UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

INDIANA COAL AND ASSOCIATED ROCK SAMPLES COLLECTED FROM 1975 TO 1977

by

CHARLES L. OMAN

WALTER A. HASSENMUELLER *

and

LINDA J. BRAGG

* Indiana Geological Survey

U. S. Geological Survey Open-File Report 92-682

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Abstract

Chemical and geologic data are presented for 378 samples of coal and coal-associated rocks from Indiana. These data include sample site locations, stratigraphic position, air-drying loss, proximate and ultimate analysis, heat content, forms of sulfur, initial deformation temperature, softening temperature, fluid temperature, free-swelling index, concentrations of major- and minor-oxides, and trace elements.

Introduction

From 1975 to 1977 members of the Indiana Geological Survey (IGS) collected 244 samples of bituminous coal and 144 samples of associated roof, parting, and floor rocks. The samples were collected to provide data useful in determining the economic value of the coal, environmental effects of coal mining and coal use, and the adaptability of a coal to cleaning and to other technological processes of coal treatment and usage. These samples were analyzed by the U.S. Geological Survey (USGS) for major-and minor-oxides and trace elements, and by the U.S. Bureau of Mines for proximate and ultimate analysis, heat content, forms of sulfur, ash-fusion temperatures, free-swelling index, and air-drying loss.

The USGS sample numbers beginning with D were analyzed using a scheme published by Swanson and Huffman (1976). The USGS sample numbers beginning with W were analyzed according to the flow chart in Figure 1. Details on the analytical procedures can be found in Golightly and Simon (1989).

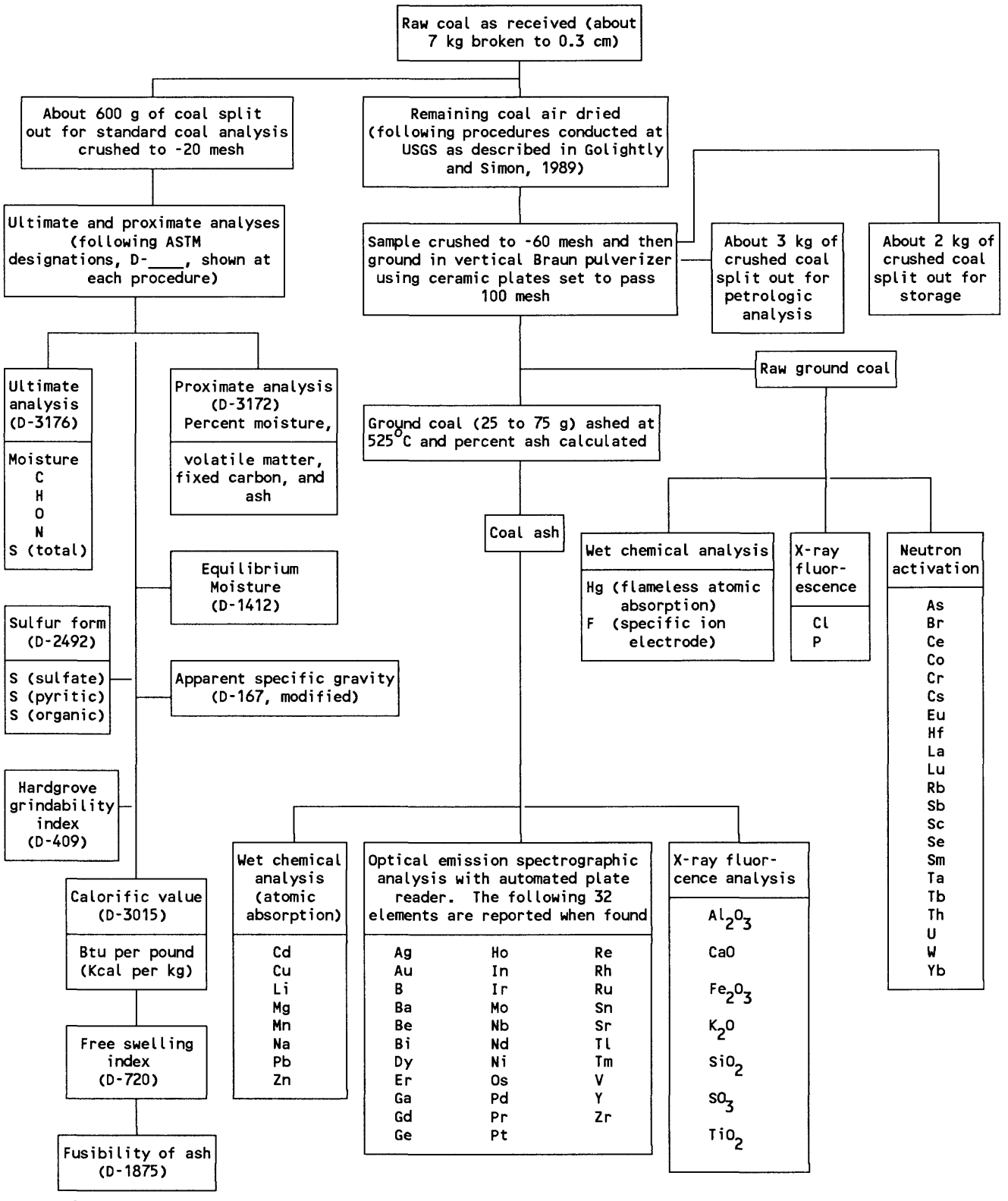

Figure 1. Flow diagram of procedures used for the analysis of coal samples collected. (ASTM-American Society for Testing and Materials, U. S. Bureau of Mines, U.S. Dept. of Energy, USGS-United States Geological Survey.)

Figure 2 is a county and index map of the sample locations, figures 3 and 4 indicate locations of rock samples and figures 5 and 6 indicate locations of coal samples. Table 1 is a list of rock locations and laboratory numbers and table 2 is a list of coal location and laboratory numbers.

The sample locations and descriptions are given in Table 3 for 234 coal samples and 3a for 144 rock samples associated with coals. Table 3 includes the USGS samples number, Indiana State Geological Survey number, the county, quadrangle, latitude and longitude, group, formation, bed, and estimated rank. The samples are arranged by county and sample locality.

The analytical results are listed in Tables 4, 5, and 6. Table 4 lists the major- and minor-oxides on and ash basis. Table 5 contains the trace element concentrations on a whole-coal basis. Table 6 contains the ultimate and proximate analysis, heat content, forms of sulfur, free-swelling index and ash-fusion temperatures. Tables 4a, 5a and 6 contain coal data, tables 4b and 5b contain data on the associated rocks.

