STATE OF ILLINOIS
HENRY HORNER, GOVERNOR
DEPARTMENT OF REGISTRATION AND EDUCATION
DIVISION OF THE
STATE GEOLOGICAL SURVEY
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BULLETIN No. 62

Classification and Selection of Illinois Coals

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PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS

URBANA, ILLINOIS
1935
REPRINTED, 1936

January 14, 1965

Illinois Geological Survey
Bulletin 62, "Classification and Selection of Illinois Coals" (1936)
Supplement to Bulletin 62, "Analyses of Illinois Coals" (1948)

Identity of Illinois mine index numbers of mines abandoned and identified in Bulletin 62, pp. 327-329 and Supplement, pp. 71-74, mines abandoned since publication of the Supplement, and mines identified in United States Bureau of Mines publications.

Mine Index No.	Coal Bed	Company	Mine	Location
		BOND COUNTY		
218	No. 6	Pocahontas Mining Co.	#1	3-4N-4W
		BUREAU COUNTY		
1	No. 2	Spring Valley C. C.	#5	24-16N-11E
8	No. 2	Marquette Third Vein C.M.Co.	#1	31-16N-11E
10	No. 2	Cherry C. C.	Cherry	27-17N-11E
532	No. 7	Cherry C. C.	Cherry	27-17N-11E
651	No. 6	Coal Creek N. C.	Coal Creek Strip	31-16N-7E
		CHRISTIAN COUNTY		
21	Assumption	Assumption C. & M. Co.	#1	2-12N-1E
219	No. 6	Peabody C. C.	#9	19-13N-2W
220	No. 6	Peabody C. C.	#8	8-13N-3W
221=BM56	No. 6	Smith Lohr C. C.	#1 Springside	15-11N-1E
222	No. 6	Pana C. C.	#2	15-11N-1E
		CLINTON COUNTY		
84	No. 6	Southern C. & M. Co.	#9	17-1N-5W
85	No. 6	Breese-Trenton M. Co. (Beckemeyer C. C.)	Buxton	22-2N-3W
198	No. 6	Breese-Trenton C. C.	Breese	22-2N-4W
199	No. 6	Breese-Trenton M. Co.	North Breese	23-2N-4W
		EDGAR COUNTY		
614	No. 5 & 7	Edgar County C. C.	#1	20-14N-10W
		FRANKLIN COUNTY		
50=BM22	No. 6	Old Ben C. Corp.	#16	19-5S-2E
51	No. 6	Brazil Block C. C. (Peabody C. C., #19)	#11	18-7S-3E
52	No. 6	Hart-Williams C. C.	#2	30-6S-3E
53	No. 6	Bell & Zoller M. C.	Leiter #1	13-7S-1E
56	No. 6	W. P. Rend Collieries Co. (Old Ben C. Corp., #19)	#1	4-6S-2E
57=BM16	No. 6	Franklin County C. & C. Co.	#7	23-7S-1E
58=BM14	No. 6	Old Ben Coal Corp.	#12	30-6S-2E
134	No. 6	Interstate C. C.	Sesser #22	12-5S-1E
136	No. 6	Old Ben Coal Corp.	Valier #22	1-6S-1E
139	No. 6	U. S. Fuel Co.	Middlefork	21-6S-3E
140	No. 6	Black Starr C. C.	Logan	35-6S-3E

Mine Index No.	Coal Bed	Company	Mine	Location
		FRANKLIN COUNTY (Cont'd.)		
143=BM66	No. 6	Old Ben C. Corp.	#8	25-7S-2E
145	No. 6	Bell & Zoller C. C.	#2	26-7S-1E
147=BM68	No. 6	Western C. & M. C.	Bush #2	31-7S-1E
256	No. 6	Peabody C. C.	#18	8-7S-3E
655=BM13	No. 6	Old Ben C. Corp.	#14	20-6S-2E
BM15	No. 6	Chi. Wil. & Franklin C. C.	Orient #1	10-7S-2E
BM19	No. 6	Brewerton C. C.	#21	24-7S-2E
BM21	No. 6	Old Ben C. Corp.	#10	24-6S-1E
BM64	No. 6	Old Ben C. Corp.	#11	14-6S-1E
BM65	No. 6	Old Ben C. Corp.	#9	20-7S-3E
BM67	No. 6	Franklin County C. C.	#5	33-7S-2E
		FULTON COUNTY		
28	No. 5	Monmouth C. C.	"A"#1	11-7N-4E
29	No. 5	Alden C. C.	#6	27-8N-4E
30	No. 5	Maplewood C. C.	#2	15-8N-4E
31	No. 5	Big Creek C. C.	#2	16-6N-4E
32	No. 5	Star C. C.	#1	28-7N-3E
105	No. 1	Spoon River Colliery C.	Ellisville	28-8N-2E
111	No. 5	Alden C. C.	#8	3-8N-4E
112	No. 5	Silver Creek Colliery Co.	Silver Creek	4-8N-4E
113	No. 5	Maplewood C. C.	#1	11-8N-4E
114	No. 5	Canton C. C.	#1	34-8N-4E
115	No. 5	Coal Creek M. C.	Parrville #1	30-8N-3E
116	No. 5	Simmons C. C.	Simmons	14-7N-4E
118	No. 5	E. G. Bader C. C.	Eclipse	14-3N-1E
367	No. 5	Linkenfelter & Sons	#1 Drift	26-7N-3E
520	No. 5	Tom Wilson	Wilson	3-3N-2E
		GALLATIN COUNTY		
47	No. 5	Gallatin C. & C. Co.	#1	20-9S-8E
135	No. 5	Hickory Hill C. C.	Hickory Hill	23-9S-8E
223	No. 6	Sam Black	Bentley	13-10S-8E
230	No. 5	J. H. Booten	Booten	18-10S-8E
631	Lower Willis	E. V. Schneider	E. V. Schneider	30-10S-9E
640	No. 5	Cedar Hill M. C.	Cedar Hill	19-10S-9E
648	No. 5	Logan Highway C. C.	Hickory Hill	14-9S-8E
659	No. 5	Roy Thurman	Colbert	18-10S-8E
		GREENE COUNTY		
329	No. 4	Greenfield M. C.	Greenfield	27-11N-10W
347	No. 4	Greene County C. C.	Poli	28-11N-10W
		GRUNDY COUNTY		
5	No. 2	Wilmington Star M. C.	#7	5-32N-8E
6	No. 2	Big Four Wilmington C. C.	#6	26-33N-8E
7	No. 2	Chi., Wil., & Vermilion C.C.	#1	14-31N-8E
530	No. 6	Wright Bros. C. C.	#1 Verona	23-32N-6E
625	No. 2	Morris C. & M. Co.	#2(Morocco)	34-34N-7E
652	No. 6	Clark City-Wilmington C. C.	Clark City	25-31N-8E

Mine Index No.	Coal Bed	Company	Mine	Location
		HANCOCK COUNTY		
609	No. 2	Three Counties C. Corp.		27-3N-5W
		HENRY COUNTY		
237	No. 1	Warner C. C.	Rex	3-16N-1E
252	No. 1	Blossomberg C. C.	Blossomberg	19-17N-1E
354	No. 1	Rodamsky and White	Local	28-17N-2E
527	No. 6	W. T. Lamb C. C.	Lamb	16-15N-5E
619	No. 2	Midland Electric C. C.	Atkinson Strip	36-17N-4E
635	No. 6	Pettit and Head	Pettit and Head	9-15N-5E
		JACKSON COUNTY		
12	Murphysboro	Gus Blair Big Muddy C. C.	#2	32-8S-2W
13	Murphysboro	Big Muddy C. & Iron Co.	#9	34-8S-2W
14	Murphysboro	Gartside C. C.	#4	29-8S-2W
15	Murphysboro	Big Muddy C. & Iron Co.	Harrison #10	33-8S-2W
16	Murphysboro	Gus Blair Big Muddy C. C.	#1	29-8S-2W
55	No. 6	Muddy Valley C. C.	Muddy Valley	29-7S-1W
183	No. 5 & 6	Union Colliery Co.	Kathleen	5-7S-1W
419	No. 6	Truax Traer C. C.	Black Servant	18-7S-1W
602	Murphysboro	J. P. Swofford C. C.	#2	36-9S-1W
604	Murphysboro	Templeton C. C.	Slope	16-9S-2W
607	Murphysboro	Thomas G. Phillips	Drift	36-9S-1W
		JEFFERSON COUNTY		
BM 63	No. 6	Illinois C. Corp.	#10	15-4S-2E
		KNOX COUNTY		
236	No. 4	Adcock M. C.	Soperville	21-12N-1E
355	No. 1	Galesburg M. C.	Galesburg	16-11N-2E
526	No. 6	Diehle Mine	Diehle	29-14N-4E
632	No. 1	Knoxville M. C.	Knoxville	23-11N-2E
		LASALLE COUNTY		
2	No. 2	Oglesby C. C.	Oglesby	25-33N-1E
3	No. 2	LaSalle Carbon C. C.	LaSalle	15-33N-1E
9	No. 2	Illinois Zinc Co.	Black Hollow	30-33N-2E
99	No. 6	Chi., Wil., & Vermilion C. C.	#3	24-31N-3E
102	No. 2	LaSalle County Carbon C. C.	Cedar Point	4-32N-1E
103	No. 2	Rutland C. C.	Rutland	18-29N-2E
231	No. 6	Matthieson and Hegeler	M. and H.	14-33N-1E
358	No. 2	Peru Deep Vein C. C.	#3	16-33N-1E
370	No. 2	Osage C. C.	Osage #1	14-33N-2E
620	No. 6	French C. C.	Local	3-31N-3E
645	Spring Lake	Spring Lake C. C.	Spring Lake	22-31N-3E
657	No. 2	McElwain C. C.	Echo	8-33N-4E

Mine Index No.	Coal Bed	Company	Mine	Location
		LIVINGSTON COUNTY		
215	No. 6	Pontiac C. M. C.	#1	15-28N-5E
216	No. 6	Fairbury C. C.	Fairbury	5-26N-6E
600	No. 6	Fairbury Coop. C. C.		11-26N-6E
		LOGAN COUNTY		
33	No. 5	Latham C. C.	North shaft	30-20N-2W
109	No. 5	Citizens C. C.	Citizens	32-20N-2W
		MCDONOUGH COUNTY		
22	No. 2	Colchester C. C.	Shaft	13-5N-4W
213	No. 2	Elmer Hamilton	M. G. Davis	4-6N-4W
		MCLEAN COUNTY		
100	No. 2 & 5	McLean County C. C.	Bloomington	5-23N-2E
		MACON COUNTY		
41	No. 5	Decatur C. C.	Niantic	12-16N-1W
42	No. 5	Manufacturers & Consumers C. C. (Macon County C. C.)	#1	14-16N-2E
		MACOUPIN COUNTY		
66	No. 6	Superior C. C.	#3	36-8N-7W
67	No. 6	Glenridge C. C.	North	9-12N-6W
68	No. 6	Consolidated C. C.	#15	9-7N-6W
69	No. 6	Carlinville C. C.	Carlinville	28-10N-7W
185	No. 6	Chi., Wil., & Franklin C. C.	Royal	8-12N-6W
186	No. 6	Illinois Coal & Coke Co.	Empire #4	32-12N-6W
187	No. 6	Standard Oil Co.	#1	21-10N-7W
188	No. 6	Superior C. C.	#4	10-7N-7W
189	No. 6	Consolidated C. C.	#7	21-7N-6W
190	No. 6	Consolidated C. C.	#4	30-7N-6W
503	No. 6	Superior C. C.	#2	6-7N-6W
534=BM31	No. 6	Superior C. C.	#1	29-8N-6W
		MADISON COUNTY		
70	No. 6	Madison C. Corp.	#2	34-4N-8W
71	No. 6	Lumaghi C. C.	#2	25-3N-8W
72	No. 6	Livingston & Mt. Olive C. C.	#1	16-6N-6W
75	No. 6	Mt. Olive & Staunton C. C.	#2	10-6N-6W
191	No. 6	Madison County M. C.	Madison County	10-4N-8W
192	No. 6	Abbey C. C.	Abbey	33-3N-8W
627	No. 6	Carlin C. C.	Bethalto	6-5N-8W
629	No. 6	Stiers Bros. Construction Co.	Stiers Bros.	31-6N-8W
644	No. 6	Chicopee C. C.	Troy	9-3N-7W

Mine Index No.	Coal Bed	Company	Mine	Location
		MARION COUNTY		
87	No. 6	Odin C. C.	Odin	13-2N-1E
206	No. 6	Chicago, Sandoval C. C.	#2	17-2N-1E
207	No. 6	Marion County C. C.	Glen Ridge	31-2N-1E
		MARSHALL.COUNTY		
4	No. 2	Wenona C. C.	Wenona	24-30N-1E
11	No. 2	Toluca C. C.	#1 and #2	8-29N-1E
360	No. 7	Lopeman and Butler		34-12N-9E
361	No. 7	E. L. Colwell		35-13N-9E
362	No. 7	Spar and Reed	Sparland	15-12N-9E
363	No. 7	Tony Turk		2-12N-9E
364	No. 7	Bartol Biwar		14-12N-9E
365	No. 7	Callear and Pitcher		34-12N-9E
		MENARD COUNTY		
34	No. 5	Wabash C. C.	#2	36-18N-6W
531	No. 5	Greenview M. C.	Greenview	36-19N-6W
612	No. 5	Johnson Valley C. C.	#1	26-19N-5W
		MERCER COUNTY		
17	No. 1	Coal Valley C. C.	#2	4-15N-1W
18	No. 1	Coal Valley C. C.	#3	27-15N-2W
19	No. 1	Alden C. C.	#7	27-15N-2W
233	No. 1	W. P. Williams	Martin	32-14N-2W
356	No. 1	Black Diamond C. C.	Black Diamond	2-14N-2W
		MONTGOMERY COUNTY		
76=BM45	No. 6	Cosgrove Meehan C. C.	#5	22-7N-4W
194	No. 6	Indiana and Illinois C. C.	#10	10-10N-2W
195	No. 6	Illinois C. C. (Nokomis C. C., Reliance)	Nokomis #1	27-10N-2W
196	No. 6	Indiana and Illinois C. Corp.	#12	6-9N-2W
197	No. 6	Indiana and Illinois C. Corp.	#11	5-8N-3W
		MOULTRIE COUNTY		
336	No. 6	Lovington C. C.	Lovington	27-15N-5E
		PEORIA COUNTY		
25	No. 5	Clark C. C.	#2	10-8N-7E
26	No. 5	Crescent C. C.	Crescent #1	12-8N-7E
106	No. 5	M. E. Case	LeMarsh #1	8-7N-7E
107	No. 5	Newsam Bros. C. C.	Glasford #4	28-7N-6E
348=BM3	No. 5	Dorthel C. C.	#1	10-8N-6E
349	No. 5	Pocahontas C. C.	Mapleton	30-7N-7E
601	No. 5	Crescent M. C.	#6	8-7N-7E
BM2	No. 5	Colliers' Coop. C. C.	Colliers'	26-8N-7E

Mine Index No.	Coal Bed	Company	Mine	Location
		PERRY COUNTY		
54=BM61	No. 6	Paradise C. C.	Paradise	15-6S-1W
88	No. 6	Willisville C. & M. C.	#1	30-6S-4W
89	No. 6	Brilliant C. & C. Co.	Horn	19-6S-1W
90	No. 6	Ritchey C. C. (Pinckneyville M. C., #5)	#1	23-5S-3W
175	No. 6	Victory Collieries Co.	#1	20-4S-1W
176	No. 6	Perry C. C.	Perry County	18-4S-4W
178	No. 6	Bailey Bros. C. C.	Diamond	30-5S-1W
179	No. 6	Kanawha Fuel Co.	Old Abe	32-5S-1W
180=BM29	No. 6	Peabody C. C.	Majestic	23-6S-1W
182	No. 6	Brewerton C. C.	#44	5-6S-4W
184	No. 6	Willis C. & M. C.	Willis #8	30-6S-4W
623	No. 6	Truax-Traer Coal Co.	Pyramid	36-5S-3W
633	No. 6	Peabody C. C.	Gayle #15	32-5S-1W
BM73	No. 6	Security C. & M. C.	Security	29-6S-1W
		RANDOLPH COUNTY		
83	No. 6	Moffet C. C.	#1	8-5S-5W
208	No. 6	Madison C. Corp.	Crystal	5-4S-5W
209	No. 6	Illinois Fuel Co.	#4	16-5S-5W
210	No. 6	Willis C. & M. C.	#6	14-6S-5W
229	No. 5	Willis C. & M. C.	#9	11-6S-5W
337	No. 5	Stanway	Stanway	35-5S-6W
613	No. 6	Illinois Missouri C. C.	Wilson	1-5S-6W
630	No. 6	Welshan and West C. C.		15-5S-6W
654	No. 6	St. Louis C. C.	Florida	10-4S-5W
		ROCK ISLAND COUNTY		
234	No. 1	Price M. Co.	Section 1	1-16N-1W
		ST. CLAIR COUNTY		
78	No. 6	Superior C. & M. C.	Superior	1-1N-9W
79	No. 6	Southern C. & M. C.	#8	17-1N-7W
80	No. 6	Borders C. C.	Borders #1	27-3S-6W
81	No. 6	Joseph Taylor C. C.	Taylor	24-2N-8W
82	No. 6	St. Louis and O'Fallon C. C.	#2 Black Eagle	33-2N-8W
200	No. 6	Premier C. M. C.	Premier	30-2N-6W
201	No. 6	Consolidated C. C.	#17	10-2N-8W
203	No. 6	Southern C. & Coke M. C.	Little Oak #7	18-1N-7W
205	No. 6	Egyptian C. & M. C.	#1	36-3S-6W
626	No. 6	Prairie C. C.	Prairie	27-2N-8W
628	No. 6	Ed Lill	Lill	2-1S-9W
650	No. 6	Vinegar Hill C. C.	Vinegar Hill	2-3S-7W
		SALINE COUNTY		
43	No. 5	O'Gara C. C.	#9	21-9S-6E
44	No. 5	Peabody C. C.	#43 (old mine)	17-9S-6E
45	No. 5	Wasson C. C.	#1	36-8S-6E

Mine Index No.	Coal Bed	Company	Mine	Location
		SALINE COUNTY (cont'd)		
46	No. 5	Eldorado C. & M. C.	#1	15-8S-7E
48	No. 5	O'Gara C. C.	#7	36-9S-5E
49=BM8	No. 5	Harrisburg Southern C. C. (Peabody C. C., #46)	Nigger Hill	34-8S-7E
124	No. 5	Peabody C. C.	Harco #47	27-8S-5E
125=BM70	No. 5	Dering C. C.	#2	24-8S-6E
126	No. 5	O'Gara C. C.	#11	20-8S-7E
127	No. 5	Sahara C. C.	#1	2-9S-6E
128	No. 5	O'Gara C. C.	#14	30-9S-6E
129	No. 5	Saline County C. C. (Peabody C. C., #44)	#4	15-9S-5E
130	No. 5	Wasson C. C.	#2	33-9S-5E
608=BM71	No. 5	Sahara (O'Gara) C. C.	#3	15-9S-6E
610	No. 5	Blue Bird C. C.	Blue Bird	5-10S-5E
646	No. 5	White Star C. C.		23-9S-7E
647	No. 5	Rocky Branch C. C.	#1	22-9S-7E
BM72	No. 5	Saline County C. C.	Saline #2	36-9S-5E
		SANGAMON COUNTY		
36	No. 5	Springfield C. M. C. (Peabody C. C., #52)	#2	10-16N-4W
37	No. 5	Peabody C. C.	#59 Peerless	13-16N-5W
38	No. 5	Woodside C. C. (Peabody C. C., #53)	Woodside	3-15N-5W
39	No. 5	Illinois Midland C. C. (Peabody C. C., #6)	#6	36-17N-5W
40	No. 5	Williamsville C. C.	Selbytown	17-17N-4W
74	No. 6	Madison C. C.	#6	21-13N-5W
75	No. 6	Black Diamond C. C. (Peabody C. C., #54)	Black Diamond	15-13N-6W
119	No. 5	Illinois C. & Coke Corp.	Empire #1	14-16N-5W
120	No. 5	Spring Creek C. C.	Spring Creek	19-16N-5W
121	No. 5	Bissell C. C.	Clear Lake	8-16N-4W
122	No. 5	Jefferson C. M. C.	Brewerton #81	1-15N-5W
193	No. 6	Panther Creek C. C.	Panther Creek	35-14N-6W
616	No. 5	Central Illinois C. M. C. (Citizens C. C.)	"A"	32-16N-5W
617	No. 5	Central Illinois C. M. C. (Citizens C. C.)	"B"	31-16N-5W
618	No. 5	Panther Creek C. C.	#4	29-16N-5W
624	No. 5	Bethel C. C.	Bethel	25-17N-8W
641	No. 5	Farrand C. C.	Farrand	12-16N-4W
		SCHUYLER COUNTY		
214	No. 2	Simpson and Gory		36-3N-1W
327	No. 5	Vonach M. C.	Vonach	20-2N-1W
		SHELBY COUNTY		
217	No. 5	Moweaqua C. M. & Mfg. Co.	#1	31-14N-2E
615	Trowbridge	Curry Brothers		11-10N-6E

Mine Index No.	Coal Bed	Company	Mine	Location
		STARK COUNTY		
528	No. 6	Frank Kingen and Son	Kingen	18-13N-7E
529	No. 6	Jake McDaniels	McDaniels	25-13N-6E
		TAZEWELL COUNTY		
27	No. 5	Tazewell County C. C.	Tazewell	6-24N-4W
108	No. 5	Crescent C. C.	#2, Groveland	18-25N-4W
		VERMILION COUNTY		
91	No. 6	Peabody C. C.	#24	15-18N-12W
92	No. 6	Sharon C. C.	Sharon	7-17N-11W
93	No. 6	Bunsen C. C.	Little Vermilion	19-18N-11W
94	No. 7	Electric C. C.	Electric	10-19N-12W
95	No. 6	W. C. Shafer	Shafer	7-19N-11W
97	No. 7	Fairmount C. C.	Fairmount	34-19N-13W
212	No. 6	Taylor English C. C.	#2	3-18N-12W
401	No. 6	U. S. Fuel Co.	Bunsenville	26-18N-12W
603	No. 7	M. and B. C. C.	M. and B.	10-19N-12W
656	No. 7	Grape Creek M. C.	Grape Creek	5-18N-11W
		WABASH COUNTY		
658	Friendsville	Painter and Bellissa C. C.	Hillcrest	29-2S-13W
		WARREN COUNTY		
346	No. 1	Williams	Chicken	15-11N-2W
357	No. 1	A. L. Richardson	Richardson	24-12N-2W
		WASHINGTON COUNTY		
86	No. 6	Centralia C. C.	#5	25-1N-1W
226	No. 6	Clarkson C. & M. Co.	Clarkson	13-2S-3W
637	No. 6	Darmstadt C. C.	Darmstadt	30-2S-5W
		WHITE COUNTY		
227	No. 6	Interstate Fuel & Power Corp.	#1	21-6S-8E
		WILLIAMSON COUNTY		
59	No. 6	Johnston City C. C.	West	24-8S-2E
60	No. 6	Peabody C. C.	#3	1-9S-2E
61=BM27	No. 6	Carterville & Herrin Co. (Pratt Brothers)	Jeffrey	22-8S-2E
62	No. 6	Chi., Wil., & Franklin C. C.	"A"	19-8S-2E
63	No. 6	Big Muddy C. and Iron Co.	#8	14-8S-1E
64	No. 6	Hafer Washed C. C.	#3	36-8S-1E
65	No. 6	Chicago and Big Muddy C. C.	Big Muddy	2-9S-2E
148	No. 6	Consolidated C. C. of St. Louis (old)	Lake Creek	18-8S-3E
149	No. 6	Searls C. C.	McClintock	19-8S-3E
150	No. 6	Johnston City Washed C. C.	White Ash	31-8S-3E

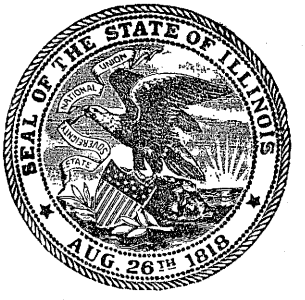
Mine Index No.	Coal Bed	Company	Mine	Location
		WILLIAMSON COUNTY (Cont'd.)		
151	No. 6	Slogo C. Corp.	Slogo	32-8S-3E
152	No. 6	Cameron C. C.	Keystone	35-8S-3E
154	No. 6	Cosgrove Meehan C. C.	Franco #1	11-8S-2E
155	No. 6	Old Ben C. Corp.	#18	12-8S-2E
156	No. 6	Chi., Wil., & Franklin C. C.	"B"	17-8S-2E
157	No. 6	Peabody C. C.	#26	25-8S-2E
158	No. 6	Taylor C. C.	#2	31-8S-2E
159	No. 6	Taylor C. C.	#1	32-8S-2E
160	No. 6	Sincerity C. C.	#2	34-8S-2E
163	No. 6	Madison C. Corp.	#12	20-8S-1E
165	No. 6	T. G. Warden C. C.	Sunnyside	25-8S-1E
166	No. 6	Peabody C. C.	#16	33-8S-1E
167	No. 6	Madison C. Corp.	#8	35-8S-1E
168	No. 6	Orchard C. C.	Orchard	2-9S-3E
169	No. 6	West Virginia C. C.	West Virginia	5-9S-3E
170	No. 6	William Stroud C. C.	Stroud	6-9S-3E
171	No. 6	George Brown	Blinkley	6-9S-3E
172	No. 6	Spiller and Lewis Co.	Spiller & Lewis	6-9S-3E
173	No. 6	Henderson and Wallace C. C.	H. and W. #1	8-9S-3E
353	No. 5	Laclede C. & M. C.	Laclede	34-8S-2E
BM28	No. 6	Rend C. C. (Old Ben C. Corp., #20)	#2	1-8S-1E
BM69	No. 6	Freeman C. & M. C.	Pond Creek	5-8S-2E
		WOODFORD COUNTY		
410	No. 2	W. G. Sutton	Minonk #2	6-28N-2E
611	No. 2	Roanoke Coal & Tile Co.	Roanoke	14-27N-1W

STATE OF ILLINOIS
HENRY HORNER, GOVERNOR
DEPARTMENT OF REGISTRATION AND EDUCATION
DIVISION OF THE
STATE GEOLOGICAL SURVEY
M. M. LEIGHTON, *Chief*

BULLETIN No. 62

Classification and Selection of Illinois Coals

GILBERT H. CADY



PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS

URBANA, ILLINOIS
1935
REPRINTED, 1936

STATE OF ILLINOIS

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DEPARTMENT OF REGISTRATION AND EDUCATION

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(In cooperation with the United States Geological Survey)

Publications and Records

This Bulletin is a contribution from the Coal Division of the Geological Resource Section, with the assistance of the Geochemical Section under the direction of Dr. F. H. Reed, Chief Chemist.

2

(66384)

Dedicated to the memory of
PROFESSOR SAMUEL WILSON PARR
friend and consultant
and leader in chemical researches
on Illinois coals

Preface

FOR NEARLY THIRTY YEARS the State Geological Survey has been investigating the chemical character of Illinois coal. In so doing there has been in mind the eventual standardization of the product of our coal mines, providing a basis for discriminating selection by the consumer and accurate representation by the vendor. This is an end that could not have been attained at once because of the necessity for perfecting and standardizing sampling and analytical procedure, for developing a satisfactory basis for comparison and evaluation, and for collecting samples from a sufficiently large number of mines through a period of years to justify confidence in the conclusions drawn.

From the time of the organization of the Survey until his death in 1931 the late Professor S. W. Parr of the University of Illinois either assisted in the planning and execution of the chemical studies in coal carried on by the Survey or was in friendly touch with the work that was being carried on. He searched diligently and we believe successfully for a basis of classification and selection that permits the accurate comparison of the quality of Illinois coals with one another and with competitive fuels. He did much to perfect the methods of sampling, and to improve and standardize analytical procedure.

Professor Parr's particular contribution to coal classification was the development of a relatively simple method of expressing the heat value of the pure, that is the mineral-matter-free, coal substance. This theoretically pure coal he believed was essentially uniform in character for each individual bed over considerable areas, where geological conditions are essentially uniform as in most of the Illinois coal basin. Local variations in the coal as produced are, if this theory is correct, due to variations in the quantity and character of the impurities. Systematic sampling by the Survey of 100 mines in the State in 1912 and the careful analysis of the several hundred samples under Professor Parr's direction gave definite support to the theory of the uniformity of the essential coal material over large areas such as counties. Since that time additional information has substantiated the validity of this early generalization.

The mineral-matter-free, or what he called the "unit coal", values were likewise regarded by Professor Parr as the basis for designating the rank classification of a coal. This method has been employed by the Survey for several years, and it is of interest to note that tentative specifications for the classification of coal by rank, recently announced by the American Society for Testing Materials and printed in Chapter II of this bulletin, are in close accordance with it.

It seems particularly appropriate, therefore, that the first attempt at application should be made in Illinois coals, inasmuch as the proposals are in line with practice that has long been in use by this Survey. County and district rank averages have been published in our bulletins since 1914. The only important difference between averages presented in the present bulletin and those previously presented is the use of moist rather than dry mineral-matter-free values, this being the basis preferred by the Coal Classification Committee.

Since the publication of the last compilation of Illinois coal analyses in 1927 numerous mines have been sampled so that many more mining areas are now represented in our analytical files. Furthermore, the Coal Classification Committee has indicated the desirability of eliminating from the compilations analyses made before 1912. A revision of the published compilations is therefore desirable to exclude analyses of doubtful accuracy and to include new analyses.

Among the analyses and other experimental data presented will be found much information supplied by the United States Bureau of Mines. To this bureau the State Geological Survey is indebted for its vast amount of assistance in analytical work and for helpful criticism.

Many of the analytical results contained in this bulletin were made for us under the supervision of Professor J. M. Lindgren in the Chemical Testing Laboratory of the University of Illinois, for which we make grateful acknowledgment.

None of the work of determining the analytical character of Illinois coals would have been possible without the continuous hearty, confident support of the host of friends of the Survey through these many years among the producers and miners of coal. Cooperation in the task of collecting samples was invariable. It is impossible to detail the list of those in the coal mining industry who have helped in the accumulation of these data.

Our thanks is likewise given to the American Society of Testing Materials for their courtesy in extending the privilege of publishing the tentative specifications for the classification of coal by rank and grade found in Chapter II.

The bulletin presents a compilation of analytical data in regard to Illinois coal so interpreted that it is believed even the small user of coal with sufficient interest in the matter of the discriminating selection of coal to investigate its possibilities can find herein the means for making such selection. The Survey is ready at all times to answer inquiries in regard to the coals of the State and to advise with regard to the application of the criteria recommended for use.

M. M. LEIGHTON, *Chief.*

April 4, 1935.

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GILBERT H. CADY

CHAPTER I

INTRODUCTION, SUMMARY, AND ACKNOWLEDGMENTS

THIS REPORT has for its primary purpose the presentation of a compilation of available analyses of face samples of Illinois coal made by the State and Government laboratories between January, 1912, and October, 1934. The secondary purpose of the report is the application to Illinois coals of the system of rank and grade classification of coals recently announced by the American Society for Testing Materials and the explanation of a method for a discriminating selection of these coals based upon the proposed system of classification.

The analytical data presented indicate the nature of the coal as it exists in the bed, and the value of the data is primarily its usefulness in indicating the nature of the pure coal material—that is, the mineral-matter-free coal—which it is believed has an essentially uniform character for considerable areas within each bed. It is not desirable to use analyses of face samples as representative of coal as mined and prepared for shipment. They may be used, however, to indicate the character of the pure coal material, as the pure coal is probably not appreciably modified by the mining and preparation process.

The use of ash and sulfur values given in this report as an expression of the ash and sulfur content of the coal as loaded at the mine is particularly undesirable; only analyses of tipple or car samples can supply such information.

For some years a committee sponsored by the American Society for Testing Materials and working under the auspices of the American Standards Association, has been investigating North American coals for the purpose of recommending specifications for a practical and scientifically correct system of coal classification. Acceptance of proposed tentative specifications covering the classification of coal by rank and grade was finally announced by the American Society for Testing

Materials in March, 1934[1], and details of the specifications were presented in the following April[2], followed by publication by the Society in September[3].

Plan of the report.—The general plan of the report following the introductory chapter consists, first, of a presentation in full of the A.S.T.M. specifications for the classification by rank and grade. This is followed by a discussion of the general problem of coal classification and the nature of rank and grade. The specifications are then applied to Illinois coal and the application of the proposed scheme of classification to the problem of selection of Illinois coal by the user of small quantities of coal is explained. The discussion involves consideration of the distribution of variations in ash and sulfur in Illinois coals, the nature of variations in the softening temperature of coal ash, and in the agglutinating or coking strength of the coal. A general summary is given of the correlation, stratigraphic position, and distribution of the commercially important coal beds. The final chapter of the report discusses the nature of the analytical data given in the tables in the appendix and elsewhere in the report. The analytical tables in the appendix consist of proximate analyses of individual samples, with a few ultimate analyses of individual samples in a separate table, mine and county average proximate and ultimate analyses, and a table showing ash softening temperatures of a large number of Illinois coals. In the text are tables giving the county average ash values for face samples for each county and agglutinating and slacking indices for various coals. Graphical methods of determining the "as received" heat value and certain other analytical values from mineral-matter-free values, and for comparison of the price of coals and of coal, oil, and gas are presented in Appendix II.

Summary of method of coal selection.—The plan that is recommended for the selection of Illinois coal is based upon the well established fact of the uniformity of rank of the individual beds of Illinois coal over fairly large areas, commonly as large as a county. The rank of a coal, as is explained, is indicated by the heat value of the moist, mineral-matter-free coal. It is therefore proposed to designate the B.t.u. value of such coal, expressed to the nearest hundred units, the **rank index,** this being a value of sufficient precision for most purposes of comparison. The rank index of each coal bed and for many mines is given in the tables accompanying the report as are also the county average indices. The character of the coal produced at the individual mine in a county expressed in terms of its "as received" heat value can be readily ascertained from the rank index if the amount of mineral matter present in the coal is known. The "as received" heat value thus or otherwise determined is called in this report the

[1] Bulletin American Society for Testing Materials, March, 1934, page 9.
[2] Fieldner, A. C., Coal classification is boon to industry: Industrial Standardization and Commercial Standards, pp. 63-68, April, 1934.
[3] A.S.T.M. Standards on coal and coke, prepared by Committee D-5 on Coal and Coke: September, 1934.
Tentative specifications for classification of coals by rank, A.S.T.M. Designation D 388-34T.
Tentative specifications for classification of coals by grade, A.S.T.M. Designation D 389-34T.

heat index when expressed to the nearest hundred B.t.u. A simple method for obtaining a value for mineral matter from the ash and sulfur values makes the derivation of the heat index from the rank index an easy multiplication. Thus, with the standard rank index for any coal available it is possible for the purchase and sale of coal to take place on the basis of amount of heat purchased for each unit of cost, provided specifications applying to a particular coal include accurate statements of its ash and sulfur content.

Analytical data.—The chemical analyses presented in the appendix and used as a basis for the discussion of the classification and selection of Illinois coals consist of a new compilation of all analyses of standard face samples of Illinois coal made during and since 1912 by the University of Illinois, the U. S. Bureau of Mines, and the Analytical Division of the State Geological Survey (since 1931), the character of which is explained more fully in the final chapter. This compilation supersedes that appearing in Illinois State Geological Survey's Cooperative Mining Series Bulletin 27 (originally designated as an extract), entitled "Analyses of Illinois Coals", compiled by G. W. Hawley, published in 1923.

The compilation of these data has been carried on interruptedly through a number of years. A preliminary task consisted in recalculating all analyses made before 1928, particularly the unit coal values. In 1929 the analyses available up to that date had been tabulated and mine and county averages had been determined, the latter values appearing in Bulletin 56, "Illinois Coal", by A. Bement (1929). The second edition of this bulletin, published in 1932, carried a revised list of county averages based upon a slightly enlarged and an otherwise somewhat modified list of analyses. Since 1931 a fairly large number of analyses have been made so that several counties and seams are better represented than formerly in the analytical files of the State Geological Survey. The fact that during the meetings of the Coal Classification Committee doubt was thrown on the comparative value of analyses made before 1912,[4] made it seem best to omit such analyses. Accordingly for the present report it was necessary to revise earlier lists, eliminating analyses made before 1912 and adding new analyses made since 1931 and to calculate new mine and county averages (Appendix). Furthermore, with the adoption of the moist, mineral-matter-free values as the basis of rank classification, it became necessary to provide such values, at least for mine and county averages. The present list also contains unit coal (dry, mineral-matter-free), volatile, and fixed carbon values not presented in earlier compilations.

Acknowledgments.—The author is under great obligation to his associates on the staff for their willing assistance in making numerous calculations and in checking tables. It is a pleasure to refer particularly to Mr. John Hughes

[4]The date stated in the A.S.T.M. specification is 1913 (p. 21), but the methods used in 1912 in obtaining the analyses included herein were essentially those adopted by the American Society for Testing Materials in 1913.

who assisted in the preliminary compilations, to Messrs. L. C. McCabe, Clayton G. Ball, E. T. Benson, and W. S. McCabe of the regular staff, and to Messrs. John F. West and W. A. Blomstran, temporary employees during the C. W. A. period. To Dr. M. M. Leighton, Dr. F. H. Reed, Dr. Gilbert Thiessen, and Dr. O. W. Rees of the Survey staff, and Professor D. R. Mitchell of the Department of Mining and Metallurgical Engineering of the University of Illinois, the author is indebted for helpful criticisms and suggestions.

The writer wishes to express his personal appreciation of and to acknowledge the indebtedness of the Survey for the helpful cooperation of Dr. A. C. Fieldner, Mr. W. A. Selvig, and Mr. H. M. Cooper of the United States Bureau of Mines in arranging for and carrying through many proximate and ultimate analyses of coal samples supplied by the Survey, for furnishing analytical data from the files of the Bureau, in supplying agglutinating and slacking indices for a considerable number of Illinois coals, and for running occasional check analyses as an assistance in standardizing the operations of local laboratories.

The bulletin contains many hundreds of analyses representing mine samples collected in nearly 300 mines in the State. This has required the services of many sampling parties and the helpful cooperation of the mine management of the numerous mines. The analytical work has been carried on by chemists in three laboratories, that of the Bureau of Mines for the last several years under the direction of Mr. H. M. Cooper, that of the University of Illinois under the direction of Mr. J. M. Lindgren, and that of the State Geological Survey under the direction of Dr. O. W. Rees, by Messrs. John W. Robinson, Jr., Carl Westerberg, C. E. Imhoff, L. D. McVicker, G. C. Finger, and W. F. Bradley. The author wishes to make appreciative acknowledgment in the name of the Survey of the cooperation and assistance of all those who have helped to make possible the existence and compilation of these data.

CHAPTER II

TENTATIVE SPECIFICATIONS FOR RANK AND GRADE CLASSIFICATION BY THE AMERICAN SOCIETY FOR TESTING MATERIALS

FOR THE CONVENIENCE of the reader and as a basis for the discussion that follows, the complete text of the tentative specifications for classification of coal by rank and grade is published herewith through the courtesy of the American Society for Testing Materials in whose publications the specifications have previously been published. The specifications for classification by rank have the A.S.T.M. designation D 388–34T, and the specification for classification by grade the designation D 389–34T. In both instances the standards are designated tentative and hence are subject to annual revision. Both specifications were issued in 1934. A single revision, but not one affecting the classification of Illinois coals, is in prospect for 1935. This will be noted at the proper place in the text.

TENTATIVE SPECIFICATIONS FOR CLASSIFICATION OF COALS BY RANK[1]

Scope

1. These specifications cover the classification of coals by rank, that is, according to their degree of metamorphism, or progressive alteration, in the natural series from lignite to anthracite.

Basis of Classification

2. The basic scheme of classification is according to fixed carbon and calorific value (expressed in B.t.u.) calculated to the mineral-matter-free basis. The higher-rank coals are classified according to fixed carbon on the dry basis; and the lower-rank coals according to B.t.u. on the moist basis. Agglutinating and slacking indices are used to differentiate between certain adjacent groups.

CLASSIFICATION BY RANK

Classification by Rank

3. *(a) Fixed Carbon and B.t.u.*—Coals shall be classified by rank in accordance with Table 1. Coals having calorific values of 14,000 B.t.u. or more on the moist, mineral-matter-free basis, and coals having fixed carbon of 69 per cent or more on the dry, mineral-matter-free basis, shall be classified accord-

[1] Under the standardization procedure of the Society, these specifications are under the jurisdiction of the Sectional Committee on Classification of Coals functioning under the procedure of the American Standards Association with the American Society for Testing Materials as sponsor.

ing to fixed carbon on the dry mineral-matter-free basis; coals having calorific values less than 14,000 B.t.u. on the moist, mineral-matter-free basis shall be classified according to B.t.u. on the moist, mineral-matter-free basis, provided the fixed carbon on the dry, mineral-matter-free basis is less than 69 per cent.

(b) Weathering Index.—Coals showing average weathering indices of less than 5 per cent shall be considered non-weathering, coals showing average weathering indices of 5 per cent or more shall be considered weathering from the standpoint of classification.

(c) Agglutinating Index.—Coals having average agglutinating indices of 500 g. or more at a ratio of 15 parts sand to 1 part coal shall be considered agglutinating from the standpoint of classification.

TABLE 1.—CLASSIFICATION OF COALS BY RANK.

Legend: F.C.=Fixed Carbon V.M.=Volatile Matter. B.t.u.=British thermal units.

Class	Group	Limits of Fixed Carbon or B.t.u. Mineral-Matter-Free Basis	Requisite Physical Properties
I. Anthracitic	1. Meta-anthracite	Dry F.C., 98 per cent or more (Dry V.M., 2 per cent or less)	Non-agglutinating[a]
	2. Anthracite	Dry F.C., 92 per cent or more and less than 98 per cent (Dry V.M., 8 per cent or less and more than 2 per cent)	
	3. Semianthracite	Dry F.C., 86 per cent or more and less than 92 per cent (Dry V.M., 14 per cent or less and more than 8 per cent)	
II. Bituminous[c]	1. Low volatile bituminous coal	Dry F.C., 77[2] per cent or more and less than 86 per cent (Dry V.M., 23 per cent or less and more than 14 per cent)	
	2. Medium volatile bituminous coal	Dry F.C., 69 per cent or more and less than 77[2] per cent (Dry V M., 31 per cent or less and more than 23 per cent)	
	3. High volatile *A* bituminous coal	Dry F.C., less than 69 per cent (Dry V.M., more than 31 per cent); and moist[b] B.t.u., 14,000[d] or more	
	4. High volatile *B* bituminous coal	Moist[b] B.t.u. 13,000 or more and less than 14,000[d]	
	5. High volatile *C* bituminous coal	Moist B.t.u., 11,000 or more and less than 13,000[d]	Either agglutinating or non-weathering[e]
III. Subbituminous	1. Subbituminous *A* coal	Moist B.t.u., 11,000 or more and less than 13,000[d]	Both weathering and non-agglutinating
	2. Subbituminous *B* coal	Moist B.t.u., 9500 or more and less than 11,000[d]	
	3. Subbituminous *C* coal	Moist B.t.u., 8300 or more and less than 9500[d]	
IV. Lignitic	1. Lignite	Moist B.t.u., less than 8300	Consolidated
	2. Brown coal	Moist B.t.u., less than 8300	Unconsolidated

[a] If agglutinating, classify in low-volatile group of the bituminous class.

[b] Moist B.t.u. refers to coal containing its natural bed moisture but not including visible water on the surface of the coal.

[c] Pending the report of the Subcommittee on Origin and Composition and Methods of Analysis, it is recognized that there may be non-caking varieties in each group of the bituminous class.

[d] Coals havig 69 per cent or more fixed carbon on the dry, mineral-matter-free basis shall be classified according to fixed carbon, regardless of B.t.u.

[e] There are three varieties of coal in the High-volatile *C* bituminous coal group, namely, Variety 1, agglutinating and non-weathering; Variety 2, agglutinating and weathering: Variety 3, non-agglutinating and non-weathering.

[2] AUTHOR'S NOTE: This value has recently been changed to 78 and the following 23 has been changed to 22.

Symbols for Expressing Classification

4. *(a)* The position of a coal in the scale of rank may be expressed in condensed form as in the following example:

(62 — 146)

in which the parenthesis signifies that the contained numbers are on the mineral-matter-free basis. The first number represents fixed carbon on the dry basis, reported to the nearest whole per cent. The second number represents B.t.u. on the moist basis, expressed as hundreds of B.t.u. (to the nearest hundred); for example, 14,580 B.t.u. would be represented as 146.

(b) When agglutinating or weathering properties enter into the classification of a coal, they shall be expressed outside and immediately following the parenthesis by the following symbols:

ag. = agglutinating
na. = non-agglutinating
we. = weathering
nw. = non-weathering.

(c) Symbols describing the grade of coal shall be placed after the parenthesis, as shown in the following illustration:

(62-146) 132-A8-F24-S1.6

The numbers in parenthesis are on the mineral-matter-free basis, and give the position of the coal in the scale of rank as explained in Paragraph *(a)* of this section. The numbers and symbols following the parenthesis show the position of the coal according to classification by grade as shown in Section 2 of the Tentative Specifications for Classification of Coals by Grade (A.S.T.M. Designation: D 389 - 34T) of the American Society for Testing Materials.[1] That is, 132-A8-F24-S1.6 indicates a heating value of approximately 13,200 B.t.u., an ash content of 6.1 to 8.0 per cent, inclusive, an ash-softening temperature of 2400 to 2590 F., inclusive, and a sulfur content of 1.4 to 1.6 per cent, inclusive, all expressed on the basis of the coal as sampled.

SAMPLING

Bed Samples

5. *(a)* The classification of a coal bed, or part of a coal bed, in any locality shall be based on the average analysis and calorific value (and agglutinating and weathering index where required) of not less than three and preferably five or more face samples taken in different and uniformly distributed localities, either within the same mine or closely adjacent mines representing a continuous and compact area not greater than approximately four square miles in regions of geological uniformity. In regions where conditions indicate that the coal probably varies rapidly in short distances the spacing of samples and groupings of analyses to provide average values shall not be such that coals of obviously different rank will be used in calculating average values.

[1] See p. 22.

(b) The samples shall be taken in accordance with the U. S. Bureau of Mines method[1] or its equivalent, and shall be placed in moisture-tight containers in the mine.

(c) Analyses of samples from outcrops or from weathered or oxidized coal shall not be used for classification by rank.

(d) In case the coal is likely to be classified on the "moist" basis, that is, containing the natural bed-moisture, the samples shall be taken at freshly exposed faces, which are free from visible surface moisture if possible. Samples of low-rank coals which appear dry at the time of collection frequently give off moisture which condenses on the inner surface of the sample containers, before they are opened for analysis. In the case of coals which were free from visible surface moisture when sampled, but which show moisture on the inner surface of the containers when opened, both the container and the coal shall be weighed before and after air-drying and the total loss in weight shall be reported as air-drying loss.

(e) If it is impossible to sample the coal without including visible surface moisture, and the coal is likely to be classified on the "moist" basis, the sampler shall include the following statement in the description: "Sample contains surface moisture." Samples so marked shall not be used for classification on a moist basis unless brought to a standard condition of moisture equilibrium at 30 C. in a vacuum desiccator containing a saturated solution of potassium sulfate (96 per cent humidity) as suggested by Stansfield and Gilbart.[2] Analyses of such wet samples which have been treated in this manner shall be designated as "wet samples equilibrated at 30 C. and 96 per cent humidity."

Tipple or Shipment Samples

6. *(a)* The classification of "run of mine" coal and prepared sizes of coal shall be based on representative samples taken in accordance with the Standard Method of Sampling Coal (A.S.T.M. Designation: D 21) of the American Society for Testing Materials.[3]

(b) In case the coal is likely to be classified on the "moist" basis, the samples shall be taken at the tipple or preparation plant and protected against loss of moisture as specified in Sections 8 and 9 of the Standard Method D 21. Samples which appear dry at the time of collection shall be handled in accordance with Section 5 *(d)* above to ensure correct determination of total air-drying loss. Samples which have visible surface moisture on the coal when sampled, and which are likely to be classified on the "moist" basis, shall be marked by the sampler, equilibrated, and the analyses designated in accordance with Section 5 *(e)* above.

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[1] J. A. Holmes, "The Sampling of Coal in the Mine," U. S. Bureau of Mines *Technical Paper No.* 1 (1918).

[2] Edgar Stansfield and K. C. Gilbart, "Moisture Determination for Coal Classification," *Transactions,* Am. Inst. Mining and Metallurgical Engrs., Coal Division, p. 125 (1932).

[3] 1933 Book of A.S.T.M. Standards, Part II, p. 318.

Methods of Analysis and Tests

Laboratory Sampling and Analysis

7. The coal shall be prepared and analyzed in accordance with the Standard Methods of Laboratory Sampling and Analysis of Coal and Coke (A.S.T.M. Designation: D 271) of the American Society for Testing Materials.[1]

Weathering or Slacking Index

8. Pending the adoption of a method by the American Society for Testing Materials, the weathering or slacking characteristics of coals shall be determined by the U. S. Bureau of Mines method[2] modified with respect to the selection of a standard humidity. Briefly, the test consists of air-drying 500 to 1000 g. of approximately 1 to 1½ in. lumps at a temperature of 30 to 35 C. and a humidity of 30 to 35 per cent for a period of 24 hr. and then immersing the lumps in water for 1 hr.; the water then being drained off, and the sample again air-dried for 24 hr. The amount of disintegration is determined by sieving on an 8-in. wire-mesh sieve with 0.263-in. square openings, and weighing the quantity of coal passing (undersize) and that retained on (oversize) the sieve. The percentage of coal passing the sieve (undersize), after deducting a blank sieving test, is the weathering or slacking index of the coal.

Agglutinating Index

9. Pending consideration of an agglomeration test now being investigated, the agglutinating index shall be determined in accordance with the Tentative Method of Test for Agglutinating Value of Coal (A.S.T.M. Designation: D — - 34 T) of the American Society for Testing Materials.[3]

Calculation to Mineral-Matter-Free Basis

Calculation of Fixed Carbon and B.t.u.

10. *(a)* For classification of coal according to rank, fixed carbon and B.t.u. shall be calculated to the mineral-matter-free basis in accordance with either the Parr formulas[4] (1), (2) and (3) or the approximation formulas (4), (5) and (6) given below. In case of litigation the appropriate Parr formula shall be used.

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[1] 1933 Book of A.T.S.M. Standards, Part II, p. 269.

[2] A. C. Fieldner, W. A. Selvig and W. H. Frederic, "Accelerated Laboratory Test for Determination of Slacking Characteristics of Coal," U. S. Bureau of Mines *Report of Investigations No. 3055* (1930).

[3] See preprint of annual Report of Committee D-5 on Coal and Coke to be presented at the Thirty-seventh Annual Meeting of the American Society for Testing Materials at Atlantic City, N. J., June, 1934.

[4] S. W. Parr, "The Classification of Coal," *Bulletin No. 180*, Engineering Experiment Station, University of Illinois (1928).

Calculation from "moist" basis:

Parr Formulas:

$$\text{Dry, Mm-free F.C.} = \frac{\text{F.C.} - 0.15\text{S}}{100 - (\text{M} + 1.08\text{A} + 0.55\text{S})} \times 100 \quad (1)$$

$$\text{Dry, Mm-free V.M.} = 100 - \text{Dry, Mm-free F.C.} \quad (2)$$

$$\text{Moist, Mm-free B.t.u.} = \frac{\text{B.t.u.} - 50\text{S}}{100 - (1.08\text{A} + 0.55\text{S})} \times 100 \quad (3)$$

NOTE.—The above formula for fixed carbon is derived from the Parr formula for volatile matter.

AUTHOR'S NOTE: Mechanical methods of solving formula 3 and the Parr formula for volatile matter are given in Appendix II.

Approximation Formulas:

$$\text{Dry, Mm-free F.C.} = \frac{\text{F.C.}}{100 - (\text{M} + 1.1\text{A} + 0.1\text{S})} \times 100 \quad (4)$$

$$\text{Dry, Mm-free V.M.} = 100 - \text{Dry, Mm-free F.C.} \quad (5)$$

$$\text{Moist, Mm-free B.t.u.} = \frac{\text{B.t.u.}}{100 - (1.1\text{A} + 0.1\text{S})} \times 100 \quad (6)$$

where:

Mm = mineral matter;
B.t.u. = British thermal units;
F.C. = percentage of fixed carbon;
V.M. = percentage of volatile matter;
M = percentage of moisture;
A = percentage of ash;
S = percentage of sulfur;

Moist refers to coal containing its natural bed moisture, but not including visible water on the surface of the coal. See Section 5 (*d*) and (*e*) and Section 6 (*b*) above.

Modifications for Coals High in Carbonate

(b) In case of controversy, samples containing more than 1.0 per cent of carbon dioxide occurring as carbonates shall be either (1) crushed to pass through an 840-micron (No. 20) sieve and floated on a heavy liquid of such specific gravity as to reduce the carbon dioxide occurring as carbonate to 1.0 per cent or less on a dry basis, provided, however, that the recovery of float coal shall not be less than 75 per cent; or (2) shall be analyzed for mineral matter according to the Parr method[1] for coals with high calcium carbonate content. In case of litigation, method (1) shall be used.

[1] S. W. Parr, "Chemical Study of Illinois Coal," Illinois Coal Mining Investigations, State Geological Survey, Urbana, Ill., *Bulletin No. 3*, p. 35 (1916).

APPENDIX

PUBLISHED ANALYSES SUITABLE FOR COAL CLASSIFICATION

Only such published analyses as have been made in accordance with the standard methods of the American Society for Testing Materials shall be used in the classification of coal; and if classification is on the basis of moist B.t.u., then only those samples which have been taken and transported to the laboratory in such a manner as to preserve the true moisture content of the coal shall be used. In general, the principal sources of published analyses of samples suitable for coal classification are the publications of the U. S. Bureau of Mines, the U. S. Geological Survey, and the Canadian Department of Mines. Suitable analyses are published also by some of the State Surveys and some of the Provinces of Canada. However, it must be kept in mind that many of the bed sample analyses of the government organizations are from prospects in which the coal may have been altered by exposure. Such samples shall not be used for classification. Analyses published prior to 1904 are unlikely to represent the true moisture content of coal, and even after this date, analyses from sources other than governmental laboratories are not likely to be representative with respect to moisture.

In view of the importance of the fixed carbon determination in coal classification, special attention is called to the 1913 revision in this method by the American Chemical Society.[1] The new revision was substantially the same as that introduced by the U. S. Bureau of Mines[2] a few years earlier, as a result of finding large discrepancies between results of the Pittsburgh, Pa., and Washington, D. C., laboratories. A considerable number of analyses were made before it was discovered that the natural-gas burners at the Pittsburgh laboratory gave high results for fixed carbon.[3] For this reason, the fixed carbon results of the U. S. Geological Survey or U. S. Bureau of Mines analyses designated by Laboratory Nos. 5147 to 9120, inclusive, shall not be used for the classification of coal.

All analyses made by any laboratory prior to 1913 should be rejected unless there is positive evidence that the methods of analysis were essentially those adopted by the American Society for Testing Materials in 1913.

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[1] Preliminary Report of the Committee on Coal Analysis of the American Society for Testing Materials and the American Chemical Society, *Journal of Industrial and Engineering Chemistry,* Vol. 5, p. 517 (1913); see also Report of Subcommittee IV on Volatile Matter, *Proceedings,* Am. Soc. Testing Mats., Vol. XIV, Part I, p. 424 (1914).

[2] A. C. Fieldner, "Notes on the Sampling and Analysis of Coal," U. S. Bureau of Mines *Technical Paper No. 76,* p. 16 (1914).

[3] N. W. Lord, J. A. Holmes, F. M. Stanton, A. C. Fieldner and S. Sanford, "Analyses of Coals in the United States," U. S. Bureau of Mines *Bulletin No. 22,* Part I, p. 28 (1913).

TENTATIVE SPECIFICATIONS
FOR
CLASSIFICATION OF COALS BY GRADE[1]

Scope

1. These specifications cover the classification of coals according to quality, as determined by calorific value, ash and sulfur content, and ash-softening temperature. Other properties, such as resistance to breakage, screen size and caking properties are under consideration.

TABLE 2.—SYMBOLS FOR GRADING COAL ACCORDING TO ASH, SOFTENING TEMPERATURE OF ASH AND SULFUR (ANALYSES EXPRESSED ON THE BASIS OF THE COAL AS SAMPLED).

Ash[a]		Softening Temperature of Ash[b]		Sulfur[a]	
Symbol	Per cent, inclusive	Symbol	Deg. Fahr., inclusive	Symbol	Per cent, inclusive
A4.....	0.0 to 4.0	F28.....	2800 and higher	S0.7.....	0.0 to 0.7
A6.....	4.1 to 6.0	F26.....	2600 to 2790	S1.0.....	0.8 to 1.0
A8.....	6.1 to 8.0	F24.....	2400 to 2590	S1.3.....	1.1 to 1.3
A10.....	8.1 to 10.0	F22.....	2200 to 2390	S1.6.....	1.4 to 1.6
A12.....	10.1 to 12.0	F20.....	2000 to 2190	S2.0.....	1.7 to 2.0
A14.....	12.1 to 14.0	F20 minus..	less than 2000	S3.0.....	2.1 to 3.0
A16.....	14.1 to 16.0			S5.0.....	3.1 to 5.0
A18.....	16.1 to 18.0			S5.0 plus	5.1 and higher
A20.....	18.1 to 20.0				
A20 plus.	20.1 and higher.				

[a] Ash and sulfur shall be reported to the nearest 0.1 per cent by dropping the second decimal figure when it is 0.01 to 0.04, inclusive, and by increasing the percentage by 0.1 per cent when the second decimal figure is 0.05 to 0.09, inclusive. For example, 4.85 to 4.94 per cent, inclusive, shall be considered to be 4.9 per cent.

[b] Ash-softening temperatures shall be reported to the nearest 10 F. For example, 2635 to 2644 F., inclusive, shall be considered to be 2640 F.

CLASSIFICATION BY GRADE

Classification by Grade

2. Analyses shall be expressed on the basis of the coal as sampled. The calorific value of a coal shall be expressed in hundreds of B.t.u. to the nearest hundred, for example, 13,150 to 13,249 B.t.u., inclusive, shall be expressed as 132. The ash, softening temperature of ash, and sulfur content shall be expressed by symbols in accordance with Table 2. For example, a coal designated as 132-A8-F24-S1.6, indicates a heating value of approximately 13,200 B.t.u., an ash content of 6.1 to 8.0 per cent, inclusive, an ash-softening temperature of 2400 to 2590 F., inclusive, and a sulfur content of 1.4 to 1.6 per cent, inclusive.

[1] Under the standardization procedure of the Society, these specifications are under the jurisdiction of the Sectional Committee on Classification of Coals functioning under the procedure of the American Standards Association with the American Society for Testing Materials as sponsor.

Symbols for Expressing Classification

3. In reporting grade designations, the calorific value shall be given first, followed by the symbols separated by dashes, in the order shown in the example given in Section 2.

4. When both rank and grade of a coal are reported, the grade designation shall follow the rank designation as shown in Section 4 of the Tentative Specifications for Classification of Coals by Rank (A.S.T.M. Designation: D 388 - 34 T) of the American Society for Testing Materials,[1] and as illustrated in the following example:

(62 - 146) 132-A8-F24-S1.6

The numbers in parenthesis are on the mineral-matter-free basis and give the position of the coal in the scale of rank. The first number represents fixed carbon on the dry, mineral-matter-free basis reported to the nearest whole per cent. For example, 61.5 to 62.4 per cent fixed carbon, inclusive, shall be expressed as 62. The second number represents B.t.u. on the moist, mineral-matter-free basis, expressed as hundreds of B.t.u. to the nearest hundred. The meaning of 132-A8-F24-S1.6 is explained in Section 2.

Sampling

Sampling

5. The coal shall be sampled to represent its condition as sold. Sampling shall be performed in accordance with the Standard Method of Sampling Coal (A.S.T.M. Designation: D 21) of the American Society for Testing Materials.

Methods of Analysis

Analysis

6. The coal shall be analyzed in accordance with the Standard Methods of Laboratory Sampling and Analysis of Coal and Coke (A.S.T.M. Designation: D 271) of the American Society for Testing Materials. Analyses shall be expressed on the basis of the coal as sampled.

[1] See p. 17.

CHAPTER III

PROBLEMS OF THE CLASSIFICATION OF ILLINOIS COAL

VARIETIES OF COAL

THE GENERAL PROBLEM of classification of coal involves determination of three fundamental characteristics, namely, the rank, the type, and the grade of the coal.

(1) By rank is indicated those differences in the pure coal material due to geological processes, technically designated as metamorphic, whereby the coal material changes from peat through lignite and bituminous coal to anthracite or even to graphite.

(2) By type is signified those differences due to variations in the kind of plant material of which the coal is composed, whereby such varieties as common banded coal, cannel coal, algal coal, and splint coal are produced.

(3) Grade distinctions separate coals of varying value and are determined by rank, amount and character of impurities, combustion behavior, screen size, and what ever else may affect the usefulness of a coal for general or for specific uses as the classification demands.

It is evident that the rank of a coal is an inherent characteristic unaffected by processing. Grade, on the other hand, is very largely determined by the mineral matter content and the characteristics of the mineral matter, and may be considerably modified by preparation processes. The extent to which type affects rank or grade has not been worked out. It seems probable, however, that a considerable range of variation among Illinois coals will eventually be possible on this basis.

The tentative specifications for classification concern primarily the grade and rank of the common banded type of coal. There has been no agreement on the details of type classification except to the extent of recognizing the common banded coals, cannel, and algal coals as broad general types. These may eventually be subdivided into several natural sub-types and it is possible that artificially produced sub-types may be recognized.

BASES FOR DIFFERENCE IN RANK OF ILLINOIS COALS

The several values recommended by the committee of classification as bases for rank classification consist of the familiar items of the standard com-

mercial proximate analysis, particularly moisture, fixed carbon, and heat value (B.t.u.), these values to be expressed on a pure coal, that is a mineral matter-free basis, either moist or dry, as explained below, and also of standard determinations of the somewhat less familiar agglutinating (coking) and weathering properties.

THE MINERAL-MATTER-FREE BASIS OF COMPARISON

For determining the rank of a coal on the basis of the items of the proximate analysis,[1] the committee proposes the use of values on a mineral-matter-free rather than on an ash-free basis. A little consideration reveals the error of regarding the ash residue of coal combustion as identical with the mineral matter present in the coal before combustion. It differs both in kind and amount. It has been shown[2] that the mineral matter in Illinois coals consists primarily of three minerals, pyrite, calcite, and kaolinite, which latter mineral commonly is in the familiar form of clay, whereas inspection of the ash reveals the presence of none of these minerals. Accordingly the mineral matter must change its character in its reduction to ash.

The changes involved in the formation of ash from mineral mattter are conceived as being, in general, relatively simple. Certain volatile materials, particularly carbon dioxide, moisture, and sulfur, the last also being combustible, are lost from the mineral matter during combustion of the coal and constitute part of the material measured either as volatile matter, or, to a less extent, as fixed carbon, in the proximate analysis. The problem arises, therefore, in order to express the values of the proximate analyses on a mineral-matter-free basis, of determining a satisfactory method for increasing the ash value to represent the quantity of mineral matter originally present in the raw coal, for it is as yet chemically impossible to determine the amount or kind of mineral matter directly.

Fortunately for the solution of this problem the committee had the benefit of long years of investigation by the late Professor S. W. Parr of the University of Illinois in cooperation with the State Geological Survey. Before 1910,[3] he

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[1] In America this form of analysis usually gives the following values: Moisture, volatile matter, fixed carbon, and ash totaling 100 per cent. In addition the amount of sulfur is usually shown and the heat value of the coal is given in British thermal units (B.t.u.) per pound, a B.t.u. being the heat required to raise one pound of water at its maximum density (39.2°F.) one degree Fahrenheit. In some publications heat values are also given in calories per gram, 1.8 B.t.u. per pound being equivalent to 1 calorie per gram. Values are commonly given on one or more of three bases, namely "as received", moisture-free or "dry", and ash- and moisture-free. Analyses publishd by the Illinois State Geological Survey and the University of Illinois Engineering Experiment Station also commonly give heat values on a unit coal (moisture and mineral-matter-free) basis and in some tables accompanying this bulletin on the recommended moist, mineral-matter-free basis.

[2] Ball, C. G., The mineral matter of No. 6 bed coal, West Frankfort, Franklin County, Illinois: Illinois State Geol. Survey Report of Investigations No. 33, 1935.

[3] Parr, S. W., and Wheeler, W. F., Unit Coal and the composition of coal ash: University of Illinois Eng. Exp. Sta. Bull. No. 37, 1909.
Parr, Samuel W., The classification of coal: University of Illinois Eng. Exp. Sta. Bull. No. 180, 1928.

had announced a simple mathematical procedure for deriving mineral matter values from the reported ash values of the proximate analysis, namely,

Mineral matter = 1.08 × Ash + 0.55 × Sulfur.

This ash correction formula has been tested through more than twenty years of investigation of Illinois and other coals, and, with respect to Illinois coals at least, has established its superiority to any substitute or alternative that has been proposed. It was accepted after thorough consideration by the classification committee as the standard method of obtaining mineral matter values. The mineral-matter-free basis of comparison also requires the elimination of the heat of the sulfur from the calorific values. This is accomplished by subtracting 50 B.t.u. for each per cent of sulfur present from the as received calorific value before applying the ash correction. By the use of either one of the two following formulae, the mineral matter correction and the correction for the heat of the sulfur are both automatically performed. The second formula (2) gives slightly more accurate results.

Mineral matter (including heat of sulfur) = 1.1 × Ash + 0.1 × Sulfur[4] (1)

Mineral matter (including heat of sulfur) = 1.08 × Ash + 0.21 × Sulfur[5] (2)

It may be well to state that no single ash correction formula can be devised that will provide an absolutely accurate determination of mineral matter values from ash and sulfur values provided by the proximate analysis. The best that can be hoped for is a close approximation to a correct value.

DERIVATION OF THE PARR ASH-TO-MINERAL-MATTER CORRECTION FORMULA

The calculation of mineral matter values from ash values by the Parr formula proceeds on the assumption that the mineral matter consists entirely of clay and pyrite, and that the sulfur in the coal is entirely in the form of iron pyrites (pyrite). The change from mineral matter to ash during combustion accordingly consists in the dehydration of (or loss in water from) the clay and the substitution of oxygen for sulfur in the pyrite, whereby the latter is changed to iron oxide. Thus it is assumed that ash consists entirely of dehydrated clay minerals and iron oxide, and the Parr correction formula indicates the mathematical procedure which restores the moisture to the dehydrated clay minerals and substitutes the sulfur for the oxygen in the iron oxide. Actually more minerals than clay and pyrite are present, and more or less of the sulfur is organically combined, but the proved general fitness of the formula for providing a satisfactory mineral matter value is ascribed to the probable compensation of opposing errors involved in the calculation.[6]

In connection with the work of the Coal Classification Committee, mem-

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[4] See approximate formula (4), p. 20.

[5] Thiessen, Gilbert, A proposed simplification of the Parr unit coal formula: Illinois State Geol. Survey Report of Investigations No. 32, pp. 7-25, 1934.

[6] Ball, C. G., The mineral matter of No. 6 bed coal at West Frankfort, Franklin County, Illinois: Illinois State Geol. Survey Report of Investigations No. 33, pp. 69-73, 1935.

bers of the Survey have recently investigated at some length the validity of the Parr formula. The results of these investigations have been assembled and recently published in Report of Investigation No. 32[7] to which the reader who may be interested in the technical verification of the Parr formula is referred.

"UNIT" COAL VERSUS MOIST MINERAL-MATTER-FREE COAL

In selecting moist mineral-matter-free coal as the basis of coal classification, the committee rejected unit coal, that is, dry mineral-matter-free coal as less satisfactory for the purpose. A short explanation is pertinent to this discussion.

"Unit" coal is a term proposed by Parr more than 20 years ago as a name for "dry mineral-matter-free" coal. In this report these two phrases are used interchangeably. For many years the State Geological Survey has regarded the unit coal B.t.u. values as the most satisfactory for the commercial standardization and comparison of Illinois coals. Values on this basis for a given mine and area are regarded as more uniform than corresponding values on a moist basis. They are particularly useful for checking the accuracy of analyses. In the present bulletin, therefore, these values are presented for all individual and average analyses. Moisture values themselves are more variable than corresponding unit coal values, hence moist mineral-matter-free values are more variable for a given coal than the corresponding dry values. The unit coal value still continues, therefore, to have an important use as a basis for checking the accuracy of analyses, particularly B.t.u. values, and establishing standard values for the individual mine or for regions. The relative merits of the "moist" and "dry" mineral-matter-free values can be observed by comparing the range of variation of the rank and unit coal indices from mine to mine for individual counties (Table 3, Appendix).

In the matter of rank classification for the entire range of coals, the classification committee agreed that the original or bed moisture content was one of the essential considerations in determining the rank of the high-moisture, high-volatile bituminous coals such as are common in the middle west, and of the sub-bituminous coals and lignites.

SIGNIFICANCE OF MOISTURE IN RANK CLASSIFICATION

Because the rank of a coal is determined by its mineral-matter-free value on the moist basis, no special consideration of the moisture in Illinois coals is necessary. The hundreds of analyses of face samples that are available (Table 2, Appendix) indicate that in Illinois, moisture values are essentially uniform for an individual bed in areas larger than those occupied by single mines. Once the coal leaves the face it is subject to continuous change in its moisture content.

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[7] Contributions to the Study of Coal. (a) A proposed simplification of the Parr unit coal formula by Gilbert Thiessen; (b) Ash-to-mineral matter correction in coal analyses by Gilbert Thiessen; (c) Unit coal as a basis of coal standardization as applied to Illinois coals by G. H. Cady and O. W. Rees; (d) Studies of the graphical method of calculating pure coal calorific value by Gilbert Thiessen and Frank H. Reed: Illinois State Geol. Survey Report of Investigations No. 32, 1934.

The only moisture value, therefore, that possesses any degree of constancy is the bed moisture value. Allowance being made for the presence of this moisture in the calorific value when expressed on a moist basis, no further consideration need be given this inert component of the coal.

VALUES USED IN RANK CLASSIFICATION

Only two analytical values are used in rank classification throughout the entire range of coal material—fixed carbon and heat value (B.t.u.). Agglutinating value and slacking index are also used at certain positions. For coals having moist mineral-matter-free heat values exceeding 14,000 B.t.u. per pound, classification is on the basis of unit (dry mineral-matter-free) fixed carbon (which equals 100 per cent minus the per cent of dry mineral-matter-free volatile matter). For coals having a heat value of less than 14,000 B.t.u. per pound on the moist mineral-matter-free basis, rank classification is solely on the moist heat value basis irrespective of fixed carbon. Such coals possessing either agglutinating or non-slacking characteristics are placed in the bituminous groups of coals, those that are both non-agglutinating and slacking are classified as subbituminous coals.

It is well to emphasize that in this classification system B.t.u. values are always compared on the moist mineral-matter-free basis, whereas fixed carbon values are always compared on the unit coal or dry mineral-matter-free basis.

SYMBOLS FOR EXPRESSING RANK CLASSIFICATION

It has been tentatively proposed that the rank of a coal be indicated by a symbol consisting of two numbers separated by a hyphen and inclosed in a parenthesis. The first number represents the percentage of fixed carbon on the dry mineral-matter-free basis reported to the nearest whole number and the second number represents the B.t.u. on the moist mineral-matter-free basis expressed as hundreds of B.t.u. to the nearest hundred. Thus the symbols (62-146) represent coal having 62 per cent fixed carbon (dry, mineral-matter-free basis) and a B.t.u. value of 14,600 (moist, mineral-matter-free basis). The particular coal used in this illustration belongs to the only group for which both heat and fixed carbon values are desirable for designating the classification, that is, coals with less than 69 per cent fixed carbon but more than 14,000 B.t.u. per pound. Only Illinois coals from Eagle Valley in southern Gallatin County belong in this group, although certain coals in Saline and northern Gallatin counties lie very close to the boundary.

All high volatile bituminous coals having less than 14,000 B.t.u. (moist mineral-matter-free basis) per pound, are classified on a heat value basis, hence for all Illinois coals except as noted in the preceding paragraph, the only symbol necessary for rank classification is that indicating the B.t.u. value to the nearest hundred B.t.u. Accordingly a symbol such as (138) is herein designated the

rank index of the coal, indicating in this particular case a coal having 13,800 B.t.u. per pound.

With respect to coals having more than 14,000 B.t.u. per pound (moist, mineral matter-free basis) the *rank index* should in general be designated by a symbol for fixed carbon, viz., (62). However, since none of the Illinois coals belonging in this group has more than 69 per cent fixed carbon on a dry, mineral-matter-free, or unit coal basis, and hence all belong to the bituminous class, High Volatile A group, it is desirable for purposes of uniformity and comparison to use the symbol for B.t.u. value as the index of rank for these coals likewise. No shipping mines exploit these coals so at present they are commercially unimportant.

PHYSICAL PROPERTIES DETERMINING RANK

It has previously been stated that coking or agglutinating value and the slacking or weathering property are classification criteria. Since all Illinois coals are positively agglutinating or coking, they belong in the bituminous grades rather than in the sub-bituminous rank. Some Illinois coals may be slacking coals, although this has not been definitely established, but this property for our coals is a matter of grade rather than of rank. The method of designation of this property with a symbol and the significance of the term is explained below.

THE SPECIFICATIONS OF GRADE CLASSIFICATION

Grade classification must be based upon a variety of considerations other than the rank of a coal, but four have been tentatively selected as of outstanding importance—the "as received" heat value, the ash content, the softening temperature of the ash, and the sulfur content. Eventually other properties such as coking and weathering properties, resistance to breakage, size of pieces, etc., may be added to the list.

Symbols have been devised to assist in grading coal according to the four considerations noted above (Table 2, p. 22). These symbols for grade follow that indicating the rank of the coal, thus:

(138)-123-A8-F22-S3

The significance of these symbols is explained in the "Tentative specifications for the classification of coals by grade" (pp. 23) but as the symbols given there apply to coals of somewhat different grade than those found in Illinois, an interpretation of the symbols given above may be helpful toward their understanding. The first number (in parenthesis) is the rank index and indicates a coal of 13,800 B.t.u. on a moist, mineral-matter-free basis. The symbol "123" is the "as received" heat value of the coal in hundreds of B.t.u. expressed to the nearest hundred. The symbol "A8" represents an ash content between 6.1 and 8.0. "F22" indicates a softening temperature of the ash of between 2200°

and 2390°F., and the symbol "S3" represents a sulfur content of between 2.1 and 3.0 per cent.

If information in regard to the amount of dry, mineral-matter-free (unit) fixed carbon is desired, the symbol representing this value expressed to the nearest whole number may be inserted in the parenthesis, thus:

(60-138)-123-A8-F22-S3

the "60" signifying a unit fixed carbon content of 60 per cent. However, as previously stated, this value is not necessary for rank classification of Illinois coals.

WEATHERING CHARACTERISTICS

When weathering characteristics enter into the classification of a coal they may be expressed by the following symbols

we = weathering

nw = non-weathering

These symbols should be placed immediately following the symbol for rank index and outside the parenthesis, thus:

(60-138)nw-123-A8-F22-S3

The weathering characteristics of a coal are determined by a standard weathering test devised by the United States Bureau of Mines.[8] In brief the test consists of air-drying 500 to 1000 grams of approximately 1 to 1½-inch lumps at a temperature of 30° to 35° C., for a period of 24 hours, and then immersing the lumps in water for one hour. The water is then drained off, and the sample is again dried for 24 hours. The amount of disintegration is determined by sieving. Coals showing average slacking indices, that is, an amount of fine coal of less than 5 per cent, are considered nonslacking or nonweathering. As has been suggested, the weathering characteristics of Illinois coals is best regarded as one of the minor attributes of grade and is considered again farther on.

[8] Fieldner, A. C., Selvig, W. A., and Fredericks, W. H., Accelerated laboratory test for determination of slacking characteristics of coal; U. S. Bureau of Mines Report of Investigations Serial No. 3055, 1930, 24 pp.

CHAPTER IV

CLASSIFICATION OF ILLINOIS COALS

CLASSIFICATION BY RANK

ILLINOIS COALS fall into three groups of the high volatile Bituminous Rank, group 1 (low volatile) and group 2 (medium volatile) not being represented:

Group 3, High-volatile A bituminous coal.—Coal with dry, mineral-matter-free (or unit coal) fixed carbon less than 69 per cent (dry, mineral-matter-free volatile matter more than 31 per cent), and moist, mineral-matter-free B.t.u. of 14,000 or more. (Rank index 140 +.)

Group 4, High-volatile B bituminous coals.—Coal with moist, mineral matter-free B.t.u. between 13,000 and 13,990. (Rank index 130 to 139.)

Group 5, High-volatile C bituminous coals.—Coal with moist, mineral matter-free B.t.u. between 11,000 and 12,990. (Rank index 110-129.)

So far as known, coals of group 3 (high-volatile A) are found in Illinois only in southeastern Illinois (Fig. 1) in a small area in southern Gallatin and southeastern Saline County known as Eagle Valley where there are no shipping mines. There may be small bodies of such coal here and there at other places along the southern margin of the coal basin, particularly south of the outcrops of the main bodies of Harrisburg (No. 5) coal and Herrin (No. 6) coal. The dry, mineral-matter-free (unit coal) fixed carbon values of these coals are not known to exceed 63 per cent.

Coals of Group 4 (high-volatile B) are found only in southern Illinois, in the Murphysboro, DuQuoin, Franklin-Williamson, and Harrisburg districts and farther south.

The remaining Illinois coals belong to Group 5 or high-volatile C bituminous coals. (Fig. 1.)

RANK INDEX AND UNIT COAL INDEX BY MINE AND COUNTY

The rank index (p. 30) of coal for individual mines and for counties is shown in the Appendix, Table 3; and for counties alone in the Appendix, Table 5. The *unit coal index,* that is the unit coal B.t.u. value expressed in hundreds of B.t.u. to the nearest hundred, is shown in the same tables, and for individual face samples in the Appendix, Table 2.

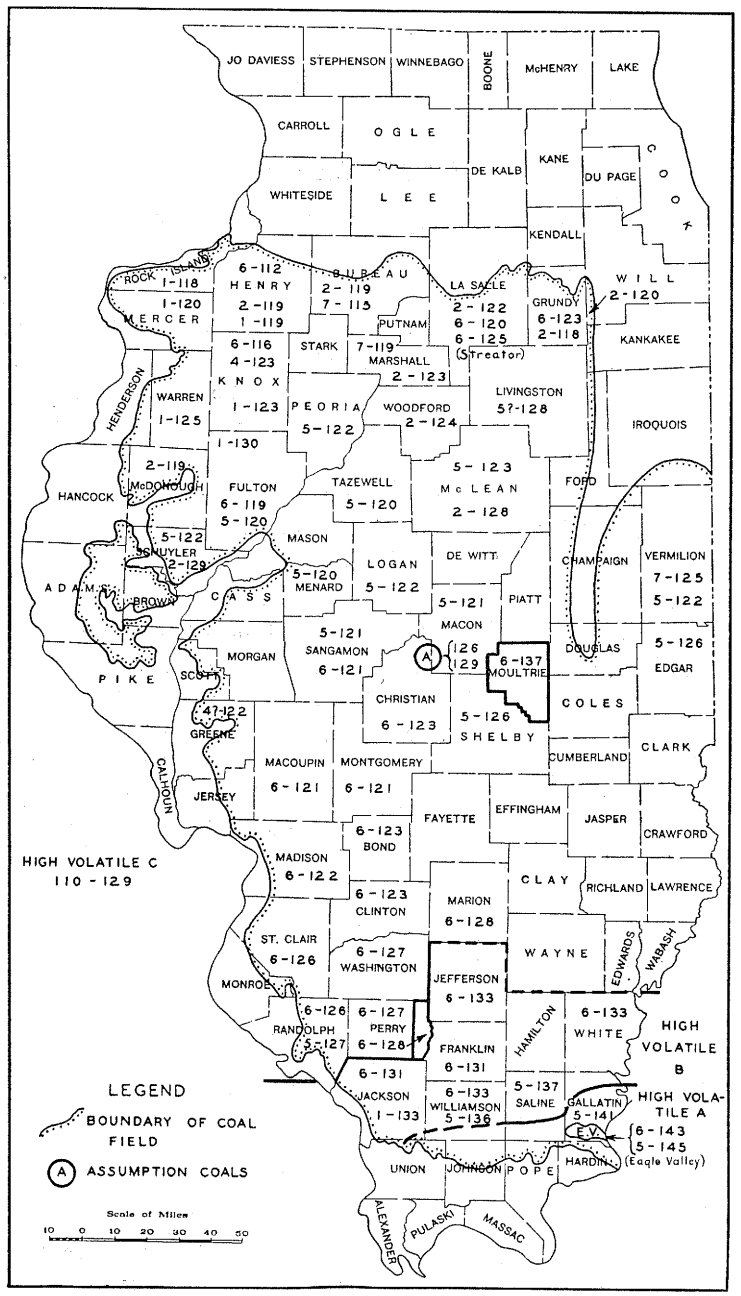


Fig. 1—County average rank indices (moist mineral-matter-free B.t.u. values expressed to the nearest hundred B.t.u.) for Illinois coals.
High volatile A—Rank index above 140.
High volatile B—Rank index 130-139.
High volatile C—Rank index 110-129.

CLASSIFICATION OF ILLINOIS COALS BY GRADE

Grade classification, as previously stated, is determined by rank classification, by "as received" B.t.u. value, by ash content, by the softening temperature of the ash, and by sulfur content. These items as they apply to Illinois coals are considered briefly in order.

Rank.—The first basis for grade classification of Illinois coals, or any coal, is the rank of the coal in terms of the moist, mineral-matter-free heat value. The rank index of Illinois coals varies from 112 to 145 (11,200 to 14,500 B.t.u.) (Appendix, Tables 2 and 3), but the range of the present commercially important coals is between 11,200 and 14,000 B.t.u. per pound. The coals are all of the high-volatile bituminous groups with coals present representing each group, A, B, and C. The classification of Illinois coals by rank has already been discussed at length.

"As received" calorific value and heat index. — The second basis for grade classification is the calorific value of the coal on the "as received" basis. This important value is represented by a symbol, hereinafter designated the **heat index**, which is the "as received" B.t.u. value expressed in hundreds of B.t.u. to the nearest hundred. (Thus, if the "as received" B.t.u. value is 11,670, the heat index is 117.) Heat indices are not given in the tables of analyses found in the Appendix, since the relative quality of a coal as it enters the market may not be correctly represented by values based upon face samples, due to the difference in the mineral matter content of the face sample and the coal as produced. The mineral matter content usually differs not only from place to place in a coal bed but likewise among different sizes and different shipments of the prepared coal. In general any considerable portion of a coal of established rank, such as a car or truck load, will possess the heat index (as received B.t.u. value) of the bed average for the mine provided the mineral matter content is approximately the same as the bed average. This generalization is subject to certain qualifications particularly applicable where coal preparation tends very definitely toward the concentration of any of the banded ingredients and hence to change materially the type of the coal.

Ash.—The third basis for grade classification of coals is ash content. For this purpose analyses of face samples such as accompany this bulletin are only partially satisfactory. Such analyses do not indicate strictly the quantity and character of the ash in the coal as produced but rather the amount of ash derived from samples collected at several points, usually three or more, in the mine, exclusive of such coarse mineral components of the bed as would be eliminated by the miner under the usual conditions of hand loading. It is particularly important to understand that the mine or county average ash (or sulfur) values are not a correct expression of the actual ash (or sulfur) content of the coal as mined and loaded at the individual mines in the respective counties. The ash (or sulfur) content of the coal as produced can be definitely known only by

analysis of tipple or car samples, or samples of a similar nature. In general the average ash (or sulfur) content of mine-run hand-loaded coal probably does not differ greatly from mine average values based upon analyses of several face samples, but when coal is subjected to some form of mechanical cleaning, the ash (or sulfur) content of all coal so treated usually is reduced to less than the mine average for the face samples.

In general it is believed that the mine average ash value based upon several face samples taken in different parts of the mine is a close approximation to the minimum ash value that may be expected in sized and hand picked coal which has not been subjected to some form of mechanical cleaning. The amount of ash remaining in mechanically cleaned coal depends entirely upon the cleaning method and the extent to which coal can be sacrificed for the sake of reducing the quantity of ash. It is possible to obtain coal with less than 5 per cent ash from any of the Illinois mines but in general this would entail such a high loss in coal as to be impracticable.[1] Nevertheless, ash reduction to between 5 and 10 per cent is generally practicable for the commercially important coals.[2] The ash values presented here for the face samples should not be used as a basis for judging the amount of impurity in mechanically cleaned coal. Such coal is commonly sold under a guarantee in regard to ash content that is well supported by commercial analyses.

The ash values given in the average proximate analyses (Table 2, Appendix) provide an excellent index of the *relative* ash content of the different coals as received at the mine tipple. Whether or not the coal as shipped will be lower in ash depends upon the preparation it receives, but it is reasonable to believe that a coal with a natural low ash content in the face sample will yield a cleaner product than one with a natural high ash content, if neither one is mechanically cleaned.

The average ash content of face samples of Illinois coals, based upon 252 mine averages (Table 2, Appendix) is 9.78 per cent (as received), the distribution of values being given in Table 3.

TABLE 3.—AVERAGE ASH CONTENT OF FACE SAMPLES OF ILLINOIS COALS

Ash content per cent	Number of mines	Ash content per cent	Number of mines
4 to 4.9	3	10 to 10.9	64
5 to 5.9	5	11 to 11.9	40
6 to 6.9	8	12 to 12.9	12
7 to 7.9	22	13 to 13.9	5
8 to 8.9	44	14 to 14.9	2
9 to 9.9	45	15 to 15.9	2

[1] Callen, Alfred C., and Mitchell, David R., Washability tests of Illinois coals: University of Illinois Eng. Exp. Sta. Bull. 217, 1930.

[2] McCabe, L. C., Mitchell, D. R., and Cady, G. H., Banded Ingredients of No. 6 coal and their heating values as related to washability characteristics: Illinois State Geol. Survey Report of Investigations No. 34. 1934.

The mines that have been sampled are distributed in the different districts in about the proportion of the relative importance of coal mining now or in the past in the districts. Inasmuch, therefore, as the coal in 191 out of the 252 mines represented in the tabulation has an average ash content of less than 11 per cent, it is apparent that a very large proportion of Illinois coal is produced where the coal beds contain less than this quantity of ash. In 1933, 74 per cent of the coal in the State was produced from localities where the coal beds contained less than 10 per cent ash.

The ash content of each coal bed is fairly uniform over considerable areas, as shown by the mine and county averages (Table 2, Appendix I).

The relative desirability of a coal is probably too commonly determined solely on the basis of ash content. Such a single criterion for selection serves fairly well in areas within which the rank of the coal varies but little, but if generally applied, other more important differences will be ignored. The range of heat value for Illinois coal on a moist mineral-matter-free basis is about 2800 B.t.u., or 20 per cent on a 14,000 B.t.u. basis. This range in heat value is obviously more significant than that which would be produced by a 10 per cent variation in ash content.

Ash softening temperature.—The fourth item in determining grade classification is the softening temperature of the ash as determined under standard conditions.[3] The grades of fusion temperature of the ash of Illinois coals vary from F20- to F26 (Table 2) with grades F20- to F22 being most common. Herrin (No. 6) coal bed in eastern Perry, Williamson, Franklin, and Jefferson counties commonly yields ash with a softening temperature exceeding 2200° F. The same bed in eastern Jackson County and Harrisburg (No. 5) coal in Saline County also generally yield ash of relatively high softening temperature of 2100 to 2200° F., and in some instances coals mined elsewhere in the State produce ash of this character. Preparation of any coal, particularly by mechanical cleaning processes, may modify the fusion temperature of the ash.

Sulfur.—The sulfur content of a coal is the fifth item determining grade classification.

Sulfur occurs in coal mainly in two ways: (1) combined with iron as the mineral pyrite (or marcasite), an iron sulphide (FeS_2), and (2) in organic combination. Some sulfate sulfur (¼ to ½ of one per cent) is commonly present but the amount is so small that for purposes of this discussion it need not be considered. The mineral gypsum ($CaSO_4.2H_2O$), commonly regarded as the form in which sulfate sulfur occurs, is rarely found in fresh Illinois coal although it has often been listed as a common mineral.[4]

There has been no determination of the nature of the distribution of the

[3] Selvig, W. A., and Fieldner, A. C., Fusibility of ash from coals of the United States: U. S. Bureau of Mines Bull. 209, 1922. See also A.S.T.M. D271-33.

[4] Ball, Clayton G., The mineral matter of No. 6 bed coal at West Frankfort, Franklin County, Illinois: Illinois State Geol. Survey Report of Investigations No. 33, 1935.

organically combined sulfur among the plant constituents of Illinois coal, although it is probable that certain constituents will contain more sulfur than others. This is a matter suitable for investigation, but in the meantime the organic sulfur must be regarded as homogeneously combined with the coal material.

The greater the amount of the total sulfur in Illinois coal, the greater is the relative amount of pyritic as compared with organic sulfur (Appendix, Table 6).[5] Coals with less than 1.5 per cent of sulfur contain pyritic and organic sulfur in about equal proportions, whereas in high-sulfur coals the pyritic sulfur commonly accounts for two-thirds of the sulfur present and organic sulfur rarely exceeds 2.5 per cent of the coal. The quantity of organic sulfur is much more constant than the amount of total or pyritic sulfur.

It is generally true that when the amount of organic sulfur exceeds 2 per cent of the coal, the amount of pyritic sulfur is in excess of 3 per cent and may be much higher. In such coals pyrite in nodules and bands is common and lends unevenness to the sulfur content.

The distribution of sulfur is irregular within the geographical area of each bed. In most beds in Illinois there are more or less restricted areas in which the sulfur content does not exceed 2.0 per cent. Why this is true is not fully known but it is thought by the writer[5] that the coals characterized by low sulfur content are those which represent a relatively high proportion of preservation of the plant material. The position of the various low sulfur areas in the commercially important beds is of interest and are briefly described in the stratigraphic order of the beds concerned.

Rock Island or Murphysboro (No. 1) coal.—The area of low sulfur coal in No. 1 seam is in central Jackson County near Murphysboro. The coal here is generally known as Murphysboro (No. 2) coal, and except for small outlying areas has been worked out and the mining district abandoned by commercial mines. Whether the low sulfur area extends into the present marginal operations is not known but these are all mines having small output. The sulfur content in the low sulfur area was generally less than 2.0 per cent and commonly less than 1.5. Locally it was less than 1.0 per cent.

La Salle (No. 2) coal.—There are two low sulfur areas of La Salle (No. 2) coal, both located in the northern part of the coal basin. One area lies east and northeast of Coal City in Will County and the other in northeastern Woodford County. The extent of these low sulfur areas is not known except that they are probably not large. At the present time only a single mine in each area is producing coal. The sulfur content in this area is usually less than 2.0 per cent and commonly less than 1.5 per cent (dry basis).

[5] Cady, Gilbert H., Distribution of sulfur in Illinois coals and its geological significance: Illinos State Geol. Survey Report of Investigations No. 35, 1935.

HARRISBURG (No. 5) COAL.—Low sulfur areas of relatively small size are known here and there in the Harrisburg district. Several mines in this district are known to contain areas of this bed of coal in which the sulfur content is less than 2.0 per cent.

SPRINGFIELD (No. 5) COAL.—If the recent correlation, by Dr. J. M. Weller and Dr. H. R. Wanless of the Survey staff, of the Grape Creek coal in Vermilion County with the Springfield (No. 5)[6] coal is correct, the Vermilion County area contains the only known occurrence of relatively low sulfur No. 5 bed coal. The area in which the seam has been commercially developed lies chiefly south of Westville and the sulfur content will probably average between 2.0 and 2.5 per cent (dry basis) with as little as 1.75 per cent being found in some samples.

HERRIN (No. 6) COAL.—A large area of No. 6 coal with low sulfur content extends through much of the west half of Franklin County northward into southern Jefferson County and southward into Williamson County to the outcrop of the seam between Carterville and Marion, and westward into Perry County up to but not across the DuQuoin anticline. This is undoubtedly the largest tract of low sulfur coal in the State and it probably contains coal with the lowest sulfur content, locally not exceeding 0.5 to 0.6 per cent. The coal is rapidly being depleted so that its complete exhaustion within fifty years seems highly probable.

The amount of coal produced from the low sulfur areas during 1933 amounted to about ten million tons or between one-third and one-fourth of the total production in that year of relatively small out-put. Under more normal conditions the production from the low sulfur areas is probably relatively smaller.

Sulfur is heat producing to the extent of about 5,000 B.t.u. per pound. Accordingly mineral matter containing more or less pyrite has heat value, compared with non-pyritic mineral matter which has none. This would be a clear gain in calorific value for a coal containing pyrite as compared with one containing the *same amount of mineral matter* but no pyrite. Sulfur in organic combination is likewise heat producing, although less so than the hydrogen and carbon it displaces.

[6]Personal communication.

CHAPTER V

THE USE OF GRADE RATING SPECIFICATIONS IN SELECTING ILLINOIS COALS

IN GENERAL, considerations other than its grade rating determine the prices at which Illinois coals are bought and sold. This condition exists largely because the consumer has an indefinite idea of the nature and significance of the variations among coals. The only possibility of reformation of price practice probably lies in a wider knowledge of the significant criteria for evaluating coal. This is a matter which it may take years to accomplish; the present bulletin, it is hoped, will prove a step in the desired direction.

GENERAL BASIS OF COAL SELECTION

Classification of Illinois coals by the consumer, in the present state of knowledge in regard to coal, is essentially individual. Grade classification assumes that coals shall be rated with respect to their value, but since conditions under which coals are burned and the particular requirements of utilization vary, standards of values will likewise vary, so that no general classification based on several criteria will be satisfactory to all users. Furthermore the lack of standardization, both in the character and in maintenance of combustion devices, makes it improbable that any grade classification devised will accord with the variations obtained in practice. Determination by test of the most suitable fuel for individual conditions is becoming the common practice, but even so, coals are certain to be classified by the consumer with respect to probable fitness for trial, mainly on the bases for grade classification that have been proposed.

Coals may be selected for various reasons, assuming that there has been a definite process of selection by the consumer. Price, calorific value, ash content, sulfur content, ash softening temperature, size, dustiness, resistance to weathering, storage characteristics, coking characteristics, friability, and other characteristics affect individually or in combination the choice of a coal. Of these characteristics, price and ash content, irrespective of the effect of the ash on the heat value of a coal, are probably the two most universally used bases of selection. Within recent years ash softening temperature is being rather generally accepted as a criterion of value, but unlike some of the other criteria no absolute scale of values can be adopted because what is preferred by one group of users

is found undesirable by another. With respect to such characteristics, classification will undoubtedly have to be in accordance with particular requirements.

PRICE

The most general first consideration in the selection of a coal by the average consumer is probably price per ton modified by a more or less indefinite knowledge in regard to the rank of the coal as indicated by its trade name or some knowledge of its source. Undoubtedly in a great many cases source is the first consideration, but in that case price is of next importance. Instead of price per ton, price is, not uncommonly and to somewhat better advantage, expressed in terms of price per million B.t.u., or in the quantity of B.t.u. available per unit of price. These latter methods, if used, indicate a desirable realization on the part of the consumer that what he is buying is not coal but heat. The number of B.t.u. per pound of coal obtainable for a unit price is readily determined and the relative desirability of coals on this basis thus ascertained.

HEAT RATING OF ILLINOIS COALS

Moist mineral-matter-free coal and coals of identical ash and sulfur content.—The symbols indicating the rank index of Illinois coals (Table 3, Appendix I) have a numerical range from 112 to 142 (11,200 to 14,200 B.t.u.), the highest index being in the order of 26 per cent greater than the lowest. This represents the approximate range of variation in the heat of combustion of theoretically pure, moist, mineral-matter-free Illinois coals as determined from mine averages. Coals containing identical amounts of mineral matter (or sulfur and ash) can be compared on this basis. The maximum difference in the heat rating of Illinois coals and hence of their value when referred to this basis is accordingly only about 26 per cent.

Coals of unequal ash and sulfur (or mineral matter) content.—Identical sulfur and ash or mineral matter content is very rare among coals, so that the rank index is rarely a suitable basis for comparison. Instead coals are more satisfactorily compared on an "as received" basis. In making such a comparison, the heat index (p. 35) may be conveniently used as an abbreviation of the full expression of B.t.u. value or heat rating of the "as received" coal.

Unless specific information is available concerning the ash and sulfur content of the coals under consideration, comparison must be made on the basis of mine average B.t.u. values (Table 3, Appendix I) on the assumption that for similar sizes of coal there will be similar variations from the mine average values.

In estimating the value of a coal it is essential to have some information in regard to its actual or probable ash and sulfur content.

THE MINERAL MATTER CORRECTION.—The calculation of the heat index, or symbol indicating the "as received" B.t.u. value, from the rank index requires determination of the mineral matter value from the ash and sulfur values and a

correction for the heat of the sulfur. Since only a rough approximation to accuracy is necessary, mineral matter values (adjusted to include the heat of the sulfur) corresponding to various combinations of ash and sulfur values may be obtained by reference to the accompanying table (Table 4). Thus if the ash and sulfur symbols are respectively A-12 and S-3 the mineral matter content (including the heat of the sulfur) will be found to be 13.6 per cent. The factor for converting the rank index symbol to the heat index symbol is .864 (1.000–0.136), appearing in the adjacent column. Thus 138 (rank index) × .864 = 119 (heat index).

Unless unusual precision is demanded in the determination of the heat index the values obtained by the use of the table are satisfactory. The most accurate method of determining the mineral matter value from ash and sulfur values has been described (p. 27). It is also possible to obtain the heat index from the rank index quickly by the use of nomographs I and II given in Appendix II. These can be used with sufficient precision to determine the "as received" B.t.u. value within about 10 units of accuracy, but use of generalized indices and symbols will be sufficiently accurate for most purposes.

Range of variation in heat index.—For Illinois coals, the range of variation in the heat index, that is the "as received" B.t.u. value, with variations in the rank index from 112 to 142, in ash from 4 to 20 per cent, and in sulfur from 0.5 to 5 per cent is from 85 to 135. The heat index probably rarely exceeds 130 (13,000 B.t.u.) and for marketable coal probably rarely falls below 90 (9,000 B.t.u.).

With an approximate range of variation of about 4,000 B.t.u. it is apparent that distinctions should be drawn only with respect to fairly large differences, at least as much as 5 per cent. This being the case grade symbols as a basis of calculation are sufficiently accurate.

Ash.—In this section we are concerned with ash as a nuisance rather than as a diluent of coal, as considered in the preceding section. Ash in quantities above that necessary for grate protection in certain types of combustion apparatus is undesirable and should be reduced to the lowest possible amount under which efficient combustion can take place. Some allowance should be made for the excess ash. Furthermore, when coals of different ash content are available for purchase, it is desirable that the buyer have some idea of the significance of these differences in terms of the fuel value.

The loss in heat value due to the presence of ash is taken care of when coal is bought as a quantity of heat. There is, however, an additional loss due to the expense of handling and disposal of the ash, and particularly due to the loss of efficiency of the fuel. Thus coal with 40 per cent ash is essentially worthless, in spite of the 60 per cent of coal present. Relative value, therefore, decreases more rapidly than the increase in ash.[1]

[1] Parr, S. W., Fuel, Gas, Water and Lubricants: Chapter XII, Coal Contracts, pp. 103-115, McGraw-Hill, 1932.

TABLE 4.—PERCENTAGE OF MINERAL MATTER CONTENT FOR THE DIFFERENT GRADES OF ASH AND SULFUR

	A-4 (Ash, 0-4%)		A-6 (Ash, 4.1-6%)		A-8 (Ash, 6.1-8%)		A-10 (Ash, 8.1-10%)	
	Mineral Matter [a]	Factor [b]	Mineral Matter [a]	Factor [b]	Mineral Matter [a]	Factor [b]	Mineral Matter [a]	Factor [b]
S 0	4.3	.957	6.5	.935	8.6	.914	10.8	.892
S 0.7 (Sulfur, 0-.7)	4.5	.955	6.6	.934	8.8	.912	10.9	.891
S 1 (Sulfur, .8-1.)	4.5	.955	6.6	.934	8.9	.911	11.0	.890
S 1.3 (Sulfur, 1.1-1.3)	4.6	.954	6.7	.933	8.9	.911	11.1	.889
S 1.6 (Sulfur, 1.4-1.6)	4.7	.953	6.7	.933	9.0	.910	11.1	.889
S 2.0 (Sulfur, 1.7-2.0)	4.7	.953	6.8	.932	9.1	.909	11.2	.888
S 3 (Sulfur, 2.1-3.0)	5.0	.950	7.0	.930	9.3	.907	11.4	.886
S 5 (Sulfur, 3.1-5.0)	5.4	.946	7.5	.925	9.7	.903	11.9	.881

a Calculated by formula: Mineral matter (including heat of the sulfur) = 1.08 × Ash + .21 × Sulfur, using numerical values of respective symbols for Ash and Sulfur. (Thiessen, Gilbert, Proposed simplification of the Parr unit coal formula, Illinois State Geol. Survey Report of Investigations No. 32, 1934.)

b Factor by which rank index is to be multiplied to determine heat index or as received B.t.u. expressed to nearest hundreds of B.t.u. = (100% of mineral matter, expressed as decimal).

CONTENT OF COMMERCIAL COALS AND CALCULATION FACTOR FOR USE WITH RANK AND HEAT INDICES.

