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SAND AND GRAVEL RESOURCES OF
JERAULD COUNTY, SOUTH DAKOTA

By

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INTRODUCTION

This pamphlet is one of a series of reports on the geology and hydrology of Jerauld County, South Dakota. It is designed to aid in the exploration and development of sand and gravel resources within the County. The purpose of the report is two-fold: (1) to disseminate information about sand and gravel as rapidly as possible, and (2) to express the technical data in a non technical manner that will be useful to the lay reader.

Other upcoming reports include "Major Aquifers in Aurora and Jerauld Counties, South Dakota," "Water Resources of Aurora and Jerauld County, South Dakota," and "Geology of Aurora and Jerauld Counties, South Dakota."

The first report describes the yield, quality and location of major aquifers (water-bearing deposits) in a short, easy to read pamphlet. The second and third reports are more technical and exhaustive investigations of the hydrology and geology of the Counties.

In addition it is recommended that the following publication be used as a companion reference to this pamphlet:

Evaluation of exploration methods for coarse aggregate in eastern South Dakota: South Dakota Geological Survey Report of Investigations No. 95.

GEOLOGIC TERMS

The following brief discussion of geologic terms is presented as an aid in understanding the discussion of sand and gravel deposits.

Outwash

Glacial outwash is a general term referring to any deposit of clay, silt, sand, gravel, or boulders that has been washed and sorted, and subsequently deposited by water from melting glacier ice. Depending on the amount of sorting action, the material may contain an abundance of silt and clay, or in the other extreme, outwash may consist primarily of boulders. Most outwash is a mixture of material between the two extremes. In other words, an outwash deposit is usually composed of sand and gravel.

Till

Till is the term used for the unsorted and unstratified material lodged beneath a glacier or let down by a glacier as the ice melted away. The mixture for the most part has not been subjected to the action of running water and therefore is a mixture of clay and silt containing a random mixture of sand,

gravel, and boulders. The material is locally called "boulder clay" or "blue clay."

Distribution of till is extensive throughout Jerauld County. However, within large areas of till there may exist small isolated hills or lenses of outwash material. The size of these hills or lenses may range from a very small knob or patch as small as 100 square feet to an area the size of several acres or several tens of acres. Thickness of the sand and gravel in the knobs or lenses may vary from a thin veneer to 50 feet, but generally the thickness is less than 20 feet. In some cases the larger and thicker isolated knobs and lenses of outwash may contain useable sand and gravel.

As a result of the complexities in the mechanics of deposition from the ice these small hills and lenses of outwash have a random occurrence. Their presence cannot generally be determined unless the outwash material is exposed or unless its presence has been determined through use of hand auger holes, test holes, or other sampling procedures.

Alluvium

Alluvium consists of a mixture of clay, silt, sand, and gravel that has been deposited by streams since the retreat of the glaciers. The grain size of the deposits will depend primarily on the velocity of the stream and may vary from place to place in the stream valley. Where deposits consist primarily of sand and gravel they may be mined for construction materials.

Bedrock Deposits

Bedrock deposits refer to the consolidated rocks underlying the glacial deposits. In Jerauld County the bedrock deposits are sedimentary and consist primarily of shale and chalk. No possibility exists of finding sand and gravel where the bedrock is present at the surface. However, sand and gravel deposits may occur in contact with bedrock along some drainage ways.

EXPLANATION OF TABLES

Table 1 is a list of test holes drilled in Jerauld County along with their locations. Most have been drilled by either the South Dakota Geological Survey or the United States Geological Survey. A few have been supplied by private drillers, the Division of Water Rights, or the United States Water and Power Resource Services. Only that part of the log which indicates sand and/or gravel has been included in order to reduce the amount of extraneous information.

Table 2 is a list of sand and gravel pits on file with the South Dakota Division of Highways. Where the information is available it also includes the type of

material being extracted, the average thickness of overburden, and the average thickness of sand and/or gravel being removed. The depths of some pits are determined by the water table and others by the predominance of medium to fine sand or clay.

EXPLANATION OF MAP

The map shows locations of test holes, gravel pits, and a few landmarks. Test holes are represented by three different symbols. A filled circle (●) represents a location in which sand and/or gravel was encountered in the upper 25 feet with overburden of 5 feet or less. A filled square (■) indicates a location at which sand and/or gravel was encountered in the upper 25 feet but the overburden exceeds 5 feet. Numbers accompanying these two symbols refer to table 1 which contains the pertinent information from the test hole logs. An unfilled circle (○) indicates a location where no sand and/or gravel was encountered in the upper 25 feet and are not numbered as they are not listed in the tables.

Gravel pits are designated by a crossed pick and shovel (⌘). Those with numbers are listed in table 2 and have additional data on file with the District Highway Office of the South Dakota Division of Highways in Huron, South Dakota. No attempt has been made to differentiate the active from inactive pits.

In addition, the map has been divided into three different area types determined by the probability of finding sand and/or gravel. The probability designations are "good," "fair," or "poor" and have been delineated by use of test hole data, gravel pit locations, topographic maps, aerial photographs, and field observations. Each area listed as "good" or "fair" has been assigned a capital letter (A through I) and are discussed below.

