFAX TWP., 15N-9W, SECTIONS 4, 5																
☼ COLLIN	SALINA-NIAGARAN	1968	ST. CLAIR	2,196	4 D		NIAGARAN	2,364	2	0	0	2	80	0	2,019	288,140	618,885	25	2
			COTTRELLVILLE TWP., 3N-16E, SECTION 20																
⊕ COLUMBUS	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS															715,496	13,253,674		
● COLUMBUS, SEC. 2	NIAGARAN	1971	ST. CLAIR	2,798	8 D	29	NIAGARAN	3,182	2	2	0	2	80	0	0				
			COLUMBUS TWP., 5N-15E, SECTION 2 WALES TWP., 6N-15E, SECTION 35																

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
● COLUMBUS, SEC. 3	NIAGARAN	1968	ST. CLAIR	3,105	15 D		NIAGARAN	3,340	23	0	0	23	460	398,152	961,174			2,090	112
			COLUMBUS TWP., 5N-15E, SECTIONS 3, 10 WALES TWP., 6N-15E, SECTION 34																
☼ COLUMBUS, SEC. 23	NIAGARAN	1965	ST. CLAIR	2,900	46+ D		CLINTON	3,122	6	0	0	6	240	2,312	12,431	139,142	791,889	52	60
			COLUMBUS TWP., 5N-15E, SECTIONS 23, 25											GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL						
☼ COLUMBUS, SEC. 32	NIAGARAN REEF	1970	ST. CLAIR	2,983	16 D		NIAGARAN	3,050	2	1	0	2	80	SHUT-IN FOR MARKET					
			COLUMBUS TWP., 5N-15E, SECTION 32																
● COLUMBUS, NORTH	NIAGARAN	1968	ST. CLAIR	3,266	8 D		NIAGARAN	3,374	11	1	0	11	260	135,657	369,427			1,421	94
			COLUMBUS TWP., 5N-15E, SECTIONS 5, 6																
☼ COLUMBUS, WEST	SALINA-NIAGARAN	1967	ST. CLAIR	3,183	14+ D		CLINTON	3,447	13	0	0	13	520			792,991	13,575,516		200
			COLUMBUS TWP., 5N-15E, SECTIONS 7, 17, 18																
● COMSTOCK, SEC. 5	TRAVERSE	1949	KALAMAZOO	1,430	3 L		TRAVERSE	1,480	2	ABANDONED 1952			20		974			49	
			COMSTOCK TWP., 2S-10W, SECTION 5																
● CONCORD	TRAVERSE	1953	JACKSON	1,627	1 L		SALINA	2,417	5	ABANDONED 1958			50		6,437			129	
			CONCORD TWP., 3S-3W, SECTIONS 35, 36																
☼ COON CREEK	NIAGARAN	1963	MACOMB	3,034	20 D		NIAGARAN	3,093	2	ABANDONED 1968			80				134,116		
			LENOX TWP., 4N-14E, SECTION 18																
☼ COOPERSVILLE	"BEREA"	1939	OTTAWA	1,240	5 D		TRAVERSE	1,900	3	ABANDONED 1959			240				108,839		
			WRIGHT TWP., 8N-13W, SECTIONS 7, 19																
● COTTRELLVILLE	SALINA-NIAGARAN	1961	ST. CLAIR	2,262	6 D	38.7	CLINTON	2,511	12	0	0	7	280	6,526	123,830			442	2
			CHINA TWP., 4N-16E, SECTION 31 COTTRELLVILLE TWP., 3N-16E, SECTIONS 6, 7, 8 IRA TWP., 3N-15E, SE¼ SECTION 1, NE¼ SECTION 12																
☼ COTTRELLVILLE	NIAGARAN	1959	ST. CLAIR	2,293	37 D		CLINTON	2,511	2	0	0	2	240			105,163	2,119,008		20
			COTTRELLVILLE TWP., 3N-16E, SECTIONS 6, 7, 8																
⊕ CRANBERRY LAKE	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
● CRANBERRY LAKE	TRAVERSE	1952	CLARE	3,120	7 L	39.0	RICHFIELD	5,223	7	ABANDONED 1965				PRODUCTION COMBINED WITH CRANBERRY LAKE DUNDEE AND RICHFIELD					
●	DUNDEE	1943		3,835	2 L	42.8			8	0	0	3	70	PRODUCTION COMBINED WITH RICHFIELD					456
●	DETROIT RIVER SZ	1953		4,801	16 D	48.8			1	ABANDONED 1962				PRODUCTION COMBINED WITH CRANBERRY LAKE DUNDEE AND RICHFIELD					
●	RICHFIELD	1951		5,048	15 D	51.0			17	0	0	6	680	20,785	1,518,003			2,024	29
			WINTERFIELD TWP., 20N-6W, SECTIONS 1, 2, 11, 12																
● CRANBERRY LAKE, EAST	TRAVERSE	1963	CLARE	3,057	6 L	39.2	DETROIT RIVER	5,139	1	ABANDONED 1964				PRODUCTION COMBINED WITH DUNDEE AND RICHFIELD					
●	DUNDEE	1963		3,760	6 L	43.5		}					200						1,241
●	RICHFIELD	1964		5,087	12 D	44.0		}	6	0	0	6	80	31,411	565,630			2,019	5
			SUMMERFIELD TWP., 20N-5W, SECTIONS 7, 8, 17						THE 6 WELLS INCLUDE 4 DUNDEE, 1 RICHFIELD AND 1 DUNDEE AND RICHFIELD DUAL COMPLETION										
● CROOKED LAKE	TRAVERSE	1949	ALLEGAN	1,278	1 L		TRAVERSE	1,312	2	ABANDONED 1956			40		115,452			2,886	
			CLYDE TWP., 2N-15W, SECTION 25																
⊕ CROTON	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
● CROTON	TRAVERSE	1951	NEWAYGO	2,543	2 L		SALINA	3,993	10	ABANDONED 1958			200		91,678			458	
			CROTON TWP., 12N-11W, SECTIONS 20, 29																
● CRUMP	DUNDEE	1950	BAY	3,294	7 L		DUNDEE	3,354	1	ABANDONED 1951			10		1,043			104	
			GARFIELD TWP., 16N-3E, SECTION 23																
● CRYSTAL	TRAVERSE	1954	MONTCALM	2,769	4 L	41.8	DETROIT RIVER	3,391	2	0	0	1	20						
●	DUNDEE	1935		3,187	4 D	43.5			193	0	0	7	2,000	7,807	7,803,209			3,863	1,605
			CRYSTAL TWP., 10N-5W, SECTIONS 1, 2, 3, 4, 10, 11, 12, 13 FERRIS TWP., 11N-5W, SECTIONS 26, 34, 35, 36																
● CRYSTAL VALLEY	TRAVERSE	1945	OCEANA	1,809	3 L	37.0	ST. PETER SS.	6,062	5	0	0	1	50						TO PLUG
●	DUNDEE	1957		2,575	12 D	42.5			19	0	0	1	420	0	203,747			434	TO PLUG
			CRYSTAL TWP., 16N-16W, SECTIONS 9, 10, 11, 14, 15, 16																
☼ CRYSTAL VALLEY	DUNDEE	1946	OCEANA	2,400	7 L		TRENTON-BLACK RIVER	5,985	4	ABANDONED 1966			160				*162,079		
☼	SALINA	1961		4,102	10 D				1	ABANDONED 1966			40				*PRODUCTION COMBINED		
			CRYSTAL TWP., 16N-16W, SECTIONS 11, 14, 15, 16																
● CRYSTAL VALLEY, SEC. 19	TRAVERSE	1971	OCEANA	1,689	1.5 L		DUNDEE	2,233	2	2	0	2	40	9,345	9,345			234	12
☼	DUNDEE	1971		2,222	11 L				1	1	0	1	20			0	0		
			CRYSTAL TWP., 16N-16W, SECTION 19																
● CRYSTAL VALLEY, SOUTH	TRAVERSE	1969	OCEANA	1,739	1 L		TRAVERSE	1,740	1	0	0	1	40	1,814	7,226			181	15
			CRYSTAL TWP., 16N-16W, SECTION 20																
● CURRIE	DUNDEE	1936	ISABELLA	3,918	2 D	45.9	DUNDEE	4,042	2	0	0	2	40	846	203,668			5,092	
			VERNON TWP., 16N-4W, SECTIONS 5, 8																
● DALLAS	TRAVERSE	1942	CLINTON	2,482	2 L		DETROIT RIVER	2,934	3	ABANDONED 1948			40		3,085			770	
			DALLAS TWP., 7N-4W, SECTION 21																
● DALTON	TRAVERSE	1940	MUSKEGON	1,851	5 L	40.0	DUNDEE	2,515	16	0	3	2	300	0	107,788			359	
			DALTON TWP., 11N-16W, SECTIONS 10, 11, 15																
☼ DAY	MICHIGAN STRAY	1934	MONTCALM	1,352	4 S		MARSHALL	1,395	2	ABANDONED 1944			80				8,494		
			DAY TWP., 11N-6W, SECTION 1 HOME TWP., 12N-6W, SECTION 36																
● DAY	TRAVERSE	1946	MONTCALM	2,900	2 L	43.0	DUNDEE	3,387	1	ABANDONED 1967			10		3,095			310	
●	DUNDEE	1946		3,337	2 L				2	ABANDONED 1954			20		16,239			812	
			DAY TWP., 11N-6W, SECTION 25 (TRAVERSE); DAY TWP., 11N-6W, SECTION 36 (DUNDEE)																

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
◐ ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	DAY, SEC. 13	DUNDEE	1971	MONTCALM	3,414	15 L		DUNDEE	3,475	1	1	0	1	20	6,928	6,928			346	250
	DAY TWP., 11N-6W, SECTION 13																			
☼	DEEP RIVER	BEREA	1936	ARENAC	1,490	10 S		SYLVANIA	4,311	12	0	0	3	1,520				1,609,812	DOMESTIC USE	
	DEEP RIVER TWP., 19N-4E, SECTIONS 7, 8, 16, 17, 18, 20																			
●	DEEP RIVER	DUNDEE	1944	ARENAC	2,795	145 D	35.8	RICHFIELD	4,258	106	0	2	38	1,060	69,563	26,471,003			24,973	7,928
●		RICHFIELD	1953	(CONSOLIDATED WITH STERLING DETROIT RIVER - RICHFIELD IN 1954)				THE 38 WELLS INCLUDE 37 DUNDEE AND 1 TRAVERSE												
	DEEP RIVER TWP., 19N-4E, SECTIONS 6, 7, 8, 9, 14, 15, 16, 23, 24																			
●	DEERFIELD	TRENTON	1920	MONROE	2,115	10 L	42.7	CAMBRIAN	3,250	47	0	0	20	450	2,162	713,961			1,587	7
	DUNDEE TWP., 6S-6E, SECTIONS 19, 29, 30 SUMMERFIELD TWP., 6S-6E, SECTION 31																			
☼	DEMINGS LAKE	TRAVERSE	1968	LENAWEE	734	2 L		TRAVERSE	741	1	0	0	1	40					NO MARKET	
	DOVER TWP., 7S-2E, SECTION 27																			
●	DENNISON	TRAVERSE	1963	OTTAWA	1,874	4 L	38.0	SALINA	3,202	15	ABANDONED 1971			300	0	312,956			1,043	
	POLKTON TWP., 8N-14W, SECTIONS 21, 27, 28																			
☼	DIAMOND CRYSTAL SALT	NIAGARAN	1927	ST. CLAIR	2,483	17 D		NIAGARAN	2,500	1	ABANDONED 1931			40				136,445		
	ST. CLAIR TWP., 5N-17E, SECTION 31																			
●	DIAMOND SPRINGS	TRAVERSE	1938	ALLEGAN	1,461	3 L	41.0	SALINA	2,651	56	0	0	7	420	1,271	1,007,806			2,400	155
●		SALINA-E ZONE	1958		2,389	21 D	25.5			3	0	0	3	30	1,861	58,235			1,941	10
	OVERISEL TWP., 4N-14W, SECTION 36 SALEM TWP., 4N-13W, SECTION 31 HEATH TWP., 3N-14W, SECTION 1 MONTEREY TWP., 3N-13W, SECTION 6																			
●	DORR	TRAVERSE	1938	ALLEGAN	1,617	4 L	41.0	NIAGARAN	3,319	41	0	0	4	410	355	420,221			1,025	16
●		DETROIT RIVER	1955		2,082	6 D	38.0			14	0	0	4	280	547	73,339			262	22
●		SALINA	1956		2,922	7 D	17.0			18	0	1	11	540	4,125	301,614	55,112	1,242,386	559	38
	DORR TWP., 4N-12W, SECTIONS 19, 29 THROUGH 33 SALEM TWP., 4N-13W, SECTION 25																			
☼	DORR	DETROIT RIVER	1957	ALLEGAN	1,918	1 D		NIAGARAN	3,319	1	0	0	1	160				4,710	NO MARKET	
	DORR TWP., 4N-12W, SECTION 33																			
☼	DORR, SEC. 17	"BEREA"	1951	ALLEGAN	953	8 D		TRAVERSE	1,642	1	ABANDONED 1967			40				0		
	DORR TWP., 4N-12W, SECTION 17																			
☼	DORR, SEC. 21	"BEREA"	1940	ALLEGAN	957	1 D		TRAVERSE	1,687	1	0	0	1	40				0	DOMESTIC USE	
	DORR TWP., 4N-12W, SECTION 21																			
●	DOUGLASS	DUNDEE	1945	MONTCALM	3,400	2 L	47.1	DUNDEE	3,458	6	0	0	1	120	1,045	248,847			2,074	175
	DOUGLASS TWP., 11N-7W, SECTION 1																			
☼	DOUGLASS	MICHIGAN STRAY	1943	MONTCALM	1,190	5 S		DUNDEE	3,423	4	ABANDONED 1951			640				184,806		
	DOUGLASS TWP., 11N-7W, SECTIONS 27, 28																			
◐	DOUGLASS, SEC. 3	TRAVERSE	1954	MONTCALM	3,025	8 L		DUNDEE	3,666	1	ABANDONED 1956			20		3,155			158	
	DOUGLASS TWP., 11N-7W, SECTION 3																			
●	DUNNINGVILLE	TRAVERSE	1950	ALLEGAN	1,435	3 L	38.0	TRAVERSE	1,438	5	0	0	1	50	512	120,270			2,405	20
	HEATH TWP., 3N-14W, SECTIONS 22, 27, 33																			
●	DWIGHT	DETROIT RIVER	1945	HURON	2,862	4 L	36.2	SYLVANIA	3,290	1	0	0	1	40	0	41,165			1,029	2
	DWIGHT TWP., 18N-13E, SECTION 21																			
☼	EAST CHINA	NIAGARAN	1969	ST. CLAIR	2,344	19 D		NIAGARAN	2,363	1	0	0	1	40					SHUT-IN FOR MARKET	
	EAST CHINA TWP., 4N-16E, SECTION 25																			
◐	EAST NORWICH	TRAVERSE	1944	MISSAUKEE-ROSCOMMON	2,410	1 L		BASS ISLANDS	3,520	1	ABANDONED 1944			PRODUCTION COMBINED WITH EAST NORWICH RICHFIELD						
◐		DUNDEE	1942		3,082	4 L	44.2			1	ABANDONED 1947			PRODUCTION COMBINED WITH EAST NORWICH RICHFIELD						
●		RICHFIELD	1942		4,390	14 D	40.9			109	0	6	69	4,360	256,499	8,590,478	506,216	6,770,407	1,970	239
	NORWICH TWP., 24N-5W, SECTION 16 (TRAVERSE), SECTION 14 (DUNDEE) LYON TWP., 24N-4W, SECTIONS 6, 7, 18 (RICHFIELD) THE 69 WELLS INCLUDE 54 RICHFIELD & 14 SOUR ZONE & 1 RICHFIELD & SOUR ZONE																			
	NORWICH TWP., 24N-5W, SECTIONS 1, 2, 3, 9 THROUGH 16, 21, 22 (RICHFIELD)																			
●	EATON RAPIDS 36-2N-3W	NIAGARAN	1971	EATON	3,740	55 D	47	NIAGARAN	4,200	1	1	0	1	40	0	0			SHUT-IN	
	EATON RAPIDS TWP., 2N-3W, SECTION 36																			
●	EDEN	TRAVERSE	1948	MASON	1,679	3 L	34.5	CAMBRIAN	7,249	10	0	0	5	90						100
☼		TRAVERSE	1958		1,960	7 L				1	0	0	1	160					SHUT-IN	
●		DUNDEE	1948		2,240	2 L	45.3			38	0	0	27	380						1,620
●		REED CITY	1948		2,345	8 D	42.8			5	0	0	2	40	9,827	2,945,209	0	275,801	5,775	20
	EDEN TWP., 17N-16W, SECTION 26 (TRAVERSE GAS) SECTIONS 25, 26, 35, 36 (TRAVERSE, DUNDEE, REED CITY OIL COMBINED IN ABOVE FIGURES)																			
●	EDENVILLE	DUNDEE	1938	MIDLAND	3,790	8 L	41.0	DUNDEE	3,962	36	0	0	2	370	787	1,366,291			3,693	10
	EDENVILLE TWP., 16N-1W, SECTIONS 5, 26, 27																			
☼	EDENVILLE, SEC. 5	SAGINAW FM.	1956	MIDLAND	382	12 S		DUNDEE	4,028	3	0	1	1	160			0	0	TO PLUG	
	EDENVILLE TWP., 16N-1W, SECTION 5																			
●	EDMORE	TRAVERSE	1933	MONTCALM	3,102	4 L	43.2	DUNDEE	3,613	35	0	0	8	500	10,940	1,370,750	0	1,094,960	2,742	1,005
	HOME TWP., 12N-6W, SECTIONS 2, 3, 9, 10, 11																			
⊖	EDMORE-RICHLAND	REFER TO TABLE 4 UNDEVELOPED GAS STORAGE RESERVOIRS																		
●	EDWARDS	DUNDEE	1951	OGEMAW	3,362	10 L		SYLVANIA-BOIS BLANC	5,260	4	0	0	3	90	2,068	31,951			355	450
	EDWARDS TWP., 21N-1E, SECTION 15																			
☼	EGELSTON	"BEREA"	1951	MUSKEGON	1,120	5 D		DUNDEE	2,282	7	ABANDONED 1966			1,120				291,097		
	EGELSTON TWP., 10N-15W, SECTIONS 3, 4, 9, 10, 15																			