A-12 (Ash, 10.1-12%)		A-14 (Ash, 12.1-14%)		A-16 (Ash, 14.1-16%)		A-18 (Ash, 16.1-18%)		A-20 (Ash, 18.1-20%)	
Mineral Matter [a]	Factor [b]	Mineral Matter [a]	Factor [b]	Mineral Matter [a]	Factor [b]	Mineral Matter [a]	Factor [b]	Mineral Matter [a]	Factor [b]
13.0	.870	15.1	.849	17.3	.827	19.4	.806	21.6	.784
13.1	.869	15.3	.847	17.4	.826	19.6	.804	21.7	.783
13.2	.868	15.3	.847	17.5	.825	19.7	.803	21.8	.782
13.2	.868	15.4	.846	17.6	.824	19.7	.803	21.9	.781
13.3	.867	15.5	.845	17.6	.824	19.8	.802	21.9	.781
13.4	.866	15.5	.845	17.7	.823	19.9	.801	22.0	.780
13.6	.864	15.8	.842	17.9	.821	20.1	.799	22.2	.778
14.0	.860	16.2	.838	18.3	.817	20.5	.795	22.7	.773

In determining the relative value of two or more Illinois coals of a different ash content the following procedure may be used:

(a) Determine their relative value on the basis of the heat index.

(b) Decrease the value of the coal of higher heat index if it has more ash than the coal of lower heat index, or increase it if it has less ash than the coal of lower heat index, according to the following scheme.

TABLE 5.—CORRECTIONS FOR DIFFERENCES IN ASH [a]

Symbol of lower ash coal	Corrections in cents per ton							
	2	4	7	12	18	25	35	50
	Symbols of higher ash coal							
A 4 (0.0- 4.0)	A 6	A 8	A10	A12	A14	A16	A18	A20
A 6 (4.1- 6.0)	A 8	A10	A12	A14	A16	A18	A20	
A 8 (6.1- 8.0)	A10	A12	A14	A16	A18	A20		
A10 (8.1-10.0)	A12	A14	A16	A18	A20			
A12 (10.1-12)	A14	A16	A18	A20				
A14 (12.1-14)	A16	A18	A20					
A16 (14.1-16)	A18	A20						
A18 (16.1-18)	A20							

[a] Adapted from Bulletin 378, United States Geological Survey. Results of Purchasing Coal under Government Specifications, quoted in Illinois State Geological Survey Bulletin 29, page 75. Purchase and sale of Illinois Coal on Specifications, by S. W. Parr, 1914.

Thus, for example, suppose in the case of two coals correctly valued on a heat index basis at $7.00 and $7.50, the lower priced coal has 6 per cent ash (symbol A6) and the higher priced coal 12 per cent ash (symbol A12). The values of the two coals become $7.00 and $7.43 ($7.50-0.07) when adjustment is made for the difference in ash content. On the other hand, were ash values reversed the prices would be $7.00 and $7.57. In other words, if the higher rank coal could be purchased at any price less than $7.57 in competition with the lower rank coal at $7.00 it would presumably be to the advantage of the consumer to buy it.

It should be noted that the adjustment for increase in ash is not a proportionate value but is a definite amount added to the sales price of the coal and hence it is relatively more important for coal used near the mine than at a distance where the mine cost of the coal is increased by transportation charges.

Fusion point of the ash.—It is not apparent that data in regard to the fusion point of the ash can be interpreted in terms of monetary value. There seems in general to be two grades of Illinois coal, one with fusion point generally below 2100–2200° F. and the other with higher fusion point. The requirements of the combustion equipment determines whether the best results will be obtained with easily melting or relatively refractory ash. The usual form of domestic equipment usually works somewhat at a disadvantage with coal which forms heavy clinker. Selection for such use, therefore, would tend to avoid

that kind of coal irrespective of the fuel value. In certain types of stokers, on the other hand, clinkering is desirable. Unfortunately the standard fusion test does not tell the whole story about the melting point of a coal ash, for considerable variations in this temperature are possible depending upon whether oxidizing or reducing conditions obtain in the fuel bed.

Sulfur.—There are large supplies of Illinois coal obtained from beds which, where they are being mined, contain not more than 2 per cent of sulfur. Cleaning plants in other places are able to produce coal similarly free from sulfur, particularly in the form of pyrites. It is therefore possible for the domestic consumer, if he buys with care, to obtain coal containing relatively little sulfur.

Where its cheapness makes desirable the use of coal having sulfur in excess of 2 per cent, the heat index of such coal for comparative purposes should be calculated to a sulfur-free basis. This will provide a means for compensating in price for the disadvantage residing in the presence of an excess of sulfur. The heat index should be reduced by one unit if the sulfur symbol is S-3, by two units if the symbol is S-5, and by three units if the sulfur exceeds 5 per cent. Thus if the heat index of coal is 110 and the sulfur symbol is S-5, the heat index modified for the sulfur content becomes $110 - 2 = 108$.

Other factors affecting the grading of Illinois coals.—Factors other than the four selected as of chief importance in the specifications for grading coals have more or less significance in a grade classification. These are particularly the coking strength, resistance to weathering, and friability.

With respect to Illinois coals data are still meager in regard to these characteristics, and, what is more important, the methods of testing these characteristics to obtain comparable values are, with the possible exception of the weathering tests, not completely standardized. Such tests as have been made by the same laboratory under similar conditions give some idea in regard to variations among the coals tested but comparison of values derived by different laboratories is likely to be misleading.

Coking strength.—Coking strength is determined by what is known as an agglutinating test which involves determining the weight which a mixture of sand (15 parts) and coal (1 part) will support without crushing after heating as in the volatile matter determinations.[2]

The inability of different laboratories to attain the same results on the same coal led to the discovery[3] that the character of the sand used in the tests was an important factor in determining the strength of the button obtained, etched sands giving results different from those obtained from unetched sands. The agglutinating results on Illinois coals (Table 6) were made before the

[2] Selvig, W. A., Beattie, B. B., and Clelland, J. B., Agglutinating value test for coal: Amer. Soc. for Testing Materials, Proc. 33 (2) : 1933.

[3] Information obtained through correspondence between Mr. W. A. Selvig, U. S. Bureau of Mines, and Dr. Gilbert Thiessen, Illinois State Geological Survey, and conveyed orally to the writer.

ratio of 15 parts of sand to 1 part of coal had been established, and are, therefore, reported on a basis of 14 parts of sand to 1 part of coal. The values reported in the table are kilograms of weight sustained without crushing. In certain instances the button developed abnormal characteristics that made testing impossible. The values where obtained probably record real differences among the coals, but must be used with caution when compared with values obtained by other laboratories on these or other coals. Agglutinating coals have average agglutinating indices of at least 500 g. (½ kilogram). All Illinois coals are regarded as agglutinating.

In general the higher the rank of Illinois coal the higher its agglutinating index (Table 6, p. 51) and presumably the greater its coking strength. It is desirable to have such tests verified by actual coking tests on a laboratory scale in order that there may be a definite significance to the agglutinating index. Such coking tests on Illinois coals are being carried on by Dr. Gilbert Thiessen of the Illinois Geological Survey.

Intelligent discrimination among coals on the basis of relatively slight differences in the coking properties of Illinois coals calls for a fairly high degree of technical knowledge in regard to the combustion process and combustion apparatus. The fact that all Illinois coals are coking coals, although of varying strength, is probably sufficient distinction between these and noncoking coals from outside the State.

Weathering characteristics.—The rank of a coal more or less determines its tendency to slack when exposed to the air; the higher the rank of the coal, in general the more resistant it is to the slacking tendency. The Bureau of Mines[4] has standardized an accelerated weathering test for determining within a relatively short period of time the relative tendency of a coal to weather (p. 19).

Illinois coals that have been tested by the Bureau of Mines, as shown in Table 6—and only one other series of tests is known[5]—indicate in general slacking indices less than 5 per cent, except for No. 6 coal in counties in western Illinois for which slacking indices as high as 14 per cent were obtained. They are evidently coals which slack readily and hence probably would not retain themselves in large lump sizes more than a few weeks if exposed to the weather. There has been no systematic observation of the extent of such slacking and the sizes to which the coal is commonly reduced before the process stops or considerably slows down. Undoubtedly such coals will give most satisfactory service in equipment designed to burn fine sizes of coal.

FRIABILITY.—Friability is a quality commonly possessed by loosely cemented sandstones that crumble readily under pressure or from a blow. Coals possess

[4] Fieldner, A. C., Selvig, W. A., and Frederick, W. H., Accelerated laboratory test for determining the slacking characteristics of coal: United States Bureau of Mines, Report of Investigations 3055: 24 pages, 1930.

[5] Mitchell, D. R., Accelerated slacking tests of some Illinois coals: Illinois Acad. Sci., Trans. 23 (3): 421-425, March 1931.

this quality to a greater or lesser degree, due probably to the variations in the amount of jointing. It is a quality which concerns the producer and dealer as, together with the brittleness of certain components, and the tendency to slack in the air, it determines the proportions of the different sizes that the mine will produce, the extent to which small sizes will be produced in shipping and in transfers in the dealers yard, and the amount of "slack" in mine run coal.

No accepted standard method for deriving a numerical value for friability has been perfected. Dropping tests have been applied[6] to more than 40 samples of freshly mined Illinois coal but the results obtained are comparable only among themselves, the conclusion drawn from the investigation being that distinctive differences in the friability of coals exist from place to place and from seam to seam in the coal basin.

Discrimination between friable and non-friable coal is of little importance to the person buying sized coal since the operation of sizing effects most of the important degradation. Where coal is purchased directly from the mine, however, its friability may have important effects upon the size of the coal received or in the proportion of sizes in mine run coal. In general, however, coal is purchased in large sizes because of the supposed advantage in greater freedom from mineral impurities of such coal. Where such coal is shipped directly from the mine to the consumer, no change in ash content takes place, regardless of the amount of degradation. Where the coal passes through a coal yard, however, rescreening of "lump" coal is necessary, and the disposal of the "fines" may become a matter of some difficulty to the dealer, so that he is much interested in friability as well as in weathering degradation.

CONCLUSION

It is suggested as desirable to rate coals primarily on the basis of their heat value, comparison being made with the use of the heat index—consisting of the as received B.t.u. value of the coal expressed in the nearest hundreds of units. (This value doubled gives the number of thousand heat units per 1 ct. of cost assuming the coal could be purchased at $1.00 per ton. It is thus easy to compare the relative value of two coals and their relative desirability at any price.) A method is suggested for compensating for differences in ash value, the compensation being respectively 2, 4, 7, 12, 18, 25, 35, and 50 cents per ton for each successive two per cent increase or decrease of difference in ash content. Sulfur of 3 per cent or more is penalized to the extent of the heat value of the sulfur, that is approximately 50 B.t.u. for each per cent of sulfur. Ash fusion temperature, coking strength, sulfur content, friability and slacking tendency of coals are considerations, the importance of each of which or any combination of

[6] Smith, C. M., The Friability of Illinois Coals: University of Illinois Engineering Experiment Station, Bulletin 218, 1930.

which depends largely on special conditions and determines for special reasons the suitability or unsuitability of a coal.

An example of the method of comparison of two coals is presented as an illustration of the procedure recommended:

Coal No. 1: Rank index 120; ash content 15 per cent; sulfur content 3 per cent; priced at $5.00.

Coal No. 2: Rank index 131; ash content 12 per cent; sulfur content 1.5 per cent; priced at $6.00.

Coal No. 1: Ash content symbol A16; sulfur content symbol S3. The mineral matter content by Table 4 is therefore 17.9 per cent and the calculation factor .821. Heat index: $120 \times .821 = 99$ (9,900 B.t.u. as received basis.) (Subtract 1 for heat of sulfur: $99 - 1 = 98$.

Thousands of B.t.u. per 1 cent at $1.00 per ton: $98 \times 2 = 196$.

Coal No. 2: Ash content symbol A12; sulfur content symbol S1.6. The mineral matter content by Table 4 is 13.3 and the calculation factor .867.

Heat index: $131 \times .867 = 114$ (11,400 B.t.u. as received basis)

Thousands of B.t.u. per 1 cent at $1.00 per ton: $114 \times 2 = 228$.

Coal No. 1 at $5.00 per ton supplies $196/5 = 39$ thousand B.t.u. per 1 cent of cost.

Coal No. 2 at $6.00 per ton supplies $228/6 = 38$ thousand B.t.u. per 1 cent of cost.

Coal No. 2 if purchased at the same rate as coal No. 1 would cost $228/39 =$ $5.85 approximately, to which two cents should be added as an allowance for the difference in ash content making a total of $5.87.

A graphical method for determining the relative value of coals using rank indices or actual B.t.u. values, ash and sulfur symbols, or actual values, is given in Plate II, Appendix II, and a similar method of comparing the relative economy of coals, fuel oil, and gas is given in Plate III, Appendix II.

This general method for the classification and selection of Illinois coals by the use of rank indices provided by the tables of analyses and the additional use of generalized ash and sulfur symbols based upon the ash and sulfur content of the coals as prepared for the market will enable the purchaser of small quantities of coal to make discriminating selection among the fairly wide variety of coals mined in Illinois. It is essential, however, that reliable data are available in regard to the ash and sulfur content of the coal as prepared for shipment at the mine. Unfortunately not all of the mines systematically collect samples of prepared coal for analysis. The purchaser often, therefore, must judge the quality of the coal offered for sale by the data provided by face samples as given in the mine and county averages (Table 3, Appendix I). This at best gives approxi-

mate values only, for as has been previously pointed out, the methods of mining and preparing coal for market are of great importance in determining the extent to which extraneous ash and sulfur is included with the coal or is removed at the face or at the tipple.

It needs to be emphasized that heat value, although of great importance in the selection of a fuel, is not always the only important consideration. The extent to which other factors must be taken into consideration depends largely upon the peculiar requirements of the individual device for utilization.

TABLE 6.—AGGLUTINATING AND SLACKING INDICES OF CERTAIN ILLINOIS COALS, SHOWING THE RESULTS OF TESTS BY THE UNITED STATES BUREAU OF MINES, USING BUREAU OF MINES METHODS IN 1933-1934.

County	Index No.	Coal No.	Laboratory No.	Agglutination Index 14 Sand : 1 Coal Kg.	First Cycle Slacking Index Per Cent
Bureau.....	532	7	A86596	3.0	5.9
			A86597	2.8	3.5
Franklin.....	136	6	A90715	3.9	1.9
			A90716	4.0	0.8
			A90717	4.7	0.7
	BM19	6	A90785	4.8	2.6
			A90786	4.7	1.8
			A90787	4.7	1.7
Grundy.....	530	6	A86302	6.1	2.0
			A86303	6.2	3.1
Henry.....	232	1	A90505	4.2	1.8
			A90506	4.3	0.1
			A90507	3.9	0.4
	527	6	A86458	1.1	7.9
			A86459	1.1	14.1
Jackson.....	419	6	A90723	4.7	1.2
			A90724	7.5	0.1
			A90725	7.4	0.6
Knox.....	526	6	A86455	2.1	11.3
			A86456	2.1	13.0
Livingston....	600	5?	A90312	8.7	1.4
			A90313	8.4	1.6
			A90314	7.2	1.3
Menard.....	531	5N	A86593	4.7	5.7
			A86594	3.8	4.6
Peoria.....	601	5N	A90424	5.2	1.4
			A90425	5.4	1.5
			A90519	5.7	1.3

TABLE 6—*Continued.*

County	Index No.	Coal No.	Laboratory No.	Agglutination Index 14 Sand : 1 Coal Kg.	First Cycle Slacking Index Per Cent
Saline.....	127	5S?	A90719	8.7	0.0
			A90720	6.2	0.0
			A90721	6.9	0.0
	BM71 = 608	5S	A91426	6.3	0.5
			A91427	6.2	0.3
			A91428	7.1	0.6
Stark.....	528	6	A86466	3.1	7.9
			A86463	2.6	9.9
Vermilion....	401	5N	A90658	Abnormal	5.9
			A90659	7.0	3.6
			A90660	Abnormal	10.4
	603	7	A90627	6.8	0.2
			A90628	7.2	0.6
			A90629	7.2	0.9
Will.....	359	2	A90366	Abnormal	4.8
			A90367	Abnormal	5.3
			A90369	Abnormal	2.5
			A90370	Abnormal	4.7
Woodford....	410	2	A90282	Abnormal	4.9
			A90283	4.9 (Slightly Abnormal)	6.5
			A90284	Abnormal	3.6

CHAPTER VI

COMMERCIALLY IMPORTANT COAL BEDS IN ILLINOIS

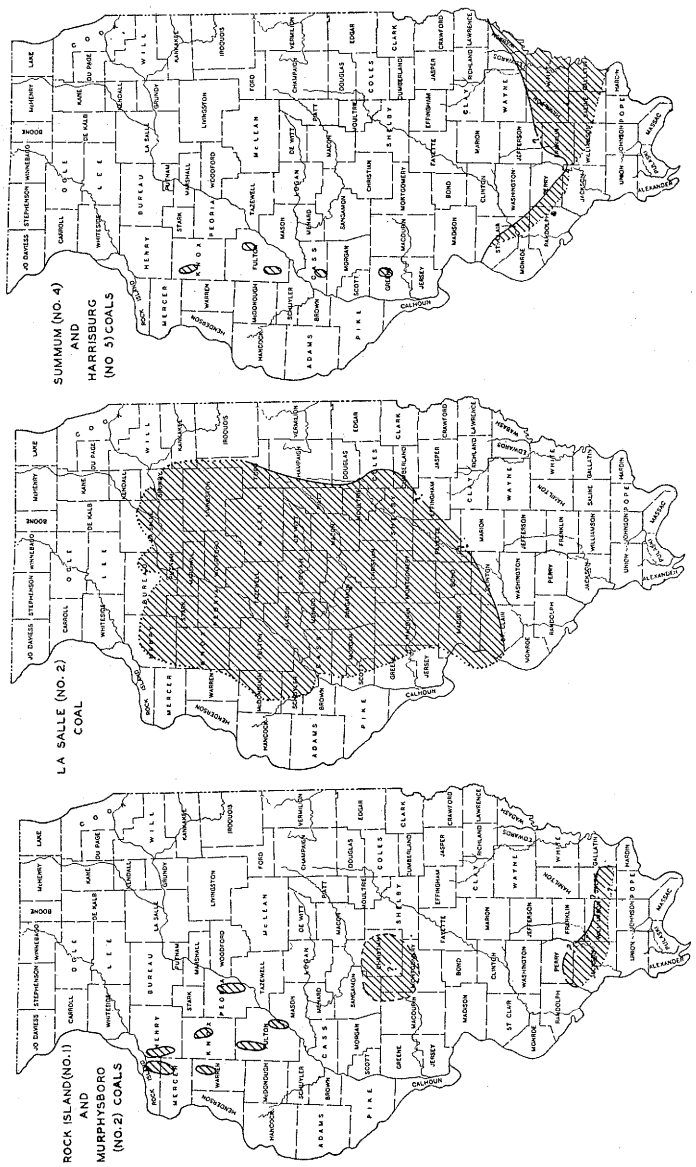
IN THE PRESENT BULLETIN the following commercially important coal beds are recognized, being listed in order from the lowest in the stratigraphic column upward:

Coal No. 1	Rock Island and Murphysboro bed
.....	Lower Assumption bed (possibly same as Coal No. 1)
.....	Upper Assumption bed (possibly same as Coal No. 1)
Coal No. 2	Colchester and LaSalle bed ("Third Vein" in Longwall district)
Coal No. 4	Summum bed
Coal No. 5 (south)	Harrisburg bed (possibly the same as coal No. 4)
Coal No. 5 (north)	Springfield, Grape Creek (Vermilion County) bed
Coal No. 6	Herrin bed (also Streator and LaSalle "Second Vein" bed)
Coal No. 7	Danville and Sparland bed (also "First Vein" in LaSalle County)

None of these coal beds is continuous beneath the coal basin, at least in workable thickness. Each bed occurs in workable thickness in more or less well defined, usually large areas (Fig. 2) beyond which, although the coal bed may be present, it is thin. Not uncommonly it is entirely absent although closely associated beds, indicating its approximate position, may be present.

The original thickness of the Pennsylvanian system or "Coal Measures" was probably at least 3000 feet. The upper half of the system contains no coals of present commercial importance although there are seams of sufficient thickness to be worked for local trade. The lower third of the system also lacks seams of commercial thickness but contains beds worked for local supplies. The intermediate portion of the system, with a maximum thickness of about 600 to 700 feet contains all the seams listed at the beginning of the chapter, and corresponds fairly closely with what is called the Carbondale formation, the top of that formation, however, being at the top of coal No. 6 rather than coal No. 7.

Toward the north and west margins of the basin the thickness of this productive series is not more than half what it is in the southern and central


SUMMUM (NO. 4) AND HARRISBURG (NO. 5) COALS
LA SALLE (NO. 2) COAL
ROCK ISLAND (NO. 1) AND MURPHYSBORO (NO. 2) COALS

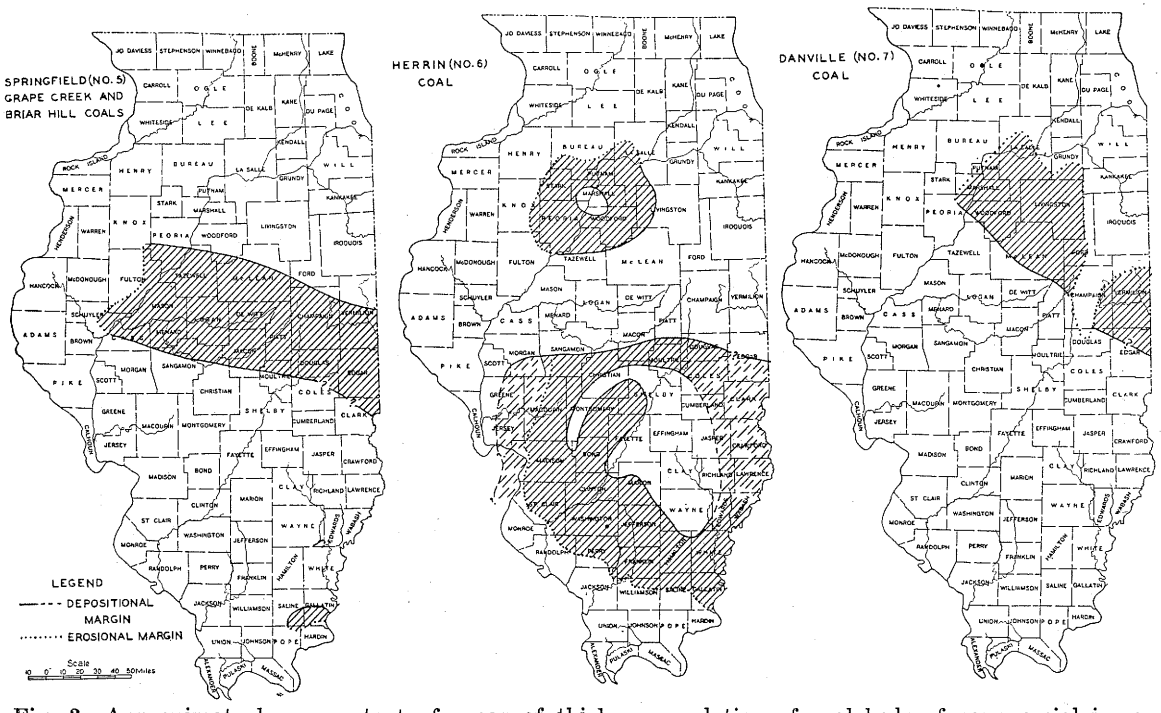


Fig. 2—Approximate known extent of areas of thick accumulation of coal beds of commercial importance in Illinois, shown by seam. Approximate margins of the areas of thick accumulation are indicated by a full or broken line; by the latter if very indefinite. Present erosional margin of each coal bed is indicated by a line of dots. (Some of the data presented are based on field studies by J. M. Weller and H. R. Wanless.) (Cady, G. H., Distribution of Sulfur in Illinois Coals and its Geological Implications: Illinois State Geol. Survey Report of Investigations No. 35, 1935.)

part of the basin. In these marginal areas the upper part of the system may be entirely eroded and the lower part be absent so that coal No. 1 or even coal No. 2 may lie within a few feet of rocks of much greater age.

The "Coal Measures" rocks below coal No. 1 contain several coal beds, probably there are five or six coal horizons, but the beds are rarely if ever more than three feet thick. These coal beds have no numbers, but are referred to by name such as "Willis," "Ice House," and "Battery Rock" coals in southern Illinois. Coal beds of about the same age in northern Illinois are crowded closely together, commonly being separated only by underclays and also commonly consisting of little more than smut bands.

Above No. 7 coal are a large number of coal beds, probably as many as twenty-five, some of which are commonly represented by little more than sooty streaks, and others of which attain a thickness of between 1 and 3 feet over fairly large areas. A few of these beds like the "Shelbyville" coal bed, the "Neoga" coal bed (between Trowbridge and Neoga in southeastern Shelby County), the "Calhoun" coal bed in Richland County,[1] and the "Friendsville" coal bed in Wabash County, are fairly important sources of coal used locally.

Whereas it was formerly supposed that there were less than twenty coal beds in the Illinois "Coal Measures", it is now known that there are at least twice that many and possibly nearer three times. None of the original numbers applied by Worthen in the eight volumes of the Geological Survey of Illinois[2] was consistently applied to the same bed throughout the basin. This being the case with the workable, and more easily traceable beds, it means even greater confusion with respect to the thinner less readily identified beds. It is, therefore, desirable to avoid the use of numbers and refer to beds by names which usually have a local significance and make designation more definite. The well established use of numbers in the coal trade, however, makes some use of numbers unavoidable but it is important that their designation be thoroughly understood.

In no previous report has exactly the same system of bed numbers and names been employed as is used here, several changes in correlation and identification having resulted from investigations and discoveries made in the last few years by the Stratigraphic Division under the direction of Dr. J. Marvin Weller with the assistance of Dr. H. R. Wanless. As an aid in the identification of beds the following table is provided:

[1] Noé, A. C., Our present knowledge of American coal ball plants: Illinois Acad. Sci. Trans. 26 (3): 103, March, 1934.

[2] Published—1866-1890.

TABLE 7.—COMPARISON OF PRESENT AND FORMER SYSTEMS OF NAMES AND NUMBERS OF THE COMMERCIALLY IMPORTANT SEAMS IN ILLINOIS.

Present Coal Nos.	Present names and alternate names	Correlation of Cooperative Investigations 1912-1930	Correlation prior to 1912 (Worthen Survey)
No. 7	Danville (Sparland) (LaSalle "First Vein")	Streator, Danville LaSalle "First Vein"	Streator, Danville, LaSalle First Vein (No. 6 in places in Southern Illinois)
No. 6	Herrin (Brereton) (LaSalle "Second Vein") Streator	Herrin, Grape Creek Springfield or LaSalle "Second Vein" in Northern Illinois	No. 6 (in places in southern and western Illinois) No. 5 and LaSalle "Second Vein" in Northern Illinois
No. 5 (north)	Springfield (Grape Creek)	Springfield, Harrisburg	No. 5 in western Illinois, locally called No. 4
No. 5 (south)	Harrisburg (possibly same as Summum) (Blair)	Springfield or Harrisburg (Blair)	No. 6 in parts of southern Illinois
No. 4	Summum (Soperville) possibly Harrisburg	Not recognized	Not recognized. (No. 5 called No. 4 in places in western Illinois, but not the same coal as Summum coal)
No. 3	Not recognized	Not recognized	No. 2 coal locally called No. 3
No. 2	LaSalle (Colchester)	LaSalle, LaSalle "Third Vein", Colchester Murphysboro	No. 2; locally called No. 3 in western Illinois
No. 1	Rock Island, Murphysboro (Curlew)	Rock Island	Rock Island

MINING ENTERPRISES BY BED

At the present time no shipping mine is producing coal from more than one bed and, for the most part, operations of this kind in each mining district are in but one bed, although two or more beds may be present in a district and worked for local uses. For this reason geographic distinctions correspond to differences in bed source.

South from Chatham, Edinburgh, and Blue Mound, Herrin (No. 6) is the only coal bed worked by railroad mines except for small mines in Williamson County and the mines in Saline and Gallatin counties where the Harrisburg coal is exclusively mined. The Harrisburg bed is mined for local trade in Williamson, Randolph, and St. Clair counties, and the Herrin coal bed is so mined in Saline and Gallatin counties. The Murphysboro district in central Jackson County is an essentially abandoned field where Murphysboro No. 1 (formerly called No. 2) bed is worked out except for small areas providing supplies of locally used coal.

Two beds near or at the horizon of Rock Island (No. 1) coal were formerly worked at Assumption, where No. 6 coal bed is missing.

In central Illinois from Springfield and Moweaqua on the south to Bloomington on the north, southern Vermilion (Grape Creek district) on the east and Rushville, St. David, Cuba, Canton, and Farmington on the west and northwest, the Springfield (No. 5) is the only bed commercially developed, except in Vermilion County. At places both higher and lower beds of workable thickness are present and at times have been mined.

In Vermilion County, Springfield No. 5, the Grape Creek bed (formerly called No. 6) is worked in the main south of Westville, and the Danville (No. 7) bed north of this point, the lower bed thinning to the north and the upper bed to the south.

In western Illinois beyond the outcrop of Springfield No. 5 coal bed in Fulton and Schuyler counties, there are numerous mines supplying local trade from various seams, but particularly from the Colchester (No. 2) and the Rock Island (No. 1) beds. In southwestern Henry County at Alpha and near Galesburg, Knox County, are the only railroad mines in the State now obtaining coal from the Rock Island (No. 1) bed. Formerly there were fifteen to twenty such mines in the Rock Island and Mercer county regions and the Murphysboro district.

In the northern part of the Illinois coal basin is the large Longwall district so-called from the method of mining the LaSalle (No. 2) bed, the principle coal bed of the district. This area extends from Bureau County on the west to the western portion of Will County on the east with some interruptions in LaSalle County, and from LaSalle County on the north to McLean County (Bloomington) on the south. In this area there are at present only 6 shipping mines, one each at Peru, Granville, Ottawa, Wilmington, Minonk, and Roanoke. Twenty years ago this was one of the important mining districts in the State with 30 shipping mines. The abandonment of the district is due not, as in the case of the Murphysboro and Rock Island districts to exhaustion of the coal supply, but to inability to meet the competition with mines working thicker and higher rank coal in the southern and central part of the State.

Here and there in the district coals other than No. 2 are being or have been worked by shipping mines and also for local trade, as the Danville No. 7 bed at Sparland, the Herrin No. 6 bed at Streator (Streator coal is commonly known as coal No. 7), worked near Verona, Grundy County (probably No. 6), and the bed worked at Pontiac and Fairbury, here called No. 5 but of uncertain identity. The position of the seams in close proximity to the axis of the LaSalle anticline may explain the anomalous high rank of this coal.

SELECTION OF COAL BY BED

No uniformity exists with respect to the characteristics of the coal in the respective beds; the variations from place to place in the same seam are as great

as variations from bed to bed. The bed source of Illinois coal is usually signified by the geographic location of the mine from which it comes. This is particularly true with respect to the coal from the larger mines, because in general all such mines in a mining district work the same coal bed. This is the case for practically all mines with railroad connections. It is generally true that more definite information is available in regard to the characteristics of the coal bed generally worked in any district than about other beds, so that extravagant claims regarding the quality of such unusual coals cannot be so readily refuted as in the case of the more generally worked coals. Claims with respect to the unusual quality of one coal in a region as compared with another originating in the same region must be regarded with some suspicion because differences, although they do exist, are small, and mainly have to do with differences in mineral matter (ash) content.

In general a slight increase in rank is to be noticed from bed to bed with increase in depth or age.[3] The deepest and oldest coal in any district will generally have slightly the highest rank.

[3] Cady, G. H. and Rees, O. W., Unit coal as a basis of coal standardization as applied to Illinois coals: Illinois State Geol. Survey Report of Investigations No. 32, 1934.

CHAPTER VII

AVAILABLE CHEMICAL DATA AND THEIR RELIABILITY

PROXIMATE AND ULTIMATE ANALYSES

The characteristics of coal that are recorded in the usual form of commercial analyses of coal consist of the following items:

Proximate analysis
- Moisture
- Volatile matter
- Fixed carbon
- Ash

Ultimate analysis
- Hydrogen
- Carbon
- Nitrogen
- Oxygen
- Sulfur
- Ash

The calorific (B.t.u.) value and the sulfur content is usually reported with each form of analysis, although the sulfur is strictly not part of the proximate analysis and the heat value determination is part of neither. Other values commonly reported with either or both forms are

- Mineral CO_2
- Forms of sulfur (organic, pyritic, and sulfate sulfur)
- "Softening" temperature of the ash, commonly called the "fusion point of the ash".

There are available a few complete elementary analyses of coal, including both coal material and ash.

PURPOSE OF ANALYTICAL DATA

The analytical data are compiled primarily to show the character of regional variations in Illinois coals rather than to show the character of the coal produced at the individual mine. For this primary purpose the results of analyses of abandoned mines, which make up a large part of the tabulations, are just as important as analyses of face samples from active mines. The tables are so compiled as to emphasize the importance of regional averages for each workable bed rather than the character of the coal in the individual mine.

RELEASE OF ANALYTICAL DATA

It is realized that specific information in regard to the character of the coal bed in a particular mine is often desired. This can be obtained, however, only by correspondence with the Survey except in so far as the identity of the mine may be shown in Table 5, Appendix I, which lists certain long inactive or abandoned mines and certain mines for which analyses included in Table 1 (Appendix I) have been published by the United States Bureau of Mines without concealment of identity. If analyses of the coal in the mine concerning which there is particular inquiry are represented in the present tabulations or in Survey files, a request for its release for a specific purpose will be made by the Survey to the operator concerned. When this consent is gained the information will be supplied to the inquirer. The Survey is willing to undertake this service, and in the past has usually found the individual operator quite willing to release the information provided he knows to whom it is supplied.

TABULATIONS

The individual analyses given in the Appendix, Table 1, consist only of proximate analyses and B.t.u. values. Very few ultimate analyses of individual samples of Illinois coals are available. Ultimate analyses have most commonly been made of samples composited of a group of face samples collected in an individual mine in the same sampling trip and represent a laboratory average of from two to five such samples, usually of three to five. Most such ultimate analyses of Illinois coal made before 1931 were made in the Bureau of Mines Experiment Station at Pittsburgh. Since 1931 a number of ultimate analyses of composite samples have been made by the Analytical Division of the Survey. In the table of mine averages (Table 2, Appendix I) the ultimate values are commonly those obtained by analysis of a composite sample, indicated by a single laboratory number. Mine average ultimate values are adjusted to conform to average ash and sulfur values for all analyses from the same mine or for all mine averages for the same county.

In order that all values used in compiling mine averages (Table 2, Appendix I) may be presented, it is necessary to give intermediate average or composite values for certain groups of analyses. Table 3 (Appendix I) gives at least two such averages or composite analyses for each mine represented, the average of these two or more analyses being the mine average shown in Table 2. Where it is possible to do so without revealing the source of the samples represented by the averages, the averages are grouped together in Table 3. However, in the case of certain counties it is necessary to group analyses numbered in the B.M. series separately from those not so numbered because the identity of the mines in the B.M. series is given in Table 5 (Appendix I). Where such is the case it is not possible to know what two or more averages were used in the calculation of the mine average given in Table 2 without having a key to the identity of the

mines. This can not be avoided so long as it is the policy to conceal the identity of mines other than those revealed by published Bureau of Mines analyses. All composite analyses of samples represented by groups of single analyses in Table 1 appear either in Table 2 or Table 3. None appear in Table 1.

Available information in regard to the softening temperature of the ash of certain Illinois coals, the ash content, the total sulfur content of these coals, and their content of pyritic and organic sulfur are presented in Table 6 (Appendix I).

STANDARDIZATION OF LABORATORY PROCEDURE

In setting forth the specifications for classification with chemical data it is stated that the coal shall be analyzed in accordance with standard methods of laboratory procedure as established by the American Society for Testing Materials (A.S.T.M. Designation: D 271-33). The determinations of the values herein presented were made in accordance with this procedure by one or the other of three laboratories: the Chemical Testing Laboratory of the University of Illinois, the United States Bureau of Mines Experiment Station, Pittsburgh, or the Analytical Division of the State Geological Survey.

To avoid the possibility of including analyses made under conditions giving results of more or less uncertain reliability all analyses made before 1912 were excluded from the tables.[1] The standard methods[2] adopted in 1916 had been in use by the Bureau of Mines for several years and at least as early as 1912 by the Chemical Testing Laboratory of the University of Illinois. An important change from the earlier methods of analysis which concerned the method of volatile matter determinations and which was standardized in 1913 had been developed in earlier years by the Bureau and was also in use by the University of Illinois laboratory in 1912. Uncertainty in regard to the quality of analyses made in earlier years required their elimination.

During 1912 a series of about 100 mines was sampled to provide sets of three or more, usually only three, analyses for each mine, as a basis for accurate generalizations in regard to regional variations in the character of Illinois coals. Analyses were run by the Chemical Testing Laboratory of the University of Illinois under the direction of Professor S. W. Parr and the direct supervision of Mr. J. M. Lindgren. Analyses were run in duplicate by different analysts, and numerous check analyses were made by the Experiment Station Laboratory of the Bureau of Mines at Pittsburgh. The results obtained by both laboratories on duplicate samples are included in the present report, and the set may be identified by index numbers less than 101 and dates of analysis as of 1912. These analyses were first published in 1914 in Bulletin 29, "Purchase and Sale of Illinois Coal on Specification", by S. W. Parr, and were again published

[1] Fieldner, A. C. Review of methods used in coal analysis with particular reference to classification of coal: Amer. Inst. Mining and Metallurgical Engineers, Transactions, Coal Division, 1930: 585-596, 1930.

[2] Proposed tentative methods for sampling and analysis of coal: Amer. Soc. Testing Materials Year Book 1915: 596-624.

in Cooperative Mining Series Bulletin 3, "Chemical Study of Illinois Coals," by the same author. These analyses were again published in a compilation of available analyses of Illinois coals printed as Cooperative Mining Series Bulletin 27 (or Extract from Bulletin 27) compiled by G. W. Hawley.

From 1912 to 1933 there were numerous analyses of Illinois coal made by the Bureau of Mines Experiment Station, Pittsburgh. Some have been published in one or another of the various compilations of the Bureau. Such published analyses are indicated in the tables (Tables 1, 2, and 3, Appendix) by a symbol B.M. preceding the index number.

In addition to these published analyses there are others made by the U. S. Bureau of Mines under special arrangement with the Survey in regard to publication, and still others which although made without special arrangement in regard to publication have not yet been published. Such analyses have the Bureau of Mines analysis numbers and the mine index numbers are prefixed by the initial "A."

Analyses not made by the U. S. Bureau of Mines since 1912 were made either by the Chemical Testing Laboratory of the University of Illinois, J. M. Lindgren in charge, or in the Analytical Laboratory of the Survey under the supervision of Dr. F. H. Reed, Head of the Chemistry Section, and in immediate charge of Dr. O. W. Rees. Both laboratories operate under standard conditions and the results of both have been frequently checked by comparison with results obtained by the Experiment Station Laboratory of the Bureau of Mines by exchange of samples and by comparison of results obtained upon opposite end halves of a riffled sample. Several examples of such analyses made by two laboratories in 1932 and 1933 appear in Table 2.

Most of the analyses made between 1912 and 1931 by the Chemical Testing Laboratory of the University of Illinois were made about 1921 in anticipation of the publicaiton of the compilation which appeared in Cooperative Mining Series Bulletin 27, previously mentioned.

The analyses made from 1931 to 1933 by the Survey laboratory (prefixed by "C.") and by the U. S. Bureau of Mines were made in connection with investigations of the agglutinating and slacking characteristics of Illinois coals to assist in establishing criteria for differentiating between bituminous and subbituminous ranks of coal. Analyses made since 1933 have been largely for the purpose of making the record more complete and up-to-date before the present publication.

Although the analyses here assembled were made in three laboratories through a period of more than 20 years it is believed that the values are comparable within the range of error allowable in general classifications as have been suggested.

SAMPLING METHODS

The present bulletin gives analyses only of face samples of coal. The purpose of such sampling is to obtain an analysis which will represent as closely as possible the composition of the entire seam of the coal except for gross impurities such as would be discarded by the miner under ordinary conditions of hand mining. To obtain a sample that will give this result, each layer of the seam must be proportionately represented in the sample and there must be as little loss in moisture and occluded gases as possible. Standard sampling methods require the collection of three or more channel samples at a freshly mined face representing the bed or that portion of it being mined, and further require that the samples shall be sealed in the mine in a container in which it is transported to the laboratory. Generally where samples must be transported a considerable distance the original sample is crushed down in the mine to less than ¼-inch mesh and then quartered or riffled down to a weight of about 3 pounds. This sample is then sealed in the container in the mine whence it is taken to the laboratory. The entire sample weighing 5 to 15 pounds per foot of coal may be sealed in a large tin such as a 50-pound lard container and taken to the laboratory and very quickly run through a large jaw crusher and riffled to the size necessary for a laboratory sample. The amount of time for this procedure is considerably less than that required for grinding or tamping the sample to ¼ inch size in the mine and comparison of results obtained by the two methods shows no appreciable difference in the character of the laboratory samples obtained. This method has been employed in collecting samples analyzed by the Analytical Division of the Survey during 1934.

APPENDIX I

INDIVIDUAL AND AVERAGE ANALYSES OF ILLINOIS COALS

FINDING KEY TO ARRANGEMENT OF ANALYSES BY COAL BED

Finding Key to Arrangement of Analyses by County

Finding Key to Arrangement of Analyses by County

County, Coal No., Part of State	Table 1 Page	Table 2 Page	Table 3 Page
Marshall (No. 7) (Western Illinois)	201	288	312
Menard (No. 5) (Central Illinois)	116	240	300
Mercer (No. 1) (Western Illinois)	72	210	
Montgomery (No. 6) (Southwestern Illinois)	164	268	307
Moultrie (No. 6?) (Central Illinois)	167	270	
Peoria (No. 5) (Western Illinois)	118	241	300
Perry (E) (No. 6) (Southern Illinois)	173	273	308
Perry (W) (No. 6) (Southwestern Illinois)	167	270	308
Randolph (No. 5 (4?)) (Southwestern Illinois)	90	226	
Randolph (No. 6) (Southwestern Illinois)	177	274	
Rock Island (No. 1) (Western Illinois)	74	211	
St. Clair (No. 6) (Southwestern Illinois)	179	276	
Sangamon (No. 5) (Central Illinois)	122	243	301
Sangamon (No. 6) (Central Illinois)	184	278	
Saline (No. 5 (4?)) (Southern Illinois)	91	227	294
Schuyler (No. 2) (Western Illinois)	84	223	
Schuyler (No. 5) (Western Illinois)	127	247	
Shelby (No. 5) (Central Illinois)	127	247	
Stark (No. 6) (Western Illinois)	131	251	303
Tazewell (No. 5) (Central Illinois)	128	247	
Vermilion (No. 5) (Eastern Illinois)	102	233	297
Vermilion (No. 7) (Eastern Illinois)	203	289	313
Warren (No. 1) (Western Illinois)	74	212	
Washington (No. 6) (Southwestern Illinois)	186	279	310
White (No. 6) (Southern Illinois)	187	280	
Will (No. 2) (Northern Illinois)	85	222	293
Williamson (No. 5 (4?)) (Southern Illinois)	100	231	
Williamson (No. 6) (Southern Illinois)	187	281	311
Woodford (No. 2) (Northern Illinois)	86	222	293

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES OF ILLINOIS COAL BEDS ARRANGED BY BED, COUNTY, AND MINE

ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12469.....	*105	1921	Fulton.....	1	1	11.38	38.66	39.51	10.45	4.52	.87	11447
					2		43.62	44.58	11.80	5.10	.98	12917
					3		49.46	50.54	.....	5.78	1.11	14645
					4	.....	.....	.....	.....	.....	.....	14993
12470.....	*105	1921	Fulton.....	1	1	11.42	38.17	40.07	10.34	4.76	.45	11409
					2	.....	43.09	45.24	11.67	5.37	.51	12880
					3	.....	48.78	51.22	.....	6.08	.58	14582
					4	.....	.....	.....	.....	.....	.....	14934
12471.....	*105	1921	Fulton.....	1	1	10.84	38.42	40.91	9.83	5.61	.54	11554
					2	.....	43.09	45.88	11.03	6.29	.61	12959
					3	.....	48.43	51.57	.....	7.06	.69	14566
					4	.....	.....	.....	.....	.....	.....	14941
14387.....	232	1924	Henry.....	1	1	13.36	40.10	36.34	10.20	5.83	.97	10820
					2	.....	46.28	41.94	11.78	6.73	1.12	12488
					3	.....	52.46	47.54	.....	7.63	1.27	14155
					4	.....	.....	.....	.....	.....	.....	14539
14388.....	232	1924	Henry.....	1	1	15.17	40.10	37.32	7.41	4.85	.99	11058
					2	.....	47.28	43.99	8.73	5.72	1.17	13036
					3	.....	51.80	48.20	.....	6.27	1.28	14283
					4	.....	.....	.....	.....	.....	.....	14584
BM-A90505..	232	1933	Henry.....	1	1	14.8	37.4	38.2	9.6	5.3	.42	10730
					2	.....	43.9	44.8	11.3	6.2	.50	12590
					3	.....	49.5	50.5	.....	7.0	.....	14200
					4	.....	.....	.....	.....	.....	.....	14552
BM-A90506..	232	1933	Henry.....	1	1	14.6	38.4	38.5	8.5	5.6	.90	10890
					2	.....	45.0	45.1	9.9	6.5	1.04	12750
					3	.....	50.0	50.0	.....	7.2	.....	14160
					4	.....	.....	.....	.....	.....	.....	14493

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM-A90507..	232	1933	Henry.....	1	1	14.7	37.4	37.7	10.2	6.4	.82	10680
					2	.....	43.9	44.1	12.0	7.5	.96	12520
					3	.....	49.9	50.1	.....	8.5	.....	14220
					4	.....	.....	.....	.....	.....	.....	14647
14385.....	237	1924	Henry.....	1	1	17.36	36.31	40.73	5.60	2.92	.79	11035
					2	.....	43.93	49.29	6.78	3.53	.96	13353
					3	.....	47.13	52.87	.....	3.79	1.03	14324
					4	.....	.....	.....	.....	.....	.....	14522
14386.....	237	1924	Henry.....	1	1	17.40	35.72	38.72	8.16	3.84	.99	10650
					2	.....	43.24	46.88	9.88	4.65	1.20	12894
					3	.....	47.98	52.02	.....	5.16	1.33	14308
					4	.....	.....	.....	.....	.....	.....	14592
14383.....	252	1924	Henry.....	1	1	14.13	36.22	37.02	12.63	7.63	.62	10246
					2	.....	42.17	43.12	14.71	8.89	.72	11932
					3	.....	49.44	50.56	.....	10.42	.84	13989
					4	.....	.....	.....	.....	.....	.....	14500
14384.....	252	1924	Henry.....	1	1	15.02	35.45	38.78	10.75	5.66	.60	10334
					2	.....	41.71	45.64	12.65	6.66	.71	12161
					3	.....	47.75	52.25	.....	7.62	.81	13922
					4	.....	.....	.....	.....	.....	.....	14307
15691.....	354	1927	Henry.....	1	1	17.45	36.52	37.68	8.35	3.48	1.26	10539
					2	.....	44.24	45.65	10.11	4.21	1.53	12767
					3	.....	49.22	50.78	.....	4.68	1.70	14203
					4	.....	.....	.....	.....	.....	.....	14472
15692.....	354	1927	Henry.....	1	1	16.83	36.25	38.00	8.92	3.80	1.35	10585
					2	.....	43.58	45.70	10.72	4.57	1.62	12727
					3	.....	48.81	51.19	.....	5.12	1.81	14255
					4	.....	.....	.....	.....	.....	.....	14550
15493.....	355	1926	Knox.....	1?	1	13.88	36.92	40.55	8.65	4.34	.90	11146
					2	.....	42.87	47.09	10.04	5.04	1.04	12942
					3	.....	47.65	52.35	.....	5.60	1.16	14386
					4	.....	.....	.....	.....	.....	.....	14689

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
15494.....	355	1926	Knox.....	1?	1	14.68	36.48	41.61	7.23	4.74	.90	11188
					2	.....	42.75	48.78	8.47	5.55	1.05	13111
					3	.....	46.71	53.29	.....	6.06	1.15	14324
					4	.....	.....	.....	.....	.....	.....	14617
5371.....	*17	1912	Mercer.....	1	1	17.75	39.50	34.61	8.14	5.53	.86	10435
					2	.....	48.03	42.08	9.89	6.72	1.05	12687
					3	.....	53.30	46.70	.....	7.46	1.17	14079
					4	.....	.....	.....	.....	.....	.....	14425
5372.....	*17	1912	Mercer.....	1	1	17.50	38.78	33.66	10.06	4.51	.29	10238
					2	.....	47.00	40.80	12.20	5.46	.35	12409
					3	.....	53.53	46.47	.....	6.22	.40	14133
					4	.....	.....	.....	.....	.....	.....	14478
5359.....	*18	1912	Mercer.....	1	1	14.58	39.49	36.82	9.11	5.60	.15	10894
					2	.....	46.23	43.09	10.68	6.56	.18	12754
					3	.....	51.76	48.24	.....	7.34	.20	14279
					4	.....	.....	.....	.....	.....	.....	14642
5360.....	*18	1912	Mercer.....	1	1	15.07	38.14	37.44	9.35	4.85	.34	10790
					2	.....	44.91	44.07	11.02	5.71	.38	12705
					3	.....	50.47	49.53	.....	6.42	.43	14278
					4	.....	.....	.....	.....	.....	.....	14618
5361.....	*18	1912	Mercer.....	1	1	14.10	39.60	36.73	9.57	3.92	.23	10956
					2	.....	46.09	42.76	11.15	4.56	.27	12753
					3	.....	51.87	48.13	.....	5.13	.30	14353
					4	.....	.....	.....	.....	.....	.....	14660
5338.....	*19	1912	Mercer.....	1	1	13.23	40.29	37.20	9.28	4.37	.41	11104
					2	.....	46.43	42.88	10.69	5.04	.47	12797
					3	.....	51.99	48.01	.....	5.64	.53	14329
					4	.....	.....	.....	.....	.....	.....	14641
5339.....	*19	1912	Mercer.....	1	1	15.24	37.66	35.73	11.37	4.80	1.47	10353
					2	.....	44.44	42.15	13.41	5.66	1.73	12214
					3	.....	51.52	48.68	.....	6.54	1.99	14106
					4	.....	.....	.....	.....	.....	.....	14478

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5340.....	*19	1912	Mercer.....	1	1	15.15	39.06	38.48	7.31	3.30	.17	11252
					2	.....	46.03	45.36	8.61	3.89	.19	13260
					3	.....	50.37	49.63	.....	4.26	.21	14509
					4	.....	.....	.....	.....	.....	.....	14753
5363.....	*19	1912	Mercer.....	1	1	14.97	38.27	37.07	9.69	3.75	.33	10840
					2	.....	44.99	43.61	11.40	4.95	.43	12749
					3	.....	50.78	49.22	.....	5.58	.48	14389
					4	.....	.....	.....	.....	.....	.....	14712
5364.....	*19	1912	Mercer.....	1	1	14.46	40.42	35.33	9.79	4.23	.59	10780
					2	.....	47.24	41.32	11.44	4.94	.69	12603
					3	.....	53.34	46.66	.....	5.58	.78	14231
					4	.....	.....	.....	.....	.....	.....	14551
5365.....	*19	1912	Mercer.....	1	1	14.07	39.95	34.01	11.97	4.55	.78	10525
					2	.....	46.49	39.59	13.92	5.29	.91	12247
					3	.....	54.01	45.99	.....	6.15	1.06	14227
					4	.....	.....	.....	.....	.....	.....	14604
13812.....	†233	1923	Mercer.....	1	1	16.19	36.17	37.35	10.29	3.82	Trace	10428
					2	.....	43.16	44.56	12.28	4.56	Trace	12442
					3	.....	49.20	50.80	.....	5.31	.....	14184
					4	.....	.....	.....	.....	.....	.....	14500
13813.....	†233	1923	Mercer.....	1	1	16.49	36.97	38.63	7.91	3.13	.29	10739
					2	.....	44.27	46.26	9.47	3.75	.35	12860
					3	.....	48.90	51.10	.....	4.14	.39	14205
					4	.....	.....	.....	.....	.....	.....	14448
13814.....	†233	1923	Mercer.....	1	1	15.35	38.43	38.43	7.79	3.72	.11	10945
					2	.....	45.40	45.40	9.20	4.39	.13	12930
					3	.....	50.00	50.00	.....	4.83	.14	14240
					4	.....	.....	.....	.....	.....	.....	14501
15414.....	†356	1926	Mercer.....	1	1	16.38	37.80	38.96	6.86	4.35	.66	11001
					2	.....	45.21	46.59	8.20	5.20	.79	13156
					3	.....	49.25	50.75	.....	5.66	.81	14331
					4	.....	.....	.....	.....	.....	.....	14608

†Local or captive mine (those sampled before 1930 largely abandoned).
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
15415.....	†356	1926	Mercer....	1	1	14.51	37.94	38.71	8.84	5.04	.68	11024
					2	.....	44.38	45.28	10.34	5.90	.80	12892
					3	.....	49.50	50.50	.....	6.58	.89	14385
					4	.....	.....	.....	.....	.....	.....	14722
13815.....	†234	1923	Rock Island	1	1	16.81	35.35	39.58	8.26	4.78	.37	10597
					2	.....	42.49	47.58	9.93	5.75	.44	12738
					3	.....	47.17	52.83	.....	6.38	.49	14142
					4	.....	.....	.....	.....	.....	.....	14458
13816.....	†234	1923	Rock Island	1	1	17.11	35.55	38.45	8.89	4.76	.31	10507
					2	.....	42.88	46.39	10.73	5.74	.38	12676
					3	.....	48.03	51.97	.....	6.43	.43	14200
					4	.....	.....	.....	.....	.....	.....	14532
13817.....	†234	1923	Rock Island	1	1	15.92	36.08	39.72	8.28	4.93	.31	10741
					2	.....	42.91	47.24	9.85	5.86	.37	12775
					3	.....	47.60	52.40	.....	6.50	.41	14171
					4	.....	.....	.....	.....	.....	.....	14490
13708.....	†346	1923	Warren....	1	1	13.34	37.77	37.24	11.65	6.92	.15	10713
					2	.....	43.58	42.97	13.45	7.99	.17	12362
					3	.....	50.35	49.65	.....	9.23	.20	14283
					4	.....	.....	.....	.....	.....	.....	14755
13808.....	†346	1923	Warren....	1	1	16.04	36.79	37.93	9.24	5.57	.18	10676
					2	.....	43.82	45.18	11.00	6.64	.21	12716
					4	.....	49.24	50.76	.....	7.46	.24	14288
					4	.....	.....	.....	.....	.....	.....	14661
15416.....	†357	1926	Warren....	1	1	13.03	40.77	39.56	6.64	4.88	.04	11583
					2	.....	46.88	45.49	7.63	5.61	.05	13318
					3	.....	50.75	49.25	.....	6.07	.05	14418
					4	.....	.....	.....	.....	.....	.....	14703
15417.....	†357	1926	Warren....	1	1	10.21	42.44	40.68	6.67	4.70	.05	11946
					2	.....	47.27	45.31	7.42	5.23	.06	13304
					3	.....	51.06	48.94	.....	5.65	.06	14370
					4	.....	.....	.....	.....	.....	.....	14636

†Local or captive mine (those sampled before 1930 largely abandoned).

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
MURPHYSBORO (NO. 1?)[a] COAL (SOUTHERN ILLINOIS)												
5251.....	*12	1912	Jackson....	1	1	9.51	33.13	52.12	5.24	.66	.94	12500
					2	.....	36.62	57.59	5.79	.73	1.03	13814
					3	.....	38.87	61.13	.....	.77	1.09	14663
					4	.....	.....	.....	.....	.....	.....	14759
5252.....	*12	1912	Jackson....	1	1	9.37	33.39	49.29	7.95	2.11	.94	11972
					2	.....	36.84	54.38	8.78	2.32	1.03	13208
					3	.....	40.39	59.61	.....	2.54	1.13	14479
					4	.....	.....	.....	.....	.....	.....	14670
5253.....	*12	1912	Jackson....	1	1	9.99	32.51	51.88	5.62	.62	.20	12308
					2	.....	36.12	57.63	6.25	.69	.22	13673
					3	.....	38.53	61.47	.....	.74	.23	14585
					4	.....	.....	.....	.....	.....	.....	14686
5248.....	*13	1912	Jackson....	1	1	9.88	33.23	52.43	4.46	.70	.33	12709
					2	.....	36.87	58.18	4.95	.77	.36	14103
					3	.....	38.79	61.21	.....	.81	.38	14837
					4	.....	.....	.....	.....	.....	.....	14926
5249.....	*13	1912	Jackson....	1	1	10.91	33.51	51.20	4.38	1.14	.20	12503
					2	.....	37.61	57.47	4.92	1.28	.23	14034
					3	.....	39.56	60.44	.....	1.35	.24	14760
					4	.....	.....	.....	.....	.....	.....	14864
5250.....	*13	1912	Jackson....	1	1	9.76	33.45	52.07	4.72	1.08	.51	12629
					2	.....	37.06	57.71	5.23	1.20	.56	13996
					3	.....	39.11	60.89	.....	1.27	.59	14768
					4	.....	.....	.....	.....	.....	.....	14874
5225	*14	1912	Jackson....	1	1	7.72	35.09	48.56	8.63	2.01	.29	12248
					2	.....	38.02	52.62	9.36	2.18	.31	13272
					3	.....	41.95	58.05	.....	2.41	.34	14643
					4	.....	.....	.....	.....	.....	.....	14841
5226.....	*14	1912	Jackson....	1	1	8.77	32.78	50.58	7.87	2.00	.02	12253
					2	.....	35.93	55.44	8.63	2.19	.03	13430
					3	.....	39.32	60.68	.....	2.39	.03	14698
					4	.....	.....	.....	.....	.....	.....	14887

a Previously called No. 2 coal.

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
												52
5228.....	*14	1912	Jackson....	1	1	9.18	34.70	51.58	4.54	.60	.05	12740
					2	.....	38.20	56.80	5.00	.66	.06	14079
					3	.....	40.21	59.79	.....	.69	.06	14764
					4	.....	.....	.....	.....	.....	.....	148
5286.....	*15	1912	Jackson....	1	1	8.32	35.28	51.10	5.30	1.39	.19	12671
					2	.....	38.49	55.74	5.77	1.53	.21	13822
					3	.....	40.85	59.15	.....	1.62	.22	14668
					4	.....	.....	.....	.....	.....	.....	14791
5287.....	*15	1912	Jackson....	1	1	8.86	35.00	49.74	6.40	1.69	.07	12436
					2	.....	38.40	54.57	7.03	1.85	.08	13645
					3	.....	41.30	58.70	.....	1.99	.08	14677
					4	.....	.....	.....	.....	.....	.....	14830
5288.....	*15	1912	Jackson....	1	1	8.91	34.03	53.17	3.89	1.15	.07	12844
					2	.....	37.36	58.37	4.27	1.26	.07	14101
					3	.....	39.03	60.97	.....	1.32	.07	14730
					4	.....	.....	.....	.....	.....	.....	14824
5496.....	*16	1912	Jackson....	1	1	9.25	34.67	50.53	5.55	1.41	.13	12528
					2	.....	38.20	55.68	6.12	1.56	.14	13804
					3	.....	40.69	59.31	.....	1.66	.15	14704
					4	.....	.....	.....	.....	.....	.....	14834
5497.....	*16	1912	Jackson....	1	1	9.56	34.52	50.47	5.45	1.32	.27	12483
					2	.....	38.16	55.83	6.01	1.46	.30	13802
					3	.....	40.60	59.40	.....	1.55	.32	14685
					4	.....	.....	.....	.....	.....	.....	14809
5498.....	*16	1912	Jackson....	1	1	9.20	34.48	50.54	5.78	1.44	.19	12481
					2	.....	37.97	55.66	6.37	1.59	.21	13746
					3	.....	40.55	59.45	.....	1.70	.22	14681
					4	.....	.....	.....	.....	.....	.....	14815
LOWER ASSUMPTION (NO. ?)[a] COAL (CENTRAL ILLINOIS)												
5229.....	*21	1912	Christian...	?	1	11.27	38.68	40.55	9.50	2.07	.33	11445
					2	.....	43.59	45.70	10.71	2.33	.37	12898
					3	.....	48.82	51.18	.....	2.61	.41	14445
					4	.....	.....	.....	.....	.....	.....	14666

a Previously called No. 1 coal.
*Shipping mine abandoned or long idle.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5230.....	*21	1912	Christian...	?	1	11.52	38.78	41.01	8.69	2.42	.97	11648
					2	.....	43.83	46.35	9.82	2.73	1.10	13164
					3	.....	48.60	51.40	.....	3.03	1.22	14597
					4	.....	.....	.....	.....	.....	.....	14822
5231.....	*21	1912	Christian...	?	1	11.13	39.21	41.26	8.40	2.56	.61	11715
					2	.....	44.12	46.43	9.45	2.88	.69	13183
					3	.....	48.72	51.28	.....	3.18	.76	14559
					4	.....	.....	.....	.....	.....	.....	14779
UPPER ASSUMPTION (NO. ?)[b] COAL (CENTRAL ILLINOIS)												
5205.....	*21	1912	Christian...	?	1	12.07	39.36	41.91	6.66	3.74	.07	11776
					2	.....	44.77	47.66	7.57	4.26	.09	13393
					3	.....	48.44	51.56	.....	4.61	.10	14490
					4	.....	.....	.....	.....	.....	.....	14730
5206.....	*21	1912	Christian...	?	1	12.53	38.60	40.62	8.25	3.67	.31	11389
					2	.....	44.12	46.44	9.44	4.22	.35	13020
					3	.....	48.72	51.28	.....	4.65	.39	14377
					4	.....	.....	.....	.....	.....	.....	14641
5207.....	*21	1912	Christian...	?	1	14.30	39.54	40.30	5.86	2.00	.24	11609
					2	.....	46.14	47.02	6.84	2.33	.28	13544
					3	.....	49.53	50.47	.....	2.50	.30	14538
					4	.....	.....	.....	.....	.....	.....	14702
LA SALLE AND COLCHESTER (NO. 2) COAL (NORTHERN AND WESTERN ILLINOIS)												
5324.....	*1	1912	Bureau.....	2	1	16.65	36.66	38.58	8.11	3.40	.67	10740
					2	.....	43.99	46.29	9.72	4.07	.80	12884
					3	.....	48.73	51.27	.....	4.51	.89	14271
					4	.....	.....	.....	.....	.....	.....	14531
5325.....	*1	1912	Bureau.....	2	1	15.08	40.12	36.35	8.45	3.68	.91	10831
					2	.....	47.25	42.80	9.95	4.33	1.07	12754
					3	.....	52.47	47.53	.....	4.81	1.19	14163
					4	.....	.....	.....	.....	.....	.....	14431
5326.....	*1	1912	Bureau.....	2	1	16.83	36.54	39.19	7.44	2.64	.89	10788
					2	.....	43.93	47.12	8.95	3.17	1.07	12970
					3	.....	48.24	51.76	.....	3.48	1.18	14244
					4	.....	.....	.....	.....	.....	.....	14461

[b] Previously called No. 2 coal.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5348.....	*8	1912	Bureau.....	2	1	15.19	39.67	38.69	6.45	2.20	.99	11206
					2	.....	46.78	45.60	7.62	2.62	1.17	13213
					3	.....	50.64	49.36	.....	2.84	1.27	14303
					4	.....	.....	.....	.....	.....	.....	14480
5349.....	*8	1912	Bureau.....	2	1	17.34	37.12	39.28	6.26	2.80	.49	11006
					2	.....	44.90	47.52	7.58	3.38	.59	13314
					3	.....	48.58	51.42	.....	3.66	.64	14406
					4	.....	.....	.....	.....	.....	.....	14612
5350.....	*8	1912	Bureau.....	2	1	16.97	38.66	34.83	9.54	2.25	2.29	10397
					2	.....	46.56	41.95	11.49	2.71	2.91	12522
					3	.....	52.60	47.40	.....	3.06	3.28	14147
					4	.....	.....	.....	.....	.....	.....	14386
5312.....	*10	1912	Bureau.....	2	1	14.88	38.69	37.25	9.18	3.83	1.07	10685
					2	.....	45.45	43.76	10.79	4.50	1.25	12553
					3	.....	50.95	49.05	.....	5.04	1.40	14071
					4	.....	.....	.....	.....	.....	.....	14357
5313.....	*10	1912	Bureau.....	2	1	17.43	38.07	39.44	5.06	2.68	.52	11070
					2	.....	46.10	47.76	6.14	3.25	.63	13407
					3	.....	49.12	50.88	.....	3.46	.67	14284
					4	.....	.....	.....	.....	.....	.....	14462
5314.....	*10	1912	Bureau.....	2	1	16.07	39.68	38.36	5.89	2.96	.57	11216
					2	.....	47.28	45.71	7.01	3.53	.63	13363
					3	.....	50.84	49.16	.....	3.79	.68	14370
					4	.....	.....	.....	.....	.....	.....	14571
5373.....	*5	1912	Grundy....	2	1	17.29	38.61	36.69	7.41	2.87	1.44	10708
					2	.....	46.68	44.36	8.96	3.47	1.74	12947
					3	.....	51.27	48.73	.....	3.81	1.91	14221
					4	.....	.....	.....	.....	.....	.....	14447
5374.....	*5	1912	Grundy....	2	1	13.73	39.87	42.19	4.21	2.04	1.47	11787
					2	.....	46.22	48.90	4.88	2.37	1.71	13662
					3	.....	48.59	51.41	.....	2.49	1.80	14362
					4	.....	.....	.....	.....	.....	.....	14496

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5377.....	*5	1912	Grundy....	2	1	17.01	39.48	36.74	6.77	3.32	1.05	10834
					2	.....	47.57	44.27	8.16	4.00	1.27	13055
					3	.....	51.80	48.20	.....	4.36	1.38	14215
					4	.....	.....	.....	.....	.....	.....	14446
5367.....	*6	1912	Grundy....	2	1	19.97	38.16	37.45	4.42	1.82	.65	10936
					2	.....	47.68	46.79	5.53	2.27	.79	13664
					3	.....	50.47	49.53	.....	2.40	.84	14464
					4	.....	.....	.....	.....	.....	.....	14605
5368.....	*6	1912	Grundy....	2	1	18.95	37.60	38.23	5.22	2.46	.64	10787
					2	.....	46.39	47.16	6.45	3.04	.79	13309
					3	.....	49.58	50.42	.....	3.25	.84	14226
					4	.....	....	.....	.....	.....	.....	14400
5369.....	*6	1912	Grundy....	2	1	19.66	37.01	38.16	5.17	2.03	.83	10734
					2	.....	46.06	47.50	6.44	2.53	1.03	13360
					3	.....	49.23	50.77	.....	2.70	1.10	14279
					4	.....	.....	.....	.....	.....	.....	14438
5375.....	*7	1912	Grundy....	2	1	16.84	38.37	41.19	3.60	1.74	.04	11508
					2	.....	46.13	49.53	4.34	2.09	.05	13838
					3	.....	48.22	51.78	.....	2.19	.05	14466
					4	.....	.....	.....	.....	.....	.....	14585
5376.....	*7	1912	Grundy....	2	1	15.81	38.29	39.77	6.13	2.30	.24	11212
					2	.....	45.48	47.24	7.28	2.73	.28	13318
					3	.....	49.05	50.95	.....	2.94	.30	14363
					4	.....	.....	.....	.....	.....	.....	14543
5378.....	*7	1912	Grundy....	2	1	16.23	38.71	40.61	4.45	2.47	.32	11461
					2	.....	46.22	48.47	5.31	2.94	.38	13683
					3	.....	48.81	51.19	.....	3.10	.40	14450
					4	.....	.....	.....	.....	.....	.....	14610
C-943.....	†625	1934	Grundy....	2	1	16.9	34.3	40.4	8.4	4.67	.55	10730
					2	.....	41.3	48.6	10.1	5.62	.66	12912
					3	.....	45.9	54.1	.....	6.25	.....	14359
					4	.....	.....	.....	.....	.....	.....	14687

*Shipping mine abandoned or long idle.
†Local or captive mine (those sampled before 1930 largely abandoned).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-944.....	†625	1934	Grundy....	2	1	15.9	34.4	41.6	8.1	4.09	.95	10899
					2	.....	40.9	49.5	9.6	4.86	1.14	12959
					3	.....	45.2	54.8	.....	5.38	.....	14334
					4	.....	.....	.....	.....	.....	.....	14623
C-945.....	†625	1934	Grundy....	2	1	16.7	34.3	42.8	6.2	3.01	.79	11055
					2	.....	41.2	51.3	7.5	3.62	.94	13275
					3	.....	44.6	55.4	.....	3.91	.....	14345
					4	.....	.....	.....	.....	.....	.....	14563
C-836.....	619	1934	Henry.....	2	1	15.0	37.0	38.8	9.2	3.3	1.0	10694
					2	.....	43.6	45.6	10.8	3.9	1.2	12586
					3	.....	48.9	51.1	.....	4.4	.....	14117
					4	.....	.....	.....	.....	.....	.....	14376
C-837.....	619	1934	Henry.....	2	1	14.2	37.4	38.9	9.5	3.4	1.2	10751
					2	.....	43.6	45.3	11.1	4.0	1.4	12532
					3	.....	49.1	50.9	.....	4.5	.....	14091
					4	.....	.....	.....	.....	.....	.....	14371
C-838.....	619	1934	Henry.....	2	1	14.4	37.0	37.6	11.0	3.6	2.2	10414
					2	.....	43.3	43.9	12.8	4.3	2.5	12168
					3	.....	49.6	50.4	.....	4.9	.....	13957
					4	.....	.....	.....	.....	.....	.....	14260
5388.....	*2	1912	LaSalle....	2	1	14.22	39.49	36.94	9.35	4.46	.80	10887
					2	.....	46.03	43.06	10.91	5.20	.93	12691
					3	.....	51.67	48.33	.....	5.84	1.04	14245
					4	.....	.....	.....	.....	.....	.....	14563
5389.....	*2	1912	LaSalle.....	2	1	15.16	40.13	38.10	6.61	2.99	.64	11147
					2	.....	47.32	44.88	7.80	3.51	.70	13136
					3	.....	51.32	48.68	.....	3.81	.76	14249
					4	.....	.....	.....	.....	.....	.....	14460
5390.....	*2	1912	LaSalle.....	2	1	14.43	40.01	35.89	9.67	4.47	1.03	10678
					2	.....	46.75	41.94	11.31	5.23	1.21	12478
					3	.....	52.71	47.29	.....	5.90	1.36	14069
					4	.....	.....	.....	.....	.....	.....	14388

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5306.....	*3	1912	LaSalle.....	2	1	14.29	41.35	38.73	5.63	2.09	.19	11487
					2	.....	48.24	45.18	6.58	2.44	.22	13401
					3	.....	51.64	48.36	.....	2.61	.24	14345
					4	.....	.....	.....	.....	.....	.....	14504
5307.....	*3	1912	LaSalle.....	2	1	16.05	37.03	37.06	9.86	4.35	.59	10459
					2	.....	44.11	44.16	11.73	5.18	.70	12458
					3	.....	49.97	50.03	.....	5.87	.79	14113
					4	.....	.....	.....	.....	.....	.....	14440
5311.....	*3	1912	LaSalle.....	2	1	14.82	40.93	35.20	9.05	3.42	.99	10760
					2	.....	48.05	41.33	10.62	4.02	1.17	12632
					3	.....	53.76	46.24	.....	4.50	1.31	14133
					4	.....	.....	.....	.....	.....	.....	14402
5351.....	*9	1912	LaSalle.....	2	1	16.52	38.88	36.50	8.10	2.87	1.02	10686
					2	.....	46.57	43.72	9.71	3.44	1.22	12800
					3	.....	51.58	48.42	.....	3.81	1.35	14177
					4	.....	.....	.....	.....	.....	.....	14411
5352.....	*9	1912	LaSalle.....	2	1	17.77	39.05	34.15	9.03	3.92	1.25	10279
					2	.....	47.48	41.55	10.97	4.76	1.52	12500
					3	.....	53.33	46.67	.....	5.35	1.71	14040
					4	.....	.....	.....	.....	.....	.....	14336
5353.....	*9	1912	LaSalle.....	2	1	18.06	39.02	32.94	9.98	2.74	2.20	10209
					2	.....	47.62	40.20	12.18	3.34	2.69	12460
					3	.....	54.22	45.78	.....	3.80	3.06	14188
					4	.....	.....	.....	.....	.....	.....	14460
BM 84450...	*102	1922	LaSalle.....	2	1	14.5	36.0	41.7	7.8	3.5	.67	11130
					2	.....	42.0	48.9	9.1	4.1	.79	13010
					3	.....	46.2	53.8	.....	4.5	.....	14310
					4	.....	.....	.....	.....	.....	.....	14565
BM 84451...	*102	1922	LaSalle.....	2	1	14.0	34.9	43.2	7.9	2.3	.90	11240
					2	.....	40.6	50.3	9.1	2.7	1.04	13070
					3	.....	44.7	55.3	.....	2.9	.....	14380
					4	.....	.....	.....	.....	.....	.....	14585

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM 84452...	*102	1922	LaSalle.....	2	1	15.7	33.9	41.9	8.5	4.0	.59	10800
					2	.....	40.2	49.7	10.1	4.8	.70	12800
					3	.....	44.7	55.3	.....	5.3	.....	14240
					4	.....	.....	.....	.....	.....	.....	14528
10263.....	*103	1917	LaSalle.....	2	1	12.19	39.93	40.17	7.71	2.56	.....	11667
					2	.....	45.47	45.75	8.78	2.91	.....	13289
					3	.....	49.85	50.15	.....	3.19	.....	14568
					4	.....	.....	.....	.....	.....	.....	14782
10264.....	*103	1917	LaSalle.....	2	1	12.61	38.89	42.36	6.14	2.66	.....	11892
					2	.....	44.51	48.46	7.03	3.04	.....	13608
					3	.....	47.88	52.12	.....	3.26	.....	14637
					4	.....	.....	.....	.....	.....	.....	14830
BMA 51404..	†358	1929	LaSalle.....	2	1	11.9	37.5	39.7	10.9	4.1	.....	11080
					2	.....	42.6	45.0	12.4	4.7	.....	12580
					3	.....	48.6	51.4	.....	5.4	.....	14350
					4	.....	.....	.....	.....	.....	.....	14692
BMA 51405..	†358	1929	LaSalle.....	2	1	10.8	39.6	40.6	9.0	3.5	.....	11540
					2	.....	44.5	45.4	10.1	3.9	.....	12940
					3	.....	49.4	50.6	.....	4.3	.....	14390
					4	.....	.....	.....	.....	.....	.....	14658
BMA 51406..	†358	1929	LaSalle.....	2	1	15.4	36.2	41.5	6.9	3.0	.....	11150
					2	.....	42.8	49.0	8.2	3.6	.....	13170
					3	.....	46.6	53.4	.....	3.9	.....	14340
					4	.....	.....	.....	.....	.....	.....	14569
5232.....	*22	1912	McDonough	2	1	19.35	31.70	40.61	8.34	2.31	.37	10392
					2	.....	39.31	50.35	10.34	2.87	.46	12885
					3	.....	43.84	56.16	.....	3.20	.51	14373
					4	.....	.....	.....	.....	.....	.....	14605
5233.....	*22	1912	McDonough	2	1	16.46	33.94	42.46	7.14	1.71	.11	11064
					2	.....	40.63	50.83	8.54	2.04	.14	13246
					3	.....	44.42	55.58	.....	2.23	.15	14483
					4	.....	.....	.....	.....	.....	.....	14660

†Local or captive mine (mines sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5234.....	*22	1912	McDonough	2	1	16.39	34.26	41.36	7.99	2.04	.33	10977
					2	.....	40.97	49.47	9.56	2.44	.40	13130
					3	.....	45.30	54.70	.....	2.70	.44	14518
					4	.....	.....	.....	.....	.....	.....	14726
9728.....	†213	1916	McDonough	2	1	14.89	35.48	40.75	8.88	3.78	.....	10969
					2	.....	41.68	47.88	10.44	4.43	.....	12887
					3	.....	46.54	53.46	.....	4.95	.....	14389
					4	.....	.....	.....	.....	.....	.....	14678
9729.....	†213	1916	McDonough	2	1	16.83	34.68	39.79	8.70	3.94	.....	10628
					2	.....	41.71	47.83	10.46	4.74	.....	12778
					3	.....	46.58	53.42	.....	5.29	.....	14271
					4	.....	.....	.....	.....	.....	.....	14566
5426.....	*100	1912	McLean....	2	1	10.13	45.00	35.92	8.95	3.27	.74	11710
					2	.....	50.07	39.97	9.96	3.59	.82	13029
					3	.....	55.61	44.39	.....	3.99	.91	14470
					4	.....	.....	.....	.....	.....	.....	14723
5427.....	*100	1912	McLean....	2	1	11.34	40.05	39.18	9.43	3.18	.90	11394
					2	.....	45.17	44.19	10.64	3.58	1.01	12851
					3	.....	50.55	49.45	.....	4.01	1.13	14381
					4	.....	.....	.....	.....	.....	.....	14643
5428.....	*100	1912	McLean....	2	1	10.61	41.87	35.94	11.58	3.79	.92	11225
					2	.....	46.84	40.21	12.95	4.24	1.03	12557
					3	.....	53.81	46.19	.....	4.87	1.18	14425
					4	.....	.....	.....	.....	.....	.....	14752
5429.....	*100	1912	McLean....	2	1	12.31	42.17	38.03	7.49	2.69	.94	11636
					2	.....	48.09	43.37	8.54	3.07	1.07	13270
					3	.....	52.58	47.42	.....	3.36	1.17	14509
					4	.....	.....	.....	.....	.....	.....	14722
5430.....	*100	1912	McLean....	2	1	12.00	42.00	37.96	8.04	2.37	1.23	11634
					2	.....	47.73	43.14	9.13	2.70	1.40	13220
					3	.....	52.53	47.47	.....	2.97	1.54	14548
					4	.....	.....	.....	.....	.....	.....	14759

†Local or captive mine (those sampled before 1930 largely abandoned).
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5433.....	*100	1912	McLean....	2	1	11.27	42.17	39.27	7.29	2.91	1.12	11784
					2	.....	47.53	44.25	8.22	3.28	1.26	13279
					3	.....	51.79	48.21	.....	3.57	1.37	14468
					4	.....	.....	.....	.....	.....	.....	14684
5357.....	*4	1912	Marshall...	2	1	16.46	38.48	38.27	6.79	2.91	.28	11162
					2	.....	46.06	45.80	8.14	3.48	.34	13360
					3	.....	50.14	49.86	.....	3.78	.37	14544
					4	.....	.....	.....	.....	.....	.....	14764
5356.....	*4	1912	Marshall...	2	1	16.79	36.81	40.34	6.06	2.59	.41	11130
					2	.....	44.23	48.49	7.28	3.11	.49	13375
					3	.....	47.70	52.30	.....	3.35	.53	14425
					4	.....	.....	.....	.....	.....	.....	14620
5358.....	*4	1912	Marshall...	2	1	17.54	37.42	40.11	4.93	2.19	.42	11273
					2	.....	45.37	48.63	6.00	2.56	.50	13669
					3	.....	48.27	51.73	.....	2.72	.53	14542
					4	.....	.....	.....	.....	.....	.....	14703
5412.....	*11	1912	Marshall...	2	1	12.92	41.69	37.61	7.78	2.38	.64	11597
					2	.....	47.87	43.19	8.94	2.73	.73	13319
					3	.....	52.57	47.43	.....	3.00	.80	14627
					4	.....	.....	.....	.....	.....	.....	14836
5413.....	*11	1912	Marshall...	2	1	13.10	38.73	39.64	8.53	3.47	.65	11414
					2	.....	44.56	45.61	9.83	3.99	.75	13134
					3	.....	49.42	50.58	.....	4.42	.83	14566
					4	.....	.....	.....	.....	.....	.....	14835
5414.....	*11	1912	Marshall...	2	1	13.82	41.34	35.88	8.96	3.28	.50	11296
					2	.....	47.97	41.64	10.39	3.81	.59	13106
					3	.....	53.53	46.47	.....	4.25	.66	14626
					4	.....	.....	.....	.....	.....	.....	14901
9709.....	†214	1916	Schuyler....	2	1	12.34	38.11	42.29	7.26	4.32	.....	11841
					2	.....	43.48	48.24	8.28	4.92	.....	13507
					3	.....	47.40	52.60	.....	5.36	.....	14726
					4	.....	.....	.....	.....	.....	.....	15009

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
9708.....	†214	1916	Schuyler....	2	1	12.73	37.56	41.88	7.83	4.77	.....	11621
					2	.....	43.04	47.99	8.97	5.46	.....	13316
					3	.....	47.28	52.72	.....	6.00	.....	14628
					4	.....	.....	.....	.....	.....	.....	14939
°BMA 52979.	359	1929	Will.....	2	1	15.9	30.2	48.6	5.3	1.3	.....	11210
					2	.....	35.9	57.7	6.4	1.6	.....	13330
					3	.....	38.3	61.7	.....	1.7	.....	14230
					4	.....	.....	.....	.....	.....	.....	14369
°BMA 52980.	359	1929	Will.....	2	1	16.2	31.8	47.2	4.8	1.8	.....	11290
					2	.....	37.9	56.4	5.7	2.1	.....	13480
					3	.....	40.2	59.8	.....	2.2	.....	14300
					4	.....	.....	.....	.....	.....	.....	14430
°BMA 52981.	359	1929	Will.....	2	1	14.4	31.9	48.6	5.1	1.8	.....	11490
					2	.....	37.3	56.7	6.0	2.1	.....	13430
					3	.....	39.6	60.4	.....	2.2	.....	14280
					4	.....	.....	.....	.....	.....	.....	14426
°BMA 52153.	359	1929	Will.....	2	1	16.0	36.1	41.7	6.2	1.7	.....	11150
					2	.....	42.9	49.7	7.4	2.0	.....	13280
					3	.....	46.4	53.6	.....	2.1	.....	14340
					4	.....	.....	.....	.....	.....	.....	14498
°BMA 52154.	359	1929	Will.....	2	1	13.9	35.1	44.8	6.2	2.0	.....	11500
					2	.....	40.7	52.1	7.2	2.3	.....	13350
					3	.....	43.9	56.1	.....	2.5	.....	14390
					4	.....	.....	.....	.....	.....	.....	14551
°16888.....	359	1929	Will.....	2	1	15.57	39.65	39.36	5.42	1.75	.....	11341
					2	.....	46.96	46.62	6.42	2.07	.....	13433
					3	.....	50.18	49.82	.....	2.21	.....	14335
					4	.....	.....	.....	.....	.....	.....	14500
°16889.....	359	1929	Will.....	2	1	13.17	37.65	43.24	5.94	2.17	.....	11446
					2	.....	43.36	49.80	6.84	2.50	.....	13182
					3	.....	46.54	53.46	.....	2.68	.....	14150
					4	.....	.....	.....	.....	.....	.....	14311

†Local or captive mine (those sampled before 1930 largely abandoned).
°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°16959.....	359	1929	Will.....	2	1	18.60	29.61	46.23	5.56	1.34	.....	10779
					2	.....	36.37	56.80	6.83	1.65	.....	13242
					3	.....	39.04	60.96	.....	1.77	.....	14212
					4	.....	.....	.....	.....	.....	.....	14348
°16961.....	359	1929	Will.....	2	1	15.50	32.96	46.46	5.08	1.83	.....	11282
					2	.....	39.01	54.98	6.01	2.16	.....	13351
					3	.....	41.50	58.50	.....	2.30	.....	14205
					4	.....	.....	.....	.....	.....	.....	14344
°16962.....	359	1929	Will.....	2	1	14.08	33.85	46.59	5.48	1.86	.....	11359
					2	.....	39.40	54.22	6.38	2.17	.....	13221
					3	.....	42.09	57.91	.....	2.31	.....	14122
					4	.....	.....	.....	.....	.....	.....	14266
BMA 90366..	359	1933	Will.....	2	1	15.4	34.8	45.3	4.5	1.4	.50	11420
					2	.....	41.2	53.5	5.3	1.7	.59	13510
					3	.....	43.5	56.5	.....	1.8	.....	14260
					4	.....	.....	.....	.....	.....	.....	14383
BMA 90367..	359	1933	Will.....	2	1	14.5	35.6	45.1	4.8	1.4	.68	11560
					2	.....	41.7	52.6	5.7	1.6	.79	13520
					3	.....	44.2	55.8	.....	1.7	.....	14330
					4	.....	.....	.....	.....	.....	.....	14457
BMA 90369..	359	1933	Will.....	2	1	16.5	36.2	43.9	3.4	1.3	.11	11440
					2	.....	43.4	52.5	4.1	1.5	.13	13710
					3	.....	45.2	54.8	.....	1.6	.....	14290
					4	.....	.....	.....	.....	.....	.....	14391
BMA 90370..	359	1933	Will.....	2	1	16.5	36.0	44.0	3.5	1.1	.29	11470
					2	.....	43.2	52.6	4.2	1.3	.34	13730
					3	.....	45.1	54.9	.....	1.4	.....	14340
					4	.....	.....	.....	.....	.....	.....	14422
17002.....	410	1929	Woodford..	2	1	14.79	31.57	47.10	6.54	1.21	.63	11559
					2	.....	37.05	55.28	7.67	1.42	.74	13565
					3	.....	40.13	59.87	.....	1.54	.80	14692
					4	.....	.....	.....	.....	.....	.....	14838

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory: 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
17003.....	410	1929	Woodford..	2	1	15.24	32.09	47.30	5.37	1.36	.32	11671
					2	.....	37.87	55.80	6.33	1.61	.37	13769
					3	.....	40.43	59.57	.....	1.72	.40	14699
					4	.....	.....	.....	.....	.....	.....	14837
BMA 90282..	410	1933	Woodford..	2	1	15.1	31.9	48.1	4.9	.6	.66	11690
					2	.....	37.6	56.7	5.7	.7	.77	13770
					3	.....	39.8	60.2	.....	.8	.....	14600
					4	.....	.....	.....	.....	.....	.....	14696
BMA 90283..	410	1933	Woodford..	2	1	15.0	33.2	45.9	5.9	1.3	.66	11560
					2	.....	39.1	54.0	6.9	1.5	.77	13590
					3	.....	42.0	58.0	.....	1.6	.....	14600
					4	.....	.....	.....	.....	.....	.....	14735
BMA 90284..	410	1933	Woodford..	2	1	14.4	33.3	47.0	5.3	.7	.67	11690
					2	.....	38.9	55.0	6.1	.8	.78	13660
					3	.....	41.5	58.5	.....	.....	.....	14550
					4	.....	.....	.....	.....	.....	.....	14650
C-595.....	611	1934	Woodford..	2	1	14.3	36.7	41.9	7.1	3.16	.41	11275
					2	.....	42.8	48.9	8.3	3.68	.48	13152
					3	.....	46.7	53.3	.....	4.02	.52	14348
					4	.....	.....	.....	.....	.....	.....	14569
C-596.....	611	1934	Woodford..	2	1	14.1	36.7	42.5	6.7	2.80	.46	11437
					2	.....	42.8	49.3	7.9	3.26	.54	13320
					3	.....	46.4	53.6	.....	3.54	.59	14455
					4	.....	.....	.....	.....	.....	.....	14672
C-597.....	611	1934	Woodford..	2	1	13.9	37.4	42.5	6.2	2.76	.58	11511
					2	.....	43.4	49.4	7.2	3.21	.68	13370
					3	.....	46.7	53.3	.....	3.46	.73	14404
					4	.....	.....	.....	.....	.....	.....	14603
C-598.....	611	1934	Woodford..	2	1	14.5	38.8	40.7	6.0	2.54	.63	11445
					2	.....	45.4	47.6	7.0	2.98	.73	13389
					3	.....	48.8	51.2	.....	3.20	.78	14400
					4	.....	.....	.....	.....	.....	.....	14581

SUMMUM (NO. 4) COAL (CENTRAL AND WESTERN ILLINOIS)

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
13799.....	†329	1922	Greene.....	4?	1	13.75	36.60	40.03	9.62	3.27	.....	11022
					2	.....	42.43	46.41	11.16	3.81	.....	12779
					3	.....	47.76	52.24	.....	4.29	.....	14384
					4	.....	.....	.....	.....	.....	.....	14662
13800.....	†329	1922	Greene.....	4?	1	16.68	34.87	38.51	9.94	3.83	.....	10619
					2	.....	41.85	46.21	11.94	4.60	.....	12745
					3	.....	47.52	52.48	.....	5.22	.....	14473
					4	.....	.....	.....	.....	.....	.....	14797
13801.....	†329	1922	Greene.....	4?	1	13.76	36.75	40.90	8.59	4.21	.....	11233
					2	.....	42.61	47.43	9.96	4.88	.....	13025
					3	.....	47.32	52.68	.....	5.42	.....	14466
					4	.....	.....	.....	.....	.....	.....	14766
°16396.....	†347	1928	Greene.....	4?	1	14.63	36.38	40.15	8.84	3.65	.....	10778
					2	.....	42.61	47.03	10.36	4.28	.....	12625
					3	.....	47.53	52.47	.....	4.77	.....	14084
					4	.....	.....	.....	.....	.....	.....	14355
°16397.....	†347	1928	Greene.....	4?	1	13.85	36.46	39.68	10.01	4.23	.....	10744
					2	.....	42.32	46.06	11.62	4.91	.....	12506
					3	.....	47.88	52.12	.....	5.56	.....	14150
					4	.....	.....	.....	.....	.....	.....	14467
°BMA 45160.	†347	1928	Greene.....	4?	1	14.3	35.7	40.9	9.1	3.8	.....	10860
					2	.....	41.6	47.8	10.6	4.4	.....	12670
					3	.....	46.6	53.4	.....	4.9	.....	14170
					4	.....	.....	.....	.....	.....	.....	14455
°BMA 45161.	†347	1928	Greene.....	4?	1	13.7	36.2	40.0	10.1	4.3	.....	10810
					2	.....	42.0	46.3	11.7	4.9	.....	12520
					3	.....	47.5	52.5	.....	5.6	.....	14180
					4	.....	.....	.....	.....	.....	.....	14497
13809.....	†236	1923	Knox.....	4	1	13.91	38.28	40.28	7.53	3.43	.28	11416
					2	.....	44.47	46.78	8.75	3.98	.32	13261
					3	.....	48.73	51.27	.....	4.36	.35	14533
					4	.....	.....	.....	.....	.....	.....	14782

†Local or captive mine (those sampled before 1930 largely abandoned).
°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
13810	†236	1923	Knox	4	1	16.06	36.80	38.61	8.53	4.15	.19	10909
					2	.....	43.84	46.00	10.16	4.94	.23	12996
					3	.....	48.80	51.20	.....	5.50	.26	14466
					4	.....	.....	.....	.....	.....	.....	14771
13811	†236	1923	Knox	4	1	14.97	38.83	39.07	7.13	4.02	.12	11340
					2	.....	45.67	45.94	8.39	4.73	.14	13336
					3	.....	49.85	50.15	.....	5.16	.15	14557
					4	.....	.....	.....	.....	.....	.....	14828
HARRISBURG AND BLAIR (NO. 5 (4?))[a] COAL (SOUTHERN AND SOUTHWESTERN ILLINOIS)												
5025	*47	1912	Gallatin	5	1	5.37	36.54	45.10	12.99	3.99	1.38	11883
					2	.....	38.62	47.65	13.73	4.22	1.45	12558
					3	.....	44.77	55.23	.....	4.89	1.68	14557
					4	.....	.....	.....	.....	.....	.....	14900
5029	*47	1912	Gallatin	5	1	5.57	35.49	48.53	10.41	3.12	.78	12338
					2	.....	37.59	51.39	11.02	3.31	.83	13066
					3	.....	42.24	57.76	.....	3.72	.93	14684
					4	.....	.....	.....	.....	.....	.....	14953
5032	*47	1912	Gallatin	5	1	6.21	35.28	46.49	12.02	3.30	.87	11938
					2	.....	37.61	49.57	12.82	3.52	.93	12728
					3	.....	43.14	56.86	.....	4.04	1.07	14600
					4	.....	.....	.....	.....	.....	.....	14904
12940	*135	1921	Gallatin	5	1	4.37	34.39	49.23	12.01	3.85	.35	12270
					2	.....	35.96	51.48	12.56	4.03	.37	12831
					3	.....	41.12	58.88	.....	4.61	.42	14674
					4	.....	.....	.....	.....	.....	.....	14995
12941	*135	1921	Gallatin	5	1	4.04	35.68	50.92	9.36	3.23	.24	12828
					2	.....	37.18	53.06	9.76	3.37	.24	13368
					3	.....	41.20	58.80	.....	3.73	.27	14814
					4	.....	.....	.....	.....	.....	.....	15066

a It seems probable that this coal is not the same as the Springfield (No. 5) Coal of Central Illinois

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12942.....	*135	1921	Gallatin....	5	1	3.49	36.09	50.54	9.88	3.04	.18	12707
					2	.....	37.39	52.37	10.24	3.15	.18	13162
					3	.....	41.66	58.34	.....	3.51	.20	14663
					4	.....	.....	.....	.....	.....	.....	14912
5492.....	†230[b]	1912	Gallatin....	5	1	4.20	34.41	52.63	8.76	2.85	.01	12997
					2	.....	35.92	54.92	9.16	2.97	.01	13566
					3	.....	39.54	60.46	.....	3.27	.01	14934
					4	.....	.....	.....	.....	.....	.....	15164
5493.....	*230[b]	1912	Gallatin....	5	1	4.07	33.99	52.96	8.98	3.61	.03	12975
					2	.....	35.43	55.21	9.36	3.76	.03	13526
					3	.....	39.09	60.91	.....	4.15	.03	14922
					4	.....	.....	.....	.....	.....	.....	15186
12583.....	*229	1921	Randolph..	5	1	8.46	37.00	44.26	10.28	3.69	.29	11333
					2	.....	40.42	48.35	11.23	4.03	.32	12381
					3	.....	45.53	54.47	.....	4.54	.36	13947
					4	.....	.....	.....	.....	.....	.....	14219
12584.....	*229	1921	Randolph..	5	1	8.71	37.46	42.94	10.89	4.45	.09	11155
					2	.....	41.04	47.04	11.92	4.88	.09	12220
					3	.....	46.59	53.41	.....	5.54	1.07	13874
					4	.....	.....	.....	.....	.....	.....	14181
12585.....	*229	1921	Randolph..	5	1	8.00	38.05	43.63	10.32	3.69	.16	11338
					2	.....	41.36	47.42	11.22	4.01	.18	12324
					3	.....	46.59	53.41	.....	4.52	.20	13881
					4	.....	.....	.....	.....	.....	.....	14151
8835.....	†337	1915	Randolph..	5	1	13.90	35.33	41.33	9.44	4.84	.....	11015
					2	.....	41.03	48.00	10.97	5.63	.....	12793
					3	.....	46.09	53.91	.....	6.32	.....	14369
					4	.....	.....	.....	.....	.....	.....	14710
8836.....	†337	1915	Randolph..	5	1	12.21	35.22	41.61	10.96	4.47	.....	11037
					2	.....	40.12	47.40	12.48	5.10	.....	12572
					3	.....	45.85	54.15	.....	5.83	.....	14365
					4	.....	.....	.....	.....	.....	.....	14711

b Located in Eagle Valley.
†Local or captive mine (those sampled before 1930 largely abandoned).
*Shipping mine abandoned or long idle.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°4985.....	*43	1912	Saline.....	5	1	6.34	37.72	48.20	7.74	2.03	.61	12620
					2	.....	40.27	51.46	8.27	2.16	.65	13474
					3	.....	43.90	56.10	.....	2.35	.71	14689
					4	.....	.....	.....	.....	.....	.....	14869
°4986.....	[b]*43	1912	Saline.....	5	1	6.40	37.11	49.59	6.90	2.27	.40	12678
					2	.....	39.65	52.97	7.38	2.43	.43	13546
					3	.....	42.81	57.19	.....	2.62	.46	14625
					4	.....	.....	.....	.....	.....	.....	14802
°4987.....	* 43	1912	Saline.....	5	1	8.85	32.53	51.52	7.10	.92	.66	12321
					2	.....	35.65	56.57	7.78	1.00	.72	13502
					3	.....	38.66	61.34	.....	1.08	.78	14641
					4	.....	.....	.....	.....	.....	.....	14774
°4989.....	*43	1912	Saline.....	5	1	6.80	35.06	50.39	7.75	2.30	.03	12514
					2	.....	37.61	54.07	8.32	2.46	.03	13428
					3	.....	41.02	58.98	.....	2.68	.03	14646
					4	.....	.....	.....	.....	.....	.....	14839
°4990.....	*43	1912	Saline.....	5	1	6.02	38.23	47.53	8.22	2.67	.45	12538
					2	.....	40.68	50.58	8.74	2.84	.48	13341
					3	.....	44.58	55.42	.....	3.11	.53	14619
					4	.....	.....	.....	.....	.....	.....	14831
°4992.....	*43	1912	Saline.....	5	1	7.39	35.38	50.73	6.50	2.15	.01	12642
					2	.....	38.20	54.78	7.02	2.32	.01	13650
					3	.....	41.08	58.92	.....	2.50	.01	14681
					4	.....	.....	.....	.....	.....	.....	14848
°BM 14110..	*43	1912	Saline.....	5	1	6.63	36.72	49.69	7.96	2.09	.....	.....
					2	.....	38.26	53.21	8.53	2.94	.....	.....
					3	.....	41.83	58.17	.....	2.45	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM 14111..	*43	1912	Saline.....	5	1	8.60	32.92	51.19	7.29	.83	.....	.....
					2	.....	36.02	56.00	7.98	.91	.....	.....
					3	.....	39.14	60.86	.....	.99	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....

b Same mine as BM-7.