An area designated as "good" contains deposits that are generally (1) fairly thick--14 feet, (2) encompass a large area, and (3) are covered by little overburden; or are very thick but less continuous in lateral extent. Area A is a large outwash deposit

ranging from poorly sorted sand and gravel in the north where it is thickest, to well sorted sand in the southern sector of the area. In addition the outwash deposit has been dissected by drainage channels that have eroded the sand and/or gravel and deposited up to 5 feet of alluvium. Generally the alluvium directly overlies bedrock, but in some areas outwash is preserved as isolated patches of small extent beneath the alluvium.

Area G contains fairly coarse aggregate and has not been extensively developed. Area D is an outwash deposit that has been reworked by recent streams. It has been extensively developed and has the highest water table of the three areas designated as "good."

An area designated as "fair" contains deposits that are fairly thick but less areally extensive and have greater thicknesses of overburden. Area C is an example of such an area. The varying thickness of both sand and gravel sequences and overburden is primarily a result of erosive action since deposition. Areas B, E, H, and I all contain deposits of sand and gravel. However, these deposits are limited to small patches within existing drainage ways or have a relatively thick interval of overburden. Area F has been designated as "fair," for despite the lateral consistency the average thickness encountered is less than 8 feet.

An area designated as "poor" contains few sand and gravel pits. Some may be very productive but the deposits are localized and difficult of find without intensive exploration. Areas designated as "poor" are composed primarily of till.

GENERAL SUGGESTION FOR EXPLORATORY PURPOSES

It should be emphasized that the map is a general map to be used as a guideline for further exploration and development of sand and gravel resources. The development of specific sites would depend upon (1) materials specifications for desired use, (2) the economics of further testing and development, and (3) the availability of known sources.

TABLE 1. List of test holes in Jerauld County, South Dakota, which contains sand and/or gravel in the upper 25 feet.

Lithologic descriptions, as listed, have been condensed from data contained in driller's logs on file at the South Dakota Geological Survey, Vermillion,

South Dakota, and contain only pertinent information.

Test Hole No.	Location	Lithologic Description	From-to Feet
1	SW SW SW SW 10-108-67	Sand, yellow, coarse, silty	0- 7
2	NW NW SW NW 19-108-67	Sand, fine, silty and clayey	0-12
3	SW SW SW SW 31-108-67	Sand, medium to coarse Gravel, fine to medium Gravel, fine to medium	3-14 14-16 23-30
4	SW NW NW SE 25-108-67	Sand, brown, very silty; saturated	21-23
5	SE SE SE SE 36-108-67	Gravel, medium to coarse Gravel, fine to medium Sand, medium to coarse	8-11 16-18 25-31
6	NW NE NE SW 19-108-66	Sand, brown, coarse; moist, pebbly (Abandoned hole - rock)	12-15
7	SE SE SE SW 18-108-66	Gravel, medium, silty, clayey Sand, coarse	19-25 25-29
8	SW SW SW SW 1-108-66	Sand, gray, medium to coarse, silty; saturated	10-20
9	SE SE SW SW 13-108-66	Gravel, brown, coarse; dry Sand, black, medium; moist, pebbly	3- 5 5- 7
10	NW NW NW SW 24-108-66	Gravel, brown, medium; moist, sandy Gravel, yellow-brown, fine; moist, silty	0- 6 6- 8
11	NW NE NW NE 26-108-66	Gravel, brown, medium; dry, silty Sand, brown, medium; dry	0- 2 2- 6
12	SE SE SE SE 26-108-66	Sand, brown, coarse, silty	1- 7
13	NW NW NW NE 35-108-66	Gravel, yellow-brown; dry, silty	1- 3
14	SW SW SW NW 1-108-65	Sand, brown, coarse to pebbly, clayey; very hard Sand and gravel, medium sand to cobbles, clay; saturated at 15 feet	6- 8 8-17
15	NE NE NE NE 12-108-65	Gravel, brown, coarse, sandy, silty; dry, moist at 8 feet, saturated at 18 feet Sand, brown, coarse, gravelly; saturated	1-22 22-25
16	SE SE SW SW 25-108-65	Sand and rocks	20-30
17	NW NW NW NW 7-108-64	Gravel, medium to coarse	1-24

Test Hole No.	Location	Lithologic Description	From-to Feet
18	SE NE NW NE 5-108-64	Sand, medium brown, medium to silt	20-25
19	NW NW NW NW 15-108-64	Sand, all sizes, and gravel, some silt	22-34
20	NW NW NW NE 16-108-64	Sand, brown, medium to coarse, silty, gravelly; saturated	19-38
21	NW NW NW NW 16-108-64	Sand and gravel, brown, very clayey; moist Gravel, brown, medium; saturated Sand, brown, medium to coarse; saturated, clean Sand, gray, medium; saturated	1- 6 6- 8 8-17 17-21
22	SE SE SE NE 18-108-64	Sand, brown, fine to medium, very clayey; moist	4- 6
23	SW NW NW SW 16-108-64	Sand and gravel, brown, fine sand to cobbles; dry	0- 9+
24	SW SW SW SW 16-108-64	Gravel, sand, some silt Sand, all sizes, some gravel, fine to medium Gravel	1-10 10-49 49-54
25	NW NW NW NW 21-108-64	Sand, brown, medium, saturated	19-29
26	NE NE NE NE 19-108-64	Sand, dark buff, medium, silty, saturated Sand, dark buff, medium to coarse, silty, saturated	9-14 14-30
26a	NE NE NE NE 19-108-64	Gravel, coarse; shale pebbles	5-31
27	NW NW NW NE 19-108-64	Sand, brown, very fine to medium, silty; dry Sand, brown, fine to medium, clayey; saturated	4-14 19-23
28	NW SW SW NW 20-108-64	Sand and gravel, brown, fine sand to medium gravel, silty; dry Sand and gravel, fine sand to coarse gravel; dry, clean Sand, gray, medium to coarse, clayey; saturated	1- 5 5-11 18-28
29	NW NW NW NW 29-108-64	Sand, gray, clayey	21-25
30	NE NE NE NE 29-108-64	Gravel, sand, and silt Sand, coarse to fine, silt at top and bottom	2- 6 23-32
31	SE SE SE SW 20-108-64	Gravel, brown, fine, very silty; saturated, coarse sands	18-27
32	NE NE NE SE 20-108-64	Sand, brown, fine; dry Sand, gray, medium to very coarse, silty; saturated	3- 7 20-22
33	NW NW NW NE 21-108-64	Sand, brown, coarse, silty, pebbly; moist Gravel, brown, coarse, slightly silty; moist (saturated at 10 feet)	6- 7 7-18