The generalized statigraphic nomenclature of the coal-bearing Pennsylvanian units is included (Figure 7) to indicate the stratigraphic relationships of the samples. Table 7 contains arithmetic means, minimums, and maximums for the Indiana samples containing less than fifty percent ash; for comparison the arithmetic means for the Illinois data published by Gluskoter and others (1977) is listed. The high Cd and Zn values (slightly higher means in Illinois data) reflect high sphalerite content in the coals. The only other difference between the Indiana and

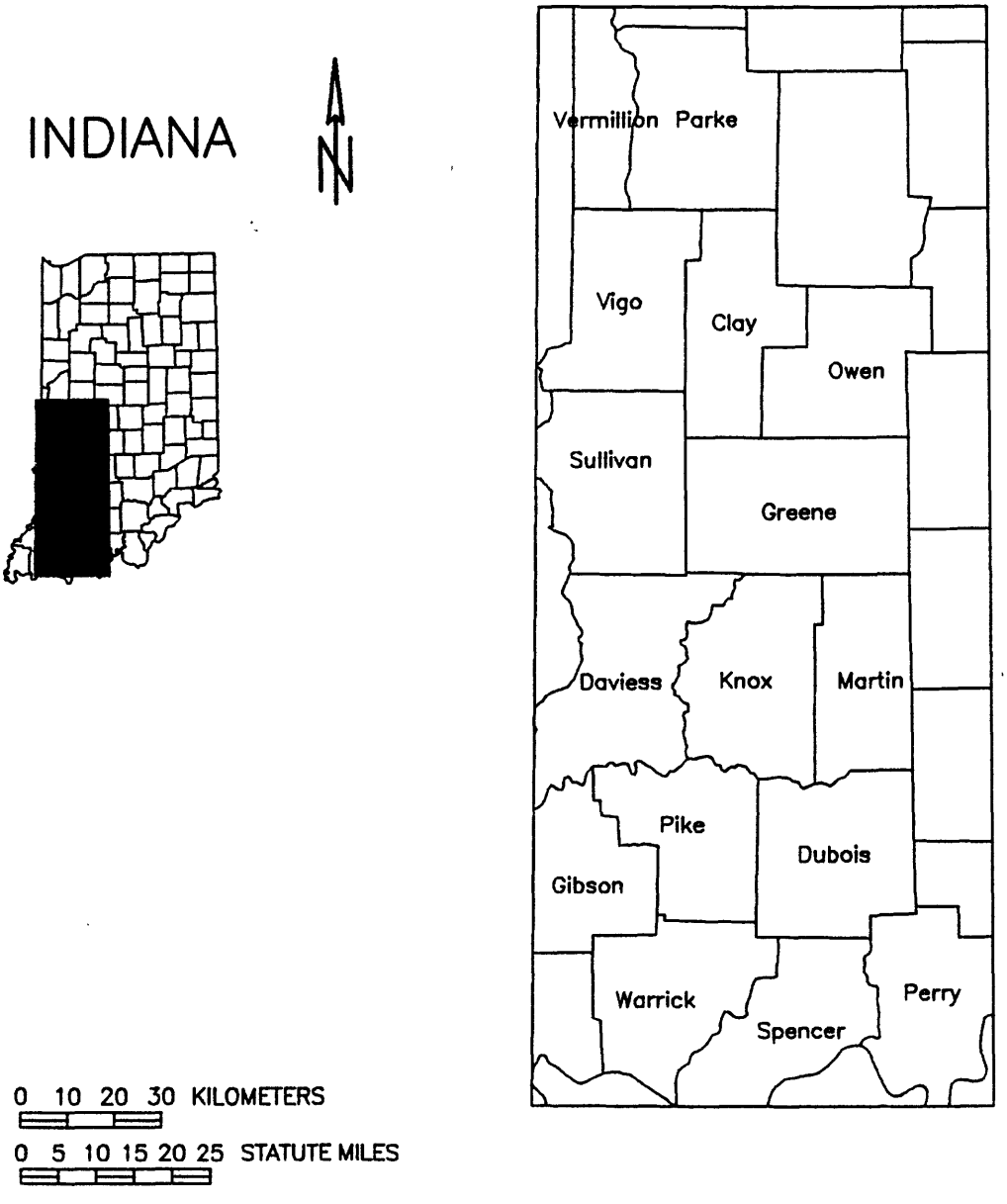

Figure 2. County index map for general location of samples.