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°BM 14112..	*43	1912	Saline.....	5	1	6.70	37.62	47.87	7.81	2.26	.....	.....
					2	.....	40.32	51.31	8.37	2.42	.....	.....
					3	.....	44.00	56.00	.....	2.64	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM 14113..	*43	1912	Saline.....	5	1	6.90	36.60	49.44	7.06	2.10	.....	.....
					2	.....	39.31	53.11	7.58	2.26	.....	.....
					3	.....	42.53	57.47	.....	2.45	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM 14138..	*43	1912	Saline.....	5	1	7.27	36.18	49.95	6.60	2.03	.....	.....
					2	.....	39.02	53.86	7.12	2.19	.....	.....
					3	.....	42.01	57.99	.....	2.36	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM 14139..	*43	1912	Saline.....	5	1	5.54	39.77	46.61	8.08	2.63	.....	.....
					2	.....	42.10	49.35	8.55	2.78	.....	.....
					3	.....	46.04	53.96	.....	3.04	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
4991.....	44	1912	Saline.....	5	1	6.49	35.85	50.46	7.20	2.82	.01	12634
					2	.....	38.34	53.97	7.69	3.02	.01	13511
					3	.....	41.53	58.47	.....	3.27	.01	14637
					4	.....	.....	.....	.....	.....	.....	14839
4993.....	44	1912	Saline.....	5	1	6.71	35.68	49.64	7.97	2.69	.00	12482
					2	.....	38.24	53.21	8.55	2.88	.00	13379
					3	.....	41.82	58.18	.....	3.15	.00	14630
					4	.....	.....	.....	.....	.....	.....	14839
4994.....	44	1912	Saline.....	5	1	6.90	34.42	48.55	10.13	2.16	.03	12088
					2	.....	36.97	52.16	10.87	2.32	.03	12984
					3	.....	41.48	58.52	.....	2.60	.03	14567
					4	.....	.....	.....	.....	.....	.....	14793
4997.....	45	1912	Saline.....	5	1	6.71	35.59	49.98	7.72	2.38	.14	12092
					2	.....	38.14	53.59	8.27	2.55	.16	13332
					3	.....	41.58	58.42	.....	2.78	.17	14534
					4	.....	.....	.....	.....	.....	.....	14725

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
*Shipping mine abandoned or long idle.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
4999	45	1912	Saline	5	1	7.45	34.18	49.88	8.49	2.78	.01	12336
					2	.....	36.94	53.90	9.16	3.01	.01	13329
					3	.....	40.66	59.34	.....	3.31	.01	14673
					4	.....	.....	.....	.....	.....	.....	14899
5001	45	1912	Saline	5	1	6.94	34.56	50.93	7.57	2.30	.16	12485
					2	.....	37.14	54.72	8.14	2.46	.18	13415
					3	.....	40.43	59.57	.....	2.68	.20	14604
					4	.....	.....	.....	.....	.....	.....	14792
C-952	45	1934	Saline	5	1	7.2	33.5	50.2	9.1	2.28	.....	12210
					2	.....	36.1	54.1	9.8	2.46	.....	13156
					3	.....	40.1	59.9	.....	2.72	.....	14589
					4	.....	.....	.....	.....	.....	.....	14800
C-953	45	1934	Saline	5	1	7.0	32.9	52.5	7.6	2.03	.....	12467
					2	.....	35.4	56.4	8.2	2.18	.....	13404
					3	.....	38.6	61.4	.....	2.37	.....	14600
					4	.....	.....	.....	.....	.....	.....	14782
C-954	45	1934	Saline	5	1	7.2	33.0	51.5	8.3	2.19	.....	12261
					2	.....	35.5	55.5	9.0	2.36	.....	13211
					3	.....	39.1	60.9	.....	2.59	.....	14516
					4	.....	.....	.....	.....	.....	.....	14715
5019	*46	1912	Saline	5	1	8.08	35.26	48.25	8.41	2.60	.38	12192
					2	.....	38.35	52.50	9.15	2.83	.41	13263
					3	.....	42.21	57.79	.....	3.12	.45	14598
					4	.....	.....	.....	.....	.....	.....	14816
5020	*46	1912	Saline	5	1	7.70	35.48	48.66	8.16	2.52	.32	12304
					2	.....	38.44	52.72	8.84	2.74	.36	13331
					3	.....	42.17	57.83	.....	3.01	.39	14624
					4	.....	.....	.....	.....	.....	.....	14833
5021	*46	1912	Saline	5	1	8.25	34.98	47.73	9.04	2.40	.85	11964
					2	.....	38.12	52.03	9.85	2.61	.92	13040
					3	.....	42.29	57.71	.....	2.90	1.02	14465
					4	.....	.....	.....	.....	.....	.....	14682

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5022.....	*46	1912	Saline.....	5	1	7.72	34.09	49.22	8.97	3.31	.23	12050
					2	.....	36.94	53.34	9.72	3.58	.25	13057
					3	.....	40.92	59.08	.....	3.97	.28	14463
					4	.....	.....	.....	.....	.....	.....	14712
5023.....	*46	1912	Saline.....	5	1	8.14	34.60	48.10	9.16	2.42	.74	11989
					2	.....	37.66	52.36	9.98	2.64	.80	13051
					3	.....	41.84	58.16	.....	2.93	.89	14498
					4	.....	.....	.....	.....	.....	.....	14719
5024.....	*46	1912	Saline.....	5	1	7.85	33.72	49.30	9.13	3.48	.24	11971
					2	.....	36.59	53.50	9.91	3.78	.26	12990
					3	.....	40.61	59.39	.....	4.20	.29	14419
					4	.....	.....	.....	.....	.....	.....	14676
4995.....	*48	1912	Saline.....	5	1	7.57	34.36	48.30	9.77	2.42	1.75	11956
					2	.....	37.18	52.25	10.57	2.62	1.89	12934
					3	.....	41.57	58.43	.....	2.93	2.11	14463
					4	.....	.....	.....	.....	.....	.....	14692
5002.....	*48	1912	Saline.....	5	1	7.45	33.71	51.27	7.57	2.63	.31	12400
					2	.....	36.42	55.40	8.18	2.84	.35	13398
					3	.....	39.66	60.34	.....	3.09	.38	14592
					4	.....	.....	.....	.....	.....	.....	14794
5010.....	*48	1912	Saline.....	5	1	7.99	33.63	51.20	7.18	2.61	.05	12346
					2	.....	36.55	55.65	7.80	2.84	.05	13419
					3	.....	39.64	60.36	.....	3.08	.05	14554
					4	.....	.....	.....	.....	.....	.....	14750
5012.....	*49	1912	Saline.....	5	1	5.19	38.37	45.92	10.52	4.06	.46	12260
					2	.....	40.47	48.43	11.10	4.28	.49	12932
					3	.....	45.52	54.48	.....	4.81	.55	14547
					4	.....	.....	.....	.....	.....	.....	14847
5015.....	*49	1912	Saline.....	5	1	5.52	36.89	45.89	11.70	4.97	.72	11962
					2	.....	39.04	48.58	12.38	5.26	.76	12662
					3	.....	44.56	55.44	.....	6.00	.87	14451
					4	.....	.....	.....	.....	.....	.....	14807

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5016.....	*49	1912	Saline.....	5	1	4.90	38.93	45.90	10.27	4.77	.47	12355
					2	.....	40.94	48.26	10.80	5.01	.49	12991
					3	.....	45.90	54.10	.....	5.62	.55	14564
					4	.....	.....	.....	.....	.....	.....	14887
12931.....	124	1921	Saline.....	5	1	7.10	33.38	51.37	8.15	2.58	.13	12354
					2	.....	35.93	55.30	8.77	2.78	.14	13313
					3	.....	39.38	60.62	.....	3.05	.15	14593
					4	.....	.....	.....	.....	.....	.....	14802
12932.....	124	1921	Saline.....	5	1	6.78	33.62	51.96	7.64	2.40	.11	12490
					2	.....	36.07	55.74	8.19	2.58	.11	13399
					3	.....	39.29	60.71	.....	2.81	.12	14594
					4	.....	.....	.....	.....	.....	.....	14788
12933.....	124	1921	Saline.....	5	1	6.62	32.79	52.27	8.32	1.74	.42	12463
					2	.....	35.11	55.98	8.91	1.86	.45	13347
					3	.....	38.54	61.46	.....	2.04	.49	14653
					4	.....	.....	.....	.....	.....	.....	14832
12934.....	125	1921	Saline.....	5	1	6.65	33.52	52.48	7.35	1.93	.13	12609
					2	.....	35.91	56.22	7.87	2.07	.13	13507
					3	.....	38.98	61.02	.....	2.25	.14	14661
					4	.....	.....	.....	.....	.....	.....	14834
12935.....	125	1921	Saline.....	5	1	6.28	33.35	51.48	8.89	3.07	.09	12357
					2	.....	35.58	54.93	9.49	3.28	.09	13185
					3	.....	39.31	60.69	.....	3.62	.10	14567
					4	.....	.....	.....	.....	.....	.....	14805
12936.....	125	1921	Saline.....	5	1	6.85	33.65	52.28	7.22	2.11	.05	12612
					2	.....	36.13	56.12	7.75	2.27	.05	13539
					3	.....	39.17	60.83	.....	2.46	.05	14676
					4	.....	.....	.....	.....	.....	.....	14854
12937.....	*126	1921	Saline.....	5	1	5.75	33.90	53.21	7.14	2.29	.04	12624
					2	.....	35.97	56.46	7.57	2.43	.04	13394
					3	.....	38.92	61.08	.....	2.63	.04	14491
					4	.....	.....	.....	.....	.....	.....	14668

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12938.....	*126	1921	Saline.....	5	1	6.13	34.28	51.83	7.76	2.44	.27	12615
					2	.....	36.52	55.22	8.26	2.60	.29	13439
					3	.....	39.81	60.19	.....	2.83	.32	14649
					4	.....	.....	.....	.....	.....	.....	14846
12939.....	*126	1921	Saline.....	5	1	6.18	33.97	51.99	7.86	2.65	.16	12508
					2	.....	36.21	55.42	8.37	2.82	.17	13332
					3	.....	39.52	60.48	.....	3.08	.19	14395
					4	.....	.....	.....	.....	.....	.....	14753
12901.....	127	1921	Saline.....	5	1	5.51	33.34	53.39	7.76	1.92	.34	12687
					2	.....	35.28	56.51	8.21	2.03	.36	13427
					3	.....	38.44	61.56	.....	2.21	.39	14628
					4	.....	.....	.....	.....	.....	.....	14803
12902.....	127	1921	Saline.....	5	1	6.05	34.38	51.87	7.70	1.98	.42	12580
					2	.....	36.59	55.21	8.20	2.11	.44	13390
					3	.....	39.86	60.14	.....	2.30	.48	14586
					4	.....	.....	.....	.....	.....	.....	14763
12903.....	127	1921	Saline.....	5	1	5.50	33.64	52.49	8.37	2.51	.51	12576
					2	.....	35.60	55.54	8.86	2.66	.54	13308
					3	.....	39.06	60.94	.....	2.92	.59	14602
					4	.....	.....	.....	.....	.....	.....	14809
BMA 90721..	127	1933	Saline.....	5	1	6.8	33.7	52.0	7.5	2.0	.24	12640
					2	.....	36.2	55.7	8.1	2.2	.26	13550
					3	.....	39.3	60.7	.....	2.4	.....	14750
					4	.....	.....	.....	.....	.....	.....	14926
BMA 90720..	127	1933	Saline.....	5	1	7.7	32.9	52.0	7.4	1.5	.15	12510
					2	.....	35.7	56.3	8.0	1.7	.17	13560
					3	.....	38.8	61.2	.....	1.8	.....	14740
					4	.....	.....	.....	.....	.....	.....	14902
BMA90719...	127	1933	Saline.....	5	1	5.7	34.6	51.1	8.6	2.5	.37	12700
					2	.....	36.6	54.3	9.1	2.7	.39	13470
					3	.....	40.3	59.7	.....	2.9	.....	14820
					4	.....	.....	.....	.....	.....	.....	15036

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C748	127	1934	Saline	5	1	6.2	34.2	52.3	7.3	1.8	.....	12620
					2	.....	36.5	55.7	7.8	1.9	.....	13450
					3	.....	39.6	60.4	.....	2.1	.....	14590
					4	.....	.....	.....	.....	.....	.....	14750
C749	127	1934	Saline	5	1	6.4	34.5	51.1	8.0	1.9	.....	12490
					2	.....	36.9	54.5	8.6	2.0	.....	13350
					3	.....	40.4	59.6	.....	2.2	.....	14590
					4	.....	.....	.....	.....	.....	.....	14780
C750	127	1934	Saline	5	1	5.5	35.1	51.2	8.2	2.3	.....	12640
					2	. . .	37.1	54.3	8.6	2.5	. . .	13370
					3	.....	40.6	59.4	.....	2.7	.....	14640
					4	.....	.....	.....	.....	.....	.....	14830
12911	*128	1921	Saline	5	1	6.52	33.57	52.37	7.54	2.57	.03	12552
					2	.....	35.91	56.02	8.07	2.75	.03	13428
					3	.....	39.06	60.94	.....	2.99	.03	14607
					4	.....	.....	.....	.....	.....	.....	14805
12912	*128	1921	Saline	5	1	6.84	30.30	48.02	14.84	1.46	.03	11343
					2	.....	32.52	51.55	15.93	1.57	.03	12176
					3	.....	38.68	61.32	.....	1.87	.04	14483
					4	.....	.....	.....	.....	.....	.....	14764
12913	*128	1921	Saline	5	1	6.17	32.87	53.54	7.42	1.60	.13	12631
					2	.....	35.03	57.06	7.91	1.71	.14	13462
					3	.....	38.04	61.96	.....	1.86	.15	14618
					4	.....	.....	.....	.....	.....	.....	14777
12917	*129	1921	Saline	5	1	5.62	34.61	52.52	7.25	2.02	.08	12781
					2	.....	36.67	55.65	7.68	2.14	.09	13542
					3	.....	39.72	60.28	.....	2.32	.10	14669
					4	.....	.....	.....	.....	.....	.....	14840
12918	*129	1921	Saline	5	1	5.75	35.01	52.65	6.59	2.05	.05	12800
					2	.....	37.15	55.86	6.99	2.18	.05	13581
					3	.....	39.94	60.06	.....	2.34	.05	14602
					4	.....	.....	.....	.....	.....	.....	14763

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12919.....	*129	1921	Saline.....	5	1	6.58	32.89	53.29	7.24	2.06	.14	12565
					2	.....	35.21	57.04	7.75	2.20	.15	13450
					3	.....	38.17	61.83	.....	2.38	.16	14580
					4	.....	.....	.....	.....	.....	.....	14754
12914.....	*130	1921	Saline.....	5	1	6.05	33.67	51.48	8.80	2.72	.34	12401
					2	.....	35.84	54.79	9.37	2.90	.35	13200
					3	.....	39.55	60.45	.....	3.20	.39	14565
					4	.....	.....	.....	.....	.....	.....	14786
12915.....	*130	1921	Saline.....	5	1	6.69	32.54	51.44	9.33	2.62	.06	12225
					2	.....	34.88	55.13	9.99	2.81	.07	13101
					3	.....	38.75	61.25	.....	3.12	.08	14555
					4	.....	.....	.....	.....	.....	.....	14785
12916.....	*130	1921	Saline.....	5	1	5.93	33.79	51.51	8.77	2.63	.10	12393
					2	.....	35.92	54.76	9.32	2.80	.11	13174
					3	.....	39.61	60.39	.....	3.09	.12	14528
					4	.....	.....	.....	.....	.....	.....	14746
BMA91427...	608	1933	Saline.....	5	1	6.3	36.6	47.7	9.4	3.1	.60	12470
					2	.....	39.1	50.9	10.0	3.3	.64	13310
					3	.....	43.4	56.6	.....	3.6	.....	14790
					4	.....	.....	.....	.....	.....	.....	15042
BMA91426...	608	1933	Saline.....	5	1	6.6	33.9	50.4	9.1	3.4	.46	12430
					2	.....	36.3	54.0	9.7	3.6	.49	13310
					3	.....	40.2	59.8	.....	4.0	.....	14750
					4	.....	.....	.....	.....	.....	.....	14998
BMA91428...	608	1933	Saline.....	5	1	5.9	37.0	47.6	9.5	2.5	.82	12500
					2	.....	39.3	50.6	10.1	2.6	.87	13280
					3	.....	43.7	56.3	.....	2.9	.....	14780
					4	.....	.....	.....	.....	.....	.....	15001
C-361.....	610	1933	Saline.....	5	1	5.8	35.0	51.3	7.9	2.40	.....	12677
					2	.....	37.2	54.4	8.4	2.55	.....	13463
					3	.....	40.6	59.4	.....	2.78	.....	14696
					4	.....	.....	.....	.....	.....	.....	14895

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-360.....	610	1933	Saline.....	5	1	6.0	35.2	51.0	7.8	2.81	.....	12609
					2	.....	37.4	54.3	8.3	2.99	.....	13417
					3	.....	40.8	59.2	.....	3.26	.....	14626
					4	.....	.....	.....	.....	.....	.....	14842
BM28448....	[b]*BM8	1917	Saline.....	5	1	4.73	37.88	47.70	9.69	4.13	.....	12463
					2	.....	39.76	50.07	10.17	4.34	.....	13082
					3	.....	44.26	55.74	.....	4.83	.....	14563
					4	.....	.....	.....	.....	.....	.....	14851
BM28449....	[b]*BM8	1917	Saline.....	5	1	4.94	39.50	45.79	9.77	3.94	.....	12420
					2	.....	41.55	48.17	10.28	4.14	.....	13065
					3	.....	46.31	53.69	.....	4.61	.....	14562
					4	.....	.....	.....	.....	.....	.....	14844
BM33091....	*BM8	1919	Saline.....	5	1	5.13	35.38	45.89	13.60	4.94	.....	11864
					2	.....	37.29	48.37	14.34	5.21	.....	12506
					3	.....	43.53	56.47	.....	6.08	.....	14600
					4	.....	.....	.....	.....	.....	.....	14998
BM33092....	*BM8	1919	Saline.....	5	1	5.82	37.18	47.28	9.72	3.70	.....	12323
					2	.....	39.48	50.20	10.32	3.93	.....	13084
					3	.....	44.02	55.98	.....	4.38	.....	14591
					4	.....	.....	.....	.....	.....	.....	14866
BM33093....	*BM8	1919	Saline.....	5	1	4.90	36.21	47.19	11.70	3.41	.....	12119
					2	.....	38.07	49.63	12.30	3.59	.....	12744
					3	.....	43.41	56.59	.....	4.09	.....	14531
					4	.....	.....	.....	.....	.....	.....	14827
BM33101....	BM70	1919	Saline.....	5	1	7.48	33.92	49.85	8.75	2.20	.....	12204
					2	.....	36.66	53.88	9.46	2.38	.....	13190
					3	.....	40.49	59.51	.....	2.63	.....	14569
					4	.....	.....	.....	.....	.....	.....	14774
BM33102....	BM70	1919	Saline.....	5	1	7.89	33.78	50.24	8.09	2.83	.....	12245
					2	.....	36.67	54.55	8.78	3.07	.....	13295
					3	.....	40.20	59.80	.....	3.37	.....	14575
					4	.....	.....	.....	.....	.....	.....	14794

[b] Fieldner, A. C., and others, Analyses of Coal: U. S. Bureau of Mines Bull. 193, p. 33, 1922.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM33103....	BM70	1919	Saline.....	5	1	8.31	33.30	49.56	8.83	2.59	.....	12112
					2	.....	36.32	54.05	9.63	2.82	.....	13210
					3	.....	40.19	59.81	.....	3.12	.....	14618
					4	.....	.....	.....	.....	.....	.....	14843
BM33081....	BM71	1919	Saline.....	5	1	5.61	36.08	48.12	10.19	3.69	.....	12283
					2	.....	38.22	50.98	10.80	3.91	.....	13012
					3	.....	42.85	57.15	.....	4.38	.....	14587
					4	.....	.....	.....	.....	.....	.....	14871
BM33082....	BM71	1919	Saline.....	5	1	6.09	35.78	49.99	8.14	2.88	.....	12577
					2	.....	38.10	53.23	8.67	3.07	.....	13392
					3	.....	41.72	58.28	.....	3.36	.....	14663
					4	.....	.....	.....	.....	.....	.....	14883
BM33083....	BM71	1919	Saline.....	5	1	6.67	32.61	50.64	10.08	3.72	.....	12182
					2	.....	34.94	54.26	10.80	3.99	.....	13054
					3	.....	39.17	60.83	.....	4.47	.....	14634
					4	.....	.....	.....	.....	.....	.....	14922
BM31381.. .	*BM72	1927	Saline.. . .	5	1	10.4	31.2	50.6	7.8	2.0	.....	12000
					2	.....	34.8	56.5	8.7	2.3	.....	13390
					3	.....	38.2	61.8	.....	2.5	.....	14680
					4	.....	.....	.....	.....	.....	.....	14859
BMA31382...	*BM72	1927	Saline.....	5	1	5.1	33.0	54.0	7.9	2.1	.....	12900
					2	.....	34.8	56.9	9.3	2.2	.....	13600
					3	.....	38.0	62.0	.....	2.4	.....	14840
					4	.....	.....	.....	.....	.....	.....	15018
BMA51411...	*353	1929	Williamson.	5	1	6.1	34.1	49.2	10.6	3.0	.....	12160
					2	.....	36.3	52.5	11.2	3.2	.....	12950
					3	.....	40.9	59.1	.....	3.6	.....	14580
					4	.....	.....	.....	.....	.....	.....	14847
BMA51412...	*353	1929	Williamson.	5	1	7.5	33.7	46.0	12.8	4.1	.....	11520
					2	.....	36.4	49.7	13.9	4.5	.....	12450
					3	.....	42.3	57.7	.....	5.2	.....	14460
					4	.....	.....	.....	.....	.....	.....	14815

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BMA51413...	*353	1929	Williamson.	5	1	7.3	34.2	48.4	10.1	3.4	.....	11990
					2	.....	36.9	52.2	10.9	3.7	.....	12930
					3	.....	41.4	58.6	.....	4.1	.....	14520
					4	.....	.....	.....	.....	.....	.....	14786
GRAPE CREEK (SPRINGFIELD) (NO. 5?) COAL (EASTERN ILLINOIS)												
C-670.....	†614	1934	Edgar.....	5?	1	12.5	36.8	40.5	10.2	3.44	.51	11094
					2	.....	42.1	46.2	11.7	3.93	.59	12679
					3	.....	47.7	52.3	.....	4.45	.67	14353
					4	.....	.....	.....	.....	.....	.....	14650
C-671.....	†614	1934	Edgar.....	5?	1	13.0	37.1	40.3	9.6	2.58	.88	11225
					2	.....	42.7	46.3	11.0	2.96	1.01	12903
					3	.....	48.0	52.0	.....	3.33	1.13	14499
					4	.....	.....	.....	.....	.....	.....	14747
C-672.....	†614	1934	Edgar.....	5?	1	12.2	38.1	40.0	9.7	3.33	.60	11254
					2	.....	43.4	45.5	11.1	3.79	.68	12815
					3	.....	48.8	51.2	.....	4.26	.76	14415
					4	.....	.....	.....	.....	.....	.....	14694
10519.....	*215	1918	Livingston..	5?[a]	1	10.22	36.56	42.14	11.08	3.09	.....	11630
					2	.....	40.72	46.94	12.34	3.44	.....	12955
					3	.....	46.45	53.55	.....	3.92	.....	14779
					4	.....	.....	.....	.....	.....	.....	15077
10523.....	*215	1918	Livingston..	5?[a]	1	10.05	32.49	37.59	19.87	7.61	.....	10125
					2	.....	36.12	41.80	22.08	8.46	.....	11256
					3	.....	46.36	53.64	.....	10.86	.....	14446
					4	.....	.....	.....	.....	.....	.....	15151
10524.....	*215	1918	Livingston..	5?[a]	1	7.95	38.03	43.55	10.47	3.52	.....	12020
					2	.....	41.31	47.31	11.38	3.82	.....	13057
					3	.....	46.61	53.39	.....	4.31	.....	14734
					4	.....	.....	.....	.....	.....	.....	15029
10520.....	*216	1918	Livingston..	5?[a]	1	13.23	36.19	39.16	11.42	1.46	.....	10924
					2	.....	41.71	45.13	13.16	1.69	.....	12590
					3	.....	48.03	51.97	.....	1.95	.....	14498
					4	.....	.....	.....	.....	.....	.....	14738

†Local or captive mine (those sampled before 1930 largely abandoned).
*Shipping mine abandoned or long idle.
a This may be Herrin No. 6 coal.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
10521.....	*216	1918	Livingston..	5?[a]	1	14.03	36.36	39.69	9.92	2.74	.....	11124
					2	.....	42.29	46.17	11.54	3.18	.....	12939
					3	.....	47.81	52.19	.....	3.59	.....	14627
					4	.....	.....	.....	.....	.....	.....	14897
10522.....	*216	1918	Livingston..	5?[a]	1	14.04	34.76	38.03	13.17	5.25	.....	10502
					2	.....	40.44	44.24	15.32	6.11	.....	12216
					3	.....	47.75	52.25	.....	7.22	.....	14426
					4	.....	.....	.....	.....	.....	.....	14871
BMA90312...	†600	1933	Livingston..	5?[a]	1	12.6	33.5	38.8	15.1	3.0	.46	10520
					2	.....	38.3	44.4	17.3	3.4	.53	12030
					3	.....	46.3	53.7	.....	4.1	.....	14550
					4	.....	.....	.....	.....	.....	.....	14928
BMA90313...	†600	1933	Livingston..	5?[a]	1	13.1	32.4	39.6	14.9	4.0	.67	10500
					2	.....	37.3	45.5	17.2	4.6	.77	12080
					3	.....	45.1	54.9	.....	5.6	.....	14590
					4	.....	.....	.....	.....	.....	.....	15020
BMA90314...	†600	1933	Livingston..	5?[a]	1	12.2	35.0	39.2	13.6	2.7	.83	10830
					2	.....	39.8	44.7	15.5	3.1	.94	12330
					3	.....	47.1	52.9	.....	3.6	.....	14590
					4	.....	.....	.....	.....	.....	.....	14934
°4741.....	91	1912	Vermilion...	5[b]	1	13.63	34.56	41.19	10.62	2.91	.78	10954
					2	.....	40.01	47.69	12.30	3.36	.90	12683
					3	.....	45.62	54.38	.....	3.83	1.03	14462
					4	.....	.....	.....	.....	.....	.....	14747
°4742.....	91	1912	Vermilion...	5	1	14.50	35.98	40.49	9.03	2.43	.44	11090
					2	.....	42.09	47.35	10.56	2.83	.52	12971
					3	.....	47.06	52.94	.....	3.15	.58	14502
					4	.....	.....	.....	.....	.....	.....	14740

a This may be Herrin No. 6 coal.

b This and following analyses of Vermilion County coal represent coal formerly called No. 6 coal (Grape Creek).

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°4743.....	91	1912	Vermilion...	5	1	14.20	35.79	42.05	7.96	1.83	.34	11295
					2	.....	41.71	49.01	9.28	2.13	.39	13165
					3	.....	45.98	54.02	.....	2.35	.43	14512
					4	.....	.....	.....	.....	.....	.....	14703
°4744.....	91	1912	Vermilion...	5	1	13.99	35.26	42.68	8.07	1.67	.98	11271
					2	.....	40.99	49.63	9.38	1.94	1.14	13104
					3	.....	45.23	54.77	.....	2.14	1.26	14460
					4	.....	.....	.....	.....	.....	.....	14647
°4745.....	91	1912	Vermilion...	5	1	14.79	34.44	42.69	8.08	1.72	.98	11053
					2	.....	40.42	50.10	9.48	2.02	1.15	12971
					3	.....	44.65	55.35	.....	2.23	1.27	14329
					4	.....	.....	.....	.....	.....	.....	14519
°4746.....	91	1912	Vermilion...	5	1	15.14	33.70	40.19	10.97	2.50	.61	10663
					2	.....	39.72	47.34	12.94	2.95	.72	12565
					3	.....	45.62	54.38	.....	3.39	.83	14433
					4	.....	.....	.....	.....	.....	.....	14712
°BM13567...	91	1912	Vermilion...	5	1	15.85	32.65	40.77	10.73	2.42	.....	.....
					2	.....	38.80	48.45	12.75	2.88	.....	.....
					3	.....	44.47	55.53	.....	3.30	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13568...	91	1912	Vermilion...	5	1	14.15	33.67	42.29	9.89	2.17	.....	.....
					2	.....	39.22	49.26	11.52	2.53	.....	.....
					3	.....	44.33	55.67	.....	2.86	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13569...	91	1912	Vermilion...	5	1	14.86	34.59	42.01	8.54	2.30	.....	.....
					2	.....	40.63	49.34	10.03	2.70	.....	.....
					3	.....	45.16	54.84	.....	3.00	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°4702.....	†92	1912	Vermilion...	5	1	15.53	33.60	39.46	11.41	2.32	.98	10404
					2	.....	39.78	46.70	13.52	2.75	1.15	12317
					3	.....	46.00	54.00	.....	3.18	1.33	14243
					4	.....	.....	.....	.....	.....	.....	14520

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
†Local or captive mine (those sampled before 1930 largely abandoned).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°4703.....	†92	1912	Vermilion...	5	1	15.70	32.72	40.22	11.36	2.57	1.06	10392
					2	.....	38.81	47.72	13.47	3.04	1.26	12328
					3	.....	44.85	55.15	.....	3.51	1.46	14247
					4	.....	.....	.....	.....	.....	.....	14535
°4704.....	†92	1912	Vermilion...	5	1	15.27	33.98	40.88	9.87	2.26	.69	10718
					2	.....	40.10	48.24	11.66	2.66	.81	12649
					3	.....	45.39	54.61	.....	3.01	.92	14319
					4	.....	.....	.....	.....	.....	.....	14563
°BM13467...	†92	1912	Vermilion...	5	1	15.87	31.97	40.61	11.55	2.42	.....	.....
					2	.....	38.00	48.27	13.73	2.88	.....	.....
					3	.....	44.05	55.95	.....	3.34	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13469...	†92	1912	Vermilion...	5	1	15.16	33.15	41.94	9.75	1.99	.....	.....
					2	.....	39.07	49.44	11.49	2.35	.....	.....
					3	.....	44.14	55.86	.....	2.66	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13470...	†92	1912	Vermilion...	5	1	15.37	33.40	40.06	11.17	1.94	.....	.....
					2	.....	39.47	47.33	13.20	2.29	.....	.....
					3	.....	45.47	54.53	.....	2.64	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13443...	*93	1912	Vermilion...	5	1	13.23	37.09	40.46	9.22	2.35	.....	.....
					2	.....	42.75	46.62	10.63	2.71	.....	.....
					3	.....	47.83	52.17	.....	3.03	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13444...	*93	1912	Vermilion...	5	1	15.50	33.72	42.80	7.98	1.74	.....	.....
					2	.....	39.90	50.66	9.44	2.06	.....	.....
					3	.....	44.06	55.94	.....	2.27	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13445...	*93	1912	Vermilion...	5	1	16.19	33.83	41.70	8.28	1.82	.....	.....
					2	.....	40.37	49.75	9.88	2.17	.....	.....
					3	.....	44.79	55.21	.....	2.41	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
†Local or captive mine (those sampled before 1930 largely abandoned).
*Shipping mine abandoned or long idle.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°BM13446...	*93	1912	Vermilion...	5	1	14.92	34.07	42.48	8.53	1.97	.....	.....
					2	.....	40.05	49.92	10.03	2.32	.....	.....
					3	.....	44.52	55.48	.....	2.58	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13447...	*93	1912	Vermilion...	5	1	15.38	35.24	40.70	8.68	2.78	.....	.....
					2	.....	41.65	48.09	10.26	3.29	.....	.....
					3	.....	46.41	53.59	.....	3.67	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13448...	*93	1912	Vermilion...	5	1	15.11	35.56	40.67	8.66	2.91	.....	.....
					2	.....	41.89	47.91	10.20	3.43	.....	.....
					3	.....	46.64	53.36	.....	3.82	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°4670.....	*93	1912	Vermilion...	5	1	13.68	36.28	41.37	8.67	2.78	.45	11101
					2	.....	42.03	47.92	10.05	3.23	.52	12861
					3	.....	46.73	53.27	.....	3.59	.58	14298
					4	.....	.....	.....	.....	.....	.....	14535
°4671.....	*93	1912	Vermilion...	5	1	15.50	33.32	43.11	8.07	1.86	.46	10976
					2	.....	39.43	51.03	9.54	2.20	.62	12989
					3	.....	43.59	56.41	.....	2.43	.69	14359
					4	.....	.....	.....	.....	.....	.....	14555
°4674.....	*93	1912	Vermilion...	5	1	15.69	34.52	42.22	7.57	1.56	.53	11019
					2	.....	40.95	50.07	8.98	1.85	.63	13085
					3	.....	45.00	55.00	.....	2.03	.69	14376
					4	.....	.....	.....	.....	.....	.....	14553
°4676.....	*93	1912	Vermilion...	5	1	14.56	35.04	41.82	8.58	2.09	.74	11006
					2	.....	41.01	48.95	10.04	2.45	.86	12881
					3	.....	45.59	54.41	.....	2.72	.96	14319
					4	.....	.....	.....	.....	.....	.....	14530
°4678.....	*93	1912	Vermilion...	5	1	16.06	34.67	40.75	8.52	1.79	.90	10810
					2	.....	41.32	48.53	10.15	2.14	1.07	12879
					3	.....	45.99	54.01	.....	2.38	1.19	14334
					4	.....	.....	.....	.....	.....	.....	14537

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°4679.....	*93	1912	Vermilion...	5	1	15.95	34.66	42.06	7.33	1.41	.39	11041
					2	.....	41.23	50.05	8.72	1.68	.46	13136
					3	.....	45.17	54.83	.....	1.84	.50	14391
					4	.....	.....	.....	.....	.....	.....	14557
°4706.....	*95	1912	Vermilion...	5	1	11.87	40.37	39.52	8.24	3.07	.74	11416
					2	.....	45.80	44.86	9.34	3.48	.84	12953
					3	.....	50.52	49.48	.....	3.84	.93	14287
					4	.....	.....	.....	.....	.....	.....	14522
°4707.....	*95	1912	Vermilion...	5	1	13.14	38.81	38.11	9.94	4.18	.88	10949
					2	.....	44.69	43.87	11.44	4.82	1.02	12604
					3	.....	50.46	49.54	.....	5.44	1.15	14232
					4	.....	.....	.....	.....	.....	.....	14546
°BM13450...	*95	1912	Vermilion...	5	1	12.44	40.33	39.43	7.80	2.91	.....	.....
					2	.....	46.06	45.03	8.91	3.32	.....	.....
					3	.....	50.56	49.44	.....	3.64	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13451...	*95	1912	Vermilion...	5	1	13.14	38.42	38.48	9.96	4.04	.....	.....
					2	.....	44.23	44.30	11.47	4.65	.....	.....
					3	.....	49.96	50.04	.. ...	5.25	.....	.....
					4	.....	.....	.....	.....	.....	.....	. . .
BM84222.. .	*212	1922	Vermilion...	5	1	13.6	34.0	42.6	9.8	2.4	.83	11020
					2	.. . .	39.3	49.5	11.2	2.8	.96	12750
					3	.....	44.3	55.7	.....	3.1	1.08	14380
					4	.....	.....	.....	.....	.....	.....	14600
BM84223....	*212	1922	Vermilion...	5	1	13.8	35.2	41.3	9.7	2.7	.69	11010
					2	.....	40.8	48.0	11.2	3.1	.80	12760
					3	.....	46.0	54.0	.....	3.5	.90	14370
					4	.....	.....	.....	.....	.....	.....	14620
BM84224....	*212	1922	Vermilion...	5	1	15.3	32.8	44.1	7.8	1.8	.80	11100
					2	.....	38.7	52.1	9.2	2.1	.94	13110
					3	.....	42.6	57.4	.....	2.3	1.04	14430
					4	.....	.....	.....	.....	.....	.....	14630

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BMA90658...	401	1933	Vermilion...	5	1	16.5	33.0	43.6	6.9	1.2	.65	11060
					2	.....	39.5	52.2	8.3	1.5	.77	13250
					3	.....	43.1	56.9	.....	1.6	.....	14450
					4	.....	.....	.....	.....	.....	.....	14605
BMA90659...	401	1933	Vermilion...	5	1	16.7	33.4	40.4	9.5	1.9	.72	10740
					2	.....	40.1	48.5	11.4	2.2	.86	12900
					3	.....	45.2	54.8	.....	2.5	.....	14550
					4	.....	.....	.....	.....	.....	.....	14778
BMA90660...	401	1933	Vermilion...	5	1	17.7	29.5	43.3	9.5	1.3	.89	10520
					2	.....	35.9	52.6	11.5	1.6	1.08	12780
					3	.....	40.5	59.5	.....	1.8	.....	14440
					4	.....	.....	.....	.....	.....	.....	14648
SPRINGFIELD (NO. 5) COAL (CENTRAL AND WESTERN ILLINOIS)												
5292.....	*28	1912	Fulton.....	5	1	17.39	37.00	35.69	9.92	2.74	1.14	10273
					2	.....	44.79	43.20	12.01	3.28	1.36	12435
					3	.....	50.90	49.10	.....	3.74	1.55	14132
					4	.....	.....	.....	.....	.....	.....	14398
5295.....	*28	1912	Fulton.....	5	1	16.33	36.24	36.58	10.82	3.40	1.94	10246
					2	.....	43.34	43.72	12.94	4.06	2.32	12217
					3	.....	49.78	50.22	.....	4.66	2.66	14067
					4	.....	.....	.....	.....	.....	.....	14373
5299.....	*28	1912	Fulton.....	5	1	16.33	36.75	38.02	8.90	2.59	1.02	10604
					2	.....	43.92	45.44	10.64	3.10	1.22	12674
					3	.....	49.15	50.85	.....	3.47	1.37	14183
					4	.....	.....	.....	.....	.....	.....	14423
5293.....	*29	1912	Fulton.....	5	1	17.13	36.23	34.44	12.20	3.03	1.79	9846
					2	.....	43.72	41.55	14.73	3.66	2.16	11882
					3	.....	51.27	48.73	.....	4.29	2.53	13934
					4	.....	.....	.....	.....	.....	.....	14252
5297.....	*29	1912	Fulton.....	5	1	16.59	35.98	37.20	10.23	4.07	1.77	10271
					2	.....	43.14	44.61	12.25	4.88	2.12	12314
					3	.....	49.16	50.84	.....	5.56	2.42	14033
					4	.....	.....	.....	.....	.....	.....	14354

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5300	*29	1912	Fulton	5	1	15.41	35.67	39.04	9.88	3.31	.52	10579
					2		42.16	46.15	11.69	3.92	.61	12505
					3		47.74	52.26		4.44	.69	14160
					4							14443
5345	*30	1912	Fulton	5	1	16.36	33.91	38.19	11.54	2.93	1.27	10186
					2		40.54	45.66	13.80	3.50	1.51	12179
					3		47.03	52.97		4.01	1.75	14129
					4							14431
5346	*30	1912	Fulton	5	1	16.33	35.50	37.01	11.16	2.89	1.84	10220
					2		42.42	44.23	13.35	3.45	2.20	12213
					3		48.96	51.04		3.98	2.54	14094
					4							14389
5347	*30	1912	Fulton	5	1	15.85	36.12	38.12	9.91	3.36	1.47	10494
					2		42.92	45.30	11.78	4.00	1.75	12471
					3		48.65	51.35		4.53	1.98	14136
					4							14423
°5283	*31	1912	Fulton	5	1	15.18	37.17	35.17	12.48	3.45	1.70	10201
					2		43.82	41.45	14.73	4.07	2.00	12026
					3		51.39	48.61		4.77	2.35	14103
					4							14444
°5284	*31	1912	Fulton	5	1	16.94	35.68	37.15	10.23	2.98	1.31	10314
					2		42.95	44.73	12.32	3.59	1.57	12418
					3		48.98	51.02		4.09	1.79	14163
					4							14446
°5285	*31	1912	Fulton	5	1	18.42	34.98	37.66	8.94	2.33	.86	10270
					2		42.88	46.15	10.97	2.85	1.06	12587
					3		48.16	51.84		3.20	1.19	14138
					4							14372
°5296	*31	1912	Fulton	5	1	16.82	37.28	33.45	12.45	2.84	1.69	10013
					2		44.81	40.23	14.96	3.42	2.02	12038
					3		52.69	47.31		4.02	2.38	14156
					4							14479

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°5298.....	*31	1912	Fulton.....	5	1	16.52	37.17	36.54	9.77	3.91	.81	10394
					2	.....	44.52	43.78	11.70	4.69	.97	12451
					3	.....	50.42	49.58	.....	5.31	1.10	14101
					4	.....	.....	.....	.....	.....	.....	14409
°5341.....	*31	1912	Fulton.....	5	1	17.37	35.71	37.86	9.06	2.34	1.14	10420
					2	.....	43.22	45.82	10.96	2.83	1.38	12610
					3	.....	48.54	51.46	.....	3.18	1.55	14162
					4	.....	.....	.....	.....	.....	.....	14397
°BM14554...	*31	1912	Fulton.....	5	1	14.99	36.33	36.16	12.52	3.24	.....	.....
					2	.....	42.73	42.54	14.73	3.81	.....	.....
					3	.....	50.11	49.89	.....	4.47	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14555...	*31	1912	Fulton.....	5	1	16.65	36.45	36.95	9.95	2.69	.....	.....
					2	.....	43.73	44.33	11.94	3.23	.....	.....
					3	.....	49.66	50.34	.....	3.67	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14556...	*31	1912	Fulton.....	5	1	17.66	34.80	37.67	9.87	2.31	.....	.....
					2	.....	42.26	45.76	11.98	2.80	.....	.....
					3	.....	48.01	51.99	.....	3.18	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14557...	*31	1912	Fulton.....	5	1	15.47	35.64	39.07	9.82	3.25	.....	.....
					2	.....	42.16	46.22	11.62	3.84	.....	.....
					3	.....	47.70	52.30	.....	4.34	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14558...	*31	1912	Fulton.....	5	1	16.39	36.56	37.60	9.45	2.48	.....	.....
					2	.....	43.73	44.97	11.30	2.97	.....	.....
					3	.....	49.30	50.70	.....	3.35	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14559...	*31	1912	Fulton.....	5	1	16.24	35.31	36.65	11.80	3.42	.....	.....
					2	.....	42.16	43.75	14.09	4.08	.....	.....
					3	.....	49.07	50.93	.....	4.75	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5342	*32	1912	Fulton	5	1	13.66	38.46	37.06	10.82	3.64	1.26	10689
					2		44.54	42.92	12.54	4.22	1.46	12379
					3		50.93	49.07		4.82	1.67	14154
					4							14462
5343	*32	1912	Fulton	5	1	14.53	37.46	38.35	9.66	3.18	1.60	10804
					2		43.83	44.87	11.30	3.72	1.87	12641
					3		49.41	50.59		4.19	2.11	14251
					4							14525
5344	*32	1912	Fulton	5	1	15.80	35.84	37.67	10.69	3.00	1.79	10460
					2		42.56	44.74	12.70	3.57	2.12	12423
					3		48.75	51.25		4.09	2.42	14230
					4							14520
12443	111	1921	Fulton	5	1	14.43	34.60	39.09	11.88	2.82	2.45	10320
					2		40.43	45.69	13.88	3.29	2.86	12061
					3		46.95	53.05		3.82	3.32	14005
					4							14297
12444	111	1921	Fulton	5	1	15.00	33.10	37.31	14.59	3.38	2.86	9834
					2		38.94	43.89	17.17	3.98	3.36	11569
					3		47.01	52.99		4.80	4.06	13967
					4							14344
12445	111	1921	Fulton	5	1	14.70	34.07	40.17	11.06	2.83	1.75	10384
					2		39.94	47.09	12.97	3.32	2.05	12172
					3		45.89	54.11		3.81	2.36	13986
					4							14266
12446	111	1921	Fulton	5	1	14.52	34.46	37.64	13.38	2.91	2.74	10045
					2		40.31	44.04	15.65	3.40	3.21	11752
					3		47.79	52.21		4.03	3.80	13932
					4							14259
12447	111	1921	Fulton	5	1	14.75	33.18	38.89	13.18	3.70	1.54	9869
					2		38.92	45.62	15.46	4.34	1.81	11577
					3		46.04	53.96		5.13	2.14	13694
					4							14039

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12448.....	111	1921	Fulton.....	5	1	14.28	34.93	38.76	12.03	2.56	1.98	10340
					2	.....	40.75	45.22	14.03	2.99	2.31	12063
					3	.....	47.40	52.60	.....	3.48	2.68	14031
					4	.....	.....	.....	.....	.....	.....	14318
12472.....	*112	1921	Fulton.....	5	1	15.32	35.12	38.04	11.52	2.59	1.41	10482
					2	.....	41.48	44.93	13.59	3.06	1.66	12379
					3	.....	48.00	52.00	.....	3.54	1.92	14325
					4	.....	.....	.....	.....	.....	.....	14617
12473.....	*112	1921	Fulton.....	5	1	15.09	35.37	39.41	10.13	2.68	1.41	10741
					2	.....	41.66	46.41	11.93	3.16	1.66	12650
					3	.....	47.30	52.70	.....	3.59	1.88	14364
					4	.....	.....	.....	.....	.....	.....	14631
12474.....	*112	1921	Fulton.....	5	1	15.56	35.68	38.92	9.84	2.43	1.33	10753
					2	.....	42.26	46.09	11.65	2.88	1.58	12735
					3	.....	47.83	52.17	.....	3.26	1.79	14414
					4	.....	.....	.....	.....	.....	.....	14668
12475.....	*112	1921	Fulton.....	5	1	14.56	35.37	38.98	11.09	2.72	1.38	10581
					2	.....	41.40	45.62	12.98	3.19	1.62	12384
					3	.....	47.57	52.43	.....	3.67	1.86	14231
					4	.....	.....	.....	.....	.....	.....	14512
12476.....	*112	1921	Fulton.....	5	1	15.39	33.82	38.77	12.02	3.40	1.67	10338
					2	.....	39.97	45.82	14.21	4.02	1.97	12220
					3	.....	46.59	53.41	.....	4.69	2.29	14243
					4	.....	.....	.....	.....	.....	.....	14578
12477.....	*112	1921	Fulton.....	5	1	15.66	34.65	37.56	12.13	2.93	1.88	10242
					2	.....	41.08	44.54	14.38	3.47	2.23	12144
					3	.....	47.98	52.02	.....	4.05	2.60	14183
					4	.....	.....	.....	.....	.....	.....	14499
12439.....	*113	1921	Fulton.....	5	1	13.37	36.03	39.03	11.57	3.06	1.46	10787
					2	.....	41.59	45.06	13.35	3.52	1.69	12452
					3	.....	48.00	52.00	.....	4.06	1.95	14370
					4	.....	.....	.....	.....	.....	.....	14676

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12440	*113	1921	Fulton	5	1	14.44	34.71	38.58	12.27	2.17	1.80	10577
					2	.....	40.57	45.09	14.34	2.54	2.10	12362
					3	.....	47.36	52.64	.....	2.96	2.45	14431
					4	.....	.....	.....	.....	.....	.....	14722
12441	*113	1921	Fulton	5	1	14.96	33.65	39.96	11.43	4.32	1.11	10502
					2	.....	39.57	46.99	13.44	5.08	1.30	12350
					3	.....	45.71	54.29	.....	5.87	1.50	14267
					4	.....	.....	.....	.....	.....	.....	14627
12459	114	1921	Fulton	5	1	14.57	35.24	39.58	10.61	2.89	1.00	10562
					2	.....	41.25	46.33	12.42	3.38	1.17	12363
					3	.....	47.10	52.90	.....	3.86	1.34	14116
					4	.....	.....	.....	.....	.....	.....	14391
12460	114	1921	Fulton	5	1	16.16	35.65	37.89	10.30	2.50	1.56	10422
					2	.....	42.52	45.19	12.29	2.98	1.86	12431
					3	.....	48.48	51.52	.....	3.40	2.12	14173
					4	.....	.....	.....	.....	.....	.....	14434
12461	114	1921	Fulton	5	1	13.35	37.84	39.86	8.95	2.22	1.77	10843
					2	.....	43.67	46.00	10.33	2.56	2.04	12514
					3	.....	48.70	51.30	.....	2.86	2.27	13956
					4	.....	.....	.....	.....	.....	.....	14166
12462	114	1921	Fulton	5	1	15.86	35.20	37.32	11.62	3.49	1.31	10198
					2	.....	41.84	44.35	13.81	4.15	1.56	12120
					3	.....	48.54	51.46	.....	4.81	1.81	14062
					4	.....	.....	.....	.....	.....	.....	14386
12463	114	1921	Fulton	5	1	14.34	35.09	36.72	13.85	3.84	2.47	9944
					2	.....	40.96	42.87	16.17	4.48	2.89	11609
					3	.....	48.86	51.14	.....	5.34	3.45	13848
					4	.....	.....	.....	.....	.....	.....	14218
12464	114	1921	Fulton	5	1	14.62	36.18	39.21	9.99	2.43	1.49	10719
					2	.....	42.38	45.92	11.70	2.85	1.74	12555
					3	.....	48.00	52.00	.....	3.23	1.97	14218
					4	.....	.....	.....	.....	.....	.....	14467

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BMA88220...	114	1933	Fulton.....	5	1	16.7	33.1	38.8	11.4	2.2	.....	10360
					2	.....	39.7	46.6	13.7	2.7	.....	12440
					3	.....	46.1	53.9	.....	3.1	.....	14420
					4	.....	.....	.....	.....	.....	.....	14698
BMA88221...	114	1933	Fulton.....	5	1	17.4	33.3	37.3	12.0	2.5	.....	10100
					2	.....	40.3	45.1	14.6	3.0	.....	12220
					3	.....	47.1	52.9	.....	3.5	.....	14300
					4	.....	.....	.....	.....	.....	.....	14616
BMA88222...	114	1933	Fulton.....	5	1	16.5	32.5	37.5	13.5	2.7	.....	10060
					2	.....	38.9	44.9	16.2	3.3	.....	12050
					3	.....	46.5	53.5	.....	3.9	.....	14380
					4	.....	.....	.....	.....	.....	.....	14729
BM84406....	*115	1922	Fulton.....	5	1	15.7	33.2	38.7	12.4	3.6	1.57	10270
					2	.....	39.3	46.0	14.7	4.3	1.86	12180
					3	.....	46.07	53.93	.....	5.0	2.18	14279
					4	.....	.....	.....	.....	.....	.....	14634
BM84407....	*115	1922	Fulton.....	5	1	14.8	33.8	42.3	9.1	2.6	.75	10950
					2	.....	39.7	49.6	10.7	3.1	.88	12860
					3	.....	44.45	55.55	.....	3.4	.99	14400
					4	.....	.....	.....	.....	.....	.....	14647
12436.....	*116	1921	Fulton.....	5	1	15.88	33.96	38.75	11.41	4.38	.92	10330
					2	.....	40.37	46.07	13.56	5.21	1.10	12280
					3	.....	46.70	53.30	.....	6.03	1.27	14206
					4	.....	.....	.....	.....	.....	.....	14569
12437.....	*116	1921	Fulton.....	5	1	16.68	35.46	37.90	9.96	3.82	.61	10464
					2	.....	42.56	45.49	11.95	4.58	.74	12559
					3	.....	48.34	51.66	.....	5.20	.84	14263
					4	.....	.....	.....	.....	.....	.....	14579
12438.....	*116	1921	Fulton.....	5	1	14.53	35.68	38.23	11.56	3.45	1.00	10608
					2	.....	41.74	44.73	13.53	4.04	1.17	12412
					3	.....	48.27	51.73	.....	4.67	1.35	14353
					4	.....	.....	.....	.....	.....	.....	14681

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM84446....	†118	1922	Fulton.....	5	1	11.6	36.4	40.4	11.6	4.1	.92	11070
					2	.....	41.1	45.7	13.2	4.6	1.04	12510
					3	.....	47.30	52.70	.....	5.3	1.20	14410
					4	.....	.....	.....	.....	.....	.....	14757
BM84447....	†118	1922	Fulton.....	5	1	13.6	34.7	41.4	10.3	3.3	.83	10950
					2	.....	40.2	47.9	11.9	3.8	.97	12670
					3	.....	45.70	54.30	.....	4.3	1.10	14390
					4	.....	.....	.....	.....	.....	.....	14672
BM84448....	†118	1922	Fulton.....	5	1	13.1	34.7	39.5	12.7	4.0	1.34	10690
					2	.....	39.9	45.4	14.7	4.7	1.54	12310
					3	.....	46.80	53.20	.....	5.4	1.80	14420
					4	.....	.....	.....	.....	.....	.....	14808
C-39.....	†520	1932	Fulton.....	5	1	15.27	34.10	38.42	12.21	4.18	.....	10528
					2	.....	40.25	45.35	14.40	4.93	.....	12306
					3	.....	47.02	52.98	.....	5.76	.....	14643
					4	.....	.....	.....	.....	.....	.....	14754
C-40.....	†520	1932	Fulton.....	5	1	14.08	34.05	37.98	13.89	3.64	.....	10420
					2	.....	39.63	44.20	16.17	4.24	.....	12128
					3	.....	47.27	52.73	.....	5.06	.....	14468
					4	.....	.....	.....	.....	.....	.....	14857
5263.....	*33	1912	Logan.....	5	1	14.64	37.87	35.56	11.93	3.60	1.10	10400
					2	.....	44.36	41.66	13.98	4.22	1.28	12183
					3	.....	51.57	48.43	.....	4.91	1.49	14163
					4	.....	.....	.....	.....	.....	.....	14497
5264.....	*33	1912	Logan.....	5	1	13.98	36.86	37.98	11.18	3.14	1.43	10549
					2	.....	42.84	44.16	13.00	3.65	1.67	12264
					3	.....	49.24	50.76	.....	4.20	1.92	14096
					4	.....	.....	.....	.....	.....	.....	14391
5265.....	*33	1912	Logan.....	5	1	13.99	36.85	38.17	10.99	3.26	1.32	10519
					2	.....	42.85	44.37	12.78	3.79	1.53	12230
					3	.....	49.13	50.87	.....	4.35	1.75	14022
					4	.....	.....	.....	.....	.....	.....	14315

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81591....	*109	1921	Logan.....	5	1	14.36	35.36	39.95	10.33	2.73	1.20	10790
					2	.....	41.29	46.65	12.06	3.19	1.40	12599
					3	.....	46.95	53.05	.....	3.63	.....	14327
					4	.....	.....	.....	.....	.....	.....	14597
BM81592....	*109	1921	Logan.....	5	1	13.70	35.46	40.38	10.46	3.38	1.11	10813
					2	.....	41.09	46.79	12.12	3.92	1.29	12530
					3	.....	46.76	53.24	.....	4.46	.....	14258
					4	.....	.....	.....	.....	.....	.....	14552
BM81593....	*109	1921	Logan.....	5	1	12.55	35.93	42.13	9.39	2.76	.84	11169
					2	.....	41.09	48.17	10.74	3.16	.96	12772
					3	.....	46.03	53.97	.....	3.52	.....	14309
					4	.....	.....	.....	.....	.....	.....	14555
5431.....	*100	1912	McLean....	5	1	12.88	38.84	35.80	12.48	3.60	1.17	10601
					2	.....	44.58	41.09	14.33	4.14	1.35	12168
					3	.....	52.04	47.96	.....	4.83	1.58	14203
					4	.....	.....	.....	.....	.....	.....	14544
5432.....	*100	1912	McLean....	5	1	13.34	38.39	36.72	11.55	3.59	1.31	10743
					2	.....	44.30	42.37	13.33	4.14	1.51	12397
					3	.....	51.11	48.89	.....	4.78	1.74	14304
					4	.....	.....	.....	.....	.....	.....	14629
5434.....	*100	1912	McLean....	5	1	13.73	36.79	36.14	13.34	3.99	1.19	10399
					2	.....	42.64	41.89	15.47	4.62	1.30	12054
					3	.....	50.44	49.56	.....	5.47	1.54	14260
					4	.....	.....	.....	.....	.....	.....	14641
5244.....	*41	1912	Macon.....	5	1	14.76	35.46	38.08	11.70	3.24	.90	10390
					2	.....	41.60	44.67	13.73	3.81	1.06	12189
					3	.....	48.22	51.78	.....	4.42	1.23	14129
					4	.....	.....	.....	.....	.....	.....	14443
5245.....	*41	1912	Macon.....	5	1	14.54	36.33	38.01	11.12	3.47	.68	10465
					2	.....	42.52	44.47	13.01	4.06	.79	12244
					3	.....	48.88	51.12	.....	4.67	.81	14075
					4	.....	.....	.....	.....	.....	.....	14383

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5246.....	*41	1912	Macon.....	5	1	14.14	36.21	38.07	11.58	3.24	1.12	10493
					2	.....	42.18	44.34	13.48	3.77	1.31	12221
					3	.....	48.75	51.25	.....	4.36	1.51	14125
					4	.....	.....	.....	.....	.....	.....	14433
5200.....	42	1912	Macon.....	5	1	13.52	36.72	39.66	10.10	4.23	.09	10646
					2	.....	42.46	45.86	11.68	4.95	.11	12443
					3	.....	48.08	51.92	.....	5.60	.12	14089
					4	.....	.....	.....	.....	.....	.....	14405
5201.....	42	1912	Macon.....	5	1	13.62	37.72	40.34	8.32	3.39	.00	11046
					2	.....	43.68	46.70	9.62	3.93	.00	12788
					3	.....	48.33	51.67	.....	4.35	.00	14149
					4	.....	.....	.....	.....	.....	.....	14399
5202.....	42	1912	Macon.....	5	1	14.29	37.61	38.89	9.21	3.87	.19	10963
					2	.....	43.88	45.37	10.75	4.46	.22	12638
					3	.....	49.17	50.83	.....	5.00	.24	14160
					4	.....	.....	.....	.....	.....	.....	14447
BM81595....	42	1921	Macon.....	5	1	13.10	34.64	43.36	8.90	2.73	.21	10934
					2	.....	39.86	49.90	10.24	3.14	.24	12582
					3	.....	44.41	55.59	.....	3.50	.....	14017
					4	.....	.....	.....	.....	.....	.....	14246
BM81596....	42	1921	Macon.....	5	1	12.67	35.75	43.08	8.50	3.32	.03	11103
					2	.....	40.94	49.33	9.73	3.80	.03	12714
					3	.....	45.35	54.65	.....	4.21	.....	14084
					4	.....	.....	.....	.....	.....	.....	14330
BM81597....	42	1921	Macon.....	5	1	12.71	35.98	42.79	8.52	3.66	.17	11093
					2	.....	41.22	49.02	9.76	4.19	.19	12708
					3	.....	45.68	54.32	.....	4.64	.....	14082
					4	.....	.....	.....	.....	.....	.....	14341
5190.....	*34	1912	Menard....	5	1	16.29	36.66	38.73	8.32	3.65	.59	10747
					2	.....	43.80	46.26	9.94	4.36	.71	12838
					3	.....	48.63	51.37	.....	4.84	.79	14255
					4	.....	.....	.....	.....	.....	.....	14528

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5191.....	*34	1912	Menard....	5	1	15.44	36.38	39.71	8.47	3.34	.26	10841
					2	.....	43.03	46.96	10.01	3.95	.31	12820
					3	.....	47.82	52.18	.....	4.39	.34	14246
					4	.....	.....	.....	.....	.....	.....	14505
5192.....	*34	1912	Menard....	5	1	20.27	34.58	37.43	7.72	3.31	.63	9919
					2	.....	43.37	46.94	9.69	4.16	.79	12441
					3	.....	48.02	51.98	.....	4.61	.87	13776
					4	.....	.....	.....	.....	.....	.....	14021
°BMA86593..	†531	1933	Menard....	5	1	15.0	34.5	40.7	9.8	3.0	.....	10880
					2	.....	40.6	47.9	11.5	3.6	.....	12800
					3	.....	45.8	54.2	.....	4.0	.....	14460
					4	.....	.....	.....	.....	.....	.....	14743
°BMA86594..	†531	1933	Menard....	5	1	14.1	34.4	40.2	11.3	2.8	.....	10780
					2	.....	40.0	46.9	13.1	3.3	.....	12540
					3	.....	46.1	53.9	.....	3.8	.....	14440
					4	.....	.....	.....	.....	.....	.....	14726
°C-149.....	†531	1933	Menard....	5N	1	14.7	34.4	41.3	9.6	2.84	.85	10886
					2	.....	40.3	48.5	11.2	3.33	1.00	12767
					3	.....	45.4	54.6	.....	3.75	1.13	14383
					4	.....	.....	.....	.....	.....	.....	14640
°C-150.....	†531	1933	Menard....	5N	1	14.4	34.7	39.8	11.1	2.51	1.56	10745
					2	.....	40.6	46.5	12.9	2.94	1.82	12550
					3	.....	46.6	53.4	.....	3.37	2.09	14415
					4	.....	.....	.....	.....	.....	.....	14687
C-151.....	†531	1933	Menard....	5	1	15.0	34.0	38.6	12.4	2.44	1.70	10430
					2	.....	40.0	45.4	14.6	2.87	2.00	12270
					3	.....	46.9	53.1	.....	3.36	2.34	14374
					4	.....	.....	.....	.....	.....	.....	14671
C-621.....	†612	1934	Menard....	5N	1	14.8	35.3	40.9	9.0	3.54	.38	10790
					2	.....	41.4	48.1	10.5	4.15	.44	12664
					3	.....	46.2	53.8	.....	4.64	.49	14150
					4	.....	.....	.....	.....	.....	.....	14421

°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and State Geological Survey.

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-622.....	†612	1934	Menard....	5N	1	14.1	36.1	41.3	8.5	3.75	.54	10980
					2	.....	42.0	48.1	9.9	4.36	.63	12779
					3	.....	46.6	53.4	.....	4.84	.70	14179
					4	.....	.....	.....	.....	.....	.....	14453
C-623.....	†612	1934	Menard....	5N	1	13.9	36.9	41.1	8.1	2.93	.68	11059
					2	.....	42.9	47.7	9.4	3.41	.79	12851
					3	.....	47.3	52.7	.....	3.76	.87	14185
					4	.....	.....	.....	.....	.....	.....	14414
5289.....	*25	1912	Peoria.....	5	1	14.23	36.65	37.04	12.08	3.39	1.55	10483
					2	.....	42.73	43.18	14.09	3.96	1.81	12222
					3	.....	49.74	50.26	.....	4.61	2.11	14224
					4	.....	.....	.....	.....	.....	.....	14553
5290.....	*25	1912	Peoria.....	5	1	14.54	37.41	37.32	10.73	3.27	1.18	10705
					2	.....	43.77	43.67	12.56	3.82	1.38	12526
					3	.....	50.06	49.94	.....	4.37	1.58	14325
					4	.....	.....	.....	.....	.....	.....	14625
5291.....	*25	1912	Peoria.....	5	1	16.00	36.46	37.28	10.26	3.65	.90	10583
					2	.....	43.41	44.38	12.21	4.35	1.07	12598
					3	.....	49.45	50.55	.....	4.96	1.22	14350
					4	.....	.....	.....	.....	.....	.....	14664
5303.....	*26	1912	Peoria.....	5	1	16.00	36.06	37.54	10.40	2.90	1.27	10515
					2	.....	42.93	44.69	12.38	3.46	1.51	12518
					3	.....	49.00	51.00	.....	3.95	1.72	14287
					4	.....	.....	.....	.....	.....	.....	14570
5304.....	*26	1912	Peoria.....	5	1	14.23	37.41	37.36	11.00	3.14	2.17	10573
					2	.....	43.62	43.56	12.82	3.66	2.53	12327
					3	.....	50.03	49.97	.....	4.20	2.90	14140
					4	.....	.....	.....	.....	.....	.....	14433
5305.....	*26	1912	Peoria.....	5	1	14.76	35.95	35.34	13.95	3.19	2.00	10173
					2	.....	42.18	41.46	16.36	3.74	2.34	11935
					3	.....	50.43	49.57	.....	4.47	2.80	14269
					4	.....	.....	.....	.....	.....	.....	14636

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM84560....	*106	1922	Peoria.....	5	1	13.5	30.7	45.5	10.3	3.2	.86	10900
					2	.....	35.5	52.6	11.9	3.7	1.00	12600
					3	.....	40.3	59.7	.....	4.2	1.14	14310
					4	.....	.....	.....	.....	.....	.....	14586
BM84561....	*106	1922	Peoria.....	5	1	15.1	29.7	45.8	9.4	3.6	.43	10870
					2	.....	35.0	53.9	11.1	4.3	.50	12800
					3	.....	39.3	60.7	.....	4.8	.56	14400
					4	.....	.....	.....	.....	.....	.....	14694
BM84562....	*106	1922	Peoria.....	5	1	11.6	30.6	43.1	14.7	4.6	1.86	10540
					2	.....	34.6	48.8	16.6	5.2	2.11	11930
					3	.....	41.5	58.5	.....	6.2	2.53	14310
					4	.....	.....	.....	.....	.....	.....	14733
BM84230....	*107	1922	Peoria.....	5	1	13.0	35.4	40.9	10.7	3.0	1.91	10830
					2	.....	40.6	47.1	12.3	3.4	2.19	12450
					3	.....	46.4	53.6	.....	3.9	2.50	14200
					4	.....	.....	.....	.....	.....	.....	14473
BM84232....	*107	1922	Peoria.....	5	1	14.4	34.8	39.9	10.9	2.9	1.23	10740
					2	.....	40.6	46.7	12.7	3.3	1.43	12540
					3	.....	46.6	53.4	.....	3.8	1.64	14380
					4	.....	.....	.....	.....	.....	.....	14650
BM84231....	*107	1922	Peoria.....	5	1	14.9	33.5	39.1	12.5	3.0	2.17	10450
					2	.....	39.3	46.0	14.7	3.5	2.55	12280
					3	.....	46.1	53.9	.....	4.1	2.99	14400
					4	.....	.....	.....	.....	.....	.....	14726
°BMA45617..	348	1928	Peoria.....	5	1	16.5	34.6	37.2	11.7	2.8	.....	10360
					2	.....	41.4	44.6	14.0	3.3	.....	12400
					3	.....	48.2	51.8	.....	3.9	.....	14420
					4	.....	.....	.....	.....	.....	.....	14729
°BMA45618..	348	1928	Peoria.....	5	1	16.8	32.5	39.0	11.7	2.5	.....	10410
					2	.....	39.1	46.8	14.1	3.0	.....	12510
					3	.....	45.5	54.5	.....	3.5	.....	14550
					4	.....	.....	.....	.....	.....	.....	14869

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°16446... ...	348	1928	Peoria.....	5	1	15.93	35.58	37.34	11.15	2.75	.....	10412
					2	.....	42.32	44.42	13.26	3.27	.....	12385
					3	.....	48.79	51.21	.....	3.77	.....	14278
					4	.....	.....	.....	.....	.....	.....	14570
°16447.....	348	1928	Peoria.....	5	1	15.82	35.09	38.19	10.90	2.42	.....	10368
					2	.....	41.69	45.37	12.94	2.87	.....	12317
					3	.....	47.89	52.11	.....	3.29	.....	14148
					4	.....	.....	.....	.....	.....	.....	14416
BMA88224...	348	1933	Peoria.....	5N	1	14.7	33.5	39.2	12.6	2.7	.....	10550
					2	.....	39.2	46.1	14.7	3.2	.....	12370
					3	.....	46.0	54.0	.....	3.7	.....	14500
					4	.....	.....	.....	.....	.....	.....	14824
BMA88225...	348	1933	Peoria.....	5	1	14.2	34.6	41.1	10.1	2.1	.....	10940
					2	.....	40.3	47.9	11.8	2.4	.....	12760
					3	.....	45.7	54.3	.....	2.8	.....	14460
					4	.....	.....	.....	.....	.....	.....	14709
BMA88226...	348	1933	Peoria.....	5	1	15.6	32.0	38.4	14.0	2.5	.....	10090
					2	.....	37.9	45.5	16.6	2.9	.....	11950
					3	.....	45.4	54.6	.....	3.5	.....	14330
					4	.....	.....	.....	.....	.....	.....	14669
16444.....	†349	1928	Peoria.....	5	1	13.87	37.87	37.31	10.95	3.23	.....	10759
					2	.....	43.97	43.32	12.71	3.75	.....	12492
					3	.....	50.37	49.63	.....	4.30	.....	14311
					4	.....	.....	.....	.....	.....	.....	14612
16445.....	†349	1928	Peoria.....	5	1	12.95	37.97	39.22	9.86	2.60	.....	11098
					2	.....	43.62	45.06	11.32	2.99	.....	12749
					3	.....	49.19	50.81	.....	3.37	.....	14376
					4	.....	.....	.....	.....	.....	.....	14628
BMA90424...	601	1933	Peoria.....	5	1	15.1	36.0	39.8	9.1	3.0	.66	10980
					2	.....	42.4	46.9	10.7	3.6	.78	12930
					3	... ...	47.4	52.6	.....	4.0	.....	14480
					4	.....	.....	.....	.....	.....	.....	14746

°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.

†Local or captive mine (those sampled before 1930 largely abandoned).

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BMA90425...	601	1933	Peoria.....	5	1	14.1	34.9	38.6	12.4	2.5	1.99	10670
					2	.....	40.6	44.9	14.5	2.9	2.31	12420
					3	.....	47.5	52.5	.....	3.4	.....	14520
					4	.....	.....	.....	.....	.....	.....	14835
BMA90519...	601	1933	Peoria.....	5	1	14.3	37.2	41.2	7.3	2.3	.42	11370
					2	.....	43.5	48.0	8.5	2.6	.49	13270
					3	.....	47.5	52.5	.....	2.9	.....	14500
					4	.....	.....	.....	.....	.....	.....	14700
BM21032....	[a]*BM2	1915	Peoria.....	5	1	15.66	34.74	40.38	9.22	2.64	.....	10798
					2	.....	41.19	47.88	10.93	3.13	.....	12803
					3	.....	46.24	53.76	.....	3.51	.....	14374
					4	.....	.....	.....	.....	.....	.....	14625
BM21033....	[a]*BM2	1915	Peoria.....	5	1	15.38	34.51	39.48	10.63	2.75	.....	10645
					2	.....	40.78	46.66	12.56	3.25	.....	12580
					3	.....	46.64	53.36	.....	3.72	.....	14398
					4	.....	.....	.....	.....	.....	.....	14670
BM21034....	[a]*BM2	1915	Peoria.....	5	1	15.34	34.25	40.80	9.61	3.11	.....	10741
					2	.....	40.46	48.19	11.35	3.67	.....	12687
					3	.....	45.64	54.36	.....	4.14	.....	14311
					4	.....	.....	.....	.....	.....	.....	14586
BM22982....	[a]BM3	1915	Peoria.....	5	1	15.03	34.56	39.05	11.36	2.64	.....	10490
					2	.....	40.67	45.96	13.37	3.11	.....	12346
					3	.....	46.95	53.05	.....	3.59	.....	14251
					4	.....	.....	.....	.....	.....	.....	14538
BM22983....	[a]BM3	1915	Peoria.....	5	1	15.41	33.87	38.85	11.87	2.88	.....	10386
					2	.....	40.04	45.93	14.03	3.40	.....	12278
					3	.....	46.57	53.43	.....	3.95	.....	14282
					4	.....	.....	.....	.....	.....	.....	14592
BM22984....	[a]BM3	1915	Peoria.....	5	1	15.51	34.77	38.69	11.03	2.62	.....	10489
					2	.....	41.15	45.79	13.06	3.10	.....	12415
					3	.....	47.33	52.67	.....	3.57	.....	14280
					4	.....	.....	.....	.....	.....	.....	14562

[a] Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 123, p. 35, 1918.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM22985....	[a]BM3	1915	Peoria.....	5	1	15.57	34.08	38.18	12.17	3.42	.....	10283
					2	.....	40.37	45.22	14.41	4.05	.....	12179
					3	.....	47.17	52.83	.....	4.72	.....	14229
					4	.....	.....	.....	.....	.....	.....	14568
5118.....	36	1912	Sangamon..	5	1	16.05	35.82	37.14	10.99	3.55	.67	10330
					2	.....	42.66	44.25	13.09	4.22	.80	12306
					3	.....	49.09	50.91	.....	4.86	.92	14159
					4	.....	.....	.....	.....	.....	.....	14476
5119.....	36	1912	Sangamon..	5	1	15.53	36.36	38.05	10.06	3.86	.55	10522
					2	.....	43.04	45.05	11.91	4.57	.66	12457
					3	.....	48.86	51.14	.....	5.19	.75	14141
					4	.....	.....	.....	.....	.....	.....	14450
5120.....	36	1912	Sangamon..	5	1	14.45	37.46	38.27	9.82	3.59	.55	10704
					2	.....	43.79	44.73	11.48	4.19	.65	12512
					3	.....	49.47	50.53	.....	4.73	.73	14135
					4	.....	.....	.....	.....	.....	.....	14423
5128.....	*37	1912	Sangamon..	5	1	14.08	37.38	37.56	10.98	3.97	.38	10600
					2	.....	43.51	43.71	12.78	5.17	.49	12337
					3	.....	49.89	50.11	.....	5.93	.56	14145
					4	.....	.....	.....	.....	.....	.....	14492
5129.....	*37	1912	Sangamon..	5	1	13.86	37.11	39.05	9.98	2.57	.52	10726
					2	.....	43.08	45.34	11.58	4.07	.61	12451
					3	.....	48.72	51.28	.....	4.60	.69	14081
					4	.....	.....	.....	.....	.....	.....	14365
5196.....	38	1912	Sangamon..	5	1	14.25	37.25	37.07	11.43	4.76	.98	10414
					2	.....	43.44	43.24	13.32	5.55	1.15	12147
					3	.....	50.12	49.88	.....	6.40	1.33	14014
					4	.....	.....	.....	.....	.....	.....	14376
5197.....	38	1912	Sangamon..	5	1	14.10	38.74	37.66	9.50	3.86	.75	10790
					2	.....	45.09	43.85	11.06	4.50	.87	12564
					3	.....	50.70	49.30	.....	5.06	.98	14126
					4	.....	.....	.....	.....	.....	.....	14418

a Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 35, 1918.

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5198.....	38	1912	Sangamon..	5	1	14.44	38.22	37.68	9.66	3.79	.63	10746
					2	.....	44.67	44.04	11.29	4.43	.73	12549
					3	.....	50.36	49.64	.....	4.98	.82	14146
					4	.....	.....	.....	.....	.....	.....	14440
5166.....	39	1912	Sangamon..	5	1	13.38	37.20	36.40	13.01	4.78	.96	10338
					2	.....	42.95	42.03	15.02	5.52	1.10	11934
					3	.....	50.54	49.46	.....	6.50	1.29	14043
					4	.....	.....	.....	.....	.....	.....	14439
5167.....	39	1912	Sangamon..	5	1	13.35	36.64	37.12	12.89	4.80	.84	10348
					2	.....	42.27	42.85	14.88	5.53	.97	11942
					3	.....	49.66	50.34	.....	6.50	1.14	14030
					4	.....	.....	.....	.....	.....	.....	14423
5168.....	39	1912	Sangamon..	5	1	13.19	38.44	36.47	11.90	4.61	1.05	10513
					2	.....	44.28	42.00	13.72	5.31	1.20	12110
					3	.....	51.32	48.68	.....	6.15	1.39	14036
					4	.....	.....	.....	.....	.....	.....	14397
5187.....	*40	1912	Sangamon..	5	1	14.82	37.18	38.22	9.78	4.30	.72	10683
					2	.....	43.65	44.87	11.48	4.52	.84	12541
					3	.....	49.31	50.69	.....	5.11	.95	14167
					4	.....	.....	.....	.....	.....	.....	14469
5188.....	*40	1912	Sangamon..	5	1	16.05	35.58	38.04	10.33	4.18	.17	10413
					2	.....	42.38	45.32	12.30	4.98	.20	12404
					3	.....	48.32	51.68	.....	5.68	.23	14144
					4	.....	.....	.....	.....	.....	.....	14474
5189.....	*40	1912	Sangamon..	5	1	14.31	37.31	38.20	10.18	4.21	.90	10655
					2	.....	43.54	44.58	11.88	4.91	1.05	12434
					3	.....	49.41	50.59	.....	5.57	1.19	14110
					4	.....	.....	.....	.....	.....	.....	14430
BM81448....	119	1921	Sangamon..	5	1	13.79	34.86	39.58	11.77	3.88	.58	10576
					2	.....	40.44	45.91	13.65	4.50	.67	12268
					3	.....	46.83	53.17	.....	5.21	.78	14207
					4	.....	.....	.....	.....	.....	.....	14548

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81449....	119	1921	Sangamon..	5	1	14.78	35.20	39.74	10.28	3.72	.33	10606
					2	.....	41.30	46.64	12.06	4.37	.39	12445
					3	.....	46.96	53.04	.....	4.97	.44	14152
					4	.....	.....	.....	.....	.....	.....	14457
BM81450....	119	1921	Sangamon..	5	1	13.62	37.50	39.30	9.58	3.62	.39	10876
					2	.....	43.41	45.50	11.09	4.06	.45	12591
					3	.....	48.82	51.18	.....	4.57	.51	14161
					4	.....	.....	.....	.....	.....	.....	14440
BM81452....	120	1921	Sangamon..	5	1	13.19	36.95	41.18	8.68	3.65	.44	11120
					2	.....	42.56	47.44	10.00	4.20	.51	12810
					3	.....	47.29	52.71	.....	4.67	.57	14233
					4	.....	.....	.....	.....	.....	.....	14501
BM81453....	120	1921	Sangamon..	5	1	13.75	37.20	37.60	11.45	4.38	1.09	10567
					2	.....	43.13	43.59	13.28	5.08	1.26	12252
					3	.....	49.73	50.27	.....	5.86	1.45	14128
					4	.....	.....	.....	.....	.....	.....	14479
BM81454....	120	1921	Sangamon..	5	1	13.94	36.29	38.94	10.83	3.76	.85	10672
					2	.....	42.17	45.25	12.58	4.37	.99	12401
					3	.....	48.24	51.76	.....	5.00	1.13	14186
					4	.....	.....	.....	.....	.....	.....	14501
BM81456....	*121	1921	Sangamon .	5	1	13.26	34.27	41.93	10.54	3.71	.16	10824
					2	.....	39.51	48.34	12.15	4.28	.18	12479
					3	.....	44.97	55.03	.....	4.87	.20	14205
					4	.....	.....	.....	.....	.....	.....	14511
BM81457....	*121	1921	Sangamon..	5	1	14.14	35.08	40.61	10.17	3.87	.67	10709
					2	.....	40.86	47.30	11.84	4.51	.78	12473
					3	.....	46.35	53.65	.....	5.12	.88	14148
					4	.....	.....	.....	.....	.....	.....	14454
BM81458....	*121	1921	Sangamon..	5	1	14.79	34.30	40.77	10.14	3.68	.53	10691
					2	.....	40.25	47.85	11.90	4.32	.62	12547
					3	.....	45.69	54.31	.....	4.90	.70	14242
					4	.....	.....	.....	.....	.....	.....	14546

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81440....	122	1921	Sangamon..	5	1	13.09	36.51	41.14	9.26	3.77	.70	10935
					2	.....	42.01	47.34	10.65	4.34	.81	12582
					3	.....	47.02	52.98	.....	4.86	.91	14082
					4	.....	.....	.....	.....	.....	.....	14359
BM81441....	122	1921	Sangamon..	5	1	12.76	35.36	41.92	9.96	3.98	.82	10907
					2	.....	40.53	48.05	11.42	4.56	.94	12502
					3	.....	45.76	54.24	.....	5.15	1.06	14114
					4	.....	.....	.....	.....	.....	.....	14413
BM81442....	122	1921	Sangamon..	5	1	13.62	35.00	40.80	10.58	3.95	.35	10594
					2	.....	40.52	47.23	12.25	4.57	.41	12264
					3	.....	46.18	53.82	.....	5.21	.47	13976
					4	.....	.....	.....	.....	.....	.....	14284
BMA90785...	122	1933	Sangamon..	5	1	15.1	35.4	40.4	9.1	4.0	.52	10830
					2	.....	41.7	47.6	10.7	4.7	.61	12770
					3	.....	46.7	53.3	.....	.....	.....	14300
					4	.....	.....	.....	.....	.....	.....	14600
BMA90786...	122	1933	Sangamon..	5	1	15.1	34.5	40.3	10.1	3.7	.49	10690
					2	.....	40.7	47.4	11.9	4.3	.57	12590
					3	.....	46.1	53.9	.....	4.9	.....	14280
					4	.....	.....	.....	.....	.....	.....	14596
BMA90787...	122	1933	Sangamon..	5	1	13.2	36.0	41.2	9.6	3.6	.67	10910
					2	.....	41.5	47.4	11.1	4.2	.77	12570
					3	.....	46.7	53.3	.....	4.7	.....	14180
					4	.....	.....	.....	.....	.....	.....	14423
C-724.....	616	1934	Sangamon..	5	1	13.3	37.3	38.0	11.4	4.21	.74	10563
					2	.....	43.1	43.8	13.1	4.86	.85	12186
					3	.....	49.6	50.4	.....	5.59	.....	14025
					4	.....	.....	.....	.....	.....	.....	14358
C-730.....	616	1934	Sangamon..	5	1	13.9	36.3	39.1	10.7	3.85	.59	10735
					2	.....	42.2	45.4	12.4	4.47	.68	12463
					3	.....	48.1	51.9	.....	5.11	.....	14222
					4	.....	.....	.....	.....	.....	.....	14545

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-731.....	616	1934	Sangamon..	5	1	14.2	35.4	38.3	12.1	4.65	.85	10466
					2	.....	41.2	44.7	14.1	5.42	.99	12084
					3	.....	48.0	52.0	.....	6.32	.....	14072
					4	.....	.....	.....	.....	.....	.....	14443
C-725.....	617	1934	Sangamon..	5	1	14.3	37.0	38.6	10.1	3.38	.81	10662
					2	.....	43.2	45.0	11.8	3.94	.94	12447
					3	.....	49.0	51.0	.....	4.47	.....	14115
					4	.....	.....	.....	.....	.....	.....	14397
C-726.....	617	1934	Sangamon..	5	1	13.0	37.6	37.8	11.6	3.44	.14	10683
					2	.....	43.3	43.3	13.4	3.96	.16	12282
					3	.....	49.9	50.1	.....	4.57	.....	14176
					4	.....	.....	.....	.....	.....	.....	14498
C-727.....	617	1934	Sangamon..	5	1	14.4	35.9	39.5	10.2	3.31	.78	10616
					2	.....	42.0	46.0	12.0	3.87	.91	12408
					3	.....	47.7	52.3	.....	4.39	.....	14094
					4	.....	.....	.....	.....	.....	.....	14385
C-728.....	617	1934	Sangamon..	5	1	15.1	35.9	37.4	11.6	4.40	.75	10311
					2	.....	42.3	44.0	13.7	5.18	.88	12144
					3	.....	49.0	51.0	.....	6.00	.....	14075
					4	.....	.....	.....	.....	.....	.....	14431
C-729.....	617	1934	Sangamon..	5	1	15.4	36.1	38.8	9.7	3.48	.71	10586
					2	.....	42.7	45.8	11.5	4.11	.84	12509
					3	.....	48.2	51.8	.....	4.65	.....	14132
					4	.....	.....	.....	.....	.....	.....	14420
C-744.....	618	1934	Sangamon..	5	1	14.1	35.6	40.3	10.0	3.84	.82	10765
					2	.....	41.4	46.9	11.7	4.47	.95	12537
					3	.....	46.9	53.1	.....	5.06	.....	14194
					4	.....	.....	.....	.....	.....	.....	14502
C-745.....	618	1934	Sangamon..	5	1	14.3	35.1	39.6	11.0	4.39	.83	10582
					2	.....	41.0	46.1	12.9	5.12	.97	12342
					3	.....	47.0	53.0	.....	5.87	.....	14165
					4	.....	.....	.....	.....	.....	.....	14518

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-746.....	618	1934	Sangamon..	5	1	13.9	35.7	39.6	10.8	4.98	.64	10961
					2	.....	41.4	46.0	12.6	5.78	.74	12413
					3	.....	47.3	52.7	.....	6.61	.....	14197
					4	.....	.....	.....	.....	.....	.....	14570
C-934.....	†624	1934	Sangamon..	5N	1	13.6	35.2	38.7	12.5	3.35	2.01	10469
					2	.....	40.7	44.8	14.5	3.88	2.32	12110
					3	.....	47.6	52.4	.....	4.54	2.72	14166
					4	.....	.....	.....	.....	.....	.....	14495
C-935.....	†624	1934	Sangamon..	5N	1	15.8	33.8	39.8	10.6	3.02	1.30	10507
					2	.....	40.1	47.3	12.6	3.58	1.55	12482
					3	.....	46.0	54.0	.....	4.10	1.77	14288
					4	.....	.....	.....	.....	.....	.....	14572
C-936.....	†624	1934	Sangamon..	5N	1	15.1	34.8	40.1	10.0	3.25	.99	10687
					2	.....	41.0	47.2	11.8	3.83	1.17	12589
					3	.....	46.5	53.5	.....	4.34	1.33	14276
					4	.....	.....	.....	.....	.....	.....	14560
13804.....	†327	1922	Schuyler....	5	1	16.17	34.88	39.31	9.64	2.16	.53	10732
					2	.....	41.61	46.89	11.50	2.58	.63	12802
					3	.....	47.02	52.98	.....	2.92	.71	14466
					4	.....	.....	.....	.....	.....	.....	14709
13805.....	†327	1922	Schuyler....	5	1	15.07	34.56	40.37	10.00	2.34	.61	10885
					2	.....	40.69	47.53	11.78	2.76	.72	12817
					3	.....	46.12	53.88	.....	3.13	.82	14528
					4	.....	.....	.....	.....	.....	.....	14784
13806.....	†327	1922	Schuyler....	5	1	14.34	34.63	41.02	10.01	3.46	.33	10915
					2	.....	40.43	47.88	11.69	4.04	.38	12742
					3	.....	45.78	54.22	.....	4.57	.43	14429
					4	.....	.....	.....	.....	.....	.....	14727
BM81311....	*217	1921	Shelby.....	5	1	12.10	35.78	40.71	11.41	3.46	.78	10807
					2	.....	40.71	46.31	12.98	3.94	.89	12295
					3	.....	46.78	53.22	.....	4.53	1.02	14129
					4	.....	.....	.....	.....	.....	.....	14434

†Local or captive mine (those sampled before 1930 largely abandoned).
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81312....	*217	1921	Shelby.....	5	1	10.42	36.85	42.83	9.90	3.48	.23	11335
					2	.....	41.14	47.81	11.05	3.88	.26	12653
					3	.....	46.25	53.75	.....	4.36	.29	14225
					4	.....	.....	.....	.....	.....	.....	14499
BM81313....	*217	1921	Shelby.....	5	1	10.71	37.16	40.91	11.22	4.16	.57	11009
					2	.....	41.62	45.81	12.57	4.66	.64	12330
					3	.....	47.60	52.40	.....	5.33	.73	14103
					4	.....	.....	.....	.....	.....	.....	14425
5277.....	*27	1912	Tazewell...	5	1	13.71	37.46	38.57	10.26	3.51	1.15	10801
					2	.....	44.06	44.03	11.91	4.07	1.33	12516
					3	.....	50.02	49.98	.....	4.62	1.51	14208
					4	.....	.....	.....	.....	.....	.....	14500
5278.....	*27	1912	Tazewell...	5	1	13.88	37.58	40.01	8.53	2.55	.95	11076
					2	.....	43.64	46.45	9.91	2.96	1.10	12860
					3	.....	48.44	51.56	.....	3.29	1.22	14275
					4	.....	.....	.....	.....	.....	.....	14499
5281.....	*27	1912	Tazewell...	5	1	15.56	37.60	36.70	10.14	3.23	1.50	10552
					2	.....	44.53	43.46	12.01	3.83	1.78	12496
					3	.....	50.61	49.39	.....	4.35	2.02	14202
					4	.....	.....	.....	.....	.....	.....	14488
BM84483....	*108	1922	Tazewell...	5	1	15.4	35.1	40.4	9.1	2.6	1.26	10720
					2	.....	41.5	47.8	10.7	3.0	1.49	12670
					3	.....	46.5	53.5	.....	3.4	1.67	14200
					4	.....	.....	.....	.....	.....	.....	14425
BM84484....	*108	1922	Tazewell...	5	1	16.5	32.8	41.6	9.1	3.1	.57	10590
					2	.....	39.3	49.8	10.9	3.7	.68	12690
					3	.....	44.1	55.9	.....	4.1	.76	14240
					4	.....	.....	.....	.....	.....	.....	14510
BM84485....	*108	1922	Tazewell...	5	1	15.4	35.2	39.8	9.6	4.2	.42	10670
					2	.....	41.6	47.1	11.3	5.0	.50	12610
					3	.....	47.0	53.0	.....	5.7	.56	14220
					4	.....	.....	.....	.....	.....	.....	14530

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
HERRIN (NO. 6) COAL (WESTERN AND NORTHERN ILLINOIS)												
C-914	621	1934	Fulton-Peoria	5	1	16.2	33.0	42.8	8.0	2.61	.....	10761
					3	.....	39.4	51.0	9.6	3.11	.....	12844
					3	.....	43.6	56.4	.....	3.44	.....	14203
					4	.....	.....	.....	.....	.....	.....	14431
C-915	621	1934	Fulton-Peoria	6	1	15.6	32.3	42.1	10.0	3.42	.....	10616
					2	.....	38.3	49.9	11.8	4.05	.....	12582
					3	.....	43.5	56.5	.....	4.60	.....	14269
					4	.....	.....	.....	.....	.....	.....	14558
°BMA86302	†530	1932	Grundy	6	1	14.6	35.4	37.9	12.1	4.6	.....	10510
					2	.....	41.5	44.3	14.2	5.4	.....	12310
					3	.....	48.3	51.7	.....	6.3	.....	14340
					4	.....	.....	.....	.....	.....	.....	14738
°BMA86303	†530	1932	Grundy	6	1	13.8	36.1	40.4	9.7	3.5	.....	10980
					2	.....	41.9	46.9	11.2	4.0	.....	12740
					3	.....	47.2	52.8	.....	4.5	.....	14350
					4	.....	.....	.....	.....	.....	.....	14632
°C-146	†530	1932	Grundy	6	1	14.1	37.2	37.1	11.6	4.50	1.46	10635
					2	.....	43.3	43.2	13.5	5.24	1.70	12381
					3	.....	50.1	49.9	.....	6.06	1.97	14319
					4	.....	.....	.....	.....	.....	.....	14683
°C-147	†530	1932	Grundy	6	1	13.9	36.8	39.8	9.5	3.24	.86	10958
					2	.....	42.7	46.3	11.0	3.77	1.00	12724
					3	.....	48.0	52.0	.....	4.23	1.12	14298
					4	.....	.....	.....	.....	.....	.....	14568
°C-138	†527	1932	Henry	6	1	19.7	31.1	38.4	10.8	2.76	.92	9834
					2	.....	38.7	47.9	13.4	3.43	1.14	12246
					3	.....	44.7	55.3	.....	3.96	1.32	14139
					4	.....	.....	.....	.....	.....	.....	14436
°C-139	†527	1932	Henry	6	1	17.4	31.1	37.4	14.1	4.82	.91	9623
					2	.....	37.6	45.4	17.0	5.83	1.10	11649
					3	.....	45.4	54.6	.....	7.03	1.33	14043
					4	.....	.....	.....	.....	.....	.....	14481

°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and State Geological Survey.

†Local or captive mine (those sampled before 1930 largely abandoned).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°BMA86458..	†527	1932	Henry.....	6	1	18.3	30.4	37.6	13.7	5.1	.....	9510
					2	.....	37.2	46.0	16.8	6.3	.....	11640
					3	.....	44.7	55.3	.....	7.6	.....	13990
					4	.....	.....	.....	.....	.....	.....	14447
°BMA86459..	†527	1932	Henry.....	5	1	21.1	29.6	39.0	10.3	2.7	.....	9670
					2	.....	37.5	49.5	13.0	3.5	.....	12260
					3	.....	43.1	56.9	.....	4.0	.....	14090
					4	.....	.....	.....	.....	.....	.....	14381
°BMA86455..	†526	1932	Knox.....	6	1	18.0	31.8	40.4	9.8	3.5	.....	10240
					2	.....	38.7	49.3	12.0	4.2	.....	12490
					3	.....	44.0	56.0	.....	4.8	.....	14190
					4	.....	.....	.....	.....	.....	.....	14493
°BMA86456..	†526	1932	Knox.....	6	1	18.5	32.5	38.1	10.9	2.8	.....	10120
					2	.....	39.9	46.7	13.4	3.4	.....	12430
					3	.....	46.1	53.9	.....	3.9	.....	14350
					4	.....	.....	.....	.....	.....	.....	14654
°C-135.....	†526	1932	Knox.....	6	1	17.4	32.6	40.0	10.0	3.14	.88	10385
					2	.....	39.4	48.4	12.2	3.80	1.06	12567
					3	.....	44.9	55.1	.....	4.33	1.21	14306
					4	.....	.....	.....	.....	.....	.....	14607
°C-136.....	†526	1932	Knox.....	6	1	17.2	33.6	37.7	11.5	2.96	1.65	10163
					2	.....	40.6	45.5	13.9	3.58	1.99	12279
					3	.....	47.1	52.9	.....	4.15	2.31	14257
					4	.....	.....	.....	.....	.....	.....	14575
5391.....	†231	1912	La Salle....	6[a]	1	15.52	41.56	32.57	10.35	4.08	.27	10425
					2	.....	49.18	38.55	12.27	4.83	.34	12340
					3	.....	56.06	43.94	.....	5.51	.39	14066
					4	.....	.....	.....	.....	.....	.....	14387
5392.....	†231	1912	La Salle....	6[a]	1	14.13	39.42	35.96	10.49	3.22	.96	10636
					2	.....	45.90	41.89	12.21	3.75	1.12	12386
					3	.....	52.28	47.72	.....	4.27	1.28	14110
					4	.....	.....	.....	.....	.....	.....	14395

a "Second Vein" formerly called coal No. 5.
°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and State Geological Survey.
†Local or captive mine (those sampled before 1930 largely abandoned).
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5393.....	†231	1912	La Salle....	6[a]	1	14.64	43.01	34.25	8.10	2.83	.56	10961
					2	.....	50.38	40.12	9.50	3.32	.66	12841
					3	.....	55.67	44.33	.....	3.67	.73	14189
					4	.....	.....	.....	.....	.....	.....	14417
5416.....	*99	1912	La Salle....	6[b]	1	13.82	41.42	35.90	8.86	3.95	.51	11174
					2	.....	48.06	41.67	10.27	4.58	.59	12966
					3	.....	53.56	46.44	.....	5.10	.66	14450
					4	.....	.....	.....	.....	.....	.....	14744
5414.....	*99	1912	La Salle....	6[b]	1	12.87	42.40	37.35	7.38	3.86	.00	11468
					2	.....	48.67	42.86	8.47	4.44	.00	13161
					3	.....	53.17	46.83	.....	4.85	.....	14379
					4	.....	.....	.....	.....	.....	.....	14635
5417.....	*99	1912	La Salle....	6[b]	1	13.99	38.81	40.12	7.08	3.23	.00	11401
					2	.....	45.12	46.65	8.23	3.76	.00	13255
					3	.....	49.17	50.83	.....	4.10	.00	14444
					4	.....	.....	.....	.....	.....	.....	14675
C-869.....	†620	1934	La Salle....	6[b]	1	13.3	38.0	39.1	9.6	3.65	.67	11065
					2	.....	43.8	45.1	11.1	4.21	.77	12763
					3	.....	49.2	50.8	.....	4.74	.....	14349
					4	.....	.....	.....	.....	.....	.....	14647
C-870.....	†620	1934	La Salle....	6[b]	1	13.2	38.4	39.1	9.3	3.67	.55	11139
					2	.....	44.2	45.0	10.8	4.23	.64	12833
					3	.....	49.5	50.5	.....	4.74	.....	14381
					4	.....	.....	.....	.....	.....	.....	14674
C-871.....	†620	1934	La Salle....	6[b]	1	12.3	38.1	40.1	9.5	3.53	.43	11163
					2	.....	43.5	45.6	10.9	4.03	.49	12733
					3	.....	48.8	51.2	.....	4.52	.....	14289
					4	.....	.....	.....	.....	.....	.....	14570
°C-140.....	†528	1932	Stark.....	6	1	16.8	33.5	38.1	11.6	3.72	1.14	10187
					2	.....	40.3	45.7	14.0	4.47	1.37	12247
					3	.....	46.9	53.1	.....	5.19	1.59	14239
					4	.....	.....	.....	.....	.....	.....	14588

a "Second Vein" formerly called coal No. 5.
b Streator coal, formerly called No. 7 coal.
†Local or captive mine (those sampled before 1930 largely abandoned).
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°C-141.....	†528	1932	Stark.....	6	1	18.1	33.8	39.4	8.7	3.37	.57	10488
					2	.....	41.3	48.1	10.6	4.11	.70	12811
					3	.....	46.3	53.7	.....	4.60	.78	14333
					4	.....	.....	.....	.....	.....	.....	14608
°BMA86462..	†528	1932	Stark.. ...	6	1	17.6	32.6	38.5	11.3	3.9	.....	10090
					2	.....	39.6	46.7	13.7	4.8	.....	12250
					3	.....	45.8	54.2	.....	5.5	.....	14190
					4	.....	.....	.....	.....	.....	.....	14546
°BMA86463..	†528	1932	Stark.....	6	1	17.6	32.3	40.9	9.2	3.8	.....	10440
					2	.....	39.2	49.6	11.2	4.6	.....	12680
					3	.....	44.2	55.8	.....	5.2	.....	14280
					4	.....	.....	.....	.....	.....	.....	14583
°BMA86461..	†529	1932	Stark.....	6	1	17.1	32.1	40.3	10.5	4.0	.51	10260
					2	.....	38.7	48.6	12.7	4.8	.62	12380
					3	.....	44.3	55.7	.....	5.5	.71	14190
					4	.....	.....	.....	.....	.....	.....	14514
°C-144.....	†529	1932	Stark.....	6	1	17.1	33.1	38.9	10.9	3.48	.62	10231
					2	.....	40.0	46.9	13.1	4.19	.74	12347
					3	.....	46.0	54.0	.....	4.83	.86	14212
					4	.....	.....	.....	.....	.....	.....	14528
HERRIN (NO. 6) COAL (CENTRAL, SOUTHWESTERN, AND SOUTHERN ILLINOIS)												
BM80788....	*218	1921	Bond.....		1	11.69	34.15	43.22	10.94	3.55	.80	10784
					2	.....	38.67	48.94	12.39	4.02	.91	12212
					3	.....	44.14	55.86	.....	4.59	1.04	13939
					4	.....	.....	.....	.....	.....	.....	14229
BM80789....	*218	1921	Bond.....	6	1	12.55	35.58	41.60	10.27	3.51	.41	10745
					2	.....	40.69	47.57	11.74	4.01	.47	12287
					3	.....	46.10	53.90	.....	4.54	.53	13921
					4	.....	.....	.....	.....	.....	.....	14199

†Local or captive mine (those sampled before 1930 largely abandoned).

*Shipping mine abandoned or long idle.

°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and State Geological Survey.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM80790....	*218	1921	Bond.....	6	1	11.64	35.55	42.12	10.69	3.09	.79	10890
					2	.....	40.23	47.67	12.10	3.50	.89	12325
					3	.....	45.77	54.23	.....	3.98	1.01	14022
					4	.....	.....	.....	.....	.....	.....	14292
BM81315....	219	1921	Christian...	6	1	11.96	36.12	42.08	9.84	3.31	.21	10989
					2	.....	41.03	47.79	11.18	3.76	.24	12482
					3	.....	46.19	53.81	.....	4.23	.27	14053
					4	.....	.....	.....	.....	.....	.....	14319
BM81316....	219	1921	Christian...	6	1	11.74	37.52	37.67	13.07	5.23	.39	10482
					2	.....	42.51	42.68	14.81	5.93	.44	11876
					3	.....	49.90	50.10	.....	6.96	.52	13941
					4	.....	.....	.....	.....	.....	.....	14341
BM81317....	219	1921	Christian...	6	1	12.30	38.02	39.56	10.12	3.03	.76	10924
					2	.....	43.35	45.11	11.54	3.45	.87	12456
					3	.....	49.01	50.99	.....	3.90	.98	14081
					4	.....	.....	.....	.....	.....	.....	14343
BM81444....	220	1921	Christian...	6	1	13.34	36.44	39.03	11.19	3.63	.77	10679
					2	.....	42.05	45.04	12.91	4.19	.89	12323
					3	.....	48.28	51.72	.....	4.81	1.02	14150
					4	.....	.....	.....	.....	.....	.....	14463
BM81445....	220	1921	Christian...	6	1	13.67	35.65	39.60	11.08	4.17	.57	10622
					2	.....	41.30	45.87	12.83	4.83	.66	12304
					3	.....	47.38	52.62	.....	5.54	.76	14115
					4	.....	.....	.....	.....	.....	.....	14448
BM81446....	220	1921	Christian...	6	1	14.74	37.10	39.34	8.82	4.20	.30	10745
					2	.....	43.51	46.15	10.34	4.93	.35	12603
					3	.....	48.53	51.47	.....	5.50	.39	14057
					4	.....	.....	.....	.....	.....	.....	14348
BM81138....	*221	1921	Christian...	6	1	11.12	37.81	41.16	9.91	4.15	.17	11070
					2	.....	42.54	46.31	11.15	4.67	.19	12455
					3	.....	47.88	52.12	.....	5.26	.21	14018
					4	.....	.....	.....	.....	.....	.....	14311

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81139....	*221	1921	Christian...	6	1	12.21	37.30	40.87	9.62	4.08	.05	10951
					2	.....	42.49	46.55	10.96	4.65	.06	12474
					3	.....	47.72	52.28	.....	5.22	.07	14009
					4	.....	.....	.....	.....	.....	.....	14299
BM81140....	*221	1921	Christian...	6	1	12.81	36.18	39.79	11.22	4.28	.46	10642
					2	.....	41.50	45.63	12.87	4.91	.53	12206
					3	.....	47.63	52.37	.....	5.64	.61	14009
					4	.....	.....	.....	.....	.....	.....	14340
BM81142....	222	1921	Christian...	6	1	12.27	37.17	40.67	9.89	3.49	.08	10917
					2	.....	42.37	46.36	11.27	3.98	.09	12444
					3	.....	47.75	52.25	.....	4.49	.10	14025
					4	.....	.....	.....	.....	.....	.....	14298
BM81143....	222	1921	Christian...	6	1	11.75	37.46	41.33	9.46	4.38	.23	11089
					2	.....	42.45	46.83	10.72	4.96	.26	12565
					3	.....	47.54	52.46	.....	5.56	.29	14074
					4	.....	.....	.....	.....	.....	.....	14372
BM81144....	222	1921	Christian...	6	1	12.31	38.31	41.22	8.16	3.27	.04	11124
					2	.....	43.69	47.00	9.31	3.73	.05	12686
					3	.....	48.18	51.82	.....	4.11	.06	13988
					4	.....	.....	.....	.....	.....	.....	14220
BM25748....	[a]BM *56	1916	Christian...	6	1	13.62	37.60	39.62	9.16	3.78	.....	11020
					2	.....	43.53	45.87	10.60	4.38	.....	12757
					3	.....	48.69	51.31	.....	4.90	.....	14269
					4	.....	.....	.....	.....	.....	.....	14553
BM25749....	[a]BM *56	1916	Christian...	6	1	13.72	37.42	39.05	9.81	4.11	.....	10847
					2	.....	43.37	45.26	11.37	4.76	.....	12571
					3	.....	48.93	51.07	.....	5.37	.....	14183
					4	.....	.....	.....	.....	.....	.....	14490
BM25750....	[a]BM *56	1916	Christian...	6	1	12.52	34.74	39.06	13.68	3.40	.....	10386
					2	.....	39.71	44.65	15.64	3.89	.....	11873
					3	.....	47.07	52.93	.....	4.61	.....	14074
					4	.....	.....	.....	.....	.....	.....	14423

[a] Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 30, 1922.