Test Hole No.	Location	Lithologic Description	From-to Feet
34	SE SE SW SE 16-108-64	Gravel, coarse, shale pebbles	5-31
35	SW SW SW SW 15-108-64	Sand and gravel, light brown, poorly sorted Sand, brown, pebbly, medium to coarse Gravel, brown, coarse, sandy, clayey	0-4 4-19 19-29
36	SE SE SE SE 21-108-64	Sand, medium to coarse Sand, coarse, and gravel; wet below 12 feet	2-10 10-28
37	NW NW NW NE 27-108-64	Sand, yellow-brown, fine to medium; moist	5-6
38	SE SE SE SE 22-108-64	Gravel, sand, silt; some clay Sand, coarse, and gravel, fine	2-5 10-29
39	NE NE NW NE 26-108-64	Gravel; some sand and clay	1-5
40	SW NW SW SW 26-108-64	Sand, dark gray, very very pebbly, silty; saturated Gravel, light brown, grape size, containing abundant super-saturated silt and clay Gravel, light brown, poor cuttings, silt and clay	4-9 9-14 14-19
41	SE SE SE SE 33-108-64	Gravel, sand, and silt; some clay	19-21
42	SE SE SW SE 35-108-64	Gravel and sand, brown, poorly sorted Sand, brown, medium to coarse, silty Sand, gravel, and silt, dark brown; satu- rated, poorly sorted Sand, dark brown, medium to coarse, silty, well sorted	1-4 4-9 9-19 19-38
42a	SE SW SW SE 35-108-64	Gravel, coarse	2-21
43	NW SW SW NW 7-108-63	Sand and gravel, gray, coarse sand to fine gravel, silty; saturated Gravel, medium, clean Sand and gravel, coarse sand to medium gravel; saturated	18-26 26-30 30-54
44	NW NE NW NW 3-108-63	Sand, yellow-brown, medium to coarse, some pebbles, clayey; saturated Sand, gray, medium to coarse; saturated	7-10 10-18
45	NE SE NW NW 3-108-63	Gravel, brown, medium, and sand, very silty and clayey; saturated at 8 feet Gravel, coarse to medium, clean, well-sorted Gravel, brown, medium, to medium sand; clean	0-10 10-12 12-18
46	SW SW SW NE 3-108-63	Sand and gravel, yellow-brown, coarse sand to medium gravel, clayey; dry Sand, red-brown, medium to coarse; saturated at 7 feet, clean	2-6 6-13
47	SE SE SW SE 3-108-63	Sand, blue-gray, very fine, silty, clayey; saturated	5-13

Test Hole No.	Location	Lithologic Description	From-to Feet
48	NE NE NE NE 10-108-63	Sand, dark buff, fine, well-sorted, containing clay nodules	4-14
		Sand, dark buff, medium	14-19
		Sand, dark brown, coarse to very coarse; well-sorted	19-49
49	NE SE NE NE 10-108-63	Sand; saturated	1-40
50	NE NE NW NE 11-108-63	Sand, yellow-brown, coarse to pebbly, clayey, dirty; saturated	5- 9
51	SE SE NE SW 11-108-63	Sand, coarse	6- 8
		Sand	10-20
52	SE SE SE SE 10-108-63	Sand and gravel, rust, poorly sorted	0- 4
		Sand and gravel, light brown; saturated, black silty stringers	4- 9
53	SW SW SE SE 10-108-63	Sand, red-brown, fine to medium, some pebbles; dry, clean	1- 5
		Sand and gravel, fine sand to medium gravel; dry, clean	5- 9
54	NW NW NW NW 14-108-63	Gravel, fine to medium	0- 6
		Gravel, fine, to coarse sand	14-43
55	SW SW SW NW 14-108-63	Sand, red-brown, medium to pebbly, clayey; dry	1- 3
		Sand, brown, medium to coarse, clayey; saturated	3- 9
		Sand, gray, fine to coarse, clean; saturated	9-29
56	SE SE SE SE 12-108-63	Sand, brown, silty; clayey	2- 6
57	NW NW NW SW 13-108-63	Sand, gray, coarse sand to medium pebbles, very clayey, silty; saturated	4- 6
		Sand and gravel, yellow-brown, coarse sand to medium gravel, silty, clayey, dirty; saturated	6-13
58	SW SW SW SW 13-108-63	Sand, yellow-gray, medium sand to small gravel, clayey, silty; saturated	9-11
59	SE SE SE SE 24-108-63	Sand and gravel, yellow-brown, coarse sand to medium gravel, clayey, silty, dirty; saturated	6-10
		Sand, brown, coarse to very coarse, dirty; saturated	10-12
		Sand, gray, coarse to very coarse, clayey; saturated	13-20
60	NW NW NW NE 26-108-63	Sand, gray, coarse to pebbly, silty, clayey; moist	6- 9
		Sand and gravel, yellow-brown, medium sand to medium gravel, silty, clayey; saturated	9-12
		Sand, gray, fine to very coarse, clayey; saturated	12-20