POOL CLASSIFICATION

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⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
☼	ELBA	MICHIGAN STRAY	1928	GRATIOT	670	10 S		DUNDEE	3,044	10	ABANDONED 1957			520				246,058		
◐		TRAVERSE	1927		2,440	2 L	47.0			8	ABANDONED 1962			90		42,925			477	
	ELBA TWP., 9N-7W, SECTIONS 9, 14, 15, 16 (MICHIGAN STRAY) SECTIONS 14, 15, 22, 23 (TRAVERSE)																			
●	ELBRIDGE	TRAVERSE	1961	OCEANA	2,112	2 L	39.4	REED CITY	2,725	19	0	5	5	380	0	414,945	SHUT-IN		1,092	
	ELBRIDGE TWP., 15N-16W, SECTIONS 22, 26, 27, 28																			
●	ELKLAND	DUNDEE	1946	TUSCOLA	2,653	14 L		SYLVANIA	3,735	2	ABANDONED 1947			20		1,546			77	
	ELKLAND TWP., 14N-11E, SECTION 31 NOVESTA TWP., 13N-11E, SECTION 6																			
●	ELMWOOD	DUNDEE	1945	TUSCOLA	2,740	8 L	31.3	BOIS BLANC	3,945	10	0	0	7	90	3,560	83,533			928	33
	ELMWOOD TWP., 14N-10E, SECTIONS 17, 20, 21																			
☼	ENSLEY	MARSHALL	1958	NEWAYGO	826	5 S		DETROIT RIVER	3,018	8	0	0	8	1,280	SHUT-IN			906,626	MAY CONVERT TO STORAGE	
◐		TRAVERSE	1954		2,439	2 L				6	ABANDONED 1959			120		70,415			587	
	ENSLEY TWP., 11N-11W, SECTIONS 6, 7, 8, 17, 18 GRANT TWP., 11N-12W, SECTION 12 (MARSHALL) ENSLEY TWP., 11N-11W, SECTIONS 6, 7, 8 (TRAVERSE)																			
●	ENTERPRISE	RICHFIELD	1943	MISSAUKEE-ROSCOMMON	4,405	15 D	41.8	RICHFIELD	4,625	32	0	0	20	1,280	101,965	2,418,617	55,725	803,218	1,890	64
	ENTERPRISE TWP., 23N-5W, SECTIONS 10 THROUGH 14 LAKE TWP., 23N-4W, SECTION 18																			
☼	ENTERPRISE, SEC. 32	MICHIGAN STRAY	1953	MISSAUKEE	1,986	5 S		DETROIT RIVER	4,200	2	0	0	2	320				0	DOMESTIC USE	
	ENTERPRISE TWP., 23N-5W, SECTION 32 BUTTERFIELD TWP., 22N-5W, SECTION 4																			
◐	ENTRICAN	TRAVERSE	1966	MONTCALM	2,870	4 L		DUNDEE	3,426	1	ABANDONED 1968			40		441			10	
●		DUNDEE	1967		3,312	2 D				2	0	0	1	40	1,072	7,517			188	600
	DOUGLASS TWP., 11N-7W, SECTION 21																			
●	ESSEXVILLE	DUNDEE	1944	BAY	2,835	17 L	35.3	SYLVANIA	4,130	50	0	0	41	1,730	44,360	3,381,846		3,267	1,955	96
	HAMPTON TWP., 14N-6E, SECTIONS 7, 8, 9, 15, 16, 17, 18 HAMPTON TWP., 14N-5E, SECTION 12																			
◐	EVART	DUNDEE	1942	OSCEOLA	3,755	6 L	46.3	SYLVANIA	5,292	29	ABANDONED 1970			1,100		3,812,127			3,466	
	OSCEOLA TWP., 18N-8W, SECTIONS 21, 22, 23, 25, 26, 27, 28																			
⊖	EVART	REFER TO TABLE 4 UNDEVELOPED GAS STORAGE RESERVOIRS																		
◐	EXCELSIOR	TRAVERSE	1950	KALKASKA	2,003	2 L	33.4	TRAVERSE	2,136	1	ABANDONED 1970			10		10,455			1,045	
	EXCELSIOR TWP., 27N-6W, SECTION 11																			
☼	FALMOUTH	MICHIGAN STRAY	1962	MISSAUKEE	1,279	3 S		REED CITY	4,035	8	0	0	1	1,280				1,102,815	DOMESTIC USE	
	AETNA TWP., 22N-6W, SECTIONS 30, 31 REEDER TWP., 22N-7W, SECTIONS 25, 36																			
◐	FERRY	TRAVERSE	1960	OCEANA	1,949	2 L	41.0	REED CITY	2,581	14	ABANDONED 1970			280		164,263			587	
	FERRY TWP., 14N-16W, SECTIONS 16, 20, 21																			
☼	FERRY, SEC. 25	"BEREA"	1961	OCEANA	1,310	5 D		REED CITY	2,650	1	0	0	1	40				0	DOMESTIC USE	
	FERRY TWP., 14N-16W, SECTION 25																			
●	FILLMORE	TRAVERSE	1940	ALLEGAN-OTTAWA	1,516	2-7 L	41.1	NIAGARAN	3,045	63	0	0	10	770	1,614	970,870			1,261	18
☼		SALINA A-2 CARB.	1959		2,632	16 D }				11	0	1	8	1,500			345,443	3,735,820		
☼		SALINA A-1 CARB.	1959		2,792	16 D }								1,600	PRODUCTION COMBINED WITH SALINA A2 ABOVE					
	FILLMORE TWP., 4N-15W, SECTIONS 2, 3, 11, 12 HOLLAND TWP., 5N-15W, SECTIONS 27, 34, 35 (TRAVERSE OIL) FILLMORE TWP., SECTIONS 2, 3 HOLLAND TWP., SECTIONS 34, 35 (SALINA GAS)																			
◐	FOREST RIVER	TRAVERSE	1965	OGEANA	1,954	1 L		DUNDEE	2,598	1	ABANDONED 1965			40		781			20	
	COLFAX TWP., 16N-15W, SECTION 12																			
◐	FORK	DUNDEE	1942	MECOSTA	3,845	8 L	49.0	BOIS BLANC	5,294	64	ABANDONED 1969			2,700		7,777,026			2,880	
◐		RICHFIELD	1945		5,001	11 D	54.8			1	ABANDONED 1966			PRODUCTION COMBINED WITH FORK DUNDEE				854,415		
	FORK TWP., 16N-7W, SECTIONS 4, 5, 6, 7, 8, 16, 18 CHIPPEWA TWP., 16N-8W, SECTIONS 1, 12																			
☼	FORK, EAST	MICHIGAN STRAY	1942	MECOSTA	1,480	5 S		DUNDEE	3,865	4	ABANDONED 1946			640				102,708		
	FORK TWP., 16N-7W, SECTIONS 2, 11																			
☼	FORK, NORTH	MICHIGAN STRAY	1956	OSCEOLA	1,433	19 S		DUNDEE	3,982	1	0	0	1	160				60,178	DOMESTIC USE	
●		DUNDEE	1951		3,788	3 D	45.8			6	0	0	1	120	0	153,661				
	ORIENT TWP., 17N-7W, SECTION 33 (MICHIGAN STRAY) SECTIONS 28, 33 (DUNDEE)																			
☼	FORK, WEST	MICHIGAN STRAY	1943	MECOSTA	1,490	5 S		SYLVANIA	5,198	17	0	0	2	2,880				2,405,559	DOMESTIC USE	
	FORK TWP., 16N-7W, SECTIONS 5, 6, 7, 8, 16 CHIPPEWA TWP., 16N-8W, SECTIONS 1, 2 EVART TWP., 17N-8W, SECTIONS 35, 36																			
☼	FORWARD	MICHIGAN STRAY	1961	MISSAUKEE	1,393	7 S		DETROIT RIVER	5,225	6	ABANDONED 1969			960				467,409		
	RIVERSIDE TWP., 21N-7W, SECTIONS 25, 36 CLAM UNION TWP., 21N-6W, SECTION 31																			
☼	FOSTORIA	BEREA	1970	TUSCOLA	1,514	16 S		RICHFIELD	3,267	1	0	0	1	160				0	SHUT-IN	
	WATERTOWN TWP., 10N-9E, SECTION 14																			
●	FOUNTAIN	REED CITY	1970	MASON	2,442	6 D		REED CITY	2,448	1	0	0	1	40	170	170			4	
	SHERMAN TWP., 19N-16W, SECTION 12																			
☼	FOUR CORNERS	SALINA-NIAGARAN	1966	ST. CLAIR	2,205	212 D		CLINTON	2,638	2	0	0	2	80			158,504	1,033,812		
	CASCO TWP., 4N-15E, SECTION 36 IRA TWP., 3N-15E, SECTION 1																			
☼	FOWLERVILLE	SALINA-NIAGARAN	1961	LIVINGSTON	3,880	45 D		PRAIRIE DU CHIEN	5,685	15	8	0	15	2,400				0	SHUT-IN	
	HANDY TWP., 3N-3E, SECTIONS 1, 2, 12 CONWAY TWP., 4N-3E, SECTION 35 HOWELL TWP., 3N-4E, SECTION 7																			
●	FREDERIC 10-28N-4W	NIAGARAN REEF	1971	CRAWFORD	6,964	99 D	45	NIAGARAN	7,300	1	1	0	1	40	16,383	16,383			410	
	FREDERIC TWP., 28N-4W, SECTION 10																			
☼	FREEDOM	TRAVERSE	1971	WASHTENAW	1,038	24 L		CAMBRO-ORDOVICIAN	4,691	1	1	0	1	40				0	SHUT-IN	
☼		DUNDEE	1971		1,198	28 L				1	1	0	1	40				0	SHUT-IN	
◐		TRENTON	1954		3,963	20 D	43.5			1	ABANDONED 1956			40		7,217			180	
	FREEDOM TWP., 3S-4E, SECTION 8																			
⊕	FREEMAN-LINCOLN	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
ACTIVE GAS FIELD OR POOL
ABANDONED GAS FIELD OR POOL
GAS-CONDENSATE FIELD OR POOL
ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	FREEMAN-REDDING	DUNDEE	1938	CLARE	3,885	19 L	44.4	SYLVANIA	5,462	170	0	1	16	2,800	30,483	16,613,480		1,956,056	5,933	4,750
				REDDING TWP., 19N-6W, SECTIONS 27, 28, 29, 32, 33, 34 FREEMAN TWP., 18N-6W, SECTIONS 3, 4																
●	FREEMAN, SEC. 15	DUNDEE	1963	CLARE	3,894	8 L	41.0	DUNDEE	3,902	1	ABANDONED 1965			40		736			18	
				FREEMAN TWP., 18N-6W, SECTION 15																
●	FREEPORT	TRAVERSE	1949	BARRY	2,031	3 L		DETROIT RIVER	2,430	1	ABANDONED 1951			10		19,229			1,923	
				CARLTON TWP., 4N-8W, SECTION 6																
☼	FREMONT	MICHIGAN STRAY	1941	ISABELLA	1,235	5 S		DUNDEE	3,700	5	ABANDONED 1956			800				381,330		
●		DUNDEE	1938		3,696	4 D				2	ABANDONED 1956			30		3,045			102	
				FREMONT TWP., 13N-5W, SECTIONS 20, 21, 22, 27, 28 (MICHIGAN STRAY) SECTIONS 5, 8 (DUNDEE)																
☼	FREMONT, SEC. 32	MICHIGAN STRAY	1958	ISABELLA	1,264	6 S		DUNDEE	3,619	1	0	0	1	160			0	27,134		
●		TRAVERSE	1957		3,058	2 L				1	ABANDONED 1958			10		892			89	
				FREMONT TWP., 13N-5W, SECTION 32																
☼	FREMONT	DUNDEE	1937	SAGINAW	3,125	1 L		DUNDEE	3,150	2	ABANDONED 1947			20		2,000			100	
				FREMONT TWP., 11N-2E, SECTIONS 3, 5																
●	GARFIELD	DETROIT RIVER	1946	CLARE	5,038	10 S		SYLVANIA	5,307	1	ABANDONED 1948			40		13,769		535,811	344	
				GARFIELD TWP., 17N-6W, SECTION 18																
●	GENEVA	DUNDEE	1935	MIDLAND	3,671	2 L		DETROIT RIVER	3,898	8	ABANDONED 1969			70		63,143			902	
				GENEVA TWP., 15N-2W, SECTIONS 19, 20, 29 ABANDONED IN 1960, REACTIVATED IN 1967																
●	GENEVA	TRAVERSE	1940	VAN BUREN	1,042	2 L	31.5	TRENTON	2,950	77	0	0	1	760	0	495,063			651	
				GENEVA TWP., 1S-16W, SECTIONS 20, 21, 22, 27, 28, 29, 32, 33																
●	GIBSON	TRAVERSE	1935	BAY	2,036	4 L		DETROIT RIVER	4,343	12	ABANDONED 1957			130		51,892			399	
●		DUNDEE	1950		2,942	4 L				1	ABANDONED 1952				PRODUCTION COMBINED WITH GIBSON TRAVERSE					
				GIBSON TWP., 18N-3E, SECTIONS 1, 2, 11, 12 DUNDEE PRODUCTION - SECTION 2																
●	GIBSON, SEC. 20	DUNDEE	1951	BAY	3,097	11 L		DUNDEE	3,195	3	0	0	2	30	935	30,674			1,022	
				GIBSON TWP., 18N-3E, SECTIONS 20, 29																
●	GILBERT LAKE	TRAVERSE	1956	OCEANA	2,032	8 L	42.5	REED CITY	2,711	5	2	0	3	50	3,365	54,098			1,082	20
				GOLFAX TWP., 16N-15W, SECTIONS 34, 35																
☼	GILMORE	MICHIGAN STRAY	1945	ISABELLA	1,560	3 S		DUNDEE	4,091	6	ABANDONED 1952			320				203,312		
				GILMORE TWP., 16N-5W, SECTIONS 25, 26, 36 VERNON TWP., 16N-4W, SECTION 31																
●	GILMORE	DUNDEE	1955	ISABELLA	3,803	3 L	48.6	DUNDEE	3,812	12	0	0	3	120	4,143	388,064			323	1,250
				GILMORE TWP., 16N-5W, SECTIONS 30, 31, 32 NOTTAWA TWP., 15N-5W, SECTION 5																
●	GOODWELL	TRAVERSE	1943	NEWAYGO	2,760	12 L	43.0	BASS ISLANDS	4,342	31	0	0	2	1,240	3,097	1,119,724			903	29
				GOODWELL TWP., 14N-11W, SECTIONS 5, 6, 7, 8, 9, 16, 17																
⊕	GOODWELL	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
☼	GOODWELL, EAST	MICHIGAN STRAY	1945	NEWAYGO	1,190	4 S		DETROIT RIVER	3,498	2	ABANDONED 1950			200				7,504		
				GOODWELL TWP., 14N-11W, SECTIONS 23, 24																
☼	GRANT	GLACIAL DRIFT	1929	MASON	632	1 S		DUNDEE	2,385	3	ABANDONED 1955			120				8,020		
				GRANT TWP., 20N-17W, SECTION 15																
●	GRANT 26-25N-12W	NIAGARAN REEF	1971	GRAND TRAVERSE	5,961	80 D	65.7	CLINTON	6,383	1	1	0	1	40	1,990	1,990			50	
				GRANT TWP., 25N-12W, SECTION 26																
●	GRANT, SEC. 29	DETROIT RIVER	1953	HURON	3,358	8 D	38.8	BOIS BLANC	3,918	3	0	0	3	120	440	19,591			163	
				GRANT TWP., 15N-11E, SECTION 29																
☼	GREEN	MICHIGAN STRAY	1946	MECOSTA	1,250	3 S		REED CITY	3,710	2	ABANDONED 1951			320				73,368		
				GREEN TWP., 16N-10W, SECTION 18																
●	GREEN OAK	TRENTON-BLK. RIVER	1967	LIVINGSTON	4,682	10 D		BLACK RIVER	5,560	1	ABANDONED 1970			40		2,836			71	
				GREEN OAK TWP., 1N-6E, SECTION 14																
●	GREENWOOD, SEC. 3	TRAVERSE	1968	CLARE	3,438	14 L		DUNDEE	4,048	2	1	0	2	40	5,507	37,558			939	500
				GREENWOOD TWP., 19N-5W, SECTIONS 2, 3																
●	GREENWOOD, SEC. 11	DUNDEE	1952	CLARE	4,054	10 L		RICHFIELD	5,432	1	ABANDONED 1953			10		1,324			132	
				GREENWOOD TWP., 19N-5W, SECTION 11																
●	GROUT	DUNDEE	1940	GLADWIN	3,825	4 L		DETROIT RIVER	5,240	5	ABANDONED 1957				PRODUCTION COMBINED WITH GROUT RICHFIELD					
●		DETROIT RIVER SZ	1958		4,801	12 D				1	ABANDONED 1963				PRODUCTION COMBINED WITH GROUT RICHFIELD					
●		RICHFIELD	1956		5,039	10 D	41.7			17	0	0	12	680	53,051	1,498,408			2,204	194
				GROUT TWP., 18N-2W, SECTIONS 10, 11, 14, 15																
☼	HAMILTON	MICHIGAN STRAY	1940	CLARE	1,270	3 S		RICHFIELD	5,395	4	ABANDONED 1954			440				275,606		
●		DUNDEE	1940		4,041	10 L	41.8			3	ABANDONED 1959			30	PRODUCTION COMBINED WITH HAMILTON RICHFIELD					
●		RICHFIELD	1952		5,145	12 D	42.2			45	0	1	26	1,800	253,635	5,293,211	120,141	3,555,907	2,892	989
				HAMILTON TWP., 19N-3W, SECTIONS 5, 6, 7, 8, 15 HAYES TWP., 19N-4W, SECTIONS 1, 2 FROST TWP., 20N-4W, SECTIONS 35, 36 MICHIGAN STRAY IN HAMILTON TWP., SECTIONS 13, 23, 26																
⊕	HAMILTON, NORTH	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
☼	HAMLIN	SALINA-NIAGARAN	1952	MASON	3,950	7 D		CAMBRIAN	6,622	1	ABANDONED 1962			160				0		
●		NIAGARAN	1952		4,224	20 D	46.2			1	ABANDONED 1958			40		60,532			1,513	
				HAMLIN TWP., 19N-18W, SECTION 27																
●	HANOVER	TRENTON-BLK. RIVER	1959	JACKSON	4,012	120+ D	43.0	PRAIRIE DU CHIEN	4,604	10	0	0	7	180	20,398	1,300,495	82,677	586,017	7,225	150
				HANOVER TWP., 4S-2W, SECTIONS 8, 9																

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⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	HARDY DAM	REED CITY	1966	MECOSTA	3,351	5 D	44.8	DETROIT RIVER	3,482	22	0	1	20	880	77,256	1,016,119			1,155	2,385
				AETNA TWP., 13N-10W, SECTIONS 5, 6, 7, 8																
☼	HARRISON	MICHIGAN STRAY	1945	CLARE	1,675	3 S		SYLVANIA	5,633	7	ABANDONED 1962			760				598,465		
●		DUNDEE	1945		4,190	13 L	39.7			2	0	0	2	80	2,415	152,545			1,907	15
				LINCOLN TWP., 18N-5W, SECTIONS 1, 12, 13 HATTON TWP., 18N-4W, SECTIONS 6, 7 (MICHIGAN STRAY) DUNDEE IN HATTON TWP., SECTION 7																
●	HART	TRAVERSE	1933	OCEANA	1,911	54 D	34.0	ST. PETER SS.	5,531	17	ABANDONED 1936			150		116,275			775	
				HART TWP., 15N-17W, SECTION 36 ELBRIDGE TWP., 15N-16W, SECTION 31																
☼	HARTWICK	MICHIGAN STRAY	1968	OSCEOLA	1,681	25 S		MICHIGAN STRAY	1,706	1	0	0	1	160				0	NO MARKET	
				HARTWICK TWP., 19N-8W, SECTION 11																
●	HATTON	DUNDEE	1941	CLARE	3,945	2 L		DUNDEE	4,000	4	ABANDONED 1948			160		139,272			870	
				HATTON TWP., 18N-4W, SECTION 31 LINCOLN TWP., 18N-5W, SECTION 36																
●	HAWKHEAD	TRAVERSE	1946	ALLEGAN	1,103	1 L	36.0	DETROIT RIVER	1,385	16	ABANDONED 1960			160		68,292			427	
				CASCO TWP., 1N-16W, SECTIONS 20, 29																
●	HAYES 11-29N-4W (GAYLORD-TECON LAKE)	NIAGARAN	1969	OTSEGO	6,180	57 D	47	NIAGARAN	6,420	4	2	0	4	640	147,090	312,165	30,663	30,663	488	206
				HAYES TWP., 29N-4W, SECTIONS 2, 11, 12, 14																
☼	HEADQUARTERS	MICHIGAN STRAY	1945	CLARE-ROSCOMMON	1,340	6 S		BOIS BLANC	5,929	12	0	0	2	1,760						
●		TRAVERSE	1941		3,356	5 L	42.3			47	0	0	3	1,400				SHUT-IN		
●		DUNDEE	1958		3,899	12 L	39.9			1	0	0	1	10				SHUT-IN		
●		DETROIT RIVER SZ	1942		4,946	13 D	43.7	}												
●		RICHFIELD	1952		5,147	23 D	42.6	}		60	0	1	40	2,320	67,508	10,202,697		4,248,560	2,707	50
				ROSCOMMON TWP., 21N-3W, SECTIONS 17, 19, 20, 21, 28, 29, 30, 32, 33, 34 FRANKLIN TWP., 20N-3W, SECTIONS 3, 4, 10, 11, 15 THE 40 WELLS INCLUDE 12 RICHFIELD, 22 SOUR ZONE & 6 RICHFIELD & SOUR ZONE																
●	HEATH	TRAVERSE	1948	ALLEGAN	1,498	2 L	38.0	SALINA	2,716	25	0	0	4	270	1,127	207,798			770	2
				HEATH TWP., 3N-14W, SECTIONS 11, 12, 13, 14																
☼	HEATH, SEC. 21	SALINA	1960	ALLEGAN	2,492	19 D		SALINA	2,789	1	ABANDONED 1965			160				63,430		
				HEATH TWP., 3N-14W, SECTION 21																
●	HEATH, SEC. 35	TRAVERSE	1945	ALLEGAN	1,468	2 L		TRAVERSE	1,470	1	ABANDONED 1946			10		559			56	
				HEATH TWP., 3N-14W, SECTION 35																
☼	HERSEY	MICHIGAN STRAY	1971	OSCEOLA	1,510	3 S		MICHIGAN STRAY	1,586	3	3	0	3	480	0	0		SHUT-IN		
				HERSEY TWP., 17N-9W, SECTIONS 26, 36																
☼	HESSEN	NIAGARAN	1965	ST. CLAIR	2,499	261 D		NIAGARAN	2,887	16	0	0	16	640	7,590	88,147	847,759	9,110,726	138	92
				CASCO TWP., 4N-15E, SECTIONS 2, 3, 10, 11 COLUMBUS TWP., 5N-15E, SECTIONS 34, 35																
●	HILLIARDS	TRAVERSE	1944	ALLEGAN	1,576	1.2 L		NIAGARAN	3,157	17	ABANDONED 1961			300		124,401			415	
☼		SALINA A-1 CARB.	1958		2,938	30 D				6	0	0	6	960	[illegible]		56,786	2,150,066		
				HOPKINS TWP., 3N-12W, SECTIONS 4, 5 (TRAVERSE) DORR TWP., 4N-12W, SECTION 34 HOPKINS TWP., 3N-12W, SECTIONS 3, 4, 10 (SALINA)																
●	HOLTON	TRAVERSE	1948	MUSKEGON	1,993	1 L	37.3	DUNDEE	2,554	3	ABANDONED 1963			60		95,911			1,598	
				HOLTON TWP., 12N-15W, SECTIONS 4, 9																
●	HOME, SEC. 26	TRAVERSE	1964	MONTCALM	3,096	10 L	45.3	REED CITY	3,618	2	0	0	1	20						
●		DUNDEE	1970		3,513	7 L				4	1	0	4	200	20,603	35,790			163	68
				HOME TWP., 12N-6W, SECTIONS 26, 27 (TRAVERSE) SECTION 27 (DUNDEE) THE 5 WELLS INCLUDE 1 TRAVERSE, 2 DUNDEE AND 2 TRAVERSE AND DUNDEE COMMINGLED																
●	HOPE	TRAVERSE	1939	BARRY	1,869	3 L	37.6	PRAIRIE DU CHIEN	4,944	66	0	0	37	650	10,339	623,085			959	2
				HOPE TWP., 2N-9W, SECTIONS 26, 27, 28, 33, 34, 35 BARRY TWP., 1N-9W, SECTIONS 1, 2, 3, 12																
●	HOPKINS	TRAVERSE	1939	ALLEGAN	1,633	4 L	41.5	DETROIT RIVER	1,965	10	ABANDONED 1956			110		145,513			1,323	
				HOPKINS TWP., 3N-12W, SECTIONS 22, 23																
●	HOPKINS, SOUTH	TRAVERSE	1948	ALLEGAN	1,538	3 L	38.0	TRAVERSE	1,611	35	0	0	1	330	560	268,097			812	1
				HOPKINS TWP., 3N-12W, SECTIONS 19, 30, 31, 32																
●	HOPKINS, WEST	TRAVERSE	1941	ALLEGAN	1,371	2 L	41.5	CLINTON	3,140	31	ABANDONED 1951			370		388,777			1,051	
●		SALINA	1956		2,755	7 D	17.9			2	ABANDONED 1968			20		1,849			92	
				HOPKINS TWP., 3N-12W, SECTIONS 7, 18																
⊕	HOWELL	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	HUBBARDSTON	DUNDEE	1947	IONIA	3,028	5 L		DUNDEE	3,072	5	ABANDONED 1959			50		48,479			970	
				NORTH PLAINS TWP., 8N-5W, SECTION 4																
●	HUBER	TRAVERSE	1955	NEWAYGO	2,109	2 L	41.3	DETROIT RIVER	3,400	13	0	0	5	260	952	549,810			2,115	800
				DENVER TWP., 14N-14W, SECTIONS 4, 5, 8																
⊕	IRA	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
☼	ISABELLA	MICHIGAN STRAY	1949	ISABELLA	1,454	7 S		DETROIT RIVER	3,993	6	ABANDONED 1956			240				335,791		
●		DUNDEE	1948		3,783	9 D	46.9			20	0	0	1	370	506	824,833		138,359	2,229	
				ISABELLA TWP., 15N-4W, SECTIONS 7, 18 (MICHIGAN STRAY) ISABELLA TWP., SECTIONS 7, 18 NOTTAWA TWP., 15N-5W, SECTIONS 12, 13 (DUNDEE)																
☼	ITHACA	MICHIGAN STRAY	1943	GRATIOT	900	16 S		DUNDEE	3,419	5	ABANDONED 1965			800				1,520,995		
				ARCADIA TWP., 11N-3W, SECTIONS 25, 35, 36																
●	JEFFERSON	TRAVERSE	1961	CASS	710	3 L	32.0	PRAIRIE DU CHIEN	2,603	20	ABANDONED 1971			400	0	101,330			253	
				JEFFERSON TWP., 7S-15W, SECTIONS 22, 23, 26, 27, 35																
●	JEROME	DUNDEE	1947	MIDLAND	3,743	10 L	39.0	DETROIT RIVER	4,001	12	0	0	3	260	1,600	235,601			906	4
				JEROME TWP., 15N-1W, SECTIONS 6, 7, 8																
●	JOHNSTOWN	TRAVERSE	1951	BARRY	1,870	2 L	37.0	TRAVERSE	1,899	5	0	0	2	50	1,185	31,053			621	
				JOHNSTOWN TWP., 1N-8W, SECTIONS 7, 8, 17																

POOL CLASSIFICATION

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	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	KALKASKA 5-27N-7W (KALKASKA, NORTH)	NIAGARAN REEF	1970	KALKASKA	6,314	68 D	41.5	CLINTON	6,921	3	2	0	3	240	23,141	34,784			109	85
	KALKASKA TWP., 27N-7W, SECTION 5; RAPID RIVER TWP., 28N-7W, SECTION 33																			
☼	KALKASKA 28-27N-7W (KALKASKA)	NIAGARAN REEF	1970	KALKASKA	7,129	28 D	65.3 COND.	CLINTON	7,408	1	0	0	1	160	0	172 BBLS. CONDENSATE	SHUT-IN		1	
	KALKASKA TWP., 27N-7W, SECTION 28																			
☼	KALKASKA 32-27N-7W	NIAGARAN REEF	1971	KALKASKA	6,828	309 D		NIAGARAN	7,369	1	1	0	1	160		0		0		
	KALKASKA TWP., 27N-7W, SECTION 32																			
●	KALKASKA 21-27N-8W	NIAGARAN REEF	1971	KALKASKA	6,562	77 D		NIAGARAN	6,856	2	2	0	2	160	1,435	1,435			9	
	KALKASKA TWP., 27N-8W, SECTIONS 21, 22																			
●	KALKASKA 28-27N-8W	NIAGARAN REEF	1971	KALKASKA	6,717	6 D		NIAGARAN	6,813	1	1	0	1	80	0	0		SHUT-IN		
	KALKASKA TWP., 27N-8W, SECTION 28																			
●	KAWKAWLIN	BEREA	1941	BAY	1,505	4 S	38.0	ST. PETER SS.	10,477	4	0	0	4	40						
●		DUNDEE	1938		2,830	45 L	35.0			320	0	2	292	6,400				4,590		486
●		DETROIT RIVER	1939		3,515	5 D	42.0			9	0	0	8	280	176,034	14,310,055			2,129	
☼		SALINA	1941		7,760	16 D				1	ABANDONED 1946			40				NO RECORD		
	MONITOR TWP., 14N-4E, SECTION 2 (SALINA) KAWKAWLIN TWP., 15N-4E, SECTIONS 26, 27, 28, 29, 33, 34, 35, 36 MONITOR TWP., 14N-4E, SECTIONS 1, 2, 3, 11, 12 BANGOR TWP., 14N-5E, SECTIONS 4, 5, 6, 7, 8, 9																			
	BANGOR TWP., 15N-5E, SECTION 31																			
●	KIMBALL LAKE	TRAVERSE	1947	NEWAYGO	2,532	6 L	43.0	ST. PETER SS.	6,689	106	0	0	3	2,120	1,488	6,225,137		2,123,116	2,936	1,680
●		REED CITY	1955		2,852	37 ?	39.2			2	0	0	1	20			GAS TO OPERATE TRAVERSE WELLS			
	GARFIELD TWP., 12N-13W, SECTIONS 2, 10, 11, 12, 13, 14, 15, 24																			
●	LACOTA	TRAVERSE	1946	VAN BUREN	1,110	2 L		TRAVERSE	1,208	11	ABANDONED 1955			120		51,904			433	
	GENEVA TWP., 1S-16W, SECTIONS 9, 10																			
●	LAKEFIELD	DUNDEE	1937	SAGINAW	3,185	12 L	39.0	DUNDEE	3,197	1	0	0	1	10	847	28,173			2,817	
	LAKEFIELD TWP., 11N-1E, SECTION 1																			
●	LAKE GEORGE	DUNDEE	1954	CLARE	3,968	2 L	43.8	DUNDEE	3,997	10	0	0	3	100	3,201	358,718			3,587	450
	LINCOLN TWP., 18N-5W, SECTION 6																			
●	LAKETON	TRAVERSE	1965	MUSKEGON	1,698	4 L	41.4	REED CITY	2,199	8	0	0	7	200	17,867	247,530			1,238	110
	LAKETON TWP., 10N-17W, SECTIONS 10, 15																			
●	LAKEVIEW	TRAVERSE	1961	MONTCALM	2,941	4 L	42.5	REED CITY	3,495	2	0	0	2	20	231	7,719			386	
	CATO TWP., 12N-8W, SECTION 22																			
●	LARKIN	BEREA	1935	MIDLAND	2,473	4 S	39.0	DUNDEE	3,829	2	ABANDONED 1945			20		7,070			353	
	LARKIN TWP., 15N-2E, SECTIONS 21, 32																			
●	LAWTON	TRAVERSE	1939	VAN BUREN	1,140	1 L	37.5	TRENTON	2,775	65	0	0	8	650	587	209,599			322	16
	PORTER TWP., 4S-13W, SECTIONS 5, 8, 17, 18, 19, 20 DECATUR TWP., 4S-14W, SECTION 24																			
☼	LEATON	MICHIGAN STRAY	1935	ISABELLA	1,240	2 S		DUNDEE	3,710	5	ABANDONED 1940			400				185,609		
●		DUNDEE	1929		3,657	7.5 L	43.0	DETROIT RIVER	4,390	40	0	0	2	500	4,903	1,762,530			3,525	140
	DENVER TWP., 15N-3W, SECTIONS 17, 19 (MICHIGAN STRAY) DENVER TWP., SECTIONS 19, 30, 31 ISABELLA TWP., 15N-4W, SECTIONS 24, 25 (DUNDEE)																			
●	LEBANON	TRAVERSE	1948	CLINTON	2,548	1 L		TRAVERSE	2,570	1	ABANDONED 1950			10		1,036			104	
	LEBANON TWP., 8N-4W, SECTION 34																			
●	LEE	TRAVERSE	1941	ALLEGAN	1,170	1 L		TRAVERSE	1,207	6	ABANDONED 1952			60		3,030			51	
	LEE TWP., 1N-15W, SECTIONS 18, 19 CASCO TWP., 1N-16W, SECTION 13																			
●	LEE, SEC. 33	TRAVERSE	1971	ALLEGAN	1,155	5 L		TRAVERSE	1,160	1	1	0	1	10	0	0				3
	LEE TWP., 1N-15W, SECTION 33																			
●	LEE, SOUTH	TRAVERSE	1949	ALLEGAN	1,171	1 L		TRENTON	2,960	12	ABANDONED 1953			120		91,117			759	
	LEE TWP., 1N-15W, SECTION 31 CASCO TWP., 1N-16W, SECTION 36																			
⊕	LENOX	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
☼	LEONARD	NIAGARAN	1963	OAKLAND	4,245	21 D		CLINTON	4,450	8	4	0	8	320				SHUT-IN FOR MARKET		
	ADDISON TWP., 5N-11E, SECTIONS 14, 15, 22																			
●	LEROY	REED CITY	1965	OSCEOLA	3,796	4 D		REED CITY	3,800	2	0	0	2	80	2,944	28,806			360	
	LEROY TWP., 19N-10W, SECTION 27																			
●	LIME LAKE	PRAIRIE DU CHIEN	1960	HILLSDALE	3,461	5 D	44.6	PRAIRIE DU CHIEN	3,533	1	ABANDONED 1965			20		7,842			392	
	WRIGHT TWP., 8S-1W, SECTION 11																			
●	LINCOLN, SEC. 18	TRAVERSE	1957	ARENAC	2,717	1 L		DUNDEE	3,062	2	0	0	2	20	269	3,141			100	
	LINCOLN TWP., 18N-4E, SECTION 18																			
●	LINCOLN, SEC. 31	DUNDEE	1963	ARENAC	2,942	10 D	34.9	DUNDEE	2,986	1	ABANDONED 1968			10	COMBINED WITH SECTION 18 PRODUCTION					
	LINCOLN TWP., 18N-4E, SECTION 31																			
☼	LOGAN	RICHFIELD	1941	MASON	3,260	5 S		RICHFIELD	3,330	2	0	0	2	80			SHUT-IN	13,289		
	LOGAN TWP., 17N-15W, SECTIONS 9, 16																			
☼	LOGAN	WEIR	1949	OGEMAW	1,230	11 S		RICHFIELD	4,537	PRODUCTION COMBINED WITH BEREA										
☼		BEREA	1944		1,420	6 S				16	0	0	14	2,240			83,156	980,450		
	LOGAN TWP., 22N-4E, SECTIONS 16, 17, 18, 20, 23, 25, 26 CHURCHILL TWP., 22N-3E, SECTIONS 1, 11, 12																			
●	LUCHT	TRAVERSE	1949	BAY	2,230	3 L	37.2	DUNDEE	3,240	5	0	0	1	50	525	193,316			3,866	
	PINCONNING TWP., 17N-4E, SECTION 29																			
●	LUTHER	TRAVERSE	1965	LAKE	2,565	2 L	42.0	REED CITY	3,362	1	0	0	1	20	0	28,034	SHUT-IN		1,402	
	NEWKIRK TWP., 19N-12W, SECTION 14																			