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM25751....	[a]BM *56	1916	Christian...	6	1	12.31	38.59	39.15	9.95	3.54	.....	11086
					2	.....	44.00	44.65	11.35	4.04	.....	12641
					3	.....	49.63	50.37	.....	4.56	.....	14259
					4	.....	.....	.....	.....	.....	.....	14544
BM26336....	[a]BM *56	1916	Christian...	6	1	11.89	37.14	40.58	10.39	3.88	.....	11056
					2	.....	42.15	46.06	11.79	4.40	.....	12548
					3	.....	47.78	52.22	.....	4.99	.....	14225
					4	.....	.....	.....	.....	.....	.....	14529
BM26337....	[a]BM *56	1916	Christian...	6	1	11.98	38.52	39.18	10.32	4.21	.....	11120
					2	.....	43.76	44.52	11.72	4.78	.....	12634
					3	.....	49.56	50.44	.....	5.41	.....	14311
					4	.....	.....	.....	.....	.....	.....	14631
5073.....	84	1912	Clinton....	6	1	13.32	37.43	39.02	10.23	4.06	.69	10726
					2	.....	43.18	45.02	11.80	4.68	.80	12374
					3	.....	48.96	51.04	.....	5.31	.91	14029
					4	.....	.....	.....	.....	.....	.....	14336
5074.....	84	1912	Clinton....	6	1	12.40	37.94	39.04	10.62	4.24	.58	10796
					2	.....	43.32	44.56	12.12	4.84	.69	12324
					3	.....	49.29	50.71	.....	5.51	.79	14023
					4	.....	.....	.....	.....	.....	.....	14341
5052.....	85	1912	Clinton....	6	1	12.60	36.78	40.48	10.14	2.88	.77	10827
					2	.....	42.07	46.32	11.61	3.29	.88	12388
					3	.....	47.59	52.41	.....	3.72	1.00	14015
					4	.....	.....	.....	.....	.....	.....	14271
5053.....	85	1912	Clinton....	6	1	12.15	37.74	40.52	9.59	3.51	.29	10949
					2	.....	42.96	46.13	10.91	3.99	.33	12464
					3	.....	48.22	51.78	.....	4.48	.37	13990
					4	.....	.....	.....	.....	.....	.....	14256
5054.....	85	1912	Clinton....	6	1	12.43	36.14	41.02	10.41	4.19	.38	10730
					2	.....	41.28	46.84	11.88	4.79	.44	12253
					3	.....	46.84	53.16	.....	5.44	.50	13905
					4	.....	.....	.....	.....	.....	.....	14211

a Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 30, 1922.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM80744....	198	1921	Clinton....	6	1	11.78	36.43	40.93	10.86	4.22	.63	10771
					2	.....	41.29	46.40	12.31	4.78	.71	12209
					3	.....	47.09	52.91	.....	5.45	.81	13923
					4	.....	.....	.....	.....	.....	.....	14237
BM80745....	198	1921	Clinton....	6	1	11.40	36.59	41.07	10.94	3.74	.62	10817
					2	.....	41.30	46.35	12.35	4.22	.70	12209
					3	.....	47.12	52.88	.....	4.81	.80	13929
					4	.....	.....	.....	.....	.....	.....	14225
BM80746....	198	1921	Clinton....	6	1	10.11	37.97	41.14	10.78	2.58	.60	11064
					2	.....	42.24	45.77	11.99	2.87	.67	12308
					3	.....	47.99	52.01	.....	3.26	.76	13985
					4	.....	.....	.....	.....	.....	.....	14231
BM80767....	199	1921	Clinton....	6	1	10.52	34.59	43.42	11.47	3.80	.35	10951
					2	.....	38.66	48.52	12.82	4.25	.39	12413
					3	.....	44.34	55.66	.....	4.87	.45	14042
					4	.....	.....	.....	.....	.....	.....	14351
BM80768*...	199	1921	Clinton....	6	1	11.73	35.25	43.87	9.15	3.48	.22	11034
					2	.....	39.93	49.70	10.37	3.94	.25	12500
					3	.....	44.55	55.45	.....	4.40	.28	13946
					4	.....	.....	.....	.....	.....	.....	14201
BM80769....	199	1921	Clinton....	6	1	11.26	34.94	42.49	11.31	3.46	.77	10774
					2	.....	39.38	47.87	12.75	3.90	.87	12141
					3	.....	45.13	54.87	.....	4.47	1.00	13915
					4	.....	.....	.....	.....	.....	.....	14207
5222.....	*50	1912	Franklin....	6	1	9.65	34.55	47.85	7.95	1.04	.31	11916
					2	.....	38.24	52.97	8.79	1.15	.34	13190
					3	.....	41.92	58.08	.....	1.26	.37	14461
					4	.....	.....	.....	.....	.....	.....	14613
5223.....	*50	1912	Franklin....	6	1	9.00	35.10	47.35	8.55	1.08	.40	11973
					2	.....	38.58	52.03	9.39	1.19	.44	13159
					3	.....	42.58	57.42	.....	1.31	.49	14522
					4	.....	.....	.....	.....	.....	.....	14684

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5224	*50	1912	Franklin	6	1	9.36	34.86	48.90	6.88	1.01	.43	12122
					2		38.46	53.96	7.58	1.12	.48	13373
					3		41.61	58.39		1.21	.52	14469
					4							14603
5008	51	1912	Franklin	6	1	10.63	33.23	48.79	7.35	1.07	.38	11803
					2		37.18	54.59	8.23	1.19	.43	13207
					3		40.51	59.49		1.30	.47	14391
					4							14534
5009	51	1912	Franklin	6	1	9.83	33.91	49.14	7.12	1.13	.18	11942
					2		37.62	54.48	7.90	1.25	.20	13245
					3		40.85	59.15		1.36	.22	14381
					4							14522
5011	51	1912	Franklin	6	1	10.39	33.13	49.23	7.25	1.37	.06	11920
					2		36.97	54.93	8.10	1.53	.06	13303
					3		40.23	59.77		1.66	.07	14475
					4							14629
4810	*52	1912	Franklin	6	1	6.96	38.42	44.16	10.46	2.98	.92	11848
					2		41.29	47.47	11.24	3.21	.99	12733
					3		46.52	53.48		3.62	1.12	14345
					4							14603
4811	*52	1912	Franklin	6	1	7.34	38.11	44.23	10.32	3.26	1.41	11771
					2		41.13	47.73	11.14	3.51	1.53	12703
					3		46.28	53.72		3.95	1.72	14295
					4							14561
4812	*52	1912	Franklin	6	1	6.00	38.55	45.46	9.99	3.16	1.20	11998
					2		41.01	48.36	10.63	3.36	1.28	12764
					3		45.88	54.12		3.76	1.43	14282
					4							14534
4785	53	1912	Franklin	6	1	10.57	33.37	43.09	12.97	.83	4.38	10714
					2		37.30	48.19	14.51	.93	4.89	11980
					3		43.63	56.37		1.09	5.72	14013
					4							14236

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
4786	53	1912	Franklin	6	1	10.00	32.80	50.92	6.28	.66	.33	12001
					2		36.45	56.59	6.96	.73	.36	13334
					3		39.18	60.82		.78	.39	14331
					4							14441
4787	53	1912	Franklin	6	1	10.15	32.88	50.56	6.41	.59	.22	12000
					2		36.59	56.27	7.14	.65	.25	13356
					3		39.40	60.60		.70	.27	14383
					4							14494
4789	53	1912	Franklin	6	1	10.00	32.08	50.93	6.99	.47	.17	11935
					2		35.65	56.60	7.75	.52	.20	13261
					3		38.64	61.36		.56	.22	14375
					4							14489
5208	*56	1912	Franklin	6	1	6.43	37.62	44.77	11.18	2.64	.64	11834
					2		40.20	47.85	11.95	2.82	.68	12646
					3		45.66	54.34		3.20	.77	14363
					4							14620
5209	*56	1912	Franklin	6	1	10.15	35.55	45.82	8.48	1.41	.80	11691
					2		39.56	51.01	9.43	1.57	.89	13011
					3		43.69	56.31		1.73	.98	14365
					4							14539
5211	*56	1912	Franklin	6	1	7.71	35.75	45.38	11.16	3.50	.89	11644
					2		38.74	49.17	12.09	3.79	.96	12616
					3		44.07	55.93		4.31	1.09	14351
					4							14644
5507	57	1912	Franklin	6	1	9.83	31.82	49.78	8.57	.79	.35	11702
					2		35.29	55.21	9.50	.88	.39	12977
					3		38.99	61.01		.97	.43	14339
					4							14490
5508	57	1912	Franklin	6	1	9.44	32.57	50.09	7.90	.67	.29	11914
					2		35.97	55.31	8.72	.74	.32	13156
					3		39.41	60.59		.81	.35	14412
					4							14547

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5509.....	57	1912	Franklin....	6	1	9.75	32.33	48.77	9.15	1.39	.32	11652
					2	.....	35.83	54.03	10.14	1.54	.35	12911
					3	.....	39.87	60.13	.....	1.71	.39	14367
					4	.....	.....	.....	.....	.....	.....	14550
4791.....	*58	1912	Franklin....	6	1	8.70	34.62	48.92	7.76	.62	.31	11945
					2	.....	37.92	53.59	8.49	.68	.34	13084
					3	.....	41.44	58.56	.....	.74	.37	14298
					4	.....	.....	.....	.....	.....	.....	14426
4793.....	*58	1912	Franklin....	6	1	9.04	34.46	48.73	7.77	.68	.23	11946
					2	.....	37.88	53.59	8.53	.74	.25	13133
					3	.....	41.41	58.59	.....	.81	.27	14358
					4	.....	.....	.....	.....	.....	.....	14490
4794.....	*58	1912	Franklin....	6	1	9.05	34.45	48.75	7.75	.91	.37	11923
					2	.....	37.88	53.59	8.53	1.00	.41	13108
					3	.....	41.41	58.59	.....	1.09	.45	14330
					4	.....	.....	.....	.....	.....	.....	14472
12701.....	134	1921	Franklin....	6	1	8.88	32.17	50.84	8.11	.78	.11	11858
					2	.....	35.31	55.80	8.89	.86	.12	13015
					3	.....	38.80	61.20	.....	.94	.13	14284
					4	.....	.....	.....	.....	.....	.....	14425
12702.....	134	1921	Franklin....	6	1	7.11	34.23	48.83	9.83	1.30	.35	11883
					2	.....	36.85	52.57	10.58	1.40	.37	12792
					3	.....	41.20	58.80	.....	1.57	.41	14305
					4	.....	.....	.....	.....	.....	.....	14489
12703.....	134	1921	Franklin....	6	1	8.31	34.07	49.44	8.18	1.02	.21	12010
					2	.....	37.16	53.91	8.93	1.12	.23	13098
					3	.....	40.80	59.20	.....	1.23	.25	14382
					4	.....	.....	.....	.....	.....	.....	14533
12720.....	134	1921	Franklin....	6	1	9.24	32.39	49.49	8.88	1.50	.21	11722
					2	.....	35.69	54.53	9.78	1.65	.23	12915
					3	.....	39.50	60.50	.....	1.83	.25	14315
					4	.....	.....	.....	.....	.....	.....	14495

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12721.....	134	1921	Franklin....	6	1	7.61	34.77	48.96	8.66	1.70	.05	12038
					2	.....	37.63	53.00	9.37	1.85	.05	13029
					3	.....	41.50	58.50	.....	2.04	.06	14376
					4	.....	.....	.....	.....	.....	.....	14558
12722.....	134	1921	Franklin....	6	1	8.56	31.76	50.52	9.16	1.29	.32	11643
					2	.....	34.73	55.26	10.01	1.41	.35	12733
					3	.....	38.60	61.40	.....	1.57	.39	14149
					4	.....	.....	.....	.....	.....	.....	14322
C-492.....	134	1933	Franklin....	6	1	9.9	33.2	50.1	6.8	1.28	.30	12003
					2	.....	36.8	55.7	7.5	1.42	.33	13329
					3	.....	39.8	60.2	.....	1.53	.36	14412
					4	.....	.....	.....	.....	.....	.....	14550
C-493.....	134	1933	Franklin....	6	1	9.2	33.0	48.9	8.9	2.16	.51	11751
					2	.....	36.3	53.9	9.8	2.38	.56	12940
					3	.....	40.2	59.8	.....	2.63	.62	14338
					4	.....	.....	.....	.....	.....	.....	14552
C-494.....	134	1933	Franklin....	6	1	8.9	34.4	49.9	6.8	.92	.17	12153
					2	.....	37.7	54.9	7.4	1.01	.19	13341
					3	.....	40.8	59.2	.....	1.09	.21	14415
					4	.....	.....	.....	.....	.....	.....	14533
C-495.....	134	1933	Franklin....	6	1	10.8	31.1	50.1	8.0	1.05	.36	11655
					2	.....	34.9	56.1	9.0	1.18	.40	13060
					3	.....	38.3	61.7	.....	1.29	.44	14348
					4	.....	.....	.....	.....	.....	.....	14505
12729.....	136	1921	Franklin....	6	1	6.72	35.94	46.32	11.02	3.11	.72	11599
					2	.....	38.53	49.65	11.82	3.33	.78	12434
					3	.....	43.69	56.31	.....	3.78	.88	14100
					4	.....	.....	.....	.....	.....	.....	14365
12730.....	136	1921	Franklin....	6	1	6.95	35.53	46.19	11.33	3.42	.51	11579
					2	.....	38.18	49.65	12.17	3.68	.55	12444
					3	.....	43.46	56.54	.....	4.19	.63	14168
					4	.....	.....	.....	.....	.....	.....	14450

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12731.....	136	1921	Franklin....	6	1	8.36	32.98	51.49	7.17	1.28	.26	12070
					2	.....	35.99	56.19	7.82	1.40	.28	13170
					3	.....	39.04	60.96	.....	1.52	.30	14287
					4	.....	.....	.....	.....	.....	.....	14430
12732.....	136	1921	Franklin....	6	1	6.63	36.30	46.99	10.08	3.63	.39	11798
					2	.....	38.88	50.32	10.80	3.89	.42	12635
					3	.....	43.58	56.42	.....	4.36	.47	14164
					4	.....	.....	.....	.....	.....	.....	14433
12733.....	136	1921	Franklin....	6	1	8.46	35.77	46.51	9.26	2.50	.15	11712
					2	.....	39.08	50.80	10.12	2.73	.17	12794
					3	.....	43.48	56.52	.....	3.04	.19	14234
					4	.....	.....	.....	.....	.....	.....	14454
12734.....	136	1921	Franklin....	6	1	7.52	34.46	48.88	9.14	1.20	.22	11895
					2	.....	37.26	52.86	9.88	1.30	.24	12862
					3	.....	41.34	58.66	.....	1.44	.27	14272
					4	.....	.....	.....	.....	.....	.....	14440
BMA90715...	136	1933	Franklin....	6	1	10.7	32.5	48.8	8.0	.9	.4	11770
					2	.....	36.3	54.8	8.9	1.1	.45	13170
					3	.....	39.9	60.1	.....	1.2	.....	14460
					4	.....	.....	.....	.....	.....	.....	14607
BMA90716...	136	1933	Franklin....	6	1	9.1	33.1	50.0	7.8	.8	.19	12010
					2	.....	36.4	55.0	8.6	.9	.21	13220
					3	.....	39.8	60.2	.....	1.0	.....	14460
					4	.....	.....	.....	.....	.....	.....	14604
BMA90717...	136	1933	Franklin....	6	1	9.0	32.5	48.4	10.1	.9	.35	11710
					2	.....	35.7	53.2	11.1	1.0	.39	12860
					3	.....	40.2	59.8	.....	1.1	.....	14470
					4	.....	.....	.....	.....	.....	.....	14646
12682.....	*139	1921	Franklin....	6	1	7.06	35.69	45.24	12.01	3.50	.33	11487
					2	.....	38.41	48.67	12.92	3.77	.35	12359
					3	.....	44.10	55.90	.....	4.33	.....	14193
					4	.....	.....	.....	.....	.....	.....	14493

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12683.....	*139	1921	Franklin....	6	1	10.07	32.64	50.15	7.14	.76	.22	11850
					2	.....	36.29	55.77	7.94	.85	.24	13177
					3	.....	39.42	60.58	.....	.92	.26	14313
					4	.....	.....	.....	.....	.....	.....	14440
12684.....	*139	1921	Franklin....	6	1	8.28	34.98	49.38	7.36	1.13	.25	12047
					2	.....	38.14	53.84	8.02	1.24	.27	13134
					3	.....	41.46	58.54	.....	1.35	.29	14279
					4	.....	.....	.....	.....	.....	.....	14419
12698.....	*139	1921	Franklin....	6	1	6.79	37.24	46.38	9.59	3.38	.31	11858
					2	.....	39.96	49.76	10.28	3.63	.33	12722
					3	.....	44.53	55.47	.....	4.05	.37	14180
					4	.....	.....	.....	.....	.....	.....	14431
12699.....	*139	1921	Franklin....	6	1	8.07	33.85	49.71	8.37	1.02	.05	11908
					2	.....	36.82	54.08	9.10	1.11	.05	12954
					3	.....	40.51	59.49	.....	1.22	.05	14250
					4	.....	.....	.....	.....	.....	.....	14402
12700.....	*139	1921	Franklin....	6	1	6.96	36.53	44.79	11.72	3.95	.20	11590
					2	.....	39.27	48.13	12.60	4.24	.22	12456
					3	.....	44.92	55.08	.....	4.85	.25	14251
					4	.....	.....	.....	.....	.....	.....	14566
12738.....	*140	1921	Franklin....	6	1	5.74	36.04	48.19	10.03	3.37	.36	11960
					2	.....	38.23	51.13	10.64	3.57	.38	12687
					3	.....	42.78	57.22	.....	4.00	.42	14197
					4	.....	.....	.....	.....	.....	.....	14453
12739.....	*140	1921	Franklin....	6	1	6.64	36.34	48.38	8.64	2.75	.05	12043
					2	.....	38.92	51.83	9.25	2.94	.05	12899
					3	.....	42.89	57.11	.....	3.24	.06	14213
					4	.....	.....	.....	.....	.....	.....	14426
12740.....	*140	1921	Franklin....	6	1	8.15	32.79	51.10	7.96	1.51	.14	11890
					2	.....	35.70	55.63	8.67	1.64	.16	12944
					3	.....	39.09	60.91	.....	1.80	.18	14172
					4	.....	.....	.....	.....	.....	.....	14333

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12865.....	145	1921	Franklin....	6	1	8.33	31.23	51.35	9.09	1.24	.25	11846
					2	.....	34.07	56.02	9.91	1.35	.27	12921
					3	.....	37.82	62.18	.....	1.50	.30	14342
					4	.....	.....	.....	.....	.....	.....	14514
12866.....	145	1921	Franklin....	6	1	8.17	32.54	50.60	8.69	1.20	.15	11942
					2	.....	35.43	55.11	9.46	1.31	.17	13005
					3	.....	39.13	60.87	.....	1.45	.19	14363
					4	.....	.....	.....	.....	.....	.....	14528
12867.....	145	1921	Franklin....	6	1	8.96	32.71	50.71	7.62	.67	.08	11964
					2	.....	35.93	55.70	8.37	.74	.08	13142
					3	.....	39.21	60.79	.....	.81	.09	14342
					4	.....	.....	.....	.....	.....	.....	14472
BMA39228...	256	1928	Franklin....	6	1	8.7	33.5	49.0	8.8	1.3	.....	12010
					2	.....	36.7	53.7	9.6	1.4	.....	13150
					3	.....	40.5	59.5	.....	1.6	.....	14540
					4	.....	.....	.....	.....	.....	.....	14720
BMA39229...	256	1928	Franklin....	6	1	8.5	34.5	47.7	9.3	2.8	.....	11930
					2	.....	37.8	52.1	10.1	3.1	.....	13040
					3	.....	42.0	58.0	.....	3.4	.....	14500
					4	.....	.....	.....	.....	.....	.....	14745
BMA39230...	256	1928	Franklin....	6	1	9.1	32.4	46.2	12.3	2.7	.....	11350
					2	.....	35.6	50.9	13.5	3.0	.....	12480
					3	.....	41.2	58.8	.....	3.5	.....	14440
					4	.....	.....	.....	.....	.....	.....	14720
BM23473....	[b]BM13	1915	Franklin....	6	1	9.28	34.21	47.76	8.75	1.10	.....	11950
					2	.....	37.71	52.64	9.65	1.21	.....	13172
					3	.....	41.74	58.26	.....	1.34	.....	14578
					4	.....	.....	.....	.....	.....	.....	14745
BM23474....	[b]BM13	1915	Franklin....	6	1	8.91	35.51	47.46	8.12	.80	.....	12083
					2	.....	38.98	52.11	8.91	.88	.....	13265
					3	.....	42.79	57.21	.....	.97	.....	14562
					4	.....	.....	.....	.....	.....	.....	14707

[b] Fieldner, A C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 33, 1918.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM23475....	[b]BM13	1915	Franklin....	6	1	8.82	33.91	48.87	8.40	.81	.....	12038
					2	.....	37.19	53.60	9.21	.89	.....	13203
					3	.....	40.96	59.04	.....	.98	.....	14542
					4	.....	.....	.....	.....	.....	.....	14691
BM23476....	[b]BM13	1915	Franklin....	6	1	9.25	33.76	48.08	8.91	1.07	.....	11898
					2	.....	37.20	52.98	9.82	1.18	.....	13111
					3	.....	41.25	58.75	.....	1.31	.....	14539
					4	.....	.....	.....	.....	.....	.....	14707
BM23477....	[b]BM13	1915	Franklin....	6	1	8.75	33.71	48.44	9.10	1.55	.....	11943
					2	.....	36.94	53.09	9.97	1.70	.....	13088
					3	.....	41.02	58.98	.....	1.89	.....	14537
					4	.....	.....	.....	.....	.....	.....	14726
BM22686....	[b]BM *14	1915	Franklin....	6	1	9.33	33.60	48.48	8.59	.82	.....	11824
					2	.....	37.06	53.47	9.47	.90	.....	13041
					3	.....	40.94	59.06	.....	.99	.....	14405
					4	.....	.....	.....	.....	.....	.....	14556
BM22687....	[b]BM *14	1915	Franklin....	6	1	9.05	33.74	48.65	8.56	.96	.....	11858
					2	.....	37.10	53.49	9.41	1.06	.....	13038
					3	.....	40.95	59.05	.....	1.17	.....	14392
					4	.....	.....	.....	.....	.....	.....	14548
BM22688....	[b]BM *14	1915	Franklin....	6	1	8.59	34.66	48.89	7.86	.92	.....	12089
					2	.....	37.92	53.48	8.60	1.01	.....	13225
					3	.....	41.48	58.52	.....	1.10	.....	14469
					4	.....	.....	.....	.....	.....	.....	14612
BM22689....	[b]BM *14	1915	Franklin....	6	1	8.91	33.87	49.21	8.01	.99	.....	12017
					2	.....	37.18	54.03	8.79	1.09	.....	13192
					3	.....	40.76	59.24	.....	1.20	.....	14463
					4	.....	.....	.....	.....	.....	.....	14612
BM22690....	[b]BM *14	1915	Franklin....	6	1	10.06	33.92	47.26	8.76	.92	.....	11756
					2	.....	37.71	52.55	9.74	1.02	.....	13071
					3	.....	41.78	58.22	.....	1.13	.....	14481
					4	.....	.....	.....	.....	.....	.....	14642

*Shipping mine abandoned or long idle.

b Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 33, 1918.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory: 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM23442....	[b]BM15	1915	Franklin....	6	1	9.72	32.91	48.92	8.45	.87	.....	11866
					2	.....	36.45	54.19	9.36	.96	.....	13144
					3	.....	40.22	59.78	.....	1.06	.....	14501
					4	.....	.....	.....	.....	.....	.....	14654
BM23443....	[b]BM15	1915	Franklin....	6	1	10.24	32.54	49.49	7.73	.80	.....	11941
					2	.....	36.25	55.14	8.61	.89	.....	13304
					3	.....	39.66	60.34	.....	.97	.....	14557
					4	.....	.....	.....	.....	.....	.....	14698
BMA66441...	[c]BM15	1930	Franklin....	6	1	9.5	32.7	49.7	8.1	.5	.....	11920
					2	.....	36.1	54.9	9.0	.6	.....	13170
					3	.....	39.7	60.3	.....	.7	.....	14470
					4	.....	.....	.....	.....	.....	.....	14610
BMA66442...	[c]BM15	1930	Franklin....	6	1	8.8	33.6	48.1	9.5	.8	.....	11800
					2	.....	36.9	52.7	10.4	.9	.....	12940
					3	.....	41.1	58.9	.....	1.0	.....	14440
					4	.....	.....	.....	.....	.....	.....	14610
BMA66443...	[c]BM15	1930	Franklin....	6	1	10.7	33.0	47.7	8.6	1.1	.....	11720
					2	.....	36.9	53.4	9.7	1.2	.....	13120
					3	.....	40.9	59.1	.....	1.3	.....	14530
					4	.....	.....	.....	.....	.....	.....	14700
BMA66444...	[c]BM15	1930	Franklin....	6	1	6.1	33.1	52.5	8.3	.7	.....	12410
					2	.....	35.2	56.0	8.8	.8	.....	13210
					3	.....	38.6	61.4	.....	.9	.....	14490
					4	.....	.....	.....	.....	.....	.....	14620
BMA66445...	[c]BM15	1930	Franklin....	6	1	8.8	33.6	50.4	7.2	.8	.....	12220
					2	.....	36.8	55.4	7.8	.9	.....	13410
					3	.....	40.0	60.0	.....	.9	.....	14350
					4	.....	.....	.....	.....	.....	.....	14670
BM20080....	[b]BM16	1914	Franklin....	6	1	9.33	31.15	50.36	9.16	.56	.....	11806
					2	.....	34.36	55.54	10.10	.62	.....	13021
					3	.....	38.22	61.78	.....	.69	.....	14483
					4	.....	.....	.....	.....	.....	.....	14636

b Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 33, 1918.
c Fieldner, A. C., and others, Carbonizing properties and constitution of No. 6 bed coal from West Frankfort, Franklin Co., Ill.; U. S. Bureau of Mines, Tech. Paper 524, p. 3, 1932.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM20081....	[b]BM16	1914	Franklin....	6	1	10.01	29.93	50.08	9.98	.52	.....	11522
					2	.....	33.26	55.65	11.09	.58	.....	12803
					3	.....	37.41	62.59	.....	.65	.....	14400
					4	.....	.....	.....	.....	.....	.....	14564
BM20082....	[b]BM16	1914	Franklin....	6	1	9.25	31.03	51.02	8.70	.48	.....	11857
					2	.....	34.19	56.22	9.59	.53	.....	13064
					3	.....	37.82	62.18	.....	.59	.....	14450
					4	.....	.....	.....	.....	.....	.....	14591
BM20723....	[b]BM16	1915	Franklin....	6	1	8.21	32.46	49.00	10.33	.96	.....	11770
					2	.....	35.36	53.39	11.25	1.05	.....	12823
					3	.....	39.84	60.16	.....	1.18	.....	14449
					4	.....	.....	.....	.....	.....	.....	14632
BM20724....	[b]BM16	1915	Franklin....	6	1	9.07	32.24	48.42	10.27	1.14	.....	11606
					2	.....	35.45	53.26	11.29	1.25	.....	12764
					3	.....	39.96	60.04	.....	1.41	.....	14389
					4	.....	.....	.....	.....	.....	.....	14578
BM20725....	[b]BM16	1915	Franklin....	6	1	9.83	31.44	51.53	7.20	.50	.....	11990
					2	.....	34.87	57.15	7.98	.55	.....	13297
					3	.....	37.89	62.11	.....	.60	.....	14449
					4	.....	.....	.....	.....	.....	.....	14569
BM22915....	[b]BM19	1915	Franklin....	6	1	9.78	32.29	49.73	8.20	1.02	.....	11860
					2	.....	35.79	55.12	9.09	1.13	.....	13145
					3	.....	39.36	60.64	.....	1.24	.....	14459
					4	.....	.....	.....	.....	.....	.....	14613
BM22916....	[b]BM19	1915	Franklin....	6	1	10.23	31.97	49.87	7.93	.91	.....	11839
					2	.....	35.61	55.56	8.83	1.01	.....	13188
					3	.....	39.05	60.95	.....	1.11	.....	14465
					4	.....	.....	.....	.....	.....	.....	14612
BM22917....	[b]BM19	1915	Franklin....	6	1	10.48	33.53	49.02	6.97	1.22	.....	11932
					2	.....	37.46	54.76	7.78	1.36	.....	13329
					3	.....	40.62	59.38	.....	1.47	.....	14453
					4	.....	.....	.....	.....	.....	.....	14598

b Fieldner, A C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 123, p. 33. 1918.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM22918....	[b]BM19	1915	Franklin....	6	1	8.86	33.27	49.48	8.39	.89	.....	11970
					2	.....	36.50	54.29	9.21	.94	.....	13133
					3	.....	40.20	59.80	.....	1.04	.....	14465
					4	.....	.....	.....	.....	.....	.....	14614
BM22919....	[b]BM19	1915	Franklin....	6	1	10.48	31.87	49.10	8.55	1.16	.....	11678
					2	.....	35.60	54.85	9.55	1.29	.....	13045
					3	.....	39.35	60.65	.....	1.43	.....	14422
					4	.....	.....	.....	.....	.....	.....	14588
BM22920....	[b]BM19	1915	Franklin....	6	1	10.16	32.66	49.63	7.56	.99	.....	11921
					2	.....	36.35	55.24	8.41	1.10	.....	13269
					3	.....	39.68	60.32	.....	1.20	.....	14487
					4	.....	.....	.....	.....	.....	.....	14631
BM29741....	[e]BM21	1918	Franklin....	6	1	9.73	34.19	48.99	7.09	1.08	.....	11997
					2	.....	37.88	54.27	7.85	1.20	.....	13289
					3	.....	41.11	58.89	.....	1.30	.....	14422
					4	.....	.....	.....	.....	.....	.....	14559
BM29742....	[e]BM21	1918	Franklin....	6	1	10.34	33.70	46.90	9.06	.54	.....	11529
					2	.....	37.59	52.31	10.10	.60	.....	12857
					3	.....	41.81	58.19	.....	.67	.....	14301
					4	.....	.....	.....	.....	.....	.....	14450
BM29743....	[e]BM21	1918	Franklin.. .	6	1	9.28	34.17	48.77	7.78	.74	... ...	11885
					2	.....	37.67	53.75	8.58	.82	.....	13100
					3	.....	41.21	58.79	.....	.90	.....	14330
					4	.....	.....	.....	.....	.....	.....	14464
BM29744....	[e]BM21	1918	Franklin....	6	1	9.17	34.29	49.15	7.39	1.17	.....	12163
					2	.....	37.75	54.11	8.14	1.29	.....	13390
					3	.....	41.09	58.91	.....	1.40	.....	14576
					4	.....	.....	.....	.....	.....	.....	14724
BM29745....	[e]BM21	1918	Franklin....	6	1	10.56	34.81	44.73	9.90	.45	.....	11354
					2	... . .	38.92	50.01	11.07	.50	.....	12695
					3	..... .	43.77	56.23	.....	.56	.....	14276
					4	.....	.....	..... .	.....	.....	.....	14435

b Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 33, 1918.
e Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 31, 1922.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM29746..	[e]BM21	1918	Franklin....	6	1	10.36	32.12	47.21	10.31	.56	.....	11326
					2	.....	35.83	52.67	11.50	.62	.....	12634
					3	.....	40.48	59.52	.....	.70	.....	14276
					4	.....	.....	.....	.....	.....	.....	14446
BM26492....	[f]BM *22	1916	Franklin....	6	1	9.54	32.91	48.41	9.14	.98	.....	11772
					2	.....	36.38	53.52	10.10	1.08	.....	13014
					3	.....	40.47	59.53	.....	1.20	.....	14476
					4	.....	.....	.....	.....	.....	.....	14644
BM26493....	[f]BM *22	1916	Franklin....	6	1	9.58	33.25	50.16	7.01	1.08	.....	12051
					2	.....	36.77	55.48	7.75	1.19	.....	13329
					3	.....	39.85	60.15	.....	1.29	.....	14448
					4	.....	.....	.....	.....	.....	.....	14621
BM26494....	[f]BM *22	1916	Franklin....	6	1	10.97	33.70	46.86	8.47	.99	.....	11671
					2	.....	37.85	52.64	9.51	1.11	.....	13109
					3	.....	41.82	58.18	.....	1.23	.....	14486
					4	.....	.....	.....	.....	.....	.....	14647
BM26495....	[f]BM *22	1916	Franklin....	6	1	10.26	33.17	48.39	8.18	1.31	.....	11858
					2	.....	36.96	53.93	9.11	1.46	.....	13214
					3	.....	40.66	59.34	.....	1.61	.....	14538
					4	.....	.....	.....	.....	.....	.....	14705
BM26496....	[f]BM *22	1916	Franklin....	6	1	9.68	32.90	48.35	9.07	1.09	.....	11693
					2	.....	36.43	53.53	10.04	1.21	.....	12946
					3	.....	40.49	59.51	.....	1.35	.....	14391
					4	.....	.....	.....	.....	.....	.....	14561
BM30892....	[f]BM 64	1918	Franklin....	6	1	10.04	35.48	47.29	7.19	.77	.....	11945
					2	.....	39.44	52.57	7.99	.86	.....	13279
					3	.....	42.86	57.14	.....	.93	.....	14431
					4	.....	.....	.....	.....	.....	.....	14561
BM30893....	[f]BM 64	1918	Franklin....	6	1	11.33	32.38	47.18	9.11	.59	.....	11430
					2	.....	36.52	53.21	10.27	.67	.....	12892
					3	.....	40.70	59.30	.....	.75	.....	14368
					4	.....	.....	.....	.....	.....	.....	14522

e Fieldner, A C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 31, 1922.
f Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 32, 1922.
*Shipping mine abandoned or long idle.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM30894....	[f]BM 64	1918	Franklin....	6	1	9.04	36.20	47.86	6.90	1.28	.....	12164
					2	.....	39.80	52.61	7.59	1.41	.....	13374
					3	.....	43.07	56.93	.....	1.53	.....	14472
					4	.....	.....	.....	.....	.....	.....	14615
BM30895.. .	[f]BM 64	1918	Franklin....	6	1	10.43	33.10	48.50	7.97	.52	.....	11713
					2	.....	36.95	54.15	8.90	.58	.....	13075
					3	.....	40.56	59.44	.....	.64	.....	14353
					4	.....	.....	.....	.....	.....	.....	14484
BM30882....	[g]BM 65	1918	Franklin....	6	1	9.94	33.39	48.99	7.68	1.14	.....	11880
					2	.....	37.08	54.39	8.53	1.27	.....	13192
					3	.....	40.54	59.46	.....	1.39	.....	14423
					4	.....	.....	.....	.....	.....	.....	14572
BM30883....	[g]BM 65	1918	Franklin....	6	1	10.07	33.07	49.40	7.46	1.24	.....	11894
					2	.....	36.77	54.94	8.29	1.38	.....	13226
					3	.....	40.09	59.91	.....	1.50	.....	14422
					4	.....	.....	.....	.....	.....	.....	14572
BM30884....	[g]BM 65	1918	Franklin....	6	1	10.73	33.02	47.65	8.60	1.61	.....	11637
					2	.....	36.99	53.38	9.63	1.80	.....	13036
					3	.....	40.93	59.07	.....	1.99	.....	14425
					4	.....	.....	.....	.....	.....	.....	14609
BM30885....	[g]BM 65	1918	Franklin....	6	1	10.05	33.93	48.58	7.44	1.40	.....	11884
					2	.....	37.72	54.01	8.27	1.56	.....	13210
					3	.....	41.12	58.88	.....	1.70	.....	14402
					4	.....	.....	.....	.....	.....	.....	14557
BM30887....	[g]BM 66	1918	Franklin....	6	1	11.15	33.95	47.50	7.40	1.36	.....	11734
					2	.....	38.21	53.46	8.33	1.53	.....	13207
					3	.....	41.68	58.32	.....	1.67	.....	14407
					4	.....	.....	.....	.....	.....	.....	14563
BM30888....	[g]BM 66	1918	Franklin....	6	1	9.08	34.99	48.21	7.72	1.43	.....	12019
					2	.....	38.49	53.02	8.49	1.57	.....	13219
					3	.....	42.06	57.94	.....	1.72	.....	14447
					4	.....	.....	.....	.....	.....	.....	14605

f Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 31, 1922.
g Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 33, 1922.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM30889....	[g]BM 66	1918	Franklin....	5	1	10.31	33.54	49.91	6.24	1.11	.....	12055
					2	.....	37.40	55.64	6.96	1.24	.....	13441
					3	.....	40.20	59.80	.....	1.33	.....	14447
					4	.....	.....	.....	.....	.....	.....	14574
BM30867....	[g]BM 67	1918	Franklin....	6	1	10.74	32.20	50.91	6.15	.83	.....	12001
					2	.....	36.07	57.04	6.89	.93	.....	13444
					3	.....	38.74	61.26	.....	1.00	.....	14440
					4	.....	.....	.....	.....	.....	.....	14555
BM30868....	[g]BM 67	1918	Franklin....	6	1	10.36	32.52	47.17	9.95	.63	.....	11356
					2	.....	36.28	52.62	11.10	.70	.....	12668
					3	.....	40.81	59.19	.....	.79	.....	14251
					4	.....	.....	.....	.....	.....	.....	14416
BM30869....	[g]BM 67	1918	Franklin....	6	1	9.86	32.38	49.68	8.08	.93	.....	11925
					2	.....	35.92	55.12	8.96	1.03	.....	13230
					3	.....	39.45	60.55	.....	1.13	.....	14531
					4	.....	.....	.....	.....	.....	.....	14682
BM30870....	[g]BM 67	1918	Franklin....	6	1	10.91	32.32	50.89	5.88	.56	.....	12049
					2	.....	36.28	57.12	6.60	.63	.....	13525
					3	.....	38.84	61.16	.....	.67	.....	14481
					4	.....	.....	.....	.....	.....	.....	14583
BM30877....	[h]BM 68	1918	Franklin....	6	1	8.72	34.31	46.15	10.82	3.81	.....	11543
					2	.....	37.59	50.56	11.85	4.17	.....	12645
					3	.....	42.64	57.36	.....	4.73	.....	14344
					4	.....	.....	.....	.....	.....	.....	14646
BM30878....	[h]BM 68	1918	Franklin....	6	1	10.04	33.73	47.53	8.66	2.43	.....	11725
					2	.....	37.54	52.83	9.63	2.70	.....	13034
					3	.....	41.54	58.46	.....	2.99	.....	14423
					4	.....	.....	.....	.....	.....	.....	14638
BM30879....	[h]BM 68	1918	Franklin....	6	1	9.67	33.32	46.67	10.34	3.07	.....	11547
					2	.....	36.89	51.66	11.45	3.40	.....	12784
					3	.....	41.66	58.34	.....	3.84	.....	14436
					4	.....	.....	.....	.....	.....	.....	14707

g Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 33, 1922.
h Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 30, 1922.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory: 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM30880....	[h]BM 68	1918	Franklin....	6	1	9.27	34.27	45.48	10.98	3.79	.....	11461
					2	.....	37.77	50.13	12.10	4.18	.....	12632
					3	.....	42.97	57.03	.....	4.76	.....	14371
					4	.....	.....	.....	.....	.....	.....	14678
5510.....	†223	1912	Gallatin....	6	1	4.47	35.33	47.73	12.47	3.59	.05	12320
					2	.....	36.98	49.96	13.06	3.76	.05	12895
					3	.....	42.54	57.46	.....	4.32	.06	14832
					4	.....	.....	.....	.....	.....	.....	15159
5511.....	†223	1912	Gallatin....	6	1	4.10	36.79	50.38	8.73	3.83	.04	12849
					2	.....	38.36	52.54	9.10	3.99	.04	13398
					3	.....	42.20	57.80	.....	4.39	.04	14739
					4	.....	.....	.....	.....	.....	.....	15002
4773.....	*55	1912	Jackson....	6	1	10.88	31.71	48.90	8.51	.65	.30	11594
					2	.....	35.57	54.88	9.55	.73	.34	13009
					3	.....	39.33	60.67	.....	.81	.38	14383
					4	.....	.....	.....	.....	.....	.....	14529
4780.....	*55	1912	Jackson....	6	1	7.17	36.36	45.25	11.22	3.92	.43	11678
					2	.....	39.18	48.74	12.08	4.22	.47	12581
					3	.....	44.56	55.44	.....	4.80	.53	14310
					4	.....	.....	.....	.....	.....	.....	14617
4784.....	*55	1912	Jackson....	6	1	8.82	35.30	44.96	10.92	3.46	.50	11547
					2	.....	38.72	49.30	11.98	3.79	.54	12663
					3	.....	43.99	56.01	.....	4.31	.61	14386
					4	.....	.....	.....	.....	.....	.....	14679
14303.....	183	1924	Jackson....	6	1	9.61	35.47	46.14	8.78	1.36	.....	11789
					2	.....	39.24	51.04	9.72	1.51	.....	13042
					3	.....	43.46	56.54	.....	1.67	.....	14446
					4	.....	.....	.....	.....	.....	.....	14623
14304.....	183	1924	Jackson....	6	1	9.67	34.91	44.27	11.15	1.89	.....	11344
					2	.....	38.65	49.01	12.34	2.09	.....	12558
					3	.....	44.09	55.91	.....	2.38	.....	14326
					4	.....	.....	.....	.....	.....	.....	14561

[h] Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 30, 1922.
*Shipping mine abandoned or long idle.
†Local or captive mine (those sampled before 1930 largely abandoned).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
14307.....	183	1924	Jackson....	6	1	9.76	35.51	44.67	10.06	1.68	.....	11581
					2	.....	39.35	49.50	11.15	1.86	.....	12834
					3	.....	44.29	55.71	.....	2.09	.....	14445
					4	.....	.....	.....	.....	.....	.....	14655
14309.....	183	1924	Jackson....	6	1	9.90	35.96	45.91	8.23	1.46	.....	11859
					2	.....	39.91	50.95	9.14	1.62	.....	13162
					3	.....	43.92	56.08	.....	1.78	.....	14486
					4	.....	.....	.....	.....	.....	.....	14658
14310.....	183	1924	Jackson....	6	1	9.85	35.16	44.77	10.22	1.71	.....	11493
					2	.....	39.00	49.66	11.34	1.90	.....	12749
					3	.....	43.99	56.01	.....	2.14	.....	14380
					4	.....	.....	.....	.....	.....	.....	14594
14311.....	183	1924	Jackson....	6	1	9.52	35.99	44.82	9.67	2.05	.....	11623
					2	.....	39.78	49.53	10.69	2.27	.....	12846
					3	.....	44.54	55.46	.....	2.54	.....	14383
					4	.....	.....	.....	.....	.....	.....	14600
14312.....	183	1924	Jackson....	6	1	9.68	35.98	45.51	8.83	1.88	.....	11768
					2	.....	39.84	50.38	9.78	2.08	.....	13029
					3	.....	44.16	55.84	.....	2.31	.....	14441
					4	.....	.....	.....	.....	.....	.....	14638
14313.....	183	1924	Jackson....	6	1	10.34	34.22	45.75	9.69	1.03	.....	11604
					2	.....	38.16	51.03	10.81	1.15	.....	12942
					3	.....	42.78	57.21	.....	1.29	.....	14511
					4	.....	.....	.....	.....	.....	.....	14692
14314.....	183	1924	Jackson....	6	1	9.73	35.06	44.98	10.23	1.94	.....	11518
					2	.....	38.83	49.83	11.34	2.15	.....	12759
					3	.....	43.80	56.20	.....	2.42	.....	14391
					4	.....	.....	.....	.....	.....	.....	14600
14315.....	183	1924	Jackson....	6	1	9.38	35.41	46.75	8.46	1.66	.....	11788
					2	.....	39.06	51.60	9.34	1.83	.....	13009
					3	.....	43.08	56.91	.....	2.02	.....	14349
					4	.....	.....	.....	.....	.....	.....	14529

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
14316.....	183	1924	Jackson....	6	1	9.63	35.68	46.19	8.50	1.45	.....	11774
					2	.....	39.48	51.11	9.41	1.60	.....	13029
					3	.....	43.58	56.42	.....	1.77	.....	14382
					4	.....	.....	.....	.....	.....	.....	14556
14317.....	183	1924	Jackson....	6	1	9.69	35.74	45.43	9.14	2.06	.....	11750
					2	.....	39.57	50.31	10.12	2.28	.....	13011
					3	.....	44.03	55.97	.....	2.54	.....	14476
					4	.....	.....	.....	.....	.....	.....	14686
14318.....	183	1924	Jackson....	6	1	9.51	34.41	45.74	10.34	2.28	.....	11567
					2	.....	38.02	50.55	11.43	2.52	.....	12783
					3	.....	42.93	57.07	.....	2.85	.....	14433
					4	.....	.....	.....	.....	.....	.....	14671
14319.....	183	1924	Jackson....	6	1	9.63	35.40	46.64	8.33	1.43	.....	11885
					2	.....	39.17	51.61	9.22	1.58	.....	13151
					3	.....	43.15	56.85	.....	1.74	.....	14486
					4	.....	.....	.....	.....	.....	.....	14659
14320.....	183	1924	Jackson....	6	1	8.56	35.88	46.72	8.84	2.55	.....	11827
					2	.....	39.24	51.05	9.71	2.79	.....	12989
					3	.....	43.45	56.54	.....	3.09	.....	14386
					4	.....	.....	.....	.....	.....	.....	14605
14321.....	183	1924	Jackson....	6	1	9.75	35.06	45.79	9.40	1.63	.....	11587
					2	.....	38.85	50.70	10.45	1.81	.....	12879
					3	.....	43.38	56.62	.....	2.02	.....	14382
					4	.....	.....	.....	.....	.....	.....	14580
14322.....	183	1924	Jackson....	6	1	9.41	35.46	45.96	9.17	1.68	.....	11757
					2	.....	39.14	50.74	10.12	1.86	.....	12978
					3	.....	43.55	56.45	.....	2.07	.....	14439
					4	.....	.....	.....	.....	.....	.....	14634
14323.....	183	1924	Jackson....	6	1	9.28	34.81	47.30	8.61	1.64	.....	11859
					2	.....	38.37	52.14	9.49	1.81	.....	13072
					3	.....	42.39	57.61	.....	2.00	.....	14442
					4	.....	.....	.....	.....	.....	.....	14626

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
14324.....	183	1924	Jackson....	6	1	9.97	34.41	44.32	11.30	2.02	.....	11319
					2	.....	38.22	49.23	12.55	2.25	.....	12573
					3	.....	43.70	56.30	.....	2.57	.....	14377
					4	.....	.....	.....	.....	.....	.....	14624
14325.....	183	1924	Jackson....	6	1	10.52	34.76	45.02	9.70	1.99	.....	11576
					2	.....	38.85	50.31	10.84	2.23	.....	12938
					3	.....	43.57	56.43	.....	2.50	.....	14511
					4	.....	.....	.....	.....	.....	.....	14732
14326.....	183	1924	Jackson....	6	1	9.61	33.70	48.01	8.68	1.57	.....	11708
					2	.....	37.29	53.12	9.59	1.74	.....	12953
					3	.....	41.25	58.75	.....	1.92	.....	14327
					4	.....	.....	.....	.....	.....	.....	14507
14338.....	183	1924	Jackson....	6	1	10.77	35.34	46.15	7.74	1.28	.....	11816
					2	.....	39.60	51.72	8.68	1.44	.....	13242
					3	.....	43.36	56.64	.....	1.58	.....	14501
					4	.....	.....	.....	.....	.....	.....	14660
14339.....	183	1924	Jackson....	6	1	10.54	35.52	44.89	9.05	1.79	.....	11662
					2	.....	39.70	50.18	10.12	2.00	.....	13036
					3	.....	44.17	55.83	.....	2.22	.....	14504
					4	.....	.....	.....	.....	.....	.....	14700
14340.....	183	1924	Jackson....	6	1	10.99	34.09	43.74	11.18	1.61	.....	11214
					2	.....	38.30	49.14	12.56	1.81	.....	12599
					3	.....	43.80	56.20	.....	2.07	.....	14409
					4	.....	.....	.....	.....	.....	.....	14640
14341.....	183	1924	Jackson....	6	1	9.94	34.72	47.08	8.26	1.43	.....	11757
					2	.....	38.55	52.28	9.17	1.59	.....	13055
					3	.....	42.44	57.56	.....	1.75	.....	14373
					4	.....	.....	.....	.....	.....	.....	14543
14342.....	183	1924	Jackson....	6	1	10.26	34.45	46.67	8.62	1.53	.....	11622
					2	.....	38.38	52.01	9.61	1.71	.....	12951
					3	.....	42.46	57.54	.....	1.89	.....	14328
					4	.....	.....	.....	.....	.....	.....	14508

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
14343.....	183	1924	Jackson....	6	1	11.58	33.19	45.39	9.84	1.14	.....	11330
					2	.....	37.54	51.33	11.13	1.29	.....	12814
					3	.....	42.24	57.76	.....	1.45	.....	14419
					4	.....	.....	.....	.....	.....	.....	14609
14344.....	183	1924	Jackson....	6	1	10.59	33.74	45.91	9.76	1.12	.....	11469
					2	.....	37.74	51.34	10.92	1.25	.....	12827
					3	.....	42.37	57.63	.....	1.40	.....	14399
					4	.....	.....	.....	.....	.....	.....	14585
A90723.....	419	1933	Jackson....	6	1	10.8	32.8	46.1	10.3	2.2	.35	11370
					2	.....	36.7	51.8	11.5	2.5	.40	12750
					3	.....	41.5	58.5	.....	.....	.....	14410
					4	.....	.....	.....	.....	.....	.....	14645
A90724.....	419	1933	Jackson....	6	1	7.8	36.1	46.3	9.8	2.7	.54	11950
					2	.....	39.2	50.2	10.6	2.9	.58	12960
					3	.....	43.8	56.2	.....	3.2	.....	14490
					4	.....	.....	.....	.....	.....	.....	14737
BMA17498...	[i]BM 63	1925	Jefferson...	6	1	8.6	35.1	47.7	8.6	1.3	.....	12030
					2	.....	38.4	52.2	9.4	1.5	.....	13160
					3	.....	42.4	57.6	.....	1.6	.....	14520
					4	.....	.....	.....	.....	.....	.....	14698
BMA17499...	[i]BM 63	1925	Jefferson...	6	1	9.0	33.1	49.0	8.9	1.3	.....	11890
					2	.....	36.4	53.9	9.7	1.4	.....	13060
					3	.....	40.3	59.7	.....	1.6	.....	14470
					4	.....	.....	.....	.....	.....	.....	14636
5086.....	66	1912	Macoupin..	6	1	14.29	39.09	37.21	9.41	4.13	.32	10635
					2	.....	45.60	43.42	10.98	4.82	.37	12408
					3	.....	51.22	48.78	.....	5.41	.42	13938
					4	.....	.....	.....	.....	.....	.....	14232
5087.....	66	1912	Macoupin..	6	1	13.77	38.69	36.74	10.80	4.37	.62	10493
					2	.....	44.86	42.62	12.52	5.07	.71	12169
					3	.....	51.28	48.72	.....	5.80	.81	13911
					4	.....	.....	.....	.....	.....	.....	14236

[i] U. S. Bureau of Mines, Unpublished analyses.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5088.....	66	1912	Macoupin..	6	1	14.73	38.33	37.24	9.70	4.50	.30	10522
					2	.....	44.95	43.69	11.36	5.28	.35	12339
					3	.....	50.71	49.29	.....	5.96	.39	13920
					4	.....	.....	.....	.....	.....	.....	14235
5100.....	*67	1912	Macoupin..	6	1	15.12	38.28	36.55	10.05	3.85	.31	10610
					2	.....	45.09	43.06	11.85	4.54	.37	12501
					3	.....	51.15	48.85	.....	5.15	.42	14181
					4	.....	.....	.....	.....	.....	.....	14490
5101.....	*67	1912	Macoupin..	6	1	14.90	37.75	38.43	8.92	3.67	.45	10735
					2	.....	44.35	45.16	10.49	4.31	.53	12614
					3	.....	49.55	50.45	.....	4.82	.59	14092
					4	.....	.....	.....	.....	.....	.....	14367
5102.....	*67	1912	Macoupin..	6	1	14.67	35.49	38.83	11.01	4.15	.22	10433
					2	.....	41.59	45.50	12.91	4.86	.26	12227
					3	.....	47.76	52.24	.....	5.58	.30	14039
					4	.....	.....	.....	.....	.....	.....	14372
5112.....	68	1912	Macoupin..	6	1	12.11	40.32	39.14	8.43	4.39	.38	11170
					2	.....	45.88	44.52	9.60	5.00	.43	12705
					3	.....	50.75	49.25	.....	5.53	.48	14054
					4	.....	.....	.....	.....	.....	.....	14335
5113.....	68	1912	Macoupin..	6	1	13.27	38.58	38.15	10.00	4.89	.27	10790
					2	.....	44.48	43.99	11.53	5.64	.31	12442
					3	.....	50.28	49.72	.....	6.37	.35	14064
					4	.....	.....	.....	.....	.....	.....	14398
5114.....	68	1912	Macoupin..	6	1	13.23	38.85	38.91	9.01	4.39	.28	10935
					2	.....	44.77	44.84	10.39	5.06	.32	12601
					3	.....	49.96	50.04	.....	5.65	.36	14062
					4	.....	.....	.....	.....	.....	.....	14359
5097.....	*69	1912	Macoupin..	6	1	14.73	36.26	36.11	12.90	4.62	.28	10099
					2	.....	42.53	42.34	15.13	5.42	.33	11843
					3	.....	50.11	49.89	.....	6.39	.39	13954
					4	.....	.....	.....	.....	.....	.....	14342

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5098.....	*69	1912	Macoupin..	6	1	13.68	38.02	37.72	10.58	4.43	.21	10618
					2	.....	44.05	43.70	12.25	5.12	.25	12300
					3	.....	50.20	49.80	.....	5.83	.28	14017
					4	.....	.....	.....	.....	.....	.....	14346
5099.....	*69	1912	Macoupin..	6	1	14.19	37.92	37.03	10.86	4.21	.39	10599
					2	.....	44.19	43.15	12.66	4.91	.45	12351
					3	.....	50.60	49.40	.....	5.62	.52	14141
					4	.....	.....	.....	.....	.....	.....	14476
BM81323....	*185	1921	Macoupin..	6	1	13.32	37.97	39.84	8.87	3.40	.31	10893
					2	.....	43.80	45.97	10.23	3.92	.36	12567
					3	.....	46.79	51.21	.....	4.37	.....	13999
					4	.....	.....	.....	.....	.....	.....	14253
BM81324....	*185	1921	Macoupin..	6	1	12.41	37.96	39.98	9.65	3.57	.29	10889
					2	.....	43.34	45.64	11.02	4.08	.33	12432
					3	.....	48.71	51.29	.....	4.59	.....	13972
					4	.....	.....	.....	.....	.....	.....	14243
BM81325....	*185	1921	Macoupin..	6	1	9.84	42.13	39.51	8.52	3.51	.24	11426
					2	.....	46.73	43.82	9.45	3.89	.27	12675
					3	.....	51.61	48.39	.....	4.30	.....	13996
					4	.....	.....	.....	.....	.....	.....	14238
BM81327....	186	1921	Macoupin..	6	1	11.18	37.54	40.19	11.09	3.65	1.00	10841
					2	.....	42.27	45.24	12.49	4.11	1.13	12206
					3	.....	48.30	51.70	.....	4.70	.....	13948
					4	.....	.....	.....	.....	.....	.....	14244
BM81328....	186	1921	Macoupin..	6	1	9.01	39.20	41.42	10.37	4.32	.58	11193
					2	.....	43.08	45.52	11.40	4.75	.64	12301
					3	.....	48.62	51.38	.....	5.36	.....	13884
					4	.....	.....	.....	.....	.....	.....	14180
BM81329....	186	1921	Macoupin..	6	1	13.17	36.72	40.09	10.02	4.04	.40	10685
					2	.....	42.29	46.17	11.54	4.65	.46	12306
					3	.....	47.81	52.19	.....	5.26	.....	13911
					4	.....	.....	.....	.....	.....	.....	14207

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81332....	*187	1921	Macoupin..	6	1	13.30	37.46	38.68	10.56	4.23	.36	10621
					2	.....	43.21	44.61	12.18	4.88	.42	12250
					3	.....	49.20	50.80	.....	5.56	.....	13949
					4	.....	.....	.....	.....	.....	.....	14265
BM81333....	*187	1921	Macoupin..	6	1	13.52	36.25	38.70	11.53	4.38	.63	10471
					2	.....	41.92	44.75	13.33	5.06	.73	12108
					3	.....	48.37	51.63	.....	5.84	.....	13970
					4	.....	.....	.....	.....	.....	.....	14314
BM81334....	*187	1921	Macoupin..	6	1	13.86	36.52	39.11	10.51	3.97	.22	10554
					2	.....	42.40	45.40	12.20	4.61	.26	12252
					3	.....	48.29	51.71	.....	5.25	.....	13954
					4	.....	.....	.....	.....	.....	.....	14262
BM81085....	188	1921	Macoupin..	6	1	12.30	38.69	41.07	7.94	3.62	.15	11080
					2	.....	44.12	46.83	9.05	4.13	.17	12634
					3	.....	48.51	51.49	.....	4.54	.....	13891
					4	.....	.....	.....	.....	.....	.....	14129
BM81086....	188	1921	Macoupin..	6	1	11.39	39.03	40.49	9.09	4.57	.17	11037
					2	.....	44.05	45.69	10.26	5.16	.19	12456
					3	.....	49.09	50.91	.....	5.75	.....	13880
					4	.....	.....	.....	.....	.....	.....	14170
BM81087....	188	1921	Macoupin..	6	1	12.24	38.25	41.24	8.27	3.61	.11	11066
					2	.....	43.58	47.00	9.42	4.11	.13	12609
					3	.....	48.11	51.89	.....	4.54	.....	13920
					4	.....	.....	.....	.....	.....	.....	14165
BM81016....	189	1921	Macoupin..	6	1	12.74	36.09	42.77	8.40	3.73	.15	10948
					2	.....	41.36	49.01	9.63	4.27	.17	12546
					3	.....	45.77	54.23	.....	4.73	.....	13883
					4	.....	.....	.....	.....	.....	.....	14134
BM81017....	189	1921	Macoupin..	6	1	15.67	33.57	41.53	9.23	3.56	.10	10379
					2	.....	39.81	49.24	10.95	4.22	.12	12308
					3	.....	44.71	55.29	.....	4.74	.....	13822
					4	.....	.....	.....	.....	.....	.....	14090

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81018....	189	1921	Macoupin..	6	1	13.40	35.71	41.83	9.06	4.06	.10	10711
					2	.....	41.24	48.30	10.46	4.69	.12	12368
					3	.....	46.06	53.94	.....	5.24	.....	13813
					4	.....	.....	.....	.....	.....	.....	14088
BM81020....	*190	1921	Macoupin..	6	1	13.92	34.44	43.00	8.64	3.79	.17	10814
					2	.....	40.01	49.95	10.04	4.40	.20	12563
					3	.....	44.48	55.52	.....	4.89	.....	13965
					4	.....	.....	.....	.....	.....	.....	14230
BM81021....	*190	1921	Macoupin..	6	1	13.26	34.81	42.29	9.64	3.90	.07	10773
					2	.....	40.13	48.76	11.11	4.50	.08	12420
					3	.....	45.15	54.85	.....	5.06	.....	13972
					4	.....	.....	.....	.....	.....	.....	14259
BM81022....	*190	1921	Macoupin..	6	1	15.16	33.46	41.97	9.41	3.21	.22	10540
					2	.....	39.44	49.47	11.09	3.78	.26	12423
					3	.....	44.36	55.64	.....	4.25	.....	13973
					4	.....	.....	.....	.....	.....	.....	14235
A87363.....	534	1933	Macoupin..	6	1	13.0	35.4	39.9	11.7	4.1	.....	10600
					2	.....	40.7	45.8	13.5	4.7	.....	12180
					3	.....	47.1	52.9	.....	5.4	.....	14080
					4	.....	.....	.....	.....	.....	.....	14420
A87364.....	534	1933	Macoupin..	6	1	14.9	34.2	42.0	8.9	4.2	.....	10690
					2	.....	40.2	49.4	10.4	5.0	.....	12550
					3	.....	44.8	55.2	.....	5.5	.....	14010
					4	.....	.....	.....	.....	.....	.....	14300
A87365.....	534	1933	Macoupin..	6	1	14.2	35.5	40.2	10.1	4.6	.....	10630
					2	.....	41.4	46.8	11.8	5.4	.....	12390
					3	.....	46.9	53.1	.....	6.1	.....	14050
					4	.....	.....	.....	.....	.....	.....	14380
BM18545....	[j]BM 31	1914	Macoupin..	6	1	12.90	37.80	39.77	9.53	4.23	.....	10852
					2	.....	43.40	45.66	10.94	4.86	.....	12459
					3	.....	48.73	51.27	.....	5.46	.....	13989
					4	.....	.....	.....	.....	.....	.....	14286

j Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 34, 1918.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM18546....	[j]BM 31	1914	Macoupin..	6	1	14.16	35.53	40.21	10.10	3.70	.....	10615
					2	.....	41.39	46.84	11.77	4.31	.....	12366
					3	.....	46.91	53.09	.....	4.88	.....	14016
					4	.....	.....	.....	.....	.....	.....	14309
5515.....	*70	1912	Madison....	6	1	13.88	37.60	37.74	10.78	4.21	.53	10551
					2	.....	43.65	43.82	12.53	4.89	.61	12250
					3	.....	49.90	50.10	.....	5.59	.70	14005
					4	.....	.....	.....	.....	.....	.....	14330
5517.....	*70	1912	Madison....	6	1	12.44	39.10	38.20	10.26	5.23	.64	10818
					2	.....	44.65	43.64	11.71	6.03	.73	12354
					3	.....	50.57	49.43	.....	6.83	.83	13993
					4	.....	.....	.....	.....	.....	.....	14343
5518.....	*70	1912	Madison....	6	1	12.11	39.32	36.27	12.30	4.92	.47	10615
					2	.....	44.74	41.26	14.00	5.60	.53	12076
					3	.....	52.02	47.98	.....	6.51	.62	14042
					4	.....	.....	.....	.....	.....	.....	14421
5070.....	71	1912	Madison....	6	1	12.99	37.73	36.89	12.39	4.43	.72	10499
					2	.....	43.36	42.40	14.24	5.09	.82	12067
					3	.....	50.56	49.44	.....	5.93	.96	14069
					4	.....	.....	.....	.....	.....	.....	14437
5071.....	71	1912	Madison....	6	1	12.14	41.13	38.00	8.73	3.52	.41	11206
					2	.....	46.82	43.24	9.94	4.00	.47	12759
					3	.....	51.99	48.01	.....	4.44	.53	14167
					4	.....	.....	.....	.....	.....	.....	14426
5072.....	71	1912	Madison....	6	1	12.42	39.82	37.65	10.11	4.35	.72	10909
					2	.....	45.46	43.00	11.54	4.96	.80	12457
					3	.....	51.39	48.61	.....	5.61	.90	14082
					4	.....	.....	.....	.....	.....	.....	14396
5067.....	72	1912	Madison....	6	1	13.08	38.03	37.07	11.82	5.22	.25	10543
					2	.....	43.75	42.65	13.60	6.01	.28	12129
					3	.....	50.64	49.36	.....	6.96	.32	14038
					4	.....	.....	.....	.....	.....	.....	14423

j **Fieldner,** A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull 123, p. 34, **1918.**

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5068.....	72	1912	Madison....	6	1	13.53	37.26	40.98	8.23	3.81	.30	10903
					2	.....	43.09	47.39	9.52	4.40	.35	12608
					3	.....	47.62	52.38	.....	4.86	.39	13935
					4	.....	.....	.....	.....	.....	.....	14190
5069.....	72	1912	Madison....	6	1	14.86	37.32	38.76	9.06	3.73	.20	10717
					2	.....	43.84	45.53	10.63	4.37	.23	12587
					3	.....	49.05	50.95	.....	4.89	.26	14084
					4	.....	.....	.....	.....	.....	.....	14363
5075.....	73	1912	Madison....	6	1	14.65	39.08	38.03	8.24	3.59	.29	10865
					2	.....	45.80	44.55	9.65	4.20	.34	12730
					3	.....	50.69	49.31	.....	4.65	.38	14090
					4	.....	.....	.....	.....	.....	.....	14347
5076.....	73	1912	Madison....	6	1	14.31	38.35	38.32	9.02	3.77	.31	10739
					2	.....	44.75	44.72	10.53	4.40	.37	12532
					3	.....	50.02	49.98	.....	4.92	.41	14007
					4	.....	.....	.....	.....	.....	.....	14283
5078.....	73	1912	Madison....	6	1	15.18	38.40	38.30	8.12	3.94	.23	10751
					2	.....	45.27	45.16	9.57	4.64	.27	12675
					3	.....	50.06	49.94	.....	5.13	.30	14014
					4	.....	.....	.....	.....	.....	.....	14284
BM80942....	*191	1921	Madison....	6	1	13.16	37.50	37.63	11.71	4.52	.45	10556
					2	.....	43.18	43.34	13.48	5.20	.52	12156
					3	.....	49.91	50.09	.....	6.01	.....	14050
					4	.....	.....	.....	.....	.....	.....	14405
BM80943....	*191	1921	Madison....	6	1	13.76	39.10	37.39	9.75	2.89	.75	10805
					2	.....	45.34	43.35	11.31	3.35	.87	12529
					3	.....	51.12	48.88	.....	3.78	.....	14127
					4	.....	.....	.....	.....	.....	.....	14383
BM80944....	*191	1921	Madison....	6	1	12.01	38.41	38.46	11.12	3.68	.33	10763
					2	.....	43.65	43.71	12.64	4.18	.38	12232
					3	.....	49.97	50.03	.....	4.78	.....	14002
					4	.....	.....	.....	.....	.....	.....	14305

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM80862....	192	1921	Madison....	6	1	11.71	37.44	40.57	10.28	4.32	.38	10936
					2	.....	42.41	45.95	11.64	4.89	.43	12386
					3	.....	48.00	52.00	.....	5.53	.....	14018
					4	.....	.....	.....	.....	.....	.....	14328
BM80863....	192	1921	Madison....	6	1	11.19	38.00	40.84	9.97	4.12	.47	11066
					2	.....	42.79	45.98	11.23	4.64	.53	12460
					3	.....	48.20	51.80	.....	5.23	.....	14036
					4	.....	.....	.....	.....	.....	.....	14332
BM80864....	192	1921	Madison....	6	1	12.02	35.62	41.79	10.57	3.69	.48	10888
					2	.....	40.49	47.50	12.01	4.19	.55	12376
					3	.....	46.02	53.98	.....	4.76	.....	14065
					4	.....	.....	.....	.....	.....	.....	14360
BM10956....	[k]BM 40	1910	Madison....	6	1	12.94	35.76	41.92	9.38	3.65	.....	10973
					2	.....	41.07	48.16	10.77	4.19	.....	12604
					3	.....	46.02	53.98	.....	4.70	.....	14123
					4	.....	.....	.....	.....	.....	.....	14402
BM10957....	[k]BM 40	1910	Madison....	6	1	12.31	37.57	41.09	9.03	3.58	.....	11115
					2	.....	42.84	46.86	10.30	4.08	.....	12676
					3	.....	47.76	52.24	.....	4.55	.....	14130
					4	.....	.....	.....	.....	.....	.....	14397
BM10958....	[k]BM 40	1910	Madison....	6	1	12.81	36.31	41.35	9.53	3.28	.....	11023
					2	.....	41.64	47.43	10.93	3.76	.....	12641
					3	.....	46.75	53.25	.....	4.22	.....	14193
					4	.....	.....	.....	.....	.....	.....	14459
5039.....	87	1912	Marion.....	6	1	10.06	37.96	41.09	10.89	3.92	.59	11289
					2	.....	42.21	45.69	12.10	4.35	.66	12552
					3	.....	48.02	51.98	.....	4.94	.75	14280
					4	.....	.....	.....	.....	.....	.....	14589
5041.....	87	1912	Marion.....	6	1	10.35	36.04	42.81	10.80	4.10	.25	11227
					2	.....	40.20	47.75	12.05	4.57	.28	12522
					3	.....	45.71	54.29	.....	5.20	.32	14238
					4	.....	.....	.....	.....	.....	.....	14553

[k] Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 85, p. 36, 1914.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5044.....	87	1912	Marion.....	6	1	10.96	36.54	40.68	11.82	4.00	.43	11002
					2	.....	41.04	45.69	13.27	4.52	.48	12356
					3	.....	47.32	52.68	.....	5.21	.55	14246
					4	.....	.....	.....	.....	.....	.....	14583
BM80737....	206	1921	Marion.....	6	1	9.11	36.82	41.83	12.24	4.53	.32	11119
					2	.....	40.51	46.02	13.47	4.98	.35	12233
					3	.....	46.82	53.18	.....	5.76	.....	14137
					4	.....	.....	.....	.....	.....	.....	14489
BM80738....	206	1921	Marion.....	6	1	9.05	37.00	41.78	12.17	4.93	.15	11143
					2	.....	40.68	45.94	13.38	5.42	.16	12252
					3	.....	46.96	53.04	.....	6.26	.....	14145
					4	.....	.....	.....	.....	.....	.....	14510
BM80739....	206	1921	Marion.....	6	1	9.19	36.99	41.94	11.88	3.39	.74	11243
					2	.....	40.73	46.19	13.08	3.73	.81	12381
					3	.....	46.86	53.14	.....	4.29	.....	14244
					4	.....	.....	.....	.....	.....	.....	14548
BM80740....	206	1921	Marion.....	6	1	11.32	35.62	42.16	10.90	3.98	.10	11056
					2	.....	40.17	47.54	12.29	4.49	.11	12467
					3	.....	45.80	54.20	.....	5.12	.....	14214
					4	.....	.....	.....	.....	.....	.....	14530
BM80741....	206	1921	Marion.....	6	1	11.36	35.35	42.99	10.30	4.03	.15	11137
					2	.....	39.88	48.50	11.62	4.55	.17	12564
					3	.....	45.12	54.88	.....	5.15	.....	14216
					4	.....	.....	.....	.....	.....	.....	14522
BM80742....	206	1921	Marion.....	6	1	9.59	36.93	42.67	10.81	3.51	.44	11311
					2	.....	40.85	47.19	11.96	3.88	.49	12511
					3	.....	46.40	53.60	.....	4.41	.....	14211
					4	.....	.....	.....	.....	.....	.....	14499
BM80695....	207	1921	Marion.....	6	1	9.87	35.92	44.41	9.80	3.65	.16	11494
					2	.....	39.85	49.28	10.87	4.05	.18	12753
					3	.....	44.71	55.29	.....	4.54	.....	14308
					4	.....	.....	.....	.....	.....	.....	14588

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM80696....	207	1921	Marion.....	6	1	10.63	37.26	42.04	10.07	2.87	.39	11259
					2	.....	41.69	47.04	11.27	3.21	.44	12598
					3	.....	46.99	53.01	.....	3.62	.....	14198
					4	.....	.....	.....	.....	.....	.....	14452
BM80697....	207	1921	Marion.....	6	1	10.74	36.97	40.48	11.81	3.31	.76	11048
					2	.....	41.42	45.35	13.23	3.71	.85	12377
					3	.....	47.74	52.26	.....	4.28	.....	14264
					4	.....	.....	.....	.....	.....	.....	14571
5105.....	76	1912	Montgomery	6	1	14.15	36.96	38.19	10.70	3.43	.91	10547
					2	.....	43.05	44.48	12.47	4.00	1.06	12285
					3	.....	49.18	50.82	.....	4.57	1.21	14035
					4	.....	.....	.....	.....	.....	.....	14329
5106.....	76	1912	Montgomery	6	1	13.83	36.95	39.22	10.00	3.72	.91	10728
					2	.....	42.88	45.51	11.61	4.32	1.05	12453
					3	.....	48.51	51.49	.....	4.89	1.19	14089
					4	.....	.....	.....	.....	.....	.....	14382
5107.....	76	1912	Montgomery	6	1	13.70	37.25	37.93	11.12	4.39	1.04	10444
					2	.....	43.17	43.94	12.89	5.08	1.20	12102
					3	.....	49.56	50.44	.....	5.83	1.38	13893
					4	.....	.....	.....	.....	.....	.....	14225
BM81101....	194	1921	Montgomery	6	1	12.84	37.08	40.56	9.52	3.58	.71	10894
					2	.....	42.54	46.54	10.92	4.11	.81	12499
					3	.....	47.75	52.25	.....	4.61	.....	14031
					4	.....	.....	.....	.....	.....	.....	14304
BM81102....	194	1921	Montgomery	6	1	13.28	36.02	40.55	10.15	4.15	.64	10671
					2	.....	41.54	46.76	11.70	4.79	.74	12305
					3	.....	47.04	52.96	.....	5.42	.....	13935
					4	.....	.....	.....	.....	.....	.....	14240
BM81103....	194	1921	Montgomery	6	1	13.46	35.80	41.36	9.38	4.48	.13	10774
					2	.....	41.37	47.79	10.84	5.18	.16	12450
					3	.....	46.40	53.60	.....	5.81	.....	13964
					4	.....	.....	.....	.....	.....	.....	14268

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BMA87367...	194	1933	Montgomery	6	1	11.4	38.5	40.0	10.1	4.0	.....	11180
					2	.....	43.4	45.3	11.3	4.5	.....	12611
					3	.....	48.9	51.1	.....	5.1	.....	14231
					4	.....	.....	.....	.....	.....	.....	14517
BMA87368...	194	1933	Montgomery	6	1	12.8	35.6	40.7	10.9	4.0	.....	10810
					2	.....	40.9	46.6	12.5	4.6	.....	12390
					3	.....	46.7	53.3	.....	5.3	.....	14160
					4	.....	.....	.....	.....	.....	.....	14481
BMA87369...	194	1933	Montgomery	6	1	13.5	33.9	40.2	12.4	4.0	.....	10490
					2	.....	39.2	46.4	14.4	4.6	.....	12130
					3	.....	45.9	54.1	.....	5.4	.....	14170
					4	.....	.....	.....	.....	.....	.....	14527
BM81093....	*195	1921	Montgomery	6	1	12.65	36.14	41.55	9.66	3.87	.50	10793
					2	.....	41.37	47.57	11.06	4.43	.57	12356
					3	.....	46.51	53.49	.....	4.98	.....	13892
					4	.....	.....	.....	.....	.....	.....	14173
BM81094....	*195	1921	Montgomery	6	1	11.66	37.25	41.31	9.78	3.69	.69	11053
					2	.....	42.17	46.76	11.07	4.18	.78	12512
					3	.....	47.42	52.58	.....	4.70	.....	14069
					4	.....	.....	.....	.....	.....	.....	14348
BM81095....	*195	1921	Montgomery	6	1	14.32	34.82	41.97	8.89	3.94	.16	10687
					2	.....	40.64	48.98	10.38	4.60	.19	12473
					3	.....	45.35	54.65	.....	5.13	.....	13918
					4	.....	.....	.....	.....	.....	.....	14193
BM81089....	*196	1921	Montgomery	6	1	11.38	37.05	40.98	10.59	4.26	.96	10832
					2	.....	41.81	46.24	11.95	4.81	1.08	12223
					3	.....	47.48	52.52	.....	5.46	.....	13882
					4	.....	.....	.....	.....	.....	.....	14189
BM81090....	*196	1921	Montgomery	6	1	12.53	36.21	40.35	10.91	4.61	.85	10705
					2	.....	41.40	46.13	12.47	5.27	.97	12258
					3	.....	47.30	52.70	.....	6.02	.....	13982
					4	.....	.....	.....	.....	.....	.....	14342

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM81091....	*196	1921	Montgomery	6	1	12.47	37.13	40.54	9.86	4.41	.40	10861
					2	.....	42.42	46.32	11.26	5.04	.46	12408
					3	.....	47.80	52.20	.....	5.68	.....	13982
					4	.....	.....	.....	.....	.....	.....	14290
BM81097....	*197	1921	Montgomery	6	1	14.97	34.87	41.80	8.36	3.41	.44	10697
					2	.....	41.01	49.16	9.83	4.01	.52	12580
					3	.....	45.48	54.52	.....	4.45	.....	13951
					4	.....	.....	.....	.....	.....	.....	14200
BM81098....	*197	1921	Montgomery	6	1	14.49	34.60	42.45	8.46	3.83	.36	10643
					2	.....	40.46	49.65	9.89	4.48	.42	12446
					3	.....	44.90	55.10	.....	4.97	.....	13812
					4	.....	.....	.....	.....	.....	.....	14072
BM81099....	*197	1921	Montgomery	6	1	14.69	34.56	41.14	9.61	4.32	.47	10425
					2	.....	40.51	48.23	11.26	5.06	.55	12220
					3	.....	45.65	54.35	.....	5.70	.....	13771
					4	.....	.....	.....	.....	.....	.....	14069
BM21901....	[l] BM *45	1915	Montgomery	6	1	14.87	33.42	40.70	11.01	3.26	.....	10478
					2	.....	39.26	47.81	12.93	3.83	.....	12308
					3	.....	45.09	54.91	.....	4.40	.....	14136
					4	.....	.....	.....	.....	.....	.....	14436
BM21902....	[l] BM *45	1915	Montgomery	6	1	12.70	35.52	40.16	11.62	4.15	.....	10669
					2	.....	40.69	46.00	13.31	4.75	.....	12221
					3	.....	46.93	53.07	.....	5.48	.....	14097
					4	.....	.....	.....	.....	.....	.....	14436
BM21903....	[l] BM *45	1915	Montgomery	6	1	13.04	34.06	39.58	13.32	4.84	.....	10301
					2	.....	39.17	45.51	15.32	5.57	.....	11846
					3	.....	46.25	53.75	.....	6.57	.....	13989
					4	.....	.....	.....	.....	.....	.....	14389
BM21904....	[l] BM *45	1915	Montgomery	6	1	13.43	35.06	40.96	10.55	3.82	.....	10732
					2	.....	40.50	47.31	12.19	4.41	.....	12397
					3	.....	46.12	53.88	.....	5.02	.....	14118
					4	.....	.....	.....	.....	.....	.....	14426

l Fieldner, A. C., and others, U. S. Bureau of Mines, Bull. 123, p. 35, 1918.

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM21905....	[l]BM *45	1915	Montgomery	6	1	13.31	34.86	40.42	11.41	4.02	.....	10620
					2	.....	40.21	46.63	13.16	4.64	.....	12251
					3	.....	46.31	53.69	.. ...	5.34	.....	14107
					4	.....	.....	.....	.....	.....	.....	14440
5254.....	*336	1912	Moultrie...	6	1	7.07	39.02	43.01	10.90	3.69	.36	11912
					2	.....	41.99	46.28	11.73	3.97	.39	12819
					3	.....	47.57	52.43	.....	4.50	.45	14522
					4	.....	.....	.....	.....	.....	.....	14822
5255.....	*336	1912	Moultrie...	6	1	7.18	38.09	41.38	13.35	5.18	.46	11573
					2	.....	41.03	44.59	14.38	5.58	.49	12468
					3	.....	47.92	52.08	.....	6.52	.57	14562
					4	.....	.....	.....	.....	.....	.....	14973
5256.....	*336	1912	Moultrie...	6	1	6.24	40.34	42.55	10.87	3.18	.89	12149
					2	.....	43.03	45.38	11.59	3.39	.95	12957
					3	.....	48.67	51.33	.....	3.83	1.07	14656
					4	.....	.....	.....	.....	.....	.....	14935
5048.....	*88	1912	Perry[m](W).	6	1	9.37	36.87	41.05	12.71	4.62	.43	10936
					2	.....	40.68	45.30	14.02	4.83	.47	12067
					3	.....	47.31	52.69	.....	5.62	.55	14035
					4	.....	.....	.....	.....	.....	.....	14386
5049.....	*88	1912	Perry (W)..	6	1	9.34	37.97	41.32	11.37	3.16	1.42	11099
					2	.....	41.88	45.58	12.54	3.48	1.56	12243
					3	.....	47.88	52.12	.....	3.98	1.78	13998
					4	.....	.....	.....	.....	.....	.....	14276
5050.....	*88	1912	Perry (W)..	6	1	10.11	36.44	41.45	12.00	3.59	.75	10915
					2	.....	40.54	46.12	13.34	3.99	.81	12141
					3	.....	46.78	53.22	.....	4.60	.93	14010
					4	.....	.....	.....	.....	.....	.....	14319
5514.....	*89	1912	Perry (W)..	6	1	12.43	35.55	42.86	9.16	4.80	.21	11063
					2	.....	40.59	48.94	10.47	5.48	.25	12632
					3	.....	45.34	54.66	.....	6.12	.28	14109
					4	.....	.....	.....	.....	.....	.....	14422

l Fieldner, A. C., and others, U. S. Bureau of Mines, Bull. 123, p. 35, 1918.
m Perry County, west of Duquoin anticline.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Co_2	B.t.u.
5519	*89	1912	Perry (W)	6	1	12.76	36.46	43.04	7.74	1.66	.15	11357
					2	.....	41.79	49.34	8.87	1.90	.17	13018
					3	.....	45.86	54.14	.....	2.08	.19	14285
					4	.....	.....	.....	.....	.....	.....	14458
5520	*89	1912	Perry (W)	6	1	12.17	36.42	42.41	9.00	1.96	.46	11200
					2	.....	41.46	48.28	10.26	2.23	.52	12753
					3	.....	46.20	53.80	.....	2.48	.58	14211
					4	.....	.....	.....	.....	.....	.....	14414
5034	90	1912	Perry (W)	6	1	10.60	37.03	42.32	10.05	3.73	.62	11175
					2	.....	41.42	47.35	11.23	4.17	.70	12500
					3	.....	46.66	53.34	.....	4.70	.79	14081
					4	.....	.....	.....	.....	.....	.....	14363
5037	90	1912	Perry (W)	6	1	11.20	37.29	40.57	10.94	3.20	.34	10911
					2	.....	42.00	45.69	12.31	3.60	.39	12287
					3	.....	47.90	52.10	.....	4.11	.44	14012
					4	.....	.....	.....	.....	.....	.....	14288
5038	90	1912	Perry (W)	6	1	10.60	35.99	43.05	10.36	4.18	.47	11012
					2	.....	40.25	48.16	11.59	4.67	.53	12317
					3	.....	45.53	54.47	.....	5.28	.60	13932
					4	.....	.....	.....	.....	.....	.....	14230
5040	90	1912	Perry (W)	6	1	11.60	37.03	42.17	9.20	3.84	.38	11107
					2	.....	41.89	47.71	10.40	4.34	.43	12570
					3	.....	46.75	53.25	.....	4.84	.48	14029
					4	.....	.....	.....	.....	.....	.....	14301
5042	90	1912	Perry (W)	6	1	10.82	37.83	41.52	9.83	2.98	.76	11210
					2	.....	42.42	46.56	11.02	3.34	.85	12570
					3	.....	47.67	52.33	.....	3.75	.96	14127
					4	.....	.....	.....	.....	.....	.....	14378
5043	90	1912	Perry (W)	6	1	10.89	36.81	41.23	11.07	3.71	.55	10826
					2	.....	41.29	46.27	12.44	4.16	.62	12277
					3	.....	47.16	52.84	.....	4.75	.71	14021
					4	.....	.....	.....	.....	.....	.....	14319

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°BM14175. .	90	1912	Perry (W). .	6	1	10.31	36.51	43.12	10.06	3.38	.....	.....
					2	.....	40.71	48.07	11.22	3.77	.....	.....
					3	.....	45.86	54.14	.....	4.25	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14176...	90	1912	Perry (W). .	6	1	10.47	35.74	42.84	10.95	4.04	.....	.....
					2	.....	39.92	47.85	12.23	4.51	.....	.....
					3	.....	45.48	54.52	.....	5.14	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14177...	90	1912	Perry (W). .	6	1	10.87	36.19	41.89	11.05	3.01	.....	.....
					2	.....	40.61	46.99	12.40	3.38	.....	.....
					3	.....	46.36	53.64	.....	3.86	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14179...	90	1912	Perry (W). .	6	1	11.04	36.48	42.91	9.57	3.74	.....	.....
					2	.....	41.01	48.23	10.76	4.20	.....	.....
					3	.....	45.96	54.04	.....	4.71	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14180...	90	1912	Perry (W). .	6	1	10.56	36.15	42.52	10.77	3.34	.....	.....
					2	.....	40.42	47.54	12.04	3.73	.....	.....
					3	.....	45.95	54.05	.....	4.24	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM14181...	90	1912	Perry (W). .	6	1	10.32	37.52	42.39	9.77	2.84	.....	.....
					2	.....	41.84	47.27	10.89	3.17	.....	.....
					3	.....	46.95	53.05	.....	3.56	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
12596.....	175	1921	Perry (W). .	6	1	10.11	35.92	43.55	10.42	3.62	.56	11161
					2	.....	39.96	48.45	11.59	4.03	.62	12422
					3	.....	45.19	54.81	.....	4.56	.70	14050
					4	.....	.....	.....	.....	.....	.....	14332
12597.....	175	1921	Perry (W). .	6	1	10.16	35.53	44.84	9.47	3.46	.11	11368
					2	.....	39.55	49.91	10.54	3.85	.12	12654
					3	.....	44.21	55.79	.....	4.31	.13	14145
					4	.....	.....	.....	.....	.....	.....	14406

°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and University of Illinois.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12598.....	175	1921	Perry (W)..	6	1	10.16	35.49	42.89	11.46	3.92	.42	11041
					2	.....	39.50	47.74	12.76	4.36	.47	12290
					3	.....	45.28	54.72	.....	5.00	.54	14099
					4	.....	.....	.....	.....	.....	.....	14402
12574.....	176	1921	Perry (W)..	6	1	9.26	39.03	42.31	9.40	3.38	.30	11449
					2	.....	43.01	46.63	10.36	3.73	.33	12617
					3	.....	47.98	52.02	.....	4.16	.37	14075
					4	.....	.....	.....	.....	.....	.....	14328
12575.....	176	1921	Perry (W)..	6	1	9.52	36.11	43.88	10.49	3.47	.35	11330
					2	.....	39.91	48.50	11.59	3.84	.39	12522
					3	.....	45.14	54.86	.....	4.35	.44	14164
					4	.....	.....	.....	.....	.....	.....	14443
12576.....	176	1921	Perry (W) .	6	1	10.01	36.39	43.99	9.61	3.87	.84	11313
					2	.....	40.44	48.88	10.68	4.28	.84	12572
					3	.....	45.27	54.73	.....	4.79	.94	14075
					4	.....	.....	.....	.....	.....	.....	14351
12577.....	176	1921	Perry (W)..	6	1	10.61	36.25	43.49	9.65	3.40	.50	11125
					2	.....	40.55	48.65	10.80	3.68	.56	12445
					3	.....	45.46	54.54	.....	4.13	.63	13951
					4	.....	.....	.....	.....	.....	.....	14205
12578.....	176	1921	Perry (W)..	6	1	10.14	35.55	43.07	11.24	3.49	.40	10979
					2	.....	39.56	47.93	12.51	3.89	.45	12218
					3	.....	45.22	54.78	.....	4.45	.51	13965
					4	.....	.....	.....	.....	.....	.....	14254
12579.....	176	1921	Perry (W)..	6	1	11.52	34.89	43.18	10.41	2.99	.51	10887
					2	.....	39.43	48.80	11.77	3.38	.58	12305
					3	.....	44.69	55.31	.....	3.83	.66	13946
					4	.....	.....	.....	.....	.....	.....	14205
12620.....	178	1921	Perry (W)..	6	1	9.29	35.59	42.81	12.31	3.31	.32	11019
					2	.....	39.24	47.19	13.57	3.65	.34	12148
					3	.....	45.40	54.60	.....	4.22	.39	14055
					4	.....	.....	.....	.....	.....	.....	14358

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12621.....	178	1921	Perry (W)..	6	1	10.19	34.23	41.62	13.96	5.43	.37	10486
					2	.....	38.12	46.34	15.54	6.05	.40	11676
					3	.....	45.13	54.87	.....	7.16	.47	13824
					4	.....	.....	.....	.....	.....	.....	14237
12622.....	178	1921	Perry (W)[m].	6	1	9.84	35.15	43.16	11.85	3.54	.28	10942
					2	.....	38.98	47.87	13.15	3.93	.30	12137
					3	.....	44.88	55.12	.....	4.53	.35	13975
					4	.....	.....	.....	.....	.....	.....	14277
12664.....	*179	1921	Perry (W)..	6	1	8.79	36.91	43.31	10.99	3.43	.19	11300
					2	.....	40.47	47.48	12.05	3.76	.21	12389
					3	.....	46.01	53.99	.....	4.28	.24	14086
					4	.....	.....	.....	.....	.....	.....	14368
12665.....	*179	1921	Perry (W)..	6	1	8.88	37.82	42.73	10.57	3.38	.06	11290
					2	.....	41.51	46.89	11.60	3.71	.06	12390
					3	.....	46.96	53.04	.....	4.20	.07	14016
					4	.....	.....	.....	.....	.....	.....	14287
12592.....	182	1921	Perry (W)..	6	1	9.06	36.59	43.13	11.22	3.73	.37	11126
					2	.....	40.24	47.43	12.33	4.10	.41	12235
					3	.....	45.90	54.10	.....	4.68	.47	13956
					4	.....	.....	.....	.....	.....	.....	14249
12593.....	182	1921	Perry (W)..	6	1	9.00	35.80	44.03	11.17	3.86	.46	11097
					2	.....	39.34	48.39	12.27	4.24	.51	12195
					3	.....	44.85	55.15	.....	4.83	.58	13901
					4	.....	.....	.....	.....	.....	.....	14194
12594.....	182	1921	Perry (W)..	6	1	9.21	35.02	44.58	11.19	3.55	.40	11194
					2	.....	38.57	49.10	12.33	3.91	.44	12327
					3	.....	44.00	56.00	.....	4.46	.50	14061
					4	.....	.....	.....	.....	.....	.....	14350
12588.....	*184	1921	Perry (W)..	6	1	8.13	38.22	42.61	11.04	3.73	.58	11296
					2	.....	41.60	46.38	12.02	4.06	.64	12296
					3	.....	47.28	52.72	.....	4.62	.73	13976
					4	.....	.....	.....	.....	.....	.....	14262

m Perry County, west of Duquoin anticline.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12589	*184	1921	Perry (W).	6	1	7.56	37.65	43.56	11.23	3.71	.52	11336
					2	.....	40.73	47.12	12.15	4.01	.57	12263
					3	.....	46.40	53.60	.....	4.56	.65	13959
					4	.....	.....	.....	.....	.....	.....	14245
12590	*184	1921	Perry (W).	6	1	8.28	39.19	41.95	10.58	3.49	.43	11406
					2	.....	42.73	45.74	11.53	3.81	.47	12436
					3	.....	48.30	51.70	.....	4.31	.53	14057
					4	.....	.....	.....	.....	.....	.....	14329
12591	*184	1921	Perry (W).	6	1	8.00	37.60	42.27	12.13	3.38	.57	11124
					2	.....	40.87	45.95	13.18	3.67	.62	12091
					3	.....	47.07	52.93	.....	4.23	.71	13927
					4	.....	.....	.....	.....	.....	.....	14218
C-923	622	1934	Perry (W).	6	1	9.1	35.2	44.3	11.4	3.76	.86	11308
					2	.....	38.7	48.7	12.6	4.13	.95	12438
					3	.....	44.3	55.7	.....	4.73	1.08	14230
					4	.....	.....	.....	.....	.....	.....	14541
C-924	622	1934	Perry (W).	6	1	9.4	35.8	43.9	10.9	3.72	.54	11258
					2	.....	39.5	48.5	12.0	4.10	.60	12422
					3	.....	44.9	55.1	.....	4.66	.68	14114
					4	.....	.....	.....	.....	.....	.....	14410
C-925	622	1934	Perry (W).	6	1	9.4	35.7	45.3	9.6	3.80	.51	11415
					2	.....	39.4	50.0	10.6	4.20	.57	12595
					3	.....	44.1	55.9	.....	4.69	.64	14092
					4	.....	.....	.....	.....	.....	.....	14361
C-922	622	1934	Perry (W).	6	1	8.9	35.5	43.5	12.1	3.44	1.02	11180
					2	.....	39.0	47.7	13.3	3.78	1.11	12272
					3	.....	45.0	55.0	.....	4.36	1.29	14160
					4	.....	.....	.....	.....	.....	.....	14460
C-928	623	1934	Perry (W).	6	1	10.1	35.1	43.9	10.9	3.73	.42	11106
					2	.....	39.0	48.9	12.1	4.14	.47	12348
					3	.....	44.4	55.6	.....	4.72	.53	14056
					4	.....	.....	.....	.....	.....	.....	14343

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-929.....	623	1934	Perry (W)..	6	1	10.3	35.0	44.2	10.5	3.32	.81	11145
					2	.....	39.0	49.3	11.7	3.70	.90	12420
					3	.....	44.1	55.9	.....	4.19	1.02	14063
					4	.....	.....	.....	.....	.....	.....	14338
C-930.....	623	1934	Perry (W)..	6	1	10.2	35.2	44.9	9.7	3.50	.47	11244
					2	.....	39.2	50.0	10.8	3.90	.53	12519
					3	.....	43.9	56.1	.....	4.37	.59	14038
					4	.....	.....	.....	.....	.....	.....	14299
C-931.....	623	1934	Perry (W)..	6	1	10.0	35.2	45.0	9.8	3.39	.35	11262
					2	.....	39.1	50.0	10.9	3.77	.39	12513
					3	.....	43.9	56.1	.....	4.23	.44	14041
					4	.....	.....	.....	.....	.....	.....	14306
BM31033....	[n]*BM 69	1918	Perry (W)..	6	1	12.34	33.48	45.02	9.16	1.82	.....	11171
					2	.....	38.19	51.36	10.45	2.08	.....	12744
					3	.....	42.65	57.35	.....	2.32	.....	14231
					4	.....	.....	.....	.....	.....	.....	14434
BM31034....	[n]*BM 69	1918	Perry (W)..	6	1	12.19	34.16	44.50	9.15	1.32	.....	11245
					2	.....	38.90	50.68	10.42	1.50	.....	12805
					3	.....	43.42	56.58	.....	1.67	.....	14294
					4	.....	.....	.....	.....	.....	.....	14479
BM31035....	[n]*BM 69	1918	Perry (W)..	6	1	11.93	33.50	45.35	9.22	1.36	.....	11257
					2	.....	38.04	51.49	10.47	1.54	.....	12782
					3	.....	42.49	57.51	.....	1.72	.....	14276
					4	.....	.....	.....	.....	.....	.....	14463
BM31036....	[n]*BM 69	1918	Perry (W)..	6	1	11.86	34.13	44.63	9.38	1.46	.....	11236
					2	.....	38.72	50.64	10.64	1.66	.....	12748
					3	.....	43.33	56.67	.....	1.86	.....	14265
					4	.....	.....	.....	.....	.....	.....	14458
4756.....	*54	1912	Perry [o](E)..	6	1	10.32	34.03	46.19	9.46	1.07	.24	11395
					2	.....	37.94	51.51	10.55	1.18	.26	12705
					3	.....	42.41	57.59	.....	1.32	.29	14203
					4	.....	.....	.....	.....	.....	.....	14377

n Fieldner, A. C., and others, Analyses of coal, U. S. Bureau of Mines Bull. 193, p. 33, 1922.
o Perry County, east of Duquoin anticline.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
4764	*54	1912	Perry (E)	6	1	9.98	33.71	44.91	11.40	.84	.33	11205
					2		37.45	49.88	12.67	.93	.37	12447
					3		42.88	57.12		1.06	.42	14253
					4							14452
4766	*54	1912	Perry (E)	6	1	9.64	33.49	45.60	11.27	.82	.35	11230
					2		37.06	50.47	12.47	.90	.39	12428
					3		42.34	57.66		1.03	.45	14199
					4							14394
4768	*54	1912	Perry (E)	6	1	10.05	33.24	45.85	10.86	.93	.63	11257
					2		36.94	50.98	12.08	1.04	.70	12513
					3		42.02	57.98		1.18	.80	14232
					4							14424
°BM13585	*54	1912	Perry (E)	6	1	10.74	32.39	47.89	8.98	.80		
					2		36.29	53.65	10.06	.90		
					3		40.35	59.65		1.00		
					4							
°BM13586	*54	1912	Perry (E)	6	1	11.60	32.50	46.92	8.98	.86		
					2		36.76	53.08	10.16	.97		
					3		40.92	59.08		1.08		
					4							
°BM13587	*54	1912	Perry (E)	6	1	10.88	31.99	46.34	10.79	1.00		
					2		35.90	51.99	12.11	1.12		
					3		40.85	59.15		1.27		
					4							
°BM13588	*54	1912	Perry (E)	6	1	10.60	32.63	45.08	11.69	.91		
					2		36.50	50.42	13.08	1.02		
					3		41.99	58.01		1.17		
					4							
°BM13589	*54	1912	Perry (E)	6	1	10.27	32.48	45.80	11.77	.81		
					2		36.20	50.68	13.12	.90		
					3		41.67	58.33		1.04		
					4							

°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and University of Illinois.