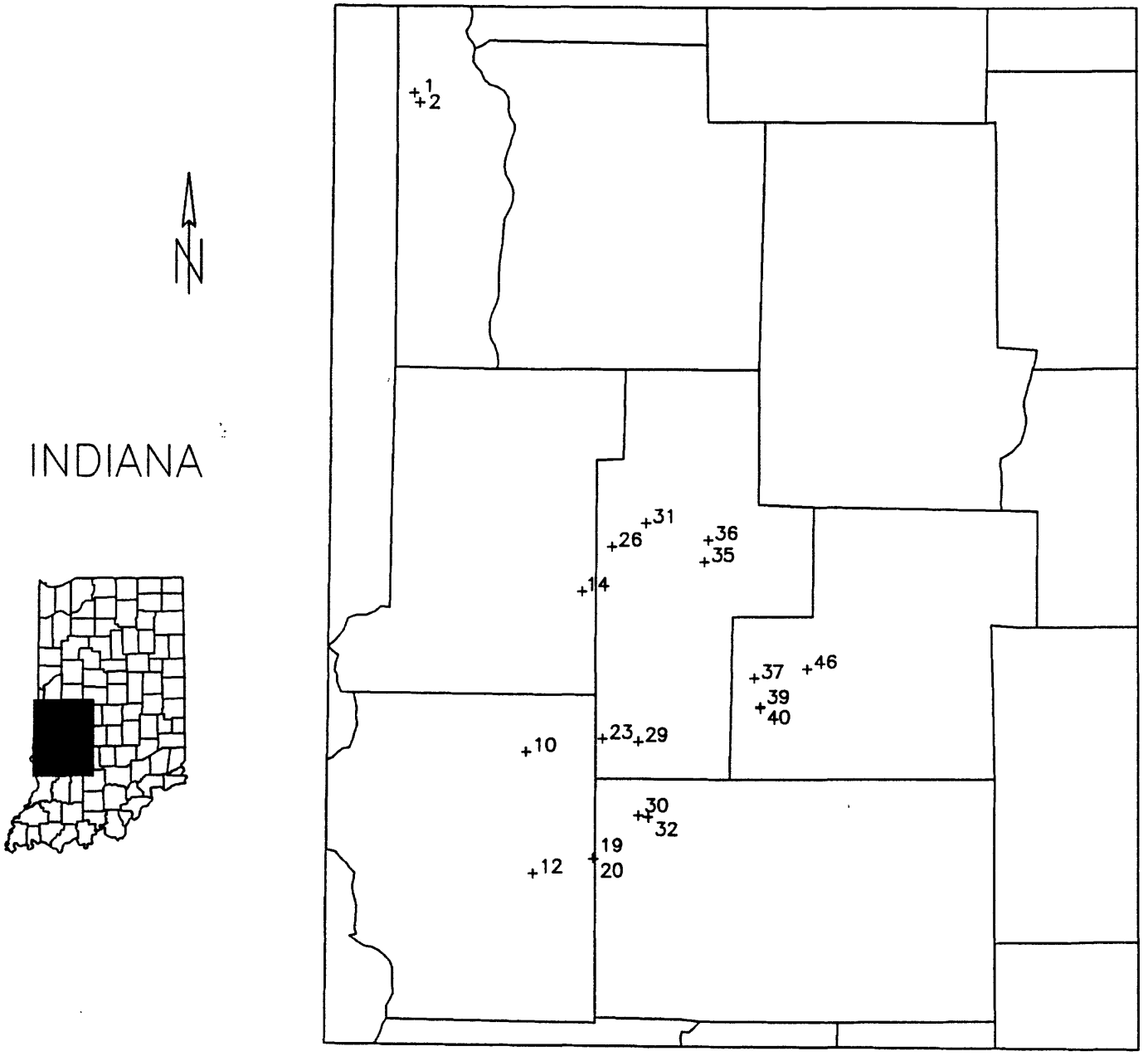

Figure 3. General location of rock samples, north half of area of figure 2.

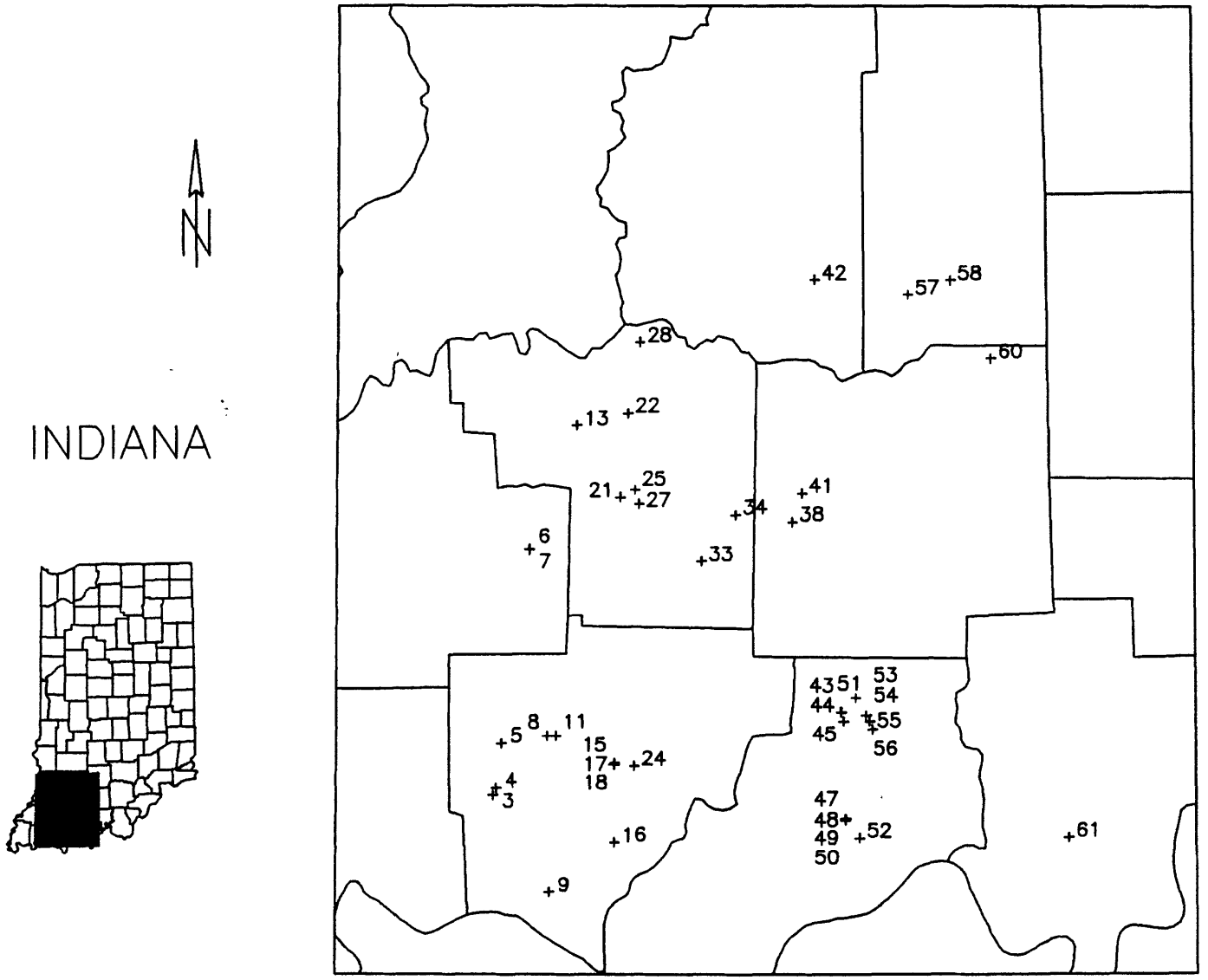

Figure 4. General location of rock samples, south half of area of figure 2.

Sample Location	Lab Number	Sample Location	Lab Number	Sample Location	Lab Number
1	W191273	16	W191234	41	W194427
2	W194459	17	W194835	42	W197289
3	W194460	17	W194836	43	W191261
4	W194414	18	W194832	43	W191262
5	W194415	19	W191244	44	W191259
5	W191237	19	W191246	44	W191260
5	W191238	20	W191247	45	W196373
5	W191240	20	W191249	45	W196375
5	W191241	21	W191229	46	W191203
6	W197282	22	W194837	47	W191270
6	W197283	22	W194838	47	W191271
6	W197284	23	W194398	47	W191272
6	W197285	23	W194399	48	W191267
7	W194406	24	W194465	48	W191268
7	W194408	25	W191242	48	W191269
7	W194409	25	W191243	49	W191252
7	W194410	26	W191217	49	W191253
8	W194428	26	W191218	50	W191250
8	W194429	27	W194833	50	W191251
9	W191274	27	W194834	51	W196367
9	W191275	28	W194830	51	W196369
9	W191280	28	W194831	52	W191254
10	W194450	29	W191235	52	W191255
10	W194451	29	W191236	52	W191256
10	W194452	30	W194817	52	W191257
10	W194453	31	W194818	52	W191258
10	W194454	31	W194819	53	W191263
11	W194430	31	W194820	53	W191264
11	W194432	31	W194822	54	W191265
11	W194433	31	W194824	54	W191266
11	W194435	31	W194826	55	W196370
11	W194436	31	W191219	55	W196372
11	W194437	31	W191221	56	W194400
11	W194438	31	W191223	56	W194402
11	W194439	32	W191278	57	W194441
11	W194440	33	W194445	57	W194442
12	W194457	33	W194446	57	W194443
12	W194458	34	W191226	58	W197286
12	W194827	35	W191214	58	W197288
12	W194828	36	W194449	59	W196361
13	W194840	37	W191206	60	W196363
14	W196365	37	W191210	60	W196364
15	W194461	38	W194403	61	W194416
15	W194462	38	W194404	61	W194417
15	W194463	39	W194456	61	W194418
16	W191230	40	W196358	61	W194420
16	W191231	40	W196359	61	W194422
16	W191232	41	W194425	61	W196376

Table 1. Lab numbers for sample locations of figures 3 and 4.