Test Hole No.	Location	Lithologic Description	From-to Feet
61	NW NW NW NW 26-108-63	Gravel, brown to red-brown, medium to coarse; oxidized	8-25
62	SE SE SE SE 22-108-63	Sand and gravel, buff, clayey; saturated Gravel, brown, coarse to pea-size, silty; saturated Gravel, brown, fine to pea-size, sandy; saturated	4- 9 9-14 14-39
63	NW NW SW SW 23-108-63	Sand and gravel, fine to coarse	2-24
64	SW SW SW NW 23-108-63	Sand, gray-white, very fine, clayey; moist Sand, brown, medium, clean; saturated Sand, gray, very fine to medium pebbles, clean; saturated	2- 6 7- 8 8-29
65	SE NW SW SW 14-108-63	Sand, dark brown, very fine, silty; saturated Sand, brownish-gray, fine, silty; saturated	14-19 19-44
66	NW NW NW SW 22-108-63	Sand, brown, coarse, pebbly; saturated Sand, light gray, coarse, pebbly; saturated	7-10 10-30
67	SW SW SE SE 17-108-63	Gravel, fine to medium	19-24
68	SE SE SE NE 20-108-63	Sand, gray, very fine to medium, clayey; saturated	10-17
69	NE NE NE NE 28-108-63	Sand, yellow-brown, fine to medium, clayey; moist	3- 4
70	NW NW NW NE 27-108-63	Sand, gray, very fine to fine, clayey; saturated	10-12
71	NW SW SW SW 34-108-63	Sand, yellow-brown, very fine, pebbly; dry, clean Sand, brown, very fine, pebbly, slightly clayey; moist	2- 9 9-14
72	SE SE SE SE 34-108-63	Sand and gravel, poorly sorted Sand and gravel, silty; saturated, poorly sorted	0- 4 4-19
73	NW NW NW SW 35-108-63	Sand, yellow-brown, very fine, pebbles; dry, clean Sand, brown, fine to medium, pebbly, slightly clayey; moist, saturated at 10 feet Sand, gray, very fine to coarse, clayey; saturated	1- 4 4-20 20-35
74	SE SE SE SE 27-108-63	Sand, dark buff, fine Gravel, coarse, silty Sand, brown, very fine, well-sorted Sand, light gray, fine to medium, well sorted	0- 4 4- 9 14-24 24-62
75	NW NW NE SW 26-108-63	Sand, to medium gravel	10-45

Test Hole No.	Location	Lithologic Description	From-to Feet
76	SE SE NE 26-108-63	Sand, medium brown	13-16
77	NW NW NW SW 25-108-63	Sand, red-brown, fine to coarse, clayey; saturated Sand, red-brown, very fine; saturated, clean Sand, gray, very fine; saturated, clean	4- 7 7- 9 9-17
78	NW SW SW SW 36-108-63	Gravel, medium to coarse, sandy, thin clay stringers	10-23
79	NW NW NW SW 7-107-67	Sand and gravel, dark brown, poorly sorted Sand, dark brown, silty; gravel, pea-size Sand and gravel, dark brown, poorly sorted Gravel, cobble-size Sand, dark brown, medium, gravel, small to pea-size, silty; saturated at 42 feet	0- 4 4-19 19-24 24-39 39-44
80	SW SW SW SW 7-107-67	Gravel, poorly sorted, less than 1.5 inch; clay stringer 29 feet to 32 feet	10-55
81	NW NW NW SW 8-107-67	Sand and gravel, dark brown, poorly sorted Sand, dark brown, clayey, medium Sand, light brown, fine to medium; clean, with dark gray clay stringers Sand, gray, fine to medium, well-sorted Sand, light brown, medium, well-sorted; saturated at 29 feet Sand, dark brown, medium, clayey, well-sorted	0- 4 4- 9 9-14 14-24 24-39 39-44
82	SE SE NE NE 8-107-67	Gravel, red, medium to coarse	2-43
83	NE SE SE NE 4-107-67	Sand and gravel	2-20
84	SW SW SW NW 12-107-67	Sand, black, medium, silty; moist	4- 6
85	SW SW SW SW 12-107-67	Sand, pebbly, some clay Sand, medium to coarse, pebbly, few clay lenses	0- 4 19-39
85a	SW SW SW SW 12-107-67	Sand, light brown, medium, well-sorted, few clay stringers, few pebbles	2-27
86	NE NW NW NW 13-107-67	Sand, fine to medium gravel, some clay Sand, tan, fine, with clay Gravel	1-13 20-29 29-30
87	SE 11-107-67	Sand	0-20
88	NW NW SW SW 11-107-67	Sand, fine to medium, gravelly Sand, medium to coarse, well-sorted; clean Gravel, sand, and clay, in alternating layers Sand, medium, some clay; saturated at 19 feet Gravel, clayey Sand, medium to coarse, shaley below 39 feet	0- 7 7- 9 9-14 14-24 24-32 32-47
89	SW SW SW SW 9-107-67	Gravel, coarse, silty, poorly sorted	0- 9