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°BM13590...	*54	1912	Perry (E)...	6	1	10.73	32.16	45.66	11.45	1.00	.....	.... .
					2	.....	36.03	51.14	12.83	1.12	.....	.....
					3	.....	41.33	58.67	.....	1.28	.....	.....
					4	.....	.....	.....	.....	.....	.....	.... .
12614.....	180	1921	Perry (E)...	6	1	10.00	32.79	48.99	8.22	.77	.12	11570
					2	.....	36.44	54.43	9.13	.86	.14	12855
					3	.....	40.10	59.90	.....	.95	.15	14147
					4	.....	.....	.....	.....	.....	.....	14288
12615.....	180	1921	Perry (E)...	6	1	9.89	33.47	47.05	9.59	1.35	.43	11424
					2	.....	37.14	52.22	10.64	1.50	.48	12678
					3	... . .	41.56	58.44	..... .	1.68	.54	14188
					4	.....	... ...	.....	.....	.....	.....	14372
12616.....	180	1921	Perry (E)...	6	1	9.49	34.09	46.22	10.20	1.21	.18	11432
					2	... ...	37.67	51.06	11.27	1.33	.20	12632
					3	.....	42.45	57.55	.....	1.50	.23	14236
					4	.....	.....	.....	.....	.....	.....	14425
12623.....	180	1921	Perry (E)...	6	1	8.29	34.61	48.18	8.92	1.07	.25	11703
					2	.....	37.74	52.54	9.72	1.17	.27	12761
					3	.....	41.80	58.20	... ...	1.30	.30	14135
					4	.....	.....	.....	.....	.....	... . .	14295
12624.....	180	1921	Perry (E)...	6	1	8.91	33.28	47.11	10.70	.95	.05	11355
					2	.. . .	36.53	51.72	11.75	1.04	.06	12466
					3	.. ...	41.39	58.61	.....	1.18	.07	14125
					4	.....	.....	.....	.....	.....	.....	14311
BM20728....	[p]BM 29	1915	Perry (E)...	6	1	10.88	32.97	47.20	8.95	1.15	.....	11380
					2	.....	37.00	52.96	10.04	1.29	.....	12769
					3	.. ...	41.13	58.87	.....	1.43	.....	14194
					4	.....	.....	.....	.....	.....	.....	14364
BM20729....	[p]BM 29	1915	Perry (E)...	6	1	10.20	33.08	49.63	7.09	.80	.....	11749
					2	.....	36.83	55.27	7.90	.89	.....	13084
					3	.....	39.99	60.01	.....	.97	.....	14206
					4	.....	.....	.....	.....	.....	.....	14332

p Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 35, 1918.
°Duplicate samples sent to University of Illinois and U. S. Bureau of Mines Experiment Station.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM20730....	[p]BM 29	1915	Perry (E)...	6	1	11.47	32.05	48.44	8.04	.92	.....	11446
					2	.....	36.20	54.72	9.08	1.04	.....	12929
					3	.....	39.82	60.18	.....	1.14	.....	14220
					4	.....	.....	.....	.....	.....	.....	14368
BM20731....	[p]BM 29	1915	Perry (E)...	6	1	10.64	32.78	48.93	7.65	.68	.....	11621
					2	.....	36.68	54.76	8.56	.76	.....	13005
					3	.....	40.11	59.89	.....	.83	.....	14222
					4	.....	.....	.....	.....	.....	.....	14354
BM20732....	[p]BM 29	1915	Perry (E)...	6	1	11.54	32.16	49.35	6.95	.85	.....	11578
					2	.....	36.36	55.78	7.86	.96	.....	13088
					3	.....	39.46	60.54	.....	1.04	.....	14204
					4	.....	.....	.....	.....	.....	.....	14332
BM20733....	[p]BM 29	1915	Perry (E)...	6	1	10.99	32.24	48.32	8.45	.72	.....	11446
					2	.....	36.22	54.29	9.49	.81	.....	12859
					3	.....	40.02	59.98	.....	.89	.....	14207
					4	.....	.....	.....	.....	.....	.....	14354
BM26462....	[q]*BM 61	1916	Perry (E)...	6	1	10.45	33.92	47.88	7.75	.83	.....	11729
					2	.....	37.88	53.47	8.65	.93	.....	13097
					3	.....	41.47	58.53	.....	1.02	.....	14338
					4	.....	.....	.....	.....	.....	.....	14477
BM26463....	[q]*BM 61	1916	Perry (E)...	6	1	10.66	33.04	47.60	8.70	.82	.....	11590
					2	.....	36.98	53.28	9.74	.92	.....	12973
					3	.....	40.97	59.03	.....	1.02	.....	14373
					4	.....	.....	.....	.....	.....	.....	14529
BM26465....	[q]*BM 61	1916	Perry (E)...	6	1	11.26	33.84	46.18	8.72	.80	.....	11484
					2	.....	38.13	52.04	9.83	.90	.....	12941
					3	.....	42.29	57.71	.....	1.00	.....	14352
					4	.....	.....	.....	.....	.....	.....	14508
BM26464....	[q]*BM 61	1916	Perry (E)...	6	1	10.61	33.04	46.72	9.63	1.02	.....	11412
					2	.....	36.96	52.27	10.77	1.14	.....	12766
					3	.....	41.42	58.58	.....	1.28	.....	14307
					4	.....	.....	.....	.....	.....	.....	14485

[p] Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 123, p. 35, 1918.
[q] Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 193, p. 33, 1922.
*Shipping mine abandoned or long idle.
x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM26466....	[q]*BM 61	1916	Perry (E)...	6	1	11.75	33.49	45.94	8.82	.78	.....	11392
					2	.....	37.95	52.06	9.99	.88	.....	12909
					3	.....	42.16	57.84	.....	.98	.....	14342
					4	.....	.....	.....	.....	.....	.....	14500
BM26467....	[q]*BM 61	1916	Perry (E)...	6	1	11.47	32.81	47.22	8.50	1.08	.....	11484
					2	.....	37.06	53.34	9.60	1.22	.....	12972
					3	.....	41.00	59.00	.....	1.35	.....	14350
					4	.....	.....	.....	.....	.....	.....	14513
BM26469....	[q]*BM 61	1916	Perry (E)...	6	1	13.73	33.99	49.58	2.70	.77	.....	12064
					2	.....	39.40	57.47	3.13	.89	.....	13984
					3	.....	40.67	59.33	.....	.92	.....	14436
					4	.....	.....	.....	.....	.....	.....	14500
5045.....	83	1912	Randolph...	6	1	11.38	36.94	40.25	11.43	4.16	.72	10823
					2	.....	41.68	45.41	12.91	4.69	.81	12212
					3	.....	47.86	52.14	.....	5.39	.93	14022
					4	.....	.....	.....	.....	.....	.....	14348
5046.....	83	1912	Randolph...	6	1	10.62	38.10	39.12	12.16	4.45	.42	10849
					2	.....	42.63	43.77	13.60	4.98	.47	12137
					3	.....	49.34	50.66	.....	5.76	.54	14047
					4	.....	.....	.....	.....	.....	.....	14397
5047.....	83	1912	Randolph...	6	1	11.39	36.80	41.04	10.77	4.11	.60	10895
					2	.....	41.53	46.32	12.15	4.63	.67	12294
					3	.....	47.27	52.73	.....	5.27	.76	13994
					4	.....	.....	.....	.....	.....	.....	14304
12562.....	*208	1921	Randolph...	6	1	9.54	36.55	43.35	10.56	3.21	.58	11251
					2	.....	40.41	47.92	11.67	3.55	.64	12438
					3	.....	45.75	54.25	.....	4.02	.72	14081
					4	.....	.....	.....	.....	.....	.....	14349
12563.....	*208	1921	Randolph...	6	1	9.52	37.01	40.86	12.61	4.90	.46	10971
					2	.....	40.90	45.16	13.94	5.42	.51	12125
					3	.....	47.52	52.48	.....	6.30	.59	14089
					4	.....	.....	.....	.....	.....	.....	14463

q Fieldner, A C., and others, Analyses of coal: U. S. Bureau of Mines, Bull. 133, p. 33,1922.
*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12564.....	*208	1921	Randolph...	6	1	9.69	37.31	41.70	11.30	4.15	.50	11135
					2	. . .	41.31	46.17	12.52	4.59	.55	12330
					3	.....	47.22	52.78	.....	5.25	.63	14095
					4	.....	.....	.....	.....	.....	.....	14412
12565.....	*208	1921	Randolph...	6	1	11.07	36.15	41.17	11.61	2.90	.69	10902
					2	.....	40.65	46.30	13.05	3.47	.78	12259
					3	.....	46.75	53.25	.....	3.99	.90	14099
					4	.....	.....	.....	.....	.....	.....	14388
12566.....	*208	1921	Randolph...	6	1	10.58	35.65	39.85	13.92	3.20	.88	10526
					2	.....	39.86	44.57	15.57	3.58	.98	11772
					3	.....	47.21	52.79	.....	4.24	1.16	13943
					4	.....	.....	.....	.....	.....	.....	14273
12567... ...	*208	1921	Randolph...	6	1	10.65	36.25	40.89	12.21	4.32	.52	10885
					2	.....	40.57	45.76	13.67	4.84	.58	12182
					3	.....	46.99	53.01	.....	5.61	.67	14111
					4	.....	.....	.....	.....	.....	.....	14458
12580.....	*209	1921	Randolph...	6	1	10.55	37.35	41.41	10.69	3.73	.51	10991
					2	.....	41.75	46.30	11.95	4.17	.57	12287
					3	.....	47.42	52.58	.....	4.74	.65	13955
					4	.....	.....	... ...	.....	.....	.....	14244
12581.....	*209	1921	Randolph...	6	1	8.95	36.48	41.87	12.70	4.72	.66	10874
					2	.....	40.06	45.99	13.95	5.19	.73	11943
					3	.....	46.55	53.45	.....	6.03	.85	13879
					4	.....	.....	.....	.....	.....	.....	14233
12582.....	*209	1921	Randolph...	6	1	9.44	36.89	42.42	11.25	4.31	.75	11016
					2	.....	40.73	46.84	12.43	4.76	.83	12165
					3	.....	46.51	53.49	.....	5.44	.95	13892
					4	.....	.....	.....	.....	.....	.....	14205
12570.....	*210	1921	Randolph...	6	1	9.62	36.49	42.58	11.31	3.61	.21	11215
					2	.....	40.37	47.11	12.52	3.99	.23	12409
					3	.....	46.15	53.85	.....	4.56	.26	14185
					4	.....	.....	.....	.....	.....	.....	14486

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12571	*210	1921	Randolph	6	1	9.03	37.38	43.63	9.96	3.42	.39	11456
					2	.....	41.09	47.96	10.95	3.76	.43	12593
					3	.....	46.14	53.86	.....	4.22	.48	14141
					4	.....	.....	.....	.....	.....	.....	14408
12572	*210	1921	Randolph	6	1	9.27	35.55	43.78	11.40	3.10	.29	11230
					2	.....	39.18	48.25	12.57	3.42	.32	12378
					3	.....	44.81	55.19	.....	3.91	.37	14158
					4	.....	.....	.....	.....	.....	.....	14439
12573	*210	1921	Randolph	6	1	9.42	35.40	41.85	13.33	3.91	.41	10858
					2	.....	39.08	46.20	14.72	4.32	.45	11987
					3	.....	45.83	54.17	.....	5.07	.53	14056
					4	.....	.....	.....	.....	.....	.....	14400
C-639	613	1934	Randolph	6	1	10.9	35.3	40.5	13.3	4.32	.99	10573
					2	.....	39.6	45.5	14.9	4.85	1.11	11868
					3	.....	46.6	53.4	.....	5.70	1.30	13948
					4	.....	.....	.....	.....	.....	.....	14310
C-640	613	1934	Randolph	6	1	11.5	35.0	41.5	12.0	3.34	.43	10657
					2	.....	39.5	46.9	13.6	3.78	.49	12042
					3	.....	45.7	54.3	.....	4.37	.57	13935
					4	.....	.....	.....	.....	.....	.....	14241
C-641	613	1934	Randolph	6	1	11.5	34.8	41.9	11.8	3.63	.62	10753
					2	.....	39.3	47.4	13.3	4.10	.70	12147
					3	.....	45.3	54.7	.....	4.73	.81	14015
					4	.....	.....	.....	.....	.....	.....	14322
5055	78	1912	St. Clair	6	1	13.06	38.21	37.36	11.37	3.21	1.17	10741
					2	.....	43.95	42.96	13.09	3.70	1.35	12354
					3	.....	50.57	49.43	.....	4.26	1.55	14215
					4	.....	.....	.....	.....	.....	.....	14515
5060	78	1912	St. Clair	6	1	11.44	38.73	38.11	11.72	4.26	.56	10841
					2	.....	43.73	43.04	13.23	4.81	.64	12242
					3	.....	50.40	49.60	.....	5.54	.74	14109
					4	.....	.....	.....	.....	.....	.....	14447

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5061.....	78	1912	St. Clair....	6	1	10.75	39.19	38.88	11.18	3.41	.67	11041
					2	.....	43.91	43.56	12.53	3.82	.75	12371
					3	.....	50.20	49.80	.....	4.37	.86	14143
					4	.....	.....	.....	.....	.....	.....	14438
12536.....	78	1921	St. Clair....	6	1	11.45	37.39	38.66	12.50	5.21	.32	10739
					2	.....	42.22	43.66	14.12	5.88	.36	12128
					3	.....	49.16	50.84	.....	6.85	.42	14122
					4	.....	.....	.....	.....	.....	.....	14517
12537.....	78	1921	St. Clair....	6	1	10.65	35.54	40.93	12.88	4.21	.88	10782
					2	.....	39.77	45.81	14.42	4.71	.99	12067
					3	.....	46.47	53.53	.....	5.50	1.16	14100
					4	.....	.....	.....	.....	.....	.....	14459
12538.....	78	1921	St. Clair....	6	1	11.17	39.20	39.20	10.43	4.44	.31	11073
					2	.....	44.13	44.13	11.74	5.00	.35	12465
					3	.....	50.00	50.00	.....	5.66	.40	14123
					4	.....	.....	.....	.....	.....	.....	14444
5056.....	79	1912	St. Clair....	6	1	10.69	40.16	37.87	11.28	4.55	.58	11063
					2	.....	44.97	42.39	12.64	5.10	.65	12387
					3	.....	51.48	48.52	.....	5.84	.74	14179
					4	.....	.....	.....	.....	.....	.....	14522
5058.....	79	1912	St. Clair....	6	1	12.12	38.61	40.61	8.66	3.10	.35	11217
					2	.....	43.93	46.22	9.85	3.52	.39	12764
					3	.....	48.73	51.27	.....	3.90	.43	14159
					4	.....	.....	.....	.....	.....	.....	14399
5059.....	79	1912	St. Clair....	6	1	11.12	40.54	38.27	10.07	4.18	.32	11145
					2	.....	45.61	43.06	11.33	4.70	.36	12540
					3	.....	51.44	48.56	.....	5.30	.40	14142
					4	.....	.....	.....	.....	.....	.....	14446
5524.....	*80	1912	St. Clair....	6	1	10.11	39.72	38.87	11.30	3.69	.78	11051
					2	.....	44.19	43.24	12.57	4.10	.86	12294
					3	.....	50.54	49.46	.....	4.69	.98	14062
					4	.....	.....	.....	.....	.....	.....	14361

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5525	*80	1912	St. Clair	6	1	9.83	39.84	37.97	12.36	4.02	.87	10958
					2		44.19	42.11	13.70	4.45	.96	12152
					3		51.21	48.79		5.16	1.10	14081
					4							14415
5526	*80	1912	St. Clair	6	1	10.19	38.44	40.41	10.96	3.95	.68	11127
					2		42.79	45.00	12.21	4.49	.78	12388
					3		48.74	51.26		5.11	.89	14111
					4							14421
5077	81	1912	St. Clair	6	1	11.35	39.68	38.59	10.38	4.05	.58	11036
					2		44.75	43.54	11.71	4.57	.65	12449
					3		50.69	49.31		5.18	.74	14100
					4							14404
5079	81	1912	St. Clair	6	1	10.85	40.75	38.36	10.04	4.09	.58	11192
					2		45.71	43.03	11.26	4.58	.65	12554
					3		51.51	48.49		5.16	.73	14147
					4							14445
5080	81	1912	St. Clair	6	1	11.50	40.68	37.91	9.91	3.96	.46	10908
					2		45.96	42.84	11.20	4.47	.52	12597
					3		51.76	48.24		5.03	.59	14186
					4							14482
5108	*82	1912	St. Clair	6	1	10.99	38.96	38.79	11.26	4.36	.36	11047
					2		43.77	43.59	12.64	4.90	.40	12411
					3		50.10	49.90		5.61	.46	14207
					4							14544
5109	*82	1912	St. Clair	6	1	13.42	39.23	36.92	10.43	4.92	.26	10753
					2		45.31	42.65	12.04	5.69	.31	12419
					3		51.51	48.49		6.47	.35	14119
					4							14469
5110	*82	1912	St. Clair	6	1	11.40	40.96	36.89	10.75	4.10	.57	11052
					2		46.23	41.63	12.14	4.63	.63	12472
					3		52.62	47.38		5.27	.72	14195
					4							14511

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM80827....	*200	1921	St. Clair....	6	1	14.93	30.71	42.72	11.64	2.22	.24	10340
					2	.....	36.10	50.22	13.68	2.61	.27	12155
					3	.....	41.82	58.18	.....	3.02	.31	14081
					4	.....	.....	.....	.....	.....	.....	14351
BM80828....	*200	1921	St. Clair....	6	1	12.71	31.53	45.31	10.45	1.65	.58	10809
					2	.....	36.12	51.91	11.97	1.89	.66	12383
					3	.....	41.03	58.97	.....	2.15	.75	14067
					4	.....	.....	.....	.....	.....	.....	14283
BM80829....	*200	1921	St. Clair....	6	1	13.68	32.10	42.59	11.63	1.25	1.51	10573
					2	.....	37.19	49.34	13.47	1.45	1.75	12249
					3	.....	42.98	57.02	.....	1.68	2.02	14156
					4	.....	.....	.....	.....	.....	.....	14394
BM80823....	*201	1921	St. Clair....	6	1	11.64	37.40	41.80	9.16	3.66	.35	11177
					2	.....	42.33	47.30	10.37	4.14	.40	12649
					3	.....	47.23	52.77	.....	4.62	.45	14112
					4	.....	.....	.....	.....	.....	.....	14380
BM80824....	*201	1921	St. Clair....	6	1	11.26	37.92	39.03	11.79	3.66	.67	10931
					2	.....	42.73	43.98	13.29	4.12	.75	12318
					3	.....	49.28	50.72	.....	4.75	.86	14206
					4	.....	.....	.....	.....	.....	.....	14526
BM80825....	*201	1921	St. Clair....	6	1	12.08	37.02	41.58	9.32	3.77	.17	11153
					2	.....	42.10	47.30	10.60	4.29	.19	12685
					3	.....	47.10	52.90	.....	4.80	.21	14189
					4	.....	.....	.....	.....	.....	.....	14468
12541.....	203	1921	St. Clair....	6	1	9.72	39.13	40.02	11.13	4.87	.72	11228
					2	.....	43.34	44.33	12.33	5.39	.80	12437
					3	.....	49.44	50.56	.....	6.15	.91	14186
					4	.....	.....	.....	.....	.....	.....	14534
12542.....	203	1921	St. Clair....	6	1	9.26	40.97	39.09	10.68	4.36	.53	11308
					2	.....	45.15	43.08	11.77	4.80	.59	12462
					3	.....	51.17	48.83	.....	5.44	.67	14124
					4	.....	.....	.....	.....	.....	.....	14438

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12543	203	1921	St. Clair	6	1	11.17	39.71	37.52	11.60	4.63	.69	10826
					2	.....	44.70	42.24	13.06	5.21	.78	12187
					3	.....	51.41	48.59	.....	5.99	.90	14018
					4	.....	.....	.....	.....	.....	.....	14364
12544	203	1921	St. Clair	6	1	10.59	39.83	39.99	9.59	4.09	.32	11103
					2	.....	44.54	44.73	10.73	4.57	.36	12419
					3	.....	49.89	50.11	.....	5.12	.40	13912
					4	.....	.....	.....	.....	.....	.....	14192
12545	203	1921	St. Clair	6	1	11.33	39.64	39.04	9.99	3.59	.18	11153
					2	.....	44.70	44.03	11.27	4.05	.20	12578
					3	.....	50.38	49.62	.....	4.56	.22	14175
					4	.....	.....	.....	.....	.....	.....	14458
12546	203	1921	St. Clair	6	1	10.00	40.32	40.28	9.40	4.43	.55	11386
					2	.....	44.80	44.76	10.44	4.92	.61	12651
					3	.....	50.02	49.98	.....	5.49	.68	14126
					4	.....	.....	.....	.....	.....	.....	14422
12556	205	1921	St. Clair	6	1	10.39	36.91	41.73	10.97	2.89	.74	11004
					2	.....	41.19	46.57	12.24	3.23	.83	12280
					3	.....	46.93	53.07	.....	3.68	.95	13993
					4	.....	.....	.....	.....	.....	.....	14255
12557	205	1921	St. Clair	6	1	9.26	37.77	41.08	11.89	3.01	.37	11170
					2	.....	41.62	45.27	13.11	3.32	.41	12310
					3	.....	47.90	52.10	.....	3.82	.47	14167
					4	.....	.....	.....	.....	.....	.....	14455
12558	205	1921	St. Clair	6	1	9.36	37.18	40.86	12.60	4.02	.55	10959
					2	.....	41.02	45.08	13.90	4.44	.61	12091
					3	.....	47.64	52.36	.....	5.16	.71	14042
					4	.....	.....	.....	.....	.....	.....	14378
C-947	626	1934	St. Clair	6	1	11.6	38.8	40.7	8.9	3.78	.34	11249
					2	.....	43.9	46.0	10.1	4.28	.38	12718
					3	.....	48.8	51.2	.....	4.75	.....	14143
					4	.....	.....	.....	.....	.....	.....	14415

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-948.....	626	1934	St. Clair....	6	1	11.5	36.5	40.8	11.2	3.77	.72	10885
					2	.....	41.3	46.0	12.7	4.26	.81	12305
					3	.....	47.3	52.7	.....	4.88	.....	14090
					4	.....	.....	.....	.....	.....	.....	14406
C-949.....	626	1934	St. Clair....	6	1	11.3	36.5	40.1	12.1	3.66	.71	10790
					2	.....	41.1	45.3	13.6	4.12	.80	12170
					3	.....	47.6	52.4	.....	4.77	.....	14087
					4	.....	.....	.....	.....	.....	.....	14406
C-950.....	626	1934	St. Clair....	6	1	11.1	37.8	39.1	12.0	4.15	.61	10831
					2	.....	42.6	43.9	13.5	4.67	.69	12181
					3	.....	49.2	50.8	.....	5.40	.....	14088
					4	.....	.....	.....	.....	.....	.....	14421
14414.....	*74	1924	Sangamon..	6	1	14.59	36.91	39.03	9.47	3.82	. . .	10686
					2	.....	43.21	45.70	11.09	4.47	.....	12511
					3	.....	48.60	51.40	.....	5.03	.....	14071
					4	.....	.. ...	.....	.....	.....	.. ...	14361
14415.....	*74	1924	Sangamon..	6	1	14.55	34.39	39.65	11.41	5.11	.....	10397
					2	.....	40.24	46.40	13.36	5.98	.....	12167
					3	.....	46.45	53.55	.....	6.90	.....	14043
					4	.....	.....	.....	.....	.....	.....	14423
14416.....	*74	1924	Sangamon..	6	1	15.45	34.87	38.39	11.29	4.70	.....	10226
					2	.....	41.23	45.41	13.36	5.56	.....	12096
					3	.....	47.59	52.41	.....	6.42	.....	13961
					4	.....	.....	.....	.....	.....	.....	14322
14417.....	*74	1924	Sangamon..	6	1	13.41	36.50	39.74	10.35	4.44	.....	10688
					2	.....	42.15	45.90	11.95	5.13	.....	12343
					3	.....	47.87	52.13	.....	5.83	.....	14018
					4	... . .	.....	.....	.....	.....	.....	14342
5130.....	*74	1912	Sangamon..	6	1	15.22	38.23	37.36	9.19	4.38	.38	10579
					2	.....	45.09	44.07	10.84	5.17	.45	12478
					3	.....	50.57	49.43	.....	5.81	.50	13995
					4	.....	.....	.....	.....	.....	.....	14301

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5131.....	*74	1912	Sangamon..	6	1	13.10	38.86	37.25	10.79	5.08	.41	10592
					2	.....	44.72	42.86	12.42	5.86	.47	12187
					3	.....	51.06	48.94	.....	6.69	.54	13915
					4	.....	.....	.....	.....	.....	.....	14268
5132.....	*74	1912	Sangamon..	6	1	14.43	38.14	37.07	10.36	4.77	.40	10495
					2	.....	44.58	43.32	12.10	5.58	.47	12265
					3	.....	50.72	49.28	.....	6.35	.53	13953
					4	.....	.....	.....	.....	.....	.....	14292
5115.....	*75	1912	Sangamon..	6	1	14.97	36.90	38.36	9.77	3.53	.59	10598
					2	.....	43.39	45.12	11.49	4.16	.67	12466
					3	.....	49.02	50.98	.....	4.70	.76	14084
					4	.....	.....	.....	.....	.....	.....	14370
5116.....	*75	1912	Sangamon..	6	1	14.51	37.60	39.69	8.20	3.44	.22	10911
					2	.....	43.98	46.43	9.59	4.02	.25	12763
					3	.....	48.65	51.35	.....	4.45	.28	14117
					4	.....	.....	.....	.....	.....	.....	14368
5117.....	*75	1912	Sangamon..	6	1	12.98	38.23	38.92	9.87	4.32	.56	10845
					2	.....	43.94	44.72	11.34	4.96	.65	12463
					3	.....	49.56	50.44	.....	5.59	.73	14057
					4	.....	.....	.....	.....	.....	.....	14366
BM81319....	193	1921	Sangamon..	6	1	13.16	36.32	39.36	11.16	4.98	.51	10553
					2	.....	41.82	45.33	12.85	5.73	.59	12152
					3	.....	47.99	52.01	.....	6.57	.68	13944
					4	.....	.....	.....	.....	.....	.....	14301
BM81320....	193	1921	Sangamon..	6	1	13.25	36.73	40.75	9.27	3.53	.63	10884
					2	.....	42.34	46.97	10.69	4.07	.73	12546
					3	.....	47.41	52.59	.....	4.56	.82	14048
					4	.....	.....	.....	.....	.....	.....	14316
BM81321....	193	1921	Sangamon..	6	1	12.95	36.40	40.52	10.13	3.52	.56	10818
					2	.....	41.82	46.54	11.64	4.04	.64	12427
					3	.....	47.33	52.67	.....	4.57	.72	14064
					4	.....	.....	.....	.....	.....	.....	14347

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5030	86	1912	Washington.	6	1	11.45	37.22	39.81	11.52	3.62	.67	10874
					2	.....	42.03	44.96	13.01	4.09	.76	12281
					3	.....	48.32	51.68	.....	4.70	.87	14118
					4	.....	.....	.....	.....	.....	.....	14428
5033	86	1912	Washington.	6	1	10.24	39.06	39.79	10.91	4.18	.30	11180
					2	.....	43.51	44.33	12.16	4.65	.34	12456
					3	.....	49.53	50.47	.....	5.29	.39	14180
					4	.....	.....	.....	.....	.....	.....	14499
5035	86	1912	Washington.	6	1	10.69	38.76	39.01	11.54	3.98	.51	10963
					2	.....	43.41	43.66	12.93	4.47	.57	12275
					3	.....	49.86	50.14	.....	5.13	.65	14098
					4	.....	.....	.....	.....	.....	.....	14418
BM80680	226	1921	Washington.	6	1	9.58	38.50	39.87	12.05	4.63	.49	10906
					2	.....	42.58	44.09	13.33	5.12	.54	12061
					3	.....	49.13	50.87	.....	5.91	.62	13916
					4	.....	.....	.....	.....	.....	.....	14259
BM80681	226	1921	Washington.	6	1	9.41	39.02	40.33	11.24	3.59	.41	11172
					2	.....	43.07	44.52	12.41	3.96	.45	12333
					3	.....	49.17	50.83	.....	4.52	.51	14080
					4	.....	.....	.....	.....	.....	.....	14375
BM80682	226	1921	Washington.	6	1	9.29	38.45	38.94	13.32	4.70	.66	10796
					2	.....	42.39	42.93	14.68	5.18	.73	11902
					3	.....	49.68	50.32	.....	6.07	.86	13950
					4	.....	.....	.....	.....	.....	.....	14322
C-367	226	1933	Washington.	6	1	10.0	39.0	37.8	13.2	4.59	.95	10854
					2	.....	43.3	42.1	14.6	5.10	1.05	12064
					3	.....	50.7	49.3	.....	5.98	1.23	14135
					4	.....	.....	.....	.....	.....	.....	14502
C-368	226	1933	Washington.	6	1	9.9	37.7	40.1	12.3	4.24	.56	10887
					2	.....	41.9	44.4	13.7	4.71	.63	12089
					3	.....	48.5	51.5	.....	5.46	.73	14010
					4	.....	.....	.....	.....	.....	.....	14348

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-369.....	226	1933	Washington.	6	1	10.2	36.7	39.8	13.3	4.04	.56	10719
					2	.....	40.9	44.3	14.8	4.50	.63	11940
					3	.....	48.1	51.9	.....	5.28	.73	14021
					4	.....	.....	.....	.....	.....	.....	14367
BM80594....	227	1921	White.....	6	1	8.20	34.68	48.79	8.33	2.93	.73	12079
					2	.....	37.78	53.15	9.07	3.19	.80	13158
					3	.....	41.55	58.45	.....	3.51	.88	14471
					4	.....	.....	.....	.....	.....	.....	14696
BM80595....	227	1921	White.....	6	1	7.86	36.01	45.62	10.51	2.75	.96	11701
					2	.....	39.08	49.51	11.41	2.98	1.04	12699
					3	.....	44.11	55.89	.....	3.36	1.17	14335
					4	.....	.....	.....	.....	.....	.....	14587
BM80596....	227	1921	White.....	6	1	9.22	35.05	47.88	7.85	2.89	.23	11991
					2	.....	38.61	52.74	8.65	3.18	.25	13209
					3	.....	42.27	57.73	.....	3.48	.27	14460
					4	.....	.....	.....	.....	.....	.....	14678
5122.....	*59	1912	Williamson.	6	1	9.79	33.28	48.66	8.27	1.32	.44	11891
					2	.....	36.89	53.94	9.17	1.46	.49	13181
					3	.....	40.61	59.39	.....	1.61	.54	14512
					4	.....	.....	.....	.....	.....	.....	14681
5123.....	*59	1912	Williamson.	6	1	10.67	32.54	47.32	9.47	1.53	.15	11619
					2	.....	36.42	52.97	10.61	1.71	.17	13007
					3	.....	40.74	59.26	.....	1.91	.20	14551
					4	.....	.....	.....	.....	.....	.....	14748
5124.....	*59	1912	Williamson.	6	1	10.96	33.14	45.86	10.04	1.72	.55	11383
					2	.....	37.24	51.49	11.27	1.93	.62	12784
					3	.....	41.97	58.03	.....	2.18	.70	14403
					4	.....	.....	.....	.....	.....	.....	14623
4996.....	*60	1912	Williamson.	6	1	8.32	34.61	47.56	9.51	2.25	.24	11978
					2	.....	37.75	51.88	10.37	2.46	.26	13066
					3	.....	42.12	57.88	.....	2.74	.29	14578
					4	.....	.....	.....	.....	.....	.....	14801

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5000	*60	1912	Williamson.	6	1	7.53	34.90	47.37	10.20	3.23	.60	11799
					2		37.74	51.23	11.03	3.49	.65	12760
					3		42.42	57.58		3.92	.73	14342
					4							14607
5006	*60	1912	Williamson.	6	1	8.81	32.13	51.85	7.21	1.00	.13	11962
					2		35.62	56.38	8.00	1.11	.16	13264
					3		38.72	61.28		1.21	.17	14417
					4							14555
5121	61	1912	Williamson.	6	1	9.44	33.63	49.58	7.35	1.28	.19	12092
					2		37.13	54.75	8.12	1.42	.21	13354
					3		40.41	59.59		1.55	.23	14534
					4							14685
5133	61	1912	Williamson.	6	1	8.99	34.22	49.51	7.28	1.70	.04	12149
					2		37.62	54.39	7.99	1.87	.04	13349
					3		40.89	59.11		2.03	.04	14508
					4							14674
5134	61	1912	Williamson.	6	1	9.38	33.62	50.01	6.99	1.12	.14	12138
					2		37.10	55.18	7.72	1.24	.16	13394
					3		40.20	59.80		1.34	.17	14515
					4							14654
5125	62	1912	Williamson.	6	1	9.97	32.20	49.62	8.21	1.47	.22	11814
					2		35.76	55.12	9.12	1.63	.25	13123
					3		39.35	60.65		1.79	.28	14440
					4							14610
5126	62	1912	Williamson.	6	1	8.37	34.19	50.18	7.26	1.03	.18	12254
					2		37.31	54.77	7.92	1.12	.20	13374
					3		40.52	59.48		1.22	.22	14524
					4							14663
5127	62	1912	Williamson.	6	1	9.06	32.93	49.98	8.03	1.03	.24	12010
					2		36.20	54.97	8.83	1.13	.27	13207
					3		39.71	60.29		1.24	.30	14486
					4							14637

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5180	*63	1912	Williamson.	6	1	10.38	32.76	48.10	8.76	1.50	.16	11735
					2	.....	36.56	53.67	9.77	1.67	.18	13072
					3	.....	40.52	59.48	.....	1.85	.20	14487
					4	.....	.....	.....	.....	.....	.....	14672
5181	*63	1912	Williamson.	6	1	8.78	34.25	47.56	9.41	2.49	.53	11885
					2	.....	37.54	52.14	10.32	2.73	.58	13029
					3	.....	41.86	58.14	.....	3.04	.65	14528
					4	.....	.....	.....	.....	.....	.....	14758
5182	*63	1912	Williamson.	6	1	9.26	33.36	48.70	8.68	1.83	.39	11955
					2	.....	36.76	53.68	9.56	2.01	.43	13176
					3	.....	40.65	59.35	.....	2.22	.48	14569
					4	.....	.....	.....	.....	.....	.....	14761
5169	*64	1912	Williamson.	6	1	9.13	32.03	51.07	7.77	1.10	.33	12044
					2	.....	35.25	56.20	8.55	1.21	.36	13254
					3	.....	38.55	61.45	.....	1.32	.39	14493
					4	.....	.....	.....	.....	.....	.....	14643
5170	*64	1912	Williamson.	6	1	11.51	30.75	49.74	8.00	.84	.32	11554
					2	.....	34.76	56.20	9.04	.90	.36	13057
					3	.....	38.21	61.79	.....	.99	.40	14355
					4	.....	.....	.....	.....	.....	.....	14499
5172	*64	1912	Williamson.	6	1	7.38	35.59	47.56	9.47	.86	.51	12017
					2	.....	38.42	51.35	10.23	.93	.55	12974
					3	.....	42.80	57.20	.....	1.04	.61	14452
					4	.....	.....	.....	.....	.....	.....	14617
4998	*65	1912	Williamson.	6	1	9.35	32.83	50.07	7.75	1.05	.26	12017
					2	.....	36.21	55.24	8.55	1.16	.29	13256
					3	.....	39.60	60.40	.....	1.27	.32	14495
					4	.....	.....	.....	.....	.....	.....	14644
5004	*65	1912	Williamson.	6	1	9.99	33.79	48.56	7.66	.99	.06	11899
					2	.....	37.53	53.96	8.51	1.10	.06	13218
					3	.....	41.02	58.98	.....	1.20	.07	14447
					4	.....	.....	.....	.....	.....	.....	14593

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
5005	*65	1912	Williamson.	6	1	8.58	33.95	48.31	9.16	3.10	.14	11845
					2	.....	37.14	52.84	10.02	3.39	.16	12956
					3	.....	41.28	58.72	.....	3.77	.18	14399
					4	.....	.....	.....	.....	.....	.....	14644
BM80603	*148	1921	Williamson.	6	1	8.00	33.66	50.86	7.48	1.08	.13	12266
					2	.....	36.59	55.28	8.13	1.17	.14	13333
					3	.....	39.83	60.17	.....	1.27	.15	14513
					4	.....	.....	.....	.....	.....	.....	14656
BM80602	*148	1921	Williamson.	6	1	8.14	32.87	49.99	9.00	1.43	.14	12015
					2	.....	35.78	54.42	9.80	1.56	.16	13080
					3	.....	39.67	60.33	.....	1.73	.18	14501
					4	.....	.....	.....	.....	.....	.....	14681
BM80604	*148	1921	Williamson.	6	1	7.85	33.92	49.60	8.63	1.14	.18	12107
					2	.....	36.81	53.83	9.36	1.24	.20	13138
					3	.....	40.61	59.39	.....	1.37	.22	14495
					4	.....	.....	.....	.....	.....	.....	14658
BM80610	*149	1921	Williamson.	6	1	5.65	36.49	47.69	10.17	3.54	.55	12100
					2	.....	38.68	50.54	10.78	3.75	.62	12825
					3	.....	43.35	56.65	.....	4.20	.69	14375
					4	.....	.....	.....	.....	.....	.....	14645
BM80611	*149	1921	Williamson.	6	1	5.62	36.04	44.78	13.56	4.21	.69	11621
					2	.....	38.19	47.44	14.37	4.46	.81	12313
					3	.....	44.60	55.40	.....	5.21	.95	14379
					4	.....	.....	.....	.....	.....	.....	14739
BM80612	*149	1921	Williamson.	6	1	7.66	32.76	51.12	8.46	1.51	.05	12074
					2	.....	35.48	55.36	9.16	1.64	.06	13076
					3	.....	39.06	60.94	.....	1.81	.07	14395
					4	.....	.....	.....	.....	.....	.....	14566
12793	*150	1912	Williamson.	6	1	6.14	34.47	48.04	11.35	3.57	.25	11722
					2	.....	36.73	51.18	12.09	3.80	.27	12489
					3	.....	41.78	58.22	.....	4.32	.31	14207
					4	.....	.....	.....	.....	.....	.....	14494

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12794.....	*150	1921	Williamson.	6	1	5.96	35.07	47.56	11.41	4.37	.07	11791
					2	.....	37.29	50.57	12.14	4.65	.07	12538
					3	.....	42.44	57.56	.....	5.29	.08	14270
					4	.....	.....	.....	.....	.....	.....	14591
12795.....	*150	1921	Williamson.	6	1	5.85	35.46	47.58	11.11	4.06	.46	11845
					2	.. ...	37.66	50.53	11.81	4.31	.48	12581
					3	.....	42.70	57.30	.....	4.89	.54	14266
					4	.....	.....	.....	.....	.....	.. ...	14568
BM80614....	*151	1921	Williamson.	6	1	6.33	36.22	46.84	10.61	3.29	.04	11900
					2	.....	38.67	50.00	11.33	3.51	.05	12704
					3	.....	43.61	56.39	.....	3.96	.06	14327
					4	.....	.....	.....	.....	.....	.....	14596
BM80615....	*151	1921	Williamson.	6	1	7.15	37.17	46.55	9.13	3.03	.11	12028
					2	.....	40.03	50.14	9.83	3.26	.12	12954
					3	.....	44.39	55.61	.....	3.62	.13	14366
					4	.....	.....	.....	.....	.....	.....	14603
BM80616....	*151	1921	Williamson.	6	1	7.25	35.84	47.88	9.03	2.04	.16	12118
					2	.....	38.64	51.62	9.74	2.20	.17	13065
					3	.....	42.81	57.19	.....	2.44	.19	14475
					4	.....	.....	.....	.....	.....	.....	14676
12769.....	152	1921	Williamson.	6	1	6.76	31.08	52.76	9.40	1.16	.13	12128
					2	.....	33.33	56.59	10.08	1.24	.14	13007
					3	.....	37.07	62.93	.....	1.38	.16	14465
					4	.....	.....	.....	.....	.....	.....	14639
12770.....	152	1921	Williamson.	6	1	7.19	32.65	50.12	10.04	1.36	.75	11928
					2	.....	35.18	54.00	10.82	1.47	.81	12852
					3	.....	39.45	60.55	.....	1.65	.91	14411
					4	.....	.....	.....	.....	.. ...	.....	14603
12771.....	152	1921	Williamson.	6	1	7.14	33.07	52.02	7.77	1.44	.05	12297
					2	.....	35.61	56.02	8.37	1.55	.05	13242
					3	... ...	38.86	61.14	.. ...	1.69	.05	14452
					4	.....	.....	.....	.....	.....	.....	14610

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12799.....	154	1921	Williamson.	6	1	7.75	31.88	51.20	9.17	1.45	.18	11987
					2	.....	34.56	55.50	9.94	1.57	.20	12994
					3	.....	38.37	61.63	.....	1.74	.22	14428
					4	.....	.....	.....	.....	.....	.....	14610
12800.....	154	1921	Williamson.	6	1	8.53	32.12	52.30	7.05	1.13	.17	12253
					2	.....	35.11	57.18	7.71	1.23	.19	13396
					3	.....	38.04	61.96	.....	1.33	.21	14515
					4	.....	.....	.....	.....	.....	.....	14654
12801.....	154	1921	Williamson.	6	1	7.42	32.85	50.39	9.34	1.01	.18	12084
					2	.....	35.48	54.43	10.09	1.09	.20	13052
					3	.....	39.46	60.54	.....	1.21	.22	14517
					4	.....	.....	.....	.....	.....	.....	14686
BMA38989...	154	1927	Williamson.	6	1	10.5	29.6	53.8	6.1	.8	.....	12170
					2	.....	33.0	60.2	6.8	.9	.....	13590
					3	.....	35.4	64.6	.....	1.0	.....	14590
					4	.....	.....	.....	.....	.....	.....	14700
BMA38990...	154	1927	Williamson.	6	1	10.2	30.3	50.2	9.3	.9	.....	11660
					2	.....	33.8	55.8	10.4	1.0	.....	12990
					3	.....	37.7	62.3	.....	1.2	.....	14490
					4	.....	.....	.....	.....	.....	.....	14670
BMA38991...	154	1927	Williamson.	6	1	10.1	29.2	51.7	9.0	2.0	.....	11800
					2	.....	32.4	57.6	10.0	2.2	.....	13130
					3	.....	36.0	64.0	.....	2.4	.....	14580
					4	.....	.....	.....	.....	.....	.....	14910
C-691.....	155	1934	Williamson.	6	1	7.5	35.5	47.7	9.3	1.46	.53	12032
					2	.....	38.4	51.5	10.1	1.58	.58	13003
					3	.....	42.7	57.3	.....	1.75	.65	14462
					4	.....	.....	.....	.....	.....	.....	14648
C-692.....	155	1934	Williamson.	6	1	8.1	33.7	50.9	7.3	.93	.16	12278
					2	.....	36.7	55.3	8.0	1.02	.18	13364
					3	.....	39.8	60.2	.....	1.11	.20	14526
					4	.....	.....	.....	.....	.....	.....	14662

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
C-693.....	155	1934	Williamson.	6	1	8.4	34.0	50.4	7.2	1.38	.17	12221
					2	.....	37.1	55.0	7.9	1.50	.19	13345
					3	.....	40.3	59.7	.....	1.63	.21	14486
					4	.....	.....	.....	.....	.....	.....	14640
C-694.....	155	1934	Williamson.	6	1	8.3	34.6	49.1	8.0	1.57	.13	12100
					2	.....	37.8	53.5	8.7	1.72	.14	13201
					3	.....	41.4	58.6	.....	1.88	.....	14466
					4	.....	.....	.....	.....	.....	.....	14628
12822.....	*156	1921	Williamson.	6	1	8.38	31.25	53.08	7.29	1.12	.05	12067
					2	.....	34.11	57.93	7.96	1.22	.05	13171
					3	.....	37.06	62.94	.....	1.33	.05	14310
					4	.....	.....	.....	.....	.....	.....	14449
12823.....	*156	1921	Williamson.	6	1	9.18	31.10	52.33	7.39	1.32	.16	11956
					2	.....	34.25	57.61	8.14	1.45	.18	13164
					3	.....	37.28	62.72	.....	1.58	.20	14330
					4	.....	.....	.....	.....	.....	.....	14480
12824.....	*156	1921	Williamson.	6	1	8.71	31.98	52.07	7.24	.94	.12	12062
					2	.....	35.03	57.04	7.93	1.03	.14	13213
					3	.....	38.05	61.95	.....	1.12	.15	14351
					4	.....	.....	.....	.....	.....	.....	14483
12841.....	*156	1921	Williamson.	6	1	7.42	31.81	53.51	7.26	1.22	.07	12250
					2	.....	34.36	57.80	7.84	1.32	.07	13231
					3	.....	37.28	62.72	.....	1.43	.08	14357
					4	.....	.....	.....	.....	.....	.....	14498
12842.....	*156	1921	Williamson.	6	1	7.53	32.41	53.95	6.11	2.41	.22	12416
					2	.....	35.05	58.34	6.61	2.61	.24	13426
					3	.....	37.53	62.47	.....	2.79	.26	14376
					4	.....	.....	.....	.....	.....	.....	14542
BM80598....	*157	1921	Williamson.	6	1	7.19	35.82	47.55	9.44	2.90	.26	12074
					2	.....	38.59	51.24	10.17	3.12	.28	13009
					3	.....	42.96	57.04	.....	3.47	.31	14482
					4	.....	.....	.....	.....	.....	.....	14723

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM80599....	*157	1921	Williamson.	6	1	8.17	35.03	46.87	9.93	3.08	.29	11893
					2	.....	38.15	51.04	10.81	3.35	.30	12951
					3	.....	42.77	57.23	.....	3.76	.34	14521
					4	.....	.....	.....	.....	.....	.....	14782
BM80600....	*157	1921	Williamson.	6	1	9.25	32.70	50.57	7.48	1.52	.17	12056
					2	.....	36.03	55.73	8.24	1.67	.19	13285
					3	.....	39.27	60.73	.....	1.82	.21	14478
					4	.....	.....	.....	.....	.....	.....	14639
12819.....	*158	1921	Williamson.	6	1	7.47	32.15	51.38	9.00	2.37	.32	11885
					2	.....	34.75	55.52	9.73	2.56	.35	12845
					3	.....	38.50	61.50	.....	2.84	.39	14230
					4	.....	.....	.....	.....	.....	.....	14437
12820.....	*158	1921	Williamson.	6	1	8.24	30.97	51.39	9.40	2.75	.00	11776
					2	.....	33.75	56.00	10.25	3.00	.00	12833
					3	.....	37.60	62.40	.....	3.34	.00	14299
					4	.....	.....	.....	.....	.....	.....	14531
12821.....	*158	1921	Williamson.	6	1	9.91	30.11	52.87	7.11	1.55	.02	11923
					2	.....	33.42	58.69	7.89	1.72	.02	13234
					3	.....	36.28	63.72	.....	1.87	.02	14368
					4	.....	.....	.....	.....	.....	.....	14523
12796.....	*159	1921	Williamson.	6	1	7.79	32.17	52.09	7.95	1.72	.06	12157
					2	.....	34.89	56.49	8.62	1.87	.06	13184
					3	.....	38.18	61.82	.....	2.05	.07	14428
					4	.....	.....	.....	.....	.....	.....	14599
12797.....	*159	1921	Williamson.	6	1	6.89	33.72	48.39	11.00	3.99	.25	11768
					2	.....	36.22	51.97	11.81	4.29	.27	12639
					3	.....	41.07	58.93	.....	4.86	.31	14332
					4	.....	.....	.....	.....	.....	.....	14637
12798.....	*159	1921	Williamson.	6	1	8.10	30.89	50.72	10.29	3.62	.09	11717
					2	.....	33.61	55.19	11.20	3.94	.09	12750
					3	.....	37.85	62.15	.....	4.44	.10	14358
					4	.....	.....	.....	.....	.....	.....	14642

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12868.....	*160	1921	Williamson.	6	1	8.81	31.54	50.60	9.05	1.46	.06	11783
					2	.....	34.59	55.49	9.92	1.60	.06	12921
					3	.....	38.40	61.60	.....	1.78	.07	14344
					4	.....	.....	.....	.....	.....	.....	14524
12869.....	*160	1921	Williamson.	6	1	8.52	31.66	52.11	7.71	1.17	.09	12094
					2	.....	34.61	56.96	8.43	1.29	.09	13220
					3	.....	37.80	62.20	.....	1.41	.10	14437
					4	.....	.....	.....	.....	.....	.....	14586
12870.....	*160	1921	Williamson.	6	1	6.88	34.57	49.39	9.16	3.79	.02	12022
					2	.....	37.12	53.04	9.84	4.07	.02	12909
					3	.....	41.17	58.83	.....	4.51	.02	14318
					4	.....	.....	.....	.....	.....	.....	14582
13539.....	*163	1922	Williamson.	6	1	6.49	35.49	46.95	11.07	3.49	.....	11821
					2	.....	37.95	50.21	11.84	3.73	.....	12640
					3	.....	43.05	56.95	.....	4.23	.....	14339
					4	.....	.....	.....	.....	.....	.....	14625
13540.....	*163	1922	Williamson.	6	1	6.63	36.47	47.50	9.50	3.06	.....	12133
					2	.....	39.06	50.77	10.17	3.30	.....	12995
					3	.....	43.48	56.52	.....	3.67	.....	14466
					4	.....	.....	.....	.....	.....	.....	14713
13541.....	*163	1922	Williamson.	6	1	5.93	34.60	47.58	11.89	3.27	.....	11788
					2	.....	36.78	50.58	12.64	3.48	.....	12532
					3	.....	42.10	57.90	.....	3.98	.....	14345
					4	.....	.....	.....	.....	.....	.....	14636
13542.....	*163	1922	Williamson.	6	1	7.11	34.56	46.85	11.48	2.89	.....	11668
					2	.....	37.20	50.44	12.36	3.11	.....	12561
					3	.....	42.45	57.55	.....	3.55	.....	14332
					4	.....	.....	.....	.....	.....	.....	14605
13543.....	*163	1922	Williamson.	6	1	7.59	33.61	49.25	9.55	2.72	.....	11974
					2	.....	36.37	53.29	10.34	2.94	.....	12958
					3	.....	40.56	59.44	.....	3.28	.....	14452
					4	.....	.....	.....	.....	.....	.....	14689

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
13544	*163	1922	Williamson.	6	1	6.01	35.21	47.68	11.10	3.54	.....	11867
					2	.....	37.46	50.73	11.81	3.77	.....	12526
					3	.....	42.48	57.52	.....	4.27	.....	14203
					4	.....	.....	.....	.....	.....	.....	14485
13829	*163	1923	Williamson.	6	1	6.96	35.80	47.04	10.20	3.03	.....	11894
					2	.....	38.48	50.56	10.96	3.26	.....	12784
					3	.....	43.22	56.78	.....	3.66	.....	14358
					4	.....	.....	.....	.....	.....	.....	14613
13830	*163	1923	Williamson.	6	1	6.55	36.14	47.27	10.04	2.85	.....	12023
					2	.....	38.67	50.59	10.74	3.05	.....	12866
					3	.....	43.32	56.68	.....	3.41	.....	14414
					4	.....	.....	.....	.....	.....	.....	14660
13831	*163	1923	Williamson.	6	1	6.49	34.61	47.03	11.87	3.00	.....	11771
					2	.....	37.01	50.29	12.70	3.20	.....	12588
					3	.....	42.39	57.61	.....	3.66	.....	14419
					4	.....	.....	.....	.....	.....	.....	14703
13833	*163	1923	Williamson.	6	1	6.71	34.52	46.92	11.85	3.08	.....	11698
					2	.....	37.00	50.30	12.70	3.30	.....	12539
					3	.....	42.38	57.62	.....	3.78	.....	14363
					4	.....	.....	.....	.....	.....	.....	14649
BM80651	*165	1921	Williamson.	6	1	8.82	31.24	52.45	7.49	.92	.49	12047
					2	.....	34.26	57.53	8.21	1.01	.54	13212
					3	.....	37.32	62.68	.....	1.10	.59	14394
					4	.....	.....	.....	.....	.....	.....	14531
BM80652	*165	1921	Williamson.	6	1	8.79	32.97	48.73	9.51	1.61	.60	11819
					2	.....	36.15	53.42	10.43	1.77	.66	12958
					3	.....	40.36	59.64	.....	1.98	.74	14467
					4	.....	.....	.....	.....	.....	.....	14664
BM80653	*165	1921	Williamson.	6	1	6.51	34.93	46.12	12.44	4.21	1.01	11697
					2	.....	37.36	49.33	13.31	4.50	1.08	12511
					3	.....	43.10	56.90	.....	5.19	1.24	14432
					4	.....	.....	.....	.....	.....	.....	14776

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12838	*166	1921	Williamson.	6	1	7.85	32.46	49.17	10.52	3.03	.82	11675
					2	.....	35.23	53.36	11.41	3.28	.88	12670
					3	.....	39.77	60.23	.....	3.70	.99	14302
					4	.....	.....	.....	.....	.....	.....	14564
12839	*166	1921	Williamson.	6	1	8.08	32.30	50.78	8.84	2.00	.21	11867
					2	.....	35.14	55.24	9.62	2.18	.23	12910
					3	.....	38.88	61.12	.....	2.41	.25	14284
					4	.....	.....	.....	.....	.....	.....	14479
12840	*166	1921	Williamson.	6	1	6.47	33.63	48.02	11.88	3.57	.64	11659
					2	.....	35.96	51.34	12.70	3.71	.69	12464
					3	.....	41.19	58.81	.....	4.25	.79	14277
					4	.....	.....	.....	.....	.....	.....	14575
12875	*167	1921	Williamson.	6	1	8.10	31.22	53.02	7.66	1.15	.13	12156
					2	.....	33.97	57.69	8.34	1.25	.14	13227
					3	.....	37.06	62.94	.....	1.36	.15	14432
					4	.....	.....	.....	.....	.....	.....	14578
12876	*167	1921	Williamson.	6	1	8.79	32.42	48.41	10.38	1.59	.48	11573
					2	.....	35.54	53.08	11.38	1.74	.53	12688
					3	.....	40.10	59.90	.....	1.96	.60	14317
					4	.....	.....	.....	.....	.....	.....	14525
12877	*167	1921	Williamson.	6	1	6.47	34.62	49.61	9.30	2.92	.20	12046
					2	.....	37.01	53.05	9.94	3.12	.22	12878
					3	.....	41.09	58.91	.....	3.46	.24	14299
					4	.....	.....	.....	.....	.....	.....	14531
13537	*167	1922	Williamson.	6	1	9.09	31.04	51.54	8.33	1.09	.....	11999
					2	.....	34.15	56.69	9.16	1.20	.....	13199
					3	.....	37.59	62.41	.....	1.32	.....	14530
					4	.....	.....	.....	.....	.....	.....	14689
13538	*167	1922	Williamson.	6	1	7.31	34.19	46.48	12.02	3.07	.....	11635
					2	.....	36.88	50.15	12.97	3.31	.....	12553
					3	.....	42.38	57.62	.....	3.80	.....	14424
					4	.....	.....	.....	.....	.....	.....	14717

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
12881.....	168	1921	Williamson.	6	1	5.00	37.42	46.61	10.97	3.13	.28	12108
					2	.....	39.39	49.06	11.55	3.29	.30	12745
					3	.....	44.53	55.47	.....	3.72	.34	14409
					4	.....	.....	.....	.....	.....	.....	14676
12882.....	168	1921	Williamson.	6	1	4.94	36.99	46.71	11.36	3.39	.44	12106
					2	.....	38.91	49.14	11.95	3.57	.46	12735
					3	.....	44.19	55.81	.....	4.05	.52	14463
					4	.....	.....	.....	.....	.....	.....	14750
12883.....	168	1921	Williamson.	6	1	5.73	35.37	44.97	13.93	4.17	.36	11514
					2	.....	37.52	47.71	14.77	4.42	.38	12215
					3	.....	44.02	55.98	.....	5.19	.45	14332
					4	.....	.....	.....	.....	.....	.....	14695
12772.....	*169	1921	Williamson.	6	1	5.48	36.28	47.15	11.09	3.78	.61	11879
					2	.....	38.38	49.89	11.73	4.00	.65	12568
					3	.....	43.48	56.52	.....	4.53	.74	14238
					4	.....	.....	.....	.....	.....	.....	14528
12773.....	*169	1921	Williamson.	6	1	5.88	35.63	46.19	12.30	3.77	.45	11631
					2	.....	37.86	49.07	13.07	4.01	.47	12358
					3	.....	43.55	56.45	.....	4.61	.54	14216
					4	.....	.....	.....	.....	.....	.....	14529
12774.....	*169	1921	Williamson.	6	1	6.95	34.41	48.47	10.17	4.02	.03	11848
					2	.....	36.98	52.09	10.93	4.32	.03	12733
					3	.....	41.52	58.48	.....	4.85	.03	14295
					4	.....	.....	.....	.....	.....	.....	14585
BM80625....	†[r]170	1921	Williamson.	6	1	6.40	36.71	47.70	9.19	3.41	.04	12150
					2	.....	39.22	50.96	9.82	3.64	.04	12981
					3	.....	43.49	56.51	.....	4.04	.04	14395
					4	.....	.....	.....	.....	.....	.....	14644
BM80626....	†[r]171	1921	Williamson.	6	1	7.29	34.93	47.65	10.13	3.78	.04	11745
					2	.....	37.68	51.39	10.93	4.08	.04	12669
					3	.....	42.30	57.70	.....	4.58	.04	14224
					4	.....	.....	.....	.....	.....	.....	14502

r Two small stripping mines and one local drift mine operating in the same section.
*Shipping mine abandoned or long idle.
†Local or captive mine (those sampled before 1930 largely abandoned).
x The form of analyses is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM80670....	†[r]172	1921	Williamson.	6	1	6.40	36.38	48.20	9.02	3.45	.04	12179
					2	.....	38.87	51.49	9.64	3.69	.04	13012
					3	.....	43.02	56.98	.....	4.08	.04	14400
					4	.....	.....	.....	.....	.....	.....	14650
BM80671.. .	*173	1921	Williamson.	6	1	6.24	36.41	44.45	12.90	3.56	.90	11672
					2	.....	38.83	47.41	13.76	3.80	.96	12449
					3	.....	45.03	54.97	.....	4.41	1.11	14435
					4	.....	... . .	.....	.....	.....	.. ...	14761
BM80672....	*173	1921	Williamson.	6	1	7.49	36.37	46.95	9.19	2.73	.04	12080
					2	.....	39.31	50.76	9.93	2.95	.04	13058
					3	.....	43.64	56.36	.....	3.28	.04	14498
					4	.....	.....	.....	.....	.....	.....	14729
BM80673....	*173	1921	Williamson.	6	1	7.14	35.39	44.61	12.86	4.35	.63	11481
					2	... ...	38.11	48.04	13.85	4.68	.68	12364
					3	.....	44.24	55.76	.....	5.43	.79	14352
					4	.....	.....	.....	.....	.....	.....	14709
BM17719....	[s]BM *27	1913	Williamson.	6	1	8.77	32.64	51.41	7.18	1.10	.....	12177
					2	.....	35.78	56.35	7.87	1.21	.....	13347
					3	.....	38.84	61.16	.....	1.31	.....	14486
					4	.....	.....	.....	.....	.....	.....	14627
BM17720....	[s]BM *27	1913	Williamson.	6	1	9.37	32.83	49.63	8.17	1.70	.....	11988
					2	.....	36.22	54.77	9.01	1.88	.....	13228
					3	.....	39.81	60.19	.....	2.07	.....	14539
					4	.....	.....	.....	.....	.....	.....	14718
BM17721....	[s]BM *27	1913	Williamson.	6	1	8.70	31.78	51.89	7.63	1.00	.....	12173
					2	.....	34.81	56.83	8.36	1.10	.....	13334
					3	.....	37.98	62.02	.....	1.20	.....	14551
					4	.....	.....	.....	.....	.....	.....	14695
BM28810....	[t]BM *28	1917	Williamson.	6	1	8.31	32.40	50.75	8.54	1.33	.....	11965
					2	.....	35.34	55.35	9.31	1.45	.....	13048
					3	.....	38.97	61.03	.....	1.60	.....	14387
					4	.....	.....	.....	.....	.....	.....	14555

r Two small stripping mines and one local drift mine operating in the same section.
s Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 123, p. 36, 1918.
t Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 34, 1922.
*Shipping mine abandoned or long idle.
†Local or captive mine (those sampled before 1930 largely abandoned).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM28811....	[t]BM	1917	Williamson.	6	1	9.13	31.48	51.00	8.39	.97	.....	11822
	*28				2	.....	34.64	56.13	9.23	1.07	.....	13010
					3	.....	38.16	61.84	.....	1.18	.....	14333
					4	.....	.....	.....	.....	.....	.....	14486
BM28812....	[t]BM	1917	Williamson.	6	1	8.82	35.15	47.90	8.13	1.07	.....	11965
	*28				2	.....	38.55	52.53	8.92	1.17	.....	13122
					3	.....	42.32	57.68	.....	1.28	.....	14407
					4	.....	.....	.....	.....	.....	.....	14560
BM28813....	[t]BM	1917	Williamson.	6	1	9.31	32.93	49.63	8.13	.82	.....	11902
	*28				2	.....	36.31	54.73	8.96	.90	.....	13124
					3	.....	39.88	60.12	.....	.99	.....	14414
					4	.....	.....	.....	.....	.....	.....	14560
BM28814....	[t]BM	1917	Williamson.	6	1	9.78	33.08	49.93	7.21	.75	.....	11965
	*28				2	.....	36.67	55.34	7.99	.83	.....	13262
					3	.....	39.85	60.15	.....	.90	.....	14414
					4	.....	.....	.....	.....	.....	.....	14542
BM30863....	BM	1918	Williamson.	6	1	9.72	32.84	50.65	6.79	.96	.....	12026
	*28				2	.....	36.38	56.10	7.52	1.06	.....	13322
					3	.....	39.34	60.66	.....	1.15	.....	14405
					4	.....	.....	.....	.....	.....	.....	14534
BM30864....	[t]BM	1918	Williamson.	6	1	9.40	34.38	47.35	8.87	1.28	.....	11801
	*28				2	.....	37.95	52.26	9.79	1.41	.....	13027
					3	.....	42.07	57.95	.....	1.56	.....	14440
					4	.....	.....	.....	.....	.....	.....	14615
BM30865....	[t]BM	1918	Williamson.	6	1	10.58	32.47	46.30	10.65	1.57	.....	11322
	*28				2	.....	36.31	51.78	11.91	1.76	.....	12661
					3	.....	41.22	58.78	.....	2.00	.....	14373
					4	.....	.....	.....	.....	.....	.....	14591
BM30872....	[t]BM	1918	Williamson.	6	1	9.13	32.21	47.97	10.69	.80	.....	11500
	69				2	.....	35.45	52.79	11.76	.88	.....	12656
					3	.....	40.18	59.82	.....	1.00	.....	14342
					4	.....	.....	.....	.....	.....	.....	14527

t Fieldner, A C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 34, 1922.

*Shipping mine abandoned or long idle.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
BM30873....	tBM 69	1918	Williamson.	6	1	8.84	32.52	49.81	8.83	1.09	... ...	11873
					2	.....	35.67	54.64	9.69	1.20	.....	13023
					3	.....	39.50	60.50	.....	1.33	.....	14420
					4	.....	.....	.....	.....	.....	.....	14586
BM30874....	tBM 69	1918	Williamson.	6	1	9.75	33.36	51.37	5.52	.88	.....	12280
					2	.....	36.96	56.92	6.12	.98	... ...	13606
					3	.....	39.37	60.63	.....	1.04	.....	14492
					4	.....	.....	.....	.....	.....	.....	14601
BM30875....	tBM 69	1918	Williamson.	6	1	10.82	31.11	49.02	9.05	.88	.....	11646
					2	.....	34.88	54.97	10.15	.99	.....	13059
					3	.....	38.82	61.18	.....	1.10	.....	14535
					4	.....	.....	.....	.....	.....	.....	14701
SPARLAND OR DANVILLE (NO. 7) COAL (NORTHERN AND EASTERN ILLINOIS)												
A86569.....	†532	1933	Bureau....	7	1	18.3	32.4	36.7	12.6	2.8	.....	9840
					2	.....	39.6	45.0	15.4	3.4	.....	12040
					3	.....	46.8	53.2	.....	4.1	.....	14230
					4	.....	.....	.....	.....	.....	.....	14565
A86597.....	†532	1933	Bureau.....	7	1	16.9	32.6	35.4	15.1	3.9	.....	9580
					2	.....	39.2	42.6	18.2	4.7	... . .	11540
					3	.....	47.9	52.1	.....	5.8	.....	14100
					4	.....	.....	.....	.....	.....	.....	14538
C-153.....	†532	1933	Bureau.....	7	1	17.3	32.4	36.2	14.1	3.24	.71	9676
					2	.....	39.2	43.7	17.1	3.92	.86	11697
					3	.....	47.3	52.7	.....	4.73	1.03	14102
					4	.....	.....	.....	.....	.....	.....	14489
C-154.....	†532	1933	Bureau.....	7	1	18.0	33.0	36.6	12.4	2.60	.94	9847
					2	... . .	40.3	44.6	15.1	3.17	1.15	12015
					3	.....	47.5	52.5	.....	3.73	1.35	14158
					4	.....	.....	.....	.....	.....	.....	14468
°BMA45318..	†360	1928	Marshall...	7	1	15.9	32.8	35.8	15.5	4.0	.....	9890
					2	.....	39.0	42.6	18.4	4.7	.....	11750
					3	.....	47.8	52.2	.....	5.8	.....	14410
					4	.....	.....	.....	.....	.....	.....	14850

t Fieldner, A. C., and others, Analyses of coal: U. S. Bureau of Mines Bull. 193, p. 34, 1922.
°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and University of Illinois.
†Local or captive mine (those sampled before 1930 largely abandoned).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°BMA45319..	†360	1928	Marshall...	7	1	14.3	33.3	35.7	16.7	4.2	.....	9830
					2	.....	38.9	41.6	19.5	4.9	.....	11470
					3	.....	48.3	51.7	.....	6.1	.....	14250
					4	.....	.....	.....	.....	.....	.....	14722
°16417.....	†360	1928	Marshall...	7	1	16.34	34.62	35.18	13.86	3.97	.....	9817
					2	.....	41.38	42.05	16.57	4.75	.....	11734
					3	.....	49.60	50.40	.....	5.69	.....	14064
					4	.....	.....	.....	.....	.....	.....	14462
°16418.....	†360	1928	Marshall...	7	1	15.12	33.95	34.45	16.48	4.01	.....	9627
					2	.....	40.00	40.58	19.42	4.72	.....	11342
					3	.....	49.64	50.36	.....	5.86	.....	14075
					4	.....	.....	.....	.....	.....	.....	14530
16420.....	†361	1928	Marshall...	7	1	15.63	34.44	35.06	14.87	3.94	.....	9910
					2	.....	40.82	41.55	17.63	4.67	.....	11746
					3	.....	49.56	50.44	.....	5.67	.....	14260
					4	.....	.....	.....	.....	.....	.....	14686
16421.....	†361	1928	Marshall...	7	1	16.08	34.57	35.15	14.20	3.08	.....	9955
					2	.....	41.19	41.89	16.92	3.67	.....	11862
					3	.....	49.58	50.42	.....	4.42	.....	14278
					4	.....	.....	.....	.....	.....	.....	14652
16422.....	†362	1928	Marshall...	7	1	14.67	35.13	34.31	15.89	3.73	.....	9742
					2	.....	41.17	40.21	18.62	4.37	.....	11417
					3	.....	50.59	49.41	.....	5.37	.....	14029
					4	.....	.....	.....	.....	.....	.....	14452
16423.....	†362	1928	Marshall...	7	1	15.21	35.83	34.90	14.06	3.68	.....	10087
					2	.....	42.26	41.16	16.58	4.34	.....	11896
					3	.....	50.66	49.34	.....	5.20	.....	14260
					4	.....	.....	.....	.....	.....	.....	14652
°16432.....	†363	1928	Marshall...	7	1	13.97	37.82	34.96	13.25	3.13	.....	10317
					2	.....	43.96	40.64	15.40	3.64	.....	11992
					3	.....	51.96	48.04	.....	4.30	.....	14175
					4	.....	.....	.....	.....	.....	.....	14514

°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and University of Illinois.

†Local or captive mine (those sampled before 1930 largely abandoned).

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°16433.....	†363	1928	Marshall...	7	1	13.62	37.31	35.22	13.85	3.15	.....	10325
					2	.....	43.19	40.78	16.03	3.65	.....	11953
					3	.....	51.43	48.57	.....	4.35	.....	14235
					4	.....	.....	.....	.....	.....	.....	14589
°BMA45463..	†363	1928	Marshall...	7	1	14.2	33.0	38.8	14.0	3.1	.....	10380
					2	.....	38.4	45.3	16.3	3.6	.....	12100
					3	.....	45.9	54.1	.....	4.3	.....	14460
					4	.....	.....	.....	.....	.....	.....	14823
°BMA45464..	†363	1928	Marshall...	7	1	14.3	34.9	38.4	12.4	2.7	.....	10560
					2	.....	40.7	44.8	14.5	3.1	.....	12330
					3	.....	47.6	52.4	.....	3.6	.....	14410
					4	.....	.....	.....	.....	.....	.....	14739
16434.....	†364	1928	Marshall...	7	1	15.19	36.83	36.37	11.61	3.21	.....	10496
					2	.....	43.43	42.88	13.69	3.79	.....	12376
					3	.....	50.32	49.68	.....	4.39	.....	14339
					4	.....	.....	.....	.....	.....	.....	14660
16435.....	†364	1928	Marshall...	7	1	15.02	35.80	35.17	14.01	3.35	.....	10168
					2	.....	42.13	41.39	16.48	3.94	.....	11988
					3	.....	50.44	49.56	.....	4.72	.....	14353
					4	.....	.....	.....	.....	.....	.....	14732
16443.....	†365	1928	Marshall...	7	1	15.19	36.94	36.22	11.65	3.11	.....	10414
					2	.....	43.56	42.71	13.73	3.67	.....	12279
					3	.....	50.49	49.51	.....	4.25	.....	14233
					4	.....	.....	.....	.....	.....	.....	14546
16442.....	†365	1928	Marshall...	7	1	17.87	34.57	32.27	15.29	3.75	.....	9424
					2	.....	42.09	39.29	18.62	4.57	.....	11475
					3	.....	51.72	48.28	.....	5.62	.....	14100
					4	.....	.....	.....	.....	.....	.....	14535
°4711.....	*94	1912	Vermilion...	7	1	12.20	39.53	38.38	9.89	3.76	.46	11243
					2	.....	45.03	43.70	11.27	4.29	.52	12804
					3	.....	50.75	49.25	.....	4.83	.59	14430
					4	.....	.....	.....	.....	.....	.....	14730

°Duplicate samples analyzed by University of Illinois and U. S. Bureau of Mines Experiment Station.

*Shipping mine abandoned or long idle.

†Local or captive mine (those sampled before 1930 largely abandoned).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°4713	*94	1912	Vermilion	7	1	12.70	39.20	39.24	8.86	2.79	.52	11399
					2	.....	44.90	44.95	10.15	3.19	.59	13057
					3	.....	49.97	50.03	.....	3.55	.66	14532
					4	.....	.....	.....	.....	.....	.....	14776
°4714	*94	1912	Vermilion	7	1	12.76	38.84	38.31	10.09	3.91	.61	11106
					2	.....	44.53	43.91	11.56	4.48	.70	12788
					3	.....	50.35	49.65	.....	5.06	.79	14459
					4	.....	.....	.....	.....	.....	.....	14773
°4716	*94	1912	Vermilion	7	1	12.67	39.01	37.43	10.89	3.54	.84	11041
					2	.....	44.67	42.86	12.47	4.06	.96	12644
					3	.....	51.03	48.97	.....	4.64	1.09	14445
					4	.....	.....	.....	.....	.....	.....	14758
°4722	*94	1912	Vermilion	7	1	13.53	37.39	39.57	9.51	3.20	.46	11045
					2	.....	43.24	45.76	11.00	3.70	.54	12773
					3	.....	48.58	51.42	.....	4.16	.61	14352
					4	.....	.....	.....	.....	.....	.....	14622
°4724	*94	1912	Vermilion	7	1	13.27	37.25	40.65	8.83	3.27	.38	11209
					2	.....	42.95	46.87	10.18	3.77	.44	12925
					3	.....	47.82	52.18	.....	4.20	.49	14390
					4	.....	.....	.....	.....	.....	.....	14650
°BM13491	*94	1912	Vermilion	7	1	13.04	38.78	38.43	9.75	3.06	.....	.....
					2	.....	44.60	44.19	11.21	3.52	.....	.....
					3	.....	50.23	49.77	.....	3.96	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13492	*94	1912	Vermilion	7	1	12.76	38.98	39.01	9.25	3.50	.....	.....
					2	.....	44.68	44.72	10.60	4.01	.....	.....
					3	.....	49.98	50.02	.....	4.49	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13493	*94	1912	Vermilion	7	1	12.67	39.61	38.17	9.55	3.36	.....	.....
					2	.....	45.36	43.70	10.94	3.85	.....	.....
					3	.....	50.93	49.07	.....	4.32	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....

°Duplicate samples analyzed by University of Illinois and U. S. Bureau of Mines Experiment Station.

*Shipping mine abandoned or long idle.

x The form of analyses is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Continued*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
°BM13494...	*94	1912	Vermilion...	7	1	12.45	39.09	39.66	8.80	2.86	.....	.....
					2	.....	44.65	45.30	10.05	3.27	.....	.....
					3	.....	49.64	50.36	.....	3.64	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13495...	*94	1912	Vermilion...	7	1	13.84	37.84	38.67	9.65	2.78	.....	.....
					2	.....	43.92	44.88	11.20	3.23	.....	.....
					3	.....	49.46	50.54	.....	3.64	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
°BM13496...	*94	1912	Vermilion...	7	1	13.77	37.85	39.87	8.51	3.01	.....	.....
					2	.....	43.89	46.24	9.87	3.49	.....	.....
					3	.....	48.70	51.30	.....	3.87	.....	.....
					4	.....	.....	.....	.....	.....	.....	.....
BM84226....	*94	1922	Vermilion...	7	1	13.1	37.7	39.8	9.4	2.8	.59	11110
					2	.....	43.4	45.8	10.8	3.2	.69	12770
					3	.....	48.75	51.3	.....	3.6	.77	14330
					4	.....	.....	.....	.....	.....	.....	14570
BM84227....	*94	1922	Vermilion...	7	1	14.1	37.0	39.3	9.6	2.9	.86	11030
					2	.....	43.1	45.7	11.2	3.4	1.0	12840
					3	.....	48.5	51.5	.....	3.8	1.13	14450
					4	.....	.....	.....	.....	.....	.....	14730
BM84228....	*94	1922	Vermilion...	7	1	13.7	37.0	39.5	9.8	3.2	.70	11050
					2	.....	42.9	45.7	11.4	3.7	.81	12800
					3	.....	48.4	51.6	.....	4.2	.91	14440
					4	.....	.....	.....	.....	.....	.....	14730
4727.....	*97	1912	Vermilion...	7	1	12.92	36.98	38.94	11.16	2.90	.70	10924
					2	.....	42.46	44.73	12.81	3.33	.80	12544
					3	.....	48.70	51.30	.....	3.82	.92	14387
					4	.....	.....	.....	.....	.....	.....	14677
4734.....	*97	1912	Vermilion...	7	1	13.10	38.42	39.14	9.34	2.26	.56	11281
					2	.....	44.22	45.03	10.75	2.59	.64	12981
					3	.....	49.55	50.45	.....	2.90	.72	14544
					4	.....	.....	.....	.....	.....	.....	14778

°Duplicate samples analyzed by U. S. Bureau of Mines Experiment Station and University of Illinois.

*Shipping mine abandoned or long idle.

TABLE 1.—INDIVIDUAL PROXIMATE ANALYSES OF FACE SAMPLES—*Concluded*

Laboratory No.	Mine Index No.	Date	County	Coal bed	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	CO_2	B.t.u.
4736.....	*97	1912	Vermilion...	7	1	13.41	37.33	38.87	10.39	2.54	.46	11065
					2	.....	43.11	44.89	12.00	2.93	.53	12778
					3	.....	48.99	51.01	.....	3.33	.60	14520
					4	.....	.....	.....	.....	.....	.....	14787
A90627	†603	1933	Vermilion...	7	1	12.9	38.7	39.2	9.2	3.00	.69	11320
					2	.....	44.5	45.0	10.5	3.50	.79	13000
					3	.....	49.7	50.3	.....	3.9	.....	14530
					4	.....	.....	.....	.....	.....	.....	14786
A90628.....	†603	1933	Vermilion...	7	1	13.5	37.2	38.8	10.5	2.9	.90	11110
					2	.....	43.0	44.9	12.1	3.3	1.04	12840
					3	.....	48.9	51.1	.....	.....	.....	14600
					4	.....	.....	.....	.....	.....	.....	14891
A90629.....	†603	1933	Vermilion...	7	1	13.7	39.1	38.2	9.0	2.6	1.06	11250
					2	.....	45.3	44.2	10.5	3.0	1.23	13030
					3	.....	50.6	49.4	.....	3.4	.....	14560
					4	.....	.....	.....	.....	.....	.....	14803

*Shipping mine abandoned or long idle.

†Local or captive mine (those sampled before 1930 largely abandoned).

x The form of analyses is denoted by number, as follows: 1=sample as received at laboratory: 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES OF ILLINOIS COALS, ARRANGED BY COAL BED, COUNTY, AND MINE

FULTON COUNTY — **ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	United Coal index
105	(3) 12469-70-71	1	11.2	38.4	40.2	10.2	5.0	.....	.....	.....	.....	6372	11470	.....	....
	(1921)	2	.....	43.3	45.2	11.5	5.6	.....	.....	.....	.....	7177	12920	.....	....
	(County average)	3	.....	48.9	51.1	.....	6.3	.....	.....	.....	.....	8109	14600	.....	....
		4	13.0	41.3	45.7	.....	.....	.....	.....	.....	.....	7229	13010	130	....
		5	.....	47.5	52.5	.....	.....	.....	.....	.....	.....	8309	14960	.....	150

County Average Rank Index 130
County Average Unit Coal Index 150

HENRY COUNTY — **ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)**

232	(2) 14387-88; A90508 (composite 3)	1	14.7	38.5	37.8	9.0	5.5	5.9	58.6	.9	20.1	6027	10850	.....	....
	(1924, 1933)	2	.....	45.2	44.2	10.6	6.5	5.1	68.6	1.0	8.2	7062	12710	.....	....
		3	.....	50.5	49.5	.....	7.3	5.7	76.7	1.1	9.2	7898	14220	.....	....
		4	16.8	40.8	42.4	.....	.....	.....	.....	.....	.....	6737	12130	121	....
		5	.....	49.1	50.9	.....	.....	.....	.....	.....	.....	8098	14580	.....	146
237	(2) 14385-86	1	17.4	36.0	39.7	6.9	3.4	.....	.....	.....	.....	6023	10840	.....	....
	(1924)	2	.....	43.6	48.1	8.3	4.1	.....	.....	.....	.....	7290	13120	.....	....
		3	.....	47.5	52.5	.....	4.5	.....	.....	.....	.....	7953	14320	.....	....
		4	19.2	37.6	43.2	.....	.....	.....	.....	.....	.....	6537	11770	118	....
		5	.....	46.5	53.5	.....	.....	.....	.....	.....	.....	8087	14560	.....	146

252	(2) 14383-84	1	14.6	35.8	37.9	11.7	6.7	.....	.....	.....	.....	5717	10290	.....	....
	(1924)	2	.....	41.9	44.4	13.7	7.8	.....	.....	.....	.....	6692	12060	.....	....
		3	.....	48.6	51.4	.....	9.0	.....	.....	.....	.....	7752	13950	.....	....
		4	17.4	38.5	44.1	.....	.....	.....	.....	.....	.....	6608	11890	119	....
		5	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	8999	14400	.....	144
354	(2) 15691-92	1	17.1	36.4	37.9	8.6	3.6	.....	.....	.....	.....	5868	10560	.....	....
	(1927)	2	.....	43.9	45.7	10.4	4.4	.....	.....	.....	.....	7082	12750	.....	....
		3	.....	49.0	51.0	.....	4.9	.....	.....	.....	.....	7904	14230	.....	....
		4	19.3	38.6	42.1	.....	.....	.....	.....	.....	.....	6503	11710	117	....
		5	.....	47.9	52.1	.....	.....	.....	.....	.....	.....	8062	14510	.....	145
	Average 4 mine averages (1 ultimate)	1	15.9	36.7	38.3	9.1	4.8	6.2	58.0	0.8	21.1	5908	10640	.....	....
	(County average)	2	.....	43.6	45.6	10.8	5.7	5.2	69.0	1.0	8.3	7025	12650	.....	....
		3	.....	48.9	51.1	.....	6.4	5.8	77.4	1.1	9.3	7875	14180	.....	....
		4	18.2	38.9	42.9	.....	.....	.....	.....	.....	.....	6597	11880	119	....
		5	.....	47.5	52.5	.....	.....	.....	.....	.....	.....	8059	14510	.....	145

County Average Rank Index 119 (117-121)
County Average Unit Coal Index 145 (144-146)

KNOX COUNTY — ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)

355	(2) 15493-94	1	14.3	36.7	41.1	7.9	4.5	.....	.....	.....	.....	6204	11170	.....	....
	(1926)	2	.....	42.8	47.9	9.3	5.3	.....	.....	.....	.....	7237	13030	.....	....
	(County average)	3	.....	47.2	52.8	.....	5.8	.....	.....	.....	.....	7975	14360	.....	....
		4	16.1	38.5	45.4	.....	.....	.....	.....	.....	.....	6834	12300	123	....
		5	.....	45.9	54.1	.....	.....	.....	.....	.....	.....	8141	14650	.....	147

County Average Rank Index 123
County Average Unit Coal Index 147

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

MERCER COUNTY — **ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
17	(2) 5371-72 (1912)	1	17.6	39.2	34.1	9.1	5.0	.....	.....	.....	.....	4742	10340	.....	....
		2	.....	47.5	41.4	11.1	6.1	.....	.....	.....	.....	6971	12550	.....	....
		3	.....	53.4	46.6	.....	6.8	.....	.....	.....	.....	7836	14110	.....	....
		4	20.2	41.6	38.2	.....	.....	.....	.....	.....	.....	6409	11540	115	....
		5	.....	52.2	47.8	.....	.....	.....	.....	.....	.....	8029	14450	.....	145
18	(3) 5359-60-61 (1912)	1	14.6	39.1	37.0	9.3	4.8	.....	.....	.....	.....	6044	10880	.....	....
		2	.....	45.7	43.3	11.0	5.6	.....	.....	.....	.....	7076	12740	.....	....
		3	.....	51.4	48.6	.....	6.3	.....	.....	.....	.....	7975	14360	.....	....
		4	16.7	41.7	41.6	.....	.....	.....	.....	.....	.....	6774	12190	122	....
		5	.....	50.1	49.9	.....	.....	.....	.....	.....	.....	8133	14640	.....	146
19	(6) 5338-39-40, 5363-64-65 (1912)	1	14.5	39.3	36.3	9.9	4.2	.....	.....	.....	.....	6005	10810	.....	....
		2	.....	45.9	42.5	11.6	4.9	.....	.....	.....	.....	7025	12650	.....	....
		3	.....	51.9	48.1	.....	5.52	.....	.....	.....	.....	7945	14300	.....	....
		4	16.7	42.3	41.0	.....	.....	.....	.....	.....	.....	6768	12180	122	....
		5	.....	50.8	49.2	.....	.....	.....	.....	.....	.....	8123	14620	.....	146
233	(3) 13812-13-14 (1923)	1	16.0	37.2	38.1	8.7	3.6	.....	.....	.....	.....	5947	10700	.....	....
		2	.....	44.3	45.4	10.3	4.2	.....	.....	.....	.....	7080	12740	.....	....
		3	.....	49.4	50.6	.....	4.8	.....	.....	.....	.....	7895	14210	.....	....
		4	18.1	39.5	42.4	.....	.....	.....	.....	.....	.....	6593	12190	122	....
		5	.....	48.3	51.7	.....	.....	.....	.....	.....	.....	8046	14480	.....	145

356	(2) 15414-15	1	15.4	37.9	38.8	7.9	4.7	.....	.....	.....	.....	6117	11010	.....	....
	(1926)	2	.....	44.8	45.9	9.3	5.6	.....	.....	.....	.....	7235	13020	.....	....
		3	.....	49.4	50.6	.....	6.1	.....	.....	.....	.....	7974	14350	.....	....
		4	17.4	39.7	42.9	.....	.....	.....	.....	.....	.....	6732	12120	121	....
		5	.....	48.1	51.9	.....	.....	.....	.....	.....	.....	8145	14660	.....	147
	Average 5 mine averages	1	15.6	38.5	36.9	9.0	4.4	.....	.....	.....	.....	5971	10750	.....	....
	(County average)	2	.....	45.7	43.7	10.6	5.3	.....	.....	.....	.....	7078	12740	.....	....
		3	.....	51.1	48.9	.....	5.9	.....	.....	.....	.....	7920	14250	.....	....
		4	17.8	41.0	41.2	.....	.....	.....	.....	.....	.....	6654	11980	120	....
		5	.....	49.9	50.1	.....	.....	.....	.....	.....	.....	8094	14570	.....	146

County Average Rank Index 120 (115-122)
County Average Unit Coal Index 146 (145-147)

ROCK ISLAND COUNTY

ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)

234	(3) 13815-16-17	1	16.6	35.7	39.2	8.5	4.8	.....	.....	.....	.....	5897	10620	.....	....
	(1923)	2	.....	42.7	47.1	10.2	5.8	.....	.....	.....	.....	7072	12730	.....	....
		3	.....	47.6	52.4	.....	6.4	.....	.....	.....	.....	7872	14170	.....	....
		4	18.8	37.5	43.7	.....	.....	.....	.....	.....	.....	6535	11760	118	....
		5	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	8052	14490	.....	145

County Average Rank Index 118
County Average Unit Coal Index 145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

WARREN COUNTY — **ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
346	(2) 13708-13808	1	14.7	37.3	37.6	10.4	6.2	.....	.....	.....	.....	5942	10700	.....	....
	(1923)	2	.....	43.7	44.1	12.2	7.3	.....	.....	.....	.....	6965	12540	.....	....
		3	.....	49.8	50.2	.....	8.3	.....	.....	.....	.....	7934	14280	.....	....
		4	17.2	39.8	43.0	.....	.....	.....	.....	.....	.....	6762	12170	122	....
		5	.....	48.1	51.9	.....	.....	.....	.....	.....	.....	8169	14700	.....	147
357	(2) 15416-17	1	11.6	41.6	40.1	6.7	4.7	.....	.....	.....	.....	6535	11760	.....	....
	(1926)	2	.....	47.1	45.4	7.5	5.4	.....	.....	.....	.....	7395	13310	.....	....
		3	.....	50.9	49.1	.....	5.8	.....	.....	.....	.....	7996	14390	.....	....
		4	12.9	43.4	43.7	.....	.....	.....	.....	.....	.....	7099	12780	128	....
		5	.....	49.9	50.1	.....	.....	.....	.....	.....	.....	8148	14670	.....	147
	Average 2 mine averages	1	13.2	39.4	38.8	8.6	5.5	.....	.....	.....	.....	6236	11220	.....	....
	(County average)	2	.....	45.4	44.7	9.9	6.3	.....	.....	.....	.....	7180	12920	.....	....
		3	.....	50.4	49.6	.....	7.0	.....	.....	.....	.....	7966	14340	.....	....
		4	15.0	41.6	43.4	.....	.....	.....	.....	.....	.....	6934	12480	125	....
		5	.....	49.0	51.0	.....	.....	.....	.....	.....	.....	8157	14680	.....	147

County Average Rank Index 125 (122-128)
County Average Unit Coal Index 147

12	(3) 5251-2-3.	1	9.6	33.0	51.1	6.3	1.1	. . . . .	. . . . .	. . . . .	. . . . .	6811	12260	. . . . .	. . . .
	(1912)	2	. . . . .	36.5	56.5	7.0	1.3	. . . . .	. . . . .	. . . . .	. . . . .	7536	13570	. . . . .	. . . .
		3	. . . . .	39.1	60.9	. . . . .	1.4	. . . . .	. . . . .	. . . . .	. . . . .	8097	14580	. . . . .	. . . .
		4	10.4	34.6	55.0	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	7321	13180	132	. . . .
		5	. . . . .	38.6	61.4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8170	14710	. . . . .	147
13	(3) 5248-49-50.	1	10.2	33.4	51.9	4.5	1.0	. . . . .	. . . . .	. . . . .	. . . . .	7008	12610	. . . . .	. . . .
	(1912)	2	. . . . .	37.2	57.8	5.0	1.1	. . . . .	. . . . .	. . . . .	. . . . .	7802	14040	. . . . .	. . . .
		3	. . . . .	39.2	60.8	. . . . .	1.1	. . . . .	. . . . .	. . . . .	. . . . .	8216	14790	. . . . .	. . . .
		4	10.8	34.5	54.7	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	7381	13290	133	. . . .
		5	. . . . .	38.7	61.3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8271	14890	. . . . .	149
14	(3) 5225-6-8.	1	8.6	34.2	50.2	7.0	1.5	. . . . .	. . . . .	. . . . .	. . . . .	6899	12420	. . . . .	. . . .
	(1912)	2	. . . . .	37.4	54.9	7.7	1.7	. . . . .	. . . . .	. . . . .	. . . . .	7545	13580	. . . . .	. . . .
		3	. . . . .	40.5	59.5	. . . . .	1.8	. . . . .	. . . . .	. . . . .	. . . . .	8171	14710	. . . . .	. . . .
		4	9.4	36.0	54.6	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	7486	13480	135	. . . .
		5	. . . . .	39.8	60.2	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8258	14860	. . . . .	149
15	(3) 5286-7-8.	1	8.7	34.8	51.3	5.2	1.4	. . . . .	. . . . .	. . . . .	. . . . .	7028	12650	. . . . .	. . .
	(1912)	2	. . . . .	38.1	56.2	5.7	1.6	. . . . .	. . . . .	. . . . .	. . . . .	7698	13860	. . . . .	. . . .
		3	. . . . .	40.4	59.6	. . . . .	1.6	. . . . .	. . . . .	. . . . .	. . . . .	8161	14690	. . . . .	. . . .
		4	9.3	36.1	54.6	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	7465	13440	134	. . . .
		5	. . . . .	39.8	60.2	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8230	14820	. . . . .	148
16	(3) 5496-7-8.	1	9.3	34.6	50.5	5.6	1.4	. . . . .	. . . . .	. . . . .	. . . . .	6943	12500	. . . . .	. . . .
	(1912)	2	. . . . .	38.1	55.7	6.2	1.5	. . . . .	. . . . .	. . . . .	. . . . .	7658	13780	. . . . .	. . . .
		3	. . . . .	40.6	59.4	. . . . .	1.6	. . . . .	. . . . .	. . . . .	. . . . .	8161	14690	. . . . .	. . . .
		4	10.0	36.0	54.0	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	7408	13340	133	. . . .
		5	. . . . .	40.0	60.0	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8233	14820	. . . . .	148

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

JACKSON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
	Average 5 mine averages.....	1	9.3	34.0	51.0	5.7	1.3	.....	.....	.....	.....	6938	12490	.....	....
	(County average)	2	.....	37.5	56.2	6.3	1.4	.....	.....	.....	.....	7648	13770	.....	....
		3	.....	40.0	60.0	.....	1.5	.....	.....	.....	.....	8163	14690	.....	....
		4	10.0	35.4	54.6	.....	.....	.....	.....	.....	.....	7413	13340	133	....
		5	.....	39.4	60.6	.....	.....	.....	.....	.....	.....	8234	14820	.....	148

County Average Rank Index 133 (132-135)
County Average Unit Coal Index 148 (147-149)

CHRISTIAN COUNTY — **LOWER ASSUMPTION (NO. ?) COAL (CENTRAL ILLINOIS)**

21	(3) 5229-30-31.....	1	11.3	38.9	40.9	8.9	2.3	.....	.....	.....	.....	6445	11600	.....	....
	(1912)	2	.....	43.8	46.2	10.0	2.6	.....	.....	.....	.....	7267	13080	.....	....
		3	.....	48.7	51.3	.....	2.9	.....	.....	.....	.....	8074	14530	.....	....
		4	12.7	41.8	45.5	.....	.....	.....	.....	.....	.....	7158	12880	129	....
		5	.....	47.9	52.1	.....	.....	.....	.....	.....	.....	8197	14760	.....	148

County Average Rank Index 129
County Average Unit Coal Index 148

CHRISTIAN COUNTY — **UPPER ASSUMPTION (NO. ?) COAL (CENTRAL ILLINOIS)**

21	(3) 5205-6-7 (1912)	1	13.0	39.2	40.9	6.9	3.1	.....	.....	.....	.....	6439	11590	.....	....
		2	.....	45.0	47.0	8.0	3.6	.....	.....	.....	.....	7399	13320	.....	....
		3	.....	48.9	51.1	.....	3.9	.....	.....	.....	.....	8038	14470	.....	....
		4	14.3	41.1	44.6	.....	.....	.....	.....	.....	.....	6996	12590	126	....
		5	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8161	14690	.....	147

County Average Rank Index 126
County Average Unit Coal Index 147

BUREAU COUNTY — **LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**

1	(3) 5324-25-26 (1912)	1	16.2	37.8	38.0	8.0	3.2	.....	.....	.....	.....	5993	10790	.....	....
		2	.....	45.1	45.4	9.5	3.9	.....	.....	.....	.....	7149	12870	.....	....
		3	.....	49.8	50.2	.....	4.3	.....	.....	.....	.....	7912	14240	.....	....
		4	18.1	40.0	41.9	.....	.....	.....	.....	.....	.....	6589	11860	119	....
		5	.....	48.8	51.2	.....	.....	.....	.....	.....	.....	8042	14480	.. .	145
8	(3) 5348-49-50	1	16.0	38.8	37.7	7.5	2.4	6.0	60.4	1.1	22.6	6062	10910	.....	....
		2	.....	46.1	44.9	9.0	2.8	5.0	72.0	1.2	10.0	7216	12990	.....	....
	BM 14587 F (composite 3)	3	.....	50.7	49.3	.....	3.1	5.5	79.1	1.4	10.9	7927	14270	.....	....
	(1912)	4	17.7	41.1	41.2	.....	.....	.....	.....	.....	.....	6621	11920	119	....
		5	.....	49.9	50.1	.....	.....	.....	.....	.....	.....	8041	14480	.....	145
10	(3) 5312-13-14 (1912)	1	16.1	38.8	38.4	6.7	3.2	.....	.....	.....	.....	6108	10990	.....	....
		2	.....	46.3	45.7	8.0	3.8	.....	.....	.....	.....	7282	13110	.....	....
		3	.....	50.3	49.7	.....	4.1	.....	.....	.....	.....	7912	14240	.....	....
		4	17.7	40.7	41.6	.....	.....	.....	.....	.....	.....	6612	11900	119	....
		5	.....	49.4	50.6	.....	.....	.....	.....	.....	.....	8037	14470	.....	145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

BUREAU COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Samples: Condition[x]	Proximate: Moisture	Proximate: Volatile Matter	Proximate: Fixed Carbon	Proximate: Ash	Ultimate: Sulphur	Ultimate: Hydrogen	Ultimate: Carbon	Ultimate: Nitrogen	Ultimate: Oxygen	Heat Values: Calories	Heat Values: British thermal units	Heat Values: Rank index	Heat Values: Unit coal index
	Average of 3 mine averages (1 ultimate)	1	16.1	38.5	38.0	7.4	2.9	5.9	60.1	1.1	22.6	6054	10900	.....	....
		2	.....	45.8	45.4	8.8	3.5	4.9	71.6	1.3	9.9	7216	12990	.....	....
	(County average)	3	.....	50.3	49.7	.....	3.8	5.4	78.5	1.4	10.9	7914	14250	.....	....
		4	17.8	40.6	41.6	.....	.....	.....	.....	.....	.....	6607	11890	119	....
		5	.....	49.4	50.6	.....	.....	.....	.....	.....	.....	8040	14470	.....	145

County Average Rank Index 119
County Average Unit Coal Index 145

GRUNDY COUNTY — **LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**

5	(3) 5373-4-5	1	16.0	39.3	38.5	6.2	2.8	.....	.....	.....	.....	6169	11100	.....	....
	(1912)	2	.....	46.8	45.9	7.3	3.3	.....	.....	.....	.....	7345	13220	.....	....
		3	.....	50.5	49.5	.....	3.5	.....	.....	.....	.....	7926	14270	.....	....
		4	17.4	41.1	41.5	.....	.....	.....	.....	.....	.....	6634	11940	119	....
		5	.....	49.8	50.2	.....	.....	.....	.....	.....	.....	8035	14460	.....	145
6	(3) 5367-8-9	1	19.5	37.6	38.0	4.9	2.0	.....	.....	.....	.....	6009	10820	.....	....
	(1912)	2	.....	46.7	47.2	6.1	2.6	.....	.....	.....	.....	7469	13440	.....	....
		3	.....	49.8	50.2	.....	2.8	.....	.....	.....	.....	7957	14320	.....	....
		4	20.9	38.9	40.2	.....	.....	.....	.....	.....	.....	6364	11460	115	....
		5	.....	49.1	50.9	.....	.....	.....	.....	.....	.....	8045	14480	.....	145

7	(3) 5375-76-78	1	16.3	38.5	40.5	4.7	2.2	.....	.....	.....	.....	6329	11390	.....	.....
	(1912)	2	.....	46.0	48.4	5.6	2.6	.....	.....	.....	.....	7563	13610	.....	.....
		3	.....	48.7	51.3	.....	2.7	.....	.....	.....	.....	8014	14430	.....	.....
		4	17.4	39.7	42.9	.....	.....	.....	.....	.....	.....	6691	12050	121	.....
		5	.....	48.1	51.9	.....	.....	.....	.....	.....	.....	8099	14580	.....	146
625	C-946 (composite 3)	1	16.6	34.2	41.7	7.5	3.8	6.0	59.5	1.0	22.2	6033	10860	.....	.....
	(1934)	2	.....	41.0	50.0	9.0	4.5	5.0	71.4	1.2	8.9	7230	13020	.....	.....
		3	.....	45.1	54.9	.....	5.0	5.5	78.4	1.2	9.9	7944	14300	.....	.....
		4	18.5	35.7	45.8	.....	.....	.....	.....	.....	.....	6600	11880	119	.....
		5	.....	43.8	56.2	.....	.....	.....	.....	.....	.....	8094	14570	.....	146
	Average of 4 mine averages (1 ultimate)	1	17.1	37.4	39.7	5.8	2.8	6.2	61.3	1.0	22.9	6139	11050	.....	.....
		2	.....	45.1	47.9	7.0	3.3	5.2	74.0	1.2	9.3	7402	13320	.....	.....
	(County average)	3	.....	48.5	51.5	.....	3.5	5.6	79.6	1.3	10.0	7959	14330	.....	.....
		4	18.6	38.8	42.6	.....	.....	.....	.....	.....	.....	6574	11830	118	.....
		5	.....	47.7	52.3	.....	.....	.....	.....	.....	.....	8009	14520	.....	145

County Average Rank Index 118 (115-121)
County Average Unit Coal Index 145 (145-146)

HENRY COUNTY — COLCHESTER (NO. 2) COAL (WESTERN ILLINOIS)

619	C-839 (composite 3)	1	14.5	37.0	38.6	9.9	3.5	5.9	58.8	1.1	20.8	5896	10610	.....	.....
	(1934)	2	.....	43.3	45.1	11.6	4.0	5.0	68.8	1.3	9.3	6897	12420	.....	.....
		3	.....	49.0	51.0	.....	4.6	5.7	77.8	1.5	10.4	7805	14050	.....	.....
		4	16.6	39.8	43.6	.....	.....	.....	.....	.....	.....	6636	11940	119	.....
		5	.....	47.8	52.2	.....	.....	.....	.....	.....	.....	7960	14330	.....	143

County Average Rank Index 119
County Average Unit Coal Index 143

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

LA SALLE COUNTY — **LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
2	(3) 5388-89-90	1	14.6	39.9	37.0	8.5	4.0	.....	.....	.....	.....	6058	10900	.....	....
	(1912)	2	.....	46.7	43.3	10.0	4.7	.....	.....	.....	.....	7093	12770	.....	....
		3	.....	51.9	48.1	.....	5.2	.....	.....	.....	.....	7882	14190	.....	....
		4	16.5	42.5	41.0	.....	.....	.....	.....	.....	.....	6714	12090	121	....
		5	.....	50.8	49.2	.....	.....	.....	.....	.....	.....	8039	14470	.....	145
3	(3) 5306-7-11	1	15.1	39.7	37.0	8.2	3.3	.....	.....	.....	.....	6055	10900	.....	....
	(1912)	2	.....	46.8	43.6	9.6	3.9	.....	.....	.....	.....	7128	12830	.....	....
		3	.....	51.8	48.2	.....	4.3	.....	.....	.....	.....	7888	14200	.....	....
		4	16.8	42.3	40.9	.....	.....	.....	.....	.....	.....	6676	12020	120	....
		5	.....	50.8	49.2	.....	.....	.....	.....	.....	.....	8027	14450	.....	145
9	(3) 5351-2-3	1	17.5	39.0	34.5	9.0	3.2	.....	.....	.....	.....	5773	10390	.....	....
	(1912)	2	.....	47.2	41.8	11.0	3.8	.....	.....	.....	.....	6993	12590	.....	....
		3	.....	53.0	47.0	.....	4.3	.....	.....	.....	.....	7852	14130	.....	....
		4	19.7	41.8	38.5	.....	.....	.....	.....	.....	.....	6424	11560	116	....
		5	.....	52.1	47.9	.....	.....	.....	.....	.....	.....	8002	14400	.....	144
102	84453 (composite 3)	1	14.7	34.8	42.4	8.1	3.4	5.8	61.5	1.0	20.2	6133	11040	.....	....
	(1912)	2	.....	40.8	49.6	9.6	4.0	4.9	72.1	1.2	8.2	7189	12940	.....	....
		3	.....	45.1	54.9	.....	4.4	5.4	79.7	1.3	9.2	7950	14310	.....	....
		4	16.4	36.7	46.9	.....	.....	.....	.....	.....	.....	6756	12160	122	....
		5	.....	44.0	56.0	.....	.....	.....	.....	.....	.....	8095	14570	.....	146

103	(2) 10263-64	1	12.4	39.4	41.3	6.9	2.6	.....	.....	.....	.....	6544	11780	.....	....
	(1917)	2	.....	45.0	47.1	7.9	3.0	.....	.....	.....	.....	7470	13450	.....	....
		3	.....	48.8	51.2	.....	3.2	.....	.....	.....	.....	8111	14600	.....	....
		4	13.6	41.5	44.9	.....	.....	.....	.....	.....	.....	7104	12790	128	....
		5	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8224	14800	.....	148
358	(3) BM A51404-5-6	1	12.7	37.8	40.6	8.9	3.5	.....	.....	.....	.....	6254	11260	.....	....
	(1929)	2	.....	43.3	46.5	10.2	4.0	.....	.....	.....	.....	7164	12900	.....	....
		3	.....	48.2	51.8	.....	4.5	.....	.....	.....	.....	7978	14360	.....	....
		4	14.4	40.3	45.3	.....	.....	.....	.....	.....	.....	6959	12530	125	....
		5	.....	47.1	52.9	.....	.....	.....	.....	.....	.....	8127	14630	.....	146
	Average 6 mine averages (1 ultimate)	1	14.5	38.4	38.8	8.3	3.3	5.8	61.6	1.0	20.0	6136	11050	.....	....
	(County average)	2	.....	44.9	45.4	9.7	3.9	4.9	72.0	1.2	8.3	7177	12920	.....	....
		3	.....	49.7	50.3	.....	4.3	5.4	79.8	1.3	9.2	7947	14310	.....	....
		4	16.3	40.8	42.9	.....	.....	.....	.....	.....	.....	6774	12190	122	....
		5	.....	48.7	51.3	.....	.....	.....	.....	.....	.....	8089	14560	.....	146

County Average Rank Index 122 (116-128)
County Average Unit Coal Index 146 (144-148)

MCDONOUGH COUNTY — COLCHESTER (NO. 2) COAL (WESTERN ILLINOIS)

22	(3) 5232-33-34	1	17.4	33.3	41.5	7.8	2.0	.....	.....	.....	.....	6006	10810	.....	....
	(1912)	2	.....	40.3	50.2	9.5	2.5	.....	.....	.....	.....	7271	13090	.....	....
		3	.....	44.5	55.5	.....	2.7	.....	.....	.....	.....	8032	14460	.....	....
		4	19.3	35.2	45.5	.....	.....	.....	.....	.....	.....	6579	11840	118	....
		5	.....	43.6	56.4	.....	.....	.....	.....	.....	.....	8146	14660	.....	147

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

McDONOUGH COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
213	(2) 9728-29	1	15.8	35.1	40.3	8.8	3.9	.....	.....	.....	.....	5999	10800	.....	....
	(1916)	2	.....	41.7	47.9	10.4	4.6	.....	.....	.....	.....	7129	12830	.....	....
		3	.....	46.6	53.4	.....	5.1	.....	.....	.....	.....	7962	14330	.....	....
		4	17.9	37.2	44.9	.....	.....	.....	.....	.....	.....	6666	12000	120	....
		5	.....	45.3	54.7	.....	.....	.....	.....	.....	.....	8124	14620	.....	146
	Average of 2 mine averages	1	16.6	34.2	40.9	8.3	2.9	.....	.....	.....	.....	6002	10800	.....	....
	(County average)	2	.....	41.0	49.0	10.0	3.5	.....	.....	.....	.....	7199	12960	.....	....
		3	.....	45.6	54.4	.....	3.9	.....	.....	.....	.....	7995	14390	.....	....
		4	18.6	36.2	45.2	.....	.....	.....	.....	.....	.....	6621	11920	119	....
		5	.....	44.4	55.6	.....	.....	.....	.....	.....	.....	8134	14640	.....	146

County Average Rank Index 119 (118-120)
County Average Unit Coal Index 146 (146-147)

MC LEAN COUNTY — **LA SALLE (NO. 2) COAL (CENTRAL ILLINOIS)**

100	(6) 5426-7-8-9-30-33	1	11.3	42.2	37.7	8.8	3.0					6426	11570		
	(1912)	2		47.6	42.5	9.9	3.4					7242	13040		
		3		52.8	47.2		3.8					8039	14470		
		4	12.7	45.4	41.9							7139	12850	129	
		5		52.0	48.0							8176	14720		147

County Average Rank Index 129
County Average Unit Coal Index 147

MARSHALL COUNTY — **LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**

4	(3) 5356-7-8	1	16.9	37.6	39.6	5.9	2.6					6216	11190		
	(1912)	2		45.2	47.7	7.1	3.1					7482	13470		
		3		48.7	51.3		3.3					8057	14500		
		4	18.4	39.1	42.5							6665	12000	120	
		5		47.9	52.1							8164	14700		147
11	(3) 5412-13-14	1	13.3	40.6	37.7	8.4	3.0					6353	11440		
	(1912)	2		46.8	43.5	9.7	3.5					7326	13190		
		3		51.8	48.2		3.9					8114	14610		
		4	14.9	43.4	41.7							7026	12650	127	
		5		51.0	49.0							8254	14860		149
	Average 2 mine averages	1	15.1	39.1	38.6	7.2	2.8					6284	11310		
	(County average)	2		46.0	45.5	8.5	3.3					7402	13320		
		3		50.3	49.7		3.6					8086	14560		
		4	16.7	41.2	42.1							6843	12320	123	
		5		49.4	50.6							8209	14780		148

County Average Rank Index 123 (120-126)
County Average Unit Coal Index 148 (147-149)

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

WILL COUNTY — **LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
359	16890 (composite 2); BM 52982	1	15.4	34.2	45.3	5.1	1.6	6.4	63.1	1.1	22.7	6299	11340	.....	....
	(composite 3); Average 5 A52153,	2	.....	40.5	53.5	6.0	1.9	5.6	74.6	1.3	10.6	7449	13410	.....	....
	52154, 16959, 16961, 16962; A90368	3	.....	43.1	56.9	.....	2.1	5.9	79.3	1.4	11.3	7928	14270	.....	....
	(composite 2); A90371 (composite 2)	4	16.5	35.4	48.1	.....	.....	.....	.....	.....	.....	6682	12030	120	....
	(1929, 1933)	5	.....	42.4	57.6	.....	.....	.....	.....	.....	.....	7998	14400	.....	144
	(County average)														