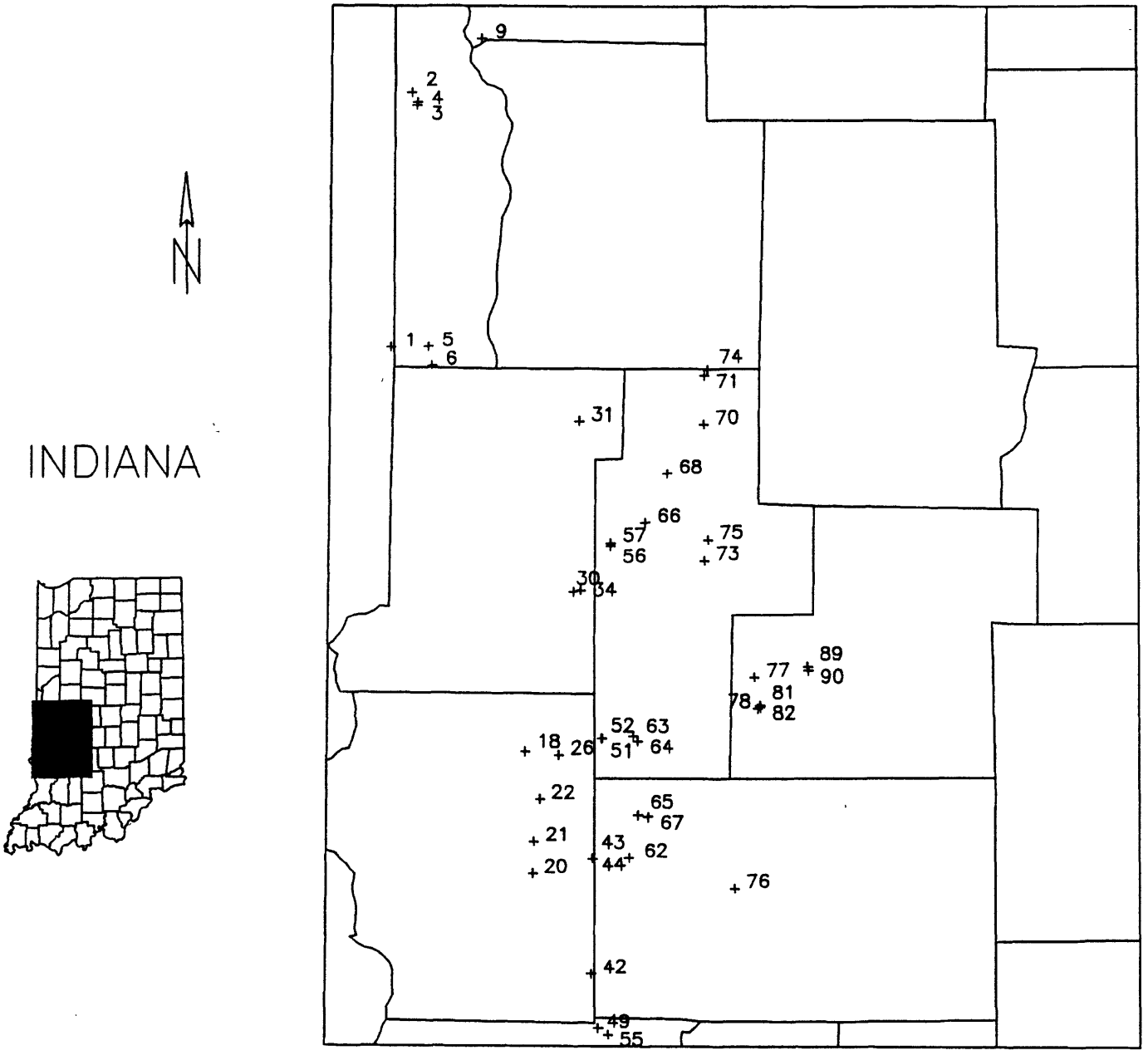

Figure 5. General location of coal samples, north half of area of figure 2.