Test Hole No.	Location	Lithologic Description	From-to Feet
89 -- continued.		Gravel, medium to fine, well-sorted, grades to sand, hit rock at 14 feet. abandoned hole	9-14
90	NW NW NW NW 16-107-67	Gravel, medium to coarse	1-23
91	SW SW SW SW 16-107-67	Gravel, medium to coarse	2-11
92	NE NW SW 30-107-67	Sand, coarse, and gravel, some very large cobbles	7-21
93	NW NE NE SW 30-107-67	Sand, brown, coarse, gravelly	7-21
94	SW SE NW SW 29-107-67	Sand, gray, fine, clayey; moist Sand, and gravel, clayey; moist	16-21 21-26
95	SE SE SW SE 29-107-67	Sand, gray, fine Sand and gravel, gray Sand and gravel, coarse sand to medium gravel, clayey	4-12 12-20 20-27
96	NE NW NE 32-107-67	Sand, gray, fine Sand and gravel Sand and gravel, clayey	4-12 12-20 20-28
97	SW NW SW SW 27-107-67	Gravel, fine Gravel, fine to medium	1- 9 14-21
98	NE NE NE NE 28-107-67	Gravel, fine	1- 3
99	SE SE SE SE 15-107-67	Gravel, medium to coarse	12-31
100	NW NW NW NE 24-107-67	Sand, brown, coarse, pebbly; dry Sand, yellow-brown, coarse; moist, clay layer at 11 feet to 13 feet	0- 5 6-23
101	NE NE NE NW 25-107-67	Sand, brown, coarse; dry Sand, brown, medium; moist Sand, medium to coarse, pebbly, silty Gravel, brown, fine, silty; saturated	0-11 14-22 22-45 45-61
102	NE NE NE NE 26-107-67	Gravel, brown, medium to coarse, clayey	22-31
103	SW SW SW SW 25-107-67	Sand, brown, silty; dry	3-11
104	SW SW SW SW 35-107-67	Gravel, coarse	7-11
105	SE NW NE NW 6-107-66	Gravel Sand Sand	0-10 14-24 26-32
106	NW NW SW NW 20-107-66	Sand, brown, medium; dry, silty, pebbly	0- 6
107	NE NE NE NE 11-107-66	Sand and gravel, medium to coarse	21-52
108	SW SW SW NW 12-107-66	Sand, fine to coarse and medium gravel	2- 8
109	SW SW NW NW 13-107-66	Sand, brown, coarse; dry	0- 2

Test Hole No.	Location	Lithologic Description	From-to Feet
109 -- continued.		Gravel, brown, fine to medium; dry, sandy	2-10
		Gravel, brown, medium; moist, sandy	10-13
110	SE SE SE SE 14-107-66	Gravel, medium	1- 8
111	SE NW SE NE 13-107-65	Gravel, brown; saturated; some clay	4-14
		Gravel, fine; saturated	14-19
112	NE SW SW NE 13-107-65	Sand, yellow-brown, fine; dry	4-14
113	NE NW NW NW 14-107-65	Gravel and large rocks (abandoned hole-rock)	24-35
114	SW SW SE SE 28-107-65	Sand and gravel; abandoned hole due to caving	10-35
115	NW NW NW NW 2-107-64	Sand, fine to coarse	12-30
116	NE NE NW NW 2-107-64	Sand, fine; silty; wet	21-27
117	NE NW NW NE 2-107-64	Gravel and sand	0-12
118	NW NW NW NW 1-107-64	Gravel and sand	5- 6
		Gravel and sand	14-16
		Sand; some gravel	25-41
119	NW NE NE NW 1-107-64	Sand, brown, very fine; dry	0- 2
120	SE SE SE SW 2-107-64	Sand, brown, medium, silty, pebbly; moist	1- 8
		Gravel, brown, medium, silty; moist (saturated at 12 feet)	8-13
		Gravel, red-brown, coarse, silty; saturated	13-36
121	SW SW SW SW 3-107-64	Gravel	1- 5
		Gravel, some sand and small amount of silt	10-14
		Gravel, gray, increasing clay content	14-16
122	NE NE NE NE 9-107-64	Sand, very coarse, to silty; some clay, brown, easily drilled	12-27
123	NW NW NW NE 15-107-64	Sand, light brown, fine to medium, very clayey; moist	7- 9
		Sand, light brown, fine; saturated	11-17
124	SW SE SE SE 15-107-64	Gravel, brown; saturated; 40% clay	9-14
		Gravel, brown; saturated; 50% clay	14-22
125	SW SW SW NW 23-107-64	Gravel, medium to coarse, subrounded to sub-angular	10-14
126	NW NW NW NW 26-107-64	Sand, medium to fine; wet and sloppy	14-20
127	NE NE NE NW 26-107-64	Sand, brown, silty; saturated	10-11
		Sand and gravel, coarse sand to medium gravel, silty; saturated	14-20
128	NE NE NE NE 7-107-63	Sand, yellow-brown, medium to pebbly, clayey, dirty; saturated	6- 7