County Average Rank Index 120
County Average Unit Coal Index 144

WOODFORD COUNTY — **LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**

410	(2) 17002-03; A 90285 (composite 3).	1	14.9	32.3	47.3	5.5	1.0	5.9	65.3	1.1	21.2	6461	11630	.....	....
	(1929, 1933)	2	.....	37.9	55.6	6.5	1.2	5.0	76.7	1.3	9.3	7592	13670	.....	....
		3	.....	40.5	59.5	.....	1.3	5.4	82.0	1.4	9.9	8122	14620	.....	....
		4	15.9	33.7	50.4	.....	.....	.....	.....	.....	.....	6880	12380	124	....
		5	.....	40.0	60.0	.....	.....	.....	.....	.....	.....	8190	14740	.....	147
611	C-599 (composite 4).....	1	14.2	37.3	41.8	6.7	2.8	6.0	63.6	1.2	19.7	6356	11440	.....	....
		2	.....	43.5	48.7	7.8	3.3	5.2	74.1	1.4	8.2	7411	13340	.....	....
	(1934)	3	.....	47.2	52.8	.....	3.5	5.6	80.4	1.6	8.9	8034	14460	.....	....
		4	15.6	39.1	45.3	.....	.....	.....	.....	.....	.....	6875	12380	124	....
		5	.....	46.3	53.7	.....	.....	.....	.....	.....	.....	8143	14660	.....	147

	Average 2 mine averages	1	14.5	34.8	44.6	6.1	1.9	5.9	64.6	1.2	20.3	6408	11540	.....	....
	(County average)	2	.....	40.7	52.2	7.1	2.2	5.1	75.5	1.4	8.7	7495	13490	.....	....
		3	.....	43.8	56.2	.....	2.4	5.5	81.2	1.5	9.4	8068	14520	.....	....
		4	15.7	36.3	48.0	.....	.....	.....	.....	.....	.....	6881	12390	124	....
		5	.....	43.1	56.9	.....	.....	.....	.....	.....	.....	8158	14690	.....	147

County Average Rank Index 124
County Average Unit Coal Index 147

SCHUYLER COUNTY — COLCHESTER (NO. 2) COAL (WESTERN ILLINOIS)

214	(2) 9708-9	1	12.5	37.9	42.1	7.5	4.5	.....	.....	.....	.....	6517	11730	.....	....
	(1916)	2	.....	43.3	48.1	8.6	5.2	.....	.....	.....	.....	7451	13410	.....	....
	(County average)	3	.....	47.3	52.7	.....	5.7	.....	.....	.....	.....	8154	14680	.....	....
		4	14.0	39.6	46.4	.....	.....	.....	.....	.....	.....	7152	12870	129	....
		5	.....	46.1	53.9	.....	.....	.....	.....	.....	.....	8319	14970	.....	150

County Average Rank Index 129
County Average Unit Coal Index 150

GREENE COUNTY — SUMMUM (NO. 4?) COAL (CENTRAL ILLINOIS)

329	(3) 13799-800-801	1	14.7	36.1	39.8	9.4	3.8	.....	.....	.....	.....	6085	10960	.....	....
	(1922)	2	.....	42.3	46.7	11.0	4.4	.....	.....	.....	.....	7139	12850	.....	....
		3	.....	47.5	52.5	.....	5.0	.....	.....	.....	.....	8024	14440	.....	....
		4	16.8	38.5	44.7	.....	.....	.....	.....	.....	.....	6814	12270	123	....
		5	.....	46.3	53.7	.....	.....	.....	.....	.....	.....	8191	14740	.....	147

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

GREENE COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
347	BM 45162 (composite 2); 16399 (composite 2)..... (1928)	1	14.1	36.2	40.2	9.5	4.0	5.7	60.1	1.1	19.6	6013	10820	.....	....
		2	.....	42.2	46.8	11.0	4.7	4.7	70.0	1.3	8.3	7001	12600	.....	....
		3	.....	47.4	52.6	.....	5.3	5.4	78.7	1.5	9.1	7866	14160	.....	....
		4	16.1	38.7	45.2	.....	.....	.....	.....	.....	.....	6739	12130	121	....
		5	.....	46.1	53.9	.....	.....	.....	.....	.....	.....	8032	14460	.....	145
	Average of two mine averages (1 ultimate)..... (County average)	1	14.4	36.2	40.0	9.4	3.9	5.7	60.1	1.1	19.8	6050	10890	.....	....
		2	.....	42.2	46.8	11.0	4.6	4.8	70.1	1.3	8.2	7071	12730	.....	....
		3	.....	47.4	52.6	.....	5.1	5.4	78.8	1.5	9.2	7946	14300	.....	....
		4	16.5	38.6	44.9	.....	.....	.....	.....	.....	.....	6777	12200	122	....
		5	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	8112	14600	.....	146

County Average Rank Index 122 (121-123)
County Average Unit Coal Index 146 (145-147)

KNOX COUNTY — **SUMMUM (NO. 4) COAL (WESTERN ILLINOIS)**

236	(3) 13809-10-11..... (1923)	1	15.0	38.0	39.3	7.7	3.9	.....	.....	.....	.....	6234	11220	.....	....
		2	.....	44.7	46.2	9.1	4.6	.....	.....	.....	.....	7333	13200	.....	....
		3	.....	49.1	50.9	.....	5.0	.....	.....	.....	.....	8066	14520	.....	....
		4	16.7	40.0	43.3	.....	.....	.....	.....	.....	.....	6844	12320	123	....
		5	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8219	14790	.....	148

County Average Rank Index 123
County Average Unit Coal Index 148

GALLATIN COUNTY (North of Eagle Valley) — **HARRISBURG (NO. 5 (4?)) COAL (SOUTHERN ILLINOIS)**

47	(3) 5025-29-32	1	5.7	35.8	46.7	11.8	3.5	.....	.....	.....	.....	6696	12050	.....	....
	(1912)	2	.....	37.9	49.6	12.5	3.7	.....	.....	.....	.....	7102	12780	.....	....
		3	.....	43.4	56.6	.....	4.2	.....	.....	.....	.....	8118	14610	.....	....
		4	6.7	39.2	54.1	.....	.....	.....	.....	.....	.....	7733	13920	139	....
		5	.....	42.0	58.0	.....	.....	.....	.....	.....	.....	8288	14920	.....	149
135	(3) 12940-41-42	1	4.0	35.4	50.2	10.4	3.4	.....	.....	.....	.....	7001	12600	.....	....
	(1921)	2	.....	36.8	52.3	10.9	3.5	.....	.....	.....	.....	7291	13120	.....	....
		3	.....	41.3	58.7	.....	4.0	.....	.....	.....	.....	8177	14720	.....	....
		4	4.6	38.2	57.2	.....	.....	.....	.....	.....	.....	7948	14310	143	....
		5	.....	40.0	60.0	.....	.....	.....	.....	.....	.....	8330	14990	.....	150
	Average of 2 mine averages	1	4.9	35.6	48.4	11.1	3.4	.....	.....	.....	.....	6848	12330	.....	....
	(County average except Eagle	2	.....	37.4	50.9	11.7	3.6	.....	.....	.....	.....	7197	12960	.....	....
	Valley)	3	.....	42.3	57.7	.....	4.1	.....	.....	.....	.....	8148	14670	.....	....
		4	5.6	38.7	55.7	.....	.....	.....	.....	.....	.....	7841	14110	141	....
		5	.....	41.0	59.0	.....	.....	.....	.....	.....	.....	8309	14960	.....	150

Rank Index 141 (139-143)
Unit Coal Index 150 (149-150)

GALLATIN COUNTY (Eagle Valley) — **HARRISBURG (NO. 5 (4?)) COAL**

230	(2) 5492-93 (Eagle Valley)	1	4.1	34.2	52.8	8.9	3.2	.....	.....	.....	.....	7214	12990	.....	....
	(1912)	2	.....	35.7	55.1	9.2	3.4	.....	.....	.....	.....	7526	13550	.....	....
	(Eagle Valley average)	3	.....	39.3	60.7	.....	3.7	.....	.....	.....	.....	8294	14930	.....	....
		4	4.7	36.3	59.0	.....	.....	.....	.....	.....	.....	8036	14470	145	....
		5	.....	38.1	61.9	.....	.....	.....	.....	.....	.....	8436	15180	.....	152

County Average (Eagle Valley only)
Rank Index 145
Unit Coal Index 152

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

RANDOLPH COUNTY — **BLAIR (NO. 5 (4?)) COAL (SOUTHWESTERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
229	(3) 12583-84-85	1	8.4	37.5	43.6	10.5	3.9	.....	.....	.....	.....	6264	11280	.....	....
	(1921)	2	.....	40.9	47.6	11.5	4.3	.....	.....	.....	.....	6838	12310	.....	....
		3	.....	46.2	53.8	.....	4.9	.....	.....	.....	.....	7723	13900	.....	....
		4	9.7	40.6	49.7	.....	.....	.....	.....	.....	.....	7116	12810	128	....
		5	.....	44.9	55.1	.....	.....	.....	.....	.....	.....	7880	14180	.....	142
337	(2) 8835-36	1	13.0	35.3	41.5	10.2	4.7	.....	.....	.....	.....	6126	11030	.....	....
	(1915)	2	.....	40.6	47.7	11.7	5.4	.....	.....	.....	.....	7046	12680	.....	....
		3	.....	46.0	54.0	.....	6.1	.....	.....	.....	.....	7981	14370	.....	....
		4	15.1	37.7	47.2	.....	.....	.....	.....	.....	.....	6938	12490	125	....
		5	.....	44.4	55.6	.....	.....	.....	.....	.....	.....	8172	14710	.....	147
	Average of 2 mine averages	1	10.7	36.4	42.5	10.4	4.5	.....	.....	.....	.....	6194	11150	.....	....
	(County average)	2	.....	40.7	47.7	11.6	5.1	.....	.....	.....	.....	6939	12490	.....	....
		3	.....	46.1	53.9	.....	5.7	.....	.....	.....	.....	7849	14130	.....	....
		4	12.4	39.1	48.5	.....	.....	.....	.....	.....	.....	7029	12650	127	....
		5	.....	44.6	55.4	.....	.....	.....	.....	.....	.....	8027	14450	.....	145

County Average Rank Index 127 (125-128)
County Average Unit Coal Index 145 (142-147)

43	(8) 4985, 86, 87, 89, 90, 92, BM 12794,95; BM 14114 (composite 6) (1912)	1	7.0	35.8	49.7	7.5	2.0	5.5	70.4	1.6	13.0	6983	12570	.....	....
		2	.....	38.5	53.5	8.0	2.2	5.1	75.7	1.7	7.3	7507	13510	.....	....
		3	.....	41.9	58.1	.....	2.4	5.5	82.3	1.9	7.9	8160	14690	.....	....
		4	7.7	37.9	54.4	.....	.....	.....	.....	.....	.....	7626	13730	137	....
		5	.....	41.1	58.9	.....	.....	.....	.....	.....	.....	8261	14870	.....	149
44	(3) 4991-93-94..... (1912)	1	6.7	35.3	49.6	8.4	2.6	.....	.....	.....	.....	6889	12400	.....	....
		2	.....	37.9	53.1	9.0	2.7	.....	.....	.....	.....	7384	13290	.....	....
		3	.....	41.6	58.4	.....	3.0	.....	.....	.....	.....	8117	14610	.....	....
		4	7.5	37.6	54.9	.....	.....	.....	.....	.....	.....	7620	13720	137	....
		5	.....	40.6	59.4	.....	.....	.....	.....	.....	.....	8236	14830	.....	148
45	(3) 4997, 99, 5001; C-955 (composite 3)..... (1912, 1934)	1	7.0	34.1	50.7	8.2	2.4	5.5	68.9	1.2	13.8	6845	12320	.....	....
		2	.....	36.6	54.5	8.8	2.6	5.0	74.1	1.3	8.2	7360	13250	.....	....
		3	.....	40.2	59.8	.....	2.9	5.5	81.2	1.4	9.0	8070	14530	.....	....
		4	7.8	36.2	56.0	.....	.....	.....	.....	.....	.....	7521	13580	136	....
		5	.....	39.2	60.8	.....	.....	.....	.....	.....	.....	8182	14730	.....	147
46	(6) 5019-20-21-22-23-24..... (1912)	1	8.0	34.7	48.5	8.8	2.8	.....	.....	.....	.....	6709	12080	.....	....
		2	.....	37.7	52.7	9.6	3.0	.....	.....	.....	.....	7289	13120	.....	....
		3	.....	41.7	58.3	.....	3.4	.....	.....	.....	.....	8062	14510	.....	....
		4	9.0	36.9	54.1	.....	.....	.....	.....	.....	.....	7457	13420	134	....
		5	.....	40.6	59.4	.....	.....	.....	.....	.....	.....	8188	14740	.....	147
48	(3) 4995, 5002, 5010..... (1912)	1	7.7	33.9	50.3	8.1	2.6	.....	.....	.....	.....	6797	12230	.....	....
		2	.....	36.7	54.4	8.9	2.8	.....	.....	.....	.....	7361	13250	.....	....
		3	.....	40.3	59.7	.....	3.0	.....	.....	.....	.....	8076	14540	.....	....
		4	8.5	35.9	55.6	.....	.....	.....	.....	.....	.....	7492	13490	135	....
		5	.....	39.2	60.8	.....	.....	.....	.....	.....	.....	8192	14750	.....	148

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SALINE COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
49	(3) 5012, 15, 16 Composite 3BM 2BM (1912, 1917, 1919)	1	5.1	37.7	46.5	10.7	4.2	5.2	67.4	1.4	11.1	6808	12260	.....	....
		2	.....	39.7	49.0	11.3	4.4	4.9	71.0	1.5	6.9	7171	12910	.....	....
		3	.....	44.8	55.2	.....	5.0	5.5	80.0	1.7	7.8	8087	14560	.....	....
		4	5.9	40.8	53.3	.....	.....	.....	.....	.....	.....	7774	13990	140	....
		5	.....	43.4	56.6	.....	.....	.....	.....	.....	.....	8259	14870	.....	149
124	(3) 12931-2-3. (1921)	1	6.8	33.3	51.9	8.0	2.2	.....	.....	.....	.....	6908	12440	.....	....
		2	.....	35.7	55.7	8.6	2.4	.....	.....	.....	.....	7415	13350	.....	....
		3	.....	39.1	60.9	.....	2.6	.....	.....	.....	.....	8115	14610	.....	....
		4	7.6	35.2	57.2	.....	.....	.....	.....	.....	.....	7599	13680	137	....
		5	.....	38.1	61.9	.....	.....	.....	.....	.....	.....	8223	14800	.....	148
125	(3) 12934-5-6. Composite 3BM. (1919, 1921)	1	7.3	33.3	51.2	8.2	2.5	5.3	69.1	1.5	13.4	6866	12360	.....	....
		2	.....	36.0	55.2	8.8	2.6	4.9	74.5	1.7	7.5	7403	13330	.....	....
		3	.....	39.4	60.6	.....	2.9	5.3	81.7	1.9	8.2	8117	14610	.....	....
		4	8.1	35.3	56.6	.....	.....	.....	.....	.....	.....	7566	13620	136	....
		5	.....	38.4	61.6	.....	.....	.....	.....	.....	.....	8231	14820	.....	148
126	(3) 12937-38-39. (1921)	1	6.0	34.1	52.3	7.6	2.5	.....	.....	.....	.....	6990	12580	.....	....
		2	.....	36.2	55.7	8.1	2.6	.....	.....	.....	.....	7438	13390	.....	....
		3	.....	39.4	60.6	.....	2.9	.....	.....	.....	.....	8090	14560	.....	....
		4	6.7	35.9	57.4	.....	.....	.....	.....	.....	.....	7652	13770	138	....
		5	.....	38.4	61.6	.....	.....	.....	.....	.....	.....	8197	14760	.....	148

127	(3) 12901-02-03; (3) C748-9-50; BM A90722 (composite 3)..... (1921, 1933, 1934)	1	6.1	34.1	51.9	7.9	2.1	5.4	70.1	1.6	12.9	7002	12610	.....	....
		2	.....	36.3	55.3	8.4	2.2	5.1	74.7	1.7	7.9	7462	13430	.....	....
		3	.....	39.7	60.3	.....	2.4	5.5	81.5	1.9	8.7	8143	14660	.....	....
		4	6.8	36.1	57.1	.....	.....	.....	.....	.....	.....	7684	13830	138	....
		5	.....	38.8	61.2	.....	.....	.....	.....	.....	.....	8245	14840	.....	148
128	(3) 12911-12-13..... (1921)	1	6.5	32.3	51.3	9.9	1.9	.....	.....	.....	.....	6764	12180	.....	....
		2	.....	34.5	54.9	10.6	2.0	.....	.....	.....	.....	7234	13020	.....	....
		3	.....	38.6	61.4	.....	2.9	.....	.....	.....	.....	8095	14570	.....	....
		4	7.4	34.8	57.8	.....	.....	.....	.....	.....	.....	7606	13690	137	....
		5	.....	37.6	62.4	.....	.....	.....	.....	.....	.....	8212	14780	.....	148
129	(3) 12917-18-19..... (1921)	1	6.0	34.2	52.8	7.0	2.0	.....	.....	.....	.....	7064	12720	.....	....
		2	.....	36.3	56.2	7.5	2.2	.....	.....	.....	.....	7513	13520	.....	....
		3	.....	39.3	60.7	.....	2.3	.....	.....	.....	.....	8120	14620	.....	....
		4	6.6	35.9	57.5	.....	.....	.....	.....	.....	.....	7676	13820	138	....
		5	.....	38.4	61.6	.....	.....	.....	.....	.....	.....	8214	14790	.....	148
130	(3) 12914-15-16..... (1921)	1	6.2	33.3	51.5	9.0	2.7	.....	.....	.....	.....	6855	12340	.....	....
		2	.....	35.5	54.9	9.6	2.8	.....	.....	.....	.....	7309	13160	.....	....
		3	.....	39.3	60.7	.....	3.1	.....	.....	.....	.....	8082	14550	.....	....
		4	7.0	35.5	57.5	.....	.....	.....	.....	.....	.....	7632	13740	137	....
		5	.....	38.2	61.8	.....	.....	.....	.....	.....	.....	8207	14770	.....	148
608	BM A91429 (composite 3); BM 33084 (composite 3)..... (1919, 1933)	1	6.3	35.1	49.3	9.3	3.2	5.4	68.8	1.6	11.7	6886	12400	.....	....
		2	.....	37.4	52.6	10.0	3.4	5.1	73.3	1.7	6.5	7345	13220	.....	....
		3	.....	41.6	58.4	.....	3.8	5.7	81.4	1.9	7.2	8158	14690	.....	....
		4	7.1	37.5	55.4	.....	.....	.....	.....	.....	.....	7712	13880	139	....
		5	.....	40.4	59.6	.....	.....	.....	.....	.....	.....	8302	14940	.....	149

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SALINE COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
610	(2) C-360-361	1	5.9	35.2	51.1	7.8	2.6	.....	.....	.....	.....	7027	12650	.....	....
	(1933)	2	.....	37.4	54.3	8.3	2.8	.....	.....	.....	.....	7467	13440	.....	....
		3	.....	40.8	59.2	.....	3.0	.....	.....	.....	.....	8143	14660	.....	....
		4	6.5	37.2	56.3	.....	.....	.....	.....	.....	.....	7714	13890	139	....
		5	.....	39.8	60.2	.....	.....	.....	.....	.....	.....	8256	14860	.....	149
BM72	BMA31383 (composite 2)	1	7.8	31.6	52.6	8.0	2.1	5.4	70.1	1.5	12.9	6928	12470	.....	....
	(1927)	2	.....	34.3	57.1	8.6	2.3	4.9	76.0	1.7	6.5	7511	13520	.....	....
		3	.....	37.6	62.4	.....	2.5	5.3	83.2	1.8	7.2	8222	14800	.....	....
		4	8.6	33.4	58.0	.....	.....	.....	.....	.....	.....	7618	13710	137	....
		5	.....	36.6	63.4	.....	.....	.....	.....	.....	.....	8326	14990	.....	150
	Average 16 mine averages (7 ultimates)	1	6.6	34.3	50.7	8.4	2.5	5.4	69.5	1.5	12.7	6895	12410	.....	....
		2	.....	36.7	54.3	9.0	2.7	5.0	74.4	1.6	7.3	7383	13290	.....	....
	(County average)	3	.....	40.3	59.7	.....	3.0	5.5	81.7	1.8	8.0	8113	14600	.....	....
		4	7.4	36.4	56.2	.....	.....	.....	.....	.....	.....	7622	13720	137	....
		5	.....	39.3	60.7	.....	.....	.....	.....	.....	.....	8230	14810	.....	148

County Average Rank Index 137 (134-140)
County Average Unit Coal Index 148 (147-150)

WILLIAMSON COUNTY — **HARRISBURG (NO. 5 (4?)) COAL**

353	(3) BM A51411-12-13	1	7.0	34.0	47.9	11.1	3.5	.....	.....	.....	.....	6605	11890	...	....
	(1929)	2	.....	36.5	51.5	12.0	3.8	.....	.....	.....	.....	7099	12780	.....	....
	(County average)	3	.....	41.5	58.5	.....	4.3	.....	.....	.....	.....	8067	14520	.....	....
		4	8.1	36.9	55.0	.....	.....	.....	.....	.....	.....	7567	13620	136	....
		5	.....	40.1	59.9	.....	.....	.....	.....	.....	.....	8232	14820	.....	148

County Average Rank Index **136**
County Average Unit Coal Index **148**

EDGAR COUNTY — **GRAPE CREEK (SPRINGFIELD) (NO. 5?) COAL (EASTERN ILLINOIS)**

614	C-682 (composite 3)	1	12.5	37.1	40.6	9.8	3.1	5.7	62.2	1.2	18.0	6242	11240	.....	....
	(1934)	2	.....	42.4	46.4	11.2	3.5	5.0	71.1	1.3	7.9	7133	12840	.....	....
	(County average)	3	.....	47.8	52.2	.....	4.0	5.6	80.1	1.5	8.8	8037	14470	.....	....
		4	14.3	40.0	45.7	.....	.....	.....	.....	.....	.....	7021	12640	126	....
		5	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	8189	14740	.....	147

County Average Rank Index **126**
County Average Unit Coal Index **147**

LIVINGSTON COUNTY — **GRAPE CREEK (SPRINGFIELD) (NO. 5?) COAL (EASTERN ILLINOIS)**

215	(3) 10519-23-24	1	9.4	35.7	41.1	13.8	4.7	.....	.....	.....	.....	6254	11260	.....	....
	(1918)	2	.....	39.4	45.4	15.2	5.2	.....	.....	.....	.....	6904	12430	.....	....
		3	.....	46.5	53.5	.....	6.1	.....	.....	.....	.....	8144	14660	.....	....
		4	11.4	39.6	49.0	.....	.....	.....	.....	.....	.....	7423	13360	135	....
		5	.....	44.7	55.3	.....	.....	.....	.....	.....	.....	8379	15080	.....	151

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

LIVINGSTON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
216	(3) 10520-21-22	1	13.8	35.8	38.9	11.5	3.2	.....	.....	.....	.....	6028	10850	.....	....
	(1918)	2	.....	41.5	45.2	13.3	3.7	.....	.....	.....	.....	6991	12580	.....	....
		3	.....	47.9	52.1	.....	4.2	.....	.....	.....	.....	8067	14520	.....	....
		4	16.1	39.1	44.8	.....	.....	.....	.....	.....	.....	6919	12460	125	....
		5	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	8242	14840	.....	148
600	A90315 (composite 3)	1	12.5	33.9	39.1	14.5	3.2	5.5	59.1	.9	16.8	5906	10630	.....	....
	(1933)	2	.....	38.7	44.7	16.6	3.7	4.7	67.5	1.1	6.4	6756	12160	.....	....
		3	.....	46.4	53.6	.....	4.4	5.7	81.0	1.3	7.6	8094	14570	.....	....
		4	15.1	38.1	46.8	.....	.....	.....	.....	.....	.....	7044	12680	127	....
		5	.....	44.8	55.2	.....	.....	.....	.....	.....	.....	8312	14960	.....	150
	Average 3 mine averages (1 ultimate)	1	11.9	35.1	39.7	13.3	3.7	5.6	60.2	1.0	16.2	6063	10910	.....	....
	(County average)	2	.....	39.8	45.1	15.1	4.2	4.9	68.3	1.1	6.4	6882	12390	.....	....
		3	.....	46.9	53.1	.....	4.9	5.8	80.5	1.3	7.5	8106	14590	.....	....
		4	14.2	38.9	46.9	.....	.....	.....	.....	.....	.....	7129	12830	128	....
		5	.....	45.3	54.7	.....	.....	.....	.....	.....	.....	8313	14960	.....	150

County Average Rank Index 128 (125-134)
County Average Unit Coal Index 150 (148-151)

VERMILION COUNTY		GRAPE CREEK (SPRINGFIELD) (NO. 5)[a] COAL (EASTERN ILLINOIS)													
91	(6) 4741, 42, 43, 44, 45, 46; BM13570	1	14.7	34.5	41.4	9.4	2.2	5.8	60.6	1.3	20.7	6079	10940	.....	....
	(composite 3).....	2	.....	40.5	48.4	11.1	2.6	4.8	71.1	1.5	8.9	7125	12830	.....	....
	(not weighted)	3	.....	45.5	54.5	.....	3.0	5.4	79.9	1.7	10.0	8012	14420	.....	....
	(1912)	4	16.6	37.1	46.3	.....	.....	.....	.....	.....	.....	6792	12230	122	....
		5	.....	44.5	55.5	.....	.....	.....	.....	.....	.....	8143	14660	.....	147
92	(3) 4702, 03, 04; BM 13471 (com-	1	15.5	32.9	40.7	10.9	2.3	5.5	59.5	1.3	20.5	5856	10540	.....	....
	posite 3).....	2	.....	38.9	48.2	12.9	2.7	4.5	70.5	1.5	7.9	6928	12470	.....	....
	(1912)	3	.....	44.6	55.4	.....	3.1	5.2	80.9	1.7	9.1	7952	14310	.....	....
		4	17.8	35.7	46.5	.....	.....	.....	.....	.....	.....	6658	11980	120	....
		5	.....	43.5	56.5	.....	.....	.....	.....	.....	.....	8099	14580	.....	146
93	(6) 4670, 71, 74, 76, 78, 79; BM13449	1	15.2	34.7	41.8	8.3	2.1	5.9	61.2	1.2	21.3	6092	10970	.....	....
	(composite 6).....	2	.....	41.0	49.2	9.8	2.5	4.9	72.2	1.4	9.2	7183	12930	.....	....
	(1912)	3	.....	45.4	54.6	.....	2.7	5.4	80.0	1.6	10.2	7963	14330	.....	....
		4	16.9	37.0	46.1	.....	.....	.....	.....	.....	.....	6713	12080	121	....
		5	.....	44.5	55.5	.....	.....	.....	.....	.....	.....	8079	14540	.....	145
95	(2) 4706, 07; BM 13452 (composite 2)	1	12.6	39.6	38.8	9.0	3.6	5.7	61.5	1.2	19.0	6234	11220	.....	....
	(1912)	2	.....	45.3	44.4	10.3	4.1	4.8	70.4	1.4	9.0	7136	12840	.....	....
		3	.....	50.5	49.5	.....	4.6	5.4	78.5	1.5	10.0	7951	14310	.....	....
		4	14.3	42.4	43.3	.....	.....	.....	.....	.....	.....	6943	12500	125	....
		5	.....	49.4	50.6	.....	.....	.....	.....	.....	.....	8103	14590	.....	146

a Grape Creek coal, formerly called No. 6 coal.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

VERMILION COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
212	BM 84225 (composite 3).....	1	14.1	34.1	42.8	9.0	2.3	5.8	61.7	1.2	20.0	6133	11040	.....	....
	(1922)	2	.....	39.7	49.8	10.5	2.7	4.9	71.9	1.4	8.6	7144	12860	.....	....
		3	.....	44.4	55.6	.....	3.0	5.4	80.3	1.5	9.8	7983	14370	.....	....
		4	15.8	36.5	47.7	.....	.....	.....	.....	.....	.....	6818	12270	123	....
		5	.....	43.3	56.7	.....	.....	.....	.....	.....	.....	8109	14600	.....	146
401	BM A90661 (composite 3).....	1	16.9	31.9	42.6	8.6	1.5	6.1	59.3	1.3	23.2	6000	10800	.....	....
	(1933)	2	.....	38.4	51.2	10.4	1.8	5.0	71.4	1.5	9.9	7222	13000	.....	....
		3	.....	42.8	57.2	.....	2.0	5.6	79.6	1.7	11.1	8061	14510	.....	....
		4	18.8	34.1	47.1	.....	.....	.....	.....	.....	.....	6629	11930	119	....
		5	.....	42.0	58.0	.....	.....	.....	.....	.....	.....	8171	14710	.....	147
	Average of 6 mine averages (6 ultimates).....	1	14.8	34.6	41.4	9.2	2.3	5.8	60.6	1.3	20.8	6065	10920	.....	....
		2	.....	40.6	48.6	10.8	2.7	4.9	71.2	1.5	8.9	7119	12810	.....	....
	(County average)	3	.....	45.5	54.5	.....	3.0	5.5	79.8	1.7	10.0	7981	14370	.....	....
		4	16.7	37.1	46.2	.....	.....	.....	.....	.....	.....	6759	12170	122	....
		5	.....	44.5	55.5	.....	.....	.....	.....	.....	.....	8110	14600	.....	146

County Average Rank Index 122 (119-125)
County Average Unit Coal Index 146 (145-147)

28	(3) 5292-5-9	1	16.7	36.7	36.7	9.9	2.9	.....	.....	.....	.....	5763	10370	.....	.....
	(1912)	2	.....	44.0	44.1	11.9	3.5	.....	.....	.....	.....	6918	12450	.....	.....
		3	.....	49.9	50.1	.....	4.0	.....	.....	.....	.....	7847	14130	.....	.....
		4	19.0	39.6	41.4	.....	.....	.....	.....	.....	.....	6477	11660	117	....
		5	.....	48.9	51.1	.....	.....	.....	.....	.....	.....	7999	14400	.....	144
29	(3) 5293, 97, 5300	1	16.4	35.9	36.9	10.8	3.5	.....	.....	.....	.....	5683	10230	.....	.....
	(1912)	2	.....	43.0	44.1	12.9	4.2	.....	.....	.....	.....	6796	12230	.....	.....
		3	.....	49.4	50.6	.....	4.5	.....	.....	.....	.....	7867	14160	.....	.....
		4	18.9	39.0	42.1	.....	.....	.....	.....	.....	.....	6462	11630	116	....
		5	.....	48.1	51.9	.....	.....	.....	.....	.....	.....	7972	14350	.....	144
30	(3) 5345-6-7	1	16.2	35.2	37.8	10.8	3.1	.....	.....	.....	.....	5722	10300	.....	.....
	(1912)	2	.....	41.9	45.1	13.0	3.7	.....	.....	.....	.....	6827	12290	.....	.....
		3	.....	48.2	51.8	.....	4.2	.....	.....	.....	.....	7845	14120	.....	.....
		4	18.7	38.2	43.1	.....	.....	.....	.....	.....	.....	6511	11720	117	....
		5	.....	47.0	53.0	.....	.....	.....	.....	.....	.....	8009	14420	.....	144
31	BM 14560 (composite 6); (6) 5283-84,	1	16.5	36.2	36.7	10.6	3.0	5.8	56.4	1.0	23.2	5694	10250	.....	.....
	85, 96, 98, 5341	2	.....	43.3	44.0	12.7	3.6	4.7	67.6	1.2	10.2	6819	12280	.....	.....
	(1912)	3	.....	49.6	50.4	.....	4.1	5.4	77.4	1.4	11.7	7813	14060	.....	.....
		4	19.0	39.3	41.7	.....	.....	.....	.....	.....	.....	6458	11630	116	....
		5	.....	48.5	51.5	.....	.....	.....	.....	.....	.....	7972	14350	.....	144
32	(3) 5342-3-4	1	14.7	37.2	37.7	10.4	3.3	.....	.....	.....	.....	5917	10650	.....	.....
	(1912)	2	.....	43.6	44.2	12.2	3.8	.....	.....	.....	.....	6934	12480	.....	.....
		3	.....	49.7	50.3	.....	4.4	.....	.....	.....	.....	7896	14210	.....	.....
		4	16.9	40.3	42.8	.....	.....	.....	.....	.....	.....	6699	12060	121	....
		5	.....	48.5	51.5	.....	.....	.....	.....	.....	.....	8057	14500	.....	145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

FULTON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
111	(6) 12443-44-45-46-47-48	1	14.6	34.1	38.6	12.7	3.0	.....	.....	.....	.....	5629	10130	.....	....
	(1921)	2	.....	39.9	45.3	14.8	3.6	.....	.....	.....	.....	6593	11870	.....	....
		3	.....	46.8	53.2	.....	4.2	.....	.....	.....	.....	7742	13940	.....	....
		4	17.3	37.6	45.1	.....	.....	.....	.....	.....	.....	6552	11790	118	....
		5	.....	45.4	54.6	.....	.....	.....	.....	.....	.....	7920	14260	.....	143
112	(6) 12472-3-4-5-6-7	1	15.3	35.0	38.6	11.1	2.8	.....	.....	.....	.....	5846	10520	.....	....
	(1921)	2	.....	41.3	45.6	13.1	3.3	.....	.....	.....	.....	6898	12420	.....	....
		3	.....	47.5	52.5	.....	3.8	.....	.....	.....	.....	7939	14290	.....	....
		4	17.6	38.2	44.2	.....	.....	.....	.....	.....	.....	6672	12010	120	....
		5	.....	46.3	53.7	.....	.....	.....	.....	.....	.....	8101	14580	.....	146
113	(3) 12439-40-41	1	14.3	34.8	39.2	11.7	3.2	.....	.....	.....	.....	5901	10620	.....	....
	(1921)	2	.....	40.6	45.7	13.7	3.7	.....	.....	.....	.....	6882	12390	.....	....
		3	.....	47.0	53.0	.....	4.3	.....	.....	.....	.....	7976	14360	.....	....
		4	16.7	38.1	45.2	.....	.....	.....	.....	.....	.....	6794	12230	122	....
		5	.....	45.7	54.3	.....	.....	.....	.....	.....	.....	8153	14680	.....	147
114	A 88223 (composite 3); Average 6	1	15.5	35.0	38.2	11.3	2.7	5.8	58.4	1.0	20.8	5753	10360	.....	....
	12459-60-61-62-63-64	2	.....	41.4	45.2	13.4	3.2	4.8	69.1	1.2	8.3	6804	12250	.....	....
	(1921, 1933)	3	.....	47.8	52.2	.....	3.7	5.6	79.8	1.4	9.5	7858	14150	.....	....
		4	17.9	38.3	43.8	.....	.....	.....	.....	.....	.....	6518	11730	117	....
		5	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	8019	14430	.....	144

115	BM 84408 (composite 2)	1	15.2	33.5	40.5	10.8	3.2	5.7	59.6	1.1	19.6	5894	10610	.....	....
	(1922)	2	.....	39.5	47.7	12.8	3.8	4.7	70.3	1.3	7.1	6950	12510	.....	....
		3	.....	45.3	54.7	.....	4.3	5.4	80.6	1.5	8.2	7966	14340	.....	....
		4	17.6	36.2	46.2	.....	.....	.....	.....	.....	.....	6705	12070	121	....
		5	.....	44.0	56.0	.....	.....	.....	.....	.....	.....	8140	14650	.....	147
116	(3) 12436-7-8.....	1	15.7	35.0	38.3	11.0	3.9	.....	.....	.....	.....	5815	10470	.....	....
	(1921)	2	.....	41.6	45.4	13.0	4.6	.....	.....	.....	.....	6897	12420	.....	....
		3	.....	47.8	52.2	.....	5.3	.....	.....	.....	.....	7929	14270	.....	....
		4	18.3	37.9	43.8	.....	.....	.....	.....	.....	.....	6635	11940	119	....
		5	.....	46.4	53.6	.....	.....	.....	.....	.....	.....	8116	14610	.....	146
118	BM 84449 (composite 3).....	1	12.9	35.1	40.7	11.3	3.8	5.4	60.3	1.1	18.1	6089	10960	.....	....
	(1922)	2	.....	40.3	46.7	13.0	4.4	4.6	69.2	1.3	7.5	6983	12570	.....	....
		3	.....	46.4	53.6	.....	5.0	5.2	79.5	1.5	8.8	8028	14450	.....	....
		4	15.1	38.1	46.8	.....	.....	.....	.....	.....	.....	6981	12570	126	....
		5	.....	44.9	55.1	.....	.....	.....	.....	.....	.....	8213	14780	.....	148
520	C-46 (composite 2).....	1	14.4	34.2	38.5	12.9	3.8	5.6	57.6	1.1	19.0	5806	10450	.....	....
	(1932)	2	.....	39.9	45.0	15.1	4.4	4.7	67.3	1.3	7.2	6784	12210	.....	....
		3	.....	47.0	53.0	.....	5.2	5.6	79.2	1.6	8.4	7987	14380	.....	....
		4	17.2	37.7	45.1	.....	.....	.....	.....	.....	.....	6788	12220	122	....
		5	.....	45.5	54.5	.....	.....	.....	.....	.....	.....	8194	14750	.....	148
	Average of 13 mine averages (5 ultimates).....	1	15.3	35.2	38.3	11.2	3.2	5.7	58.4	1.1	20.4	5809	10460	.....	....
		2	.....	41.6	45.2	13.2	3.8	4.7	68.9	1.3	8.1	6854	12340	.....	....
	(County average)	3	.....	47.9	52.1	.....	4.4	5.4	79.4	1.5	9.3	7896	14210	.....	....
		4	17.7	38.4	43.9	.....	.....	.....	.....	.....	.....	6640	11950	120	....
		5	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	8067	14520	.....	145

County Average Rank Index 120 (116-126)
County Average Unit Coal Index 145 (143-148)

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

LOGAN COUNTY — **SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
33	(3) 5263-4-5	1	14.2	37.2	37.2	11.4	3.3	.....	.....	.....	.....	5828	10490	.....	....
	(1912)	2	.....	43.4	43.4	13.2	3.9	.....	.....	.....	.....	6792	12230	.....	....
		3	.....	50.0	50.0	.....	4.5	.....	.....	.....	.....	7829	14090	.....	....
		4	16.5	40.7	42.8	.....	.....	.....	.....	.....	.....	6678	12020	120	....
		5	.....	48.8	51.2	.....	.....	.....	.....	.....	.....	8001	14400	.....	144
109	BM 81594 (composite 3)	1	12.8	36.5	40.8	9.9	3.0	5.6	61.5	1.1	18.9	6105	10990	.....	....
	(1921)	2	.....	41.8	46.8	11.4	3.4	4.8	70.5	1.3	8.6	7003	12610	.....	....
		3	.....	47.2	52.8	.....	3.9	5.5	79.5	1.4	9.7	7901	14220	.....	....
		4	14.6	39.4	46.0	.....	.....	.....	.....	.....	.....	6871	12370	124	....
		5	.....	46.1	53.9	.....	.....	.....	.....	.....	.....	8047	14490	.....	145
	Average of 2 mine averages (1 ultimate)	1	13.5	36.9	39.0	10.6	3.2	5.6	60.1	1.1	19.4	5967	10740	.....	....
		2	.....	42.6	45.1	12.3	3.6	4.8	69.5	1.3	8.5	6898	12420	.....	....
	(County average)	3	.....	48.6	51.4	.....	4.2	5.4	79.3	1.4	9.7	7865	14160	.....	....
		4	15.6	40.0	44.4	.....	.....	.....	.....	.....	.....	6775	12200	122	....
		5	.....	47.4	52.6	.....	.....	.....	.....	.....	.....	8023	14440	.....	144

County Average Rank Index 122 (120-124)
County Average Unit Coal Index 144 (144-145)

MC LEAN COUNTY — **SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**

100	(3) 5431-2-4. . . . . (1912)	1	13.3	38.0	36.2	12.5	3.7	. . . . .	. . . . .	. . . . .	. . . . .	5878	10580	. . . . .	. . . .
		2	. . . . .	43.8	41.8	14.4	4.3	. . . . .	. . . . .	. . . . .	. . . . .	6781	12210	. . . . .	. . . .
		3	. . . . .	51.2	48.8	. . . . .	5.0	. . . . .	. . . . .	. . . . .	. . . . .	7920	14260	. . . . .	. . . .
		4	15.8	42.0	42.2	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	6835	12300	123	. . . .
		5	. . . . .	49.9	50.1	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8114	14610	. . . . .	146

County Average Rank Index 123
County Average Unit Coal Index 146

MACON COUNTY — **SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**

41	(3) 5244-5-6. . . . . (1912)	1	14.5	36.0	38.0	11.5	3.3	. . . . .	. . .	. . . . .	. . . . .	5803	10450	. . . . .	. . . .
		2	. . . . .	42.1	44.5	13.4	3.9	. . . . .	. . . . .	. . . . .	. . . . .	6786	12210	. . . . .	. . . .
		3	. . . . .	48.6	51.4	. . . . .	4.5	. . . . .	. . . . .	. . . . .	. . . . .	7836	14110	. . . . .	. . . .
		4	16.9	39.3	43.8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	6657	11980	120	. . . .
		5	. . . . .	47.3	52.7	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8008	14420	. . . . .	144
42	BM 81598 (composite 3); (3) 5200, 01, 02. . . . . (1912, 1921)	1	13.3	36.4	41.4	8.9	3.5	5.8	60.5	1.1	20.2	6089	10960	. . . . .	. . . .
		2	. . . . .	41.9	47.8	10.3	4.1	4.9	69.8	1.3	9.6	7022	12640	. . . . .	. . . .
		3	. . . . .	46.8	53.2	. . . . .	4.5	5.5	77.8	1.4	10.8	7830	14090	. . . . .	. . . .
		4	15.0	38.7	46.3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	6777	12200	122	. . . .
		5	. . . . .	45.6	54.4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	7976	14360	. . . . .	144
	Average of 2 mine averages (1 ultimate). . . . . (County average)	1	13.9	36.2	39.7	10.2	3.4	5.7	59.1	1.1	20.5	5945	10700	. . . . .	. . . .
		2	. . . . .	42.0	46.1	11.9	4.0	4.8	68.6	1.2	9.5	6904	12430	. . . . .	. . . .
		3	. . . . .	47.7	52.3	. . . . .	4.5	5.5	77.9	1.4	10.7	7833	14100	. . . . .	. . . .
		4	16.0	39.0	45.0	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	6717	12090	121	. . . .
		5	. . . . .	46.4	53.6	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	7992	14390	. . . . .	144

County Average Rank Index 121 (120-122)
County Average Unit Coal Index 144

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

MENARD COUNTY — **SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
34	(3) 5190, 1-2	1	17.3	35.9	38.6	8.2	3.4	.....	.....	.....	.....	5833	10500	.....	....
	(1912)	2	.....	43.4	46.7	9.9	4.2	.....	.....	.....	.....	7055	12700	.....	....
		3	.....	48.2	51.8	.....	4.6	.....	.....	.....	.....	7829	14090	.....	....
		4	19.4	37.9	42.7	.....	.....	.....	.....	.....	.....	6426	11570	116	....
		5	.....	47.0	53.0	.....	.....	.....	.....	.....	.....	7973	14350	.....	144
612	C 631 (composite 3)	1	14.2	36.0	41.1	8.7	3.5	5.8	61.0	1.1	19.9	6083	10950	.....	....
	(1934)	2	.....	42.0	47.8	10.2	4.1	4.9	71.1	1.3	8.4	7090	12760	.....	....
		3	.....	46.7	53.3	.....	4.5	5.5	79.2	1.5	9.3	7892	14200	.....	....
		4	16.0	38.2	45.8	.....	.....	.....	.....	.....	.....	6746	12140	121	....
		5	.....	45.6	54.4	.....	.....	.....	.....	.....	.....	8033	14460	.....	145
531	BM A86595 (composite 2); C-152	1	14.5	34.6	40.1	10.8	2.7	5.8	59.9	1.1	19.7	5967	10740	.....	....
	(composite 3)	2	.....	40.5	46.9	12.6	3.2	4.9	70.1	1.3	7.9	6978	12560	.....	....
	(1933)	3	.....	46.3	53.7	.....	3.7	5.6	80.2	1.4	9.1	7984	14370	.....	....
		4	16.7	37.6	45.7	.....	.....	.....	.....	.....	.....	6783	12210	122	....
		5	.....	45.1	54.9	.....	.....	.....	.....	.....	.....	8141	14650	.....	147

	Average 3 mine averages (2 ultimates) (County average)	1	15.3	35.5	40.0	9.2	3.2	5.9	60.1	1.0	20.6	5961	10730	.....	....
		2	.....	41.9	47.2	10.9	3.8	5.0	70.8	1.2	8.2	7038	12670	.....	....
		3	.....	47.0	53.0	.....	4.3	5.6	79.5	1.4	9.2	7899	14220	.....	....
		4	17.3	37.9	44.8	.....	.....	.....	.....	.....	.....	6650	11970	120	....
		5	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	8048	14490	.....	145

County Average Rank Index 120 (116-122)
County Average Unit Coal Index 145 (144-147)

PEORIA COUNTY

SPRINGFIELD (NO. 5) COAL (WESTERN ILLINOIS)

25	(3) 5289-90-91 (1912)	1	14.9	36.9	37.2	11.0	3.4	.....	.....	.....	.....	5883	10590	.....	....
		2	.....	43.3	43.7	13.0	4.0	.....	.....	.....	.....	6916	12450	.....	....
		3	.....	49.8	50.2	.....	4.7	.....	.....	.....	.....	7944	14300	.....	....
		4	17.3	40.1	42.6	.....	.....	.....	.....	.....	.....	6713	12080	121	....
		5	.....	48.5	51.5	.....	.....	.....	.....	.....	.....	8119	14610	.....	146
26	(3) 5303-4-5 (1912)	1	15.0	36.5	36.7	11.8	3.1	.....	.....	.....	.....	5789	10420	.....	....
		2	.....	42.9	43.2	13.9	3.6	.....	.....	.....	.....	6811	12260	.....	....
		3	.....	49.8	50.2	.....	4.2	.....	.....	.....	.....	7907	14230	.....	....
		4	17.5	40.1	42.4	.....	.....	.....	.....	.....	.....	6663	12000	120	....
		5	.....	48.6	51.4	.....	.....	.....	.....	.....	.....	8081	14550	.....	146
106	BM 84563 (composite 3) (1922)	1	13.4	30.7	44.4	11.5	3.8	5.6	59.6	1.1	18.4	6025	10840	.....	....
		2	.....	35.4	51.4	13.2	4.4	4.8	68.8	1.3	7.5	6957	12520	.....	....
		3	.....	40.8	59.2	.....	5.1	5.5	79.3	1.5	8.6	8017	14430	.....	....
		4	15.7	33.0	51.3	.....	.....	.....	.....	.....	.....	6921	12460	125	....
		5	.....	39.1	60.9	.....	.....	.....	.....	.....	.....	8201	14760	.....	148

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

PEORIA COUNTY (Continued)

Mine Index Number	Samples		Proximate				Ultimate					Heat Values			
	Number of samples averaged, Laboratory Number and Date	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
107	BM 84233 (composite 3).....	1	14.1	34.4	40.0	11.5	2.9	5.7	59.9	1.1	18.9	5950	10710	.....	.....
	(1922)	2	.....	40.1	46.5	13.4	3.4	4.8	69.8	1.3	7.3	6926	12470	.....	.....
		3	.....	46.3	53.7	.....	3.9	5.5	80.6	1.5	8.5	7997	14400	.....	.....
		4	16.4	37.6	46.0	.....	.....	.....	.....	.....	.....	6826	12290	123	.....
		5	.....	45.0	55.0	.....	.....	.....	.....	.....	.....	8168	14700	.....	147
348	BM 22986 (composite 4);.....	1	15.5	34.1	38.7	11.7	2.8	5.8	57.7	1.1	20.9	5800	10440	.....	.....
	BM A 45619 (composite 2); 16464	2	.....	40.4	45.8	13.8	3.3	4.9	68.4	1.3	8.3	6869	12370	.....	.....
	(composite 2); BM A88227 (com-	3	.....	46.8	53.2	.....	3.8	5.8	79.3	1.5	9.6	7971	14350	.....	.....
	posite 3).....	4	18.1	37.3	44.6	.....	.....	.....	.....	.....	.....	6754	12160	122	.....
	(1915, 1928, 1933)	5	.....	45.5	54.5	.....	.....	.....	.....	.....	.....	8139	14650	.....	147
349	(2) 16444-45.....	1	13.4	37.9	38.3	10.4	2.7	.....	.....	.....	.....	6071	10930	.....	.....
	(1928)	2	.....	43.8	44.2	12.0	3.4	.....	.....	.....	.....	7011	12620	.....	.....
		3	.....	49.8	50.2	.....	3.8	.....	.....	.....	.....	7968	14340	.....	.....
		4	15.3	41.3	43.4	.....	.....	.....	.....	.....	.....	6870	12370	124	.....
		5	.....	48.7	51.3	.....	.....	.....	.....	.....	.....	8122	14620	.....	146
601	BM A 90520 (composite 3).....	1	14.4	35.7	40.2	9.7	2.6	6.0	60.8	1.0	19.9	6106	10990	.....	.....
	(1933)	2	.....	41.7	46.9	11.4	3.1	5.1	71.1	1.2	8.1	7139	12850	.....	.....
		3	.....	47.1	52.9	.....	3.5	5.7	80.2	1.4	9.2	8050	14490	.....	...
		4	16.3	38.5	45.2	.....	.....	.....	.....	.....	.....	6849	12330	123	.....
		5	.....	46.0	54.0	.....	.....	.....	.....	.....	.....	8205	14770	.....	148

BM2	[a]BM 21035 (composite 3).....	1	15.5	34.7	39.8	10.0	2.9	5.9	59.2	1.1	20.9	5969	10740	.....	....
	(1915)	2	.....	41.1	47.1	11.8	3.4	5.0	70.0	1.4	8.4	7059	12710	.....	....
		3	.....	46.6	53.4	.....	3.8	5.7	79.4	1.5	9.6	8009	14420	.....	....
		4	17.6	37.4	45.0	.....	.....	.....	.....	.....	.....	6723	12100	121	....
		5	.....	45.4	54.6	.....	.....	.....	.....	.....	.....	8162	14690	.....	147
	Average 8 mine averages (5 ultimates).....	1	14.5	35.1	39.4	11.0	3.2	5.8	59.2	1.1	19.7	5949	10710	.....	....
		2	.....	41.1	46.1	12.8	3.8	4.9	69.3	1.3	7.9	6959	12530	.....	....
	(County average)	3	.....	47.1	52.9	.....	4.3	5.6	79.5	1.5	9.1	7982	14370	.....	....
		4	16.8	38.1	45.1	.....	.....	.....	.....	.....	.....	6781	12210	122	....
		5	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	8151	14670	.....	147

County Average Rank Index 122 (120-125)
County Average Unit Coal Index 147 (146-148)

SANGAMON COUNTY — SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)

36	(3) 5118-19-20.....	1	15.3	36.6	37.8	10.3	3.7	.....	.....	.....	.....	5843	10520	.....	....
	(1912)	2	.....	43.2	44.7	12.1	4.3	.....	.....	.....	.....	6903	12430	.....	....
		3	.....	49.1	50.9	.....	4.9	.....	.....	.....	.....	7858	14150	.....	....
		4	17.7	39.4	42.9	.....	.....	.....	.....	.....	.....	6610	11900	119	....
		5	.....	47.9	52.1	.....	.....	.....	.....	.....	.....	8027	14450	.....	145
37	(2) 5128-9.....	1	14.0	37.2	38.3	10.5	3.3	.....	.....	.....	.....	5924	10660	.....	....
	(1912)	2	.....	43.3	44.5	12.2	4.6	.....	.....	.....	.....	6886	12390	.....	....
		3	.....	49.3	50.7	.....	5.3	.....	.....	.....	.....	7840	14110	.....	....
		4	16.1	40.4	43.5	.....	.....	.....	.....	.....	.....	6714	12090	121	....
		5	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8015	14430	.....	144

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free: 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SANGAMON COUNTY (Continued)

Mine Index Number	Samples		Proximate				Ultimate					Heat Values			
	Number of samples averaged, Laboratory Number and Date	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
38	(3) 5196-7-8	1	14.2	38.1	37.5	10.2	4.1	.....	.....	.....	.....	5917	10650	.....	....
	(1912)	2	.....	44.4	43.7	11.9	4.8	.....	.....	.....	.....	6901	12420	.....	....
		3	.....	50.4	49.6	.....	5.5	.....	.....	.....	.....	7832	14100	.....	....
		4	16.4	41.1	42.5	.....	.....	.....	.....	.....	.....	6691	12040	120	....
		5	.....	49.1	50.9	.....	.....	.....	.....	.....	.....	8007	14410	.....	144
39	(3) 5166-7-8	1	13.3	37.4	36.7	12.6	4.1	.....	.....	.....	.....	5777	10400	.....	....
	(1912)	2	.....	43.2	42.3	14.5	5.5	.....	.....	.....	.....	6664	12000	.....	....
		3	.....	50.5	49.5	.....	6.4	.....	.....	.....	.....	7797	14040	.....	....
		4	15.8	41.3	42.9	.....	.....	.....	.....	.....	.....	6732	12120	121	....
		5	.....	49.0	51.0	.....	.....	.....	.....	.....	.....	8011	14420	.....	144
40	(3) 5187-88-89	1	15.1	36.7	38.1	10.1	4.2	.....	.....	.....	.....	5880	10580	.....	....
	(1912)	2	.....	43.2	44.9	11.9	4.8	.....	.....	.....	.....	6922	12460	.....	....
		3	.....	49.0	51.0	.....	5.4	.....	.....	.....	.....	7856	14140	.....	....
		4	17.4	39.4	43.2	.....	.....	.....	.....	.....	.....	6641	11960	120	....
		5	.....	47.7	52.3	.....	.....	.....	.....	.....	.....	8032	14460	.....	145
119	BM 81451 (composite 3)	1	14.0	35.7	39.9	10.4	3.8	5.7	59.7	1.1	19.3	5948	10710	.....	....
	(1921)	2	.....	41.5	46.4	12.1	4.4	4.8	69.5	1.3	7.9	6918	12450	.....	....
		3	.....	47.2	52.8	.....	5.0	5.4	79.1	1.5	9.0	7869	14170	.....	....
		4	16.2	38.5	45.3	.....	.....	.....	.....	.....	.....	6739	12130	121	....
		5	.....	45.9	54.1	.....	.....	.....	.....	.....	.....	8040	14470	.....	145

120	BM 81455 (composite 3).....	1	13.7	36.8	39.2	10.3	3.9	5.8	59.7	1.2	19.1	5978	10760	....	...
	(1921)	2	.....	42.7	45.4	11.9	4.5	5.0	69.2	1.4	8.0	6928	12470	....	....
		3	.....	48.4	51.6	.....	5.1	5.7	78.6	1.5	9.1	7863	14150	....	....
		4	15.8	39.7	44.5	.....	.....	.....	.....	.....	.....	6764	12180	122	....
		5	.....	47.1	52.9	.....	.....	.....	.....	.....	.....	8034	14460	....	145
121	BM 81459 (composite 3).....	1	13.9	33.8	42.1	10.2	3.7	5.7	60.3	1.2	18.9	5987	10780	....	...
	(1921)	2	.....	39.3	48.8	11.9	4.3	4.9	70.0	1.3	7.6	6956	12520	....	....
		3	.....	44.6	55.4	.....	4.9	5.5	79.5	1.5	8.6	7896	14210	....	....
		4	16.0	36.2	47.8	.....	.....	.....	.....	.....	.....	6771	12190	122	....
		5	.....	43.2	56.8	.....	.....	.....	.....	.....	.....	8063	14510	....	145
122	BM 81443 (composite 3); BMA 90788	1	13.9	35.4	40.9	9.8	3.9	5.7	59.7	1.1	19.8	6017	10830	....	....
	(composite 3).....	2	.....	41.1	47.5	11.4	4.5	4.9	69.3	1.3	8.6	6988	12580	....	....
	(1921, 1933)	3	.....	46.4	53.6	.....	5.1	5.5	78.2	1.5	9.7	7886	14200	....	....
		4	15.9	37.9	46.2	.....	.....	.....	.....	.....	.....	6770	12190	122	....
		5	.....	45.0	55.0	.....	.....	.....	.....	.....	....	8054	14497	....	145
616	C-732 (composite 2).....	1	14.0	36.1	38.4	11.5	4.3	5.6	58.1	1.1	19.4	5856	10540	....	....
	(1934)	2	.....	42.0	44.7	13.3	5.0	4.7	67.6	1.3	8.1	6809	12260	....	....
		3	.....	48.5	51.5	.....	5.7	5.5	78.0	1.4	9.4	7858	14150	....	....
		4	16.4	39.3	44.3	.....	.....	.....	.....	.....	.....	6732	12120	121	....
		5	.....	47.0	53.0	.....	.....	.....	.....	.....	.....	8056	14500	....	145
617	C-734 (composite 2).....	1	14.6	36.1	38.5	10.8	3.7	5.8	58.3	1.1	20.3	5868	10560	....	....
	C-733 (composite 2)	2	.....	42.3	45.1	12.6	4.4	4.9	68.2	1.3	8.6	6867	12360	....	....
	(1934)	3	.....	48.4	51.6	.....	5.0	5.6	78.0	1.5	9.9	7860	14150	....	....
		4	16.9	39.1	44.0	.....	.....	.....	.....	.....	.....	6681	12020	120	....
		5	.....	47.1	52.9	.....	.....	.....	.....	.....	.....	8036	14460	....	145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SANGAMON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
618	C-747 (composite 2).....	1	14.2	35.5	39.9	10.4	4.1	5.7	59.0	1.1	19.7	5945	10700	.....	....
	(1934)	2	.....	41.3	46.6	12.1	4.8	4.8	68.7	1.3	8.3	6925	12470	.....	....
		3	.....	47.0	53.0	.....	5.4	5.5	78.1	1.5	9.5	7876	14180	.....	....
		4	16.4	38.2	45.4	.....	.....	.....	.....	.....	.....	6741	12130	121	....
		5	.....	45.6	54.4	.....	.....	.....	.....	.....	.....	8058	14510	.....	145
624	C-937 (composite 3).....	1	14.9	34.6	39.2	11.3	3.2	5.8	58.4	1.1	20.2	5835	10500	.....	....
	(1934)	2	.....	40.7	46.1	13.2	3.8	4.9	68.6	1.2	8.3	6855	12340	.....	....
		3	.....	46.9	53.1	.....	4.4	5.6	79.1	1.4	9.5	7902	14220	.....	....
		4	17.3	37.7	45.0	.....	.....	.....	.....	.....	.....	6678	12020	120	....
		5	.....	45.6	54.4	.....	.....	.....	.....	.....	.....	8067	14520	.....	145
	Average 14 mine average (9 ultimates)..	1	14.2	36.1	39.1	10.6	3.9	5.7	59.0	1.1	19.7	5911	10640	.....	....
		2	.....	42.1	45.6	12.3	4.6	4.8	68.8	1.3	8.2	6889	12400	.....	....
	(County average)	3	.....	48.0	52.0	.....	5.2	5.5	78.4	1.5	9.4	7855	14140	.....	....
		4	16.4	39.0	44.6	.....	.....	.....	.....	.....	.....	6731	12120	121	....
		5	.....	46.7	53.3	.....	.....	.....	.....	.....	.....	8032	14460	.....	145

County Average Rank Index 121 (119-123)
County Average Unit Coal Index 145 (144-145)

SCHUYLER COUNTY — **SPRINGFIELD (NO. 5) COAL (WESTERN ILLINOIS)**

327	(3) 13804-5-6 (1922)	1	15.2	34.7	40.2	9.9	2.7	.....	.....	.....	.....	6024	10840	.....	.....
		2	.....	40.9	47.5	11.6	3.1	.....	.....	.....	.....	7103	12790	.....	.....
		3	.....	46.3	53.7	.....	3.5	.....	.....	.....	.....	8040	14470	.....	.....
		4	17.3	37.4	45.3	.....	.....	.....	.....	.....	.....	6772	12190	122	.....
		5	.....	45.2	54.8	.....	.....	.....	.....	.....	.....	8187	14740	.....	147

County Average Rank Index 122
County Average Unit Coal Index 147

SHELBY COUNTY — **SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**

217	BM 81314 (composite 3) (1921)	1	11.2	35.3	42.8	10.7	3.6	5.7	61.2	1.2	17.6	6150	11070	.....	.....
		2	.....	39.7	48.2	12.1	4.0	5.0	69.0	1.4	8.5	6927	12470	.....	.....
		3	.....	45.1	54.9	.....	4.6	5.7	78.4	1.6	9.7	7880	14190	.....	.....
		4	13.0	38.1	48.9	.....	.....	.....	.....	.....	.....	7001	12600	126	.....
		5	.....	43.8	56.2	.....	.....	.....	.....	.....	.....	8045	14480	.....	145

County Average Rank Index 126
County Average Unit Coal Index 145

TAZEWELL COUNTY — **SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**

27	(3) 5277-78-81 (1912)	1	14.4	37.6	38.4	9.6	3.1	.....	.....	.....	.....	6006	10810	.....	.....
		2	.....	44.1	44.6	11.3	3.6	.....	.....	.....	.....	7014	12630	.....	.....
		3	.....	49.7	50.3	.....	4.1	.....	.....	.....	.....	7905	14230	.....	.....
		4	16.4	40.4	43.2	.....	.....	.....	.....	.....	.....	6736	12120	121	.....
		5	.....	48.6	51.4	.....	.....	.....	.....	.....	.....	8055	14500	.....	145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

TAZEWELL COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
108	BM 84486 (composite 3)..... (1922)	1	15.9	33.9	40.9	9.3	3.3	5.9	59.4	1.2	20.9	5922	10660	.....	....
		2	.....	40.2	48.8	11.0	3.9	4.9	70.6	1.4	8.2	7039	12670	.....	....
		3	.....	45.2	54.8	.....	4.4	5.5	79.3	1.5	9.3	7911	14240	.....	....
		4	18.0	36.1	45.9	.....	.....	.....	.....	.....	.....	6615	11910	119	....
		5	.....	43.9	56.1	.....	.....	.....	.....	.....	.....	8061	14510	.....	145
	Average 2 mine averages (1 ultimate) (County average)	1	15.1	35.7	39.7	9.5	3.2	5.8	59.9	1.1	20.5	5964	10740	.....	....
		2	.....	42.1	46.7	11.2	3.8	4.9	70.6	1.3	8.2	7028	12650	.....	....
		3	.....	47.4	52.6	.....	4.3	5.5	79.4	1.5	9.3	7911	14240	.....	....
		4	17.2	38.3	44.5	.....	.....	.....	.....	.....	.....	6675	12020	120	....
		5	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	8062	14510	.....	145

County Average Rank Index 120 (119-121)
County Average Unit Coal Index 145

FULTON-PEORIA — **HERRIN (NO. 6) COAL (WESTERN ILLINOIS)**

621	C-916 (composite 2).....	1	15.9	32.6	42.5	9.0	3.0	5.8	59.4	1.1	21.7	5931	10680	.....	....
	(1934)	2	.....	38.8	50.5	10.7	3.6	4.9	70.6	1.3	8.9	7054	12700	.....	....
	(County average)	3	.....	43.4	56.6	.....	4.1	5.4	79.1	1.4	10.0	7903	14230	.....	....
		4	17.9	34.6	47.5	.....	.....	.....	.....	.....	.....	6598	11880	119	....
		5	.....	42.2	57.8	.....	.....	.....	.....	.....	.....	8044	14480	.....	145

County Average Rank Index 119
County Average Unit Coal Index 145

GRUNDY COUNTY — **VERONA (NO. 6?) COAL (NORTHERN ILLINOIS)**

530	(2) 86302-86303 and C-148 (com-	1	14.0	36.4	38.9	10.7	3.9	5.8	58.4	.9	20.3	5983	10770	.....	....
	posite 2).....	2	.....	42.3	45.3	12.4	4.6	4.9	67.9	1.0	9.2	6957	12520	.....	....
	(1932)	3	.....	48.3	51.7	.....	5.2	5.6	77.6	1.1	10.5	7945	14300	.....	....
	(County average)	4	16.2	39.3	44.5	.....	.....	.....	.....	.....	.....	6808	12250	123	....
		5	.....	46.9	53.1	.....	.....	.....	.....	.....	.....	8123	14610	.....	146

County Average Rank Index 123
County Average Unit Coal Index 146

HENRY COUNTY — **HERRIN (NO. 6) COAL (WESTERN ILLINOIS)**

527	BM A 86460 (composite 2); C-145	1	19.1	30.4	38.3	12.2	3.9	5.8	53.9	.8	23.4	5378	9680	.....	....
	(composite 2).....	2	.....	37.5	47.4	15.1	4.8	4.6	66.6	1.0	7.9	6647	11970	.....	....
	(1932)	3	.....	44.2	55.8	.....	5.7	5.4	78.4	1.2	9.3	7833	14100	.....	....
	(County average)	4	22.6	32.9	44.5	.....	.....	.....	.....	.....	.....	6223	11200	112	....
		5	.....	42.4	57.6	.....	.....	.....	.....	.....	.....	8036	14470	.....	145

County Average Rank Index 112
County Average Unit Coal Index 145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

KNOX COUNTY — **HERRIN (NO. 6) COAL (WESTERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
526	BM 86457 (composite 2); C-137	1	17.9	32.5	39.0	10.6	3.1	5.9	57.1	.8	22.5	5664	10200	.....	....
	(composite 2).....	2	.....	39.5	47.5	13.0	3.8	4.7	69.6	1.0	7.9	6894	12410	.....	....
	(1932)	3	.....	45.4	54.6	.....	4.3	5.4	80.0	1.2	9.1	7921	14260	.....	....
	(County average)	4	20.6	35.0	44.4	.....	.....	.....	.....	.....	.....	6426	11570	116	....
		5	.....	44.0	56.0	.....	.....	.....	.....	.....	.....	8090	14560	.....	146

County Average Rank Index 116
County Average Unit Coal Index 146

LA SALLE COUNTY (LaSalle District) — **(SECOND VEIN) HERRIN (NO. 6?)[a] COAL (NORTHERN ILLINOIS)**

231	(3) 5391-2-3.....	1	14.8	41.3	34.3	9.6	3.4	.....	.....	.....	.....	5930	10670	.....	....
	(1912)	2	.....	48.5	40.2	11.3	4.0	.....	.....	.....	.....	6956	12520	.....	....
		3	.....	54.7	45.3	.....	4.5	.....	.....	.....	.....	7844	14120	.....	....
		4	16.8	44.7	38.5	.....	.....	.....	.....	.....	.....	6653	11980	120	....
		5	.....	53.7	46.3	.....	.....	.....	.....	.....	.....	7999	14400	.....	144

County Average Rank Index 120
County Average Unit Coal Index 144

a Formerly called No. 5 coal.

LA SALLE COUNTY — **HERRIN (STREATOR) (NO. 6) [b] COAL (NORTHERN ILLINOIS)**

99	(3) 5414-16-17	1	13.6	40.9	37.8	7.7	3.7	.....	.....	.....	.....	6304	11350	.....	.....
	(1912)	2	.....	47.3	43.7	9.0	4.3	.....	.....	.....	.....	7293	13130	.....	.....
		3	.....	52.0	48.0	.....	4.7	.....	.....	.....	.....	8013	14420	.....	.....
		4	15.1	43.3	41.6	.....	.....	.....	.....	.....	.....	6923	12460	125	.....
		5	.....	51.0	49.0	.....	.....	.....	.....	.....	.....	8158	14680	.....	147
620	C-872 (composite 3)	1	12.8	38.2	39.5	9.5	3.6	5.8	61.1	1.0	19.0	6193	11150	.....	.....
	(1934)	2	.....	43.8	45.3	10.9	4.2	5.0	70.1	1.1	8.7	7104	12790	.....	.....
		3	.....	49.2	50.8	.....	4.6	5.6	78.7	1.3	9.8	7970	14350	.....	.....
		4	14.6	41.0	44.4	.....	.....	.....	.....	.....	.....	6944	12500	125	.....
		5	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8132	14640	.....	146
	Average of 2 mine averages (1 ultimate)	1	13.2	39.5	38.7	8.6	3.7	5.8	61.5	1.0	19.4	6249	11250	.....	.....
		2	.....	45.6	44.5	9.9	4.2	5.0	70.9	1.2	8.8	7197	12960	.....	.....
	(County average)	3	.....	50.6	49.4	.....	4.7	5.6	78.7	1.3	9.7	7992	14390	.....	.....
		4	14.9	42.2	42.9	.....	.....	.....	.....	.....	.....	6933	12480	125	.....
		5	.....	49.5	50.5	.....	.....	.....	.....	.....	.....	8143	14660	.....	147

County Average Rank Index 125
County Average Unit Coal Index 147 (146-147)

b Formerly called No. 7 coal.

STARK COUNTY — **HERRIN (NO. 6) COAL (WESTERN ILLINOIS)**

528	BM A86464 (composite 2); C-142	1	17.5	33.1	39.3	10.1	3.7	5.9	57.2	.9	22.2	5736	10330	.....	.....
	(composite 2)	2	.....	40.1	47.6	12.3	4.5	4.8	69.3	1.1	8.0	6953	12520	.....	.....
	(1932)	3	.....	45.7	54.3	.....	5.1	5.5	79.0	1.3	9.1	7928	14270	.....	.....
	(County average)	4	20.1	35.4	44.5	.....	.....	.....	.....	.....	.....	6471	11650	117	.....
		5	.....	44.3	55.7	.....	.....	.....	.....	.....	.....	8105	14590	.....	146

County Average Rank Index 116
County Average Unit Coal Index 146

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

BOND COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
218	BM 80791 (composite 3).....	1	11.9	35.2	42.2	10.7	3.4	5.5	60.9	1.1	18.4	5998	10800	.....	....
	(1921)	2	.....	39.9	47.9	12.2	3.8	4.7	69.2	1.2	8.9	6810	12260	.....	....
	(County average)	3	.....	45.4	54.6	.....	4.4	5.3	78.8	1.4	10.1	7754	13960	.....	....
		4	13.8	38.1	48.1	.....	.....	.....	.....	.....	.....	6821	12280	123	....
		5	.....	44.1	55.9	.....	.....	.....	.....	.....	.....	7911	14240	.....	142

County Average Rank Index 123
County Average Unit Coal Index 142

CHRISTIAN COUNTY — **HERRIN (NO. 6) COAL (CENTRAL ILLINOIS)**

219	BM 81318 (composite 3).....	1	12.4	36.3	40.3	11.0	3.8	5.8	59.3	1.1	9.0	5982	10770	.....	....
	(1921)	2	.....	41.5	46.0	12.5	4.4	5.1	67.7	1.3	9.0	6827	12290	.....	....
		3	.....	47.5	52.5	.....	5.0	5.9	77.4	1.4	10.3	7806	14050	.....	....
		4	14.4	39.5	46.1	.....	.....	.....	.....	.....	.....	6831	12300	123	....
		5	.....	46.1	53.9	.....	.....	.....	.....	.....	.....	7978	14360	.....	144
220	BM 81447 (composite 3).....	1	13.9	36.5	39.3	10.3	4.3	5.8	58.6	1.1	19.9	5938	10690	.....	....
	(1921)	2	.....	42.4	45.6	12.0	4.9	4.9	68.0	1.3	8.9	6892	12410	.....	....
		3	.....	48.1	51.9	.....	5.6	5.6	77.3	1.5	10.0	7828	14090	.....	....
		4	16.0	39.3	44.7	.....	.....	.....	.....	.....	.....	6725	12110	121	....
		5	.....	46.8	53.2	.....	.....	.....	.....	.....	.....	8007	14410	.....	144

221	BM (average 3 composites): 81141,	1	12.4	37.6	39.6	10.4	3.9	5.6	60.4	1.1	18.6	6078	10940	.....	....
	26338, 25752.....	2	.....	42.9	45.2	11.9	4.5	4.9	68.9	1.2	8.6	6936	12480	.....	....
	(1921)	3	.....	48.7	51.3	.....	5.1	5.5	78.2	1.4	9.8	7872	14170	.....	....
		4	14.3	40.7	45.0	.....	.....	.....	.....	.....	.....	6894	12410	124	....
		5	.....	47.5	52.5	.....	.....	.....	.....	.....	.....	8042	14480	.....	145
222	BM 81145 (composite 3).....	1	12.2	37.3	41.4	9.1	3.6	5.7	60.8	1.2	19.6	6142	11060	.....	....
	(1921)	2	....	42.5	47.2	10.3	4.2	5.0	69.2	1.3	10.0	6996	12590	.....	....
		3	.....	47.4	52.6	.....	4.6	5.6	77.1	1.5	11.2	7802	14040	.....	....
		4	13.8	39.8	46.4	.....	.....	.....	.....	.....	.....	6849	12330	123	....
		5	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	7948	14310	.....	143
	Average 4 mine averages (4 ultimates)	1	12.7	37.0	40.1	10.2	3.9	5.7	59.8	1.1	19.3	6035	10860	.....	....
	(County average)	2	.....	42.3	46.0	11.7	4.5	5.0	68.4	1.3	9.1	6913	12440	.....	....
		3	.....	47.9	52.1	.....	5.1	5.6	77.5	1.4	10.4	7827	14090	.....	....
		4	14.6	39.8	45.6	.....	.....	.....	.....	.....	.....	6825	12290	123	....
		5	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	7994	14390	.....	144

County Average Rank Index 123 (121-124)
County Average Unit Coal Index 144 (143-145)

CLINTON COUNTY — HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)

84	(2) 5073-74.....	1	12.9	37.7	39.0	10.4	4.2	.....	.....	.....	.....	5978	10760	.....	....
	(1912)	2	.....	43.2	44.8	12.0	4.8	.....	.....	.....	.....	6861	12350	.....	....
		3	.....	49.1	50.9	.....	5.4	.....	.....	.....	.....	7792	14030	.....	....
		4	14.9	40.7	44.4	.....	.....	.....	.....	.....	.....	6781	12210	122	....
		5	.....	47.8	52.2	.....	.....	.....	.....	.....	.....	7966	14340	.....	143

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

CLINTON COUNTY (Continued)

Mine Index Number	Samples		Proximate				Ultimate					Heat Values			
	Number of samples averaged, Laboratory Number and Date	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
85	(3) 5052-53-54	1	12.4	36.9	40.7	10.0	3.5	.....	.....	.....	.....	6020	10840	.....	....
	(1912)	2	.....	42.1	46.4	11.5	4.0	.....	.....	.....	.....	6871	12370	.....	....
		3	.....	47.6	52.4	.....	4.5	.....	.....	.....	.....	7761	13970	.....	....
		4	14.2	39.8	46.0	.....	.....	.....	.....	.....	.....	6791	12220	122	....
		5	.....	46.3	53.7	.....	.....	.....	.....	.....	.....	7914	14250	.....	143
198	BM 80747 (composite 3)	1	11.0	36.8	41.3	10.9	3.5	5.5	60.8	1.1	18.2	6059	10910	.....	....
	(1921)	2	.....	41.4	46.4	12.2	3.9	4.8	68.3	1.3	9.5	6809	12260	.....	....
		3	.....	47.2	52.8	.....	4.5	5.5	77.8	1.4	10.8	7757	13960	.....	....
		4	12.8	40.0	47.2	.....	.....	.....	.....	.....	.....	6905	12430	124	....
		5	.....	45.9	54.1	.....	.....	.....	.....	.....	.....	7916	14250	.....	143
199	BM 80770 (composite 3)	1	11.1	34.9	43.4	10.6	3.6	5.3	60.9	1.1	18.5	6088	10960	.....	....
	(1921)	2	.....	39.3	48.8	11.9	4.0	4.6	68.6	1.2	9.7	6852	12330	.....	....
		3	.....	44.6	55.4	.....	4.5	5.2	77.9	1.4	11.0	7779	14000	.....	....
		4	12.9	37.6	49.5	.....	.....	.....	.....	.....	.....	6915	12450	125	....
		5	.....	43.2	56.8	.....	.....	.....	.....	.....	.....	7937	14290	.....	143

	Average 4 mine averages (2 ultimates) (County average)	1	11.8	36.6	41.1	10.5	3.7	5.5	60.3	1.1	18.9	6038	10870	.....	....
		2	.....	41.5	46.6	11.9	4.2	4.8	68.4	1.2	9.5	6845	12320	.....	....
		3	.....	47.1	52.9	.....	4.8	5.4	77.6	1.4	10.8	7770	13990	.....	....
		4	13.6	39.6	46.8	.....	.....	.....	.....	.....	.....	6851	12330	123	....
		5	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	7931	14280	.....	143

County Average Rank Index 123 (122-125)
County Average Unit Coal Index 143

FRANKLIN COUNTY — **HERRIN (NO. 6) COAL (SOUTHERN ILLINOIS)**

50	BM 26497 (composite 5); (3) 5222-3-4 (1912, 1916)	1	9.7	34.1	48.1	8.1	1.1	5.5	67.3	1.2	16.8	6617	11910	.....	....
		2	.....	37.8	53.3	8.9	1.2	4.9	74.6	1.4	9.0	7327	13190	.....	....
		3	.....	41.5	58.5	.....	1.3	5.3	81.9	1.6	9.9	8046	14480	.....	....
		4	10.7	36.4	52.9	.....	.....	.....	.....	.....	.....	7263	13070	131	....
		5	.....	40.8	59.2	.....	.....	.....	.....	.....	.....	8138	14640	.....	146
51	(3) 5008-9-11 (1912)	1	10.3	33.4	49.0	7.3	1.2	.....	.....	.....	.....	6606	11890	.....	....
		2	.....	37.2	54.7	8.1	1.3	.....	.....	.....	.....	7362	13250	.....	....
		3	.....	40.5	59.5	.....	1.4	.....	.....	.....	.....	8009	14420	.....	....
		4	11.2	35.4	53.4	.....	.....	.....	.....	.....	.....	7182	12930	129	....
		5	.....	39.8	60.2	.....	.....	.....	.....	.....	.....	8090	14560	.....	146
52	(3) 4810-11-12 (1912)	1	6.8	38.4	44.6	10.2	3.1	.....	.....	.....	.....	6597	11880	.....	....
		2	.....	41.1	47.9	11.0	3.4	.....	.....	.....	.....	7074	12730	.....	....
		3	.....	46.2	53.8	.....	3.8	.....	.....	.....	.....	7949	14310	.....	....
		4	7.8	41.6	50.6	.....	.....	.....	.....	.....	.....	7465	13440	134	....
		5	.....	45.1	54.9	.....	.....	.....	.....	.....	.....	8092	14570	.....	146

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

FRANKLIN COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
53	(4) 4785-6-7-9	1	10.2	32.8	48.9	8.1	.6	.....	.....	.....	.....	6478	11660	.....	.....
	(1912)	2	.....	36.5	54 4	9.1	.7	.....	.....	.....	.....	7213	12980	.....	.....
		3	.....	40.2	59.8	....	.8	.....	.....	.....	.....	7933	14280	.....	.....
		4	11.2	35.1	53.7	.....	.....	.....	.....	.....	.....	7112	12800	128	.....
		5	.....	39.5	60.5	....	.....	.....	.....	.....	.....	8011	14420	.....	144
56	(3) 5208-9-11	1	8.1	36.3	45.3	10.3	2.5	....	.....	.....	.....	6514	11730	.....	.....
	(1912)	2	.....	39.5	49.3	11.2	2.7	.....	.....	.....	.....	7088	12760	.....	.....
		3	.....	44.5	55.5	.....	3.1	.....	.....	.....	.....	7977	14360	.....	.....
		4	9.3	39.4	51.3	.....	.....	.....	.....	.....	.....	7363	13250	133	.....
		5	.....	43.4	56.6	.....	.....	.....	.....	.....	.....	8111	14600	.....	146
57	BM 20083 and BM 20726 (composite 3); BM (3) 5507-8-9	1	9.4	31.9	49.7	9.0	.7	5.2	66.9	1.5	16.7	6530	11750	.....	.....
		2	.....	35.1	54.9	10.0	.8	4.6	73.8	1.6	9.2	7207	12970	.....	.....
	(1912, 1914, 1915)	3	.....	39.1	60.9	.....	.9	5.1	82.0	1.8	10.2	8007	14410	.....	.....
		4	10.4	34.4	55.2	.....	.....	.....	.....	.....	.....	7247	13050	131	.....
		5	.....	38.3	61.7	.....	.....	.....	.....	.....	.....	8094	14570	.....	146
58	BM 22691 (composite 5); (3) 4791-93-94	1	9.1	34.1	48.7	8.1	.8	5.5	67.7	1.5	16.4	6628	11930	.....	.....
		2	.....	37.5	53.6	8.9	.9	5.0	74.4	1.7	9.1	7288	13120	.....	.....
	(1912, 1915)	3	.....	41.2	58.8	.....	1.0	5.4	81.7	1.9	10.0	7999	14400	.....	.....
		4	10.0	36.5	53.5	.....	.....	.....	.....	.....	.....	7272	13090	131	.....
		5	.....	40.6	59.4	.....	.....	.....	.....	.....	.....	8079	14540	.....	145

134	C-508 (composite 2); C-507 (composite 2); (6), 12701,-02-03, 12720-21-22 (1921, 1934)	1	8.9	32.9	49.8	8.4	1.1	5.3	67.8	1.5	15.9	6594	11870	....	....
		2	.....	36.1	54.7	9.2	1.2	4.7	74.4	1.7	8.8	7237	13030	....	....
		3	.....	39.7	60.3	.....	1.3	5.2	81.9	1.9	9.7	7972	14350	....	....
		4	9.8	35.2	55.0	.....	.....	.....	.....	.....	.....	7267	13080	131	....
		5	.....	39.0	61.0	.....	.....	.....	.....	.....	.....	8057	14500	....	145
136	BM A90718 (composite 3); (6) 12729-30-31-32-33-34 (1921, 1933)	1	8.1	34.4	48.2	9.3	2.0	5.6	65.9	1.6	15.6	6559	11810	....	....
		2	.....	37.4	52.4	10.2	2.1	5.1	71.7	1.7	9.2	7139	12850	....	....
		3	.....	41.6	58.4	.....	2.4	5.6	79.8	1.9	10.3	7947	14310	....	....
		4	9.1	37.0	53.9	.....	.....	.....	.....	.....	.....	7319	13180	132	....
		5	.....	40.7	59.3	.....	.....	.....	.....	.....	.....	8063	14510	....	145
139	(6) 12682-3-4-98-9-12700 (1921)	1	7.9	35.1	47.6	9.4	2.3	.....	.....	.....	.....	6552	11790	....	....
		2	.....	38.2	51.7	10.1	2.5	.....	.....	.....	.....	7111	12800	....	....
		3	.....	42.4	57.6	.....	2.8	.....	.....	.....	.....	7913	14240	....	....
		4	8.9	37.8	53.3	.....	.....	.....	.....	.....	.....	7320	13180	132	....
		5	.....	41.5	58.5	.....	.....	.....	.....	.....	.....	8031	14460	....	145
140	(3)12738-9-40 (1921)	1	6.8	35.1	49.2	8.9	2.5	.....	.....	.....	.....	6647	11960	....	....
		2	.....	37.6	52.9	9.5	2.7	.....	.....	.....	.....	7135	12840	....	....
		3	.....	41.6	58.4	.....	3.0	.....	.....	.....	.....	7886	14190	....	....
		4	7.7	37.4	54.9	.....	.....	.....	.....	.....	.....	7388	13300	133	....
		5	.....	40.6	59.4	.....	.....	.....	.....	.....	.....	8001	14400	....	144
145	(3) 12365-6-7 (1921)	1	8.5	32.1	50.9	8.5	1.0	.....	.....	.....	.....	6621	11920	....	....
		2	.....	35.1	55.6	9.3	1.1	.....	.....	.....	.....	7235	13020	....	....
		3	.....	38.7	61.3	.....	1.3	.....	.....	.....	.....	7972	14350	....	....
		4	9.4	34.4	56.2	.....	.....	.....	.....	.....	.....	7301	13140	131	....
		5	.....	38.0	62.0	.....	.....	.....	.....	.....	.....	8059	14510	....	145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

FRANKLIN COUNTY (Continued)

Mine Index Number	Samples		Proximate				Ultimate					Heat Values			
	Number of samples averaged, Laboratory Number and Date	Condition[x]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
147	[a]BM 30881 (composite 4).....	1	9.4	34.1	46.3	10.2	3.3	5.3	64.4	1.3	15.5	6417	11550	.....	....
	(1918)	2	.....	37.6	51.1	11.3	3.6	4.7	71.1	1.4	7.9	7083	12750	.....	....
		3	.....	42.4	57.6	.....	4.1	5.3	80.1	1.6	8.9	7986	14380	.....	....
		4	10.8	36.6	52.6	.....	.....	.....	.....	.....	.....	7259	13070	131	....
		5	.....	41.1	58.9	.....	.....	.....	.....	.....	.....	8138	14650	.....	146
256	BM A 39231 (composite 3).....	1	8.8	33.6	47.5	10.1	2.3	5.6	66.3	1.4	14.3	6561	11810	.....	....
	(1928)	2	.....	36.9	52.0	11.1	2.5	5.1	72.7	1.6	7.0	7200	12960	.....	....
		3	.....	41.5	58.5	.....	2.8	5.7	81.8	1.8	7.9	8100	14580	.....	....
		4	10.0	36.3	53.7	.....	.....	.....	.....	.....	.....	7398	13320	133	....
		5	.....	40.4	59.6	.....	.....	.....	.....	.....	.....	8231	14820	.....	148
BM13	[b]BM 23478 (composite 5).....	1	9.0	34.5	47.9	8.6	1.1	5.4	67.4	1.4	16.1	6650	11970	.....	....
	(1915)	2	.....	37.9	52.6	9.5	1.2	4.9	74.0	1.5	8.9	7308	13150	.....	....
		3	.....	41.9	58.1	.....	1.3	5.4	81.8	1.7	9.8	8071	14530	.....	....
		4	10.0	37.1	52.9	.....	.....	.....	.....	.....	.....	7346	13220	132	....
		5	.....	41.2	58.8	.....	.....	.....	.....	.....	.....	8161	14690	.....	147
BM15	BM A23444 (composite 2); BM	1	9.1	32.8	49.7	8.4	0.8	5.4	67.6	1.4	16.4	6646	11960	.....	....
	A66446 (composite 5).....	2	.....	36.1	54.7	9.2	0.9	4.8	74.5	1.5	9.1	7313	13160	.....	....
	(1916, 1930)	3	.....	39.8	60.2	.....	1.0	5.3	82.0	1.7	10.0	8053	14500	.....	....
		4	10.1	35.1	54.8	.....	.....	.....	.....	.....	.....	7315	13170	132	....
		5	.....	39.1	60.9	.....	.....	.....	.....	.....	.....	8135	14640	.....	146

BM19	[b]BM 22921 (composite 6).....	1	10.0	32.8	49.3	7.9	1.0	5.5	66.8	1.6	17.2	6587	11860	.....	...
	(1915)	2	.....	36.5	54.7	8.8	1.1	4.9	74.2	1.8	9.2	7317	13170	.....	...
		3	.....	40.0	60.0	.....	1.2	5.4	81.4	1.9	10.1	8024	14440	.....	...
		4	11.0	35.0	54.0	.....	.....	.....	.....	.....	.....	7217	12990	130	...
		5	.....	39.3	60.7	.....	.....	.....	.....	.....	.....	8107	14590	.....	146
BM21	[c]BM 29747 (composite 6).....	1	9.8	34.1	47.5	8.6	.8	5.3	66.2	1.5	17.6	6514	11730	.....	...
	(1918)	2	.....	37.8	52.6	9.6	.8	4.7	73.4	1.7	9.8	7219	12990	.....	...
		3	.....	41.9	58.1	.....	.9	5.2	81.1	1.9	10.9	7982	14370	.....	...
		4	10.8	36.8	52.4	.....	.....	.....	.....	.....	.....	7193	12950	130	...
		5	.....	41.2	58.8	.....	.....	.....	.....	.....	.....	8066	14520	.....	145
BM64	[c]BM 30896 (composite 4).....	1	10.2	34.3	47.8	7.7	.8	5.5	66.7	1.5	17.8	6571	11830	.....	...
	(1918)	2	.....	38.2	53.2	8.6	.9	4.9	74.2	1.7	9.7	7315	13170	.....	...
		3	.....	41.8	58.2	.....	.9	5.4	81.2	1.9	10.6	8003	14410	.....	...
		4	11.2	36.6	52.2	.....	.....	.....	.....	.....	.....	7179	12920	129	...
		5	.....	41.2	58.8	.....	.....	.....	.....	.....	.....	8079	14540	.....	145
BM65	[c]BM 30886 (composite 4).....	1	10.2	33.8	48.3	7.7	1.3	5.4	66.9	1.4	17.3	6597	11880	.....	...
	(1918)	2	.....	37.6	53.8	8.6	1.5	4.7	74.5	1.6	9.1	7349	13230	.....	...
		3	.....	41.2	58.8	.....	1.6	5.1	81.5	1.8	10.0	8043	14480	.....	...
		4	11.2	35.9	52.9	.....	.....	.....	.....	.....	.....	7217	12990	130	...
		5	.....	40.4	59.6	.....	.....	.....	.....	.....	.....	8132	14640	.....	146
BM66	BM30890 (composite 3).....	1	10.4	33.4	49.0	7.2	1.3	5.4	67.8	1.5	16.8	6616	11910	.....	...
	(1918)	2	.....	37.3	54.7	8.0	1.4	4.8	75.6	1.7	8.5	7382	13290	.....	...
		3	.....	40.6	59.4	.....	1.6	5.2	82.2	1.8	9.2	8026	14450	.....	...
		4	11.3	35.3	53.4	.....	.....	.....	.....	.....	.....	7190	12940	129	...
		5	.....	39.9	60.1	.....	.....	.....	.....	.....	.....	8109	14600	.....	146

a U. S. Bureau of Mines Bull. 193, p. 30.
b U. S. Bureau of Mines Bull. 123, p. 34.
c U. S. Bureau of Mines Bull. 193, pp. 31-33.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

FRANKLIN COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
BM67	[c]BM 30871 (composite 4).....	1	10.6	32.4	49.3	7.7	.7	5.4	66.9	1.5	17.8	6566	11820	.....	....
	(1918)	2	.....	36.3	55.1	8.6	.8	4.7	74.8	1.7	9.4	7339	13210	.....	....
		3	.....	39.7	60.3	.....	.9	5.2	81.8	1.8	10.3	8031	14460	.....	....
		4	11.6	34.5	53.9	.....	.....	.....	.....	.....	.....	7171	12910	129	....
		5	.....	39.0	61.0	.....	.....	.....	.....	.....	.....	8107	14590	.....	146
	Average 22 mine averages (15 ultimates).....	1	9.2	33.9	48.3	8.6	1.5	5.4	66.8	1.5	16.2	6576	11840	.....	....
		2	.....	37.3	53.2	9.5	1.6	4.8	73.6	1.6	8.9	7238	13030	.....	....
	(County average)	3	.....	41.3	58.7	.....	1.8	5.3	81.3	1.8	9.8	7997	14400	.....	....
		4	10.2	36.3	53.5	.....	.....	.....	.....	.....	.....	7271	13090	131	....
		5	.....	40.5	59.5	.....	.....	.....	.....	.....	.....	8095	14570	.....	146

County Average Rank Index 131 (128-134)
County Average Unit Coal Index 146 (144-148)

GALLATIN COUNTY (EAGLE VALLEY) **HERRIN (NO. 6) COAL (SOUTHERN ILLINOIS)**

223	(2) 5510-11.....	1	4.3	36.1	49.0	10.6	3.7	.....	.....	.....	.....	6990	12580	.....	....
	(1912)	2	.....	37.7	51.2	11.1	3.9	.....	.....	.....	.....	7303	13150	.....	....
	(Eagle Valley average)	3	.....	42.4	57.6	.....	4.4	.....	.....	.....	.....	8213	14780	.....	....
		4	5.0	39.0	56.0	.....	.....	.....	.....	.....	.....	7961	14330	143	....
		5	.....	41.0	59.0	.....	.....	.....	.....	.....	.....	8377	15080	.....	151

County Average Rank Index 143
County Average Unit Coal Index 151

55	(3) 4773-80-84	1	9.0	34.4	46.4	10.2	2.7	.....	.....	.....	.....	6449	11610	.....	....
	(1912)	2	.....	37.8	51.0	11.2	2.9	.....	.....	.....	.....	7084	12750	.....	....
		3	.....	42.6	57.4	.....	3.3	.....	.....	.....	.....	7977	14360	.....	....
		4	10.2	37.2	52.6	.....	.....	.....	.....	.....	.....	7284	13110	131	....
		5	.....	41.4	58.6	.....	.....	.....	.....	.....	.....	8114	14610	.....	146
183	Average 28 14303-4-7-9 to 26-38 to 44	1	9.9	35.0	45.7	9.4	1.7	.....	.....	.....	.....	6465	11640	.....	....
		2	.....	38.8	50.8	10.4	1.9	.....	.....	.....	.....	7177	12920	.....	....
	(1924)	3	.....	43.3	56.7	.....	2.1	.....	.....	.....	.....	8008	14420	.....	....
		4	11.2	37.7	51.1	.....	.....	.....	.....	.....	.....	7213	12980	130	....
		5	.....	42.5	57.5	.....	.....	.....	.....	.....	.....	8119	14610	.....	146
419	BM A90760 (composite 2)	1	9.2	34.4	46.4	10.0	2.4	5.5	64.6	1.3	16.2	6467	11640	.....	....
	(1933)	2	.....	37.9	51.1	11.0	2.7	4.9	71.2	1.4	8.8	7122	12820	.....	....
		3	.....	42.6	57.4	.....	3.0	5.6	80.0	1.6	9.8	8006	14410	.....	....
		4	10.5	37.1	52.4	.....	.....	.....	.....	.....	.....	7283	13110	131	....
		5	.....	41.5	58.5	.....	.....	.....	.....	.....	.....	8134	14640	.....	146
	Average 3 mine averages (1 ultimate) (County average)	1	9.4	34.5	46.2	9.9	2.2	5.5	64.8	1.3	16.3	6461	11630	.....	....
		2	.....	38.1	51.0	10.9	2.4	5.0	71.6	1.4	8.7	7132	12840	.....	....
		3	.....	42.8	57.2	.....	2.7	5.6	80.3	1.6	9.8	8004	14410	.....	....
		4	10.6	37.3	52.1	.....	.....	.....	.....	.....	....	7264	13080	131	..
		5	...	41.7	58.3	.....	.....	.....	.....	.....	.....	8129	14630	.....	146

County Average Rank Index 131 (130-131)
County Average Unit Coal Index 146

c U. S. Bureau of Mines Bull. 193, pp. 31-33.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

JEFFERSON COUNTY — **HERRIN (NO. 6) COAL (SOUTHERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
BM63	BM 17500 (composite 2).....	1	8.5	34.6	48.2	8.7	1.3	5.3	67.3	1.5	15.9	6653	11980	.....	....
	(1925)	2	.....	37.8	52.7	9.5	1.4	4.9	73.5	1.6	9.1	7272	13090	.....	....
	(County average)	3	.....	41.8	58.2	.....	1.6	5.4	81.2	1.8	10.0	8033	14460	.....	....
		4	9.5	37.1	53.4	.....	.....	.....	.....	.....	.....	7361	13250	133	....
		5	.....	41.0	59.0	.....	.....	.....	.....	.....	.....	8128	14630	.....	146

County Average Rank Index 133
County Average Unit Coal Index 146

MACOUPIN COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

66	(3) 5086-7-8.....	1	14.2	38.7	37.1	10.0	4.3	.....	.....	.....	.....	5861	10550	.....	....
	(1912)	2	.....	45.2	43.2	11.6	5.1	.....	.....	.....	.....	6836	12310	.....	....
		3	.....	51.1	48.9	.....	5.7	.....	.....	.....	.....	7735	13920	.....	....
		4	16.4	41.6	42.0	.....	.....	.....	.....	.....	.....	6610	11900	119	....
		5	.....	49.8	50.2	.....	.....	.....	.....	.....	.....	7908	14240	.....	142
67	(3) 5100-1-2.....	1	14.9	37.2	37.9	10.0	3.9	.....	.....	.....	.....	5884	10590	.....	....
	(1912)	2	.....	43.7	44.6	11.7	4.6	.....	.....	.....	.....	6915	12450	.....	....
		3	.....	49.5	50.5	.....	5.2	.....	.....	.....	.....	7836	14100	.....	....
		4	17.1	40.0	42.9	.....	.....	.....	.....	.....	.....	6634	11940	119	....
		5	.....	48.3	51.7	.....	.....	.....	.....	.....	.....	8005	14410	.....	144

68	(3) 5112-13-14..... (1912)	1	12.9	39.2	38.7	9.2	4.6	.....	.....	.....	.....	6091	10960	.....	...
		2	.....	45.0	44.5	10.5	5.2	.....	.....	.....	.....	6991	12580	.....	....
		3	.....	50.3	49.7	.....	5.9	.....	.....	.....	.....	7811	14060	.....	....
		4	14.7	41.9	43.4	.....	.....	.....	.....	.....	.....	6809	12260	123	....
		5	.....	49.1	50.9	.....	.....	.....	.....	.....	.....	7981	14370	.....	144
69	(3) 5097-8-9..... (1912)	1	14.2	37.4	37.0	11.4	4.4	.....	.....	.....	.....	5798	10440	.....	....
		2	.....	43.6	43.1	13.3	5.2	.....	.....	.....	.....	6758	12170	.....	....
		3	.....	50.3	49.7	.....	6.0	.....	.....	.....	.....	7799	14040	.....	....
		4	16.7	40.7	42.6	.....	.....	.....	.....	.....	.....	6662	11990	120	....
		5	.....	48.9	51.1	.....	.....	.....	.....	.....	.....	7994	14390	.....	144
185	BM 81326 (composite 3)..... (1921)	1	11.9	39.3	39.7	9.1	3.6	5.8	60.9	1.1	19.5	6134	11040	.....	....
		2	.....	44.6	45.1	10.3	4.1	5.1	69.1	1.3	10.1	6964	12540	.....	....
		3	.....	49.7	50.3	.....	4.5	5.7	77.1	1.4	11.3	7768	13980	.....	....
		4	13.5	42.1	44.4	.....	.....	.....	.....	.....	.....	6844	12320	123	....
		5	.....	48.7	51.3	.....	.....	.....	.....	.....	.....	7913	14240	.....	142
186	BM 81330 (composite 3)..... (1921)	1	11.2	37.8	40.4	10.6	3.9	5.9	60.2	1.1	18.3	6058	10900	.....	....
		2	.....	42.6	45.4	12.0	4.4	5.2	67.8	1.2	9.4	6621	12280	.....	....
		3	.....	48.4	51.6	.....	5.0	5.9	77.0	1.4	10.7	7746	13940	.....	....
		4	12.9	41.0	46.1	.....	.....	.....	.....	.....	.....	6886	12400	124	....
		5	.....	47.1	52.9	.....	.....	.....	.....	.....	.....	7911	14240	.....	142
187	BM 81335 (composite 3)..... (1921)	1	13.5	36.4	38.9	11.2	4.2	5.8	57.8	1.0	20.0	5876	10580	.....	....
		2	.....	42.1	45.0	12.9	4.9	5.0	66.8	1.1	9.3	6790	12220	.....	....
		3	.....	48.3	51.7	.....	5.6	5.8	76.7	1.3	10.6	7797	14040	.....	....
		4	15.7	39.5	44.8	.....	.....	.....	.....	.....	.....	6727	12110	121	....
		5	.....	46.9	53.1	.....	.....	.....	.....	.....	.....	7982	14370	.....	144

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

MACOUPIN COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
188	BM 81088 (composite 3).....	1	12.0	38.7	40.9	8.4	3.9	5.9	61.1	1.1	19.6	6158	11090	.....	....
	(1921)	2	.....	44.0	46.5	9.5	4.4	5.2	69.5	1.2	10.2	6994	12590	.....	....
		3	.....	48.6	51.4	.....	4.9	5.7	76.7	1.4	11.3	7730	13910	.....	....
		4	13.4	41.1	45.5	.....	.....	.....	.....	.....	.....	6813	12260	123	....
		5	.....	47.5	52.5	.....	.....	.....	.....	.....	.....	7872	14170	.....	142
189	BM 81019 (composite 3).....	1	14.1	35.3	41.7	8.9	4.0	5.9	58.6	1.1	21.5	5883	10590	.....	....
	(1921)	2	.....	41.1	48.6	10.3	4.6	5.1	68.2	1.3	10.5	6846	12320	.....	....
		3	.....	45.8	54.2	.....	5.2	5.6	76.0	1.4	11.8	7633	13740	.....	....
		4	16.0	37.4	46.6	.....	.....	.....	.....	.....	.....	6542	11780	118	....
		5	.....	44.5	55.5	.....	.....	.....	.....	.....	.....	7782	14010	.....	140
190	BM 87023 (composite 3).....	1	14.1	34.4	42.4	9.1	3.4	6.0	58.8	1.1	21.6	5916	10650	.....	....
	(1921)	2	.....	40.0	49.3	10.7	3.9	5.2	68.4	1.3	10.5	6887	12400	.....	....
		3	.....	44.8	55.2	.....	4.4	5.8	76.6	1.4	11.8	7708	13880	.....	....
		4	16.0	36.6	47.4	.....	.....	.....	.....	.....	.....	6597	11880	119	....
		5	.....	43.6	56.4	.....	.....	.....	.....	.....	.....	7851	14130	.....	141
534	BM A87367 (composite 3).....	1	13.8	36.0	40.2	10.0	4.1	5.7	59.2	1.0	20.0	5933	10680	.....	....
	BM 18553 (composite 2)	2	.....	41.7	46.7	11.6	4.8	4.9	68.6	1.2	8.9	6886	12400	.....	....
	(1914, 1933)	3	.....	47.2	52.8	.....	5.4	5.5	77.6	1.4	10.1	7792	14030	.....	....
		4	15.9	38.5	45.6	.....	.....	.....	.....	.....	.....	6695	12050	121	....
		5	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	7963	14330	.....	143