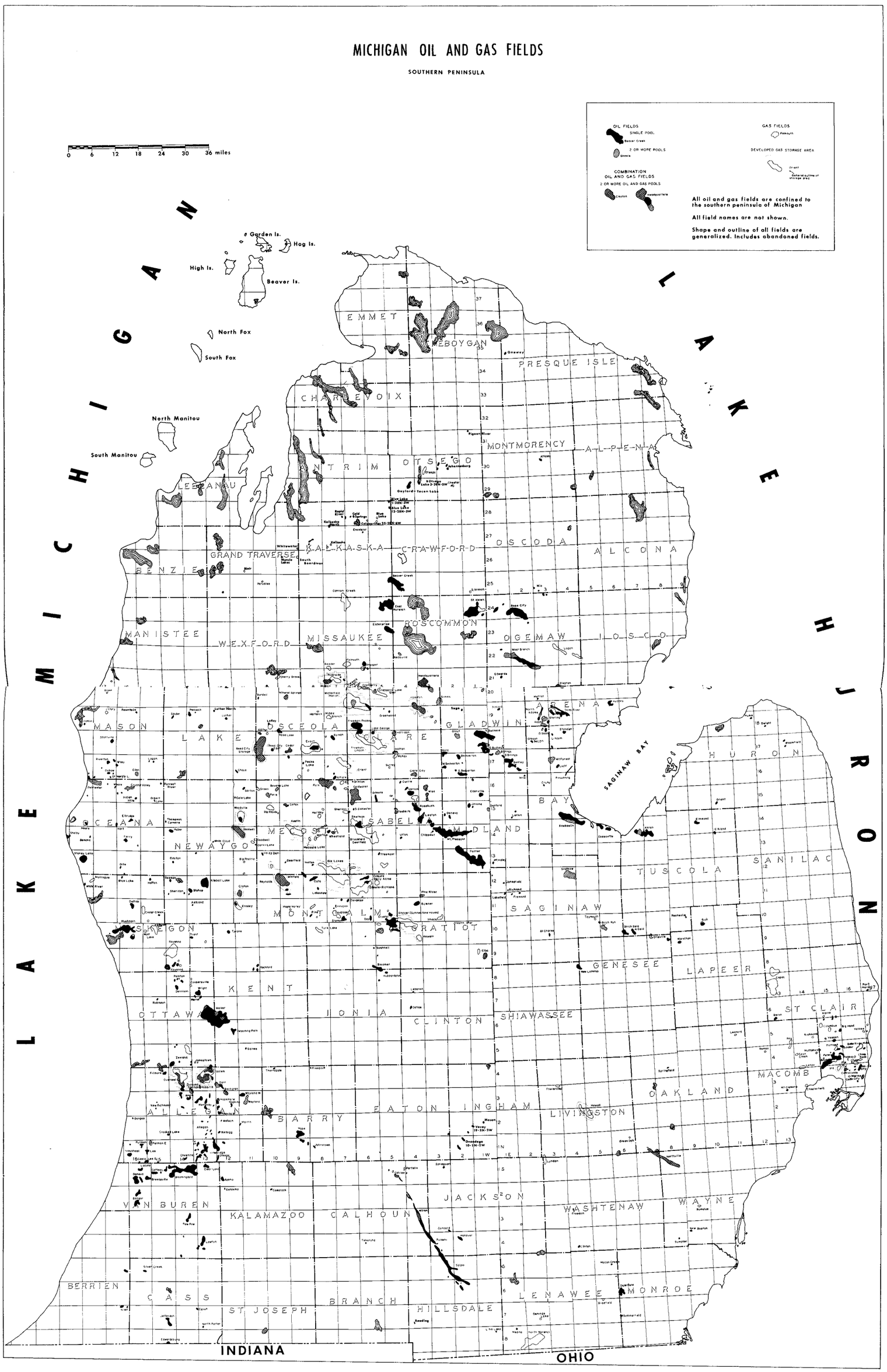
POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
◐ ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	LUTHER, NORTH	REED CITY	1970	LAKE	3,518	17 D		REED CITY	3,556	3	1	0	3	120	2,343	4,913			41	
	ELLSWORTH TWP., 19N-11W, SECTIONS 7, 8																			
☼	LYNDON	TRAVERSE	1958	WASHTENAW-LIVINGSTON	1,311	6 D		TRENTON	5,008	6	0	0	6	960			0	375,600	DOMESTIC USE	
☼		DETROIT RIVER	1959		1,733	11 D				PRODUCTION COMBINED WITH TRAVERSE										
	LYNDON TWP., 1S-3E, SECTIONS 6, 7 UNADILLA TWP., 1N-3E, SECTION 31																			
●	MACON CREEK	TRENTON-BLK. RIVER	1961	LENAWEE	2,548	36+ D		TRENTON-BLK. RIVER	3,303	1	0	0	1	40	135	1,062			27	
	MACON TWP., 5S-5E, SECTION 23																			
☼	MANISTEE	SALINA	1959	MANISTEE	3,616	94 D		NIAGARAN	4,165	1	ABANDONED 1961			160				0		
	FILER TWP., 21N-17W, SECTION 24																			
☼	MAPLE VALLEY, SEC. 16	MICHIGAN STRAY	1958	MONTCALM	1,120	5 S		REED CITY	3,365	1	0	0	1	160				0	DOMESTIC USE	
	MAPLE VALLEY TWP., 11N-9W, SECTION 16																			
☼	MARATHON	BEREA	1955	LAPEER	1,449	18 S		RICHFIELD	3,172	4	0	0	4	40			15,546	34,773	DESIGNATED AS GAS RESERVOIR IN 1970	
●		DETROIT RIVER SZ	1969		3,013	47 D								440						
●		RICHFIELD	1971		3,102	8 D				8	4	0	8	80	14,979	28,062			54	10
	MARATHON TWP., 9N-9E, SECTIONS 16, 17, 18, 21 (DETROIT RIVER SZ) SECTION 16 (BEREA) SECTION 18 (RICHFIELD)																			
●	MARINE CITY	SALINA-NIAGARAN	1955	ST. CLAIR	2,176	21 D	38.0	CLINTON	2,428	18	0	0	13	660	17,842	343,297	229,364	3,918,452	520	101
	COTTRELLVILLE TWP., 3N-16E, SECTIONS 2, 3, 10, 11, 15																			
●	MARINE CITY, SOUTH	SALINA-NIAGARAN	1962	ST. CLAIR	2,100	4 D	38.7	NIAGARAN	2,261	16	3	3	12	560	9,586	112,176			200	10
☼		SALINA A-1 CARB.	1962		2,100	4 D											598,614	1,419,853		
	COTTRELLVILLE TWP., 3N-16E, SECTIONS 23, 26, 27									GAS WELLS COMBINED WITH OIL WELL TOTALS										
⊕	MARION (WINTERFIELD)	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	MARNE	"BEREA"	1940	OTTAWA	1,170	3 L		TRAVERSE	1,904	2	ABANDONED 1946			20		6,253			313	
	TALLMADGE TWP., 7N-13W, SECTION 5 WRIGHT TWP., 8N-13W, SECTION 32																			
☼	MARSAC CREEK	SALINA-NIAGARAN	1965	ST. CLAIR	2,450	190 D		CLINTON	2,903	5	0	0	5	200	0	1,681	269,157	2,832,714		10
	CASCO TWP., 4N-15E, SECTIONS 29, 30																			
●	MARTIN	TRAVERSE	1948	ALLEGAN	1,617	1 L	36.0	ST. PETER SS.	4,290	2	ABANDONED 1960			20		2,188			109	
	MARTIN TWP., 2N-11W, SECTION 18																			
☼	MARTINY	MICHIGAN STRAY	1934	MECOSTA	1,370	2 S		DETROIT RIVER	3,807	5	0	0	4	680			14,685	1,199,718		
	MARTINY TWP., 15N-8W, SECTIONS 12, 22, 23																			
●	MCBAIN	DUNDEE	1959	MISSAUKEE	3,969	15 L	45.0	DUNDEE	3,973	24	0	0	23	920	80,791	2,869,518			3,119	5,885
	RIVERSIDE TWP., 21N-7W, SECTIONS 19, 20, 30 RICHLAND TWP., 21N-8W, SECTION 24																			
☼	MCKAY	MICHIGAN STRAY	1929	CLARE	1,400	3 S		DETROIT RIVER	4,055	9	0	0	2	360				712,626	DOMESTIC USE	
	GRANT TWP., 17N-4W, SECTION 6 SURREY TWP., 17N-5W, SECTION 1 HATTON TWP., 18N-4W, SECTION 31																			
●	MEARS	TRAVERSE	1951	OCEANA	1,745	2.5 DL	36.1	REED CITY	2,347	11	ABANDONED 1959			110		105,807			622	
●		DUNDEE	1949		2,210	3 L	32.2			3	ABANDONED 1959			60	PRODUCTION COMBINED WITH MEARS TRAVERSE					
	GOLDEN TWP., 15N-18W, SECTIONS 34, 35																			
☼	MECOSTA	MICHIGAN STRAY	1966	MECOSTA	1,345	10 S		DUNDEE	3,709	2	0	0	2	320			0	105,071		
	MORTON TWP., 14N-8W, SECTION 10																			
☼	MECOSTA LAKE	MICHIGAN STRAY	1953	MECOSTA	1,314	12 S		DUNDEE	3,690	2	ABANDONED 1956			320				84,071		
	MORTON TWP., 14N-8W, SECTIONS 17, 20																			
●	MEDINA	TRENTON-BLK. RIVER	1961	LENAWEE	2,921	18 D	40	PRAIRIE DU CHIEN	3,487	1	0	0	1	40	0	4,324			108	
	MEDINA TWP., 8S-1E, SECTION 3															CONVERTED TO GAS WELL FOR DOMESTIC USE				
☼	MIDDLE BRANCH	MICHIGAN STRAY	1964	OSCEOLA	1,630	10 S		DETROIT RIVER	4,283	4	0	0	2	640			4,401	253,869		
	MIDDLE BRANCH TWP., 19N-7W, SECTIONS 17, 18																			
●	MILLS, SEC. 1	DUNDEE	1957	MIDLAND	3,450	2 D		DUNDEE	3,463	1	0	0	1	10	99	7,883			788	2
	MILLS TWP., 16N-2E, SECTION 1																			
☼	MINERAL SPRINGS	MICHIGAN STRAY	1952	OSCEOLA	1,397	3 S		DETROIT RIVER	3,963	4	ABANDONED 1960			480				288,762		
●		DUNDEE	1951		3,854	7 D	44.5			12	0	0	1	240	443	300,801			1,253	150
	SHERMAN TWP., 20N-9W, SECTIONS 16, 20, 21 6,376 BARRELS OF TOTAL OIL PRODUCED IN TRAVERSE																			
●	MIO	RICHFIELD	1946	OGEMAW-OSCODA	4,219	6 D	32.9	CLINTON	8,544	4	0	0	2	160	1,903	55,738			348	
	MENTOR TWP., 25N-3E, SECTIONS 30, 32 ROSE TWP., 24N-3E, SECTIONS 3, 4																			
●	MOFFATT, SEC. 34	TRAVERSE	1964	ARENAC	2,100	4 D		DUNDEE	3,027	1	0	0	1	10	0	357			36	
●		DUNDEE	1953		2,984	4 L				1	ABANDONED 1956			10		8,392			839	
	MOFFATT TWP., 20N-3E, SECTION 34																			
☼	MONTAGUE	SALINA-NIAGARAN	1953	MUSKEGON	3,7347	80 D		TRENTON	4,517	3	ABANDONED 1970			480				41,482		
	MONTAGUE TWP., 12N-17W, SECTION 7 WHITE RIVER TWP., 12N-18W, SECTION 12																			
●	MONTEREY	TRAVERSE	1938	ALLEGAN	1,618	3 L	37.6	CINCINNATIAN	3,266	99	0	0	11	1,030	2,179	1,010,401			981	8
	MONTEREY TWP., 3N-13W, SECTIONS 2, 4, 8, 9, 10, 11, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 27, 32, 36																			
☼	MORTON	MICHIGAN STRAY	1946	MECOSTA	1,279	2 S		DUNDEE	3,691	2	0	0	1	320			0	118,377	DOMESTIC USE	
	MORTON TWP., 14N-8W, SECTIONS 15, 22																			
☼	MT. CLEMENS	SALINA	1961	MACOMB	2,590	18 D		CAMBRIAN ?	4,695	1	0	0	1	40		65	0	0	2	DOMESTIC USE
	MACOMB TWP., 3N-13E, SECTION 34 ORIGINALLY OIL WELL CONVERTED TO A DOMESTIC GAS WELL 1967																			
●	MT. FOREST	TRAVERSE	1952	BAY	2,124 2,224	2 L 3 L	36.2	RICHFIELD	4,305	4	0	0	2	80	PRODUCTION COMBINED WITH DUNDEE					36
●		DUNDEE	1947		3,025	9 D	34.1			37	0	0	26	960	8,831	863,636			830	8
	PINCONNING TWP., 17N-4E, SECTIONS 18, 19 MT. FOREST TWP., 17N-3E, SECTIONS 13, 24																			

MICHIGAN OIL AND GAS FIELDS

SOUTHERN PENINSULA



POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
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⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	MT. FOREST, SEC. 1	DUNDEE	1946	BAY	2,960	2 L		DUNDEE	3,057	1	ABANDONED 1946			10		1,906			191	
				MT. FOREST TWP., 17N-3E, SECTION 1																
●	MT. HALEY	DUNDEE	1934	MIDLAND	3,477	3 D	39.6	DUNDEE	3,500	1	ABANDONED 1947			10		36,069			3,607	
				MT. HALEY TWP., 13N-1E, SECTION 28																
●	MT. PLEASANT	DUNDEE	1928	ISABELLA-MIDLAND	3,545	15 L	41.8	SYLVANIA	4,821	485	0	0	144	5,710	93,173	27,569,332		7,809,323	4,828	899
				THE 144 WELLS INCLUDE 139 DUNDEE, 1 TRAVERSE AND 4 DUNDEE AND TRAVERSE																
				GREENDALE TWP., 14N-2W, SECTIONS 6 THROUGH 19 LEE TWP., 14N-1W, SECTIONS 7, 8, 18 CHIPPEWA TWP., 14N-3W, SECTIONS 1, 2, 3, 4, 11, 12, 13 DENVER TWP., 15N-3W, SECTIONS 28, 33, 34															
☼	MUSKEGON	TRAVERSE-DUNDEE-DETROIT RIVER	1927	MUSKEGON	1,640 2,025	6 L		ST. PETER SS.	4,754	7	0	0	2	1,520				7,237,438	DOMESTIC USE & LEASE FUEL	
				MUSKEGON TWP., 10N-16W, SECTIONS 4, 5, 6, 7, 8, 9, 15, 22 LAKETON TWP., 10N-17W, SECTION 12																
●	MUSKEGON	TRAVERSE & DUNDEE	1928	MUSKEGON	1,700	3.5 L	37.4	ST. PETER SS.	4,754	7	0	0	13	3,170	1,961	7,010,032			2,211	210
				MUSKEGON TWP., 10N-16W, SECTIONS 3 THROUGH 10, 15, 16, 17, 21, 22 LAKETON TWP., 10N-17W, SECTIONS 1, 11, 12, 13, 14																
☼	MUTTONVILLE	SALINA-NIAGARAN	1966	MACOMB	2,576	194 D		CLINTON	3,039	7	0	0	7	280			560,265	7,627,708		40
				LENOX TWP., 4N-14E, SECTION 13																
●	NELLSVILLE	DUNDEE	1957	ROSCOMMON	3,710	6 D	40.3	DETROIT RIVER	5,165	1	ABANDONED 1967			10		16,528			1,653	
●		RICHFIELD	1956		4,932	17 D	42.2			1	ABANDONED 1967			40		10,912			273	
				ROSCOMMON TWP., 22N-4W, SECTIONS 8, 17																
☼	NEWARK	MICHIGAN STRAY	1948	GRATIOT	979	5 S		DUNDEE	3,255	6	ABANDONED 1968			960				441,757		
				NEW HAVEN TWP., 10N-4W, SECTIONS 23, 24, 25, 26																
●	NEW BOSTON	TRENTON	1943	WAYNE	2,635	4 L		TRENTON	2,983	2	ABANDONED 1949			20		2,349			118	
				HURON TWP., 4S-9E, SECTION 18																
●	NEW LOTHROP	BEREA	1967	SHIAWASSEE-GENESEE	1,623	4 S	46	SYLVANIA	3,494	19	2	1	16	680	17,124	73,936			109	1
				FLUSHING TWP., 8N-5E, SECTIONS 7, 8, 18 HAZELTON TWP., 8N-4E, SECTION 1, 12																
●	NEW RICHMOND	TRAVERSE	1965	ALLEGAN	1,364	1 L		TRAVERSE	1,365	1	ABANDONED 1966			10		104			10	
				MANLIUS TWP., 3N-15W, SECTION 16																
●	NILES	TRAVERSE	1940	BERRIEN	602	7 L	21.5	TRENTON	2,089	7	ABANDONED 1958			70		29,672			424	
				NILES TWP., 7S-17W, SECTIONS 1, 2, 3																
●	NORTH ALLIS 29-35N-2E (ONAWAY)	NIAGARAN	1969	PRESQUE ISLE	2,727	10 D		PRECAMBRIAN	5,940	1	0	0	1	40	251	3,760			9	
				NORTH ALLIS TWP., 35N-2E, SECTION 29																
☼	NORTH MORENCI	TRAVERSE	1962	LENAWEE	638	2 D		PRAIRIE DU CHIEN	3,284	69	0	0	69	2,840		59	0	103,078	FIELD SHUT-IN NO MARKET	
				SENECA TWP., 8S-2E, SECTIONS 10, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 25, 27, 28, 29, 30 MEDINA TWP., 8S-1E, SECTIONS 24, 25, 35																
●	NORTH PORTER	TRAVERSE	1930	CASS	660	2 L	37.0	TRENTON	2,382	2	ABANDONED 1955			20		1,424			71	
				PORTER TWP., 7S-13W, SECTION 32																
☼	NORTH STAR	MICHIGAN STRAY	1940	GRATIOT	870	7 S		DUNDEE	3,100	1	0	0	1	40			3,240	566,839		
				NORTH STAR TWP., 10N-2W, SECTION 4																
☼	NORTHVILLE	DUNDEE	1948	WASHTENAW-WAYNE-OAKLAND	788	2 L		CAMBRO-ORDOVICIAN	5,850	4	ABANDONED 1961			640				0		
☼		SALINA-NIAGARAN	1937		2,905	2 D							6	1,200	FACILITY WELLS IN GAS STORAGE RESERVOIR					
●		NIAGARAN	1960		3,515	25 D	42.5											3,794,518		
●		TRENTON-BLK. RIVER	1954		4,395	70 D	39.8						14	2,835	9,891	1,031,081		14,332,358	256	97
				NIAGARAN OIL COMBINED WITH TRENTON-BLACK RIVER																
				SALEM TWP., 1S-7E, SECTIONS 1, 2 LYON TWP., 1N-7E, SECTION 36 (DUNDEE) LYON TWP., 1N-7E, SECTIONS 34, 35, 36 SALEM TWP., 1S-7E, SECTIONS 1, 2, 12 NORTHVILLE TWP., 1S-8E, SECTIONS 7, 16, 17															
				PLYMOUTH TWP., 1S-8E, SECTIONS 21, 22, 23, 25, 26 (SALINA-NIAGARAN AND TRENTON-BLACK RIVER)																
⊕	NORTHVILLE	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS CONVERTED TO GAS STORAGE AND SECONDARY RECOVERY JULY 2, 1968																		
●	OLIVET	TRENTON-BLK. RIVER	1969	EATON	4,450	5 D		PRAIRIE DU CHIEN	5,020	1	ABANDONED 1971			20	0	340				
				BELLEVUE TWP., 1N-16W, SECTION 24																
●	ONONDAGA 10-1N-2W	NIAGARAN REEF	1971	INGHAM	3,784	40 D	38.4	PRAIRIE DU CHIEN	5,744	12	12	0	12	840	234,646	234,646			279	
				ONONDAGA TWP., 1N-2W, SECTIONS 2, 3, 10, 11																
●	ONONDAGA 21-1N-2W	NIAGARAN REEF	1971	INGHAM	3,629	31 D	33.2	MANITOULIN	4,125	5	5	0	5	400	55,332	55,332			138	
				ONONDAGA TWP., 1N-2W, SECTIONS 16, 21																
⊕	ORIENT	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	OTISVILLE	BEREA	1949	GENESEE-TUSCOLA	1,446	5 S		DUNDEE	2,694	1	ABANDONED 1956			10	PRODUCTION COMBINED WITH DUNDEE					
●		TRAVERSE	1941		1,895	2 L				1	ABANDONED 1946			10	PRODUCTION COMBINED WITH DUNDEE					
●		DUNDEE	1944		2,450	3 L	37.0			5	0	0	2	50	2,479	113,834			1,626	1
				FOREST TWP., 9N-8E, SECTIONS 5, 6 MILLINGTON TWP., 10N-8E, SECTIONS 31, 32 TRAVERSE PRODUCTION IN FOREST TWP., SECTION 5																
●	OTSEGO	TRAVERSE	1938	ALLEGAN	1,532	1 L		TRAVERSE	1,600	7	D	0	1	110		2,290			21	
				OTSEGO TWP., 1N-12W, SECTIONS 19, 30 TROWBRIDGE TWP., 1N-13W, SECTION 36																
☼	OTSEGO	ANTRIM	1940	OTSEGO	1,385	4 SH		DUNDEE	3,944	9	0	0	3	840			32,981	439,480		
				BAGLEY TWP., 30N-3W, SECTIONS 21, 22, 27, 28, 34																
●	OTSEGO, SEC. 9	TRAVERSE	1950	ALLEGAN	1,456	1 L		TRAVERSE	1,457	4	ABANDONED 1951			40		681			17	
				OTSEGO TWP., 1N-12W, SECTIONS 5, 8, 9				REACTIVATED BRIEFLY IN 1958												
●	OTSEGO LAKE 3-29N-3W	SALINA-NIAGARAN	1971	OTSEGO	6,272	122 D		NIAGARAN	6,702	1	1	0	1	80	60,910	60,910	23,760	23,760	761	
				OTSEGO LAKE TWP., 29N-3W, SECTION 3																
●	OTTER LAKE	BEREA	1945	GENESEE	1,502	4 S	35.5	DETROIT RIVER	3,142	10	1	0	6	110	CUMULATIVE THROUGH 1970 COMBINED WITH OTISVILLE DUNDEE					8
●		DETROIT RIVER S2	1970		2,968	10 D				10	4	0	10	400	55,994	73,116			143	3
				FOREST TWP., 9N-8E, SECTION 12 (BEREA) FOREST TWP., 9N-8E, SECTIONS 11, 12 (DETROIT RIVER S2)																