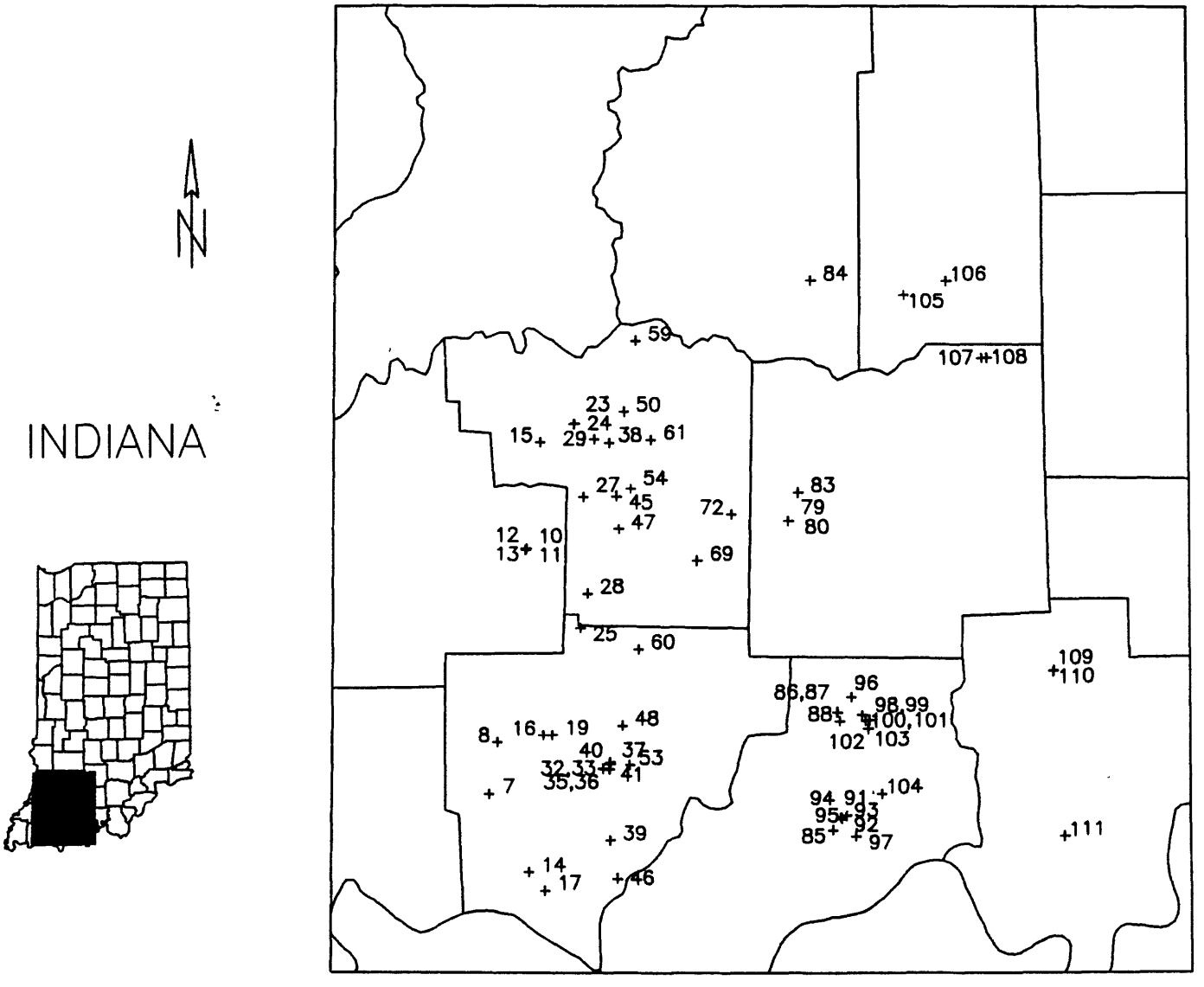

Figure 6. General location of coal samples, south half of area of figure 2.

Sample Location	Lab No.	Sample Location	Lab No.	Sample Location	Lab No.	Sample Location	Lab No.	Sample Location	Lab No.
1	W188952	26	D172307	57	W190547	75	W194448	96	W196346
2	W191043	27	W194860	58	W194861	76	D172305	96	W196347
3	W191054	28	W190528	59	W194858	77	W190538	96	W196368
3	W191059	28	W190529	60	W190530	77	W190539	97	W191038
4	W193121	29	W188932	60	W190531	77	W190540	97	W191047
5	W188953	29	W188933	61	W190532	77	W190541	98	W191037
6	W188950	30	W188944	61	W190533	77	W191207	99	W191034
6	W188951	30	W188945	62	W188946	77	W191208	100	W196348
7	W192614	31	W196339	62	W188947	77	W191209	100	W196349
7	W192615	31	W196340	63	D172302	77	W191211	100	W196350
7	W194413	31	W196341	64	W190934	77	W191212	100	W196371
8	W191052	32	W191057	65	W194821	77	W191213	101	W194392
8	W191053	33	W191058	65	W194823	78	W194390	102	W194391
8	W191060	34	W196344	65	W194825	79	W194394	102	W194401
8	W191061	34	W196366	65	W194856	80	W194393	103	W197295
8	W191239	35	W191045	66	W190548	80	W194405	104	W196355
9	D172310	36	W191044	66	W191220	81	W193119	104	W196356
9	D172311	37	W193122	66	W191222	81	W194455	104	W196357
9	D172312	37	W193123	67	W191042	82	W196338	105	W192628
9	D172313	38	D173483	67	W191051	82	W196360	105	W192629
9	D172314	38	D173485	67	W191277	83	W192620	105	W194444
9	D172315	38	D173486	67	W191279	83	W192621	106	W197287
10	W197293	39	W190932	68	W188940	83	W192622	106	W197296
11	W197294	39	W190933	68	W188941	83	W192623	107	W196342
12	W194395	39	W191233	68	W188942	83	W194423	107	W196362
13	W194396	40	W194863	68	W188943	83	W194424	108	W196343
13	W194397	41	W194859	69	W192630	83	W194426	109	W197280
13	W194407	42	D172304	69	W192631	84	W197290	109	W197281
14	W194862	43	W191046	70	W190544	84	W197297	109	W197292
15	D173484	43	W191245	70	W190545	85	W188934	110	W197278
16	W192624	44	W191049	71	W190536	85	W188935	110	W197279
16	W192625	44	W191248	71	W190537	86	W191036	110	W197291
17	W191039	45	W190931	71	W191205	87	W191035	111	W192616
17	W191040	46	D173482	72	W190929	88	W196351	111	W192617
17	W191276	47	D173480	72	W190930	88	W196352	111	W192618
18	W192635	47	D173481	72	W191224	88	W196353	111	W192619
18	W192636	48	D173487	72	W191225	88	W196354	111	W194419
19	W192626	49	D172303	72	W191227	88	W196374	111	W194421
19	W192627	50	W194839	72	W191228	89	W190534		
19	W194431	50	W194864	73	W190542	89	W190535		
20	W193120	51	W194388	73	W190543	89	W191204		
20	W194829	52	W194389	73	W191215	90	D172306		
20	W194857	53	W193124	73	W191216	91	W191041		
21	D172309	53	W194464	74	W188938	92	W191062		
22	D172308	54	W191055	74	W188939	93	W191050		
23	W194866	54	W191056	75	W192632	94	W191048		
24	W194865	55	W188948	75	W192633	95	W188936		
25	W188930	55	W188949	75	W192634	95	W188937		
25	W188931	56	W190546	75	W194447	96	W196345		

Table 2. Lab numbers for sample locations of figures 5 and 6.

Group	Formation	Coal Bed	No Coal Samples per Bed
McLeansboro	Shelburn		
Carbondale	Dugger	Danville	27
		Hymera	27
		Bucktown	4
	Petersburg	Springfield	61
		Houchin Creek	3
	Linton	Survant	15
		Colchester	3
Raccoon Creek	Staunton	Seelyville	10
	Brazil	Upper Block	23
		Lower Block	12
		Buffaloville	8
	Mansfield	Mariah Hill	4
		Blue Creek	4
		St Meinrad	7

Figure 7. Generalized stratigraphic nomenclature of the Pennsylvanian age coal-bearing rocks of the area.

Illinois coals is higher CaO for Illinois coals.

References

Gluskoter, H.J., Ruch, R.R., Miller, W.G., Cahill, R.A., Dreher, G.B., and Kuhn, J.K., 1977, Trace elements in coal: occurrence and distribution: Illinois State Geological Survey Circular 499, 154 p.

Golightly, D.W., and Simon, F.O., 1989, Methods for sampling and inorganic analysis of coal: U.S. Geological Survey Bulletin 1823, 72 p.

Swanson, V.E., and Huffman, Claude, Jr., 1976, Guidelines for sample collecting and analytical methods used in the U.S. Geological Survey for determining chemical composition of coal: U.S. Geological Survey Circular. 735, 11 p.

Table 3. Sample location information for USCHEM data for coals in Indiana.
[nde means no data entered.]