Test Hole No.	Location	Lithologic Description	From-to Feet
129	NE NE NW NE 10-107-63	Sand, dark gray, fine to medium	9-34
130	SE SE SE NE 3-107-63	Sand and gravel, brown, fine sand to fine gravel, clean; dry Sand and gravel, brown, medium sand to fine gravel, clayey, dirty; saturated Pebbles, gray, some sand, 4-7mm in size; saturated, clean	1- 5 5-13 13-30
131	NE NE NE NW 2-107-63	Sand, brown, medium to coarse, silty, dirty; saturated Sand and gravel, gray, silty; saturated	14-16 16-22
132	SE SE SE SE 2-107-63	Sand, yellow-brown, fine to pebbly, clayey; saturated at 4 feet, dirty	2- 9
133	SE SE SW SE 10-107-63	Sand, yellow-brown, very fine; dry, clean Sand, brown, fine to medium; moist, clean Sand, brown, medium to coarse, clayey; saturated	1- 4 4- 5 5-12
134	SW SW SW SE 15-107-63	Sand, red-brown, fine to coarse, pebbly; dry, clean	1-10
135	NE NE NE NE 24-107-63	Gravel and boulders Gravel and boulders	18-21 22-28
136	NE SE NE NE 24-107-63	Sand, very fine, silt and clay	0- 6
137	SW SW SW NW 23-107-63	Sand; fine to medium; dry, saturated below 8 feet, clean	1-21
138	NE NE NE NE 27-107-63	Sand, medium, silty, clayey; saturated	7-11
139	NE NW NW NW 35-107-63	Sand and gravel; fine sand to coarse gravel; dry, clean	1-14
140	NE NE NE NE 35-107-63	Sand, red-brown, very fine to coarse; dry, clean	1- 7
141	NE NW NE NE 36-107-63	Gravel, medium, sandy; dry, clean Sand, medium; moist, clean	1- 4 4-15
142	NW NW NW SW 36-107-63	Gravel, red-brown, coarse, sandy; dry, clean	1- 4
143	SW SW SW SW 36-107-63	Gravel, orange-brown, medium, sandy, clayey; saturated, dirty	5-10
144	SE SE SE SW 36-107-63	Sand, brown, coarse, pebbly, clayey; saturated Sand, gray, coarse, pebbly, clayey; saturated	4- 7 7-12
145	NE SE SE NE 7-106-67	Gravel, reddish-brown, medium, very sandy Sand, reddish-brown, very fine, clayey, silty	2- 7 7-23
146	SE SW SE SW 30-106-67	Sand, brown, poorly sorted Gravel, brown, very sandy, silty Sand, pebbly, clay nodules	0- 4 4-14 14-19


Test Hole No.	Location	Lithologic Description	From-to Feet
147	SW SW SW NW 31-106-67	Sand, medium to coarse Sand, medium to coarse, some clay	4- 9 11-25
148	NW NW NW SW 33-106-67	Gravel, very coarse, very sandy, clayey at 9 feet to 27 feet; saturated at 15 feet	1-27
149	SW SW SW SW 33-106-67	Sand and gravel, red-brown, fine sand to medium gravel; dry, saturated at 19 feet, clean	0-22
150	SE SE SE SE 33-106-67	Sand, coarse Gravel, coarse	0- 4 4-17
151	NW SW SW NW 34-106-67	Sand, brown, coarse, pebbly; dry Gravel, fine to medium, sandy, silty; saturated 37 feet	1- 3 3-50
152	SE SE SW SW 27-106-67	Gravel, brown, medium, clayey; dry (abandoned hole on rock)	20-32
153	SW SE SW SE 27-106-67	Gravel, brown, medium, sandy, silty; dry, moist at 35 feet	6-55
154	SW SE SW 8-106-66	Sand and coal	1-10
155	SW SW SW NW 2-106-66	Gravel, brown, fine to medium, silty; saturated Sand, brown, coarse, silty; saturated	23-43 43-50
156	SE NE NW SE 10-106-66	Gravel, coarse, sandy, with large cobbles	12-25
157	SE SE SE SW 10-106-66	Gravel, brown, medium, sandy, silty; moist	12-15
158	SE SE SW SE 19-106-66	Gravel, brown, medium, sandy, clayey; moist, saturated at 9 feet	7-28
159	SW SW NW NW 29-106-66	Sand, brownish-gray, fine to coarse, silty; moist Sand, brownish-gray, fine to coarse, silty, gravelly Sand, brownish-gray, fine to very fine, silty, clayey	10-12 12-22 22-27
160	NW SW SW SW 22-106-66	Sand, brown, coarse to medium, and gravel, coarse, cobble gravel from 20 feet to 25 feet, and from 27 feet to 28 feet, stopped by boulder at 28 feet	20-28
161	NE NE SE SE 23-106-66	Sand, brown, medium, very pebbly; dry Sand, brown, coarse, pebbly, clayey; moist Sand, light brown, coarse; moist Sand, brown, coarse, pebbly; moist	0- 3 3-10 10-11 11-16
162	NW NW NW SW 24-106-66	Sand, brown, fine, pebbly; dry Sand, brown, medium, pebbly; moist (saturated at 12 feet)	0- 4 4-15
163	SE SE SE SW 13-106-66	Gravel; 25% brown clay, saturated	9-22