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	OTTO, SEC. 30	"BEREA"	1958	OCEANA	1,428	9 S		TRAVERSE	1,860	2	ABANDONED 1960			10		COMBINED WITH OTTO SECTION 32				
●		TRAVERSE	1955		1,857	3 L				1	ABANDONED 1960			20		COMBINED WITH OTTO SECTION 32				
				OTTO TWP., 13N-16W, SECTIONS 19, 30																
●	OTTO, SEC. 32	"BEREA"	1950	OCEANA	1,445	1 L		TRAVERSE	1,895	2	1	0	2	10	0	4,308			108	
				OTTO TWP., 13N-16W, SECTION 32																
●	OVERISEL	TRAVERSE	1938	ALLEGAN	1,478	3 L	42.1	TRENTON	4,060	164	0	0	27	1,770	4,594	2,936,614			1,659	87
				OVERISEL TWP., 4N-14W, SECTIONS 5, 8, 9, 15, 16, 21, 22, 27, 28, 34 HEATH TWP., 3N-14W, SECTIONS 3, 4, 9, 10																
⊕	OVERISEL	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	OVERISEL, SEC. 11	TRAVERSE	1940	ALLEGAN	1,553	4 L		TRAVERSE	1,578	1	ABANDONED 1944			10		6,370			637	
				OVERISEL TWP., 4N-14W, SECTION 11																
●	OXBOW	TRAVERSE	1958	MASON	1,652	1 L	35.4	REED CITY	2,354	4	0	0	2	40	1,263	87,554			2,189	35
				RIVERTON TWP., 17N-17W, SECTIONS 26, 27																
☼	PARADISE	TRAVERSE	1965	GRAND TRAVERSE	1,889	8 L		DUNDEE	1,897	3	0	0	3	400					0	SHUT-IN FOR MARKET
				PARADISE TWP., 25N-10W, SECTIONS 9, 16																
☼	PARIS	MICHIGAN STRAY	1951	MECOSTA	1,217	5 S		REED CITY	3,545	2	0	0	1	560					375,564	DOMESTIC USE
●		TRAVERSE	1949		2,890	10 D	43.6			22	0	0	12	440	11,977	1,239,512			2,817	1,186
☼		DUNDEE	1949		3,404	5 L				2	ABANDONED 1959			20					268,667	
				GREEN TWP., 16N-10W, SECTIONS 16, 21, 22, 27, 28																
⊕	PARTELLO	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	PAW PAW	TRAVERSE	1963	VAN BUREN	1,096	2 L	41.4	TRAVERSE	1,098	8	0	0	3	160	0	20,089			126	5
				PAW PAW TWP., 3S-14W, SECTIONS 2, 10, 11, 15																
●	PAW PAW, SEC. 33	TRAVERSE	1964	VAN BUREN	1,028	1 L	38.0	TRAVERSE	1,032	1	0	0	1	10	0	0			TO PLUG	
				PAW PAW TWP., 3S-14W, SECTION 33																
●	PEACOCK	TRAVERSE	1966	LAKE	2,292	2 L	34.0	REED CITY	3,047	27	0	0	24	1,060	178,624	631,803			596	2,000
●		REED CITY	1966		3,001	4 D				1	0	0	1	40	698	3,774			94	
				PEACOCK TWP., 19N-13W, SECTIONS 7, 8, 9, 16, 17, 18																
●	PECKS LAKE	DUNDEE	1967	OSCEOLA	3,866	2 L		REED CITY	3,854	1	ABANDONED 1969			40		2,885			72	
				EVART TWP., 17N-8W, SECTION 18																
●	PENTWATER	TRAVERSE	1948	OCEANA-MASON	1,585	8 L	40.4	PRAIRIE DU CHIEN	5,383	143	0	1	57	1,400						
●		DUNDEE	1948		2,088	10 D	43.1							2,00	19,604	6,630,331		1,010,713	4,144	461
				THE 57 WELLS INCLUDE 25 TRAVERSE, 13 DUNDEE AND 19 DUNDEE AND TRAVERSE																
				WEARE TWP., 16N-17W, SECTIONS 4, 5, 6, 7, 8 PENTWATER TWP., 16N-18W, SECTIONS 1, 2, 12 SUMMIT TWP., 17N-17W, SECTION 31 SUMMIT TWP., 17N-18W, SECTIONS 26, 35, 36															
●	PENTWATER LAKE	TRAVERSE	1969	OCEANA	1,612	2 L		NIAGARAN	4,078	3	0	0	3	120	34,238	61,214			510	50
				PENTWATER TWP., 16N-18W, SECTION 26																
●	PETERS	SALINA-NIAGARAN	1955	ST. CLAIR	2,386	47 D	39.0	CLINTON	2,842	89	0	4	76	1,780	164,868	4,468,067	603,925	14,508,504	2,510	421
				CASCO TWP., 4N-15E, SECTIONS S½ 15, SE¼ 16, 22, 23, 26, 27, E½ 28, NE¼ 33, N½ 34																
●	PETERS, EAST	SALINA-NIAGARAN	1961	ST. CLAIR	2,590	17 D	41.6	CLINTON	2,777	9	0	0	8	360	PRODUCTION COMBINED WITH PETERS					64
				CASCO TWP., 4N-15E, SECTIONS 24, 25 CHINA TWP., 4N-16E, SECTION 19																
●	PINCONNING	TRAVERSE	1958	BAY	2,151	1 L		DETROIT RIVER	3,790	1	ABANDONED 1960			10	PRODUCTION COMBINED WITH PINCONNING DUNDEE					
●		DUNDEE	1944		2,898	7 D	36.2			12	0	0	2	100	3,239	867,805			7,889	200
				PINCONNING TWP., 17N-4E, SECTIONS 25, 35, 36 FRASER TWP., 16N-4E, SECTION 2																
●	PINE	TRAVERSE	1938	MONTCALM	2,836	1 L	45.0	DUNDEE	3,308	2	ABANDONED 1963			20		105,506			5,275	
				PINE TWP., 11N-8W, SECTION 29																
●	PINE RIVER	TRAVERSE	1956	GRATIOT	2,890	5 L		DUNDEE	3,285	1	ABANDONED 1958			10		760			76	
●		DUNDEE	1942		3,280	2 L				2	ABANDONED 1956			90		13,285			148	
				PINE RIVER TWP., 12N-3W, SECTION 31 SEVILLE TWP., 12N-4W, SECTION 36																
☼	PINE, SECS. 9 & 17	MICHIGAN STRAY	1951	MONTCALM	1,251	1 S		DUNDEE	3,469	2	0	0	2	80					37,272	DOMESTIC USE
				PINE TWP., 11N-8W, SECTIONS 9, 17																
☼	PIONEER	TRAVERSE	1931	MISSAUKEE	3,025	5 L		DUNDEE	3,583	1	0	0	1	40			0	0		
				PIONEER TWP., 24N-7W, SECTION 24																
●	PIPESTONE	TRAVERSE	1962	BERRIEN	822	2 L	22.4	NIAGARAN	1,353	2	ABANDONED 1966			20		85			4	
				PIPESTONE TWP., 5S-17W, SECTION 24																
●	POLKTON	TRAVERSE	1942	OTTAWA	1,878	2 L	37.8	DUNDEE	2,351	13	0	0	5	170	1,916	66,715			392	2
				POLKTON TWP., 8N-14W, SECTIONS 8, 9, 10, 11, 14, 15, 16																
●	PORTER	DUNDEE	1933	MIDLAND	3,415	12 L	40.6	BLACK RIVER	9,519	529	0	0	132	6,690	123,604	49,250,339	0	4,992,995	7,362	8,077
				THE 132 WELLS INCLUDE 128 DUNDEE, 1 TRAVERSE, AND 3 DUNDEE AND TRAVERSE																
				PORTER TWP., 13N-1W, SECTIONS 7, 8, 9, 10, 14 THROUGH 23, 26, 27, 28 JASPER TWP., 13N-2W, SECTIONS 1, 2, 3, 11, 12 GREENDALE TWP., 14N-2W, SECTIONS 34, 35															
●	PORT HURON	DUNDEE	1886	ST. CLAIR	575	20 L		CAMBRIAN	4,948	21	ABANDONED 1921			EST. 15		NO RECORD				
				FT. GRATIOT TWP., 7N-17E, SECTION 32																
☼	PORT HURON 33-7N-17E	NIAGARAN	1971	ST. CLAIR	3,160	10 D		NIAGARAN	3,185	1	1	0	1	160			0	0		
				PORT HURON TWP., 7N-17E, SECTION 33																
☼	PROSPER	MICHIGAN STRAY	1948	MISSAUKEE	1,269	6 S		RICHFIELD	5,254	3	0	0	2	480				152,882	LEASE FUEL	
				AETNA TWP., 22N-6W, SECTIONS 34, 35 CLAM UNION TWP., 21N-6W, SECTION 2																

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
GAS-CONDENSATE FIELD OR POOL
ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	PROSPER	DUNDEE	1942	MISSAUKEE	3,837	4 L	43.2	RICHFIELD	3,254	13	0	0	6	520	10,628	1,741,653			3,350	2,100
●		RICHFIELD	1954		5,128	21 D				1	ABANDONED 1957			40		7,088			177	
	AETNA TWP., 22N-6W, SECTIONS 26, 35																			
●	PROSPER, SOUTH	DUNDEE	1967	MISSAUKEE	3,798	8 D		DUNDEE	3,808	7	0	0	7	280	113,605	443,983			1,586	702
	AETNA TWP., 22N-6W, SECTION 36 CLAM UNION TWP., 21N-6W, SECTIONS 1, 2																			
●	PULLMAN	TRAVERSE	1949	ALLEGAN	1,185	1 L		BASS ISLANDS	1,942	9	ABANDONED 1951			90		26,840			298	
	CASCO TWP., 1N-16W, SECTIONS 11, 12																			
●	PULLMAN, EAST	TRAVERSE	1949	ALLEGAN	1,131	2 L	39.0	TRENTON	3,020	25	0	0	12	250	2,886	379,905			1,520	167
☼		SALINA A-2 CARB.	1961		1,645	7 D				3	ABANDONED 1968			480				27,225		
	LEE TWP., 1N-15W, SECTIONS 5, 6, 7, 8 (TRAVERSE) SECTIONS 5, 6, 8 (SALINA A-2 CARB.)																			
⊕	PUTTYGUT	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS						OIL PRODUCTION COMBINED WITH ADAIR												
●	RABBIT RIVER	TRAVERSE	1950	ALLEGAN	1,655	3 L		TRAVERSE	1,678	8	ABANDONED 1959			80		12,745			159	
	SALEM TWP., 4N-13W, SECTIONS 28, 29, 32, 33																			
●	RAPID RIVER 24-28N-7W (RAPID RIVER)	NIAGARAN REEF	1970	KALKASKA	6,590	44 D	50	NIAGARAN	6,810	5	4	0	5	400	42,158	42,158	314,433	314,433	105	2
	RAPID RIVER TWP., 28N-7W, SECTIONS 24, 25, 26																			
☼	RAVENNA	"BEREA"	1936	MUSKEGON	1,205	10 D		DUNDEE	2,306	31	0	0	5	4,480				1,432,593	DOMESTIC USE	
	RAVENNA TWP., 9N-14W, SECTIONS 4, 5, 6, 7, 8, 9, 17 SULLIVAN TWP., 9N-15W, SECTION 12 MOORLAND TWP., 10N-14W, SECTIONS 32, 33																			
●	RAVENNA	TRAVERSE	1952	MUSKEGON	1,842	15 L		DETROIT RIVER	2,601	37	0	0	2	730	151	459,090			629	1
	RAVENNA TWP., 9N-14W, SECTIONS 21, 27, 28, 29, 30, 31 SULLIVAN TWP., 9N-15W, SECTIONS 25, 36																			
☼	RAVENNA, SEC. 27	"BEREA"	1953	MUSKEGON	1,182	6 D		DUNDEE	2,500	3	0	0	2	480				32,243	DOMESTIC USE	
	RAVENNA TWP., 9N-14W, SECTIONS 22, 27, 28																			
⊕	RAY	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	READING	TRENTON	1971	HILLSDALE	3,100	10 D	42	BLACK RIVER	3,478	2	2	0	2	80	3,663	3,663			46	60
	READING TWP., 7S-4W, SECTION 29																			
☼	REDDING	MICHIGAN STRAY	1940	CLARE	1,475	3 S		SYLVANIA	5,462	?	0	0	5	160				32,692	LEASE FUEL	
	REDDING TWP., 19N-6W, SECTIONS 27, 32 FREEMAN TWP., 18N-6W, SECTION 2																			
●	REED CITY	TRAVERSE	1941	LAKE-OSCEOLA	2,925	5 L	43.7	ST. PETER SS.	8,917				10	1,600	7,244	3,650,810		388,638	2,282	513
●		DUNDEE	1940		3,490	3 L	46.3	}										16,257,876		
●		REED CITY	1941		3,585	7 D	42.8	} (LOREED UNIT-SEE TABLE 7)					178	5,320	390,459	40,922,153			7,692	3,213
●		DETROIT RIVER SZ	1955		4,184	73 DL	48.2	}		45	0	0	26	1,800	101,037	2,019,578	6,695	3,476,188	1,122	12
●		RICHFIELD	1954		4,633	12 SL	45.8	}		(TWO WELLS COMMINGLED WITH SOUR ZONE)										
	LINCOLN TWP., 18N-10W, SECTIONS 17, 18, 19, 20, 29, 30, 31, 32 RICHMOND TWP., 17N-10W, SECTIONS 4 THROUGH 9 PINORA TWP., 18N-11W, SECTIONS 24, 25, 36																			
⊕	REED CITY (STRAY)	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
⊕	REED CITY (LOREED)	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	REED CITY, EAST	TRAVERSE	1947	OSCEOLA	3,106	1 L	41.2	DETROIT RIVER	3,840	8	0	0	3	80	5,696	390,217		18,569	4,878	1,000
	LINCOLN TWP., 18N-10W, SECTION 26																			
☼	REEDER	MICHIGAN STRAY	1964	MISSAUKEE	1,385	4 S		DUNDEE	4,002	2	ABANDONED 1966			320				0		
	REEDER TWP., 22N-7W, SECTION 32																			
●	REEMAN	TRAVERSE	1958	NEWAYGO	2,099	1 L		TRAVERSE	2,100	3	ABANDONED 1967			30		44,886			1,500	
	SHERIDAN TWP., 12N-14W, SECTION 8																			
●	REYNOLDS	TRAVERSE	1955	MONTCALM-MECOSTA	2,787	4 D	39.8	BASS ISLANDS	4,300	16	0	0	6	110						640
●		REED CITY	1954		3,343	2 D	44.3			53	0	0	17	2,100	41,396	4,485,575		408,555	2,030	1,470
	REYNOLDS TWP., 12N-10W, SECTIONS 1, 2, 12, 13 WINFIELD TWP., 12N-9W, SECTIONS 6, 7, 8, 17, 18 AETNA TWP., 13N-10W, SECTION 36																			
☼	RICH	BEREA	1970	LAPEER	1,380	29 S		SYLVANIA	3,267	2	1	0	2	320			36,755	196,269		
●		DETROIT RIVER SZ	1962		3,028	5 D	33.9			18	1	0	18	720	66,345	447,315			621	21
	RICH TWP., 10N-10E, SECTIONS 21, 22 (BEREA), SECTIONS 21, 27, 28, 34, 35 (DETROIT RIVER SZ)																			
●	RICHLAND	TRAVERSE	1936	SAGINAW	2,739	10 L	46.0	DUNDEE	3,264	1	ABANDONED 1936			10		1,871			187	
	RICHLAND TWP., 12N-2E, SECTION 31																			
☼	RICHLAND, SEC. 27	MICHIGAN STRAY	1963	MONTCALM	1,247	1 S		DUNDEE	3,530	1	ABANDONED 1964			160				0		
	RICHLAND TWP., 12N-5W, SECTION 27																			
☼	RICHMOND	NIAGARAN	1968	MACOMB	3,195	12 D		NIAGARAN	3,254	1	0	0	1	40			82,824	100,809		
	RICHMOND TWP., 5N-14E, SECTION 26																			
●	RIDGEWAY, SEC. 1	TRENTON	1954	LENAWEE	2,415	4 D		TRENTON	2,491	1	ABANDONED 1962			10		47			5	
	RIDGEWAY TWP., 6S-5E, SECTION 1																			
●	RIVERSIDE	TRAVERSE	1961	MISSAUKEE	3,220	2 L	42.6	DUNDEE	3,953	1	0	0	1	10	104	16,914			1,691	
●		DUNDEE	1942		3,944	3 L	44.5			3	0	0	3	100	2,832	122,183			1,222	430
	RIVERSIDE TWP., 21N-7W, SECTIONS 14, 23, 24																			
⊕	RIVERSIDE	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	RIVERTON	TRAVERSE	1957	MASON	1,650	6 L	38.5	DUNDEE	2,317	19	ABANDONED 1971			190	0	242,206			1,275	
	RIVERTON TWP., 17N-17W, SECTIONS 10, 11, 15																			
●	RIVERTON, SEC. 21	TRAVERSE	1964	MASON	1,683	4 L	38.2	DUNDEE	2,290	3	0	0	3	30	635	13,178			439	4
	RIVERTON TWP., 17N-17W, SECTION 21																			
●	ROBINSON, SEC. 3	DUNDEE	1956	OTTAWA	2,107	7 L		DUNDEE	2,210	2	0	0	1	20	0	10,630			532	TO PLUG
	ROBINSON TWP., 7N-15W, SECTION 3																			

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
GAS-CONDENSATE FIELD OR POOL
ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	ROCKFORD	TRAVERSE	1945	KENT	2,204	3 L	44.0	DETROIT RIVER	2,850	23	0	0	3	210	5,116	541,000			2,576	470
	ALGOMA TWP., 9N-11W, SECTIONS 25, 35, 36 COURTLAND TWP., 9N-10W, SECTION 19																			
☼	ROMEO	NIAGARAN	1965	MACOMB	3,290	? D		CLINTON	3,686	1	0	0	1	40			678,798	1,991,854		
	WASHINGTON TWP., 4N-12E, SECTION 11																			
☼	ROMULUS	SALINA A-1 CARB.	1955	WAYNE	1,980	20 D		NIAGARAN	2,259	2	0	0	1	320			0	45,045		
	ROMULUS TWP., 3S-9E, SECTIONS 15, 16																			
●	ROSEBUSH	DUNDEE	1933	ISABELLA	3,690	6 L	42.0	RICHFIELD	4,838	46	0	0	38	1,020						381
●		RICHFIELD	1969		4,790	4 D		(TWO WELLS COMMINGLED WITH DUNDEE)						80	35,681	2,159,367			1,963	
	ISABELLA TWP., 15N-4W, SECTIONS 1, 2, 11, 12, 13 DENVER TWP., 15N-3W, SECTIONS 7, 18 VERNON TWP., 16N-4W, SECTION 36																			
●	ROSE CITY	RICHFIELD	1942	OGEMAW	4,125	9 D	41.2	CAMBRIAN	12,996	131	0	9	68	5,120	176,023	5,562,933	253,588	7,694,811	1,087	59
	FOSTER TWP., 24N-1E, SECTIONS 14, 20, 21, 23, 24, 25 FOSTER TWP., 24N-2E, SECTIONS 19, 20, 21, 28, 29, 30, 31, 32, 33 ROSE TWP., 24N-2E, SECTIONS 27, 34, 35 KLACKING TWP., 23N-2E, SECTIONS 2, 3, 11																			
●	ROSE LAKE	TRAVERSE	1943	OSCEOLA	3,140	5 L	45.5	DETROIT RIVER	3,990	18	0	0	6	720	18,732	1,799,892			2,500	910
	ROSE LAKE TWP., 19N-9W, SECTION 31 LEROY TWP., 19N-10W, SECTION 36 CEDAR TWP., 18N-9W, SECTION 6 LINCOLN TWP., 18N-10W, SECTION 1																			
●	SAGE	DUNDEE	1971	GLADWIN	3,867	2 L		DUNDEE	3,869	2	2	0	2	80	18,098	18,098			226	
	SAGE TWP., 19N-2W, SECTION 12																			
●	SAGINAW	BEREA	1925	SAGINAW	1,825	16 S	46.1	SYLVANIA	3,920	?	0	0	11	1,500	4,956	1,674,466			1,116	6
	SAGINAW TWP., 12N-4E, SECTIONS 10, 11, 12, 13, 14, 15, 24																			
●	SALEM	TRAVERSE	1937	ALLEGAN-OTTAWA	1,583	8 L	38.3	TRENTON	4,347	337	0	0	96	3,390	31,763	9,087,355			2,681	100
☼		DETROIT RIVER	1958		1,969	6 D				3	ABANDONED 1965			320				49,582		
●		SALINA	1937		2,725	2 D		REFER TO GAS STORAGE RESERVOIRS-PRODUCES SMALL AMOUNT OF OIL--INCLUDED AS MISCELLANEOUS PRODUCTION IN ABANDONED TOTALS												
	SALEM TWP., 4N-13W, SECTIONS 16, 21 (DETROIT RIVER) SALEM TWP., 4N-13W, SECTIONS 1, 2, 3, 10 THROUGH 17, 20, 21, 22, 23, 24, 34 JAMESTOWN TWP., 5N-13W, SECTIONS 35, 36 (TRAVERSE)																			
⊕	SALEM	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	SANFORD	TRAVERSE	1959	MIDLAND	3,125	2 L		DETROIT RIVER	4,811	13	0	0	13	260	3,884	191,528			737	3
●		DUNDEE	1951		3,755	3 L	42.6			THE 13 WELLS INCLUDE 10 DUNDEE, 1 TRAVERSE AND 2 DUNDEE AND TRAVERSE										
	JEROME TWP., 15N-1W, SECTIONS 12, 13																			
●	SAUBLE	TRAVERSE	1942	LAKE	2,111	2 L	35.6	TRAVERSE	2,156	5	0	0	2	200	0	144,763			724	1,000
	SAUBLE TWP., 19N-14W, SECTION 16																			
●	SCOTTVILLE	TRAVERSE	1961	MASON	1,646	3 L	34.6	CINCINNATIAN	5,129	17	0	1	6	340						1,040
●		REED CITY	1962		2,319	3 L	37.2			11	0	1	4	220	9,919	500,905			894	20
	AMBER TWP., 18N-17W, SECTIONS 13, 14, 23																			
☼	SEARS	MICHIGAN STRAY	1964	OSCEOLA	1,492	12 S		DUNDEE	3,988	1	ABANDONED 1965			160				0		
	SYLVAN TWP., 18N-7W, SECTION 32																			
●	SECORD	DUNDEE	1937	GLADWIN	3,437	5 L	38.0	DUNDEE	3,500	2	ABANDONED 1941			20		12,024			601	
	SECORD TWP., 19N-1E, SECTIONS 11, 12																			
⊕	SHAVER (SUMNER-NEW HAVEN)	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	SHELBY	TRAVERSE	1951	OCEANA	1,743	3 L	43.0	DUNDEE	2,234	20	ABANDONED 1971			350	130	228,092			652	
	BENONA TWP., 14N-18W, SECTION 18 BENONA TWP., 14N-19W, SECTION 13																			
☼	SHERIDAN	MICHIGAN STRAY	1935	MECOSTA	1,375	2 S		DUNDEE	3,904	5	0	0	1	480				271,374	DOMESTIC USE	
	SHERIDAN TWP., 15N-7W, SECTIONS 13, 14																			
●	SHERIDAN, SEC. 25	TRAVERSE	1951	NEWAYGO	2,204	1 L		TRAVERSE	2,205	1	ABANDONED 1955			10		628			63	
	SHERIDAN TWP., 12N-14W, SECTION 25																			
●	SHERMAN	DUNDEE	1936	ISABELLA	3,650	4 D	42.0	SYLVANIA	4,994	88	0	0	5	1,020	2,690	4,727,573		641,217	4,635	320
	SHERMAN TWP., 15N-6W, SECTIONS 29, 32, 33, 34 BROOMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5																			
●	SHERMAN, SEC. 18	TRAVERSE	1939	ISABELLA	3,217	4 L		DUNDEE	3,835	3	ABANDONED 1947			20		1,364			68	
	SHERMAN TWP., 15N-6W, SECTION 18																			
⊕	SIX LAKES	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	SKEELS	TRAVERSE	1955	CLARE-GLADWIN	3,702	6 L	38.4	SYLVANIA	6,016	4	0	0	2	40	320	44,177			1,104	1
●		DUNDEE	1950		3,840	7 D	39.6			5	0	0	4	50	3,517	967,616			19,352	
●		DETROIT RIVER SZ	1942		4,844	4 D	47.4	}		31	0	0	25	40	28,133	1,162,797			} 908	5
●		RICHFIELD	1953		5,080	17 D	44.8	}						1,240	THE 25 WELLS INCLUDE 17 RICHFIELD, 4 SOUR ZONE & 4 RICHFIELD & SOUR ZONE				}	
	SHERMAN TWP., 20N-2W, SECTIONS 30, 31 FRANKLIN TWP., 20N-3W, SECTIONS 25, 36																			
☼	SOUTH BOARDMAN UNIT	NIAGARAN REEF POOL A	1971	KALKASKA	6,616	110 D		CLINTON	6,990	1	1	0	1	160						
☼		NIAGARAN REEF POOL B	1971		6,778	38 D	65.7			1	1	0	1	160	210 BBLS. CONDENSATE	210 BBLS. CONDENSATE	PRODUCTION FOR POOLS A & B ARE COMBINED			
	BOARDMAN TWP., 26N-8W, SECTIONS 4, 5																			
☼	SOUTH BRANCH	RICHFIELD	1968	CRAWFORD	4,203	12 D		DETROIT RIVER	4,436	1	ABANDONED 1971			40				0		
	SOUTH BRANCH TWP., 25N-1W, SECTION 32																			
●	SPRINGPORT	TRENTON-BLK. RIVER	1960	JACKSON	4,696	12+ D	46.5	PRAIRIE DU CHIEN	5,250	2	ABANDONED 1970			80		3,430			43	
	SPRINGPORT TWP., 1S-3W, SECTIONS 11, 14																			
●	ST. CHARLES	TRAVERSE	1957	SAGINAW	2,305	3 L	51.6	TRAVERSE	2,308	1	ABANDONED 1967			10		13,250			1,325	
	ST. CHARLES TWP., 10N-3E, SECTION 26																			
☼	ST. CLAIR, SEC. 18	SALINA-NIAGARAN	1953	ST. CLAIR	2,567	2 D		CINCINNATIAN	3,240	1	ABANDONED 1961			160				16,101		
	ST. CLAIR TWP., 5N-17E, SECTION 18																			
●	ST. HELEN	RICHFIELD	1941	ROSCOMMON	4,180	11 D	43.3	SALINA	5,440	99	0	0	54	3,960	123,972	4,230,722	250,847	9,478,588	1,068	66
	AU SABLE TWP., 24N-1W, SECTIONS 10, 14, 15, 16, 17, 19 THROUGH 30, 32																			