USGS N.	IGS N.	County	Quadrangle (7.5′)	Latitude	Longitude	Group	Formation	Bed	Estimated rank
D172302	75012	Clay	Jasonville	391244N	871203W	Carbondale	Linton	Survant	Bituminous
W188940	75049	Clay	Staunton	392945N	870922W	Raccoon Creek	Staunton	Seelyville	Bituminous
W188941	75050	Clay	Staunton	392945N	870922W	Raccoon Creek	Staunton	Seelyville	Bituminous
W188942	75051	Clay	Staunton	392945N	870922W	Raccoon Creek	Staunton	Seelyville	Bituminous
W188943	75052	Clay	Staunton	392945N	870922W	Raccoon Creek	Staunton	Seelyville	Bituminous
W190536	75079	Clay	Brazil East	393603N	870617W	Raccoon Creek	Brazil	Upper Block	Bituminous
W190537	75080	Clay	Brazil East	393603N	870617W	Raccoon Creek	Brazil	Upper Block	Bituminous
W191205	75080A	Clay	Brazil East	393603N	870617W	Raccoon Creek	Brazil	Upper Block	Bone
W190542	75085	Clay	Center Point	392407N	870614W	Raccoon Creek	Brazil	Upper Block	Bituminous
W191215	75085B	Clay	Center Point	392407N	870614W	Raccoon Creek	Brazil	Upper Block	Bone
W190543	75086	Clay	Center Point	392407N	870614W	Raccoon Creek	Brazil	Upper Block	Bituminous
W191216	75086A	Clay	Center Point	392407N	870614W	Raccoon Creek	Brazil	Upper Block	Bone
W190544	75087	Clay	Brazil East	393256N	870618W	Raccoon Creek	Brazil	Upper Block	Bituminous
W190545	75088	Clay	Brazil East	393256N	870618W	Raccoon Creek	Brazil	Upper Block	Bituminous
W190546	75089	Clay	Staunton	392504N	871400W	Raccoon Creek	Staunton	Seelyville	Bituminous
W190547	75090	Clay	Staunton	392514N	871400W	Raccoon Creek	Staunton	Seelyville	Bituminous
W190548	75091	Clay	Staunton	392635N	871110W	Raccoon Creek	Staunton	Seelyville	Bituminous
W191220	75091B	Clay	Staunton	392635N	871110W	Carbondale	Linton	nde	Bituminous
W191222	75091D	Clay	Staunton	392635N	871110W	Raccoon Creek	Staunton	Seelyville	Bituminous
W190934	75097	Clay	Jasonville	391225N	871142W	Carbondale	Linton	Survant	Bituminous
W192632	76023	Clay	Center Point	392531N	870556W	Raccoon Creek	Brazil	Upper Block	Bituminous
W194447	76023A	Clay	Center Point	392531N	870556W	Raccoon Creek	Brazil	nde	Bone
W192633	76024	Clay	Center Point	392531N	870556W	Raccoon Creek	Brazil	Upper Block	Bituminous
W192634	76025	Clay	Center Point	392531N	870556W	Raccoon Creek	Brazil	Upper Block	Bituminous
W194448	76025A	Clay	Center Point	392531N	870556W	Raccoon Creek	Brazil	Upper Block	Bone
W197297	77042	Daviess	Alfordsville	383539N	865953W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W197290	77042B	Daviess	Alfordsville	383539N	865953W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W192620	76008	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W194423	76008A	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	nde	Bituminous
W194424	76008B	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	nde	Underclay
W192621	76009	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W194426	76009B	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W192622	76010	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W192623	76011	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W194393	76044	Dubois	Velpen	382038N	870139W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W194405	76044C	Dubois	Velpen	382038N	870139W	Raccoon Creek	Staunton	nde	Underclay
W194394	76045	Dubois	Velpen	382038N	870140W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W196342	77005	Dubois	Rusk	383041N	864625W	Raccoon Creek	Mansfield	Blue Creek	Bituminous
W196362	77005B	Dubois	Rusk	383041N	864625W	Raccoon Creek	Mansfield	nde	Bone
W196343	77006	Dubois	Rusk	383043N	864559W	Raccoon Creek	Mansfield	Blue Creek	Bituminous

Table 3. Sample location information for USCHEM data for coals in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Estimated rank
D172310	75024	Fountain	Newport	395754N	872456W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
D172311	75025	Fountain	Newport	395754N	872456W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
D172312	75026	Fountain	Newport	395754N	872456W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
D172313	75027	Fountain	Newport	395754N	872456W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
D172314	75028	Fountain	Newport	395754N	872456W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
D172315	75029	Fountain	Newport	395754N	872456W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W194395	76046	Gibson	Oakland City	381855N	872220W	Carbondale	Dugger	Hymera	Bituminous
W194396	76047	Gibson	Oakland City	381855N	872220W	Carbondale	Dugger	Hymera	Bituminous
W194407	76047A	Gibson	Oakland City	381855N	872220W	Carbondale	Dugger	nde	Bituminous
W194397	76048	Gibson	Oakland City	381855N	872220W	Carbondale	Dugger	Danville	Bituminous
W197293	77030	Gibson	Oakland City	381850N	872222W	Carbondale	Dugger	Hymera	Bituminous
W197294	77033	Gibson	Oakland City	381852N	872221W	Carbondale	Dugger	Danville	Bituminous
D172305	75015	Greene	Switz City	390251N	870338W	Raccoon Creek	Staunton	Unnamed Staunton	Bituminous
W188946	75055	Greene	Linton	390451N	871222W	Carbondale	Dugger	Hymera	Bituminous
W188947	75056	Greene	Linton	390451N	871222W	Carbondale	Dugger	Hymera	Bituminous
W191042	75125	Greene	Jasonville	390730N	871050W	Carbondale	Linton	Survant	Bituminous
W191277	75125A	Greene	Jasonville	390730N	871050W	Carbondale	Linton	Survant	Bone
W191051	75126	Greene	Jasonville	390730N	871050W	Carbondale	Linton	Survant	Bituminous
W191279	75126A	Greene	Jasonville	390730N	871050W	Carbondale	Petersburg	Survant	Bone
W194856	76049	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Bituminous
W194821	76049E	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Bituminous
W194823	76049G	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Bituminous
W194825	76049I	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Bituminous
D172303	75013	Knox	Sandborn	385349N	871453W	Carbondale	Petersburg	Springfield	Bituminous
W188948	75057	Knox	Sandborn	385327N	871404W	Carbondale	Petersburg	Springfield	Bituminous
W188949	75058	Knox	Sandborn	385327N	871404W	Carbondale	Petersburg	Springfield	Bituminous
W192628	76016	Martin	Alfordsville	383442N	865231W	Raccoon Creek	Mansfield	Blue Creek	Bituminous
W192629	76017	Martin	Alfordsville	383442N	865231W	Raccoon Creek	Mansfield	Blue Creek	Bituminous
W194444	76017B	Martin	Alfordsville	383442N	865231W	Raccoon Creek	Mansfield	nde	Bituminous
W197296	77041	Martin	Rusk	383536N	864910W	Raccoon Creek	Mansfield	Unnamed Mansfield	Bituminous
W197287	77041B	Martin	Rusk	383536N	864910W	Raccoon Creek	Mansfield	Unnamed Mansfield	Fusain
D172306	75016	Owen	Patricksburg	391655N	865732W	Raccoon Creek	Brazil	Upper Block	Bituminous
W190534	75077	Owen	Patricksburg	391710N	865736W	Raccoon Creek	Brazil	Upper Block	Bituminous
W190535	75078	Owen	Patricksburg	391710N	865736W	Raccoon Creek	Brazil	Upper Block	Bituminous
W191204	75078A	Owen	Patricksburg	391710N	865736W	Raccoon Creek	Brazil	Upper Block	Bone
W190538	75081	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bituminous
W191207	75081B	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bone
W191208	75081C	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bituminous
W190539	75082	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bituminous
W191209	75082A	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bone