	Average 11 mine averages (7 ultimates) (County average)	1	13.3	37.4	39.5	9.8	4.0	5.9	58.9	1.1	20.3	5963	10730	.....	....
		2	.....	43.1	45.6	11.3	4.6	5.1	68.0	1.2	9.8	6878	12380	.....	....
		3	.....	48.6	51.4	.....	5.2	5.7	76.6	1.4	11.1	7754	13960	.....	....
		4	15.3	40.1	44.6	.....	.....	.....	.....	.....	.....	6710	12080	121	....
		5	.....	47.3	52.7	.....	.....	.....	.....	.....	.....	7916	14250	.....	143

County Average Rank Index 121 (118-124)
County Average Unit Coal Index 143 (140-144)

MADISON COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

70	(3) 5515-17-18. (1912)	1	12.8	38.7	37.4	11.1	4.8	.....	.....	.....	.....	5923	10660	.....	....
		2	.....	44.3	42.9	12.8	5.5	.....	.....	.....	.....	6793	12230	.....	....
		3	.....	50.8	49.2	.....	6.3	.....	.....	.....	.....	7786	14010	.....	....
		4	15.0	42.0	43.0	.....	.....	.....	.....	.....	.....	6783	12210	122	....
		5	.....	49.4	50.6	.....	.....	.....	.....	.....	.....	7981	14370	.....	144
71	(3) 5070-1-2. (1912)	1	12.5	39.6	37.5	10.4	4.1	.....	.....	.....	.....	6039	10870	.....	....
		2	.....	45.2	42.9	11.9	4.7	.....	.....	.....	.....	6904	12430	.....	....
		3	.....	51.3	48.7	.....	5.3	.....	.....	.....	.....	7837	14110	.....	....
		4	14.5	42.9	42.6	.....	.....	.....	.....	.....	.....	6851	12330	123	....
		5	.....	50.1	49.9	.....	.....	.....	.....	.....	.....	8011	14420	....	144
72	(3) 5067-8-9. (1912)	1	13.8	37.6	38.9	9.7	4.3	.....	.....	.....	.....	5957	10720	.....	....
		2	.....	43.6	45.2	11.2	4.9	.....	.....	.....	.....	6912	12440	.....	....
		3	.....	49.1	50.9	.....	5.6	.....	.....	.....	.....	7788	14020	.....	....
		4	15.9	40.2	43.9	.....	.....	.....	.....	.....	.....	6697	12050	121	....
		5	.....	47.8	52.2	.....	.....	.....	.....	.....	.....	7957	14320	.....	143

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

MADISON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
73	(3) 5075-6-8. . . . . (1912)	1	14.7	38.6	38.2	8.5	3.8	.....	.....	.....	.....	5992	10790	.....	....
		2	.....	45.3	44.8	9.9	4.4	.....	.....	.....	.....	7026	12650	.....	....
		3	.....	50.3	49.7	.....	4.9	.....	.....	.....	.....	7799	14040	.....	....
		4	16.6	41.0	42.4	.....	.....	.....	.....	.....	.....	6631	11940	119	....
		5	.....	49.2	50.8	.....	.....	.....	.....	.....	.....	7947	14310	.....	143
191	BM 80945 (composite 3). . . . . (1921)	1	13.1	38.0	38.1	10.8	3.5	5.7	59.4	1.0	19.6	5948	10710	.....	....
		2	.....	43.7	43.8	12.5	4.0	4.9	68.3	1.2	9.1	6842	12320	.....	....
		3	.....	49.9	50.1	.....	4.6	5.7	78.0	1.3	10.4	7817	14070	.....	....
		4	15.1	41.4	43.5	.....	.....	.....	.....	.....	.....	6773	12190	122	....
		5	.....	48.8	51.2	.....	.....	.....	.....	.....	.....	7981	14370	.....	144
192	BM 80865 (composite 3). . . . . (1921)	1	11.6	37.0	41.2	10.2	4.1	5.7	60.8	1.1	18.1	6087	10960	.....	....
		2	.....	41.9	46.6	11.5	4.7	4.9	68.8	1.3	8.8	6887	12400	.....	....
		3	.....	47.3	52.7	.....	5.3	5.6	77.7	1.4	10.0	7783	14010	.....	....
		4	13.4	39.8	46.8	.....	.....	.....	.....	.....	.....	6887	12390	124	....
		5	.....	46.0	54.0	.....	.....	.....	.....	.....	.....	7951	14310	.....	143

Average 6 mine averages (2 ultimates) (County average)	1	13.1	38.3	38.5	10.1	4.1	5.8	59.6	1.1	19.3	5992	10790	.....	....
	2	.....	44.1	44.3	11.6	4.7	5.0	68.6	1.2	8.9	6900	12420	.....	....
	3	.....	49.9	50.1	.....	5.3	5.6	77.6	1.4	10.1	7805	14050	.....	....
	4	15.1	41.3	43.6	.....	.....	.....	.....	.....	.....	6769	12180	122	....
	5	.....	48.6	51.4	.....	.....	.....	.....	.....	.....	7974	14350	.....	144

County Average Rank Index 122 (119-124)
County Average Unit Coal Index 144 (143-144)

MARION COUNTY — **HERRIN (NO. 6) COAL (CENTRALIA DISTRICT)**

87	(3) 5039-41-44 (1912)	1	10.5	36.9	41.5	11.1	4.0	.....	.....	.....	.....	6207	11170	.....	....
		2	.....	41.1	46.4	12.5	4.5	.....	.....	.....	.....	6932	12480	.....	....
		3	.....	47.0	53.0	.....	5.2	.....	.....	.....	.....	7918	14250	.....	....
		4	12.2	40.1	47.7	.....	.....	.....	.....	.....	.....	7109	12800	128	....
		5	.....	45.6	54.4	.....	.....	.....	.....	.....	.....	8097	14580	.....	146
206	BM 80743 (composite 6) (1921)	1	9.8	36.5	42.3	11.4	4.1	5.5	61.9	1.2	15.9	6228	11210	.....	....
		2	.....	40.4	46.9	12.7	4.5	4.9	68.7	1.3	7.9	6908	12440	.....	....
		3	.....	46.3	53.7	.....	5.2	5.6	78.7	1.5	9.0	7911	14240	.....	....
		4	11.5	39.7	48.8	.....	.....	.....	.....	.....	.....	7159	12890	129	....
		5	.....	44.9	55.1	.....	.....	.....	.....	.....	.....	8092	14570	.....	146
207	BM 80698 (composite 3) (1921)	1	10.6	36.4	42.4	10.6	3.3	5.6	62.8	1.2	16.5	6277	11300	.....	....
		2	.....	40.7	47.4	11.9	3.7	4.9	70.3	1.3	7.9	7023	12640	.....	....
		3	.....	46.1	53.9	.....	4.2	5.6	79.8	1.4	9.0	7969	14340	.....	....
		4	12.3	39.4	48.3	.....	.....	.....	.....	.....	.....	7132	12840	128	....
		5	.....	44.9	55.1	.....	.....	.....	.....	.....	.....	8127	14630	.....	146

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

MARION COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
	Average 3 mine averages (2 ultimates) (County average)	1	10.3	36.6	42.1	11.0	3.8	5.5	62.2	1.2	16.3	6237	11230	.....	....
		2	.....	40.8	46.9	12.3	4.3	4.9	69.3	1.3	7.9	6954	12520	.....	....
		3	.....	46.5	53.5	.....	4.8	5.6	79.1	1.5	9.0	7933	14280	.....	....
		4	12.0	39.7	48.3	.....	.....	.....	.....	.....	.....	7133	12840	128	....
		5	.....	45.1	54.9	.....	.....	.....	.....	.....	.....	8105	14590	.....	146

County Average Rank Index 128 (128-129)
County Average Unit Coal Index 146

MONTGOMERY COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

76	BM 21906 (composite 5); (3) 5105-6-7 (1912, 1915)	1	13.7	35.9	39.3	11.1	3.9	5.6	58.6	1.2	19.6	5867	10560	.....	....
		2	.....	41.7	45.5	12.8	4.6	4.7	67.9	1.4	8.6	6797	12240	.....	....
		3	.....	47.8	52.2	.....	5.2	5.4	77.9	1.6	9.9	7798	14040	.....	....
		4	15.9	39.0	45.1	.....	.....	.....	.....	.....	.....	6706	12070	121	....
		5	.....	46.4	53.6	.....	.....	.....	.....	.....	.....	7977	14360	.....	144
194	BM 81104 (composite 3); BM A87370 (composite 3)..... (1921, 1933)	1	12.7	36.2	40.7	10.4	4.1	5.8	59.8	1.0	18.9	5989	10780	.....	....
		2	.....	41.4	46.6	12.0	4.7	5.0	68.5	1.1	8.7	6864	12360	.....	....
		3	.....	47.1	52.9	.....	5.3	5.7	77.8	1.3	9.9	7798	14040	.....	....
		4	14.7	39.0	46.3	.....	.....	.....	.....	.....	.....	6795	12230	122	....
		5	.....	45.7	54.3	.....	.....	.....	.....	.....	.....	7971	14350	.....	144

195	BM 81096 (composite 3).....	1	12.8	36.2	41.6	9.4	3.7	5.7	60.1	1.1	20.0	6042	10880	.....	...
	(1921)	2	.....	41.5	47.8	10.7	4.3	4.9	68.9	1.3	9.9	6931	12480	.....	....
		3	.....	46.5	53.5	.....	4.8	5.5	77.2	1.4	11.1	7765	13980	.....	....
		4	14.6	38.6	46.8	.....	.....	.....	.....	.....	.....	6761	12170	122	....
		5	.....	45.2	54.8	.....	.....	.....	.....	.....	.....	7917	14250	.....	143
196	BM81092 (composite 3).....	1	12.3	36.9	40.4	10.4	4.4	5.6	60.2	1.1	18.3	5986	10770	.....	....
	(1921)	2	.....	42.1	46.0	11.9	5.0	4.8	68.6	1.3	8.4	6825	12290	.....	....
		3	.....	47.8	52.2	.....	5.7	5.5	77.9	1.4	9.5	7742	13940	.....	....
		4	14.2	39.8	46.0	.....	.....	.....	.....	.....	.....	6790	12220	122	....
		5	.....	46.4	53.6	.....	.....	.....	.....	.....	.....	7918	14250	.....	143
197	BM 81100 (composite.....	1	14.7	35.4	41.0	8.9	4.0	5.7	59.6	1.1	20.7	5878	10580	.....	....
	(1921)	2	.....	41.5	48.1	10.4	4.6	4.8	69.9	1.3	9.0	6894	12410	.....	....
		3	.....	46.3	53.7	.....	5.2	5.3	78.1	1.4	10.0	7697	13850	.....	....
		4	16.7	37.5	45.8	.....	.....	.....	.....	.....	.....	6538	11770	118	....
		5	.....	45.0	55.0	.....	.....	.....	.....	.....	.....	7849	14130	.....	141
	Average 5 mine averages (5 ultimates).....	1	13.2	36.2	40.4	10.2	4.2	5.7	59.6	1.0	19.3	5962	10730	.....	....
		2	.....	41.7	46.5	11.8	4.8	4.8	68.6	1.2	8.8	6869	12360	.....	....
	(County average)	3	.....	47.3	52.7	.....	5.4	5.4	77.8	1.4	10.0	7788	14020	.....	....
		4	15.2	38.9	45.9	.....	.....	.....	.....	.....	.....	6744	12140	121	....
		5	.....	45.9	54.1	.....	.....	.....	.....	.....	.....	7960	14330	.....	143

County Average Rank Index 121 (118-122)
County Average Unit Coal Index 143 (141-144)

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

MOULTRIE COUNTY — **HERRIN (NO. 6?) COAL (CENTRAL ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
336	(3) 5254-55-56	1	6.8	39.2	42.3	11.7	4.0	.....	.....	.....	.....	6599	11880	.....	....
	(1912)	2	.....	42.0	45.4	12.6	4.3	.....	.....	.....	.....	7083	12750	.....	....
	(County average)	3	.....	48.1	51.9	.....	4.9	.....	.....	.....	.....	8101	14580	.....	....
		4	8.0	43.0	49.0	.....	.....	.....	.....	.....	.....	7619	13720	137	....
		5	.....	46.7	53.3	.....	.....	.....	.....	.....	.....	8284	14910	.....	149

County Average Rank Index 137
County Average Unit Coal Index 149

PERRY COUNTY (West of DuQuoin Anticline) — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

88	(3) 5048-49-50	1	9.6	37.1	41.3	12.0	3.8	.....	.....	.....	.....	6101	10980	.....	....
	(1912)	2	.....	41.0	45.7	13.3	4.1	.....	.....	.....	.....	6750	12150	.....	....
		3	.....	47.3	52.7	.....	4.4	.....	.....	.....	.....	7786	14010	.....	....
		4	11.3	40.8	47.9	.....	.....	.....	.....	.....	.....	7061	12710	127	....
		5	.....	46.0	54.0	.....	.....	.....	.....	.....	.....	7959	14330	.....	143
89	(3) 5514-19-20	1	12.5	36.1	42.8	8.6	2.8	.....	.....	.....	.....	6226	11210	.....	....
	(1912)	2	.....	41.3	48.8	9.9	3.2	.....	.....	.....	.....	7112	12800	.....	....
		3	.....	45.8	54.2	.....	3.6	.....	.....	.....	.....	7891	14200	.....	....
		4	14.0	38.5	47.5	.....	.....	.....	.....	.....	.....	6898	12420	124	....
		5	.....	44.8	55.2	.....	.....	.....	.....	.....	.....	8019	14430	.....	144

90	(6) 5034-37-38, 5040-42-43; BM 14178	1	10.7	36.5	42.5	10.3	3.6	5.4	61.8	1.1	17.8	6154	11080	.....	....
	(composite 6).....	2	.....	40.8	47.6	11.6	4.0	4.7	69.2	1.3	9.2	6895	12410	.....	....
	(1912)	3	.....	46.2	53.8	.....	4.5	5.3	78.3	1.4	10.5	7800	14040	.....	....
		4	12.4	39.4	48.2	.....	.....	.....	.....	.....	.....	6971	12550	126	....
		5	.....	44.9	55.1	.....	.....	.....	.....	.....	.....	7956	14320	.....	143
175	(3) 12596-7-8.....	1	10.1	35.7	43.8	10.4	3.7	.....	.....	.....	.....	6217	11190	.....	....
	(1921)	2	.....	39.7	48.7	11.6	4.1	.....	.....	.....	.....	6919	12460	.....	....
		3	.....	44.9	55.1	.....	4.6	.....	.....	.....	.....	7830	14090	.....	....
		4	11.7	38.5	49.8	.....	.....	.....	.....	.....	.....	7054	12700	127	....
		5	.....	43.6	56.4	.....	.....	.....	.....	.....	.....	7989	14380	.....	144
176	(6) 12574-5-6-7-8-9.....	1	10.2	36.4	43.3	10.1	3.4	.....	.....	.....	.....	6211	11180	.....	....
	(1921)	2	.....	40.5	48.2	11.3	3.8	.....	.....	.....	.....	6914	12450	.....	....
		3	.....	45.6	54.4	.....	4.3	.....	.....	.....	.....	7794	14030	.....	....
		4	11.7	39.2	49.1	.....	.....	.....	.....	.....	.....	7015	12630	126	....
		5	.....	44.4	55.6	.....	.....	.....	.....	.....	.....	7943	14300	.....	143
178	(3) 12620-1-2.....	1	9.8	35.0	42.5	12.7	4.1	.....	.....	.....	.....	6009	10820	.....	....
	(1921)	2	.....	38.8	47.1	14.1	4.5	.....	.....	.....	.....	6659	11990	.....	....
		3	.....	45.1	54.9	.....	5.3	.....	.....	.....	.....	7751	13960	.....	....
		4	11.6	38.5	49.9	.....	.....	.....	.....	.....	.....	7016	12630	126	....
		5	.....	43.6	56.4	.....	.....	.....	.....	.....	.....	7939	14290	.....	143
179	(2) 12664-5.....	1	8.8	37.4	43.0	10.8	3.4	.....	.....	.....	.....	6276	11300	.....	....
	(1921)	2	.....	41.0	47.2	11.8	3.7	.....	.....	.....	.....	6883	12390	.....	....
		3	.....	46.5	53.5	.....	4.2	.....	.....	.....	.....	7806	14050	.....	....
		4	10.2	40.6	49.2	.....	.....	.....	.....	.....	.....	7147	12860	129	....
		5	.....	45.3	54.7	.....	.....	.....	.....	.....	.....	7959	14330	.....	143

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

PERRY COUNTY (West of DuQuoin Anticline) (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
182	(3) 12592-3-4. (1921)	1	9.1	35.8	43.9	11.2	3.7	.....	.....	.....	.....	6188	11140	.....	....
		2	.....	39.4	48.3	12.3	4.1	.....	.....	.....	.....	6807	12250	.....	....
		3	.....	44.9	55.1	.....	4.7	.....	.....	.....	.....	7762	13970	.....	....
		4	10.6	38.9	50.5	.....	.....	.....	.....	.....	.....	7086	12750	128	....
		5	.....	43.5	56.5	.....	.....	.....	.....	.....	.....	7925	14270	.....	143
184	(4) 12588-89-90-91. (1921)	1	8.0	38.2	42.6	11.2	3.6	.....	.....	.....	.....	6273	11290	.....	....
		2	.....	41.5	46.3	12.2	3.9	.....	.....	.....	.....	6817	12270	.....	....
		3	.....	47.3	52.7	.....	4.4	.....	.....	.....	.....	7766	13980	.....	....
		4	9.3	41.7	49.0	.....	.....	.....	.....	.....	.....	7188	12940	129	....
		5	.....	46.0	54.0	.....	.....	.....	.....	.....	.....	7924	14260	.....	143
BM69	[a]BM 31037 (composite 4). (1918)	1	12.0	33.9	44.9	9.2	1.5	5.5	63.2	1.3	19.3	6237	11230	.....	....
		2	.....	38.5	51.0	10.5	1.7	4.7	71.8	1.5	9.8	7091	12760	.....	....
		3	.....	43.0	57.0	.....	1.9	5.3	80.2	1.7	10.9	7921	14260	.....	....
		4	13.5	36.5	50.0	.....	.....	.....	.....	.....	.....	6944	12500	125	....
		5	.....	42.2	57.8	.....	.....	.....	.....	.....	.....	8028	14450	.....	145
622	C-926 (composite 2) and C-927 (composite 2). (1934)	1	9.2	35.7	44.2	10.9	3.7	5.2	62.3	1.0	16.8	6269	11290	.....	....
		2	.....	39.2	48.7	12.1	4.1	4.7	68.6	1.1	9.4	6904	12430	.....	....
		3	.....	44.6	55.4	.....	4.6	5.4	78.0	1.3	10.7	7855	14140	.....	....
		4	10.7	38.7	50.6	.....	.....	.....	.....	.....	.....	7154	12880	129	....
		5	.....	43.2	56.8	.....	.....	.....	.....	.....	.....	8019	14440	.....	144

623	C-932 (composite 2); C-933 (composite 2)..... (1934)	1	10.2	35.0	44.4	10.4	3.5	5.4	61.6	1.1	18.0	6198	11160	.....	....
		2	.....	39.0	49.4	11.6	3.9	4.8	68.6	1.2	9.9	6902	12420	.....	....
		3	.....	44.1	55.9	.....	4.4	5.4	77.6	1.4	11.2	7807	14050	.....	....
		4	11.8	37.7	50.5	.....	.....	.....	.....	.....	.....	7024	12640	126	....
		5	.....	42.8	57.2	.....	.....	.....	.....	.....	.....	7962	14330	.....	143
	Average 12 mine averages (4 ultimates)..... (Western Perry County average)	1	10.0	36.1	43.3	10.6	3.4	5.4	62.1	1.1	17.4	6197	11160	.....	....
		2	.....	40.1	48.1	11.8	3.8	4.8	69.0	1.2	9.4	6886	12400	.....	....
		3	.....	45.5	54.5	.....	4.3	5.4	78.2	1.4	10.7	7808	14050	.....	....
		4	11.5	39.1	49.4	.....	.....	.....	.....	.....	.....	7041	12670	127	....
		5	.....	44.2	55.8	.....	.....	.....	.....	.....	.....	7962	14330	.....	143

County Average (West of DuQuoin anticline) Rank Index 127 (124-129)
County Average (West of DuQuoin anticline) Unit Coal Index 143 (143-145)

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PERRY COUNTY (East of DuQuoin Anticline) **HERRIN (NO. 6) COAL (SOUTHERN ILLINOIS)**

54	BM 13591 (composite 6); BM 26468 (composite 7); (4) 4764-66-68-56.. (1912, 1916)	1	10.5	33.0	46.5	10.0	.9	5.3	64.0	1.4	18.4	6307	11350	.....	....
		2	.....	36.9	51.9	11.2	1.0	4.6	71.5	1.6	10.1	7044	12680	.....	....
		3	.....	41.5	58.5	.....	1.1	5.2	80.5	1.8	11.4	7933	14280	.....	....
		4	11.8	36.9	52.3	.....	.....	.....	.....	.....	.....	7085	12750	128	....
		5	.....	40.7	59.3	.....	.....	.....	.....	.....	.....	8032	14460	.....	145
180	(5) 12614-15-16-23-24; BM (composite 6)..... (1915, 1921)	1	10.2	33.0	48.1	8.7	1.0	5.5	65.2	1.4	18.2	6410	11540	.....	....
		2	.....	36.8	53.5	9.7	1.1	4.9	72.6	1.6	10.1	7136	12840	.....	....
		3	.....	40.7	59.3	.....	1.2	5.4	80.4	1.8	11.2	7904	14230	.....	....
		4	11.3	35.5	53.2	.....	.....	.....	.....	.....	.....	7089	12760	128	....
		5	.....	40.0	60.0	.....	.....	.....	.....	.....	.....	7992	14390	.....	144

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

PERRY COUNTY (East of DuQuoin Anticline) (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
	Average 2 mine averages (2 ultimates)	1	10.3	33.0	47.3	9.4	.9	5.4	64.6	1.4	18.3	6358	11450	.....	....
	County average (East of	2	.....	36.8	52.7	10.5	1.0	4.7	72.0	1.6	10.2	7090	12760	.....	....
	DuQuoin anticline)	3	.....	41.1	58.9	.....	1.2	5.3	80.4	1.8	11.3	7918	14250	.....	....
		4	11.5	35.7	52.8	.....	.....	.....	.....	.....	.....	7087	12760	128	....
		5	.....	40.3	59.7	.....	.....	.....	.....	.....	.....	8012	14420	.....	144

Rank Index 128
Unit Coal Index 144 (144-145)

RANDOLPH COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

83	(3) 5045-6-7.....	1	11.1	37.3	40.1	11.5	4.2	.....	.....	.....	.....	6031	10860	.....	....
	(1912)	2	.....	41.9	45.2	12.9	4.8	.....	.....	.....	.....	6786	12210	.....	....
		3	.....	48.1	51.9	.....	5.5	.....	.....	.....	.....	7789	14020	.....	....
		4	13.1	40.6	46.3	.....	.....	.....	.....	.....	.....	6932	12480	125	....
		5	.....	46.7	53.3	.....	.....	.....	.....	.....	.....	7971	14350	.....	144
208	(6) 12562-3-4-5-6-7.....	1	10.2	36.5	41.3	12.0	3.8	.....	.....	.....	.....	6081	10950	.....	....
	(1921)	2	.....	40.6	46.0	13.4	4.2	.....	.....	.....	.....	6769	12180	.....	....
		3	.....	46.9	53.1	.....	4.9	.....	.....	.....	.....	7816	14070	.....	....
		4	12.0	40.0	48.0	.....	.....	.....	.....	.....	.....	7038	12670	127	....
		5	.....	45.5	54.5	.....	.....	.....	.....	.....	.....	7994	14390	.....	144

209	(3) 12580-1-2.	1	9.7	36.9	41.9	11.5	4.3	.....	.....	.....	.....	6089	10960	.....	....
	(1921)	2	.....	40.8	46.4	12.8	4.7	.....	.....	.....	.....	6740	12130	.....	....
		3	.....	46.8	53.2	.....	5.4	.....	.....	.....	.....	7727	13910	.....	....
		4	11.3	40.3	48.4	.....	.....	.....	.....	.....	.....	7009	12620	126	....
		5	.....	45.4	54.6	.....	.....	.....	.....	.....	.....	7905	14230	.....	142
210	(4) 12570-1-2-3.	1	9.3	36.2	43.0	11.5	3.5	.....	.....	.....	.....	6217	11190	.....	....
	(1921)	2	.....	39.9	47.4	12.7	3.9	.....	.....	.....	.....	6857	12340	.....	....
		3	.....	45.7	54.3	.....	4.4	.....	.....	.....	.....	7853	14140	.....	....
		4	10.9	39.6	49.5	.....	.....	.....	.....	.....	.....	7145	12860	129	....
		5	.....	44.4	55.6	.....	.....	.....	.....	.....	.....	8019	14430	.....	144
613	C-647 (composite 3).	1	11.4	35.2	41.1	12.3	3.8	5.4	59.4	1.1	18.0	5914	10650	.....	....
	(1934)	2	.....	39.7	46.4	13.9	4.3	4.6	67.0	1.3	8.9	6673	12010	.....	....
		3	.....	46.1	53.9	.....	5.0	5.4	77.8	1.5	10.3	7753	13960	.....	....
		4	13.5	38.6	47.9	.....	.....	.....	.....	.....	.....	6867	12360	124	....
		5	.....	44.6	55.4	.....	.....	.....	.....	.....	.....	7935	14280	.....	143
	Average 5 mine averages (1 ultimate)	1	10.3	36.4	41.5	11.8	3.9	5.3	60.6	1.1	17.3	6068	10920	.....	....
	(County average)	2	.....	40.6	46.3	13.1	4.4	4.7	67.6	1.2	9.0	6768	12180	.....	....
		3	.....	46.8	53.2	.....	5.0	5.4	77.8	1.4	10.4	7794	14030	.....	....
		4	12.2	39.8	48.0	.....	.....	.....	.....	.....	.....	6999	12600	126	....
		5	.....	45.3	54.7	.....	.....	.....	.....	.....	.....	7967	14340	.....	143

County Average Rank Index 126 (124-129)
County Average Unit Coal Index 143 (142-144)

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

ST. CLAIR COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
78	(6) 5055-60-61, 12536-37-38.....	1	11.4	38.0	38.9	11.7	4.1	.....	.....	.....	.....	6039	10870	.....	....
	(1912, 1921)	2	.....	42.9	43.9	13.2	4.7	.....	.....	.....	.....	6817	12270	.....	....
		3	.....	49.5	50.5	.....	5.4	.....	.....	.....	.....	7853	14140	.....	....
		4	13.4	41.7	44.9	.....	.....	.....	.....	.....	.....	6960	12530	125	....
		5	.....	48.1	51.9	.....	.....	.....	.....	.....	.....	8040	14470	.....	145
79	(3) 5056-8-9.....	1	11.3	39.8	38.9	10.0	3.9	.....	.....	.....	.....	6191	11140	.....	....
	(1912)	2	.....	44.8	43.9	11.3	4.4	.....	.....	.....	.....	6980	12560	.....	....
		3	.....	50.6	49.4	.....	4.7	.....	.....	.....	.....	7867	14160	.....	....
		4	13.0	43.0	44.0	.....	.....	.....	.....	.....	.....	6987	12580	126	....
		5	.....	49.4	50.6	.....	.....	.....	.....	.....	.....	8030	14450	.....	145
80	(3) 5524-5-6.....	1	10.0	39.4	39.1	11.5	3.9	.....	.....	.....	.....	6136	11050	.....	....
	(1912)	2	.....	43.7	43.5	12.8	4.4	.....	.....	.....	.....	6820	12280	.....	....
		3	.....	50.1	49.9	.....	5.0	.....	.....	.....	.....	7825	14090	.....	....
		4	11.8	43.2	45.0	.....	.....	.....	.....	.....	.....	7058	12710	127	....
		5	.....	48.9	51.1	.....	.....	.....	.....	.....	.....	8000	14400	.....	144
81	(3) 5077-79-80.....	1	11.2	40.4	38.3	10.1	4.0	.....	.....	.....	.....	6181	11130	.....	....
	(1912)	2	.....	45.5	43.1	11.4	4.5	.....	.....	.....	.....	6963	12530	.....	....
		3	.....	51.3	48.7	.....	5.1	.....	.....	.....	.....	7858	14140	.....	....
		4	12.9	43.7	43.4	.....	.....	.....	.....	.....	.....	6987	12580	126	....
		5	.....	50.2	49.8	.....	.....	.....	.....	.....	.....	8024	14440	.....	144

82	(3) 5108-9-10	1	12.0	39.7	37.5	10.8	4.5	.....	.....	.....	.....	6083	10950	....	....
	(1912)	2	.....	45.1	42.6	12.3	5.1	.....	.....	.....	.....	6908	12430	....	....
		3	.....	51.4	48.6	.....	5.8	.....	.....	.....	.....	7875	14180	....	....
		4	13.9	43.2	42.9	.....	.....	.....	.....	.....	.....	6939	12490	125	....
		5	.....	50.1	49.9	.....	.....	.....	.....	.....	.....	8061	14510	.....	145
200	BM 80830 (composite 3)	1	13.7	31.7	43.4	11.2	1.8	5.5	60.4	1.2	19.9	5864	10560	....	....
	(1921)	2	.....	36.7	50.3	13.0	2.1	4.6	69.9	1.5	8.9	6795	12230	....	....
		3	.....	42.2	57.8	.....	2.4	5.3	80.4	1.6	10.3	7814	14070	....	....
		4	15.8	34.6	49.6	.....	.....	.....	.....	.....	.....	6693	12050	121	....
		5	.....	41.1	58.9	.....	.....	.....	.....	.....	.....	7947	14310	.....	143
201	BM 80826 (composite 3)	1	11.6	37.6	39.6	11.2	3.8	5.6	61.3	1.0	17.1	6169	11100	....	....
	(1921)	2	.....	42.5	44.9	12.6	4.3	4.9	69.4	1.2	7.6	6978	12560	....	....
		3	.....	48.6	51.4	.....	4.9	5.6	79.4	1.4	8.7	7989	14380	....	....
		4	13.5	41.0	45.5	.....	.....	.....	.....	.....	.....	7063	12710	127	....
		5	.....	47.4	52.6	.....	.....	.....	.....	.....	.....	8167	14700	.....	147
203	(6) 12541-2-3-4-5-6	1	10.4	39.9	39.3	10.4	4.3	.....	.....	.....	.....	6204	11170	....	....
	(1921)	2	.....	44.5	43.9	11.6	4.8	.....	.....	.....	.....	6920	12460	....	....
		3	.....	50.4	49.6	.....	5.5	.....	.....	.....	.....	7828	14090	....	....
		4	12.0	43.2	44.8	.....	.....	.....	.....	.....	.....	7042	12680	127	....
		5	.....	49.1	50.9	.....	.....	.....	.....	.....	.....	8001	14400	....	144
205	(3) 12556-7-8	1	9.7	37.3	41.2	11.8	3.3	.....	.....	.....	.....	6136	11050	....	....
	(1921)	2	.....	41.3	45.6	13.1	3.7	.....	.....	.....	.....	6793	12230	....	....
		3	.....	47.5	52.5	.....	4.2	.....	.....	.....	.....	7815	14070	....	....
		4	11.3	41.0	47.7	.....	.....	.....	.....	.....	.....	7076	12740	127	....
		5	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	7979	14360	.....	144

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

ST. CLAIR COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
626	C-951 (composite 4)..... (1934)	1	11.6	37.2	40.1	11.1	3.8	5.5	60.4	1.3	17.9	6073	10930	.....	....
		2	.....	42.1	45.3	12.6	4.3	4.8	68.3	1.4	8.6	6872	12370	.....	....
		3	.....	48.1	51.9	.....	4.9	5.5	78.2	1.6	9.8	7861	14150	.....	....
		4	13.5	40.5	46.0	.....	.....	.....	.....	.....	.....	6945	12500	125	....
		5	.....	46.9	53.1	.....	.....	.....	.....	.....	.....	8037	14470	.....	145
	Average 10 mine averages (3 ultimates)..... (County average)	1	11.3	38.1	39.6	11.0	3.7	5.5	61.1	1.2	17.5	6108	11000	.....	....
		2	.....	43.0	44.6	12.4	4.2	4.7	68.9	1.3	8.4	6887	12400	.....	....
		3	.....	49.1	50.9	.....	4.8	5.4	78.7	1.5	9.6	7862	14150	.....	....
		4	13.1	41.5	45.4	.....	.....	.....	.....	.....	.....	6976	12560	126	....
		5	.....	47.8	52.2	.....	.....	.....	.....	.....	.....	8031	14460	.....	145

County Average Rank Index 126 (121-127)
County Average Unit Coal Index 145 (143-147)

SANGAMON COUNTY — **HERRIN (No. 6) COAL (CENTRAL ILLINOIS)**

74	(7) 14414-15-16-17; 5130-31-32..... (1912, 1924)	1	14.4	36.8	38.4	10.4	4.4	.....	.....	.....	.....	5846	10520	.....	....
		2	.....	43.0	44.8	12.2	5.4	.....	.....	.....	.....	6829	12290	.....	....
		3	.....	49.0	51.0	.....	6.1	.....	.....	.....	.....	7774	13990	.....	....
		4	16.7	39.7	43.6	.....	.....	.....	.....	.....	.....	6630	11930	119	....
		5	.....	47.6	52.4	.....	.....	.....	.....	.....	.....	7960	14330	.....	143

75	(3) 5115-6-7 (1912)	1	14.1	37.6	39.0	9.3	3.8	.....	.....	.....	.....	5992	10790	.....	....
		2	.....	43.8	45.4	10.8	4.4	.....	.....	.....	.....	6980	12560	.....	....
		3	.....	49.1	50.9	.....	4.9	.....	.....	.....	.....	7826	14090	.....	....
		4	16.1	40.2	43.7	.....	.....	.....	.....	.....	.....	6698	12060	121	....
		5	.....	47.9	52.1	.....	.....	.....	.....	.....	.....	7982	14370	.....	144
193	(3) BM 81322 (composite 3) (1921)	1	13.2	36.1	40.5	10.2	4.0	5.7	59.5	1.1	19.5	5986	10770	.....	....
		2	.....	41.6	46.6	11.8	4.6	4.9	68.6	1.3	8.8	6896	12410	.....	....
		3	.....	47.1	52.9	.....	5.2	5.5	77.7	1.5	10.1	7818	14070	.....	....
		4	15.2	38.8	46.0	.....	.....	.....	.....	.....	.....	6772	12190	122	....
		5	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	7988	14380	.....	144
	Average 3 mine averages (1 ultimate) (County average)	1	13.9	36.9	39.2	10.0	4.1	5.7	59.1	1.1	20.0	5942	10700	.....	....
		2	.....	42.9	45.5	11.6	4.8	4.8	68.6	1.3	8.9	6902	12420	.....	....
		3	.....	48.5	51.5	.....	5.4	5.5	77.6	1.5	10.0	7805	14050	.....	....
		4	16.0	39.6	44.4	.....	.....	.....	.....	.....	.....	6700	12060	121	....
		5	.....	47.2	52.8	.....	.....	.....	.....	.....	.....	7976	14360	.....	144

County Average Rank Index 121 (119-122)
County Average Unit Coal Index 144 (143-144)

WASHINGTON COUNTY — **HERRIN (NO. 6) COAL (Southwestern Illinois and Centralia District)**

86	(3) 5030-3-5 (1921)	1	10.8	38.4	39.5	11.3	3.9	.....	.....	.....	.....	6114	11010	.....	.. .
		2	.....	43.0	44.3	12.7	4.4	.....	.....	.....	.....	6853	12340	.....	....
		3	.....	49.2	50.8	.....	5.0	.....	.....	.....	.....	7851	14130	.....	....
		4	12.6	41.9	45.5	.....	.....	.....	.....	.....	.....	7014	12630	126	....
		5	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8027	14450	.....	145

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

WASHINGTON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
226	BM 80683 (composite 3); C-384 (composite 3) (1921, 1933)	1	9.9	38.0	39.7	12.4	4.3	5.4	60.0	1.2	16.7	6050	10890	.....	....
		2	.....	42.1	44.1	13.8	4.8	4.8	66.5	1.3	8.8	6711	12080	.....	....
		3	.....	48.8	51.2	.....	5.6	5.6	77.1	1.5	10.2	7786	14020	.....	....
		4	11.7	41.8	46.5	.....	.....	.....	.....	.....	.....	7051	12680	127	....
		5	.....	47.4	52.6	.....	.....	.....	.....	.....	.....	7988	14360	.....	144
	Average of two mine averages (1 ultimate) (County average)	1	10.3	38.2	39.6	11.9	4.1	5.5	60.1	1.2	17.2	6083	10950	.....	....
		2	.....	42.6	44.2	13.2	4.6	4.9	67.1	1.3	8.9	6786	12210	.....	....
		3	.....	49.1	50.9	.....	5.3	5.6	77.3	1.5	10.3	7819	14080	.....	....
		4	12.2	41.9	45.9	.....	.....	.....	.....	.....	.....	7027	12650	127	....
		5	.....	47.7	52.3	.....	.....	.....	.....	.....	.....	8002	14400	.....	144

County Average Rank Index 127 (126-127)
County Average Unit Coal Index 144 (144-145)

WHITE COUNTY — **HERRIN (NO. 6) COAL (SOUTHERN ILLINOIS)**

227	BM 80597 (composite 3) (1921)	1	8.5	35.4	47.1	9.0	2.8	5.5	66.6	1.4	14.7	6621	11920	.....	....
		2	.....	38.7	51.5	9.8	3.1	5.0	72.8	1.5	7.8	7239	13030	.....	....
		3	.....	42.9	57.1	.....	3.5	5.5	80.7	1.7	8.6	8025	14450	.....	....
		4	9.6	37.8	52.6	.....	.....	.....	.....	.....	.....	7371	13270	133	....
		5	.....	41.8	58.2	.....	.....	.....	.....	.....	.....	8156	14680	.....	147

County Average Rank Index 133
County Average Unit Coal Index 147

59	(3) 5122-3-4. (1912)	1	10.5	33.0	47.3	9.2	1.5					6462	11630		
		2		36.9	52.8	10.3	1.7					7217	12990		
		3		41.1	58.9		1.9					8051	14490		
		4	11.7	35.5	52.8							7200	12960	130	
		5		40.2	59.8							8158	14690		147
60	(3) 4996-5000-6. (1912)	1	8.2	34.0	48.8	9.0	2.2					6644	11960		
		2		37.0	53.2	9.8	2.4					7238	13030		
		3		41.1	58.9		2.6					8026	14450		
		4	9.2	36.4	54.4							7389	13300	133	
		5		40.1	59.9							8141	14650		147
61	(6) 5121, 5133-34 and BM 17719-20-21 (1912, 1913)	1	9.1	33.1	50.4	7.4	1.3					6733	12120		
		2		36.4	55.4	8.2	1.5					7408	13330		
		3		39.7	60.3		1.6					8067	14520		
		4	10.0	35.1	54.9							7339	13210	132	
		5		39.0	61.0							8152	14670		147
62	(3) 5125-6-7. (1912)	1	9.1	33.1	50.0	7.8	1.2					6682	12030		
		2		36.4	55.0	8.6	1.3					7353	13240		
		3		39.9	60.1		1.4					8046	14480		
		4	10.1	35.2	54.7							7316	13170	132	
		5		39.1	60.9							8132	14640		146
63	(3) 5180-1-2. (1912)	1	9.5	33.4	48.1	9.0	1.9					6584	11850		
		2		37.0	53.1	9.9	2.1					7273	13090		
		3		41.0	59.0		2.4					8071	14530		
		4	10.6	35.8	53.6							7316	13170	132	
		5		40.1	59.9							8183	14730		147

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

WILLIAMSON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
64	(3) 5169-70-2	1	9.3	32.8	49.5	8.4	.9	.....	.....	.....	.....	6596	11870	.....	....
	(1912)	2	.....	36.1	54.6	9.3	1.0	.....	.....	.....	.....	7275	13100	.....	....
		3	.....	39.8	60.2	.....	1.1	.....	.....	.....	.....	8018	14430	.....	....
		4	10.3	35.1	54.5	.....	.....	.....	.....	.....	.....	7266	13080	131	....
		5	.....	39.1	60.9	.....	.....	.....	.....	.....	.....	8103	14590	.....	146
65	(3) 4998-5004-5	1	9.3	33.5	49.0	8.2	1.7	.....	.....	.....	.....	6622	11920	.....	....
	(1912)	2	.....	37.0	54.0	9.0	1.9	.....	.....	.....	.....	7302	13140	.....	....
		3	.....	40.6	59.4	.....	2.1	.....	.....	.....	.....	8027	14450	.....	....
		4	10.3	35.7	54.0	.....	.....	.....	.....	.....	.....	7287	13120	131	....
		5	.....	39.8	60.2	.....	.....	.....	.....	.....	.....	8126	14630	.....	146
148	BM 80605 (composite 3)	1	8.0	33.0	50.6	8.4	1.2	5.4	68.6	1.6	14.8	6740	12130	.....	....
	(1921)	2	.....	35.9	55.0	9.1	1.3	4.9	74.6	1.7	8.4	7325	13190	.....	....
		3	.....	39.5	60 5	.....	1.4	5.4	82.1	1.9	9.2	8058	14500	.....	....
		4	8.8	35.3	55.9	.....	.....	.....	.....	.....	.....	7426	13370	134	....
		5	.....	38.7	61.3	.....	.....	.....	.....	.....	.....	8148	14670	.....	147
149	BM 80613 (composite 3)	1	6.3	35.2	47.8	10.7	3.1	5.3	66.6	1.4	12.9	6644	11960	.....	....
	(1921)	2	.....	37.6	51.0	11.4	3.3	4.9	71.1	1.5	7.8	7092	12770	.....	....
		3	.....	42.5	57.5	.....	3.8	5.5	80.2	1.7	8.8	8005	14410	.....	....
		4	7.3	38.2	54.5	.....	.....	.....	.....	.....	.....	7560	13610	136	....
		5	.....	41.2	58.8	.....	.....	.....	.....	.....	.....	8153	14680	.....	147

150	(3) 12793-4-5.....	1	6.0	35.0	47.7	11.3	4.0	.....	.....	.....	.....	6548	11790	.....	....
	(1921)	2	.....	37.2	50.8	12.0	4.3	.....	.....	.....	.....	6964	12540	.....	....
		3	.....	42.3	57.7	.....	4.8	.....	.....	.....	.....	7916	14250	.....	....
		4	7.0	38.0	55.0	.....	.....	.....	.....	.....	.....	7518	13530	135	....
		5	.....	40.8	59.2	.....	.....	.....	.....	.....	.....	8084	14550	.....	146
151	BM 80617 (composite 3).....	1	6.9	36.6	47.0	9.5	2.8	5.6	66.8	1.4	13.9	6679	12020	.....	....
	(1921)	2	.....	39.4	50.4	10.2	3.0	5.2	71.8	1.5	8.3	7171	12910	.....	....
		3	.....	43.8	56.2	.....	3.4	5.8	79.9	1.7	9.2	7986	14380	.....	....
		4	7.8	39.4	52.8	.....	.....	.....	.....	.....	.....	7485	13470	135	....
		5	.....	42.8	57.2	.....	.....	.....	.....	.....	.....	8117	14610	.....	146
152	(3) 12769-70-1.....	1	7.0	32.3	51.6	9.1	1.3	.....	.....	.....	.....	6732	12120	.....	....
	(1921)	2	.....	34.7	55.5	9.8	1.4	.....	.....	.....	.....	7241	13030	.....	....
		3	.....	38.4	61.6	.....	1.6	.....	.....	.....	.....	8024	14440	.....	....
		4	7.9	34.6	57.5	.....	.....	.....	.....	.....	.....	7483	13470	135	....
		5	.....	37.6	62.4	.....	.....	.....	.....	.....	.....	8121	14620	....	146
154	(3) BM A38989-90-91; (3) 12799-800-801.....	1	9.1	31.0	51.6	8.3	1.2	.....	.....	.....	.....	6663	11990	.....	....
		2	.....	34.1	56.8	9.1	1.3	.....	.....	.....	.....	7330	13190	.....	....
	(1921)	3	.....	37.5	62.5	.....	1.5	.....	.....	.....	.....	8067	14520	.....	....
		4	10.1	33.0	56.9	.....	.....	.....	.....	.....	.....	7336	13210	132	....
		5	.....	36.7	63.3	.....	.....	.....	.....	.....	.....	8158	14680	.....	147
155	C-695 (composite 4).....	1	8.1	34.7	49.3	7.9	1.3	5.4	68.8	1.6	15.0	6777	12200	.....	....
	(1934)	2	.....	37.7	53.7	8.6	1.4	4.8	75.0	1.7	8.5	7377	13280	.....	....
		3	.....	41.3	58.7	.....	1.6	5.3	82.0	1.9	9.2	8070	14530	.....	....
		4	8.9	37.0	54.1	.....	.....	.....	.....	.....	.....	7424	13360	134	....
		5	.....	40.6	59.4	.....	.....	.....	.....	.....	.....	8154	14680	.....	147

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

WILLIAMSON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
156	(5) 12822-3-4; 12841-2	1	8.2	31.7	53.0	7.1	1.4	.....	.....	.....	.....	6750	12150	.....	.....
	(1921)	2	.....	34.6	57.7	7.7	1.5	.....	.....	.....	.....	7356	13240	.....	.....
		3	.....	37.4	62.6	.....	1.7	.....	.....	.....	.....	7970	14350	.....	.....
		4	9.0	33.4	57.6	.....	.....	.....	.....	.....	.....	7326	13190	132	.....
		5	.....	36.7	63.3	.....	.....	.....	.....	.....	.....	8051	14490	.....	145
157	BM 80601 (composite 3)	1	8.1	34.5	48.5	8.9	2.5	5.5	67.2	1.4	14.5	6669	12000	.....	.....
	(1921)	2	.....	37.5	52.8	9.7	2.7	5.0	73.1	1.5	8.0	7254	13060	.....	.....
		3	.....	41.6	58.4	.....	3.0	5.5	80.9	1.7	8.9	8034	14460	.....	.....
		4	9.1	36.8	54.1	.....	.....	.....	.....	.....	.....	7416	13350	133	.....
		5	.....	40.5	59.5	.....	.....	.....	.....	.....	.....	8156	14680	.....	147
158	(3) 12819-20-21	1	8.5	31.1	51.9	8.5	2.2	.....	.....	.....	.....	6591	11860	.....	.....
	(1921)	2	.....	34.0	56.7	9.3	2.4	.....	.....	.....	.....	7206	12970	.....	.....
		3	.....	37.4	62.6	.....	2.7	.....	.....	.....	.....	7944	14300	.....	.....
		4	9.5	33.0	57.5	.....	.....	.....	.....	.....	.....	7285	13110	131	.....
		5	.....	36.4	63.6	.....	.....	.....	.....	.....	.....	8054	14500	.....	145
159	(3) 12796-7-8	1	7.6	32.3	50.4	9.7	3.1	.....	.....	.....	.....	6601	11880	.....	.....
	(1921)	2	.....	34.9	54.6	10.5	3.4	.....	.....	.....	.....	7143	12860	.....	.....
		3	.....	39.0	61.0	.....	3.8	.....	.....	.....	.....	7984	14370	.....	.....
		4	8.7	34.4	56.9	.....	.....	.....	.....	.....	.....	7423	13360	134	.....
		5	.....	37.7	62.3	.....	.....	.....	.....	.....	.....	8125	14630	.....	146

160	(3) 12868-69-70	1	8.1	32.6	50.7	8.6	2.1	.....	.....	.....	.....	6648	11970	.....	....
	(1921)	2	.....	35.4	55.2	9.4	2.3	.....	.....	.....	.....	7232	13020	.....	....
		3	.....	39.1	60.9	.....	2.6	.....	.....	.....	.....	7982	14370	.....	....
		4	9.0	34.7	56.3	.....	.....	.....	.....	.....	.....	7362	13250	133	....
		5	.....	38.1	61.9	.....	.....	.....	.....	.....	.....	8092	14570	.....	146
163	(10) 13539-40-1-2-3-4-13829-30-1-3	1	6.7	35.1	47.4	10.8	3.1	.....	.....	.....	.....	6586	11860	.....	....
	(1922, 1923)	2	.....	37.6	50.8	11.6	3.3	.....	.....	.....	.....	7055	12700	.....	....
		3	.....	42.5	57.5	.....	3.8	.....	.....	.....	.....	7983	14370	.....	....
		4	7.7	38.1	54.2	.....	.....	.....	.....	.....	.....	7508	13510	135	....
		5	.....	41.3	58.7	.....	.....	.....	.....	.....	.....	8133	14640	.....	146
165	BM 80654 (composite 3)	1	8.1	33.1	49.0	9.8	2.4	5.3	67.1	1.4	14.0	6601	11880	.....	....
	(1921)	2	.....	36.0	53.3	10.7	2.6	4.8	73.0	1.5	7.4	7181	12930	.....	....
		3	.....	40.3	59.7	.....	2.9	5.4	81.8	1.7	8.2	8045	14480	.....	....
		4	9.2	35.6	55.2	.....	.....	.....	.....	.....	.....	7422	13360	134	....
		5	.....	39.2	60.8	.....	.....	.....	.....	.....	.....	8173	14710	.....	147
166	(3) 12838-9-40	1	7.5	32.8	49.3	10.4	2.9	.....	.....	.....	.....	6519	11730	.....	....
	(1921)	2	.....	35.4	53.3	11.3	3.1	.....	.....	.....	.....	7045	12680	.....	....
		3	.....	39.9	60.1	.....	3.1	.....	.....	.....	.....	7938	14290	.....	....
		4	8.6	35.3	56.1	.....	.....	.....	.....	.....	.....	7386	13300	133	....
		5	.....	38.7	61.3	.....	.....	.....	.....	.....	.....	8077	14540	.....	145
167	12875-76-77, 13537-38	1	8.1	31.7	50.7	9.5	2.0	5.2	67.4	1.3	14.6	6604	11890	.....	....
	(1922, 1923)	2	.....	34.5	55.1	10.4	2.1	4.7	73.3	1.4	8.1	7184	12930	.....	....
		3	.....	38.5	61.5	.....	2.3	5.2	81.9	1.5	9.1	8017	14430	.....	....
		4	9.1	34.1	56.8	.....	.....	.....	.....	.....	.....	7390	13300	133	....
		5	.....	37.5	62.5	.....	.....	.....	.....	.....	.....	8133	14640	.....	146

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

WILLIAMSON COUNTY (Continued)

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
168	(3) 12881-2-3	1	5.2	36.6	46.1	12.1	3.6	.....	.....	.....	.....	6616	11910	.....	....
	(1921)	2	.....	38.6	48.6	12.8	3.8	.....	.....	.....	.....	6981	12570	.....	....
		3	.....	44.2	55.8	.....	4.3	.....	.....	.....	.....	8002	14400	.....	....
		4	6.1	40.3	53.6	.....	.....	.....	.....	.....	.....	7668	13800	138	....
		5	.....	42.9	57.1	.....	.....	.....	.....	.....	.....	8171	14710	.....	147
169	(3) 12772-3-4	1	6.1	35.4	47.3	11.2	3.9	.....	.....	.....	.....	6548	11790	.....	....
	(1921)	2	.....	37.7	50.4	11.9	4.1	.....	.....	.....	.....	6974	12550	.....	....
		3	.....	42.9	57.1	.....	4.7	.....	.....	.....	.....	7917	14250	.....	....
		4	7.1	38.5	54.4	.....	.....	.....	.....	.....	.....	7507	13510	135	....
		5	.....	41.4	58.6	.....	.....	.....	.....	.....	.....	8082	14550	.....	146
170	(3) BM 80625-26, 80670	1	6.7	36.0	47.9	9.4	3.6	5.4	66.6	1.3	13.7	6680	12030	.....	....
171	(1921)	2	.....	38.6	51.3	10.1	3.8	5.0	71.4	1.4	8.3	7159	12890	.....	....
172		3	.....	43.0	57.0	.....	4.2	5.5	79.5	1.6	9.2	7966	14340	.....	....
		4	7.6	38.5	53.9	.....	.....	.....	.....	.....	.....	7493	13490	135	....
		5	.....	41.7	58.3	.....	.....	.....	.....	.....	.....	8110	14600	.....	146
173	BM 80674 (composite 3)	1	7.0	36.0	46.0	11.0	3.6	5.2	65.5	1.3	13.4	6572	11830	.....	....
	(1921)	2	.....	38.7	49.4	11.9	3.8	4.8	70.4	1.4	7.7	7067	12720	.....	....
		3	.....	43.9	56.1	.....	4.3	5.4	79.9	1.6	8.8	8020	14440	.....	....
		4	8.1	39.1	52.8	.....	.....	.....	.....	.....	.....	7517	13530	135	....
		5	.....	42.6	57.4	.....	.....	.....	.....	.....	.....	8183	14730	.....	147

BM28	BM 28815 (composite 5); BM 30866	1	9.6	32.9	49.1	8.4	1.1	5.4	66.6	1.5	17.0	6562	11810	....	....
	(composite 3).....	2	.....	36.3	54.4	9.3	1.3	4.8	73.7	1.6	9.3	7262	13070	....	....
	(1917, 1918)	3	.....	40.1	59.9	.....	1.4	5.3	81.3	1.7	10.3	8007	14410	....	....
		4	10.7	35.1	54.2	.....	.....	.....	.....	.....	.....	7232	13020	130	....
		5	.....	39.3	60.7	.....	.....	.....	.....	.....	.....	8096	14570	.....	146
BM69	[a]BM 30876 (composite 4).....	1	9.4	33.0	49.0	8.6	.9	5.2	67.1	1.5	16.7	6588	11860	....	....
	(1918)	2	.....	36.4	54.1	9.5	1.0	4.5	74.1	1.7	9.2	7277	13090	....	....
		3	.....	40.3	59.7	.....	1.1	5.0	81.8	1.9	10.2	8039	14470	....	....
		4	10.5	35.4	54.1	.....	.....	.....	.....	.....	.....	7276	13100	131	....
		5	.....	39.6	60.4	.....	.....	.....	.....	.....	.....	8127	14630	.....	146
	Average 29 mine averages (11 ulti-	1	8.0	33.6	49.1	9.3	2.2	5.3	67.1	1.4	14.7	6629	11930	....	....
	mates).....	2	.....	36.6	53.4	10.0	2.4	4.9	72.9	1.5	8.3	7203	12970	....	....
	(County average)	3	.....	40.6	59.4	.....	2.7	5.4	81.0	1.7	9.2	8008	14410	....	....
		4	9.0	36.0	55.0	.....	.....	.....	.....	.....	.....	7396	13310	133	....
		5	.....	39.6	60.4	.....	.....	.....	.....	.....	.....	8125	14630	.....	146

County Average Rank Index 133 (130-138)
County Average Unit Coal Index 146 (145-147)

a U. S. Bureau of Mines Bull. 193, p. 34.

BUREAU COUNTY — SPARLAND OR DANVILLE (NO. 7)[a] COAL (NORTHERN ILLINOIS)

532	BM A86598 (composite 2); C155	1	17.7	32.3	36.5	13.5	3.2	5.9	53.7	.8	22.9	5411	9740	....	....
	(composite 2).....	2	.....	39.3	44.3	16.4	3.8	4.9	65.3	1.0	8.6	6578	11840	....	....
	(1933)	3	.....	47.0	53.0	.....	4.6	5.8	78.1	1.2	10.3	7870	14170	....	....
	(County average)	4	21.2	35.8	43.0	.....	.....	.....	.....	.....	.....	6361	11450	115	....
		5	.....	45.4	54.6	.....	.....	.....	.....	.....	.....	8073	14530	.....	145

County Average Rank Index 115
County Average Unit Coal Index 145

a Also called "First Vein" coal.

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Continued*

MARSHALL COUNTY — **SPARLAND OR DANVILLE (NO. 7) COAL (NORTHERN ILLINOIS)**

Mine Index Number	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British thermal units	Rank index	Unit coal index
360	BM 45320 (composite 2); 16419 (composite 2) (1928)	1	15.4	33.9	35.2	15.5	4.1	5.6	53.5	1.0	20.3	5446	9800	.....	....
		2	.....	40.0	41.6	18.4	4.8	4.6	63.2	1.2	7.8	6438	11590	.....	....
		3	.....	49.1	50.9	.....	5.9	5.7	77.5	1.4	9.5	7888	14200	.....	....
		4	19.0	38.3	42.7	.....	.....	.....	.....	.....	.....	6584	11850	119	....
		5	.....	47.3	52.7	.....	.....	.....	.....	.....	.....	8134	14640	.....	146
361	(2) 16420-21 (1928)	1	15.9	34.5	35.1	14.5	3.5	.....	.....	.....	.....	5518	9930	.....	....
		2	.....	41.0	41.7	17.3	4.2	.....	.....	.....	.....	6558	11800	.....	....
		3	.....	49.6	50.4	.....	5.0	.....	.....	.....	.....	7927	14270	.....	....
		4	19.2	38.8	42.0	.....	.....	.....	.....	.....	.....	6581	11850	119	....
		5	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8149	14670	.....	147
362	(2) 16422-23 (1928)	1	14.9	35.5	34.6	15.0	3.7	.....	.....	.....	.....	5508	9920	.....	....
		2	.....	41.7	40.7	17.6	4.4	.....	.....	.....	.....	6476	11660	.....	....
		3	.....	50.6	49.4	.....	5.3	.....	.....	.....	.....	7859	14150	.....	....
		4	18.3	40.1	41.6	.....	.....	.....	.....	.....	.....	6608	11900	119	....
		5	.....	49.1	50.9	.....	.....	.....	.....	.....	.....	8085	14550	.....	146
363	(2) 16432, 16433; BM A45465 (composite 2) (1928)	1	13.9	35.7	37.0	13.4	3.0	5.6	58.0	1.0	19.0	5789	10420	.....	....
		2	.....	41.5	43.0	15.5	3.5	4.7	67.3	1.2	7.8	6723	12100	.....	....
		3	.....	49.1	50.9	.....	4.1	5.6	79.7	1.4	9.2	7958	14320	.....	....
		4	16.6	39.8	43.6	.....	.....	.....	.....	.....	.....	6800	12240	122	....
		5	.....	47.7	52.3	.....	.....	.....	.....	.....	.....	8148	14660	.....	147

364	(2) 16434-35	1	15.1	36.3	35.8	12.8	3.3	.....	.....	.....	.....	5746	10340	.....	....
	(1928)	2	.....	42.8	42.1	15.1	3.9	.....	.....	.....	.....	6768	12180	.....	....
		3	.....	50.4	49.6	.....	4.6	.....	.....	.....	.....	7969	14350	.....	....
		4	17.9	40.3	41.8	.....	.....	.....	.....	.....	.....	6703	12070	121	....
		5	.....	49.1	50.9	.....	.....	.....	.....	.....	.....	8163	14690	.....	147
365	(2) 16442-3	1	16.5	35.8	34.2	13.5	3.4	.....	.....	.....	.....	5508	9910	.....	...
	(1928)	2	.....	42.8	41.0	16.2	4.1	.....	.....	.....	.....	6598	11880	.....	....
		3	.....	51.1	48.9	.....	4.9	.....	.....	.....	.....	7871	14170	.....	....
		4	19.8	39.9	40.3	.....	.....	.....	.....	.....	.....	6477	11660	117	....
		5	.....	49.7	50.3	.....	.....	.....	.....	.....	.....	8078	14540	.....	145
	Average of 6 mine averages (2 ultimates)	1	15.3	35.3	35.3	14.1	3.5	5.7	55.5	1.0	20.2	5585	10050	.....	....
		2	.....	41.6	41.7	16.7	4.1	4.7	65.5	1.2	7.8	6591	11870	.....	....
	(County average)	3	.....	50.0	50.0	.....	5.0	5.6	78.6	1.4	9.4	7912	14240	.....	....
		4	18.5	39.5	42.0	.....	.....	.....	.....	.....	.....	6625	11920	119	....
		5	.....	48.5	51.5	.....	.....	.....	.....	.....	.....	8126	14630	.....	146

County Average Rank Index 119 (117-122)
County Average Unit Coal Index 146 (145-147)

VERMILION COUNTY — **DANVILLE (NO. 7) COAL (EASTERN ILLINOIS)**

94	BM 13497 (composite 6); BM (composite 3); (6) 4711-13-14-16-22-24. (1912, 1922)	1	13.2	38.0	39.3	9.5	3.2	5.8	61.7	1.2	18.6	6213	11180	.....	....
		2	.....	43.8	45.2	11.0	3.7	5.0	71.1	1.3	7.9	7156	12880	.....	....
		3	.....	49.2	50.8	.....	4.1	5.6	79.9	1.5	8.9	8039	14470	.....	....
		4	15.0	40.9	44.1	.....	.....	.....	.....	.....	.....	6964	12540	125	....
		5	.....	48.1	51.9	.....	.....	.....	.....	.....	.....	8191	14740	.....	147

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 2.—MINE AND COUNTY AVERAGES OF PROXIMATE AND ULTIMATE ANALYSES—*Concluded*

VERMILION COUNTY (Continued)

Mine Index No.	Samples: Number of samples averaged, Laboratory Number and Date	Condition[x]	Proximate: Moisture	Volatile Matter	Fixed Carbon	Ash	Ultimate: Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	Heat Values: Calories	British Thermal Units	Rank Index	Unit Coal Index
97	(3) 4727-34-36; BM 13551 (composite 3) (1912)	1	13.4	37.2	39.3	10.1	2.5	5.7	60.6	1.1	20.0	6177	11120	.....	....
		2	.....	42.9	45.4	11.7	2.9	4.8	70.0	1.3	9.3	7133	12840	.....	....
		3	.....	48.6	51.4	.....	3.3	5.4	79.3	1.5	10.5	8077	14540	.....	....
		4	15.3	40.3	44.4	.....	.....	.....	.....	.....	.....	6963	12530	125	....
		5	.....	47.6	52.4	.....	.....	.....	.....	.....	.....	8221	14800	.....	148
603	BM A90630 (composite 2) (1933)	1	13.3	38.3	38.8	9.6	2.8	6.0	61.4	1.0	19.2	6244	11240	.....	....
		2	.....	44.1	44.8	11.1	3.2	5.2	70.8	1.1	8.6	7200	12960	.....	....
		3	.....	49.7	50.3	.....	3.7	5.9	79.6	1.3	9.5	8100	14580	.....	....
		4	15.1	41.3	43.6	.....	.....	.....	.....	.....	.....	7000	12600	126	....
		5	.....	48.6	51.4	.....	.....	.....	.....	.....	.....	8245	14840	.....	148
	Average of 3 mine averages (3 ultimates) (County average)	1	13.3	37.8	39.1	9.8	2.8	5.8	61.2	1.1	19.3	6193	11150	.....	....
		2	.....	43.6	45.1	11.3	3.2	5.0	70.6	1.3	8.6	7142	12860	.....	....
		3	.....	49.1	50.9	.....	3.6	5.6	79.6	1.5	9.7	8052	14500	.....	...
		4	15.1	40.9	44.0	.....	.....	.....	.....	.....	.....	6958	12530	125	....
		5	.....	48.2	51.8	.....	.....	.....	.....	.....	.....	8198	14760	.....	148

County Average Rank Index 125
County Average Unit Coal Index 148

x The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=moist mineral-matter-free; 5=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES USED IN THE CALCULATION OF SOME MINE ANALYSES SHOWN IN TABLE 2, ARRANGED BY COAL BED, COUNTY, AND MINE

Each mine is represented by two or more analyses from one or two laboratories

Samples			Proximate				Ultimate					Heat Values
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
HENRY COUNTY							**ROCK ISLAND (NO. 1) COAL (WESTERN ILLINOIS)**					
232	(2) 14387-88	1	14.26	40.10	36.83	8.81	5.34	.....	.....	.....	.....	10939
		2	.....	46.78	42.96	10.26	6.33	.....	.....	.....	.....	12758
		3	.....	52.12	47.88	.....	.....	.....	.....	.....	.....	14217
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14559
232	BM A90508 (composite 3)	1	14.9	37.5	38.4	9.2	5.7	6.0	58.0	.9	20.2	10790
		2	.....	44.1	45.1	10.8	6.7	5.1	68.2	1.0	8.2	12670
		3	.....	49.4	50.6	.....	7.6	5.7	76.4	1.1	9.2	14210
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14572
BUREAU COUNTY							**LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**					
8	(3) 5348-49-50	1	16.50	38.48	37.60	7.42	2.40	.....	.....	.....	.....	10868
		2	.....	46.08	45.03	8.89	2.90	.....	.....	.....	.....	13016
		3	.....	50.58	49.42	3.18	.....	.....	.....	.....	.....	14285
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14493
8	BM 14587F (composite 3)	1	15.50	39.04	37.83	7.63	2.32	5.93	60.84	1.07	22.21	10955
		2	.....	46.20	44.77	9.03	2.75	4.98	72.00	1.27	9.97	12964
		3	.....	50.79	49.21	.....	3.02	5.47	79.15	1.40	10.96	14251
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14454

WILL COUNTY											**LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**	
359	16890 (composite of 2).....	1	14.40	37.48	42.24	5.88	2.02	6.43	62.37	.99	22.31	11413
		2	.....	43.79	49.34	6.87	2.36	5.64	72.86	1.16	11.11	13333
		3	.....	47.02	52.98	.....	2.53	6.06	78.23	1.25	11.93	14317
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14477
359	BM 52982 (composite 3).....	1	15.5	30.9	48.6	5.0	1.6	6.5	63.2	1.2	22.5	11310
		2	.....	36.5	57.6	5.9	1.9	5.6	74.7	1.4	10.5	13370
		3	.....	38.8	61.2	.....	2.1	6.0	79.4	1.5	11.0	14210
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14338
359	(5) (A52153-54, 16959-61-62.....	1	15.62	33.52	45.16	5.70	1.75	.....	.....	.....	.....	11214
		2	.....	39.68	53.56	6.76	2.06	.....	.....	.....	.....	13289
		3	.....	42.58	57.41	.....	2.20	.....	.....	.....	.....	14252
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14401
359	BM A90368 (composite 2).....	1	15.0	35.6	44.8	4.6	1.4	6.2	64.2	1.2	22.4	11490
		2	.....	41.9	52.7	5.4	1.7	5.4	75.5	1.4	10.6	13510
		3	.....	44.3	55.7	.....	1.8	5.7	79.8	1.5	11.2	14290
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14399
359	BM A90371 (composite 2).....	1	16.4	36.3	43.8	3.5	1.2	6.3	64.1	1.2	23.7	11480
		2	.....	43.4	52.4	4.2	1.4	5.4	76.6	1.4	11.0	13720
		3	.....	45.3	54.7	.....	1.5	5.6	80.0	1.5	11.4	14320
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14415
WOODFORD COUNTY											**LA SALLE (NO. 2) COAL (NORTHERN ILLINOIS)**	
410	BM 90285 (composite 3).....	1	14.9	32.5	47.3	5.3	.8	5.9	65.6	1.1	21.3	11640
		2	.....	38.1	55.7	6.2	1.0	5.0	77.1	1.3	9.4	13670
		3	.....	40.7	59.3	.....	1.1	5.4	82.2	1.4	9.9	14580
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14684

† The form of analysis is denoted by number, as follows: 1=sa mple as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

SAMPLES			PROXIMATE				ULTIMATE					HEAT VALUES
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
WOODFORD COUNTY (Continued)												
410	(2) 17002-03	1	15.02	31.83	47.20	5.95	1.41	.....	.....	.....	.....	11615
		2	.....	37.46	55.54	7.00	1.52	.....	.....	.....	.....	13667
		3	.....	40.28	59.72	.....	1.63	.....	.....	.....	.....	14696
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14838
GREENE COUNTY							**SUMMUM (NO. 4) COAL (CENTRAL ILLINOIS)**					
347	BM A45162 (composite 2)	1	14.0	36.0	40.5	9.5	4.0	5.8	60.2	1.1	19.4	10870
		2	.....	41.9	47.1	11.0	4.7	4.9	70.0	1.3	8.1	12640
		3	.....	47.1	52.9	.....	5.3	5.6	78.7	1.5	8.9	14200
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14503
347	16399 (composite 2)	1	14.24	36.43	39.92	9.41	4.08	5.51	60.05	1.11	19.85	10777
		2	.....	42.48	46.55	10.97	4.76	4.58	70.02	1.29	8.38	12566
		3	.....	47.71	52.29	.....	5.36	5.14	78.64	1.45	9.41	14114
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14413
SALINE COUNTY							**HARRISBURG (NO. 5 (4?) COAL (SOUTHERN ILLINOIS)**					
43	(8) 4985-86-87-89-90-92 and 2 BM	1	6.99	35.65	50.01	7.35	2.08	.....	.....	.....	.....	12554
		2	.....	38.33	53.77	7.90	2.24	.....	.....	.....	.....	13497
		3	.....	41.62	58.38	.....	2.43	.....	.....	.....	.....	14655
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14833

43	BM 14114 (composite 6)	1	6.98	36.03	49.44	7.55	2.01	5.48	70.42	1.58	12.96	12583
		2	.....	38.73	53.15	8.12	2.16	5.05	75.70	1.70	7.27	13527
		3	.....	42.15	57.85	.....	2.35	5.50	82.39	1.85	7.91	14722
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14903
49	(3) 5012-15-16	1	5.20	38.06	45.90	10.84	4.60	.....	.....	.....	.....	12193
		2	.....	40.15	48.42	11.43	4.85	.....	.....	.....	.....	12862
		3	.....	45.33	54.67	.....	5.48	.....	.....	.....	.....	14521
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14848
49	BM 33094 (composite 3)	1	5.28	36.49	46.70	11.53	3.99	4.91	66.37	1.34	11.86	12101
		2	.....	38.52	49.31	12.17	4.21	4.56	70.07	1.41	7.58	12775
		3	.....	43.86	56.14	.....	4.79	5.19	79.78	1.61	8.63	14546
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14862
45	(3) 4997-99-5001	1	7.03	34.78	50.27	7.92	2.48	.....	.....	.....	.....	12304
		2	.....	37.41	54.07	8.52	2.67	.....	.....	.....	.....	13359
		3	.....	40.89	59.11	.....	2.92	.....	.....	.....	.....	14603
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14806
45	C-955 (composite 3)	1	7.1	33.3	51.1	8.5	2.21	5.41	68.77	1.22	13.92	12342
		2	.....	35.9	55.0	9.1	2.38	4.98	74.02	1.31	8.19	13284
		3	.....	39.5	60.5	.....	2.62	5.48	81.43	1.44	9.03	14614
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14815
125	(3) 12934-5-6	1	6.59	33.51	52.08	7.82	2.37	.....	.....	.....	.....	12526
		2	.....	35.88	55.75	8.37	2.54	.....	.....	.....	.....	13410
		3	.....	39.14	60.86	.....	2.78	.....	.....	.....	.....	14634
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14831

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

Samples			Proximate				Ultimate					Heat Values
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
SALINE COUNTY (Continued)												
127	(3) 12901-02-03	1	5.69	33.79	52.58	7.94	2.14	.....	.....	.....	.....	12614
		2	.....	35.83	55.75	8.42	2.27	.....	.....	.....	.....	13375
		3	.....	39.11	60.89	.....	2.48	.....	.....	.....	.....	14605
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14792
127	BM A90722 (composite 3)	1	6.7	33.9	51.6	7.8	2.0	5.5	69.7	1.6	13.4	12620
		2	.....	36.4	55.3	8.3	2.2	5.1	74.7	1.7	8.0	13530
		3	.....	39.7	60.3	.....	2.4	5.5	81.5	1.9	8.7	14770
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14940
127	(3) C-748, 749, 750	1	6.1	34.6	51.5	7.8	2.0	.....	.....	.....	.....	12580
		2	.....	36.8	54.8	8.4	2.1	.....	.....	.....	.....	13400
		3	.....	40.2	59.8	.....	2.3	.....	.....	.....	.....	14630
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14810
608	BM A91429 (composite 3)	1	6.3	35.7	48.7	9.3	2.9	5.5	68.9	1.5	11.9	12470
		2	.....	38.1	52.0	9.9	3.1	5.1	73.5	1.6	6.8	13310
		3	.....	42.3	57.7	.....	3.5	5.7	81.6	1.8	7.4	14770
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	15021

BM8	[a]BM 28450 (composite 2)	1	4.71	38.50	46.90	9.89	4.08	5.53	68.87	1.45	10.18	12470
		2	.....	40.40	49.22	10.38	4.28	5.26	72.27	1.52	6.29	13086
		3	.....	45.08	54.92	.....	4.78	5.87	80.64	1.70	7.01	14602
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14892
BM70	BM 33104 (composite 3)	1	7.93	33.17	50.40	8.50	2.53	5.31	68.17	1.56	13.93	12190
		2	.....	36.03	54.74	9.23	2.75	4.81	74.04	1.69	7.48	13239
		3	.....	39.69	60.31	.....	3.03	5.30	81.57	1.86	8.24	14585
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14801
BM71	BM33084 (composite 3)	1	6.24	34.48	49.85	9.43	3.48	5.23	68.81	1.57	11.48	12321
		2	.....	36.78	53.16	10.06	3.71	4.84	73.39	1.67	6.33	13142
		3	.....	40.90	59.10	.....	4.13	5.38	81.60	1.86	7.03	14612
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14876

VERMILION COUNTY — **GRAPE CREEK (SPRINGFIELD) (NO. 5?) COAL (EASTERN ILLINOIS)**

91	(6) 4741-42-43-44-45-46	1	14.37	34.95	41.55	9.12	2.17	.....	.....	.....	.....	11055
		2	.....	40.83	48.52	10.65	2.54	.....	.....	.....	.....	12910
		3	.....	45.68	54.32	.....	2.85	.....	.....	.....	.....	14447
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14677
91	BM 13570 (composite 3)	1	15.01	34.11	41.13	9.75	2.30	5.73	60.06	1.27	20.89	10827
		2	.....	40.13	48.40	11.47	2.71	4.78	70.67	1.49	8.88	12739
		3	.....	45.33	54.67	.....	3.06	5.40	79.83	1.68	10.03	14389
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14634

a U. S. Bureau of Mines Bull. 193, p. 33.

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

SAMPLES			PROXIMATE				ULTIMATE					HEAT VALUES
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
VERMILION COUNTY (Continued)												
92	(3) 4702-03-04	1	15.50	33.43	40.19	10.88	2.38	.....	.....	.....	.....	10504
		2	.....	39.56	47.56	12.88	2.82	.....	.....	.....	.....	12431
		3	.....	45.40	54.60	.....	3.27	.....	.....	.....	.....	14269
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14538
92	BM 13477 (composite 3)	1	15.46	32.31	41.36	10.87	2.12	5.55	59.70	1.27	20.49	10577
		2	.....	38.22	48.92	12.86	2.51	4.53	70.62	1.50	7.98	12512
		3	.....	43.86	56.14	.....	2.88	5.20	81.04	1.72	9.16	14359
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14619
93	(6) 4670-71-74-76-78-79	1	15.24	34.75	41.88	8.12	1.91	.....	.....	.....	.....	10995
		2	.....	40.99	49.42	9.58	2.25	.....	.....	.....	.....	12972
		3	.....	45.34	54.66	.....	2.49	.....	.....	.....	.....	14346
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14544
93	BM 13449 (composite 6)	1	15.14	34.73	41.63	8.50	2.26	5.81	60.95	1.24	21.24	10935
		2	.....	40.93	49.05	10.02	2.66	4.87	71.82	1.46	9.17	12886
		3	.....	45.49	54.51	.....	2.96	5.41	79.82	1.62	10.19	14321
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14539
95	BM 13478 (composite 2)	1	12.76	39.56	38.85	8.83	3.52	5.66	61.61	1.20	19.18	11263
		2	.....	45.35	44.53	10.12	4.03	4.86	70.62	1.38	8.99	12910
		3	.....	50.46	49.54	.....	4.48	5.41	78.57	1.54	10.00	14364
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14632

95	(2) 4706-07	1	12.50	39.59	38.82	9.09	3.62	.....	.....	.....	.....	11181
		2	.....	45.25	44.36	10.39	4.15	.....	.....	.....	.....	12778
		3	.....	50.48	49.52	.....	4.64	.....	.....	.....	.....	14260
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14533
FULTON COUNTY							**SPRINGFIELD (NO. 5) COAL (WESTERN ILLINOIS)**					
31	(6) 5283-84-85, 5296-98, 5341	1	16.88	36.33	36.30	10.49	2.98	.....	.....	.....	.....	10269
		2	.....	43.70	43.69	12.61	3.58	.....	.....	.....	.....	12355
		3	.....	50.03	49.97	.....	4.15	.....	.....	.....	.....	14137
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14424
31	BM 14560 (composite 6)	1	16.11	36.00	37.14	10.75	2.95	5.76	56.65	1.03	22.86	10231
		2	.....	42.91	44.28	12.81	3.52	4.73	67.53	1.23	10.18	12195
		3	.....	49.21	50.79	.....	4.04	5.43	77.45	1.41	11.67	13987
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14269
114	(6) 12459-60-61-62-63-64	1	14.82	35.86	38.44	10.88	2.89	.....	.....	.....	.....	10448
		2	.....	42.10	45.12	12.78	3.39	.....	.....	.....	.....	12266
		3	.....	48.26	51.74	.....	3.89	.....	.....	.....	.....	14063
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14344
114	BM A88223 (composite 3)	1	16.7	33.3	37.7	12.3	2.4	5.8	56.8	1.0	21.7	10170
		2	.....	40.0	45.2	14.8	2.9	4.8	68.2	1.2	8.1	12210
		3	.....	47.0	53.0	.....	3.4	5.6	80.0	1.4	9.6	14330
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14638
MACON COUNTY							**SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**					
42	BM 81598 (composite 3)	1	12.76	35.37	43.18	8.69	3.23	5.76	61.40	1.11	19.81	11035
		2	.....	40.54	49.50	9.96	3.70	4.97	70.38	1.27	9.72	12649
		3	.....	45.02	54.98	.....	4.11	5.52	78.17	1.41	10.79	14048
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14292

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

Samples			Proximate				Ultimate					Heat Values
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
MACON COUNTY (Continued)												
42	(3) 5200-01-02	1	13.81	37.35	39.63	9.21	3.83	.....	.....	.....	.....	10880
		2	.....	43.34	45.98	10.68	4.45	.....	.....	.....	.....	12623
		3	.....	48.53	51.47	.....	4.98	.....	.....	.....	.....	14132
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14416
MENARD COUNTY							**SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**					
531	C-152 (composite 3)	1	14.5	34.5	40.0	11.0	2.58	5.71	59.67	1.07	19.94	10668
		2	.....	40.4	46.7	12.9	3.01	4.79	69.80	1.25	8.25	12478
		3	.....	46.4	53.6	.....	3.46	5.49	80.14	1.44	9.47	14327
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14604
531	BM A86595 (composite 2)	1	14.5	34.7	40.3	10.5	2.9	5.9	60.2	1.0	19.5	10850
		2	.....	40.6	47.1	12.3	3.4	5.0	70.4	1.1	7.8	12690
		3	.....	46.3	53.7	.....	3.9	5.7	80.3	1.3	8.8	14470
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14756
PEORIA COUNTY							**SPRINGFIELD (NO. 5) COAL (WESTERN ILLINOIS)**					
348	[b]BM 22986 (composite 4)	1	15.41	34.34	38.52	11.73	2.97	5.65	57.96	1.12	20.57	10422
		2	.....	40.60	45.53	13.87	3.51	4.66	68.52	1.32	8.12	12321
		3	.....	47.14	52.86	.....	4.08	5.41	79.55	1.53	9.43	14305
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14617

348	BM A45619 (composite 2).....	1	16.7	33.2	38.4	11.7	2.6	5.9	57.5	1.1	21.2	10410
		2	.....	39.8	46.2	14.0	3.1	4.8	68.9	1.3	7.9	12490
		3	.....	46.3	53.7	.....	3.6	5.6	80.2	1.5	9.1	14530
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14830
348	16464 (composite 2).....	1	15.87	35.35	37.61	11.17	2.77	4.42	56.11	1.13	8.53	10352
		2	.....	42.02	44.70	13.28	3.29	5.25	66.69	1.34	10.15	12305
		3	.....	48.45	51.55	.....	3.80	6.05	76.90	1.55	11.70	14189
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14479
348	BM A 88227 (composite 3).....	1	14.8	33.3	39.9	12.0	2.5	5.8	58.8	1.0	19.9	10550
		2	.....	39.0	46.9	14.1	2.9	4.8	69.0	1.2	8.0	12380
		3	.....	45.5	54.5	.....	3.4	5.6	80.4	1.4	9.2	14420
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14710

b U. S. Bureau of Mines Bull. 123, p. 35.

SANGAMON COUNTY — **SPRINGFIELD (NO. 5) COAL (CENTRAL ILLINOIS)**

122	BM 81443 (composite 3).....	1	13.3	35.5	41.1	10.1	4.0	5.6	59.7	1.2	19.4	10850
		2	.....	40.9	47.4	11.7	4.6	4.8	68.9	1.3	8.7	12520
		3	.....	46.3	53.7	.....	5.2	5.4	78.0	1.5	9.9	14170
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14480
122	BM A 90788 (composite 3).....	1	14.4	35.4	40.6	9.6	3.8	5.8	59.7	1.0	20.1	10810
		2	.....	41.4	47.4	11.2	4.4	4.9	69.8	1.2	8.5	12630
		3	.....	46.6	53.4	.....	5.0	5.6	78.6	1.3	9.5	14230
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14520

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

SAMPLES			PROXIMATE				ULTIMATE					HEAT VALUES
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
SANGAMON COUNTY (Continued)												
617	C-733 (composite 2).....	1	15.0	35.8	39.1	10.1	3.46	5.77	58.70	1.15	20.89	10606
		2	.....	42.1	46.1	11.8	4.06	4.83	69.01	1.35	8.96	12470
		3	.....	47.7	52.3	.....	4.61	5.47	78.27	1.53	10.12	14144
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14426
617	C-734 (composite 2).....	1	14.1	36.5	37.9	11.5	3.97	5.66	58.06	1.13	19.72	10518
		2	.....	42.5	44.2	13.3	4.63	4.77	67.59	1.31	8.36	12245
		3	.....	49.0	51.0	.....	5.34	5.50	77.99	1.51	9.66	14129
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14466
GRUNDY COUNTY			**HERRIN (No. 6?) COAL (NORTHERN AND WESTERN ILLINOIS)**									
530	(2) A86302, A86303.....	1	14.2	35.8	39.1	10.9	4.1	.....	.....	.....	.....	10750
		2	.....	41.7	45.6	12.7	4.8	.....	.....	.....	.....	12530
		3	.....	47.8	52.2	.....	5.5	.....	.....	.....	.....	14352
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14693
530	C-148 (composite 2).....	1	13.8	36.9	38.8	10.5	3.84	5.70	58.83	.87	20.27	10782
		2	.....	42.8	45.0	12.2	4.46	4.83	68.26	1.00	9.28	12511
		3	.....	48.8	51.2	.....	5.08	5.50	77.74	1.14	10.54	14249
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14559

HENRY COUNTY								**HERRIN (NO. 6) COAL (NORTHERN AND WESTERN ILLINOIS)**				
527	BM A86460 (composite 2)	1	19.8	29.8	38.3	12.1	4.0	5.9	53.6	.7	23.7	9610
		2	.....	37.1	47.9	15.0	5.0	4.6	66.8	.9	7.7	11980
		3	.....	43.7	56.3	.....	5.9	5.4	78.6	1.1	9.0	14100
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14473
527	C-145 (composite 2)	1	18.4	30.9	38.3	12.4	3.83	5.72	54.18	.89	22.98	9753
		2	.....	37.9	46.9	15.2	4.69	4.50	66.41	1.08	8.12	11954
		3	.....	44.7	55.3	.....	5.53	5.31	78.31	1.28	9.57	14096
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14468
KNOX COUNTY								**HERRIN (NO. 6) COAL (WESTERN ILLINOIS)**				
526	C-137 (composite 2)	1	17.5	32.8	38.9	10.8	3.00	5.82	57.27	.94	22.21	10233
		2	.....	39.8	47.1	13.1	3.64	4.69	69.39	1.14	04	12399
		3	.....	45.8	54.2	.....	4.18	5.40	79.83	1.31	9.28	14265
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14570
526	BM A86457 (composite 2)	1	18.2	32.1	39.2	10.5	3.2	5.9	56.8	.8	22.8	10160
		2	.....	39.2	48.0	12.8	3.9	4.8	69.5	1.0	8.0	12430
		3	.....	45.0	55.0	.....	4.4	5.5	79.7	1.2	9.2	14250
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14560
STARK COUNTY								**HERRIN (NO. 6) COAL (WESTERN ILLINOIS)**				
528	C-142 (composite 2)	1	17.3	34.0	38.6	10.1	3.51	5.89	57.39	.95	22.18	10383
		2	.....	41.1	46.7	12.2	4.25	4.80	69.43	1.15	8.17	12561
		3	.....	46.8	53.2	.....	4.84	5.46	79.06	1.30	9.34	14303
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14616
528	BM A86464 (composite 2)	1	17.7	32.1	40.0	10.2	3.9	6.0	56.9	.8	22.2	10270
		2	.....	39.0	48.6	12.4	4.7	4.9	69.1	1.0	7.9	12470
		3	.....	44.5	55.5	.....	5.4	5.5	78.9	1.2	9.0	14240
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14561

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

Samples			Proximate				Ultimate					Heat Values
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
CHRISTIAN COUNTY												**HERRIN (NO. 6) COAL (CENTRAL ILLINOIS)**
221	BM 81141 (composite 3)	1	12.12	37.67	40.05	10.16	4.08	5.62	59.84	1.13	19.17	10881
		2	.....	42.87	45.57	11.56	4.64	4.86	68.09	1.29	9.56	12382
		3	.....	48.47	51.53	.....	5.25	5.50	76.99	1.46	10.80	14000
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14300
BM56	[c]BM 26338 (composite 2)	1	11.93	38.21	39.50	10.36	4.00	5.73	61.37	1.02	17.52	11086
		2	.....	43.39	44.85	11.76	4.54	5.00	69.69	1.16	7.85	12589
		3	.....	49.17	50.83	.....	5.15	5.67	78.98	1.31	8.89	14267
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14577
BM56	BM 25752 (composite 4)	1	13.04	36.98	39.25	10.73	3.66	5.58	59.83	1.14	19.06	10856
		2	.....	42.53	45.13	12.34	4.21	4.75	68.80	1.31	8.59	12485
		3	.....	48.52	51.48	.....	4.80	5.42	78.49	1.49	9.80	14243
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14550
FRANKLIN COUNTY												**HERRIN (NO. 6) COAL (SOUTHERN ILLINOIS)**
50	(3) 5222-3-4	1	9.34	34.84	48.03	7.79	1.04	.....	.....	.....	.....	12004
		2	.....	38.42	52.99	8.59	1.15	.....	.....	.....	.....	13241
		3	.....	42.04	57.96	.....	1.26	.....	.....	.....	.....	14484
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14633

[c] U. S. Bureau of Mines Bull. 193, p. 30.

57	(3) 5507-8-9	1	9.67	32.24	49.55	8.54	.95	.....	.....	.....	.....	11756
		2	.....	35.69	54.86	9.45	1.05	.....	.....	.....	.....	13015
		3	.....	39.42	60.58	.....	1.16	.....	.....	.....	.....	14372
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14529
58	(3) 4791-3-4	1	8.93	34.51	48.80	7.76	.74	.....	.....	.....	.....	11937
		2	.....	37.89	53.59	8.52	.81	.....	.....	.....	.....	13108
		3	.....	41.42	58.58	.....	.88	.....	.....	.....	.....	14329
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14463
134	C-507 (composite 2)	1	10.3	31.6	50.6	7.5	1.10	5.44	66.87	1.59	17.47	11811
		2	.....	35.3	56.3	8.4	1.22	4.75	74.97	1.77	8.89	13174
		3	.....	38.5	61.5	.....	1.34	5.19	81.80	1.94	9.73	14383
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14528
134	C-508 (composite 2)	1	9.2	33.2	49.5	8.1	1.48	5.40	67.26	1.56	16.25	11957
		2	.....	36.5	54.6	8.9	1.63	4.79	74.38	1.72	8.61	13167
		3	.....	40.1	59.9	.....	1.79	5.26	81.60	1.89	9.46	14457
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14617
134	(6) 12701-02-03-20-21-22	1	8.28	33.23	49.69	8.80	1.01	.....	.....	.....	.....	11859
		2	.....	36.23	54.18	9.59	1.38	.....	.....	.....	.....	12930
		3	.....	40.07	59.93	.....	1.53	.....	.....	.....	.....	14301
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14469
136	BM A90718 (composite 3)	1	9.6	32.7	49.1	8.6	.9	5.6	66.1	1.6	17.2	11860
		2	.....	36.2	54.2	9.6	1.0	5.0	73.2	1.7	9.5	13120
		3	.....	40.0	60.0	.....	1.1	5.6	80.9	1.9	10.5	14510
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14672

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

SAMPLES			PROXIMATE				ULTIMATE					HEAT VALUES
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
FRANKLIN COUNTY (Continued)												
136	(6) 12729-30-31-32-33-34	1	7.44	35.16	47.74	9.66	2.52	.....	.....	.....	.....	11776
		2	.....	37.99	51.58	10.43	2.72	.....	.....	.....	.....	12723
		3	.....	42.40	57.60	.....	3.05	.....	.....	.....	.....	14204
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14428
BM14	[d]BM 22691 (composite 5)	1	9.19	33.80	48.61	8.40	.92	5.49	67.25	1.52	16.42	11925
		2	.....	37.22	53.53	9.25	1.01	4.92	74.06	1.67	9.09	13131
		3	.....	41.01	58.99	.....	1.11	5.42	81.61	1.84	10.02	14468
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14623
BM15	BM 23444 (composite 2)	1	9.93	33.13	48.77	8.17	.75	5.46	67.08	1.41	17.13	11896
		2	.....	36.78	54.15	9.07	.83	4.84	74.47	1.57	9.22	13207
		3	.....	40.45	59.55	.....	.91	5.32	81.89	1.73	10.15	14522
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14669
BM15	[e]BM A66446 (composite 5)	1	8.8	32.7	50.1	8.4	.8	5.3	67.9	1.4	16.2	11990
		2	.....	35.8	55.0	9.2	.9	4.8	74.5	1.5	9.1	13150
		3	.....	39.5	60.5	.....	.9	5.3	82.1	1.7	10.0	14480
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14630
BM16	[d]BM 20726 (composite 3)	1	8.87	32.72	49.05	9.36	.94	5.05	66.81	1.52	16.32	11785
		2	.....	35.90	53.83	10.27	1.03	4.46	73.31	1.67	9.26	12931
		3	.....	40.01	59.99	.....	1.15	4.97	81.70	1.86	10.32	14413
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14579

BM16	BM 20083 (composite 3).....	1	9.62	30.68	50.43	9.27	.50	5.38	66.67	1.42	16.76	11723
		2	.....	33.94	55.80	10.26	.55	4.77	73.76	1.57	9.09	12971
		3	.....	37.82	62.18	.....	.61	5.32	82.19	1.75	10.13	14454
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14606
BM22	BM 26497 (composite 5).....	1	10.06	33.40	48.19	8.35	1.11	5.47	66.77	1.27	17.03	11817
		2	.....	37.14	53.58	9.28	1.23	4.84	74.24	1.41	9.00	13140
		3	.....	40.94	59.06	.....	1.36	5.34	81.83	1.55	9.92	14485
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14645

MACOUPIN COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

BM31	BM 18553 (composite 2).....	1	13.59	37.20	39.33	9.88	3.86	5.65	59.41	1.12	20.08	10701
		2	.....	43.05	45.52	11.43	4.47	4.79	68.76	1.30	9.25	12384
		3	.....	48.61	51.39	.....	5.05	5.41	77.64	1.47	10.43	13982
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14273
BM31	BM A87367 (composite 3).....	1	14.0	35.1	40.8	10.1	4.3	5.8	59.0	.9	19.9	10670
		2	.....	40.8	47.4	11.8	5.0	4.9	68.6	1.1	8.6	12420
		3	.....	46.2	53.8	.....	5.6	5.6	77.8	1.2	9.8	14070
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14401

MONTGOMERY COUNTY — **HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**

76	(3) 5105-6-7.....	1	13.89	37.05	38.45	10.61	3.85	.....	.....	.....	.....	10574
		2	.....	43.04	44.64	12.32	4.47	.....	.....	.....	.....	12280
		3	.....	49.08	50.92	.....	5.10	.....	.....	.....	.....	14005
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14313

d U. S. Bureau of Mines Bull. 23, p. 33.

e U. S. Bureau of Mines Tech. Paper 524, p. 3.

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

SAMPLES			PROXIMATE				ULTIMATE					HEAT VALUES
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
MONTGOMERY COUNTY (Continued)												
194	BM 81104 (composite 3)	1	13.00	36.83	40.43	9.74	4.24	5.65	59.61	1.14	19.62	10746
		2	.....	42.33	46.47	11.20	4.87	4.83	68.52	1.31	9.27	12352
		3	.....	47.67	52.33	.....	5.48	5.44	77.16	1.48	10.44	13909
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14208
194	BM A87370 (composite 3)	1	12.5	35.5	40.9	11.1	4.0	5.8	60.0	1.0	18.1	10810
		2	.....	40.6	46.7	12.7	4.6	5.0	68.6	1.1	8.0	12360
		3	.....	46.5	53.5	.....	5.2	5.7	78.5	1.3	9.3	14160
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14483
BM45	BM 21906 (composite 5)	1	13.48	34.84	40.13	11.55	4.03	5.56	58.33	1.19	19.34	10548
		2	.....	40.27	46.38	13.35	4.66	4.69	67.42	1.38	8.50	12191
		3	.....	46.48	53.52	.....	5.38	5.41	77.81	1.59	9.81	14069
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14404
PERRY COUNTY		**HERRIN (NO. 6) COAL (SOUTHWESTERN AND SOUTHERN ILLINOIS)**										
54	(4) 4756-64-66-68	1	10.00	33.62	45.63	10.75	.91	.....	.....	.....	.....	11271
		2	.....	37.35	50.71	11.94	1.01	.....	.....	.....	.....	12523
		3	.....	42.41	57.59	.....	1.15	.....	.....	.....	.....	14221
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14411

54	BM 13591 (composite 6)	1	10.66	32.24	46.50	10.60	.89	5.27	63.62	1.50	18.12	11257
		2	.....	36.09	52.05	11.86	1.00	4.58	71.21	1.68	9.67	12600
		3	.....	40.95	59.05	.....	1.13	5.20	80.79	1.91	10.97	14295
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14485
90	BM 14178 (composite 6)	1	10.55	36.10	42.88	10.47	3.52	5.35	61.87	1.14	17.65	11094
		2	.....	40.36	47.94	11.70	3.94	4.67	69.16	1.27	9.26	12402
		3	.....	45.71	54.29	.....	4.46	5.29	78.32	1.44	10.49	14045
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14326
90	(6) 5034-37-38-40-42-43	1	10.95	37.00	41.82	10.23	3.60	.....	.....	.....	.....	11060
		2	.....	41.55	46.95	11.50	4.04	.....	.....	.....	.....	12420
		3	.....	46.93	53.07	.....	4.57	.....	.....	.....	.....	14034
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14314
180	(5) 12614-15-16-23-24	1	9.31	33.65	47.51	9.53	1.07	.....	.....	.....	.....	11498
		2	.....	37.10	52.39	10.51	1.18	.....	.....	.....	.....	12678
		3	.....	41.46	58.54	.....	1.32	.....	.....	.....	.....	14167
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14340
622	C-927 (composite 2)	1	9.2	35.8	43.6	11.4	3.6	5.3	61.9	1.1	16.7	11234
		2	.....	39.4	48.0	12.6	4.0	4.7	68.2	1.2	9.3	12370
		3	.....	45.0	55.0	.....	4.5	5.4	78.0	1.4	10.7	14147
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14454
622	C-926 (composite 2)	1	9.2	35.5	44.8	10.5	3.8	5.2	62.6	1.1	16.8	11337
		2	.....	39.1	49.3	11.6	4.1	4.6	69.0	1.2	9.5	12483
		3	.....	44.2	55.8	.....	4.7	5.3	78.0	1.3	10.7	14121
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14410

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Continued*

Samples			Proximate				Ultimate					Heat Values
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
PERRY COUNTY (Continued)												
BM29	BM 20734 (composite 6)	1	11.03	32.40	48.64	7.93	.86	5.60	65.26	1.42	18.93	11575
		2	.....	36.41	54.68	8.91	.97	4.92	73.34	1.60	10.26	13010
		3	.....	39.97	60.03	.....	1.06	5.40	80.51	1.76	11.27	14283
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14427
BM61	BM 26468 (composite 7)	1	10.76	33.10	47.37	8.77	.84	5.38	64.49	1.36	19.16	11524
		2	.....	37.09	53.08	9.83	.94	4.68	72.27	1.52	10.76	12913
		3	.....	41.13	58.87	.....	1.04	5.19	80.15	1.69	11.93	14321
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14478
WASHINGTON COUNTY												**HERRIN (NO. 6) COAL (SOUTHWESTERN ILLINOIS)**
226	C-384 (composite 3)	1	10.2	37.5	39.5	12.8	4.40	5.35	59.54	1.18	16.80	10811
		2	.....	41.8	44.0	14.2	4.90	4.70	66.32	1.31	8.59	12043
		3	.....	48.7	51.3	.....	5.71	5.48	77.31	1.53	9.97	14037
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14389
226	BM 80683 (composite 3)	1	9.45	38.46	39.99	12.10	4.33	5.46	60.43	1.12	16.56	10969
		2	.....	42.47	44.17	13.36	4.78	4.87	66.74	1.24	9.01	12114
		3	.....	49.02	50.98	.....	5.52	5.62	77.03	1.43	10.40	13982
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14317

WILLIAMSON COUNTY — **HERRIN (NO. 6) COAL (SOUTHERN ILLINOIS)**

154	(3) 12799-800-801	1	7.90	32.28	51.30	8.52	1.19					12108
		2		35.05	55.70	9.25	1.29					13147
		3		38.61	61.39		1.43					14487
		4										14650
154	(3) A 38989-90-91	1	10.3	29.7	51.9	8.1	1.2					11877
		2		33.1	57.9	9.0	1.3					13241
		3		36.4	63.6		1.4					14551
		4										14711
BM28	BM 30866 (composite 3)	1	9.94	32.92	48.30	8.84	1.28	5.34	66.18	1.46	16.90	11714
		2		36.55	53.63	9.82	1.42	4.71	73.49	1.62	8.94	13007
		3		40.53	59.47		1.57	5.22	81.49	1.80	9.92	14423
		4										14598
BM28	BM 28815 (composite 5)	1	9.33	32.76	49.94	7.97	.97	5.48	67.05	1.43	17.10	11912
		2		36.13	55.08	8.79	1.07	4.90	73.95	1.58	9.71	13138
		3		39.61	60.39		1.17	5.37	81.08	1.73	10.65	14404
		4										14552

BUREAU COUNTY — **SPARLAND (DANVILLE) (NO. 7) COAL (NORTHERN ILLINOIS)**

532	C-155 (composite 2)	1	17.8	32.7	36.4	13.1	2.90	5.77	53.97	.88	23.34	9777
		2		39.8	44.2	16.0	3.53	4.61	65.61	1.06	9.22	11888
		3		47.3	52.7		4.20	5.48	78.07	1.27	10.98	14144
		4										14492
532	BM A86598 (composite 2)	1	17.7	31.9	36.5	13.9	3.4	5.9	53.5	.8	22.5	9700
		2		38.7	44.4	16.9	4.1	4.8	65.0	.9	8.3	11780
		3		46.6	53.4		4.9	5.7	78.2	1.1	10.1	14170
		4										14561

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 3.—AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF FACE SAMPLES—*Concluded.*

SAMPLES			PROXIMATE				ULTIMATE					HEAT VALUES
Mine Index Number	Laboratory Number	Condition†	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B.t.u. per lb.
MARSHALL COUNTY			**SPARLAND (DANVILLE) (NO. 7) COAL (NORTHERN ILLINOIS)**									
360	16419 (composite 2)	1	15.73	34.36	34.87	15.04	4.04	5.77	52.69	1.04	21.41	9748
		2	.....	40.77	41.38	17.85	4.79	4.77	62.53	1.24	8.82	11568
		3	.....	49.63	50.37	.....	5.83	5.81	76.12	1.51	10.73	14081
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14507
360	BM A45320 (composite 2)	1	15.1	33.4	35.5	16.0	4.1	5.4	54.3	1.0	19.2	9870
		2	.....	39.3	41.8	18.9	4.8	4.4	63.9	1.1	6.9	11610
		3	.....	48.5	51.5	.....	5.9	5.5	78.8	1.4	8.4	14320
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14776
363	(2) 16432, 16433	1	13.79	37.57	35.09	13.55	3.14	.....	.....	.....	.....	10321
		2	.....	43.58	40.70	15.72	3.64	.....	.....	.....	.....	11972
		3	.....	51.71	48.29	.....	4.32	.....	.....	.....	.....	13876
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14551
363	BM A45465 (composite 2)	1	14.0	33.8	39.0	13.2	2.9	5.6	58.1	1.0	19.2	10510
		2	.....	39.3	45.3	15.4	3.3	4.7	67.6	1.2	7.8	12230
		3	.....	46.5	53.5	.....	3.9	5.6	79.9	1.4	9.2	14450
		4	.....	.....	.....	.....	.....	.....	.....	.....	.....	14794

VERMILION COUNTY — **DANVILLE (NO. 7) COAL (EASTERN ILLINOIS)**

94	(6) 4711-13-14-16-22-24	1	12.86	38.53	38.93	9.68	3.41					11
		2		44.22	44.68	11.10	3.91					12832
		3		49.74	50.26		4.41					14434
		4										14717
94	BM 13497 (composite 6)	1	13.06	38.35	39.35	9.24	3.17	5.77	62.10	1.22	18.50	11241
		2		44.11	45.26	10.63	3.65	4.97	71.43	1.40	7.92	12929
		3		49.35	50.65		4.08	5.56	79.92	1.57	8.87	14467
		4										14734
94	BM 84229 (composite 3)	1	13.60	37.10	39.60	9.70	3.00	5.80	61.40	1.20	18.90	11100
		2		43.00	45.80	11.20	3.50	5.00	71.00	1.40	7.90	12850
		3		48.40	51.60		3.90	5.60	80.00	1.50	9.00	14460
		4										14742
97	(3) 4727-4734-4736	1	13.14	37.58	38.99	10.29	2.56					11090
		2		43.26	44.89	11.85	2.95					12768
		3		49.07	50.93		3.35					14484
		4										14747
97	BM 13551 (composite 3)	1	13.68	36.76	39.62	9.94	2.34	5.69	60.68	1.11	20.24	11146
		2		42.59	45.89	11.52	2.71	4.83	70.30	1.29	9.35	12911
		3		48.14	51.86		3.06	5.46	79.45	1.46	10.57	14593
		4										14844

† The form of analysis is denoted by number, as follows: 1=sample as received at laboratory: 2=moisture-free; 3=moisture- and ash-free; 4=dry mineral-matter-free (unit coal).