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	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	ST. MARY'S LAKE	TRAVERSE	1968	MASON	1,641	3 L		TRAVERSE	1,644	2	0	0	2	40	1,552	11,025			276	16
				RIVERTON TWP., 17N-17W, SECTION 35																
●	STANDISH	RICHFIELD	1948	ARENAC	4,108	3 O	35.4	RICHFIELD	4,210	9	ABANDONED 1967			360		147,062			409	
				LINCOLN TWP., 18N-4E, SECTIONS 10, 11, 15																
●	STANTON	TRAVERSE	1951	MONTCALM	2,916	7 DL	43.0	DUNDEE	3,492	17	0	0	11	340	10,053	942,262			2,771	360
				DOUGLASS TWP., 11N-7W, SECTIONS 26, 27, 34, 35																
●	STARRVILLE	NIAGARAN	1967	ST. CLAIR	2,336	5 D		NIAGARAN	2,396	3	0	0	3	120	12,855	95,655			797	6
				COTTRELLVILLE TWP., 3N-16E, SECTION 9																
●	STERLING	TRAVERSE	1948	ARENAC	1,970	5 L	36.2	RICHFIELD	4,285	22	0	0	16	220	3,898	259,203			1,178	5
●		DUNDEE	1947		2,872	17 L	33.6			20	0	0	18	200	7,796	401,620			2,008	4
●		DETROIT RIVER SZ	1952		3,918	5 O	41.1			41	0	0	35	1,600	43,991	1,619,663			1,012	1
●		RICHFIELD	1950		4,153	8 O	37.6								THE 35 WELLS INCLUDE 13 RICHFIELD, 13 SOUR ZONE AND 9 RICHFIELD AND SOUR ZONE					
				DEEP RIVER TWP., 19N-4E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23																
●	STONY LAKE	"BEREA"	1949	OCEANA	930	1 SL	48.0	NIAGARAN	3,837	2	ABANDONED 1965				PRODUCTION COMBINED WITH STONY LAKE TRAVERSE					
●		TRAVERSE	1946		1,630	19 L	44.9			78	0	0	15	1,540	6,131	7,531,867			4,891	1,689
				CLAYBANKS TWP., 13N-18W, SECTIONS 9, 10, 11, 14, 15, 16																
●	SUMMERFIELD	TRENTON-BLK.RIVER	1958	MONROE-LENAWEE	1,940	10 DL		TRENTON-BLK. RIVER	2,382	2	ABANDONED 1964			20		2,142			107	
				SUMMERFIELD TWP., 7S-6E, SECTION 30 DEERFIELD TWP., 7S-5E, SECTION 24																
●	SUMNER	TRAVERSE	1953	GRATIOT	2,853	1 L	44.5	DUNDEE	3,366	35	0	0	18	350	7,681	1,078,667			3,082	190
				SUMNER TWP., 11N-4W, SECTIONS 11, 12																
☼	SURREY	MICHIGAN STRAY	1945	CLARE	1,460	3 S		DUNDEE	4,000	2	0	0	2	320				12,667	DOMESTIC USE	
				SURREY TWP., 17N-5W, SECTIONS 23, 24																
☼	SWAN CREEK	SALINA-NIAGARAN	1967	ST. CLAIR	2,256	245 O		CLINTON	2,638	1	0	0	1	40			93,119	408,182	PREPARING FOR STORAGE	
				CASCO TWP., 4N-15E, SECTION 36																
☼	SYLVAN	MICHIGAN STRAY	1941	OSCEOLA	1,525	10 S		DETROIT RIVER	4,100	1	ABANDONED 1953			40				80,714		
●		DUNDEE	1948		3,925	13.7 D	48.0			11	0	0	2	440	2,468	1,188,896			2,702	500
				SYLVAN TWP., 18N-7W, SECTION 7 (MICHIGAN STRAY) SECTIONS 8, 9, 16 (DUNDEE)																
☼	TAYMOUTH	TRAVERSE	1957	SAGINAW	2,085	6 L		TRAVERSE	2,135	1	0	0	1	160	118	318		0	DOMESTIC USE	
				TAYMOUTH TWP., 10N-5E, SECTION 11																
●	TEKONSHA	TRENTON	1959	CALHOUN	3,553	7 DL	34.5	PRAIRIE DU CHIEN	4,147	2	ABANDONED 1969			30		18,785			626	
				TEKONSHA TWP., 4S-6W, SECTION 17																
●	THOMPSON CORNERS	TRAVERSE	1968	NEWAYGO	2,138	2 L		TRAVERSE	2,140	1	0	0	1	40	0	9,374			234	
				BEAVER TWP., 15N-14W, SECTION 30																
●	THORNAPPLE, SEC. 4	TRAVERSE	1952	BARRY	1,951	2 L		TRAVERSE	1,973	2	ABANDONED 1961			20		2,716			136	
				THORNAPPLE TWP., 4N-10W, SECTIONS 3, 4																
●	TRENT	TRAVERSE	1949	MUSKEGON	2,039	1 L		TRAVERSE	2,118	2	ABANDONED 1969			40		30,771			769	
				CASNOVIA TWP., 10N-13W, SECTION 19																
●	TROWBRIDGE	TRAVERSE	1937	ALLEGAN	1,358	2 L	41.2	CINCINNATIAN	2,952	162	0	0	7	1,840	3,280	517,562			281	40
				TROWBRIDGE TWP., 1N-13W, SECTIONS 1, 3 THROUGH 10, 12, 13, 15 THROUGH 23, 27, 28, 29, 30, 31, 32 OTSEGO TWP., 1N-12W, SECTIONS 7, 18																
☼	TURK LAKE	MICHIGAN STRAY	1947	MONTCALM	1,081	4 S		DETROIT RIVER	3,413	4	0	0	2	640				217,584	DOMESTIC USE	
				MONTCALM TWP., 10N-8W, SECTIONS 9, 10, 14																
●	TYRONE	TRAVERSE	1952	KENT	2,379	2 L		DETROIT RIVER	2,900	7	ABANDONED 1956			140		31,558			225	
				TYRONE TWP., 10N-12W, SECTIONS 10, 11, 14																
●	UNION	TRAVERSE	1950	ISABELLA	3,191	2 L		DETROIT RIVER	4,096	1	ABANDONED 1963			20		58,263		55,354	2,913	
				UNION TWP., 14N-4W, SECTION 20																
☼	UNION, SEC. 6	MICHIGAN STRAY	1965	ISABELLA	1,382	3 S		DUNDEE	3,777	2	0	0	2	240		SHUT-IN		0		
				UNION TWP., 14N-4W, SECTION 6																
☼	UNION 8-26N-9W (MUNCIE LAKES)	NIAGARAN REEF	1970	GRAND TRAVERSE	6,267	97 D	COND.	NIAGARAN	6,666	1	0	0	1	160	SHUT-IN FOR MARKET			0		
				UNION TWP., 26N-9W, SECTION 8																
☼	UNION 12-26N-9W (SOUTH BOARDMAN)	NIAGARAN REEF	1969	GRAND TRAVERSE	6,779	50 D	57.9 COND.	NIAGARAN	6,922	1	0	0	1	640	676 BBLS. CONDENSATE	676 BBLS. CONDENSATE		0		
				UNION TWP., 26N-9W, SECTION 12											SHUT-IN WAITING FOR MARKETING FACILITIES					
●	VERNON	DUNDEE	1930	ISABELLA	3,755	3 DL	38.6	BOIS BLANC	5,118	78	0	0	3	890	630	5,043,339			5,667	
				VERNON TWP., 16N-4W, SECTIONS 15, 16, 21, 22, 23, 26, 27																
☼	VERNON	MICHIGAN STRAY	1939	ISABELLA	1,300	2 S		DETROIT RIVER	3,907	25	ABANDONED 1956			920				1,464,249		
				VERNON TWP., 16N-4W, SECTIONS 25, 26, 35, 36 ISABELLA TWP., 15N-4W, SECTION 1																
●	VEVAY 16-2N-1W (MASON)	NIAGARAN REEF	1970	INGHAM	4,165	39 D	49.4	CLINTON	4,555	2	1	0	2	120	43,214	49,585			433	
				VEVAY TWP., 2N-1W, SECTION 16																
●	VEVAY 19-2N-1W	TRAVERSE	1971	INGHAM	2,141	65 L	37	CINCINNATIAN	4,600	2	2	0	2	80	12,930	12,930			162	1,000
☼		NIAGARAN	1971		3,942	24 D				2	2	0	2	320				0		
				VEVAY TWP., 2N-1W, SECTION 19 AURELIUS TWP., 2N-2W, SECTION 24																
●	VICTORY, SEC. 10	TRAVERSE	1957	MASON	1,603	9 L	36.0	TRAVERSE	1,616	1	ABANDONED 1958			10		580			58	DOMESTIC USE
				VICTORY TWP., 19N-17W, SECTION 10											NONCOMMERCIAL GAS PRODUCTION IN BASE OF GLACIAL DRIFT					
●	VOGEL CENTER	DUNDEE	1966	MISSAUKEE	3,892	3 L		DUNDEE	3,895	2	0	0	2	80	2,164	36,396			455	285
				CLAM UNION TWP., 21N-6W, SECTION 32																

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☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP / PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END	NUMBER OF WELLS COMP. IN 1971	NUMBER OF WELLS ABAND. IN 1971	NUMBER OF WELLS ACTIVE AT END	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
●	WALKER	"BEREA"	1940	KENT-OTTAWA	1,121	21 SL		ST. PETER SS.	5,222											
●		TRAVERSE	1938		1,872	8 L	36.0			782	0	26	366	8,560	100,628	16,528,732		3,678,731	1,931	141
															THE 366 WELLS INCLUDE 363 TRAVERSE AND 3 "BEREA"					
●		DETROIT RIVER	1957		2,132	12 D				1	0	0	1	10						1
☼		"BEREA", TRAVERSE & DETROIT RIVER								14	0	0	5		THE 5 WELLS INCLUDE 3 BEREA, 1 DETROIT RIVER & 1 TRAVERSE	10,596	1,282,928		DOMESTIC USE & LEASE FUEL	
				WALKER TWP., 7N-12W, SECTIONS 19, 20, 27, 28, 29, 30, 31, 32, 33, 34 WALKER TWP., 6N-12W, SECTIONS 3, 4, 5, 6 WYOMING TWP., 6N-12W, SECTIONS 2, 3, 4, 7, 8																	
				TALLMADGE TWP., 7N-13W, SECTIONS 14, 15, 22 THROUGH 28, 33, 34, 35, 36 TALLMADGE TWP., 6N-13W, SECTIONS 1, 12 GEORGETOWN TWP., 6N-13W, SECTIONS 1, 2 GEORGETOWN TWP., 7N-13W, SECTION 35															
●	WAYLAND	TRAVERSE	1944	ALLEGAN	1,799	6 L	36.0	TRENTON-BLK. RIVER	4,400	54	0	0	2	530	579	262,337			495	1
●		SALINA	1960		3,132	12 D	28.0			31	0	0	29	1,240	62,477	1,185,806			956	4
				WAYLAND TWP., 3N-11W, SECTIONS E½ 8, 9, 16, 17, 18, 20, 21																
●	WAYLAND, NORTH	TRAVERSE	1957	ALLEGAN	1,696	7 L		TRAVERSE	1,712	15	0	0	5	150	1,287	107,050			714	4
				WAYLAND TWP., 3N-11W, SECTIONS 6, 7, NW¼ 8																
●	WEARE	TRAVERSE	1961	OCEANA	1,681	2 L		TRAVERSE	1,737	3	ABANDONED 1964			30		6,919			231	
				WEARE TWP., 16N-17W, SECTIONS 12, 13																
●	WEARE, SEC. 14	TRAVERSE	1952	OCEANA	1,674	1 L	44.4	DUNDEE	2,217	1	ABANDONED 1954			10		1,096			110	
				WEARE TWP., 16N-17W, SECTION 14																
●	WEST BRANCH	TRAVERSE	1933	OGEMAW	1,796	2 L		CAMBRO-ORDOVICIAN	11,012						PRODUCTION COMBINED WITH WEST BRANCH DUNDEE		SOME TRAVERSE OIL PRODUCED IN CONNECTION WITH WATER FLOOD PROJECT			
●		DUNDEE	1933		2,650	20 L	36.8			276	1	4	163	2,750	71,750	8,827,435			3,210	968
●		DETROIT RIVER SZ	1951		3,585	9 D	38.9								THE 163 WELLS INCLUDE 161 DUNDEE AND 2 TRAVERSE					
●		RICHFIELD	1952		4,127		33.0			63	0	0	61	2,520	94,009	2,852,133		61,430	1,132	6
															THE 61 WELLS INCLUDE 30 RICHFIELD, 26 SOUR ZONE, AND 5 RICHFIELD & SOUR ZONE					
				WEST BRANCH TWP., 22N-2E, SECTIONS 18, 19, 20, 21, 26, 27, 28, 29, 34, 35, 36 OGEMAW TWP., 22N-1E, SECTIONS 10, 13, 14, 23, 24 CHURCHILL TWP., 22N-3E, SECTION 31																
				HORTON TWP., 21N-2E, SECTIONS 1, 2 MILLS TWP., 21N-3E, SECTIONS 5, 6																
☼	WHEATLAND	MICHIGAN STRAY	1947	MECOSTA	1,399	3 S		DETROIT RIVER	3,849	4	0	0	1	160			920	506,369	DOMESTIC USE	
●		DUNDEE	1945		3,690	2 L	43.0			6	ABANDONED 1960			100		141,631			1,416	
				WHEATLAND TWP., 14N-7W, SECTIONS 7, 8, 9																
●	WHITE CLOUD	TRAVERSE	1963	NEWAYGO	2,537	7 L		TRAVERSE	2,540	1	ABANDONED 1964			40		1,295			32	
				WILCOX TWP., 14N-12W, SECTION 19																
●	WHITE RIVER	DUNDEE	1950	MUSKEGON	2,053	2 L	28.0	DUNDEE	2,055	1	ABANDONED 1951			20		7,061			353	
				WHITE RIVER TWP., 12N-18W, SECTION 15																
☼	WHITEWATER 36-27N-9W	NIAGARAN REEF	1971	GRAND TRAVERSE	6,560	40 D	66	NIAGARAN	6,750	1	1	0	1	160	66 BBLS. CONDENSATE	66 BBLS. CONDENSATE		0		
				WHITEWATER TWP., 27N-9W, SECTION 36																
●	WILEY	TRAVERSE	1962	MASON	1,663	5 L	39.9	ST. PETER SS.	5,890	17	0	1	9	360	5,436	416,917			1,158	567
				EDEN TWP., 17N-16W, SECTION 18 RIVERTON TWP., 17N-17W, SECTION 12																
●	WINFIELD	DUNDEE-REED CITY	1936	MONTCALM	3,340	1 L	43.2	REED CITY	3,500	8	0	0	2	120	1,443	115,419			962	30
				WINFIELD TWP., 12N-9W, SECTIONS 20, 28, 29																
⊕	WINFIELD	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	WINTERFIELD	TRAVERSE	1940	CLARE	3,105	1 L		SYLVANIA	5,273					260			67,882	150,076		1
●		DUNDEE	1940		3,794	3 L	44.2							740						1,793
●		RICHFIELD	1942		5,015	15 O				50	0	0	13	100	29,095	5,192,329			4,720	
				WINTERFIELD TWP., 20N-6W, SECTIONS 28 THROUGH 32, 35, 36 REDDING TWP., 19N-6W, SECTIONS 1, 5 GREENWOOD TWP., 19N-5W, SECTION 6 THE 13 WELLS INCLUDE 8 TRAVERSE, 4 DUNDEE & 1 TRAVERSE & RICHFIELD																
☼	WISE	MICHIGAN STRAY	1940	ISABELLA	1,250	5 S		SYLVANIA	5,205	7	0	0	5	1,280			447	1,704,867	DOMESTIC USE & LEASE FUEL	
●		TRAVERSE	1953		3,090	31 L	43.0													
●		DUNDEE	1938		3,700	11 L	45.2			79	0	0	24	1,640	16,715	3,941,043			2,403	1,887
●		DETROIT RIVER SZ	1955		4,415	48 DL	42.6			2	0	0	1	80	3,184	57,533			719	30
				WISE TWP., 16N-3W, SECTIONS 8, 9, 16, 17, 20, 21, 28, 29, 32, 33 THE 24 WELLS INCLUDE 18 DUNDEE, 1 STRAY, 4 TRAVERSE AND DUNDEE AND 1 DUNDEE AND DETROIT RIVER																
☼	WOLF LAKE	"BEREA"	1949	MUSKEGON	1,050	7 O		DETROIT RIVER	2,250	2	ABANDONED 1956			320				99,756		
●		TRAVERSE	1968		1,741	23 L				3	0	0	3	60	0	4,614			77	
				EGELSTON TWP., 10N-15W, SECTIONS 7, 8, 18 MUSKEGON TWP., 10N-16W, SECTION 13																
☼	WOODSTOCK	TRAVERSE	1969	LENAWEE	1,465	2 L		TRAVERSE	1,467	2	0	1	1	80			SHUT-IN FOR MARKTET			
				WOODSTOCK TWP., 5S-1E, SECTION 18																
●	WOODVILLE	TRAVERSE	1943	NEWAYGO	2,820	5 L	43.5	DETROIT RIVER	3,534	10	0	0	10	350	6,963	551,567			1,576	40
				NORWICH TWP., 15N-11W, SECTIONS 20, 28, 29																
⊕	WOODVILLE (NORWICH)	REFER TO TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS																		
●	WRIGHT	"BEREA"	1954	OTTAWA	1,170	3 L		DETROIT RIVER	2,337	7	0	2	4	60	0	47,302	SHUT-IN -- LACK OF STORAGE		788	
●		TRAVERSE	1953	OTTAWA	1,920	1 L				7	0	0	2	70	329	18,085			258	
				WRIGHT TWP., 8N-13W, SECTIONS 28, 32, 33 TALLMADGE TWP., 7N-13W, SECTION 4																
●	WYOMING PARK	TRAVERSE	1939	KENT	1,870	6 L	39.0	DETROIT RIVER	2,255	21	ABANDONED 1970			300		157,873			526	
				WYOMING TWP., 6N-12W, SECTIONS 13, 14, 23																
☼	YANKEE	NIAGARAN	1963	ST. CLAIR	2,620	20 O		CLINTON	2,829	2	0	0	2	80		SHUT-IN		0		
				ST. CLAIR TWP., 5N-16E, SECTION 25																

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END (1971)	NUMBER OF WELLS COMP. IN (1971)	NUMBER OF WELLS ABAND. IN (1971)	NUMBER OF WELLS ACTIVE AT END (1971)	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
☼	ZEELAND	"BEREA"	1946	OTTAWA	945	9 D		NIAGARAN	3,388	7	0	0	1	280				0	DOMESTIC USE	
	ZEELAND TWP., 5N-14W, SECTIONS 2, 11, 12, 13, 14																			
●	ZEELAND	TRAVERSE	1942	OTTAWA	1,514	3 L	41.9	NIAGARAN	3,052	21	ABANDONED 1967			400		310,085			775	
●		SALINA	1958		2,792	5 D	20.5			1	ABANDONED 1962			10		1,606			161	
	ZEELAND TWP., 5N-14W, SECTIONS 25, 30, 31, 32, 36 HOLLAND TWP., 5N-15W, SECTIONS EX 35, 36 (TRAVERSE) ZEELAND TWP., 5N-14W, SECTION 29 (SALINA)																			
●	ZEELAND, SEC. 28	TRAVERSE	1954	OTTAWA	1,491	1 L		DETROIT RIVER	2,215	3	ABANDONED 1956			30		4,437			148	
	ZEELAND TWP., 5N-14W, SECTIONS 21, 28																			
													TOTALS	285,030	11,898,410	600,713,462	25,930,621	723,612,344		

LISTING OF A SECTION OR PART OF A SECTION DOES NOT NECESSARILY MEAN THE ENTIRE SECTION TO BE PRODUCTIVE OF OIL OR GAS IN ANY OR ALL POTENTIALLY PRODUCTIVE FORMATIONS. ONLY THOSE SECTIONS OR PARTS OF SECTIONS, WHICH HAVE HAD AT LEAST ONE WELL COMPLETED AS AN OIL OR GAS WELL ARE LISTED.

INCLUDES OIL FROM ABANDONED FIELD OR POOLS.

INCLUDES GAS FROM ABANDONED FIELDS OR POOLS.

INCLUDES 3,050,143 MCF OF UNASSIGNED GAS FROM EARLY RECORDS.

CHANGES IN FIELD NAMES

Historically, with few exceptions, Michigan oil and gas fields have been named after nearby geographic entities such as towns, villages, lakes and township names. Due to numerous Niagaran reef discoveries within relatively small areas and a lack of suitable identifying names for those in northern Michigan and possibly those in southern Michigan in future years, the naming system has been modified. Beginning in 1971, most new Niagaran reef fields were named according to township name, followed by the section number for the discovery well, and then by numerical town and range.

The names of the reef fields found in the Northern District in 1969 and 1970 and also one in the southern part of the basin were changed to the new system and appear in the 1972 issue of Michigan's Oil and Gas Fields, 1971. The old name appears beneath the new field name on Table 2.

OLD NAME, TABLE 2	NEW NAME IN 1972
Blair	Blair 34-26N-11W
Blue Lake	Blue Lake 28-28N-5W
Cold Springs	Cold Springs 21-28N-6W
Gaylord-Tecon Lake	Hayes 11-29N-4W
Johannesburg	Chester 21-30N-2W
Kalkaska	Kalkaska 28-27N-7W
Kalkaska, North	Kalkaska 5-27N-7W
Mason	Vevay 16-2N-1W
Muncie Lakes	Union 8-26N-9W
Onaway	North Allis 29-35N-2E
Pigeon River	Charlton 4-31N-1W
Rapid River	Rapid River 24-28N-7W
South Boardman	Union 12-26N-9W

PRORATED OIL FIELDS

As of May 1, 1972*

FIELD NAME	DRILLING UNIT	PRODUCING FORMATION	CURRENT OIL ALLOWABLE	CURRENT GAS ALLOWABLE	CURRENT ALLOWABLE EFFECTIVE:	COUNTY
Albion-Pulaski-Scipio-Trend	20 Acres	Trenton-Black River	110 BOPD	150 Mcf/d	7-1-1961	Hillsdale, Jackson, Calhoun
Aurelius 35-2N-2W	80 Acres	Salina-Niagaran	200 BOPD	200 Mcf/d	1-1-1972	Ingham
Big Hand	20 Acres	Salina-Niagaran	50 BOPD	175 Mcf/d	4-1-1972	St. Clair
Charlton 4-31N-1W	320 Acres	Salina-Niagaran	Temporary 300 BOPD	Temporary 450 Mcf/d	5-1-1972	Otsego
Chester 16-30N-2W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	12-15-1971	Otsego
Chester 18-30N-2W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	1-1-1972	Otsego
Columbus, Section 3	20 Acres	Salina-Niagaran	75 BOPD	100 Mcf/d	2-1-1970	St. Clair
Columbus, North	20 Acres	Salina-Niagaran	50 BOPD	75 Mcf/d	10-1-1970	St. Clair
Columbus, North	40 Acres	Salina-Niagaran	100 BOPD	150 Mcf/d	10-1-1970	St. Clair
Kalkaska 5-27N-7W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	1-1-1972	Kalkaska
Kalkaska 21-27N-8W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	10-1-1971	Kalkaska
Onondaga 10-1N-2W	80 Acres	Salina-Niagaran	200 BOPD	200 Mcf/d	9-1-1971	Ingham
Onondaga 21-1N-2W	80 Acres	Salina-Niagaran	200 BOPD	200 Mcf/d	9-1-1971	Ingham
Blue Lake 1-28N-5W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	3-1-1972	Kalkaska
Chester 19-30N-2W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	3-1-1972	Otsego
Peters	20 Acres	Salina-Niagaran	No Proration	150 Mcf/d	4-1-1972	St. Clair
Otsego Lake 3-29N-3W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	3-1-1972	Otsego
Chester 10-30N-2W	80 Acres	Salina-Niagaran	300 BOPD	450 Mcf/d	3-1-1972	Otsego

* Fields under Official Proration Orders. Not included are several others unofficially prorated by voluntary operating agreements.

GAS STORAGE RESERVOIRS

MARYSVILLE: THIS IS AN UNDERGROUND STORAGE PROJECT FOR LPG'S TO BE USED IN THE MANUFACTURE OF SYNTHETIC NATURAL GAS. LPG STORAGE WILL BE IN MAN-MADE CAVERNS IN SALINA SALT BEDS. PROJECT AREA IS IN SECTION 7, T.5N., R.17E.

BATTLE CREEK GAS CO: WHEN COMPLETED, NATURAL GAS WILL BE STORED IN A MAN-MADE SALT CAVERN IN SALINA SALT BEDS. THE STORAGE FIELD WILL PROBABLY BE CALLED LACEY STATION. PROJECT AREA IS IN SECTION 14, T.1N., R.8W.

NOT INCLUDED IN THE LIST OF GAS STORAGE RESERVOIRS IS ONE SMALL, SALT CAVERN STORAGE RESERVOIR LOCATED NEAR MARYSVILLE, ST. CLAIR COUNTY. GAS IS STORED IN A CAVERN IN SALINA SALT BEDS AT A DEPTH OF ABOUT 2050 FEET. THE CAVERN WAS PART OF A SALT SOLUTION--EXTRACTION OPERATION. GAS STORAGE CAPACITY IS ABOUT 341 MMCF AT A WELLHEAD PRESSURE OF 1100 PSI.

MOST GAS STORAGE RESERVOIRS WERE ORIGINALLY CLASSIFIED AS GAS FIELDS OR POOLS. UPON DEPLETION OR NEAR DEPLETION OF NATIVE GAS, THEY WERE CONVERTED TO STORAGE RESERVOIRS. RESERVOIR ROCKS IN THE BELLE RIVER MILLS, IRA, LENOX AND RAY FIELDS ARE NIAGARAN REEFS.

UNDEVELOPED GAS STORAGE RESERVOIRS ARE GAS OR OIL POOLS THAT HAVE BEEN DESIGNATED TO BECOME STORAGE RESERVOIRS AT SOME FUTURE TIME. THOSE THAT SHOW GAS PRODUCTION FOR 1971 ARE CONSIDERED ACTIVE POOLS.