Table 3. Sample location information for USCHEM data for coals in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Estimated rank
W190540	75083	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bituminous
W191211	75083B	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bone
W191212	75083C	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bituminous
W190541	75084	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bituminous
W191213	75084A	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Bone
W193119	76038	Owen	Coal City	391443N	870132W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W194455	76038A	Owen	Coal City	391443N	870132W	Raccoon Creek	Brazil	nde	Bituminous
W194390	76041	Owen	Coal City	391432N	870143W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196338	77001	Owen	Coal City	391436N	870131W	Raccoon Creek	Brazil	Upper Block	Bituminous
W196360	77001C	Owen	Coal City	391436N	870131W	Raccoon Creek	Brazil	Upper Block	Bituminous
W188938	75047	Parke	Brazil East	393627N	870601W	Raccoon Creek	Brazil	Upper Block	Bituminous
W188939	75048	Parke	Brazil East	393627N	870601W	Raccoon Creek	Brazil	Upper Block	Bituminous
W192616	76004	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	St. Meinrad	Bituminous
W192617	76005	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	St. Meinrad	Bituminous
W194419	76005A	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	nde	Bituminous
W192618	76006	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	St. Meinrad	Bituminous
W192619	76007	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	St. Meinrad	Bituminous
W194421	76007A	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	St. Meinrad	Bituminous
W197291	77026	Perry	Bristow	381120N	864052W	Raccoon Creek	Mansfield	Unnamed Mansfield	Bituminous
W197278	77026A	Perry	Bristow	381120N	864052W	Raccoon Creek	Mansfield	Unnamed Mansfield	Bone
W197279	77026B	Perry	Bristow	381120N	864052W	Raccoon Creek	Mansfield	Unnamed Mansfield	Fusain
W197292	77029	Perry	Bristow	381117N	864055W	Raccoon Creek	Mansfield	Unnamed Mansfield	Bituminous
W197280	77029A	Perry	Bristow	381117N	864055W	Raccoon Creek	Mansfield	nde	Bone
W197281	77029B	Perry	Bristow	381117N	864055W	Raccoon Creek	Mansfield	Unnamed Mansfield	Bituminous
D173480	75030	Pike	Augusta	382008N	871500W	Carbondale	Petersburg	Springfield	Bituminous
D173481	75031	Pike	Augusta	382008N	871500W	Carbondale	Petersburg	Springfield	Bituminous
D173483	75033	Pike	Petersburg	382530N	871548W	Carbondale	Petersburg	Springfield	Bituminous
D173484	75034	Pike	Petersburg	382530N	872115W	Carbondale	Petersburg	Springfield	Bituminous
D173485	75035	Pike	Petersburg	382530N	871548W	Carbondale	Petersburg	Springfield	Bituminous
D173486	75036	Pike	Petersburg	382530N	871548W	Carbondale	Petersburg	Springfield	Bituminous
W188932	75041	Pike	Petersburg	382542N	871658W	Carbondale	Dugger	Hymera	Bituminous
W188933	75042	Pike	Petersburg	382542N	871658W	Carbondale	Dugger	Hymera	Bituminous
W190528	75063	Pike	Oakland City	381606N	871730W	Carbondale	Petersburg	Springfield	Bituminous
W190529	75064	Pike	Oakland City	381606N	871730W	Carbondale	Petersburg	Springfield	Bituminous
W190532	75067	Pike	Winslow	382540N	871230W	Carbondale	Petersburg	Springfield	Bituminous
W190533	75068	Pike	Winslow	382540N	871230W	Carbondale	Petersburg	Springfield	Bituminous
W190929	75092	Pike	Velpen	382104N	870609W	Carbondale	Linton	Survant	Bituminous
W191224	75092A	Pike	Velpen	382104N	870609W	Carbondale	Linton	Survant	Bone
W191225	75092B	Pike	Velpen	382104N	870609W	Carbondale	Linton	Survant	Pyrite zone
W190930	75093	Pike	Velpen	382104N	870609W	Carbondale	Linton	Survant	Bituminous