TABLE 4.—COUNTY AVERAGE PROXIMATE AND ULTIMATE ANALYSES OF ILLINOIS COALS, ARRANGED BY COUNTY AND COAL BED, WITH RANK AND UNIT COAL INDICES

SUMMARY OF TABLE 2;

SAMPLES		PROXIMATE				ULTIMATE					HEAT VALUES			
County, Number of Mines, and Coal[a]	Condition[‡]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
Bond	1	11.9	35.2	42.2	10.7	3.4	5.5	60.9	1.1	18.4	5998	10800	.....	....
(1 mine)	2	.....	39.9	47.9	12.2	3.8	4.7	69.2	1.2	8.9	6810	12260	.....	....
Herrin No. 6	3	13.8	38.1	48.1	.....	.....	.....	.....	.....	.....	6821	12280	123	....
	4	.....	44.1	55.9	.....	.....	.....	.....	.....	.....	7911	14240	.....	142
Bureau	1	16.1	38.5	38.0	7.4	2.9	5.9	60.1	1.1	22.6	6054	10900	.....	....
(3 mines)	2	.....	45.8	45.4	8.8	3.5	4.9	71.6	1.3	9.9	7216	12990	.....	....
LaSalle No. 2	3	17.8	40.6	41.6	.....	.....	.....	.....	.....	.....	6607	11890	119	....
	4	.....	49.4	50.6	.....	.....	.....	.....	.....	.....	8040	14470	.....	145
Bureau	1	17.7	32.3	36.5	13.5	3.2	5.9	53.7	.8	22.9	5411	9740	.....	....
(1 mine)	2	.....	39.3	44.3	16.4	3.8	4.9	65.3	1.0	8.6	6578	11840	.....	....
Sparland No. 7 or "First Vein" coal	3	21.2	35.8	43.0	.....	.....	.....	.....	.....	.....	6361	11450	115	....
	4	.....	45.4	54.6	.....	.....	.....	.....	.....	.....	8073	14530	.....	145
Christian	1	11.3	38.9	40.9	8.9	2.3	.....	.....	.....	.....	6445	11600	.....	....
(1 mine)	2	.....	43.8	46.2	10.0	2.6	.....	.....	.....	.....	7267	13080	.....	....
Lower Assumption coal	3	12.7	41.8	45.5	.....	.....	.....	.....	.....	.....	7158	12880	129	....
	4	.....	47.9	52.1	.....	.....	.....	.....	.....	.....	8197	14760	.....	148

Christian	1	13.0	39.2	40.9	6.9	3.1	.....	.....	.....	.....	6439	11590	.....	....
(1 mine)	2	.....	45.0	47.0	8.0	3.6	.....	.....	.....	.....	7399	13320	.....	....
Upper Assumption coal	3	14.3	41.1	44.6	.....	.....	.....	.....	.....	.....	6996	12590	126	....
	4	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8161	14690	.....	147
Christian	1	12.7	37.0	40.1	10.2	3.9	5.7	59.8	1.1	19.3	6035	10860	.....	....
(4 mines)	2	.....	42.3	46.0	11.7	4.5	5.0	68.4	1.3	9.1	6913	12440	.....	....
Herrin No. 6	3	14.6	39.8	45.6	.....	.....	.....	.....	.....	.....	6825	12290	123	....
	4	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	7994	14390	.....	144
Clinton	1	11.8	36.6	41.1	10.5	3.7	5.5	60.3	1.1	18.9	6038	10870	.....	....
(4 mines)	2	.....	41.5	46.6	11.9	4.2	4.8	68.4	1.2	9.5	6845	12320	.....	....
Herrin No. 6	3	13.6	39.6	46.8	.....	.....	.....	.....	.....	.....	6851	12330	123	....
	4	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	7931	14280	....	143
Edgar	1	12.5	37.1	40.6	9.8	3.1	5.7	62.2	1.2	18.0	6242	11240	.....	....
(1 mine)	2	.....	42.4	46.4	11.2	3.5	5.0	71.1	1.3	7.9	7133	12840	.....	....
Grape Creek	3	14.3	40.0	45.7	.....	.....	.....	.....	.....	.....	7021	12640	126	....
Springfield No. 5?	4	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	8189	14740	.....	147
Franklin	1	9.2	33.9	48.3	8.6	1.5	5.4	66.8	1.5	16.2	6576	11840	.....	....
(22 mines)	2	.....	37.3	53.2	9.5	1.6	4.8	73.6	1.6	8.9	7238	13030	.....	....
Herrin No. 6	3	10.2	36.3	53.5	.....	.....	.....	.....	.....	.....	7271	13090	131	....
	4	.....	40.5	59.5	.....	.....	.....	.....	.....	.....	8095	14570	.....	146
Fulton	1	11.2	38.4	40.2	10.2	5.0	.....	.....	.....	.....	6372	11470	.....	....
(1 mine)	2	.....	43.3	45.2	11.5	5.6	.....	.....	.....	.....	7177	12920	.....	....
Rock Island No. 1	3	13.0	41.3	45.7	.....	.....	.....	.....	.....	.....	7229	13010	130	....
	4	.....	47.5	52.5	.....	.....	.....	.....	.....	.....	8309	14960	.....	150

a Number of mines represented by the ultimate analyses is given in Table 2.

‡ The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moist mineral-matter-free; 4=dry mineral-matter-free (unit coal).

TABLE 4.—COUNTY AVERAGE PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SAMPLES		PROXIMATE				ULTIMATE					HEAT VALUES			
County, Number of Mines, and Coal[a]	Condition[‡]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
Fulton	1	15.3	35.2	38.3	11.2	3.2	5.7	58.4	1.1	20.4	5809	10460	.....	....
(13 mines)	2	.....	41.6	45.2	13.2	3.8	4.7	68.9	1.3	8.1	6854	12340	.....	....
Springfield No. 5	3	17.7	38.4	43.9	.....	.....	.....	.....	.....	.....	6640	11950	120	....
	4	.....	46.6	53.4	.....	.....	.....	.....	.....	.....	8067	14520	.....	145
Fulton-Peoria	1	15.9	32.6	42.5	9.0	3.0	5.8	59.4	1.1	21.7	5931	10680	.....	....
Herrin No. 6	2	.....	38.8	50.5	10.7	3.6	4.9	70.6	1.3	8.9	7054	12700	.....	....
	3	17.9	34.6	47.5	.....	.....	.....	.....	.....	.....	6598	11880	119	....
	4	.....	42.2	57.8	.....	.....	.....	.....	.....	.....	8044	14480	.....	145
Gallatin	1	4.1	34.2	52.8	8.9	3.4	.....	.....	.....	.....	7214	12990	.....	....
(Eagle Valley) (1 mine)	2	.....	35.7	55.1	9.2	3.6	.....	.....	.....	.....	7526	13550	.....	....
Harrisburg No. 5 (4?)	3	4.7	36.3	59.0	.....	4.1	.....	.....	.....	.....	8036	14470	145	....
	4	.....	38.1	61.9	.....	.....	.....	.....	.....	.....	8436	15180	.....	152
Gallatin (north of Eagle Valley)	1	4.9	35.6	48.4	11.1	3.4	.....	.....	.....	.....	6848	12330	.....	....
(2 mines)	2	.....	37.4	50.9	11.7	3.6	.....	.....	.....	.....	7197	12960	.....	....
Harrisburg No. 5 (4?)	3	5.6	38.7	55.7	.....	.....	.....	.....	.....	.....	7841	14110	141	....
	4	.....	41.0	59.0	.....	.....	.....	.....	.....	.....	8309	14960	.....	150
Gallatin	1	4.3	36.1	49.0	10.6	3.7	.....	.....	.....	.....	6990	12580	.....	....
(Eagle Valley)	2	.....	37.7	51.2	11.1	3.9	.....	.....	.....	.....	7303	13150	.....	....
(1 mine)	3	5.0	39.0	56.0	.....	.....	.....	.....	.....	.....	7961	14330	143	....
Herrin No. 6	4	.....	41.0	59.0	.....	.....	.....	.....	.....	.....	8377	15080	.....	151

Greene	1	14.4	36.2	40.0	9.4	3.9	5.7	60.1	1.1	19.8	6050	10890	.....	....
(2 mines)	2	.....	42.2	46.8	11.0	4.6	4.8	70.1	1.3	8.2	7071	12730	.....	....
Summum No. 4?	3	16.5	38.6	44.9	.....	.....	.....	.....	.....	.....	6777	12200	122	....
	4	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	8112	14600	.....	146
Grundy	1	17.1	37.4	39.7	5.8	2.8	6.2	61.3	1.0	22.9	6139	11050	.....	....
(4 mines)	2	.....	45.1	47.9	7.0	3.3	5.2	74.0	1.2	9.3	7402	13320	.....	....
LaSalle No. 2	3	18.6	38.8	42.6	.....	.....	.....	.....	.....	.....	6574	11830	118	....
	4	.....	47.7	52.3	.....	.....	.....	.....	.....	.....	8009	14520	....	145
Grundy	1	14.0	36.4	38.9	10.7	3.9	5.8	58.4	.9	20.3	5983	10770	.....	....
(1 mine)	2	.....	42.3	45.3	12.4	4.6	4.9	67.9	1.0	9.2	6957	12520	.....	....
Verona No. 6?	3	16.2	39.3	44.5	.....	.....	.....	.....	.....	.....	6808	12250	123	....
	4	.....	46.9	53.1	.....	.....	.....	.....	.....	.....	8123	14630	.....	146
Henry	1	15.9	36.7	38.3	9.1	4.8	6.2	58.0	0.8	21.1	5908	10640	.....	....
(4 mines)	2	.....	43.6	45.6	10.8	5.7	5.2	69.0	1.0	8.3	7025	12650	.....	....
Rock Island No. 1	3	18.2	38.9	42.9	.....	.....	.....	.....	.....	.....	6597	11880	119	....
	4	.....	47.5	52.5	.....	.....	.....	.....	.....	.....	8059	14510	.....	145
Henry	1	14.5	37.0	38.6	9.9	3.5	5.9	58.8	1.1	20.8	5896	10610	.....	....
(1 mine)	2	.....	43.3	45.1	11.6	4.0	5.0	68.8	1.3	9.3	6897	12420	.....	....
Colchester No. 2	3	16.6	39.8	43.6	.....	.....	.....	.....	.....	.....	6636	11940	119	....
	4	.....	47.8	52.2	.....	.....	.....	.....	.....	.....	7960	14330	.....	143
Henry	1	19.1	30.4	38.3	12.2	3.9	5.8	53.9	.8	23.4	5378	9680	.....	....
(1 mine)	2	.....	37.5	47.4	15.1	4.8	4.6	66.6	1.0	7.9	6647	11970	.....	....
Herrin No. 6	3	22.6	32.9	44.5	.....	.....	.....	.....	.....	.....	6223	11200	112	....
	4	.....	42.4	57.6	.....	.....	.....	.....	.....	.....	8036	14470	.....	145

a Number of mines represented by the ultimate analyses is given in Table 2.

‡ The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moist mineral-matter-free; 4=dry mineral-matter-free (unit coal).

TABLE 4.—COUNTY AVERAGE PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SAMPLES		PROXIMATE				ULTIMATE					HEAT VALUES			
County, Number of Mines, and Coal[a]	Condition[‡]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
Jackson	1	9.3	34.0	51.0	5.7	1.3	.....	.....	.....	.....	6938	12490	.....	.....
(5 mines)	2	.....	37.5	56.2	6.3	1.4	.....	.....	.....	.....	7648	13770	.....	.....
Murphysboro No. 1?	3	10.0	35.4	54.6	.....	.....	.....	.....	.....	.....	7413	13340	133	.....
	4	.....	39.4	60.6	.....	.....	.....	.....	.....	.....	8234	14820	.....	148
Jackson	1	9.4	34.5	46.2	9.9	2.2	5.5	64.8	1.3	16.3	6461	11630	.....	.....
(3 mines)	2	.....	38.1	51.0	10.9	2.4	5.0	71.6	1.4	8.7	7132	12840	.....	.....
Herrin No. 6	3	10.6	37.3	52.1	.....	.....	.....	.....	.....	.....	7264	13080	131	.....
	4	.....	41.7	58.3	.....	.....	.....	.....	.....	.....	8129	14630	.....	146
Jefferson	1	8.5	34.6	48.2	8.7	1.3	5.3	67.3	1.5	15.9	6653	11980	.....	.....
(1 mine)	2	.....	37.8	52.7	9.5	1.4	4.9	73.5	1.6	9.1	7272	13090	.....	.....
Herrin No. 6	3	9.5	37.1	53.4	.....	.....	.....	.....	.....	.....	7361	13250	133	.....
	4	.....	41.0	59.0	.....	.....	.....	.....	.....	.....	8128	14630	.....	146
Knox	1	14.3	36.7	41.1	7.9	4.5	.....	.....	.....	.....	6204	11170	.....	.....
(1 mine)	2	.....	42.8	47.9	9.3	5.3	.....	.....	.....	.....	7237	13030	.....	.....
Rock Island No. 1	3	16.1	38.5	45.4	.....	.....	.....	.....	.....	.....	6834	12300	123	.....
	4	.....	45.9	54.1	.....	.....	.....	.....	.....	.....	8141	14650	.....	147
Knox	1	15.0	38.0	39.3	7.7	3.9	.....	.....	.....	.....	6234	11220	.....	.....
(1 mine)	2	.....	44.7	46.2	9.1	4.6	.....	.....	.....	.....	7333	13200	.....	.....
Summum No. 4	3	16.7	40.0	43.3	.....	.....	.....	.....	.....	.....	6844	12320	123	.....
	4	.....	48.0	52.0	.....	.....	.....	.....	.....	.....	8219	14790	.....	148

Knox	1	17.9	32.5	39.0	10.6	3.1	5.9	57.1	.8	22.5	5664	10200	.....	....
(1 mine)	2	.....	39.5	47.5	13.0	3.8	4.7	69.6	1.0	7.9	6894	12410	.....	....
Herrin No. 6	3	20.6	35.0	44.4	.....	.....	.....	.....	.....	.....	6426	11570	116	....
	4	.....	44.0	56.0	.....	.....	.....	.....	.....	.....	8090	14560	.....	146
LaSalle	1	14.5	38.4	38.8	8.3	3.3	5.8	61.6	1.0	20.0	6136	11050	.....	....
(6 mines)	2	.....	44.9	45.4	9.7	3.9	4.9	72.0	1.2	8.3	7177	12920	.....	....
LaSalle No. 2	3	16.3	40.8	42.9	.....	.....	.....	.....	.....	.....	6774	12190	122	....
	4	.....	48.7	51.3	.....	.....	.....	.....	.....	.....	8089	14560	.....	146
LaSalle	1	14.8	41.3	34.3	9.6	3.4	.....	.....	.....	.....	5930	10670	.....	....
LaSalle District (Second Vein)	2	.....	48.5	40.2	11.3	4.0	.....	.....	.....	.....	6956	12520	.....	....
(1 mine)	3	16.8	44.7	38.5	.....	.....	.....	.....	.....	.....	6653	11980	120	....
Herrin No. 6?	4	.....	53.7	46.3	.....	.....	.....	.....	.....	.....	7999	14400	.....	144
LaSalle	1	13.2	39.5	38.7	8.6	3.7	5.8	61.5	1.0	19.4	6249	11250	.....	....
(2 mines)	2	.....	45.6	44.5	9.9	4.2	5.0	70.9	1.2	8.8	7197	12960	.....	....
Streator No. 6	3	14.9	42.2	42.9	.....	.....	.....	.....	.....	.....	6933	12480	125	....
	4	.....	49.5	50.5	.....	.....	.....	.....	.....	.....	8143	14660	.....	147
Livingston	1	11.9	35.1	39.7	13.3	3.7	5.6	60.2	1.0	16.2	6063	10910	.....	....
(3 mines)	2	.....	39.8	45.1	15.1	4.2	4.9	68.3	1.1	6.4	6882	12390	.....	....
Grape Creek	3	14.2	38.9	46.9	.....	.....	.....	.....	.....	.....	7129	12830	128	....
	4	.....	45.3	54.7	.....	.....	.....	.....	.....	.....	8313	14960	.....	150
Logan	1	13.5	36.9	39.0	10.6	3.2	5.6	60.1	1.1	19.4	5967	10740	.....	....
(2 mines)	2	.....	42.6	45.1	12.3	3.6	4.8	69.5	1.3	8.5	6898	12420	.....	....
Springfield No. 5	3	15.6	40.0	44.4	.....	.....	.....	.....	.....	.....	6775	12200	122	....
	4	.....	47.4	52.6	.....	.....	.....	.....	.....	.....	8023	14440	.....	144

a Number of mines represented by the ultimate analyses is given in Table 2.

‡ The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moist mineral-matter-free; 4=dry mineral-matter-free (unit coal).

TABLE 4.—COUNTY AVERAGE PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SAMPLES		PROXIMATE				ULTIMATE					HEAT VALUES			
County, Number of Mines, and Coal[a]	Condition[‡]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
McDonough	1	16.6	34.2	40.9	8.3	2.9	.....	.....	.....	.....	6002	10800	.....	....
(2 mines)	2	.....	41.0	49.0	10.0	3.5	.....	.....	.....	.....	7199	12960	.....	....
Colchester No. 2	3	18.6	36.2	45.2	.....	.....	.....	.....	.....	.....	6621	11920	119	....
	4	.....	44.4	55.6	.....	.....	.....	.....	.....	.....	8134	14640	.....	146
McLean	1	11.3	42.2	37.7	8.8	3.0	.....	.....	.....	.....	6426	11570	.....	....
(1 mine)	2	.....	47.6	42.5	9.9	3.4	.....	.....	.....	.....	7242	13040	.....	....
LaSalle No. 2	3	12.7	45.4	41.9	.....	.....	.....	.....	.....	.....	7139	12850	129	....
	4	.....	49.9	50.1	.....	.....	.....	.....	.....	.....	8176	14720	.....	147
McLean	1	13.3	38.0	36.2	12.5	3.7	.....	.....	.....	.....	5878	10580	.....	....
(1 mine)	2	.....	43.8	41.8	14.4	4.3	.....	.....	.....	.....	6781	12210	.....	....
Springfield No. 5	3	15.8	42.0	42.2	.....	.....	.....	.....	.....	.....	6835	12300	123	....
	4	.....	51.2	48.8	.....	.....	.....	.....	.....	.....	8114	14610	.....	146
Macon	1	13.9	36.2	39.7	10.2	3.4	5.7	59.1	1.1	20.5	5945	10700	.....	....
(2 mines)	2	.....	42.0	46.1	11.9	4.0	4.8	68.6	1.2	9.5	6904	12430	.....	....
Springfield No. 5	3	16.0	39.0	45.0	.....	.....	.....	.....	.....	.....	6717	12090	121	....
	4	.....	46.4	53.6	.....	.....	.....	.....	.....	.....	7992	14390	.....	144
Macoupin	1	13.3	37.4	39.5	9.8	4.0	5.9	58.9	1.1	20.3	5963	10730	.....	....
(11 mines)	2	.....	43.1	45.6	11.3	4.6	5.1	68.0	1.2	9.8	6878	12380	.....	....
Herrin No. 6	3	15.3	40.1	44.6	.....	.....	.....	.....	.....	.....	6710	12080	121	....
	4	.....	47.3	52.7	.....	.....	.....	.....	.....	.....	7916	14250	.....	143

Madison	1	13.1	38.3	38.5	10.1	4.1	5.8	59.6	1.1	19.3	5992	10790	.....	....
(6 mines)	2	.....	44.1	44.3	11.6	4.7	5.0	68.6	1.2	8.9	6900	12420	.....	....
Herrin No. 6	3	15.1	41.3	43.6	.....	.....	.....	.....	.....	.....	6769	12180	122	....
	4	.....	48.6	51.4	.....	.....	.....	.....	.....	.....	7974	14350	.....	144
Marion	1	10.3	36.6	42.1	11.0	3.8	5.5	62.2	1.2	16.3	6237	11230	.....	....
(3 mines)	2	.....	40.8	46.9	12.3	4.3	4.9	69.3	1.3	7.9	6954	12520	.....	....
Herrin No. 6	3	12.0	39.7	48.3	.....	.....	.....	.....	.....	.....	7133	12840	128	....
	4	.....	45.1	54.9	.....	.....	.....	.....	.....	.....	8105	14590	.....	146
Marshall	1	15.1	39.1	38.6	7.2	2.8	.....	.....	.....	.....	6284	11310	.....	....
(2 mines)	2	.....	46.0	45.5	8.5	3.3	.....	.....	.....	.....	7402	13320	.....	....
LaSalle No. 2	3	16.7	41.2	42.1	.....	.....	.....	.....	.....	.....	6843	12320	123	....
	4	.....	49.4	50.6	.....	.....	.....	.....	.....	.....	8209	14780	.....	148
Marshall	1	15.3	35.3	35.3	14.1	3.5	5.7	55.5	1.0	20.2	5585	10050	.....	....
(6 mines)	2	.....	41.6	41.7	16.7	4.1	4.7	65.5	1.2	7.8	6591	11870	.....	....
Sparland No. 7	3	18.5	39.5	42.0	.....	.....	.....	.....	.....	.....	6625	11920	119	....
	4	.....	48.5	51.5	.....	.....	.....	.....	.....	.....	8123	14630	.....	146
Menard	1	15.3	35.5	40.0	9.2	3.2	5.9	60.1	1.0	20.6	5961	10730	.....	....
(3 mines)	2	.....	41.9	47.2	10.9	3.8	5.0	70.8	1.2	8.2	7038	12670	.....	....
Springfield No. 5	3	17.3	37.9	44.8	.....	.....	.....	.....	.....	.....	6650	11970	120	....
	4	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	8048	14490	.....	145
Mercer	1	15.6	38.5	36.9	9.0	4.4	.....	.....	.....	.....	5971	10750	.....	....
(5 mines)	2	.....	45.7	43.7	10.6	5.3	.....	.....	.....	.....	7078	12740	.....	....
Rock Island No. 1	3	17.8	41.0	41.2	.....	.....	.....	.....	.....	.....	6654	11980	120	....
	4	.....	49.9	50.1	.....	.....	.....	.....	.....	.....	8094	14570	.....	146

a Number of mines represented by the ultimate analyses is given in Table 2.

‡ The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moist mineral-matter-free; 4=dry mineral-matter-free (unit coal).

TABLE 4.—COUNTY AVERAGE PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SAMPLES		PROXIMATE				ULTIMATE					HEAT VALUES			
County, Number of Mines, and Coal[a]	Condition[‡]	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
Montgomery	1	13.2	36.2	40.4	10.2	4.2	5.7	59.6	1.0	19.3	5962	10730	.....	....
(5 mines)	2	.....	41.7	46.5	11.8	4.8	4.8	68.6	1.2	8.8	6869	12360	.....	....
Herrin No. 6	3	15.2	38.9	45.9	.....	.....	.....	.....	.....	.....	6744	12140	121	....
	4	.....	45.9	54.1	.....	.....	.....	.....	.....	.....	7960	14330	.....	143
Moultrie	1	6.8	39.2	42.3	11.7	4.0	.....	.....	.....	.....	6599	11880	.....	....
(1 mine)	2	.....	42.0	45.4	12.6	4.3	.....	.....	.....	.....	7083	12750	.....	....
Herrin No. 6?	3	8.0	43.0	49.0	.....	.....	.....	.....	.....	.....	7619	13720	137	....
	4	.....	46.7	53.3	.....	.....	.....	.....	.....	.....	8284	14910	.....	149
Peoria	1	14.5	35.1	39.4	11.0	3.2	5.8	59.2	1.1	19.7	5949	10710	.....	....
(8 mines)	2	.....	41.1	46.1	12.8	3.8	4.9	69.3	1.3	7.9	6959	12530	.....	....
Springfield No. 5	3	16.8	38.1	45.1	.....	.....	.....	.....	.....	.....	6781	12210	122	....
	4	.....	45.8	54.2	.....	.....	.....	.....	.....	.....	8151	14670	.....	147
Perry (east of DuQuoin anticline)	1	10.3	33.0	47.3	9.4	.9	5.4	64.6	1.4	18.3	6358	11450	.....	....
(2 mines)	2	.....	36.8	52.7	10.5	1.0	4.7	72.0	1.6	10.2	7090	12760	.....	....
Herrin No. 6	3	11.5	35.7	52.8	.....	.....	.....	.....	.....	.....	7087	12760	128	....
	4	.....	40.3	59.7	.....	.....	.....	.....	.....	.....	8012	14420	.....	144
Perry (west of DuQuoin anticline)	1	10.0	36.1	43.3	10.6	3.4	5.4	62.1	1.1	17.4	6197	11160	.....	....
(12 mines)	2	.....	40.1	48.1	11.8	3.8	4.8	69.0	1.2	9.4	6886	12400	.....	....
Herrin No. 6	3	11.5	39.1	49.4	.....	.....	.....	.....	.....	.....	7041	12670	127	...
	4	.....	44.2	55.8	.....	.....	.....	.....	.....	.....	7962	14330	.....	143

Randolph	1	10.7	36.4	42.5	10.4	4.5	.....	.....	.....	.....	6194	11150	.....	....
(2 mines)	2	.....	40.7	47.7	11.6	5.1	.....	.....	.....	.....	6939	12490	.....	....
Blair No. 5 (No. 4?)	3	12.4	39.1	48.5	.....	.....	.....	.....	.....	.....	7029	12650	127	....
	4	.....	44.6	55.4	.....	.....	.....	.....	.....	.....	8027	14450	.....	145
Randolph	1	10.3	36.4	41.5	11.8	3.9	5.3	60.6	1.1	17.3	6068	10920	.....	....
(5 mines)	2	.....	40.6	46.3	13.1	4.4	4.7	67.6	1.2	9.0	6768	12180	.....	....
Herrin No. 6	3	12.2	39.8	48.0	.....	.....	.....	.....	.....	.....	6999	12600	126	....
	4	.....	45.3	54.7	.....	.....	.....	.....	.....	.....	7967	14340	.....	143
Rock Island	1	16.6	35.7	39.2	8.5	4.8	.....	.....	.....	.....	5897	10620	.....	....
(1 mine)	2	.....	42.7	47.1	10.2	5.8	.....	.....	.....	.....	7072	12730	.....	....
Rock Island No. 1	3	18.8	37.5	43.7	.....	.....	.....	.....	.....	.....	6535	11760	118	....
	4	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	8052	14490	.....	145
St. Clair	1	11.3	38.1	39.6	11.0	3.7	5.5	61.1	1.2	17.5	6108	11000	.....	....
(10 mines)	2	.....	43.0	44.6	12.4	4.2	4.7	68.9	1.3	8.4	6887	12400	.....	....
Herrin No. 6	3	13.1	41.5	45.4	.....	.....	.....	.....	.....	.....	6976	12560	126	....
	4	.....	47.8	52.2	.....	.....	.....	.....	.....	.....	8031	14460	.....	145
Saline	1	6.6	34.3	50.7	8.4	2.5	5.4	69.5	1.5	12.7	6895	12410	.....	....
(16 mines)	2	.....	36.7	54.3	9.0	2.7	5.0	74.4	1.6	7.3	7383	13290	.....	....
Harrisburg No. 5 (No. 4?)	3	7.4	36.4	56.2	.....	.....	.....	.....	.....	.....	7622	13720	137	....
	4	.....	39.3	60.7	.....	.....	.....	.....	.....	.....	8230	14810	.....	148
Sangamon	1	14.2	36.1	39.1	10.6	3.9	5.7	59.0	1.1	19.7	5911	10640	.....	....
(14 mines)	2	.....	42.1	45.6	12.3	4.6	4.8	68.8	1.3	8.2	6889	12400	.....	....
Springfield No. 5	3	16.4	39.0	44.6	.....	.....	.....	.....	.....	.....	6731	12120	121	....
	4	.....	46.7	53.3	.....	.....	.....	.....	.....	.....	8032	14460	.....	145

a Number of mines represented by the ultimate analyses is given in Table 2.

‡ The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moist mineral-matter-free; 4=dry mineral-matter-free (unit coal).

TABLE 4.—COUNTY AVERAGE PROXIMATE AND ULTIMATE ANALYSES—*Continued*

SAMPLES		PROXIMATE				ULTIMATE					HEAT VALUES			
County, Number of Mines, and Coal[a]	Condition‡	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
Sangamon	1	13.9	36.9	39.2	10.0	4.1	5.7	59.1	1.1	20.0	5942	10700	.....	....
(3 mines)	2	.....	42.9	45.5	11.6	4.8	4.8	68.6	1.3	8.9	6902	12420	.....	....
Herrin No. 6	3	16.0	39.6	44.4	.....	.....	.....	.....	.....	.....	6700	12060	121	....
	4	.....	47.2	52.8	.....	.....	.....	.....	.....	.....	7976	14360	.....	144
Schuyler	1	12.5	37.9	42.1	7.5	4.5	.....	.....	.....	.....	6517	11730	.....	....
(1 mine)	2	.....	43.3	48.1	8.6	5.2	.....	.....	.....	.....	7451	13410	.....	....
Colchester No. 2	3	14.0	39.6	46.4	.....	.....	.....	.....	.....	.....	7152	12870	129	....
	4	.....	46.1	53.9	.....	.....	.....	.....	.....	.....	8319	14970	.....	150
Schuyler	1	15.2	34.7	40.2	9.9	2.7	.....	.....	.....	.....	6024	10840	.....	....
(1 mine)	2	.....	40.9	47.5	11.6	3.1	.....	.....	.....	.....	7103	12790	.....	....
Springfield No. 5	3	17.3	37.4	45.3	.....	.....	.....	.....	.....	.....	6772	12190	122	....
	4	.....	45.2	54.8	.....	.....	.....	.....	.....	.....	8187	14740	.....	147
Shelby	1	11.2	35.3	42.8	10.7	3.6	5.7	61.2	1.2	17.6	6150	11070	.....	....
(1 mine)	2	.....	39.7	48.2	12.1	4.0	5.0	69.0	1.4	8.5	6927	12470	.....	....
Springfield No. 5	3	13.0	38.1	48.9	.....	.....	.....	.....	.....	.....	7001	12600	126	....
	4	.....	43.8	56.2	.....	.....	.....	.....	.....	.....	8045	14480	.....	145
Stark	1	17.5	33.1	39.3	10.1	3.7	5.9	57.2	.9	22.2	5736	10330	.....	....
(1 mine)	2	.....	40.1	47.6	12.3	4.5	4.8	69.3	1.1	8.0	6953	12520	.....	....
Herrin No. 6	3	20.1	35.4	44.5	.....	.....	.....	.....	.....	.....	6471	11650	117	....
	4	.....	44.3	55.7	.....	.....	.....	.....	.....	.....	8105	14590	.....	146

Tazewell	1	15.1	35.7	39.7	9.5	3.2	5.8	59.9	1.1	20.5	5964	10740	.....	....
(2 mines)	2	.....	42.1	46.7	11.2	3.8	4.9	70.6	1.3	8.2	7028	12650	.....	....
Springfield No. 5	3	17.2	38.3	44.5	.....	.....	.....	.....	.....	.....	6675	12020	120	....
	4	.....	46.2	53.8	.....	.....	.....	.....	.....	.....	8062	14510	.....	145
Vermilion	1	14.8	34.6	41.4	9.2	2.3	5.8	60.6	1.3	20.8	6065	10920	.....	....
(6 mines)	2	.....	40.6	48.6	10.8	2.7	4.9	71.2	1.5	8.9	7119	12810	.....	....
Grape Creek No. 5	3	16.7	37.1	46.2	.....	.....	.....	.....	.....	.....	6759	12170	122	....
	4	.....	44.5	55.5	.....	.....	.....	.....	.....	.....	8110	14600	.....	146
Vermilion	1	13.3	37.8	39.1	9.8	2.8	5.8	61.2	1.1	19.3	6193	11150	.....	....
(3 mines)	2	.....	43.6	45.1	11.3	3.2	5.0	70.6	1.3	8.6	7142	12860	.....	....
Danville No. 7	3	15.1	40.9	44.0	.....	.....	.....	.....	.....	.....	6958	12530	125	....
	4	.....	48.2	51.8	.....	.....	.....	.....	.....	.....	8198	14760	.....	148
Warren	1	13.2	39.4	38.8	8.6	5.5	.....	.....	.....	.....	6236	11220	.....	....
(2 mines)	2	.....	45.4	44.7	9.9	6.3	.....	.....	.....	.....	7180	12920	.....	....
Rock Island No. 1	3	15.0	41.6	43.4	.....	.....	.....	.....	.....	.....	6934	12480	125	....
	4	.....	49.0	51.0							8157	14680	.....	147
Washington	1	10.3	38.2	39.6	11.9	4.1	5.5	60.1	1.2	17.2	6083	10950	.....	....
(2 mines)	2	.....	42.6	44.2	13.2	4.6	4.9	67.1	1.3	8.9	6786	12210	.....	....
Herrin No. 6	3	12.2	41.9	45.9	.....	.....	.....	.....	.....	.....	7027	12650	127	....
	4	.....	47.7	52.3	.....	.....	.....	.....	.....	.....	8002	14400	.....	144
White	1	8.5	35.4	47.1	9.0	2.8	5.5	66.6	1.4	14.7	6621	11920	.....	....
(1 mine)	2	.....	38.7	51.5	9.8	3.1	5.0	72.8	1.5	7.8	7239	13030	.....	....
Herrin No. 6	3	9.6	37.8	52.6	.....	.....	.....	.....	.....	.....	7371	13270	133	....
	4	.....	41.8	58.2	.....	.....	.....	.....	.....	.....	8156	14680	.....	147

a Number of mines represented by the ultimate analyses is given in Table 2.

‡ The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moist mineral-matter-free; 4=dry mineral-matter-free (unit coal).

TABLE 4.—COUNTY AVERAGE PROXIMATE AND ULTIMATE ANALYSES—*Concluded.*

SAMPLES		PROXIMATE				ULTIMATE					HEAT VALUES			
County, Number of Mines, and Coal[a]	Condition‡	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen	Calories	British thermal units	Rank index	Unit coal index
Will	1	15.4	34.2	45.3	5.1	1.6	6.4	63.1	1.1	22.7	6299	11340	.....	....
(1 mine)	2	.....	40.5	53.5	6.0	1.9	5.6	74.6	1.3	10.6	7449	13410	.....	....
LaSalle No. 2	3	16.5	35.4	48.1	.....	.....	.....	.....	.....	.....	6682	12030	120	....
	4	.....	42.4	57.6	.....	.....	.....	.....	.....	.....	7998	14400	.....	144
Williamson	1	7.0	34.0	47.9	11.1	3.5	.....	.....	.....	.....	6605	11890	.....	....
(1 mine)	2	.....	36.5	51.5	12.0	3.8	.....	.....	.....	.....	7099	12780	.....	....
Harrisburg No. 5 (4?)	3	8.1	36.9	55.0	.....	.....	.....	.....	.....	.....	7567	13620	136	....
	4	.....	40.1	59.9	.....	.....	.....	.....	.....	.....	8232	14820	.....	148
Williamson	1	8.0	33.6	49.1	9.3	2.2	5.3	67.1	1.4	14.7	6629	11930	.....	....
(29 mines)	2	.....	36.6	53.4	10.0	2.4	4.9	72.9	1.5	8.3	7203	12970	.....	....
Coal No. 6	3	9.0	36.0	55.0	.....	.....	.....	.....	.....	.....	7396	13310	133	....
	4	.....	39.6	60.4	.....	.....	.....	.....	.....	.....	8125	14630	.....	146
Woodford	1	14.5	34.8	44.6	6.1	1.9	5.9	64.6	1.2	20.3	6408	11540	.....	....
(2 mines)	2	.....	40.7	52.2	7.1	2.2	5.1	75.5	1.4	8.7	7495	13490	.....	....
LaSalle No. 2	3	15.7	36.3	48.0	.....	.....	.....	.....	.....	.....	6881	12390	124	....
	4	.....	43.1	56.9	.....	.....	.....	.....	.....	.....	8158	14690	.....	147

a Number of mines represented by the ultimate analyses is given in Table 2.

‡ The form of analysis is denoted by number, as follows: 1=sample as received at laboratory; 2=moisture-free; 3=moist mineral-matter-free; 4=dry mineral-matter-free (unit coal).

TABLE 5.—IDENTITY OF ILLINOIS MINES, SAMPLES FROM WHICH HAVE BEEN ANALYZED AND THE RESULTS PUBLISHED BY THE UNITED STATES BUREAU OF MINES, AND OF CERTAIN ABANDONED MINES SAMPLED BY AND ANALYZED FOR THE STATE GEOLOGICAL SURVEY.

Coal No.	County	Mine Index No.[a]	Name of Company	Name or number of mine	Bureau of Mines	
					Bulletin	Page
1	Fulton	105	Spoon River Colliery Co.	*Ellisville		
1	Jackson	12	Gus Blair Big Muddy Coal Co.	*No. 2		
1	Jackson	13	Big Muddy Coal and Iron Co.	*No. 9		
1	Jackson	14	Gartside Coal Co.	*No. 4		
1	Jackson	15	Big Muddy Coal and Iron Co.	*No.10(Harrison)		
1	Mercer	19	Alden Coal Co.	*No. 7		
2	Bureau	1	Spring Valley Coal Co.	*No. 5		
2	Bureau	10	Cherry Coal Co.	*Cherry		
2	Grundy	7	Chicago, Wilmington and Vermilion Coal Co.	*No. 1		
2	Grundy	6	Big 4 Wilmington Coal Co.	*No. 6		
2	Grundy	5	Wilmington Star Mining Co.	*No. 7		
2	LaSalle	2	Oglesby Coal Co.	*Oglesby		
2	LaSalle	9	Illinois Zinc Co.	*Black Hollow		
2	LaSalle	103	Rutland Coal Co.	*Rutland		
2	McLean	100	McLean County Coal Co.	*Bloomington		
2	Marshall	4	Wenona Coal Co.	*Wenona		
4	Knox	236	Adcock Mining Co.	*Soperville		
5S	Gallatin	135	Hickory Hill Coal Co.	*Hickory Hill		
5S	Saline	43	O'Gara Coal Co.	*No. 9		
5S	Saline	46	Eldorado Coal and Mining Co.	*No. 1		
5S	Saline	48	O'Gara Coal Co.	*No. 7		
5S	Saline	128	O'Gara Coal Co.	*No. 14		
5S	Saline	330	O'Gara Coal Co.	*No. 4		
5S	Saline	B.M. 8	Peabody Coal Co.	*No. 46	193	33
5N	Fulton	28	Monmouth Coal Co.	*"A"		
5N	Fulton	29	Alden Coal Co.	*No. 6		
5N	Fulton	30	Maplewood Coal Co.	*No. 2		
5N	Fulton	113	Maplewood Coal Co.	*No. 1		
5N	Fulton	115	Coal Creek Mining Co.	*Parrville		
5N	Livingston	216	Fairbury Coal Co.	*Fairbury		
5N	McLean	100	McLean County Coal Co.	*Bloomington (see Coal No. 2)		
5N	Macon	41	Decatur Coal Co.	*Niantic		
5N	Menard	34	Wabash Coal Co.	*No. 2		
5N	Peoria	25	Clark Coal Co.	*No. 2		
5N	Peoria	26	Crescent Coal Co.	*Crescent No. 1		
5N	Peoria	107	Newsam Bros.	*Glasford No. 4		
5N	Peoria	B.M. 2	Colliers' Cooperative Coal Co.	*Colliers'	123	35
5N	Peoria	B.M. 3	Dorthel Coal Co.	No. 1	123	35
5N	Sangamon	40	Williamsville Coal Co.	*Selbytown		

[a] See Table 1 or 3 for corresponding numbers.
*Shipping mine abandoned or long idle.

TABLE 5.—(*Continued*).

Coal No.	Connty	Mine Index No.	Name of Company	Name or number of mine	Bureau of Mines	
					Bulletin	Page
5N	Tazewell....	27	Tazewell County Coal Co.....	*Tazewell.....	.....	.....
5N	Tazewell....	108	Groveland Coal Mining Co.....	*Groveland.....	.....	.....
5N	Vermilion....	92	Sharon Coal Co.....	*Sharon.....	.....	.....
5N	Vermilion....	95	W. C. Shafer.....	*Shafer.....	.....	.....
6	Christian....	221	Smith-Lohr Coal Co.....	*No. 1, Springside.....	.....	.....
6	Christian....	B.M. 56	Smith-Lohr Coal Co.....	*No. 1, Springside	193	30
6	Franklin....	B.M. 13	Old Ben Coal Corp.....	No. 14.....	123	33
6	Franklin....	B.M. 14	Old Ben Coal Corp.....	No. 12.....	123	33
6	Franklin.....	B.M. 15	Chicago, Wilmington and Franklin Coal Co.....	No. 1.....	524[a]	3
6	Franklin....	B.M. 16	Franklin County Coal Co.....	No. 7.....	123	33
6	Franklin....	B.M. 19	Brewerton Coal Co.....	No. 21.....	123	33
6	Franklin....	B.M. 21	Old Ben Coal Corp.....	No. 10.....	193	31
6	Franklin....	B.M. 22	Old Ben Coal Corp.....	No. 16.....	193	32
6	Franklin....	B.M. 64	Old Ben Coal Corp.....	No. 11.....	193	32
6	Franklin....	B.M. 65	Old Ben Coal Corp.....	No. 9.....	193	33
6	Franklin....	B.M. 66	Old Ben Coal Corp.....	No. 8.....	193	33
6	Franklin.....	B.M. 67	Franklin County Coal Co.....	No. 5.....	193	33
6	Franklin....	B.M. 68	Western Coal and Mining Co.....	*No. 2.....	193	30
6	LaSalle.....	99	Chicago, Wilmington and Vermilion Coal Co.....	*No. 3.....	.....	.....
6	Macoupin...	67	Glenridge Coal Co.....	*North.....	.....	.....
6	Macoupin...	69	Carlinville Coal Co.....	*Carlinville.....	.....	.....
6	Macoupin...	185	Chicago, Wilmington and Franklin Coal Co.....	*Royal.....	.....	.....
6	Macoupin...	B.M. 31	Superior Coal Co.....	No. 1.....	123	34
6	Montgomery.	B.M. 45	Cosgrove Meehan Coal Co.....	*No. 5.....	123	35
6	Perry.....	B.M. 29	Peabody Coal Co.....	Majestic.....	123	35
6	Perry.....	B.M. 69	Security Coal and Mining Co.....	*Security.....	193	33
6	Perry.....	B.M. 61	Paradise Coal Co.....	*Paradise.....	193	33
6	Randolph....	208	Madison Coal Corp.....	*Crystal.....	.....	.....
6	Williamson..	60	Peabody Coal Co.....	*No. 3.....	.....	.....
6	Williamson..	62	Chicago, Wilmington and Franklin Coal Co.....	*"A".....	.....	.....
6	Williamson..	63	Big Muddy Coal and Iron Co.....	*No. 8.....	.....	.....
6	Williamson..	64	Hafer Washed Coal Co.....	*No. 3.....	.....	.....
6	Williamson..	65	Chicago Big Muddy Coal Co.....	*Big Muddy.....	.....	.....
6	Williamson..	150	Johnston City Washed Coal Co.....	*White Ash.....	.....	.....

a Technical Paper.
*Shipping mine abandoned or long idle.

TABLE 5.—(*Continued*).

Coal No.	County	Mine Index No.	Name of Company	Name or number of mine	Bureau of Mines	
					Bulletin	Page
6	Williamson..	156	Chicago, Wilmington and Franklin Coal Co.	*"B".		
6	Williamson..	157	Peabody Coal Co.	*No. 26.		
6	Williamson..	158.	Taylor Coal Co.	*No. 2.		
6	Williamson..	159	Taylor Coal Co.	*No. 1.		
6	Williamson..	160	Sincerity Coal Co.	*No. 2.		
6	Williamson..	165	T. G. Warden Coal Co.	*Sunnyside.		
6	Williamson..	166	Peabody Coal Co.	*No. 16.		
6	Williamson..	167	Madison Coal Corporation.	*No. 8.		
6	Williamson..	169	West Virginia Coal Co.	*West Virginia.		
6	Williamson..	B.M. 27	Pratt Bros (same as 61).	Jeffrey.	123	36
6	Williamson..	B.M. 28	Old Ben Coal Corp.	No. 20.	193	34
6	Williamson..	B.M. 69	Freeman Coal Co.	Pond Creek.	193	34

*Shipping mine abandoned or long idle.

TABLE 6.—ASH SOFTENING TEMPERATURE, DRY ASH CONTENT, AND DRY TOTAL SULFUR, PYRITIC SULFUR, AND ORGANIC SULFUR CONTENTS OF CERTAIN ILLINOIS COALS, ARRANGED BY BED, COUNTY, AND MINE.

County	Mine Index No.	Date	Laboratory	Laboratory No.	No. of tests	Ash softening temperature				Dry Ash	Sulfur, Dry		
						Minimum	Maximum	Individual	Average		Total	Pyritic	Organic
ROCK ISLAND (NO. 1) COAL													
Henry	232	1933	B. M.	90505	1			2020		11.3	6.2	3.3	2.7
				90506	1			2370		9.9	6.5	4.3	2.0
				90507	1			2320		12.0	7.5	5.1	2.0
				Average					2233				
Knox	407	1931	U. I.	16996	1			1950		16.7	6.2	4.0	2.0
				16997	1			1920		15.1	5.0	3.0	1.9
				Average					1935				
Mercer	19	1922[a]	B. M.	14606-11	6	2040	2180		2110	11.7	4.9		
LA SALLE AND COLCHESTER (No. 2) COAL													
Bureau	8	1922	B. M.	14584-86	3	1990	2130		2050	9.0	2.8		
	10	1922	B. M.	12467-68	2	1880	1930		1910	9.0	4.5		
Henry	619	1934	I. G. S.	C-839 (composite 3)					1938	11.6	4.1	2.4	1.6
Grundy	5	1922	B. M.	12447	1			1880		6.7	3.0		
	625	1934	I. G. S.	C-943	1			1963		10.1	5.6	4.7	.9
				C-944	1			1969		9.6	4.9	3.9	1.0
				C-945	1			2209		7.5	3.6	2.6	1.0
				C-946 (composite 3)					1966	9.0	4.5	3.6	.9

LaSalle	3	1931	U. I.	16963	1			1850		8.9	4.2	2.4	1.8
				16964	1			1865		9.5	4.7	3.1	1.5
				Average					1857				
	404	1931	U. I.	17094	1			2020		13.4	4.4	2.4	1.5
				16965	1			2035		15.6	4.6	3.2	1.4
				Average					2028				
McDonough		1922	B. M.	15117-18	2	2140	2240		2190	7.6	3.2		
		1922	B. M.	14972-73	2	1970	2120		2050	6.8	3.7		
McLean	100	1922	B. M.	14664-68	5	1960	2030		2000	10.8	3.3		
Will	359	1931	U. I.	16959	1			2080		6.83	1.7	.8	.9
				16960	1			1925		3.9	1.4	.8	.6
				16961	1			1905		6.0	2.2	1.6	.6
				16962	1			1960		6.4	2.2	1.7	.5
				Average					1967				
	359	1933	B. M.	90366	1			2070		5.3	1.7	1.0	.7
				90367	1			1940		5.7	1.6	.9	.7
				90369	1			2080		4.1	1.5	.9	.6
				90370	1			2200		4.2	1.3	.7	.6
				Average					2072				
Woodford	410	1931	U. I.	17002	1			2150		7.7	1.4	.76	.66
				17003	1			2155		6.3	1.6	.9	.7
				Average					2153				
	410	1933	B. M.	90282	1			2220		5.7	.7	.2	.5
				90283	1			2120		6.9	1.5	.9	.6
				90284	1			2250		6.1	.8	.2	.6
				Average					2163				

a Bureau of Mines data of 1922 from: Selvig, W. A., and Fieldner, A. C., Fusibility of ash from coals in the United States: United States Bureau of Mines Bull. 209, 1922.

TABLE 6.—ASH SOFTENING TEMPERATURE, DRY ASH CONTENT, AND SULFUR CONTENT OF COALS—*Continued*

County	Mine Index No.	Date	Laboratory	Laboratory No.	No. of tests	Ash softening temperature				Dry Ash	Sulfur, Dry		
						Minimum	Maximum	Individual	Average		Total	Pyritic	Organic
HARRISBURG (No. 5) (NO. 4?) COAL													
Gallatin (North of Eagle Valley)	426	1931	U. I.	17120	1			1890		12.3	4.6	2.9	1.5
				17121	1			1930		11.2	4.3	2.5	1.7
				Average					1910				
Gallatin (Eagle Valley)	230(?)	1922	B. M.	23425	1			2010		8.6	2.9		
Saline	43	1922	B. M.	12795, 14110-13, 14138-39	7	1960	2210		2090	7.9	2.2		
	45	1934	I. G. S.	C-952	1			2071		9.8	2.5	1.6	.8
				C-953	1			2099		8.2	2.2	1.5	.7
				C-954	1			2078		9.0	2.4	1.6	.7
				C-955 (composite 3)					2065	9.1	2.4	1.6	.8
	125	1931	U. I.	17116	1			2070		7.5	1.9	1.2	.7
				17117	1			1965		8.1	2.7	1.8	.8
				Average					2017				
Saline	127	1931	U. I.	17118	1			1995		9.5	2.7	1.8	.8
				17119	1			1945		8.0	2.7	1.6	1.1
				Average					1970				
		1933	B. M.	90719	1			2080		9.1	2.7	1.8	.8
				90720	1			2190		8.0	1.7	1.1	.6
				90721	1			2120		8.1	2.2	1.3	.8
				Average					2130				

	608	1933	B. M.	91426	1			2030		9.7	3.6	2.5	1.0
				91427	1			2070		10.0	3.3	2.2	1.0
				91428	1			2150		10.1	2.6	1.5	1.0
				Average					2083				
	BM6	1922	B. M.	12516-17	2	2020	2020		2020	7.9	2.9		
	BM8	1922	B. M.	28449	1			2060		10.3	4.1		
	BM70	1922	B. M.	33101-03	3	1990	2100		2040	9.3	2.8		
	BM71	1922	B. M.	33081-83	3	2010	2040		2020	10.1	3.7		
	BM72	1927	B. M.	31381	1			2120		8.7	2.3		
				31382	1			2170		8.3	2.2		
				Average					2145				

SPRINGFIELD (GRAPE CREEK, LA SALLE SECOND VEIN) (NO. 5) COAL
(Eastern Illinois)

Edgar	614	1934	I. G. S.	C-670	1			1996		11.7	3.9		
				C-671	1			2008		11.0	3.0		
				C-672	1			1984		11.1	3.8		
				Average 3					1996				
				C-682 (composite 3)					1986	11.2	3.5	2.3	1.2
Livingston	600	1934	B. M.	90312	1			2070		17.3	3.4	2.2	1.1
				90313	1			1990		17.2	4.6	3.0	1.5
				90314	1			2040		15.5	3.1	1.9	1.0
				Average					2033				
Vermilion	92	1922	B. M.	13467-71	5	2070	2160		2100	12.8	2.6		
	93	1922	B. M.	13436-41									
				13441-48	12	1930	2160		2070	9.8	2.5		
	95	1922	B. M.	13450-53	4	1990	2170		2090	10.2	3.9		
	401	1931	U. I.	16947	1			2165		10.0	2.0	1.1	.9
				16948	1			2235		11.4	1.3	.7	.5
				Average					2200				

TABLE 6.—ASH SOFTENING TEMPERATURE, DRY ASH CONTENT, AND SULFUR CONTENT OF COALS—*Continued*

County	Mine Index No.	Date	Laboratory	Laboratory No.	No. of tests	Ash softening temperature				Dry Ash	Sulfur, Dry		
						Minimum	Maximum	Individual	Average		Total	Pyritic	Organic
Vermilion (continued)	.....	1922	B. M.	12445	1	.....	.....	1940	.....	11.9	3.7	.....	.....
	401	1933	B. M.	90658	1	.....	.....	2180	.....	8.3	1.5	.9	.5
				90659	1	.....	.....	2160	.....	11.4	2.2	1.2	.9
				90660	1	.....	.....	2160	.....	11.5	1.6	1.1	.5
				Average	.....	.....	.....	.....	2167	.....	.....	.....	.....
(Western and Central Illinois)													
Fulton	31	1922	B. M.	14554-57, 14559	5	1890	1970	.....	1930	12.9	3.6	.....	.....
	114	1933	B. M.	A88220	1	.....	.....	2060	.....	13.7	2.7	.....	.....
				A88221	1	.....	.....	2060	.....	14.6	3.0	.....	.....
				A88222	1	.....	.....	1990	.....	16.2	3.3	.....	.....
				Average	.....	.....	.....	.....	2037	.....	.....	.....	.....
	328	1922	B. M.	12479-80	2	1890	1960	.....	1930	13.21	3.6	.....	.....
	411	1931	U. I.	17005	1	.....	.....	2025	.....	14.5	3.6	2.0	1.6
				17006	1	.....	.....	2115	.....	15.3	3.2	1.6	1.6
				Average	.....	.....	.....	.....	2070	.....	.....	.....	.....
Menard	34	1922	B. M.	12506-07	2	1890	1970	.....	1930	11.5	3.4	.....	.....
	531	1933	B. M.	A86593	1	.....	.....	1990	.....	11.5	3.6	.....	.....
				A86594	1	.....	.....	2030	.....	13.1	3.3	.....	.....
				Average	.....	.....	.....	.....	2010	.....	.....	.....	.....

			I. G. S.	C-149	1			1987		11.2	3.3	1.7	1.6
				C-150	1			2057		12.9	2.9	1.3	1.6
				C-151	1			2057		14.6	2.9	1.2	1.7
				Average					2034				
				C-152 (composite 3)					2025	12.9	3.0	1.4	1.6
Peoria	348	1922	B. M.	22982-85	4	1910	2030		1950	13.7	3.4		
		1933	B. M.	A88224	1			1990		14.7	3.2		
				A88225	1			2080		11.8	2.4		
				A88226	1			2090		16.6	2.9		
				Average					2053				
	408	1931	U. I.	16998	1			1890		12.4	4.0	2.2	1.8
				16999	1			1940		12.9	3.7	2.0	1.7
				Average					1915				
	601	1933	B. M.	A90424	1			2040		10.7	3.6	1.5	2.1
				A90425	1			2070		14.5	2.9	1.1	1.8
				A90519	1			2270		8.5	2.6	.5	2.1
				Average					2127				
Sangamon	412	1931	U. I.	17050	1			1850		13.4	4.9	2.7	2.1
				17051	1			1865		12.6	4.8	2.7	2.1
				Average					1857				
	607	1933	B. M.	A90785	1			1940		10.7	4.7	2.3	2.4
				A90786	1			1960		11.9	4.3	2.2	1.6
				A90787	1			1960		11.1	4.2	1.8	2.4
				Average					1953				
	616	1934	I. G. S.	C-724	1			1965		13.1	4.9		
				C-730	1			1981		12.4	4.5		
				C-731	1			1939		14.1	5.4		
				Average					1962				
				C-732 (composite 730 and 731)						13.3	5.0	2.6	2.4

TABLE 6.—ASH SOFTENING TEMPERATURE, DRY ASH CONTENT, AND SULFUR CONTENT OF COALS—*Continued*

County	Mine Index No.	Date	Laboratory	Laboratory No.	No. of tests	Ash softening temperature				Dry Ash	Sulfur, Dry		
						Minimum	Maximum	Individual	Average		Total	Pyritic	Organic
Sangamon (continued)	617	1934	I. G. S.	C-725	1			2006		11.8	3.9		
				C-726	1			1997		13.4	4.0		
				C-727	1			1998		12.0	3.9		
				C-728	1			1950		13.7	5.2		
				C-729	1			2018		11.5	4.1		
				Average					1993				
				C-734 (composite 726 and 728)						13.3	4.6	2.3	2.3
				C-733 (composite 727 and 729)						11.8	4.1	1.9	2.1
	618	1934	I. G. S.	C-745	1			1931		12.9	5.1		
				C-746	1			1938		12.6	5.8		
				C-744	1			1945		11.7	4.5		
				Average					1938				
				C-747 (composite 3)					1927	12.1	4.8	2.6	2.1
	624	1934	I. G. S.	C-934	1			2014		14.5	3.9	1.9	1.9
				C-935	1			1975		12.6	3.6	1.5	2.0
				C-936	1			1955		11.8	3.8	1.8	2.1
				C-937 (composite 3)					1988	13.2	3.8	1.8	2.0
Tazewell	409	1931	U. I.	17000	1			2000		11.0	3.6	1.7	1.9
				17001	1			2040		11.0	3.0	1.3	1.7
				Average					2020				

HERRIN (NO. 6) COAL (NORTHERN AND WESTERN ILLINOIS)

Bureau	10	1931	U. I.	16966	1			1900		18.9	6.8	5.3	1.4
Grundy	530	1933	B. M.	86302	1			1970		14.2	5.4		
				86303	1			2140		11.2	4.0		
				Average					2055				
			I. G. S.	C-146				2035		13.5	5.2	3.2	1.9
				C-147				2170		11.0	3.8	1.9	1.8
				Average					2002				
				C-148 (composite 2)					1938	12.2	4.5	2.5	1.9
Fulton	621	1934	I. G. S.	C-914	1			2424		9.6	3.1	1.6	1.5
				C-915	1			2069		11.8	4.1	2.4	1.6
				Average					2247				
				C-916 (composite 2)					2092	10.7	3.6	2.0	1.6
Henry	406	1931	U. I.	16967	1			2120		17.6	3.6	2.1	1.5
				16993	1			1905		18.2	5.9	4.3	1.5
				Average					2013				
	527	1933	B. M.	A86458	1			2060		16.8	6.3		
			B. M.	A86459	1			2100		13.0	3.5		
				Average					2080				
			I. G. S.	C-138	1			2084		13.4	3.4	2.1	1.3
				C-139	1			2035		17.0	5.8	4.6	1.2
				Average					2059				
				C-145 (composite 2)					2046	15.2	4.7	3.4	1.2
Knox	526	1933	B. M.	A86455	1			2070		12.0	4.2		
				A86456	1			2070		13.4	3.4		
				Average					2070				

TABLE 6.—ASH SOFTENING TEMPERATURE, DRY ASH CONTENT, AND SULFUR CONTENT OF COALS—*Continued*

County	Mine Index No.	Date	Laboratory	Laboratory No.	No. of tests	Ash softening temperature				Dry Ash	Sulfur, Dry		
						Minimum	Maximum	Individual	Average		Total	Pyritic	Organic
Knox (continued)			I. G. S.	C-135	1			2082		12.2	3.8	2.4	1.4
				C-136	1			2030		13.9	3.6	2.0	1.5
				Average					2056				
				C-137 (composite 2)					2019	13.1	3.6	2.2	1.4
LaSalle (Streator District)	620	1934	I. G. S.	C-869	1			2097		11.1	4.2	2.4	1.7
				C-870	1			2006		10.8	4.2	2.6	1.5
				C-871	1			2144		10.9	4.0	2.5	1.4
				Average					2082				
				C-872 (composite 3)					2128	10.9	4.2	2.6	1.5
Stark	528	1933	B. M.	A86462	1			2010		13.7	4.8		
				A86463	1			2070		11.2	4.6		
				Average					2040				
			I. G. S.	C-140	1			2066		14.0	4.5	2.8	1.7
				C-141	1			2057		10.6	4.1	2.3	1.7
				Average					2062				
				C-142 (composite 2)					2053	12.2	4.3	2.5	1.7
	529	1933	B. M.	A-86461	1			2050		12.7	4.8		
		1933	I. G. S.	C-144	1			2026		13.1	4.2	2.7	1.4
				Average					2038				

HERRIN (NO. 6) COAL (SOUTHERN AND SOUTHWESTERN ILLINOIS)

Christian	221	1922	B. M.	25748-49, 26336-37	4	1920	2090		2000	11.4	4.6		
Franklin	50	1922	B. M.	26492-96	5	2130	2260		2210	9.3	1.2		
	57	1922	B. M.	20080-82, 20723-25	6	2170	2650		2420	10.2	.76		
	134	1933	I. G. S.	C-492	1			2176		7.5	1.4	.7	.7
				C-493	1			2052		9.8	2.4	1.7	.7
				C-494	1			2381		7.4	1.0	.4	.6
				C-495	1			2231		9.0	1.2	.6	.5
				Average					2210				
	428	1931	U. I.	17136	1			2225		10.9	1.1	.5	.6
				17137				2065		8.4	1.6	.9	.7
				Average					2145				
	BM13	1922	B. M.	23473-77	5	2080	2300		2200	9.5	1.2		
	BM14	1922	B. M.	22686-90	5	2240	2440		2290	9.20	1.0		
	BM15	1922	B. M.	23442-43	2	2380	2440		2410	9.0	.9		
	BM16	1931	U. I.	17108	1			2190		10.3	1.1	.7	.4
				17109	1			2540		15.5	.6	.1	.5
				Average					2365				
	BM19	1922	B. M.	22915-17-19-20	5	2140	2520		2260	8.8	1.1		
	BM21	1922	B. M.	29741-46	6	2220	2530		2380	9.5	.8		
	BM64	1922	B. M.	30892-95	4	2080	2390		2270	8.7	.9		
Franklin	BM65	1922	B. M.	30882-85	4	2030	2150		2080	8.7	1.5		
	BM66	1922	B. M.	30887-89	3	2010	2170		2070	7.9	1.5		
	BM67	1931	U. I.	17110				2335		8.2	.9	.3	.5
				17111				2160		8.7	1.0	.6	.4
				Average					2247				
		1922	B. M.	30867-70	4	2050	2320		2210	8.4	.8		
	BM68	1922	B. M.	30877-80	4	1920	2000		1950	11.3	3.6		

TABLE 6.—ASH SOFTENING TEMPERATURE, DRY ASH CONTENT, AND SULFUR CONTENT OF COALS—*Continued*

County	Mine Index No.	Date	Laboratory	Laboratory No.	No. of tests	Ash softening temperature				Dry Ash	Sulfur, Dry		
						Minimum	Maximum	Individual	Average		Total	Pyritic	Organic
Gallatin (Eagle Valley)	255	1922	B. M.	23426	1			2060		9.8	3.2		
Jackson	418	1931	U. I.	17062	1			1980		13.5	2.9	2.0	.9
				17063	1			2190		10.7	1.3	.5	.8
				Average					2085				
	419	1931	U. I.	17106	1			1975		14.7	3.7	2.4	1.2
				17107	1			1985		13.3	3.8	2.6	1.1
				Average					1980				
		1933	B. M.	A90723	1			2180		11.5	2.5	1.5	.9
				A90724	1			2190		10.6	2.9	1.1	1.7
				Average					2185				
	419	1933	B. M.	A90725	1			2180		14.3	3.5	1.8	1.6
Jefferson	BM63	1925	B. M.	A17498	1			2220		9.4	1.5		
				A17499	1			2340		9.7	1.4		
				Average					2280				
Macoupin	188	1931	U. I.	17054	1			1930		13.7	5.2	2.7	2.4
				17055	1			1946		13.2	4.6	2.2	2.4
				Average					1937				
	534	1931	U. I.	17052	1			1905		12.6	5.0	2.4	2.6
				17053	1			1930		14.3	5.0	2.5	2.5
				Average					1917				

	.....	1933	B. M.	A87363.....	1	.....	.....	2020	.....	13.5	4.7	.....	.....
				A87364.....	1	.....	.....	2000	.....	10.4	5.0	.....	.....
				A87365.....	1	.....	.....	1990	.....	11.8	5.4	.....	.....
				Average.....	.....	.....	.....	.....	2003	.....	.....	.....	.....
	BM31	1922	B. M.	18545-46.....	2	2140	2160	.....	2150	11.4	4.6	.....	.....
Madison.....	70	1931	U. I.	17056.....	1	.....	.....	1915	.....	16.5	5.7	3.3	2.4
				17057.....	1	.....	.....	1920	.....	17.4	5.1	2.8	2.3
				Average.....	.....	.....	.....	.....	1918	.....	.....	.....	.....
	BM40	1922	B. M.	10956-58.....	3	1970	2020	.....	1990	10.7	4.0	.....	.....
Montgomery.....	76	1922	B. M.	21903-05, 21901, 11352-53....	6	2010	2170	.....	2060	13.5	4.5	.....	.....
	194	1933	B. M.	A87367.....	1	.....	.....	2020	.....	11.3	4.5	.....	.....
				A87368.....	1	.....	.....	2030	.....	12.5	4.6	.....	.....
				A87369.....	1	.....	.....	2030	.....	14.4	4.6	.....	.....
				Average.....	.....	.....	.....	.....	2027	.....	.....	.....	.....
Perry (West).....	417	1931	U. I.	17060.....	1	.....	.....	2050	.....	15.6	4.0	2.4	1.5
				17061.....	1	.....	.....	1975	.....	13.4	4.3	2.4	1.8
				Average.....	.....	.....	.....	.....	2013	.....	.....	.....	.....
	C-623	1934	I. G. S.	C-928.....	1	.....	.....	2075	.....	12.1	4.1	2.4	1.7
				C-929.....	1	.....	.....	2102	.....	11.7	3.7	2.1	1.6
				C-932 (composite 2).....	.....	.....	.....	.....	2144	12.0	3.9	2.2	1.7
				C-930.....	1	.....	.....	2137	.....	10.8	3.9	2.0	1.9
				C-931.....	1	.....	.....	2146	.....	10.9	3.8	1.9	1.9
				C-933 (composite 2).....	.....	.....	.....	.....	2123	11.0	3.8	1.9	1.8
	C-622	1934	I. G. S.	C-922.....	1	.....	.....	2113	.....	13.3	3.8	1.9	1.8
				C-924.....	1	.....	.....	2070	.....	12.0	4.1	2.2	1.9
				C-927 (composite 2).....	.....	.....	.....	.....	2126	12.6	4.0	2.1	1.9
				C-923.....	1	.....	.....	2043	.....	12.6	4.1	2.2	1.9
				C-925.....	1	.....	.....	2022	.....	10.6	4.2	2.2	1.9
				C-926 (composite 2).....	.....	.....	.....	.....	2036	11.6	4.2	2.2	1.9

TABLE 6.—ASH SOFTENING TEMPERATURE, DRY ASH CONTENT, AND SULFUR CONTENT OF COALS—*Concluded*

County	Mine Index No.	Date	Laboratory	Laboratory No.	No. of tests	Ash softening temperature				Dry Ash	Sulfur, Dry		
						Minimum	Maximum	Individual	Average		Total	Pyritic	Organic
Perry (West) (continued)	BM23	1922	B. M.	31033-36	4	2050	2130	.....	2090	10.5	1.7	.....	.....
				14175-77-79-81	5	1920	2170	.....	2060	11.5	3.7	.....	.....
Perry (East)	54	1922	B. M.	13578-83, 13585-90, 26462-67	18	2330	2610	.....	2490	11.2	1.0	.....	.....
Randolph	613	1934	I. G. S.	C-639	1	.....	.....	2010	.....	14.9	4.9	.....	.....
				C-640	1	.....	.....	2157	.....	13.6	3.8	.....	.....
				C-641	1	.....	.....	2080	.....	13.3	4.1	.....	.....
				Average	.....	.....	.....	.....	2082	.....	.....	.....	.....
				C-647 (composite 3)	.....	.....	.....	.....	2084	13.9	4.3	2.4	1.9
St. Clair	81	1922	B. M.	12505,09	2	1960	2030	.....	2000	12.7	5.0	.....	.....
	82	1931	U. I.	17058	1	.....	.....	1940	.....	14.0	5.3	2.6	2.7
				17059	1	.....	.....	1922	.....	15.7	5.6	3.1	2.4
				Average	.....	.....	.....	.....	1931	.....	.....	.....	.....
	626	1934	I. G. S.	C-947	1	.....	.....	2019	.....	10.1	4.3	1.9	2.4
				C-948	1	.....	.....	2046	.....	12.7	4.3	2.1	2.1
				C-949	1	.....	.....	2088	.....	13.6	4.1	2.0	2.2
				C-950	1	.....	.....	2064	.....	13.5	4.7	2.4	2.2
				C-951 (composite 3)	.....	.....	.....	.....	2069	12.6	4.3	2.1	2.3
Washington	226	1933	I. G. S.	C-367	1	.....	.....	2003	.....	14.6	5.1	2.7	2.4
				C-368	1	.....	.....	2039	.....	13.7	4.7	2.4	2.3

				C-369	1			2026		14.8	4.5	2.6	1.9
				Average					2023				
Williamson	154	1931	U. I.	17112	1			2055		8.6	1.6	1.0	.5
				17113				2055		9.5	1.2	.7	.5
				Average					2055				
	423	1931	U. I.	17114	1			2180		12.5	1.6	1.1	.4
				17115	1			2150		12.6	1.7	1.2	.5
				Average					2165				
	BM28	1922	B. M.	28810-14	5	2230	2390		2300	8.9	1.1		
				30863-65	3	1950	2280		2140	9.7	1.4		
	BM69	1922	B. M.	30872-75	4	2010	2430		2220	9.4	1.0		
DANVILLE (NO. 7) COAL													
Bureau	532	1933	B. M.	A86596	1			2160		15.4	3.4		
				A86597	1			2040		18.2	4.7		
				Average					2100				
		1933	I. G. S.	C-153	1			2061		17.1	3.9	2.6	1.3
				C-154	1			2143		15.1	3.2	1.5	1.7
				Average					2102				
				C-155 (composite 2)					2106	16.0	3.5	2.0	1.5
Vermilion	94	1922	B. M.	13484,86-89,91-96	11	1940	2180		2040	9.7	3.3		
	97	1922	B. M.	13548-50,52-54	6	1950	2150		2050	11.8	2.8		
	400	1931	U. I.	16945	1			2065		11.0	3.0	1.4	1.6
				16946	1			1880		13.7	5.2	3.1	2.0
				Average					1973				
	603	1933	B. M.	A90627	1			2020		10.5	3.5	1.7	1.7
				A90628	1			2040		12.1	3.3	1.6	1.6
				A90629	1			2030		10.5	3.0	1.3	1.7
				Average					2030				

APPENDIX II

NOMOGRAPHS
COAL CLASSIFICATION, PRICE, AND ECONOMY

At the suggestion of the author, Mr. Albert Jorgensen[1] has prepared for the State Geological Survey three nomographic charts as a substitute for mathematical procedure in coal classifications, Plates I, II, III.[2] The charts are designed to simplify the determination of moist, or dry, mineral-matter-free B.t.u. and volatile matter (or fixed carbon) values, which form the basis of the classification proposed by Parr[3] or that proposed by the American Society for Testing Materials for the classification of coal by rank (Chapter II).

A sharp point of any kind and a straight edge eight inches long are all that is necessary to use the charts.

CHART I.—COAL CLASSIFICATION NOMOGRAPH

The first chart includes the entire range of coal substances from peat to anthracite. Given "as received" or "moisture-free" forms of the proximate analysis, it is possible to determine quickly and easily from this chart the dry, mineral-matter-free (unit coal) B.t.u. or volatile matter values or the moist, mineral-matter-free values from the "as received" form of analysis.

To determine mineral-matter-free values.—The heat value of a pound of the hypothetical dry mineral-matter-free coal (unit coal) is derived from the "as received" proximate analysis by the following formula:

(1) Dry, mineral-matter-free (unit coal) B.t.u. =

$$\frac{\text{Determined B.t.u.} - 5000 \times \text{Sulfur}}{1.00 - (\text{Moisture} + 1.08 \times \text{Ash} + 0.55 \times \text{Sulfur})}$$

Or from the "dry" form of analysis by the formula:

(2) Dry, mineral-matter-free (unit coal) B.t.u. =

$$\frac{\text{Dry B.t.u.} - 5000 \times \text{Sulfur}}{1.00 - (1.08 \times \text{Ash} + 0.55 \times \text{Sulfur})}$$

The heat value of a pound of the hypothetical moist, mineral-matter-free coal is derived from the "as received" form of the proximate analysis by the following formula:

(3) Moist, mineral-matter-free B.t.u. =

$$\frac{\text{Determined B.t.u.} - 5000 \times \text{Sulfur}}{1.00 - (1.08 \times \text{Ash} + 0.55 \times \text{Sulfur})}$$

These formulae are quickly and easily solved by the use of the nomograph Chart I where approximate results are sufficient. The procedure is simple, the scales being used in numbered order, first Roman numerals and then Arabic, thus (letters refer to operations as indicated in key on chart):

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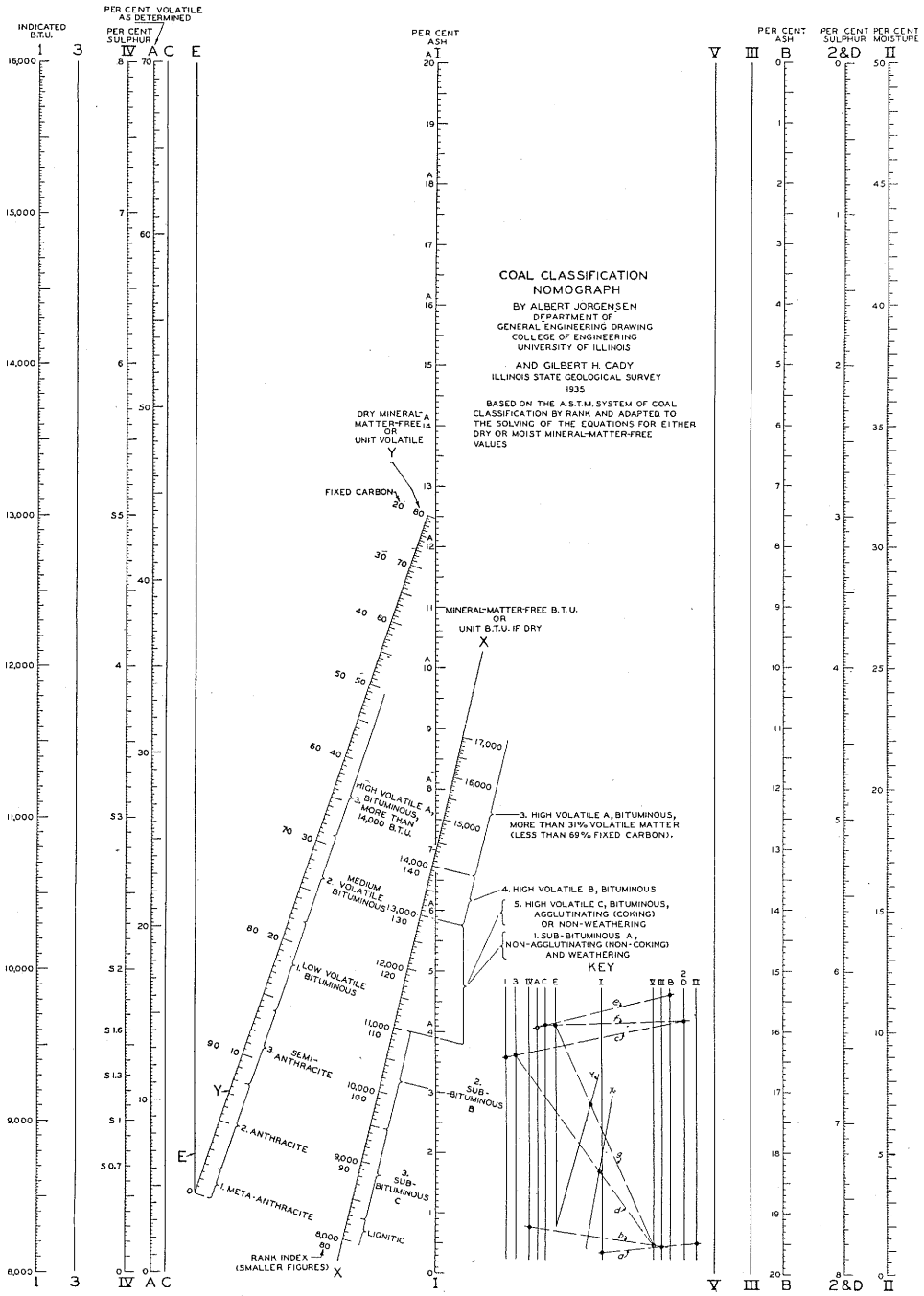
[1]Associate, Department General Engineering Drawing, University of Illinois.

[2]These plates are reproductions of larger more convenient charts (12" x 13") available from the State Geological Survey at 15 cents each.

[3]Parr, S. W., The classification of coal: University of Illinois Eng. Exp. Sta. Bull. 180, 1929.


COAL CLASSIFICATION NOMOGRAPH
BY ALBERT JORGENSEN
DEPARTMENT OF GENERAL ENGINEERING DRAWING
COLLEGE OF ENGINEERING
UNIVERSITY OF ILLINOIS
AND GILBERT H. CADY
ILLINOIS STATE GEOLOGICAL SURVEY
1935
BASED ON THE A.S.T.M. SYSTEM OF COAL CLASSIFICATION BY RANK AND ADAPTED TO THE SOLVING OF THE EQUATIONS FOR EITHER DRY OR MOIST MINERAL-MATTER-FREE VALUES
INDICATED B.T.U.
PER CENT VOLATILE AS DETERMINED
PER CENT SULPHUR
PER CENT ASH
PER CENT ASH
PER CENT SULPHUR
PER CENT MOISTURE
DRY MINERAL-MATTER-FREE OR UNIT VOLATILE
FIXED CARBON
MINERAL-MATTER-FREE B.T.U. OR UNIT B.T.U. IF DRY
RANK INDEX (SMALLER FIGURES)
3. HIGH VOLATILE A, BITUMINOUS, MORE THAN 31% VOLATILE MATTER (LESS THAN 69% FIXED CARBON).
4. HIGH VOLATILE B, BITUMINOUS
5. HIGH VOLATILE C, BITUMINOUS, AGGLUTINATING (COKING) OR NON-WEATHERING
1. SUB-BITUMINOUS A, NON-AGGLUTINATING (NON-COKING) AND WEATHERING
KEY
HIGH VOLATILE A, BITUMINOUS, MORE THAN 14,000 B.T.U.
MEDIUM VOLATILE BITUMINOUS
LOW VOLATILE BITUMINOUS
SEMI-ANTHRACITE
ANTHRACITE
META-ANTHRACITE
SUB-BITUMINOUS C
SUB-BITUMINOUS B
LIGNITIC

(a) Place straight edge from point on scale I (ash) to point on scale II (moisture) and check intersection with scale III. For formulae No. 2 and No. 3 the moisture value on scale II is taken at 0.

(b) Place straight edge from intersection point on scale III to point on scale IV (sulfur) and check intersection with scale V.

Operations (a) and (b) solve the denominator portion of the formula (1.00— (Moisture+1.08 Ash+0.55 Sulfur).

(c) Place straight edge from point on scale 1 (B.t.u.) to point on scale 2 (sulfur) and check intersection with scale 3. (B.t.u. — 5000 Sulfur).

(d) Place straight edge from intersection on scale V to intersection on scale 3 and note intersection on scale X, which gives the mineral-matter-free B.t.u. value, moist or dry as the case may be. This step divides the numerator by the denominator.

To determine the dry mineral-matter-free (unit coal) and moist mineral-matter-free Volatile Matter.—The formula used in determining dry, mineral-matter-free (unit coal) volatile matter from the "as received" analysis is as follows:

(4) Dry, mineral-matter-free (unit coal) volatile matter =

$$\frac{\text{Volatile Matter} - (0.08\ \text{Ash} + 0.4\ \text{Sulfur})}{1.00 - (\text{Moisture} + 1.08\ \text{Ash} + 0.55\ \text{Sulfur})}$$

The determination of the dry, mineral-matter-free (unit coal) volatile matter from the moisture-free or "dry" form of analyses is as follows:

(5) Dry, mineral-matter-free (unit coal) volatile matter =

$$\frac{\text{Volatile Matter} - (0.08\ \text{Ash} + 0.4\ \text{Sulfur})}{1.00 - (1.08 + 0.55\ \text{Sulfur})}$$

The formula used in determining the moist, mineral-matter-free volatile matter from the "as received" form of analysis is No. 5, using "as received" values instead of "dry" values. Moisture is omitted.

With the nomograph the procedure is as follows (letters refer to operations as indicated in key on chart):

(a) and (b) as in determining unit B.t.u.

(e) Lay straight edge from point on scale A (volatile matter) to point on scale B (ash) and note intersection with scale C (Volatile Matter — 0.08 Ash)

(f) Lay straight edge from point on scale C to point on scale D (sulfur) and note intersection with scale E (Volatile Matter — 0.08 Ash + 0.4 Sulfur)

(g) Lay straight edge from intersection on scale E to intersection on scale V and note intersection with scale Y, which gives the mineral-matter-free volatile matter, dry or moist, as the case may be. This step divides the numerator by the denominator.

It will be noted that the denominators of the equations for mineral-matter-free B.t.u. and mineral-matter-free volatile matter are the same so that steps (a) and (b) need be performed only once for both determinations.

To determine "as received" B.t.u. and volatile matter values from mineral-matter-free values.—The procedure for the determination of the "as received" B.t.u. value from the mineral-matter-free heat values with the amount of ash, sulfur, and moisture known is as follows (letters refer to operations as indicated in key on chart):

For "as received" B.t.u. value:

(a) and (b) as in the two procedures described above.

(d) Place straight edge from determined point on scale V across mineral-matter-free B.t.u. value on scale X and note intersection with scale 3.

(c) Place straight edge from intersection point on scale 3 across value on scale 2 and note intersection with scale 1, which gives the "as received" B.t.u. value and solves the following equation:

As received B.t.u. value = Mineral-matter-free B.t.u. × (1.00 − [Moisture + 1.08 × Ash + 0.55 × Sulfur]) + 5000 × Sulfur

If the moist, mineral-matter-free value is used, moisture is regarded as 0 (scale II) in manipulating the chart. If sulfur-free "Heat Index" is desired, the sulfur value (scale 2) in operation (c) is read at zero. This gives the "as received" heat value without the heat of the sulfur.

If the "as received" volatile content is desired, proceed as follows:

(a) and (b) as previously described.

(g) Place straight edge from intersection point on scale V across known point on scale Y (mineral-matter-free volatile matter) and note intersection with scale E.

(f) Place straight edge from intersection point on scale E to point on scale D (sulfur) and note intersection with scale C.

(e) Place straight edge from intersection point on scale C to point on scale B (ash) and note intersection with scale A, which gives the "as received" volatile matter and completes the solution of the following equation:

"As received" Volatile Matter = Mineral-matter-free Volatile Matter × (1.00 − [Moisture + 1.08 × Ash + 0.55 × Sulfur] + [0.08 × Ash + 0.4 × Sulfur])

Determinations derived from the moist, mineral-matter-free volatile matter value regard the moisture value as 0 (scale II).

For greater accuracy in determination of mineral-matter-free values from "as received" or "dry" values, or determination of "as received" or "dry" values from mineral-matter-free values Chart II is recommended, particularly for the high volatile groups of coals, such as are mined in Illinois.

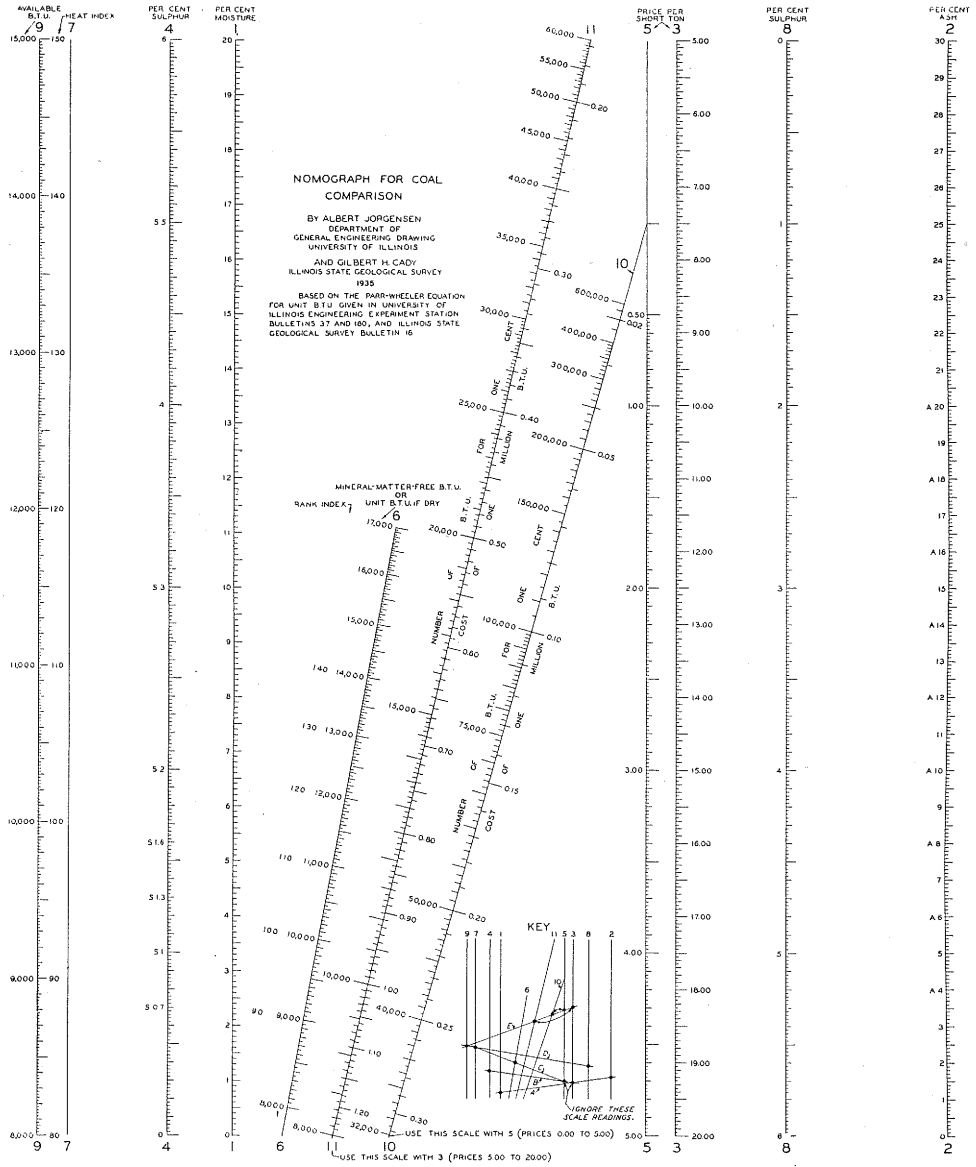

NOMOGRAPH FOR COAL COMPARISON
BY ALBERT JORGENSEN
DEPARTMENT OF GENERAL ENGINEERING DRAWING
UNIVERSITY OF ILLINOIS
AND GILBERT H. CADY
ILLINOIS STATE GEOLOGICAL SURVEY
1935
BASED ON THE PARR-WHEELER EQUATION FOR UNIT B.T.U. GIVEN IN UNIVERSITY OF ILLINOIS ENGINEERING EXPERIMENT STATION BULLETINS 37 AND 160, AND ILLINOIS STATE GEOLOGICAL SURVEY BULLETIN 16
AVAILABLE B.T.U. HEAT INDEX
PER CENT SULPHUR
PER CENT MOISTURE
MINERAL-MATTER-FREE B.T.U. OR UNIT B.T.U. IF DRY
RANK INDEX
PRICE PER SHORT TON
PER CENT SULPHUR
PER CENT ASH
NUMBER OF CENTS PER ONE B.T.U.
NUMBER OF CENTS FOR ONE MILLION B.T.U.
KEY
IGNORE THESE SCALE READINGS.
USE THIS SCALE WITH 5 (PRICES 0.00 TO 5.00)
USE THIS SCALE WITH 3 (PRICES 5.00 TO 20.00)

CHART II.—NOMOGRAPH FOR COAL COMPARISON

Chart II, which may be put to a number of uses, is designed primarily to be used with mineral-matter-free values, either moist or dry, as a basis of comparison of the economy of different coals.

Comparison of heat value.—Chart II is used like Chart I in determining calorific value on any basis from that on any other basis. The scale of this chart is larger than that of Chart I as it represents a smaller range of coals and therefore permits greater accuracy in the determination of values. The method of use is similar to that employed in using Chart I.

The procedure is as follows if determination of "as received" B.t.u. value from the mineral-matter-free value is desired (letters refer to operations as indicated in key on chart):

(A) Place a straight edge across scales 1 and 2 and note its intersection with scale 3. (In case moist, mineral-matter-free B.t.u. value is the original calorific value used, the moisture value is regarded as zero on scale 1). Ignore reading on scale 3.

(B) Across scales 4 and 3 note intersection with scale 5. Ignore reading on scale 5.

(C) Across scales 5 and 6 note intersection with scale 7.

(D) Across scales 7 and 8 note intersection with scale 9, which gives the "as received" B.t.u. (The sulfur-free "Heat Index" ["as received" B.t.u. minus the heat of the sulfur] is determined by regarding sulfur as zero).

The "dry" ("moisture-free") value can be determined only from the dry, mineral-matter-free (unit coal) value and "dry" ash and sulfur values must be used, the moisture scale (1) being read at zero.

The chart is limited to coals within certain ranges of mineral-matter-free values, but scale 9, being uniform can readily be extended at either end.

Comparison of prices and costs.—Chart II can also be used for making price comparisons directly. This can be done on the "as received" basis, "dry" basis, or mineral-matter-free basis (moist or dry), by reference to a standard scale showing the cost of one million B.t.u., or showing the number of B.t.u. per 1 cent of cost. Knowing the number of B.t.u. procurable for 1 cent, the relative value of the coal expressed in price per ton may be calculated, or it may be determined mechanically by the use of Chart II. For example, if it is desired to know the relative value of a coal priced at $5.00 and carrying 12,500 B.t.u. per pound as compared with another priced at $5.50 and carrying 12,800 B.t.u., the answer is obtained as follows (letters refer to operations as indicated in key on chart):

(E_1) A straight edge placed from 12,500 (scale 9) to $5.00 (scale 5) intersects scale 10 at the number of B.t.u. purchasable for 1 cent. The cost of one million B.t.u. at the price per ton stipulated—in this instance, 50,000 B.t.u. for 1 cent—is 20 cents.

(E_2) Similarly a straight edge from 12,800 (scale 9) to $5.50 (scale 3) intersects scale 11 at 46,500 B.t.u. for 1 cent, which is 21½ cents for one million B.t.u.

(E_3) A straight edge from 12,800 through the point on scale 11 representing 50,000 B.t.u. for one cent will indicate on scale 3 that the higher B.t.u. coal should be priced at $5.12 rather than $5.50 to be equal in value to the $5.00 coal.

In comparing the value of coal for which standard moist, mineral-matter-free (rank index) values are given the only other specific information necessary is their ash and sulfur content, since these provide the means for determining the "as received" B.t.u. value as explained in the preceding section entitled "Comparison of heat values". The mineral-matter factor necessary for the determination of the "as received" value from the mineral-matter-free value is the point on scale 5 determined by operation 2 in that section.

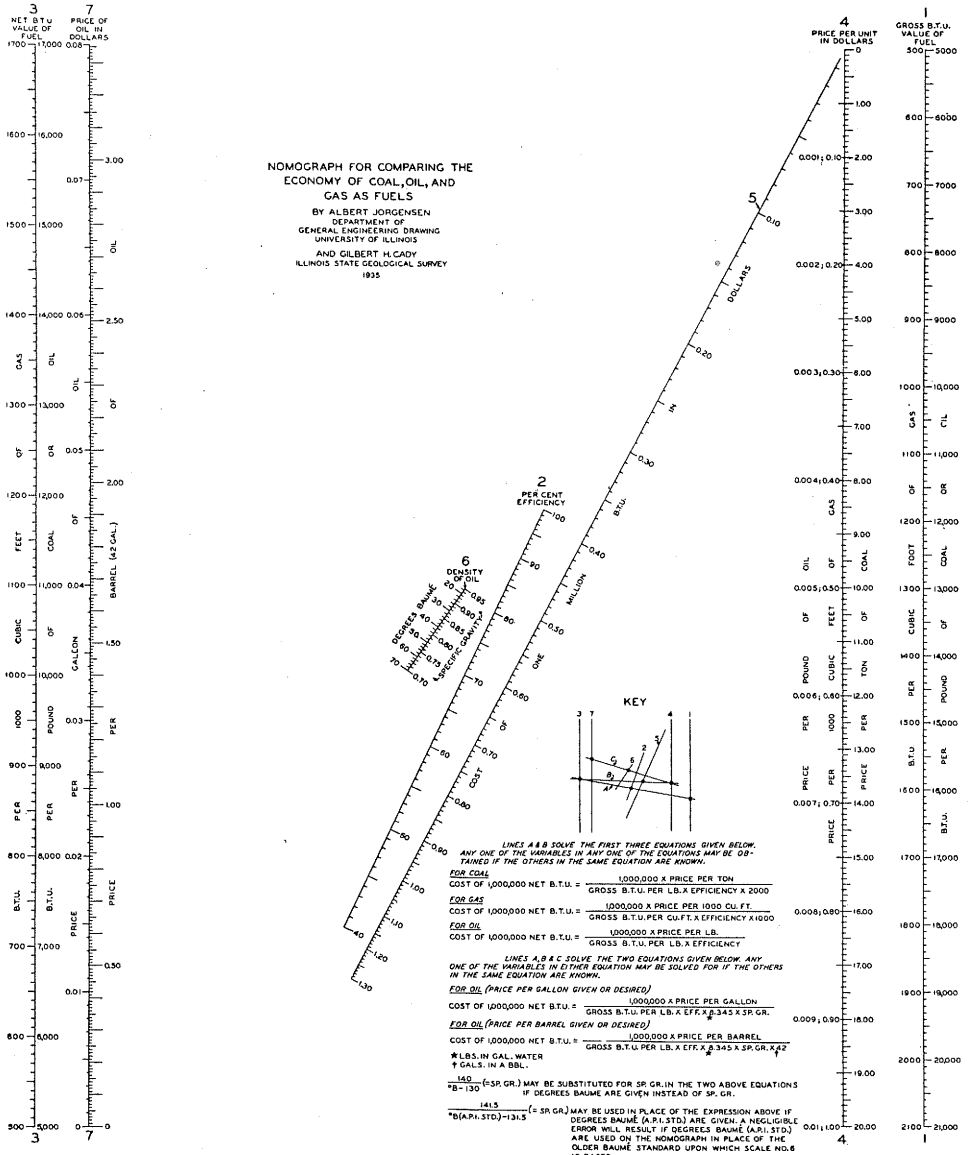

NOMOGRAPH FOR COMPARING THE ECONOMY OF COAL, OIL, AND GAS AS FUELS
BY ALBERT JORGENSEN
DEPARTMENT OF GENERAL ENGINEERING DRAWING
UNIVERSITY OF ILLINOIS
AND GILBERT H. CADY
ILLINOIS STATE GEOLOGICAL SURVEY
1935
3 NET B.T.U. VALUE OF FUEL
7 PRICE OF OIL IN DOLLARS
4 PRICE PER UNIT IN DOLLARS
1 GROSS B.T.U. VALUE OF FUEL
2 PER CENT EFFICIENCY
5 DOLLARS
6 DENSITY OF OIL
DEGREES BAUMÉ
SPECIFIC GRAVITY
KEY
LINES A & B SOLVE THE FIRST THREE EQUATIONS GIVEN BELOW. ANY ONE OF THE VARIABLES IN ANY ONE OF THE EQUATIONS MAY BE OBTAINED IF THE OTHERS IN THE SAME EQUATION ARE KNOWN.
FOR COAL
COST OF 1,000,000 NET B.T.U. = 1,000,000 X PRICE PER TON / GROSS B.T.U. PER LB. X EFFICIENCY X 2000
FOR GAS
COST OF 1,000,000 NET B.T.U. = 1,000,000 X PRICE PER 1000 CU. FT. / GROSS B.T.U. PER CU. FT. X EFFICIENCY X 1000
FOR OIL
COST OF 1,000,000 NET B.T.U. = 1,000,000 X PRICE PER LB. / GROSS B.T.U. PER LB. X EFFICIENCY
LINES A, B & C SOLVE THE TWO EQUATIONS GIVEN BELOW. ANY ONE OF THE VARIABLES IN EITHER EQUATION MAY BE SOLVED FOR IF THE OTHERS IN THE SAME EQUATION ARE KNOWN.
FOR OIL (PRICE PER GALLON GIVEN OR DESIRED)
COST OF 1,000,000 NET B.T.U. = 1,000,000 X PRICE PER GALLON / GROSS B.T.U. PER LB. X EFF. X 8.345 X SP. GR.
FOR OIL (PRICE PER BARREL GIVEN OR DESIRED)
COST OF 1,000,000 NET B.T.U. = 1,000,000 X PRICE PER BARREL / GROSS B.T.U. PER LB. X EFF. X 8.345 X SP. GR. X 42
★ LBS. IN GAL. WATER
† GALS. IN A BBL.
140/(°B − 130) (= SP. GR.) MAY BE SUBSTITUTED FOR SP. GR. IN THE TWO ABOVE EQUATIONS IF DEGREES BAUMÉ ARE GIVEN INSTEAD OF SP. GR.
141.5/(°B(A.P.I. STD.) − 131.5) (= SP. GR.) MAY BE USED IN PLACE OF THE EXPRESSION ABOVE IF DEGREES BAUMÉ (A.P.I. STD.) ARE GIVEN. A NEGLIGIBLE ERROR WILL RESULT IF DEGREES BAUMÉ (A.P.I. STD.) ARE USED ON THE NOMOGRAPH IN PLACE OF THE OLDER BAUMÉ STANDARD UPON WHICH SCALE NO. 6 IS BASED.

CHART III.—NOMOGRAPH FOR COMPARING THE ECONOMY OF COAL, OIL, AND GAS AS FUELS

Purpose.—Chart III is to make possible without mathematical calculations the comparison of the economy of coal, oil, and gas of various calorific values in terms of the number of B.t.u. per 1 cent of cost or in terms of the cost of a million B.t.u. from each fuel. The diagram provides no means of determining the efficiency of the fuels, but with assumed or known efficiencies the cost of any three of the fuels of known calorific value may be calculated.

The chart may be used for two purposes:

(1) From it may be determined the cost of a million B.t.u. for coal, oil and gas, if the prices of their B.t.u. and the efficiency of the furnace or boiler in which they are used are known.

(2) From it may be determined the price that should be paid for one fuel to result in the same cost per million B.t.u. as obtained from another fuel of known price.

Illustration of use.—Suppose the B.t.u. values of a coal, an oil, and a gas, the heat efficiency of each, and the price per unit of each are known, and it is desired to determine the cost of one million B.t.u. for each fuel, and the price that would have to be paid for the oil and gas to obtain the same economy as is obtained from the coal, the data for the estimate being as follows:

Coal:	B.t.u. value	15,000 per lb.
	Efficiency	90 per cent
	Price	$8.60 per ton
Oil:	B.t.u. value	19,000 per lb.
	Efficiency	80 per cent
	Gravity	53° Baume (Sp. Gr. 0.765)
	Price	$2.00 per bbl.
Gas:	B.t.u. value	1,100 per 1000 cu. ft.
	Efficiency	73 per cent
	Price	$0.50 per 1000 cu. ft.

Coal

(1A) A straight edge is placed on the diagram crossing scale 1 (gross value of fuel) at 15,000 B.t.u., and scale 2 (per cent efficiency) at 90 per cent. Note intersection on scale 3 (net B.t.u. value). (1B) From this point (on scale 3) extend straight edge to point indicating $8.60 on scale 4 (price per unit in dollars), and read on scale 5 the cost of one million B.t.u. in dollars, which in this instance is $0.319.

Oil

(2A) A straight edge is placed on the diagram crossing scale 1 at 19,000 and scale 2 at 80 per cent, and the intersection with scale 3 is noted. (2C) To determine the price of oil in terms of pounds rather than gallons place the straight edge to intersect scale 7 (price of oil) at point indicating price $2.00 and scale 6 (density of oil) at 53° Baume and note intersection with scale 4. (2B) A straight edge intersecting scales 3 and 4 at the determined points will intersect scale 5 and give the cost of one million B.t.u. in dollars, which in this instance is $0.49.

Gas

(3A) A straight edge is placed on the diagram crossing scale 1 at 1,100 B.t.u. for gas and scale 2 at 73 per cent. It will intersect scale 3 at the point showing the net value of the fuel. (3B) From this point the straight edge is extended to pass through a point on scale 4 representing the price per thousand feet of gas. The cost of one million B.t.u. in dollars may then be read on scale 5, which in this case is $0.62.

Upon scale 3 have been determined the net B.t.u. values of the three fuels, 13,500 for coal, 15,200 for oil and 800 for gas. On scale 5 the cost of one million B.t.u. of coal at $8.60 a ton (gross) is shown to be 0.319. By running lines from the net B.t.u. value of oil or gas through this point and extending them to scale 4 the prices that should be paid for oil or gas to result in the same cost for a million B.t.u. is found to be $0.00485 per pound for oil and $0.26 per 1000 cu. ft. of gas. To convert the price of oil per pound into price per gallon or barrel, let the straight edge cross scale 4 at 0.00485 and scale 6 at 53° Baume and the intersection with scale 7 gives the price per gallon or per barrel, which in this instance is $1.31.