THE PRODUCING SECTIONS LISTED IN GAS STORAGE RESERVOIR TABLES DO NOT NECESSARILY RELATE TO CURRENT GAS STORAGE AREA OR BOUNDARIES. ALSO, THE SECTIONS DO NOT NECESSARILY RELATE TO POTENTIAL OR FUTURE GAS STORAGE AREA OR BOUNDARIES. THE SECTIONS, OR PARTS OF SECTIONS, LISTED ARE THOSE WHICH CONTAINED AT LEAST ONE PRODUCIBLE OIL OR GAS WELL ASSIGNED TO THE FIELD OR POOL PRIOR TO CONVERSION OR DESIGNATION AS GAS STORAGE.

TABLE 3 DEVELOPED GAS STORAGE RESERVOIRS

POOL CLASSIFICATION

● ACTIVE OIL FIELD OR POOL
● ABANDONED OIL FIELD OR POOL
☼ ACTIVE GAS FIELD OR POOL
☼ ABANDONED GAS FIELD OR POOL
☼ GAS-CONDENSATE FIELD OR POOL
☼ ABANDONED GAS-CONDENSATE FIELD OR POOL
⊕ GAS STORAGE RESERVOIR
⊖ UNDEVELOPED GAS STORAGE RESERVOIR

	FIELD NAME	PRODUCING FORMATION OR POOL	YEAR OF DISC.	COUNTY TOWNSHIP PRODUCING SECTIONS	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY	PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF WELLS TO END (1971)	NUMBER OF WELLS COMP. IN (1971)	NUMBER OF WELLS ABAND. IN (1971)	NUMBER OF WELLS ACTIVE AT END (1971)	DRILLED ACRES	OIL PRODUCTION—BBLS. PRODUCED IN 1971	OIL PRODUCTION—BBLS. CUMULATIVE THROUGH 1971	GAS PRODUCTION—Mcf. PRODUCED IN 1971	GAS PRODUCTION—Mcf. CUMULATIVE THROUGH 1971	RECOVERY PER ACRE DRILLED (BBLS.)	TOTAL BARRELS BRINE PER DAY
⊕	AUSTIN	MICHIGAN STRAY	1933	MECOSTA	1,380	14 S		DETROIT RIVER	4,043		0	0	90	3,970				6,109,033		
	AUSTIN TWP., 14N-9W, SECTIONS 2, 3, 4, 9, 10, 11, 12, 13, 14 COLFAX TWP., 15N-9W, SECTIONS 32, 33 MORTON TWP., 14N-8W, SECTIONS 6, 7																			
⊕	BELLE RIVER MILLS	SALINA-NIAGARAN	1961	ST. CLAIR	2,215	305 D		CLINTON	2,694		0	0	43	840		1,212	341,199	23,977,840		
	CHINA TWP., 4N-16E, SECTIONS 11, 14, 15																			
⊕	COLUMBUS	SALINA-NIAGARAN	1964	ST. CLAIR	2,738	190 D		CLINTON	3,232		12	0	20	320			715,496	13,253,674		
	COLUMBUS TWP., 5N-15E, SECTIONS 15, 16, 21, 22																			
⊕	COLDWATER	MICHIGAN STRAY	1945	ISABELLA	1,390	10 S		SYLVANIA	5,090		11	0	55	2,400				7,382,794		
	COLDWATER TWP., 16N-6W, SECTIONS 28 THROUGH 33 SHERMAN TWP., 15N-6W, SECTION 6																			
⊕	CRANBERRY LAKE	MICHIGAN STRAY	1943	CLARE-MISSAUKEE	1,321	10 S		RICHFIELD	5,201		0	0	171	7,000				7,537,451		
	SUMMERFIELD TWP., 20N-5W, SECTIONS 4, 5, 6, 7, 8, 9, 15, 16, 17, 18, 22, 23 WINTERFIELD TWP., 20N-6W, SECTIONS 1, 2, 3, 10, 11, 12 CLAM UNION TWP., 21N-6W, SECTIONS 28, 34, 35																			
⊕	CROTON	MARSHALL	1951	NEWAYGO	917	4 S		SALINA	3,993		17	0	23	860				1,320,835		
	CROTON TWP., 12N-11W, SECTIONS 29, 32																			
⊕	FREEMAN-LINCOLN	MICHIGAN STRAY	1938	CLARE	1,500	10 S		DETROIT RIVER	3,957		18	0	129	6,600				18,099,490		
	LINCOLN TWP., 18N-5W, SECTIONS 7, 16, 17, 18, 19, 20, 21, 27, 28, 29 FREEMAN TWP., 18N-6W, SECTIONS 2, 3, 4, 9, 10, 11, 13, 14, 15, 23, 24																			
⊕	GOODWELL	MICHIGAN STRAY	1943	NEWAYGO	1,142	20 S		DETROIT RIVER	3,562		0	0	64	3,020				5,875,670		
	GOODWELL TWP., 14N-11W, SECTIONS 5, 6, 7, 8, 9, 16, 17 WILCOX TWP., 14N-12W, SECTION 1 NORWICH TWP., 15N-11W, SECTION 31 MONROE TWP., 15N-12W, SECTION 36																			
⊕	HAMILTON, NORTH	MICHIGAN STRAY-MARSHALL	1952	CLARE	1,487	8 S		RICHFIELD	5,395		0	0	62	3,040				5,450,065		
	HAMILTON TWP., 19N-3W, SECTIONS 5, 6, 7, 8 HAYES TWP., 19N-4W, SECTION 1 FROST TWP., 20N-4W, SECTIONS 35, 36																			
⊕	HOWELL	SALINA-NIAGARAN	1935	LIVINGSTON	3,920	9 D		ST. PETER SS.	5,958		0	0	69	2,400				23,678,120		
	GENOA TWP., 2N-5E, SECTIONS 5, 6, 7, 8, 17 MARION TWP., 2N-4E, SECTIONS 1, 2, 12 HOWELL TWP., 3N-4E, SECTION 35																			
⊕	IRA	SALINA-NIAGARAN	1953	ST. CLAIR	2,276	33 D		CLINTON	2,632		0	0	15	680				3,498,666		
	IRA TWP., 3N-15E, SECTIONS 1, 2, 11																			
⊕	LENOX	SALINA-NIAGARAN	1960	MACOMB	2,734	46 D		CLINTON	3,018		0	0	11	300		2,565		2,152,679		
	LENOX TWP., 4N-14E, SECTION 32 CHESTERFIELD TWP., 3N-14E, SECTION 5																			
⊕	MARION (WINTERFIELD)	MICHIGAN STRAY	1940	CLARE-OSCEOLA	1,344	15 S		SYLVANIA	5,100		0	0	282	10,720				20,084,934		
	WINTERFIELD TWP., 20N-6W, SECTIONS 17 THROUGH 21, 27 THROUGH 35 REDDING TWP., 19N-6W, SECTIONS 1, 2, 3, 4, 6 MARION TWP., 20N-7W, SECTIONS 24, 25, 36 MIDDLE BRANCH TWP., 19N-7W, SECTION 1																			
⊕	MARYSVILLE	SEE FOOTNOTE FOR GAS STORAGE FIELDS ON ADJACENT PAGE, LOWER RIGHT-HAND BLOCK.																		
⊕	NORTHVILLE	TRENTON-BLK. RIVER	1954	WAYNE-WASHTENAW	4,395	70 D		CAMBRO-ORDOVICIAN	5,850		0	0	70	2,825+				18,126,876		
	FOR LOCATION SEE NORTHVILLE, TABLE 2																	INCLUDES BOTH SALINA-NIAGARAN & TRENTON GAS		
⊕	ORIENT	MICHIGAN STRAY	1945	OSCEOLA-CLARE	1,508	11 S		SYLVANIA	5,307		6	0	75	2,600				5,350,856		
	ORIENT TWP., 17N-7W, SECTIONS 2, 3, 10, 11, 12, 13, 14 GARFIELD TWP., 17N-6W, SECTIONS 18, 19																			
⊕	OVERISEL	SALINA	1956	ALLEGAN	2,650	12 D		TRENTON	4,060		0	0	186	6,660				14,645,048		
	OVERISEL TWP., 4N-14W, SECTIONS 4, 5, 8, 9, 10, 14, 15, 16, 21, 22, 23, 27, 28																			
⊕	PARTELLO	SALINA A-1 CARB.	1959	CALHOUN	3,192	30 D		TRENTON-BLK. RIVER	4,905		1	0	5	200				1,695,320		
	LEE TWP., 1S-5W, SECTIONS 12, 13																			
⊕	PUTTYGUT	SALINA-NIAGARAN	1960	ST. CLAIR	2,423	60 D		NIAGARAN	2,774		6		23	440	OIL PRODUCTION COMBINED WITH ADAIR			11,260,480		
	CASCO TWP., 4N-15E, SECTIONS 11, 14, 15																			
⊕	RAY	SALINA-NIAGARAN	1961	MACOMB	2,945	101 D		NIAGARAN	3,273		0	0	35	660		1,689	1,535	35,203,228		
	RAY TWP., 4N-13E, SECTIONS 1, 2, 11 ARMADA TWP., 5N-13E, SECTION 36																			
⊕	REED CITY	MICHIGAN STRAY	1940	OSCEOLA-LAKE	1,217	12 S		ST. PETER SS.	8,960		0	0	102	4,880				7,642,246		
⊕		REED CITY	1941		3,585	7 D					4	0	178	COMBINATION GAS STORAGE AND SECONDARY RECOVERY PROJECT - REFER TO TABLE 6 FOR ADDITIONAL DETAILS.						
	LINCOLN TWP., 18N-10W, SECTIONS 8, 9, 16, 17, 18, 19, 20, 21, 29, 30, 31, 32 PINORA TWP., 18N-11W, SECTIONS 24, 25																			
⊕	RIVERSIDE	MICHIGAN STRAY	1940	MISSAUKEE	1,435	7 S		DUNDEE	3,953		0	0	99	3,680				5,188,481		
	RIVERSIDE TWP., 21N-7W, SECTIONS 15, 16, 17, 19, 20, 21, 22, 23																			
⊕	SALEM	SALINA	1937	ALLEGAN	2,725	2 D		TRENTON	3,792		0	0	88	4,960		2,973		11,310,698		
	SALEM TWP., 4N-13W, SECTIONS 2, 3, 9, 10, 11, 12, 14, 15, 16, 17, 21, 22, 23 JAMESTOWN TWP., 5N-13W, SECTIONS 34, 35																			
⊕	SHAVER (SUMNER-NEW HAVEN)	MICHIGAN STRAY	1935	GRATIOT-MONTCALM	1,020	11 S		DUNDEE	3,536		0	0	49	3,920				11,114,906		
	NEW HAVEN TWP., 10N-4W, SECTIONS 2, 3, 4, 5, 8, 9, 10, 11 SUMNER TWP., 11N-4W, SECTIONS 31, 32, 33, 34 CRYSTAL TWP., 10N-5W, SECTIONS 1, 2, 3, 5, 6 FERRIS TWP., 11N-5W, SECTIONS 22, 36																			
⊕	SIX LAKES	MICHIGAN STRAY	1934	ISABELLA-MECOSTA-MONTCALM	1,270	25 S		DETROIT RIVER	3,790		0	0	268	11,480				51,604,719		
	ROLLAND TWP., 13N-6W, SECTIONS 29, 30 HINTON TWP., 13N-8W, SECTIONS 23, 24, 25 MILLBROOK TWP., 13N-7W, SECTIONS 27 THROUGH 36 BELVIDERE TWP., 12N-7W, SECTIONS 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 20, 21																			
⊕	WINFIELD	MICHIGAN STRAY	1935	MONTCALM	1,125	8 S		DETROIT RIVER	3,405		33	0	41	3,240				4,836,132		
	WINFIELD TWP., 12N-9W, SECTIONS 6, 7, 8, 16, 17, 18 REYNOLDS TWP., 12N-10W, SECTIONS 1, 12																			
⊕	WOODVILLE (NORWICH)	MICHIGAN STRAY	1943	NEWAYGO	1,185	13 S		DETROIT RIVER	3,405		0	0	46	2,240				2,683,259		
	NORWICH TWP., 15N-11W, SECTIONS 16, 17, 20, 21, 28, 29 TOTAL ACREAGE 87,535																			

TABLE 4 UNDEVELOPED GAS STORAGE RESERVOIRS

⊖	BATTLE CREEK GAS CO. -LACEY	A2 SALT SOLUTION CAVERN	1971	BARRY				CAMBRIAN		1	SEE FOOTNOTE FOR GAS STORAGE FIELDS ON ADJACENT PAGE, LOWER RIGHT-HAND BLOCK.									
	JOHNSTOWN TWP., 1N-8W, SECTION 14																			
⊖	BROOMFIELD-DEERFIELD	MICHIGAN STRAY	1930	ISABELLA	1,355	5 S		SYLVANIA	4,994	91	0	0	12	8,080				13,069,069		
	BROOMFIELD TWP., 14N-6W, SECTIONS 1, 2, 3, 4, 5, 9, 10, 11, 13, 14, 15, 23, 24, 25 DEERFIELD TWP., 14N-5W, SECTIONS 7, 17, 18, 19, 20, 29, 30 SHERMAN TWP., 15N-6W, SECTIONS 29, 30, 31, 32, 33, 36																			
⊖	EDMORE-RICHLAND	MICHIGAN STRAY	1936	MONTCALM	1,300	8 S		DUNDEE	3,700	47	0	0	10	6,800				8,956,687		
	HOME TWP., 12N-6W, SECTIONS 11, 12, 13, 14, 15, 19, 21 THROUGH 30, 33 RICHLAND TWP., 12N-5W, SECTIONS 7, 8, 17, 18																			
⊖	EVART	MICHIGAN STRAY	1941	OSCEOLA	1,410	7 S		DETROIT RIVER	4,457	33	0	0	7	5,120				4,895,722		
	OSCEOLA TWP., 18N-8W, SECTIONS 19, 21, 22, 23, 26 THROUGH 35 TOTAL ACREAGE 22,400 TOTAL 34,304,272																			

TABLE 5 MISCELLANEOUS OIL WELLS

Field Name*	Location and Producing Sections				Completion	and Abandonment	Formation	Production
Big Prairie	Newaygo	Big Prairie	13N-11W	3	1967	1967	Dundee	78
Bloomfield, Sec. 20	Huron	Bloomfield	17N-14E	20	1940	1941	Traverse	71
Blue Lake, Sec. 5	Muskegon	Blue Lake	12N-16W	5	1940	1941	Traverse	26
Calvin	Cass	Calvin	7S-14W	1	1954	1955	Traverse	67
Colfax, Sec. 35	Oceana	Colfax	16N-15W	35	1952	1954	Traverse	35
Dayton, Sec. 16	Newaygo	Dayton	13N-14W	16	1957	1957	Traverse	314
Decatur, Sec. 4	Van Buren	Decatur	4S-14W	4	1942	1942	Traverse	38
Edwardsburg	Cass	Ontwa	8S-15W	22, 23	1940	1950	Traverse	277
Evergreen, Sec. 22	Montcalm	Evergreen	10N-6W	22	1953	1954	Traverse	455
Fremont, Sec. 27	Isabella	Fremont	13N-5W	27	1962	1963	Traverse	488
Gaines, Sec. 8	Kent	Gaines	5N-11W	8	1945	1945	Traverse	47
Ganges, Sec. 4	Allegan	Ganges	2N-16W	4	1954	1955	Traverse	64
Hinton, Sec. 21	Mecosta	Hinton	13N-8W	21	1948	1948	Traverse	66
Hume, Sec. 12	Huron	Hume	18N-12E	12	1953	1953	Detroit River SZ	71
Indian Hills, Sec. 26	Oceana	Crystal	16N-16W	26	1961	1962	Dundee	305
Jamestown, Sec. 29	Ottawa	Jamestown	5N-13W	29	1942	1942	Traverse	52
Jonesfield, Sec. 9	Saginaw	Jonesfield	12N-1E	9	1949	1949	Dundee	35
Jonesfield, Sec. 24	Saginaw	Jonesfield	12N-1E	24	1942	1943	Dundee	63
Lincoln, Sec. 9	Midland	Lincoln	15N-1E	9	1939	1949	Traverse	71
North Plains, Sec. 18	Ionia	North Plains	8N-5W	18	1950	1951	Dundee	239
North Plains, Sec. 19	Ionia	North Plains	8N-5W	19	1953	1955	Traverse	59
Oshtemo, Sec. 5	Kalamazoo	Oshtemo	2S-12W	5	1944	1944	Traverse	50
Sheridan, Sec. 26	Mecosta	Sheridan	15N-7W	26	1952	1953	Traverse	173
Sheridan, Sec. 29	Newaygo	Sheridan	12N-14W	29	1958	1958	Traverse	199
Sherman, Sec. 4	Isabella	Sherman	15N-6W	4, 18	1953	1955	Traverse	63
Shiawassee, Sec. 11	Shiawassee	Shiawassee	6N-3E	11	1930	1931	Traverse	236
Silver Creek	Cass	Silver Creek	5S-16W	22, 23	1939	1964	Traverse	25
Springfield, Sec. 22	Oakland	Springfield	4N-8E	22	1955	1955	Salina-Niagaran	649
St. Charles, Sec. 7	Saginaw	St. Charles	10N-3E	7	1956	1957	Traverse	111
Sumpter, Sec. 22	Wayne	Sumpter	4S-8E	22	1941	1942	Trenton	227
Tyrone, Sec. 15	Kent	Tyrone	10N-12W	15	1946	1948	Traverse	191
Watson, Salina	Allegan	Watson	2N-12W		1964	1965	Salina-Niagaran	296
Watson, Sec. 8	Allegan	Watson	2N-12W	8	1949	1950	Traverse	374
Zeeland, Sec. 4	Ottawa	Zeeland	5N-14W	4	1956	1957	Traverse	0

This list includes single wells that have been included in the oil field tables in previous summaries as pool discoveries. All have been abandoned and should not be considered as a part of Table 2.

TESTS REPORTED TO HAVE PENETRATED PRECAMBRIAN ROCK IN THE SOUTHERN PENINSULA OF MICHIGAN

PERMIT				PRECAMBRIAN	TOTAL DEPTH	YEAR COMPLETED			
26112	Berrien Co. Berrien Twp.	10-6S-17W	Security Oil & Gas Thalman #1	4604 (-3800)	5647 (-4843)	1965			
23478	Charlevoix Co. Peaine Twp.	6-37N-10W	McClure Oil Co. State-Beaver Island #2	4718 (-3977)	4803 (-4062	1961 -	Age Biotite Feldspar	Rb-Sr 1100 1110	K-Ar 1090
23435	Charlevoix Co. Peaine Twp.	27-38N10W	McClure Oil Co. State-Beaver Island #1	4566 (-3888)	5383 (-4705)	1961			
10448	Lenawee Co. Riga Twp.	32-8S-5E	Walter H. Eckert Harry Taylor #1	3865 (-3150)	3902 (-3186)	1944			
27986	Livingston Co. Osceola Twp.	11-3N-5E	Mobil Oil Corp. H. J. Messmore #1	7150?(-6170)	7589 (-6609)	1970			
11221	Monroe Co. Berlin Twp.	29-5S-10E	Joseph W. Sturman D.L. & R.L. Chapman #1	3342 (-2745)	3377 (-2780)	1945			
7702	Monroe Co. Ida Twp.	19-7S-7E	Jacob Beck Mrs. James Sancrant #1	3595 (-2926)	5495 (-4826)	1954			
25494	Monroe Co. Summerfield Twp.	16-7S-6E	Ferguson & Garrison Merlin Shimp #1	3637 (-2951)	3671 (-2985)	1964			
27199	Presque Isle Co. North Allis Twp.	29-35N-2E	Pan American Petro. Corp. D. E. Draysey #1	5877 (-5069)	5940 (-5132)	1968			
BD139	St. Clair Co. Casco Twp.	31-4N-15E	Consumers Power Co. Consumers Power Co. BD#1	4605 (-3989)	4627 (-4011)	1964			
25780	St. Clair Co. Clay Twp.	Projected 17-2N-16E	L. Bernhardt Puzzuoli #1	4152 (-3572)	4188 (-3608)	1965			
196	St. Clair Co. St. Clair Twp.	26-5N-16E	St. Clair Oil & Gas Corp. Hurst #1	4730 (-4080)	4770 (-4110)	1929 -	Age Biotite	Rb-Sr 1020	
10792	Washtenaw Co. Salem Twp.	27-1S-7E	I. C. Chamness Troy-Roddenberry Comm. #1	6075 (-5189)	6094 (-5208)	1944			
10141	Washtenaw Co. Salem Twp.	16-1S-7E	Colvin & Assoc. & Elec. Wm. F. Voss Comm. #1	6374 (-5459)	6410 (-5495)	1944 -	Age Biotite	Rb-Sr 950	
11341	Washtenaw Co. Superior Twp.	12-2S-7E	Colvin & Assoc. & Rot. St. Viola Meinzinger #1	5670 (-4852)	5692 (-4874)	1945 -	Age Biotite	Rb-Sr 1050	
BD146	Wayne Co., City of Woodhaven	22-4S-10E	Marathon Oil Co. Woodhaven BD#1	3704 (-3095)	3752 (-3143)	1969			
10430	Wayne Co. Huron Twp.	16-4S-9E	Colvin & Assoc, & Elec. Theisen Estate #1	3985 (-3360)	4046 (-3321)	1944			

DEEPEST EXPLORATORY WELL DRILLED IN MICHIGAN

25099	Ogemaw Co. Foster Twp.	28-24N-2E	Brazos Oil & Gas etal State-Foster #1	Trenton 9766 (-8290)	12,966 (-11520)	Cambrian

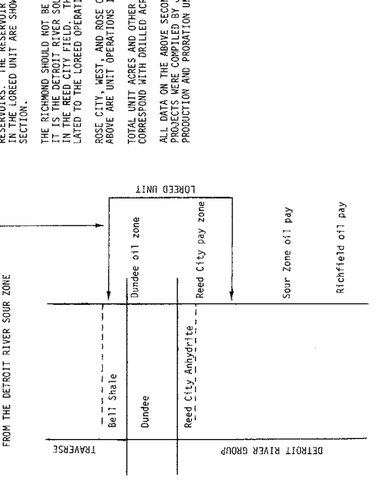
*** See Page 9 for 1971 Precambrian tests.

TABLE 6 SECONDARY RECOVERY OPERATIONS

FIELD AND COUNTY		OPERATOR OR COMPANY	TYPE OF PROJECT	DISC. YEAR	YEAR PROJECT BEGAN	PAY ZONE FORM.	PAY ZONE THICK.	PAY ZONE DEPTH	TOTAL UNIT ACRES	INJECTION FLUIDS PRESS.-PSIG	VOLUME OF INJECTED FLUID 1971 MCF GAS	VOLUME OF INJECTED FLUID 1971 BARRELS WATER	INJ. WELLS	CUMULATIVE VOLUME OF INJECTED FLUID MCF GAS	CUMULATIVE VOLUME OF INJECTED FLUID BARRELS WATER	UNIT PRODUCTION IN 1971 BARRELS OIL	UNIT PRODUCTION IN 1971 SALES MCF GAS	UNIT PRODUCTION IN 1971 WATER PRODUCED	UNIT PRODUCTION IN 1971 NO. WELLS	UNIT CUMULATIVE 1-1-72 BARRELS OIL	UNIT CUMULATIVE 1-1-72 SALES MCF GAS	UNIT CUMULATIVE 1-1-72 BARRELS WATER
BEAVER CREEK	CRAWFORD-KALKASKA	UNION OIL CO.	UNIT WTR. FLOOD	1947	1963	RICH.	17	4,400	4,680	FRESH WATER 2,200		6,440,253	58		33,564,728	(P) 39,000 (S) 573,402	495,118	231,410	52	(P) 6,464,000 (S) 2,093,265	17,766,964	2,004,516
BEAVERTON, SOUTH	GLADWIN	SUN OIL CO.	UNIT WTR. FLOOD	1936	1959	DD.	9	3,845	640	FRESH WATER 100		123,965	4		2,053,655	(P) NONE (S) 10,271		34,310	14	(P) 986,950 (S) 62,914		840,959
BEAVERTON, WEST	GLADWIN	PEAKE PET. CO.	UNIT WTR. FLOOD	1943	1966	DD.	2	3,876	480	FRESH WATER 2,100		56,251	3		489,869	(P) 9,000 (S) 285		4,015	4	(P) 171,188 (S) 4,831		32,305
BERLIN	ST. CLAIR	SUN OIL CO.	UNIT WTR. FLOOD	1960	1970	NIAG.	30	3,800	250	FRESH WATER VAC.		327,750	1		437,250	(P) 1,208 (S) NONE	NONE		3	(P) 340,864 (S) NONE		NONE
CRANBERRY LAKE	CLARE	FARM. PETRO. COOP.	UNIT WTR. FLOOD	1951	1969	RICH.	15	5,048	680	FRESH WATER 2,280		325,855	7		662,399	(P) 14,624 (S) NONE		8,395	6	(P) 1,063,323 (S) NONE		345,290
EAST NORWICH	MISSAUKEE	SUN OIL CO.	UNIT-RECY. GAS & WTR. FLOOD	1942	1947	RICH.	14	4,640	4,880	RECYCLE GAS & FRESH WTR. 2,300	DISCONT. 1962	1,103,155	51	11,699,478	11,482,602	(P) NONE (S) 256,499	506,216	73,801	69	(P) 5,800,000 (S) 2,790,478	6,770,407	1,236,909
ENTERPRISE	MISSAUKEE	SUN OIL CO.	UNIT-RECY. GAS & WTR. FLOOD	1943	1953	RICH.	16	4,405	1,320	RECYCLE GAS & FRESH WTR. 2,300	DISCONT. 1961	558,076	13	1,419,611	4,504,779	(P) NONE (S) 101,965	55,725	16,060	20	(P) 1,925,000 (S) 493,617	803,218	673,294
GROUT	GLADWIN	SUN OIL CO.	UNIT WTR. FLOOD	1956	1960	RICH.	10	5,039	480	FRESH WATER 2,100		200,101	3		2,177,537	(P) NONE (S) 53,051		73,000	12	(P) 900,000 (S) 598,408		416,713
HAMILTON	CLARE	SUN OIL CO.	UNIT WTR. FLOOD	1952	1958	RICH.	12	5,145	1,800	FRESH WATER 2,600		918,989	17		10,981,870	(P) NONE (S) 255,635	120,141	339,450	26	(P) 2,800,000 (S) 2,493,211	3,555,907	2,232,383
HEADQUARTERS	ROSCOMMON	FARM. PETRO. COOP.	UNIT WTR. FLOOD	1952	1969	RICH.	13	4,946	720	FRESH WATER 2,900		436,574	11		1,222,520	(P) NONE (S) 45,655		15,330	7	(P) 702,951 (S) 54,445		90,155
REED CITY *	OSCEOLA	MICH. CONS. GAS CO.	UNIT-GAS STORAGE IN OIL RESERVOIR	1940	1963	DD-R.C.	21	3,585	5,000	PRODUCED BRINE & EXTRANEOUS GAS	9 WTR. 158 GAS	699,705		4,070,728	145,078,671	(P) NONE (S) 390,459		683,006	168	(P) 39,294,000 (S) 1,628,153	16,257,876	165,522,002
RICHMOND **	OSCEOLA	ISBRANDSEN CO., INC.	UNIT WTR. FLOOD	1955	1965	DR(SZ)	11	4,184	1,097	FRESH WATER 1,850		344,831	10		2,292,684	(P) 11,000 (S) 79,402	4,921	3,285	9	(P) 1,053,036 (S) 241,381	2,464,823	89,250
ROSE CITY	OGEMAW	MUSKEGON DEV. CO.	UNIT WTR. FLOOD	1945	1955	RICH.	9	4,125	4,600	FRESH WATER 2,500		396,137	38		3,801,130	(P) 15,000 (S) 114,243	163,206	17,520	61	(P) 3,514,944 (S) 201,243	5,586,407	236,337
ROSE CITY, CENTRAL	OGEMAW	MUSKEGON DEV. CO.	UNIT WTR. FLOOD	1951	1971	RICH.	8	4,125	1,560	FRESH WATER 2,350		275,238	9		275,238	(P) 8,624 (S) NONE	10,683	3,723	10	(P) 1,033,652 (S) NONE	947,501	66,868
ROSE CITY, WEST	OGEMAW	SUN OIL CO.	UNIT WTR. FLOOD	1952	1968	RICH.	10	4,150	320	FRESH WATER 2,400		219,555	5		750,454	(P) NONE (S) 22,919	12,332	730	4	(P) 510,888 (S) 26,919	788,541	30,385
ST. HELEN	ROSCOMMON	SUN OIL CO.	UNIT-RECY. GAS & WTR. FLOOD	1941	1958	RICH.	9	4,480	3,920	RECYCLE GAS & FRESH WTR. 2,300	DISCONT. 1957	762,449	39	3,151,610	6,775,013	(P) NONE (S) 123,972	250,847	24,638	54	(P) 3,760,000 (S) 470,722	9,478,588	462,501
WEST BRANCH	OGEMAW	MARATHON OIL CO.	UNIT WTR. FLOOD	1933	1966	DD.	28	2,650	2,730	BRINE 1,380		360,311	16		1,214,232	(P) 25,000 (S) 43,864		125,925	52	(P) 3,309,176 (S) 129,864		506,215

* LOREED UNIT IN REED CITY FIELD.