Test Hole No.	Location	Lithologic Description	From-to Feet
163a	SE SE SE SW 13-106-66	Sand and gravel, medium to coarse	0-24
164	SE SE NW NE 13-106-66	Gravel, brown, cobbles to coarse sand Gravel, gray-brown, cobbles to coarse sand	1-16 18-22
165	SE SE SW NW 18-106-65	Gravel, brown, clayey, with cobbles Sand, gray, fine, silty; dry Sand, clayey, and gravel Sand, gray, silty; moist	0- 4 4- 6 6-16 16-51
166	NE NE NE NE 23-106-65	Sand and gravel, medium, subrounded	2- 7
167	NE NE NE NW 24-106-65	Sand and gravel, red-brown, very fine sand to medium gravel, clean, dry	4-12
168	NW SE NE SE 22-106-65	Sand and gravel, brown; dry	1- 9
169	SW SE SW SE 23-106-65	Sand and gravel, brown, coarse; sand, dry	2-11
170	NE NW NE NE 26-106-65	Sand and gravel, brown, coarse, sand, with large cobbles	10-19
171	SW NW NW NW 25-106-65	Sand, coarse, clean, some gravel	3-10
172	NW NW NW NW 25-106-65	Gravel; dry Gravel, fine; moist Gravel, medium pebbles; saturated	0- 4 4- 9 9-12
173	SW SW SW SE 24-106-65	Sand, red-brown, pebbly, clayey; dry	3- 4
174	SW SW SW SE 25-106-64	Sand, light brown, medium, silty; moist Sand, light brown, medium, slightly silty; moist (saturated at 14 feet) Sand, gray, medium, silty; saturated	6- 9 10-38 38-45
175	NE NE NE NE 1-106-63	Sand, medium to coarse	0-15
176	NE NE NE SE 1-106-63	Sand, brown, very fine to fine, clayey; moist	12-13
177	SE SE SE SE 1-106-63	Sand, medium to very coarse, gray below 14 feet	8-16
178	NW NW NE NE 13-106-63	Sand	0-40
179	NW NE NE NE 21-106-63	Sand, fine to medium, subrounded to subangular Sand and gravel, medium to coarse, subrounded to subangular	17-19 23-34


TABLE 2. List of sand and gravel pits in Jerauld County, South Dakota, which are on file at the District Office, South Dakota Division of Highways, Huron, South Dakota

Pit No.	Owner and Address	Location	Type	Average Thickness of Aggregate Deposits (in feet)	Average Overburden Thickness (in feet)
1	Scott, LeRoy	NW¼ 10-108-64	Sand & Filler		
2	Newmeyer, Melvin - Alpena	SE¼ 3-108-64	Filler		
3	SD Department of Transportation - Pierre	NE¼ 10-108-64	Filler	8.8	2.2
4	Eable, Ted - Wessington Springs	SW¼SE¼ 16-108-64	Gravel		
5	Department of School & Public Lands - Pierre	SE¼SW¼ 16-108-64	Gravel	11.8	2.0
6	Witney, S. J. - Wessington Springs	NE¼ 21-108-64	Gravel	8.6	1.5
7	Kopfman, Ernest - Alpena	SW¼SE¼ 35-108-64	Gravel	9.4	1.5
8	Jerauld County - Alpena Commercial Club	NW¼NE¼ 3-108-63	Gravel	9.8	1.7
9	Jacobs, Robert - Alpena	N¼SE¼ 3-108-63	Gravel & Sand	8.9	1.6
10	Hannah, Thomas - Alpena	SE¼ 10-108-63	Gravel	6.4	2.1
11	Uttecht, G. E. - Alpena	NE¼ 14-108-63	Gravel	6.2	1.6
12		SE¼ 14-108-63	Gravel		
13	Kopfman, Ernest - Alpena	SW¼ 22-108-63	Gravel	6.2	2.5
14	Mettler, Helmuth - Wessington Springs	SW¼ 5-107-67	Sand	16.5	1.5
15		NW¼ 18-107-67	Sand		
16	Vavra, Joe - Wessington Springs	NE¼ 16-107-67	Gravel	10.9	3.3

17	Lass, J. F. - Wessington Springs	SW¼ 12-107-67	Sand	14.3	2.0
18		W½ 11-107-66	Gravel		
19	Radke, Wm. - Wessington Springs	NW¼ 14-107-66	Gravel	9.0	2.0
20	Dean, Dr. E. R. - Wessington Springs	NE¼ 14-107-66	Gravel	10.0	1.3
21	Bult, Peter, Jr. - R. R. 3 - Wessington	SW¼ 12-107-66	Gravel	9.3	2.8
22	Dakota Wesleyan University - Mitchell	NE¼ 2-107-64	Gravel		
23	Berg, Joe - Mitchell	SE¼ 2-107-64		6.1	2.3
24	Van Fee, Deatus - Aloena	SW¼ 2-107-64	Gravel	6.8	2.0
25	Reiner, Edwin - Wessington	SE¼ 15-107-64	Gravel	7.6	3.8
26	Stammerjohn, Gust - Woonsocket	NW¼ 1-107-63	Gravel	8.0	1.0
27	Beigh, Sam - Woonsocket	SW¼ 26-107-63	Gravel	9.8	1.5
28		S½ 26-107-63	Gravel		
29	Houlihan, James - Woonsocket	NE¼ 35-107-63	Gravel	4.7	1.7
30	Barber, Dale - Rapid City	SW¼ 15-106-66	Gravel		
31	Thompson, Bennett - Wessington	SW¼ 13-106-65	Gravel	4.9	3.7
32	Koehn, Chester, H. - Chicago, IL - Smith, A. F. - Agent, 308 West Blvd. - Mitchell	SW¼ 13-106-64	Gravel	5.4	2.2
33	Hein, Harry - Woonsocket	SE¼ 25-106-64	Sand		
34	Stammerjohn, Gust - Woonsocket	NW¼ 1-106-63	Gravel		
35	Stammerjohn, Gust - Woonsocket	E½ 1-106-63	Gravel	7.3	1.8

 Good probability of finding sand or gravel deposits.