** RICHMOND UNIT - THIS UNIT PRODUCES FROM THE DETROIT RIVER SOUR ZONE



NOTE: THE LOREED UNIT IN THE REED CITY FIELD, A MULTI-POOL FIELD, IS A GAS STORAGE - SECONDARY OIL RECOVERY OPERATION ENCOMPASSING SEVERAL RESERVOIRS. THE RESERVOIRS ACTUALLY INVOLVED IN THE LOREED UNIT ARE SHOWN IN THE STRATIGRAPHIC SECTION.

THE RICHMOND SHOULD NOT BE CONSIDERED AS A FIELD. IT IS THE DETROIT RIVER SOUR ZONE POOL RESERVOIR IN THE REED CITY FIELD. THE PROJECT IS NOT RELATED TO THE LOREED OPERATION.

ROSE CITY, WEST, AND ROSE CITY, CENTRAL, AS NOTED ABOVE ARE UNIT OPERATIONS IN THE ROSE CITY FIELD.

TOTAL UNIT ACRES AND OTHER DATA DOES NOT NECESSARILY CORRESPOND WITH DRILLED ACRES AS NOTED ON TABLE 2.

ALL DATA ON THE ABOVE SECONDARY RECOVERY PROJECTS WERE COMPILED BY JAMES S. LORENZ, PRODUCTION AND PRORATION UNIT.

COMPILERS.

FIGURES DEFINED AS SECONDARY OIL (S) REPRESENT THE DIFFERENCE BETWEEN ULTIMATE RECOVERY AT THE END OF 1971 AND EXTRAPOLATED ULTIMATE PRIMARY RECOVERY (P) AT THE BEGINNING OF SECONDARY OPERATIONS.

* 25288 BBLS. OF THIS SECONDARY OIL WAS PRODUCED BY A WATER SOURCE WELL IN THE TRAVERSE FORMATION.

NUMBER OF ACTIVE SECONDARY RECOVERY OPERATIONS 17

AMOUNT OF GAS INJECTED DURING 1971 ..... 4,070,728 MCF
AMOUNT OF WATER INJECTED DURING 1971 ..... 13,349,495 BBLS.

NUMBER OF WATER INJECTION WELLS 294
NUMBER OF GAS INJECTION WELLS 158

TOTAL PRIMARY OIL PRODUCTION IN 1971 ..... 123,456 BBLS.
TOTAL SECONDARY OIL PRODUCTION IN 1971 ..... 2,069,622 BBLS.

NUMBER OF PRODUCING WELLS 571

OIL PRODUCED BY SECONDARY RECOVERY METHODS AMOUNTS TO ABOUT 17 PERCENT OF THE STATES TOTAL PRODUCTION.

TABLE 7 GAS PLANT OPERATIONS BY PLANT OR FIELD, 1971 (All figures in MCF)

Plant or Field	Input Totals	Plant Fuel	Lease Fuel	Storage and/or Repressuring Recycling	Line Loss	Vented	Extraction Loss	Sales To Pipe Line	L.P.G. Recovery Gallons
*Albion-Scipio	11,398,948	1,042,490	0	0	0	190,330	911,390	9,254,738	27,434,378
*Beaver Creek	541,253	18,303	116,931	0	0	0	28,323	377,696	118,500
Boyd	7,175,865	125,941	214,157	1,901,540	93,499	6,868	344,068	4,489,792	8,900,427
The Boyd Plant, serving several fields, receives both dry and oil well gas.									
Chester	2,080,053	32,113	0	0	18,440	0	49,483	1,980,017	329,910
*Hamilton	182,311	11,834	43,615	0	809	0	5,912	120,141	148,738
*Hanover	82,677	0	0	0	0	0	0	82,677	0
*Norwich East	724,280	89,315	76,221	0	0	0	870	558,874	0
Reed City	18,824,291	366,334	0	0	0	0	293,306	18,164,651	9,241,695
Reed City plant serves a combination storage and secondary recovery operation in an oil reservoir (Loreed Unit).									
*Rose City	253,588	7,306	0	0	0	0	0	246,282	0
*St. Helen	489,495	27,844	56,107	0	0	0	2,474	403,070	61,856
Willow Run	185,559,601	459,241	0	0	0	0	460,903	184,639,457	14,747,992
Totals	227,313,352	2,180,721	507,031	1,901,540	112,748	197,198	2,096,729	220,317,395	60,983,496

* Receives and processes oil well gas only.

NOTE: The above table is the record of plants which are serving oil field operations, or which are extracting natural gas liquids from designated dry gas sources such as Willow Run gas plant.

All data from Production and Proration Unit records.

TABLE 8 PRIMARY SUPPLY LOCATIONS AND STORAGE FACILITIES FOR LIQUIFIED PETROLEUM GAS

Company	Plant Location County	Plant Location Locality	Type of Facility	Facility Capacity Gallons of LPG
Bay Refining Company	Bay	Bay City	Refinery Storage	155,200
Dow Chemical Company	Midland	Midland	Chemical Plant (Underground)	8,820,000
Leonard Refineries, Inc.	Gratiot	Alma	Refinery Storage	120,000
Marathon Oil Company	Hillsdale	Mosherville	Natural Gas Processing Plant	294,000
Cities Service Oil Company	Kent	Lowell	Underground Storage	48,150,000
Skelly Oil Company (1)	Kent	Alto	Underground Storage	10,890,748
Consumers Power Company	Macomb	New Baltimore	Natural Gas Processing Plant	150,000
Michigan Consolidated Gas Co.	St. Clair	St. Clair	Natural Gas Processing Plant	450,000
Michigan Consolidated Gas Co.	Washtenaw	Ypsilanti	Natural Gas Processing Plant	450,000
Mobil Oil Company	Wayne	Trenton	Underground Storage	15,201,000
Sun Oil Company	Wayne	Wayne	Underground Storage	29,280,000
Marathon Oil Company	Wayne	Wayne	Underground Storage	30,831,000
Phillips Petroleum Company	Wayne	Wyandotte	Underground Storage	8,400,000
Wyandotte Chemical Corp.	Wayne	Wyandotte	Underground Storage	4,500,000

TOTAL PRIMARY STORAGE BY COUNTY, GALLONS LPG	
Bay	155,200
Gratiot	120,000
Hillsdale	294,000
Kent	59,040,748
Macomb	150,000
Midland	8,820,000
St. Clair	450,000
Washtenaw	450,000
Wayne	88,212,000
Combined Primary Storage	157,691,948

TOTAL PRIMARY STORAGE, GALLONS LPG	
Refinery Storage	275,200
Gas Plant Storage	1,344,000
Underground Storage	156,072,748
Combined Primary Storage	157,691,948

LPG underground storage reservoirs are in man-made caverns dissolved from Salina Group (Silurian) salt beds. The depth to storage reservoir salt beds varies with locality within the state.

(1) Skelly Oil Co. discontinued use of this facility in 1966.

Data updated May, 1971

* * MICHIGAN OIL REFINERIES * *

COMPANY	REFINERY LOCATION		NOMINAL CAPACITY* BBLS. DAY
Bay Refining, Division Dow Chemical Company	Bay City		17,000
Crystal Refining Company	Carson City		6,200
Lakeside Refining Company	Kalamazoo		4,000
Total Leonard, Inc. (Leonard Refineries, Inc.)			
Leonard Division	Alma		29,000
Roosevelt Division (shut down, 1970)	Mt. Pleasant	(1)	(7,500)
Marathon Oil Company	Detroit		50,000
Naph-Sol Refining Company (shut down, 1968)	Muskegon	(1)	(10,000)
Osceola Refining Company	West Branch		8,000
Petroleum Specialties, Inc. (shut down)	Flat Rock	(1)	(6,500)
Socony Mobil Oil Company	Trenton		40,700
	Total Refinery Capacity		154,900

(1) Not included in total refinery capacity.

* Individual refinery operating rates may be less or slightly more than nominal rates shown.

PART 3, CUMULATIVE RECORDS
EXPLANATION

PART 3 contains cumulative statistics principally of oil and gas production, well completions, and oil field brine production and disposal from 1925 through the most recent year-end compilations.

OIL AND GAS PRODUCTION TABLES. Oil and gas production figures for individual years prior to 1960 can be found in issues of "Summary of Operations, Oil and Gas Fields" for 1962 and prior years, and in "Michigan's Oil and Gas Fields" 1963 to present. The tables show the year of the first recorded production from a particular formation, and the yearly and cumulative production totals from 1925 through the most recent year-end compilations. Cumulative oil and gas production by county is shown on a separate table. Refer to Part 1 for county production figures for the past year, and prior issues for previous years.

CUMULATIVE WELL COMPLETIONS. These tables show the cumulative number of yearly completions in a county. Well density figures include field development wells, exploratory wells, and service wells of all types.

DRILLING PERMITS, WELL COMPLETIONS, FIELDS DISCOVERED. These tables show the number of drilling permits issued by year from 1927 through the most recent year-end compilations. Initial classification of well completions by year, the number of new fields or pools discovered, and the number of producible oil or gas wells on a yearly basis are all shown on the same table.

BRINE PRODUCTION AND DISPOSAL. Oil field brine production records other than for individual fields were discontinued in 1968. These tables listed the reported amount of produced brine and the method of disposal from 1937 up to 1967. Most oil field brine is still returned to subsurface formations. Small quantities are used for dust control or ice and snow removal on county roads in local areas. A small amount of brine is also disposed of in burning pits.

SERVICE WELLS. Service wells as listed in this publication are those wells which were drilled to serve some purpose other than the initial production of oil or gas. Oil or gas wells are sometimes converted to salt water disposal, observation, or facility wells in gas storage or pressure maintenance projects. There are several types of service wells:

LPG WELLS. These are wells drilled for underground storage of liquified petroleum gas. In Michigan, these storage reservoirs are in man-made cavities in salt beds. The cavities have been made by dissolving the salt with water and then pumping out the brine.

Gas Storage Wells. These are wells drilled in gas storage reservoirs. They are frequently referred to as facility wells, and are generally used to inject gas into or extract gas from the reservoir. Certain facility wells may sometime in the history of the field be used as salt water disposal wells or observation wells.

Observation Wells. Most observation wells are related to gas storage projects. They are used to observe underground movement of gas, brines, and other fluids, or to observe pressures.

Brine Disposal Wells. These wells are used in the disposal of oil and gas field brines back into some suitable subsurface formation. Brine disposal well permits are issued for these wells.

Injection and Pressure Maintenance Wells. These are wells used in secondary recovery, or pressure maintenance projects. They may be new wells drilled specifically for injection or pressure maintenance, or they may be converted oil or gas wells; their status can change from time to time.

Oil or gas wells are sometimes converted to salt water disposal, observation, facility wells in gas storage reservoirs, or water injection wells used in secondary recovery or pressure maintenance projects. The types of service wells listed under "Classification of Well Completions" does not include oil or gas wells converted to service wells.

TABLE 9 OIL PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1971 AND PRIOR YEARS

These data include estimates for multiple pay wells and leases when an accurate breakdown was not available

YEAR	MISSISSIPPIAN		DEVONIAN			SILURIAN	ORDOVICIAN	Total Barrels Oil All Formations
	Marshall	Berea	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	
	First Year of Recorded Oil Production by Formation							
	1938	1925	1927	1927	1939	1952	1935	
1925 Through 1929	(Cumulative)	876,559	873,777	4,017,451				5,767,787
1930 Through 1934	(Cumulative)	318,171	995,439	31,870,671				33,184,281
1935 Through 1939	7,411 (Cumulative)	310,313	13,814,816	72,339,293	14,000		43,565	86,529,398
1940 Through 1944	22,040 (Cumulative)	229,262	27,856,377	67,939,211	727,418		348,477	97,122,785
1945 Through 1949	17,283 (Cumulative)	166,687	16,914,771	62,438,443	4,302,309		106,510	83,946,003
1950 Through 1954	9,068 (Cumulative)	125,089	16,974,863	38,058,703	11,878,669	43,091	225,180	67,314,663
1955 Through 1959	8,183 (Cumulative)	110,639	8,788,785	25,618,934	13,716,790	568,085	3,108,341	51,920,757
1960 Through 1964	6,090 (Cumulative)	84,222	6,777,853	15,725,957	8,260,636	4,611,123	48,022,216	83,488,097
1965 Through 1969	5,293 (Cumulative)	113,898	3,851,321	12,186,197	8,387,775	4,195,694	39,132,615	67,852,793
1970	1,161	26,689	670,068	2,079,935	2,014,461	1,412,079	5,489,095	11,693,488
1971	899	26,600	621,964	2,038,997	2,142,522	2,313,202	4,749,226	11,893,410

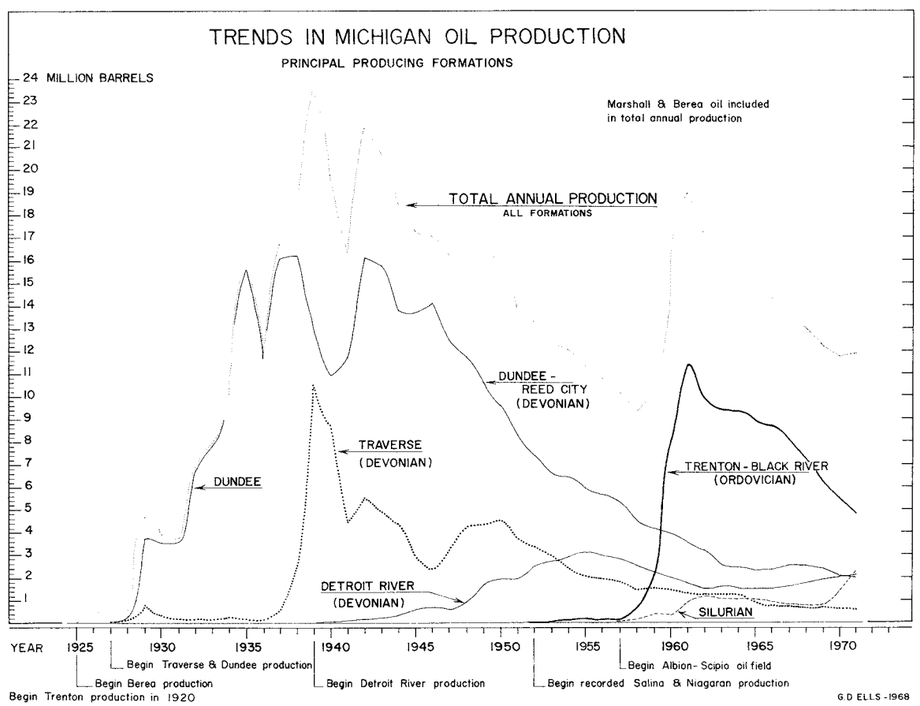


TABLE 10 GAS PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1971 AND PRIOR YEARS

YEAR	CENOZOIC	MISSISSIPPIAN		DEVONIAN				SILURIAN	ORDOVICIAN	Total MCF Gas All Formations
	Glacial Drift	Stray-Marshall	Berea	Antrim Shale	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	
	First Year of Recorded Gas Production by Formation									
	1949	1931	1936	1947	1934	1929	1946	1929	1954	
1925 Through 1929	(Cumulative-5 year interval)					1,887,732		74,867		1,962,599
1930 Through 1934	(Cumulative-5 year interval)	3,001,963			3,744	6,034,206		61,578		9,101,491
1935 Through 1939	(Cumulative-5 year interval)	30,769,471	1,391,076		69,894	8,862,165		6,331		41,098,937
1940 Through 1944	(Cumulative-5 year interval)	70,498,989	5,860,831		3,716,132	7,647,510		79,983		87,803,445
1945 Through 1949	(Cumulative-5 year interval)	8,020	80,217,680	1,467,460	52,495	1,414,004	15,710,636	793,763	7,393,744	107,057,802
1950 Through 1954	(Cumulative-5 year interval)	0	18,033,449	916,202	55,626	1,913,497	5,361,578	6,997,257	11,316,082	10,725	44,604,416
1955 Through 1959	(Cumulative-5 year interval)	0	6,834,419	148,085	56,686	266,623	2,287,066	12,539,252	20,117,524	6,609,393	48,859,048
1960 Through 1964	(Cumulative-5 year interval)	0	2,874,824	42,020	156,485	876,356	1,117,064	19,252,334	66,799,392	45,443,994	136,562,469
1965 Through 1969	(Cumulative-5 year interval)	0	2,636,857	814,223	220,305	454,198	150,659	10,649,603	106,149,601	57,253,914	178,329,360
1970		0	73,219	108,526	159,890	82,194	73,917	1,832,213	25,419,973	11,502,081	39,252,013
1971		0	25,986	98,702	152,700	67,882	65,222	1,735,681	12,546,934	11,237,514	25,930,621

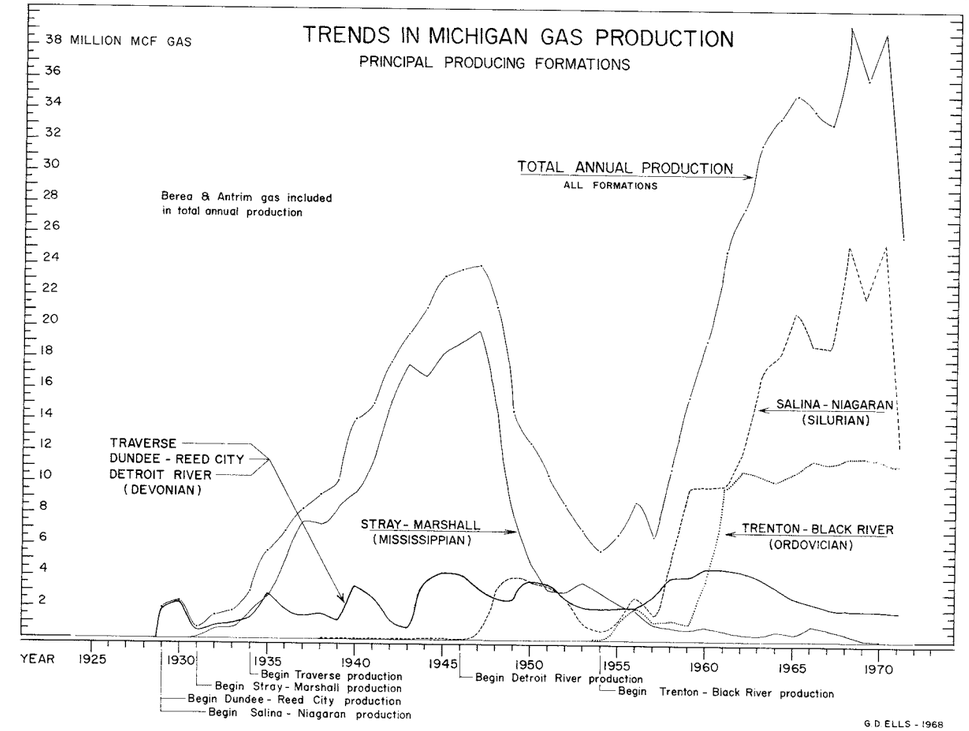


TABLE 11 CUMULATIVE OIL PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1971 AND PRIOR YEARS

These data include estimates for multiple pay wells and leases when an accurate breakdown was not available

YEAR	MISSISSIPPIAN		DEVONIAN			SILURIAN	ORDOVICIAN	Total Barrels Oil All Formations
	Marshall	Berea	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	
	First Year of Recorded Oil Production by Formation							
	1938	1925	1927	1927	1939	1952	1935	
1925 Through 1929		876,559	873,777	4,017,451				5,767,787
1930 Through 1934		1,194,730	1,869,216	35,888,122				38,952,068
1935 Through 1939	7,411	1,505,043	15,684,032	108,227,415	14,000		43,565	125,481,466
1940 Through 1944	29,451	1,734,305	43,540,409	176,166,626	741,418		392,042	222,604,251
1945 Through 1949	46,734	1,900,992	60,455,180	238,605,069	5,043,727		498,552	306,550,254
1950 Through 1954	55,802	2,026,081	77,430,043	276,663,772	16,922,396	43,091	723,732	373,864,917
1955 Through 1959	63,985	2,136,720	86,218,828	302,282,706	30,640,186	611,176	3,832,073	425,785,674
1960 Through 1964	70,075	2,220,942	92,996,681	318,008,663	38,900,822	5,222,299	51,854,289	509,273,771
1965 Through 1969	75,368	2,334,840	96,848,002	330,194,860	47,288,597	9,417,993	90,986,904	577,126,564
1970	76,529	2,361,529	97,518,070	332,274,795	49,303,058	10,830,072	96,475,999	588,820,052
1971	77,428	2,388,129	98,140,034	334,313,792	51,445,580	13,143,274	101,225,225	600,713,462

TABLE 12 CUMULATIVE GAS PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1971 AND PRIOR YEARS

YEAR	CENOZOIC	MISSISSIPPIAN		DEVONIAN				SILURIAN	ORDOVICIAN	Cumulative MCF All Formations
	Glacial Drift	Stray-Marshall	Berea	Antrim Shale	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	
	First Year of Recorded Gas Production by Formation									
	1949	1931	1936	1947	1934	1929	1946	1929	1954	
1925 Through 1929						1,887,732		74,867		1,962,599
1930 Through 1934		3,001,963			3,744	7,921,938		136,445		11,064,090
1935 Through 1939		33,771,434	1,391,076		73,638	16,784,103		142,776		52,163,027
1940 Through 1944		104,270,423	7,251,907		3,789,770	24,431,613		222,759		139,966,472
1945 Through 1949	8,020	184,488,103	8,719,367	52,495	5,203,774	40,142,249	793,763	7,616,503		247,024,274
1950 Through 1954	8,020	202,521,522	9,635,569	108,121	7,117,271	45,503,827	7,791,020	18,932,585	10,725	291,628,690
1955 Through 1959	8,020	209,355,971	9,783,654	164,807	7,383,894	47,790,893	20,330,272	39,050,109	6,620,118	340,487,738
1960 Through 1964	8,020	212,230,795	9,825,674	321,292	8,260,250	48,907,957	39,582,606	105,849,501	52,064,112	477,050,207
1965 Through 1969	8,020	214,867,652	10,639,897	541,597	8,714,448	49,058,616	50,232,209	211,999,102	109,318,026	655,379,567
1970	8,020	214,940,871	10,748,423	701,487	8,796,642	49,132,533	52,064,422	237,419,075	120,820,107	694,631,580
1971	8,020	214,966,857	10,847,125	854,187	8,864,524	49,197,755	53,800,103	249,966,009	132,057,621	720,562,201*

*Does not include 3,050,143 mcf of unassigned gas from early records.

TABLE 13. CUMULATIVE OIL AND GAS PRODUCTION BY COUNTY THROUGH 1971

COUNTY	CUMULATIVE PRODUCTION	
	Barrels Oil	MCF Gas
Allegan	19,521,188	31,050,635
Arenac	45,959,951	6,722,136
Barry	676,083	0
Bay	19,745,142	7,857
Berrien	29,757	0
Calhoun	29,876,797	45,429,054
Cass	103,121	0
Clare	35,462,556	56,950,752
Clinton	4,121	0
Crawford	7,022,255	15,786,132
Eaton	340	0
Genesee	212,099	0
Gladwin	33,573,770	9,834
Grand Traverse	3,483	0
Gratiot	1,134,888	12,943,727
Hillsdale	48,237,945	48,919,346
Huron	60,727	0
Ingham	353,950	0
Ionia	381,328	0
Isabella	53,033,177	33,022,993
Jackson	21,283,570	25,652,943
Kalamazoo	28,868	0
Kalkaska	1,822,983	2,502,746
Kent	9,748,515	3,764,548
Lake	2,833,961	182,438
Lapeer	469,343	227,635
Lenawee	12,700	156,221
Livingston	2,946	23,741,734
Macomb	50,243	47,273,252
Mason	4,714,976	297,116
Mecosta	10,355,079	31,162,733
Midland	66,751,285	12,444,916
Missaukee	15,414,815	15,719,763
Monroe	715,607	0
Montcalm	18,064,331	52,576,247
Montmorency	7,688	0
Muskegon	7,961,356	9,759,149
Newaygo	8,761,465	13,132,674
Oakland	32,310	13,737
Oceana	15,099,097	1,172,788
Ogemaw	17,403,878	8,727,094
Osceola	54,237,782	45,135,653
Oscoda	37,806	0
Otsego	1,115,199	3,116,584
Ottawa	8,770,403	3,484,233
Presque Isle	3,056	0
Roscommon	11,634,899	13,380,848
Saginaw	2,485,271	0
Shiawassee	40,823	0
St. Clair	9,833,972	136,702,714
Tuscola	2,571,339	0
Van Buren	12,042,212	0
Washtenaw	774,747	7,518,343
Wayne	233,422	10,948,906
Wexford	4,814	924,719
55 Counties	600,713,462	*720,562,204

NOTE
Cumulative oil production for Calhoun County at the end of 1970 amounted to 28,344,193 bbls. rather than 28,373,950 bbls. as shown on Table 14, Annual Statistical Summary 14, 1971 Issue.

*Does not include 3,050,143 MCF of unassigned gas shown on early records.

TABLE 14. CUMULATIVE WELL COMPLETIONS BY COUNTY THROUGH 1971

County	Area of County (including inland water)		Classification of Completed Wells (New Hole) (does not include reworked wells)						Approximate Well Density (All Classes)
	Square Miles	Acres	Oil Wells	Gas Wells	Service Wells GS - OBS - BDW - LPG		Dry Holes	Total Completions	Wells:Sq. Miles
Alcona	694	444,160					21	21	1:33
Allegan	837	535,680	1,306	89	174		1,693	3,262	4:1
Alpena	590	377,600					11	11	1:54
Antrim	520	332,800		1			37	38	1:14
Arenac	369	236,160	406	44			402	852	2:1
Barry	571	365,440	74				132	206	1:3
Bay	451	288,640	458	1			218	677	2:1
Benzie	342	218,880					8	8	1:43
Berrien	584	373,760	9				70	79	1:7
Branch	517	330,880					56	56	1:9
Calhoun	716	458,240	236	16	1		311	564	1:1
Cass	505	323,200	30				125	155	1:3
Charlevoix	451	288,640					13	13	1:35
Cheboygan	798	510,720					18	18	1:44
Chippewa	1,651	1,056,640	Northern Peninsula County				4	4	1:413
Clare	577	369,280	385	172	458		362	1,377	2:1
Clinton	573	366,720	4				80	84	1:7
Crawford	566	362,240	85	1	8		25	119	1:5
Delta	1,202	769,280	Northern Peninsula County				1	1	1:1200
Eaton	572	366,080	2				38	40	1:14
Emmet	477	305,280					5	5	1:95
Genesee	649	415,360	31	1			45	77	1:8
Gladwin	512	327,680	738				267	1,005	2:1
Grand Traverse	490	313,600	1	7			16	24	1:20
Gratiot	566	362,240	46	74	20		268	408	1:1
Hillsdale	604	386,560	256	2			471	729	1:1
Huron	824	527,360	5				75	80	1:10
Ingham	560	358,400	22	1(1)			33	55	1:10
Ionia	578	369,920	9				80	89	1:6
Iosco	563	360,320					26	26	1:22
Isabella	573	366,720	656	161	44		476	1,337	2:1
Jackson	717	458,880	136	3			264	403	1:2
Kalamazoo	580	371,200	18				109	127	1:5
Kalkaska	573	366,720	39	14			56	110(2)	1:5
Kent	868	555,520	461	6	1	8	347	823	1:1
Lake	577	369,280	50	1			159	210	1:3
Lapeer	662	423,680	31	1			62	94	1:7
Leelanau	374	239,360					9	9	1:42
Lenawee	760	486,400	3	72			109	184	1:4
Livingston	583	373,120	1	32	55		82	170	1:3
Luce	929	594,560	Northern Peninsula County				2	2	1:465
Mackinac	1,081	691,840	Northern Peninsula County				2	2	1:541
Macomb	481	307,840	5	44	12		304	365	1:1
Manistee	568	363,520		1			33	34	1:17
Mason	505	323,200	126	7			296	429	1:1
Mecosta	570	364,800	128	196	183		406	913	2:1
Midland	523	334,720	899	2		2	274	1,177	2:1
Missaukee	572	366,080	178	63	102		211	554	1:1
Monroe	564	360,960	45				113	158	1:4
Montcalm	720	460,800	383	221	200		589	1,393	2:1
Montmorency	567	362,880	3	1			18	22	1:26
Muskegon	519	332,160	443	120			388	951	2:1
Newaygo	867	554,880	200	46	90		389	725	1:1
Oakland	899	575,360	6	10			67	83	1:11
Oceana	541	346,240	335	8			529	872	2:1
Ogemaw	580	371,200	504	21	1		169	695	1:1
Osceola	585	374,400	345	117	181		369	1,012	2:1
Oscoda	568	363,520	2				12	14	1:41
Otsego	538	344,320	18	27			54	99	1:5
Ottawa	572	366,080	473	19	2		495	989	2:1
Presque Isle	678	433,920	1				18	19	1:36
Roscommon	573	366,720	180	14			103	297	1:2
Saginaw	814	520,960	378	2			174	554	1:1
Sanilac	961	615,040					51	51	1:19
Schoolcraft	1,229	786,560	Northern Peninsula County				2	2	1:615
Shiawassee	540	345,600	9				56	65	1:8
St. Clair	751	480,640	264	182	43	12	855	1,356	2:1
St. Joseph	518	331,520					16	16	1:32
Tuscola	820	524,800	152	2			106	260	1:3
Van Buren	615	393,600	722				998	1,720	3:1
Washtenaw	723	462,720	10	18	5	1	103	137	1:5
Wayne	625	400,000	12	24	17	29	54	136	1:5
Wexford	570	364,800	1	4			59	64	1:9
73 Counties	47,342	Totals:	11,320	1,848	1,597	52	13,899	28,716	

(1) One well dual discovery Traverse oil and Niagaran gas.
(2) Includes one well abandoned and later re-drilled on a skid location.

Total includes gas storage, observation, salt water disposal, water injection wells, and brine wells.

TABLE 15 PERMITS, DISCOVERIES, WELL COMPLETIONS, WELLS AT END OF YEAR, 1971 AND PRIOR YEARS

Year	Permits Issued	Classification of Well Completions: Oil Wells	Gas Wells	Service Wells GS-OBS-SWD	Service Wells LPG	Dry Holes	Total Completions	Fields or Pools Discovered: Oil	Gas	Wells at End of Year: Oil Wells	Gas Wells	GS OBS	Inj.* P.M.	LPG*
1925	0	3					3	1		Incomplete records from 1925 through 1930				
1926	0	89				16	105		1					
1927	16	218	3			46	267	1	1					
1928	283	79	30			49	158	1		*LPG injection and extraction wells in LPG storage facilities.				
1929	576	324	22			137	483							
1930	257	154	19			158	331	2	3					
1931	111	59	17			52	128		1	634	64			
1932	184	109	10			64	183	1		645	72			
1933	429	223	10			85	318	3	1	831	70			
1934	444	272	47			150	469	3	2	977	117			
1935	700	319	101			221	641	1	5	1,167	212			
1936	777	333	206			268	807	6	5	1,360	402			
1937	973	622	66			267	985	6	1	1,778	442			
1938	996	580	27			411	1,018	17	2	2,141	448			
1939	1,465	845	56			578	1,479	8	2	2,684	485			
1940	1,121	557	59			565	1,181	8	13	2,928	510			
1941	1,044	441	97			413	951	7	8	3,158	577	13		
1942	570	297	74			331	682	14	4	3,324	631	13		
1943	627	233	47			355	635	12	8	3,386	639	13		
1944	741	246	64			400	710	10	2	3,433	651	13		
1945	755	271	57	6		467	801	11	11	3,536	663	19		
1946	822	223	53	86		461	823	19	10	3,520	547	226		
1947	886	318	43	148		387	896	10	4	3,532	534	409		
1948	918	371	32	77		437	917	10	5	3,554	502	482		
1949	999	439	22	73		473	1,007	21	2	3,818	471	554		
1950	901	336	28	47		473	884	18	4	3,954	471	610		
1951	744	227	20	43	1	466	757	16	6	3,911	417	673		1
1952	694	261	30	51	2	370	714	14	5	3,979	388	732		3
1953	824	258	18	110	1	360	747	11	6	4,089	313	901		4
1954	573	214	15	2	2	338	571	18		4,167	316	903		6
1955	484	204	13	1	1	291	510	12	2	4,223	321	904		7
1956	476	196	12	28		227	463	12	2	4,191	310	932		7
1957	461	176	40	35	3	207	461	12	5	4,233	335	977		10
1958	481	166	20	36	4	227	453	10	7	4,201	345	1,025		14
1959	727	257	47	72	4	272	652	8	7	4,327	323	1,094		18
1960	904	372	19	79	1	441	912	7	4	4,555	249	1,337	242	19
1961	849	207	57	74	3	476	817	13	10	4,619	292	1,420	260	22
1962	711	148	62	53	4	474	741	5	7	4,603	300	1,531	287	26
1963	704	135	72	56	2	384	650	7		4,598	367	1,601	287	28
1964	583	82	48	126		376	632	6	4	4,588	404	1,632	288	28
1965	494	53	34	107		291	485	6	7	4,368	424	1,859	341	28
1966	430	56	45	11	2	290	404	8	3	4,315	429	1,896	233	30
1967	405	69	38	26		287	420	8	2	4,273	481	1,921	333	30
1968	378	70	12	30	6	251	369	9	4	4,372	414	2,010	394	36
1969	379	73	9	26		239	347	7	3	4,349	410	2,034	---	36
1970	425	50	16	108	3	211	388	11	7	4,324	418	2,119	---	39
1971	425	83	31	83	13	186	396	28	13	4,323	418	2,299		52

All facility wells in gas storage fields. See Tables 3 and 4, developed and undeveloped gas storage reservoirs.

Figures in these columns represent the well count at the end of the year. Figures are subject to change due to well abandonments, re-classification, etc. See Table 2 for producible wells in individual fields.

STRATIGRAPHIC SUCCESSION IN MICHIGAN

PALEOZOIC THROUGH RECENT

MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
Ralph A. MacMullan, Director

Geological Survey Division
Arthur E. Slaughter, State Geologist

ACKNOWLEDGEMENT: Compiled with the counsel of colleagues in the department, the U. S. Geological Survey, Michigan's universities, other state Geological Surveys and geologists within Michigan's oil and gas industry. Dr. Arthur T. Cross, Department of Geology, Michigan State University, identified rocks of Mesozoic age and suggested stratigraphic age assignments.

GEOLOGIC NAMES COMMITTEE

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Harry J. Hardenberg; L. David Johnson; Harry O. Sorensen

PLEISTOCENE NOMENCLATURE

ERA	SYSTEM	SERIES	STAGE	
CENOZOIC	QUATERNARY	RECENT		
		PLEISTOCENE	Wisconsin Glaciation	Valders Stade
				Two Creeks Interstade
				Mankato Stade (= Huron?)
				Cary Stade
				Tazewell Stade
			Sangamon Interglaciation	
			Illinoian Glaciation	

OUTCROP NOMENCLATURE

GEOLOGIC TIME: ERA	PERIOD	EPOCH	TIME-STRATIGRAPHIC: SYSTEM	ROCK-STRATIGRAPHIC: SERIES	GROUP	FORMATION	MEMBER
MESOZOIC	JURASSIC	LATE	JURASSIC	KIMERIDGIAN			
MESOZOIC	PENNSYLVANIAN	LATE	PENNSYLVANIAN	CONEMAUGH		Grand River Fm	Toma, Erton and Woodville Sandstones
MESOZOIC	PENNSYLVANIAN	EARLY	PENNSYLVANIAN	POTTSVILLE		Saginaw Fm	Verne Ls
MESOZOIC	MISSISSIPPIAN	LATE	MISSISSIPPIAN	MERAMECIAN	GRAND RAPIDS	Bayport Ls	
MESOZOIC	MISSISSIPPIAN	LATE	MISSISSIPPIAN	MERAMECIAN	GRAND RAPIDS	Michigan Fm	
MESOZOIC	MISSISSIPPIAN	LATE	MISSISSIPPIAN	OSAGIAN		Marshall Ss	Napoleon Sh
MESOZOIC	MISSISSIPPIAN	EARLY	MISSISSIPPIAN	KINDERHOOKIAN		Coldwater Sh	
MISSISSIPPIAN-DEVONIAN Unassigned						Ellsworth Sh (Western Michigan)	
PALEOZOIC	DEVONIAN	LATE		CHAUTAUQUAN		Antrim Sh	
PALEOZOIC	DEVONIAN	LATE		SENECAN		Squaw Bay Ls	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Thunder Bay Ls	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Potter Farm Fm	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Norway Point Fm	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Four Mile Dam Fm	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Alpena Ls	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Newton Creek Ls	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Genshaw Fm	Killians
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Ferron Point Fm	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Rockport Quarry Ls	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Bell Sh	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Rogers City Ls	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ERIAN	TRAVERSE	Dundee Ls	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ULSTERIAN	DETROIT RIVER	Anderdon Fm	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ULSTERIAN	DETROIT RIVER	Lucas Fm	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ULSTERIAN	DETROIT RIVER	Amherstburg Fm	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ULSTERIAN	DETROIT RIVER	Sylvania Ss	
PALEOZOIC	DEVONIAN	MIDDLE	DEVONIAN	ULSTERIAN	DETROIT RIVER	Bois Blanc Fm	MACKINAC BRECCIA
PALEOZOIC	DEVONIAN	EARLY				Garden Island Fm	MACKINAC BRECCIA
PALEOZOIC	DEVONIAN	EARLY		CAYUGAN	BASS ISLANDS	Raisin River Dol	MACKINAC BRECCIA
PALEOZOIC	DEVONIAN	EARLY		CAYUGAN	BASS ISLANDS	Put-in-Bay Dol	MACKINAC BRECCIA
PALEOZOIC	DEVONIAN	EARLY		CAYUGAN	BASS ISLANDS	St Ignace Dol (Northern Peninsula)	MACKINAC BRECCIA
PALEOZOIC	SILURIAN	LATE	SILURIAN	CAYUGAN	SALINA	Pte aux Chenes Sh	
PALEOZOIC	SILURIAN	MIDDLE	SILURIAN	NIAGARAN		Engadine Dol	
PALEOZOIC	SILURIAN	MIDDLE	SILURIAN	NIAGARAN	MANISTIQUE	Cordell Dol	
PALEOZOIC	SILURIAN	MIDDLE	SILURIAN	NIAGARAN	MANISTIQUE	Schoolcraft Dol	
PALEOZOIC	SILURIAN	MIDDLE	SILURIAN	NIAGARAN	BURNT BLUFF	Hendricks Dol	Tibbits Ls
PALEOZOIC	SILURIAN	MIDDLE	SILURIAN	NIAGARAN	BURNT BLUFF	Byron Dol	
PALEOZOIC	SILURIAN	MIDDLE	SILURIAN	NIAGARAN	BURNT BLUFF	Lime Island Dol	
PALEOZOIC	SILURIAN	EARLY	SILURIAN	ALEXANDRIAN	CATARACT	Cabot Head Sh	
PALEOZOIC	SILURIAN	EARLY	SILURIAN	ALEXANDRIAN	CATARACT	Manitoulin Dol	
PALEOZOIC	ORDOVICIAN	LATE	ORDOVICIAN	CINCINNATIAN	RICHMOND	Big Hill Fm	
PALEOZOIC	ORDOVICIAN	LATE	ORDOVICIAN	CINCINNATIAN	RICHMOND	Stonington Fm	Opeche; Bay de Noc
PALEOZOIC	ORDOVICIAN	LATE	ORDOVICIAN	CINCINNATIAN	RICHMOND	Bill's Creek Sh	Collingwood
PALEOZOIC	ORDOVICIAN	MIDDLE	ORDOVICIAN	MOHAWKIAN	TRENTON	Groos Quarry Fm	
PALEOZOIC	ORDOVICIAN	MIDDLE	ORDOVICIAN	MOHAWKIAN	TRENTON	Chandler Falls Fm	
PALEOZOIC	ORDOVICIAN	MIDDLE	ORDOVICIAN	MOHAWKIAN	BLACK RIVER	Bony Falls Fm	
PALEOZOIC	ORDOVICIAN	EARLY	ORDOVICIAN	CHAZYAN			
PALEOZOIC	ORDOVICIAN	EARLY	ORDOVICIAN	CANADIAN	PRAIRIE DU CHIEN	Oneota Dol	
PALEOZOIC	CAMBRIAN	LATE	CAMBRIAN	ST CROIXAN	LAKE SUPERIOR	Trempealeau Fm	Jordan Ss; Lodi; St. Lawrence
PALEOZOIC	CAMBRIAN	LATE	CAMBRIAN	ST CROIXAN	LAKE SUPERIOR	Munising Fm	Miner's Castle Ss; Chapel Rock Ss
PALEOZOIC	CAMBRIAN	EARLY (MIDDLE)	CAMBRIAN			Jacobsville Ss	

SUBSURFACE NOMENCLATURE

ROCK-STRATIGRAPHIC: FORMATION	MEMBER	GROUP	Approximate maximum thickness, in feet, of rock units in the subsurface — NO SCALE
Glacial Drift			
Subsurface only(?)			
Red Beds (unnamed)			220
Grand River Fm			
Saginaw Fm			750
Bayport Ls		GRAND RAPIDS	160
Michigan Fm		GRAND RAPIDS	600
Marshall Ss	Napoleon Sh	GRAND RAPIDS	130
Coldwater Sh			1300
Sunbury Sh	(Eastern Michigan)		160
Berea Ss	(Eastern Michigan)		260
Bedford Sh	(Eastern Michigan)		240
Antrim Sh	(Eastern Michigan)		660
Squaw Bay Ls	Generally undivided in subsurface		
Alpena Ls	Generally undivided in subsurface	TRAVERSE	830
Bell Sh			
Rogers City Ls			475
Lucas Fm		DETROIT RIVER	1450
Amherstburg Fm		DETROIT RIVER	
Sylvania Ss		DETROIT RIVER	800
Bois Blanc Fm		DETROIT RIVER	
Garden Island Fm		DETROIT RIVER	100
G Unit		BASS ISLANDS	700
F Evaporites		SALINA	3150
E Unit		SALINA	
D Evaporite		SALINA	
C Unit		SALINA	
B Evaporite		SALINA	
A-2 Carbonate		SALINA	
A-2 Evaporite		SALINA	
A-1 Carbonate		SALINA	
A-1 Evaporite		SALINA	
Generally undivided in subsurface		NIAGARA	980
Cabot Head Sh		CATARACT	200?
Manitoulin Dol		CATARACT	
Queenston Sh		RICHMOND	
Utica Sh	Collingwood	RICHMOND	950
Generally undivided in subsurface		TRENTON	1100
Glenwood		BLACK RIVER	
St Peter Ss			260
Shakopee Dol		PRAIRIE DU CHIEN	
New Richmond Ss		PRAIRIE DU CHIEN	
Oneota Dol		PRAIRIE DU CHIEN	425
Jordan Ss		LAKE SUPERIOR	750
Lodi		LAKE SUPERIOR	
St. Lawrence		LAKE SUPERIOR	
Franconia Ss		LAKE SUPERIOR	
Dresbach Ss		LAKE SUPERIOR	
Eau Claire		LAKE SUPERIOR	1175?
Mount Simon Ss		LAKE SUPERIOR	
Jacobsville Ss			1100+
PRECAMBRIAN			

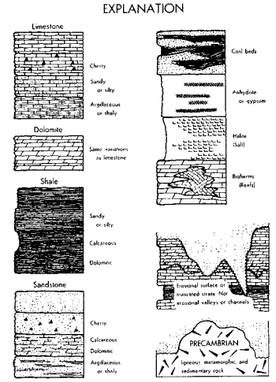
DOMINANT LITHOLOGY

INFORMAL TERMS

Principal oil and gas pays, and informal terms used in petroleum exploration and applied to parts of formations or groups in the subsurface

STRATIGRAPHIC POSITION	INFORMAL TERMS	PAYS
Basal sandstones of Saginaw Fm	Parma sandstone	
In lower part of Michigan	triple gyp; brown lime; stray strap ss; mass dol; stray ss	Gas; Gas & Oil
Marshall Ss		Gas & Oil
Coldwater Sh	Coldwater lime; Wow sand; Coldwater red rock	Gas
In upper part of Ellsworth Sh	Berea (Western Michigan)	Oil & Gas
Berea Ss	Berea sand (Eastern Michigan)	Oil & Gas
Squaw Bay Ls	Squaw Bay	Oil & Gas
Upper part of Traverse Group in Western Michigan	Traverse formation; Traverse lime; Sprey Lake zone	Oil & Gas; Oil & Gas
Rogers City Ls		Oil & Gas
Dundee Ls		Oil & Gas
Dundee Ls (?), Upper part of Lucas Fm (?)	Reed City zone	Oil & Gas
In Lucas Fm	massive salt; big salt; sour zone; massive anhydrite; big anhydrite; Richfield zone	Oil & Gas
Amherstburg Fm	Black lime	
Part of Salina Group E Unit	E zone (or Kimball zone)	Oil
Divisions of A-2 Carbonate in Western Michigan	A-2 dolomite; A-2 lime	Gas
A-1 Carbonate	A-1 dolomite	Oil & Gas
Upper part of Niagaran Series	brown Niagaran; gray Niagaran; white Niagaran	Oil & Gas
Part of Niagaran Series	Clinton shale (Eastern Michigan)	
Trenton Group		Oil & Gas
Black River Group	Black River formation; Black River shale; Van Wert zone	Oil & Gas
Oneota Dol		Oil

EXPLANATION



GEOLOGIC NAMES COMPILATIONS: Harry O. Sorensen: Cambrian and Ordovician. Robert W. Kelley: Early and Middle Silurian. Garland D. Ells: Late Silurian through Detroit River Group of Devonian age. Harry J. Hardenberg: Dundee Limestone through Traverse Group of Devonian age. L. David Johnson: Antrim Shale through the Pennsylvanian System. J. Wells Farrington: glacial geology of the Cenozoic.

CHART 1
1964

ABBREVIATIONS

A.A.P.G.	American Assoc. Petroleum Geologists
A.P.I.	American Petroleum Institute
(A) I.P.	(Acid) Initial Production or Potential
A-1 Carb.	A-1 Carbonate
A-2 Carb.	A-2 Carbonate
Bbls.	Barrels
B.B.	Bois Blanc formation
B.D.	Brine Disposal
BDW	Brine Disposal Well
BOPD	Barrels Oil Per Day
B.R.	Black River
Camb.	Cambrian
"Camb."	Unidentified Cambrian
Cat.	Cataract formation
c.f.p.b.	Cubic feet per barrel
C.H.	Cabot Head formation
Cinn.	Cincinnatian
Cl.	Clinton formation
Cold.	Coldwater formation
Compl.	Completion
Coop.	Cooperative
D & A	Dry and Abandoned
Dev.	Devonian
D.R.	Detroit River formation
D.R. SZ	Detroit River Sour Zone
Dres.	Dresbach formation
Dd., DD.	Dundee
Dd.-R.C.	Dundee-Reed City
DPT	Deeper Pool Test
E.C.	Eau Claire formation
Explor.	Exploratory
Fran.	Franconia formation
Geo. Test	Geological Test
G.O.R.	Gas-Oil Ratio
Grav.	Gravity, Gravimeter
GS	Gas Storage
GSW	Gas Storage Service Well
Gw	Glenwood
Incs.	Includes
Inj.	Injection
L.P.G.	Liquid Petroleum Gas
Marsh.	Marshall formation
MCF	Thousand Cubic Feet
MCFGPD	Thousand Cubic Feet Gas Per Day
Mich.	Michigan formation
Miss.	Mississippian
M.S.	Mt. Simon ss.
NFW	New Field Wildcat
(N) I.P.	(Natural) Initial Production or Potential
Niag.	Niagaran
Nt.	Nontechnical
OBS	Observation Well
OP	Out Post Well
Ord.	Ordovician
OWDD	Old Well Drilled Deeper
P.D.C.	Prairie du Chien formation
Penn.	Pennsylvanian
Pilot Wtr.	Pilot Water
P.M.	Pressure Maintenance
Prod. Form.	Producing Formation
R.C.	Reed City formation
RW	Reworked Well
Rich.	Richfield formation
Sag.	Saginaw formation
Sal.-Niag.	Salina-Niagaran
SD	Shut Down
Seis.	Seismograph
SO & G	Show Oil and Gas
S.P.	St. Peter formation
Stray	Michigan Stray formation
Sub.	Subsurface geology
SW	Service Well
SWD	Salt Water Disposal
Sylv.	Sylvania formation
SZ	Sour Zone (In Detroit River)
Thick.	Thickness
(T) I.P.	(Treatment) Initial Production or Potential
Trav.	Traverse
Tremp.	Trempealeau formation
Trent.-Blk River	Trenton-Black River
Unit.	Unitized

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Square miles	40
BRINE	
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TECHNICAL STAFF AND ORGANIZATION CHART

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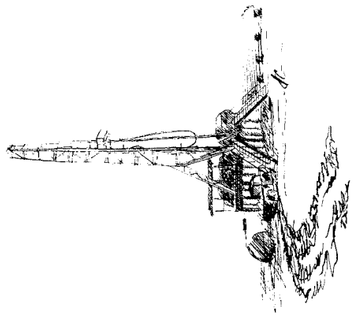
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