 Fair probability of finding sand or gravel deposits.

 Poor probability of finding sand or gravel deposits.

Letters A through I designate areas described in the text

39 ● Test hole containing sand or gravel in upper 25 feet with 0–5 feet of overburden. Number refers to table I.

16 ■ Test hole containing sand or gravel in upper 25 feet with 6–25 feet of overburden. Number refers to table I.

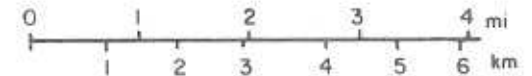
○ Test hole containing no sand or gravel in upper 25 feet.

(20) ✕ Gravel pit; those with a number are listed in table 2.

--- Approximate boundary



Index map of South Dakota showing location of Jerauld County

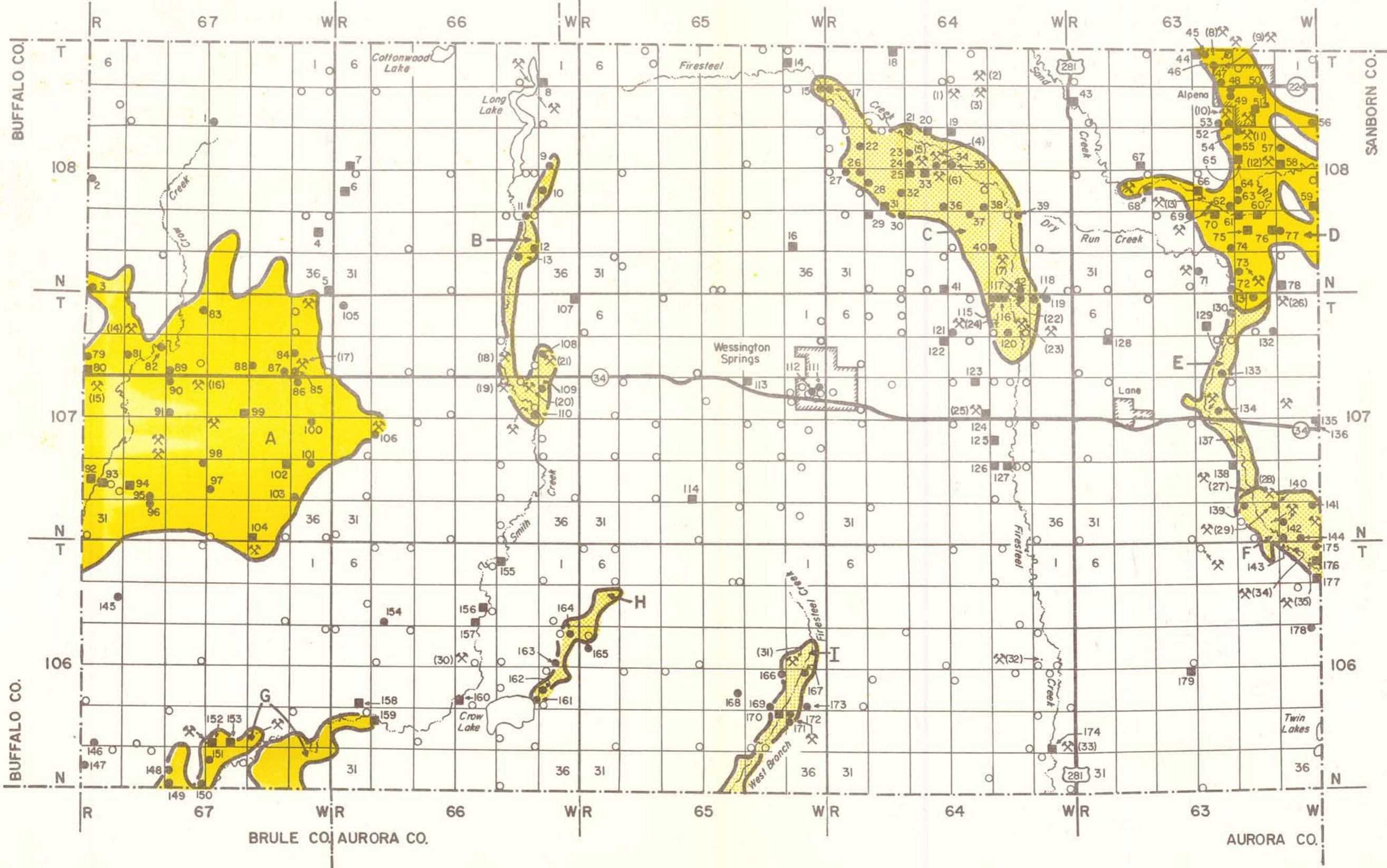


6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Sectionized township

Map showing test holes, gravel pits, and sand and gravel deposits in Jerauld County, South Dakota.

HAND CO. | BEADLE CO.



BRULE CO. | AURORA CO.

AURORA CO.