Table 3. Sample location information for USCHEM data for coals in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Estimated rank
W191227	75093A	Pike	Velpen	382104N	870609W	Carbondale	Linton	Survant	Bone
W191228	75093B	Pike	Velpen	382104N	870609W	Carbondale	Linton	nde	Bituminous
W190931	75094	Pike	Oakland City	382210N	871512W	Carbondale	Petersburg	Springfield	Bituminous
W191055	75102	Pike	Winslow	382239N	871405W	Carbondale	Petersburg	Springfield	Bituminous
W191056	75103	Pike	Winslow	382239N	871405W	Carbondale	Petersburg	Springfield	Bituminous
W192630	76021	Pike	Augusta	381810N	870850W	Carbondale	Linton	Survant	Bituminous
W192631	76022	Pike	Augusta	381810N	870850W	Carbondale	Linton	Survant	Bituminous
W194831	76051B	Pike	Sandy Hook	383148N	871341W	Carbondale	Petersburg	nde	Underclay
W194860	76053	Pike	Oakland City	382208N	871750W	Carbondale	Petersburg	Springfield	Bituminous
W194861	76054	Pike	Augusta	382144N	871345W	Carbondale	Petersburg	Springfield	Bituminous
W194864	76058	Pike	Winslow	382725N	871437W	Carbondale	Petersburg	Springfield	Bituminous
W194839	76058C	Pike	Winslow	382725N	871437W	Carbondale	Petersburg	nde	Bituminous
W194865	76059	Pike	Petersburg	382639N	871832W	Carbondale	Dugger	Hymera	Bituminous
W194866	76060	Pike	Petersburg	382637N	871837W	Carbondale	Dugger	Hymera	Bituminous
W188934	75043	Spencer	Santa Claus	380126N	865812W	Raccoon Creek	Brazil	Buffaloville	Bituminous
W188935	75044	Spencer	Santa Claus	380126N	865812W	Raccoon Creek	Brazil	Buffaloville	Bituminous
W188936	75045	Spencer	Santa Claus	380219N	865708W	Raccoon Creek	Brazil	Buffaloville	Bituminous
W188937	75046	Spencer	Santa Claus	380219N	865708W	Raccoon Creek	Brazil	Buffaloville	Bituminous
W191048	75110	Spencer	Santa Claus	380212N	865731W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W191050	75111	Spencer	Santa Claus	380213N	865731W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W191047	75112	Spencer	Santa Claus	380102N	865624W	Raccoon Creek	Mansfield	Unnamed Mansfield	Bituminous
W191038	75113	Spencer	Santa Claus	380102N	865624W	Raccoon Creek	Mansfield	Unnamed Mansfield	Bituminous
W191035	75114	Spencer	Dale	380847N	865751W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W191036	75115	Spencer	Dale	380847N	865752W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W191037	75116	Spencer	Dale	380835N	865555W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W191034	75117	Spencer	Dale	380835N	865554W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W191062	75118	Spencer	Santa Claus	380208N	865732W	Raccoon Creek	Brazil	Buffaloville	Bituminous
W191041	75119	Spencer	Santa Claus	380211N	865733W	Raccoon Creek	Brazil	Buffaloville	Bituminous
W194391	76042	Spencer	Dale	380744N	865526W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W194401	76042B	Spencer	Dale	380744N	865526W	Raccoon Creek	Brazil	Unnamed Brazil	Bone
W194392	76043	Spencer	Dale	380747N	865526W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196345	77011	Spencer	Dale	380943N	865645W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196368	77011B	Spencer	Dale	380943N	865645W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196346	77012	Spencer	Dale	380943N	865645W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196347	77013	Spencer	Dale	380943N	865645W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196348	77014	Spencer	Dale	380814N	865538W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196371	77014B	Spencer	Dale	380814N	865538W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196349	77015	Spencer	Dale	380814N	865538W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196350	77016	Spencer	Dale	380814N	865538W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196351	77017	Spencer	Dale	380814N	865741W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous

Table 3. Sample location information for USCHEM data for coals in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Estimated rank
W196352	77018	Spencer	Dale	380814N	865741W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196374	77018A	Spencer	Dale	380814N	865741W	Raccoon Creek	Brazil	nde	Bone
W196353	77019	Spencer	Dale	380814N	865741W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196354	77020	Spencer	Dale	380814N	865741W	Raccoon Creek	Brazil	Unnamed Brazil	Bituminous
W196356	77021	Spencer	Santa Claus	380343N	865422W	Raccoon Creek	Mansfield	Mariah Hill	Bituminous
W196357	77022	Spencer	Santa Claus	380343N	865422W	Raccoon Creek	Mansfield	Mariah Hill	Bituminous
W196355	77023	Spencer	Santa Claus	380343N	865422W	Raccoon Creek	Mansfield	Mariah Hill	Bituminous
W197295	77037	Spencer	Dale	380817N	865521W	Raccoon Creek	Mansfield	Mariah Hill	Bituminous
D172304	75014	Sullivan	Bucktown	385720N	871528W	Carbondale	Dugger	Hymera	Bituminous
D172307	75017	Sullivan	Hymera	391131N	871814W	Carbondale	Petersburg	Springfield	Bituminous
D172308	75018	Sullivan	Hymera	390840N	871948W	Carbondale	Dugger	Hymera	Bituminous
D172309	75019	Sullivan	Dugger	390554N	872015W	Carbondale	Dugger	Danville	Bituminous
W191046	75108	Sullivan	Dugger	390447N	871523W	Carbondale	Dugger	Danville	Bituminous
W191245	75108B	Sullivan	Dugger	390447N	871523W	Carbondale	Dugger	Danville	Bone
W191049	75109	Sullivan	Dugger	390447N	871522W	Carbondale	Dugger	Danville	Bituminous
W191248	75109B	Sullivan	Dugger	390447N	871522W	Carbondale	Dugger	Danville	Bone
W192635	76026	Sullivan	Hymera	391143N	872101W	Carbondale	Dugger	Hymera	Bituminous
W192636	76027	Sullivan	Hymera	391143N	872101W	Carbondale	Dugger	Hymera	Bituminous
W193120	76037	Sullivan	Dugger	390349N	872023W	Carbondale	Dugger	Danville	Bituminous
W194388	76039	Sullivan	Jasonville	391235N	871440W	Carbondale	Petersburg	Springfield	Bituminous
W194389	76040	Sullivan	Jasonville	391235N	871439W	Carbondale	Petersburg	Springfield	Bituminous
W194857	76050	Sullivan	Dugger	390349N	872023W	Carbondale	Dugger	Hymera	Bituminous
W194829	76050C	Sullivan	Dugger	390349N	872023W	Carbondale	Dugger	Hymera	Bone
W188952	75061	Vermillion	Clinton	393752N	873222W	Carbondale	Dugger	Danville	Bituminous
W188953	75062	Vermillion	Clinton	393755N	872916W	Carbondale	Dugger	Danville	Bituminous
W191043	75120	Vermillion	Humrick	395422N	873046W	Carbondale	Dugger	Bucktown	Bituminous
W191059	75123	Vermillion	Humrick	395333N	873018W	Carbondale	Dugger	Bucktown	Bituminous
W191054	75124	Vermillion	Humrick	395333N	873018W	Carbondale	Dugger	Bucktown	Bituminous
W193121	76036	Vermillion	Humrick	395344N	873017W	Carbondale	Petersburg	Springfield	Bituminous
W188944	75053	Vigo	Lewis	392204N	871703W	Carbondale	Petersburg	Houchin Creek	Bituminous
W188945	75054	Vigo	Lewis	392204N	871703W	Carbondale	Petersburg	Houchin Creek	Bituminous
W188950	75059	Vigo	New Goshen	393640N	872859W	Carbondale	Dugger	Danville	Bituminous
W188951	75060	Vigo	New Goshen	393640N	872859W	Carbondale	Dugger	Danville	Bituminous
W196339	77002	Vigo	Rosedale	393305N	871638W	Carbondale	Linton	Colchester	Bituminous
W196340	77003	Vigo	Rosedale	393305N	871638W	Carbondale	Linton	Colchester	Bituminous
W196341	77004	Vigo	Rosedale	393305N	871638W	Carbondale	Linton	Colchester	Bituminous
W196344	77010	Vigo	Lewis	392209N	871628W	Carbondale	Petersburg	Houchin Creek	Bituminous
W196366	77010B	Vigo	Lewis	392209N	871628W	Carbondale	Petersburg	nde	Bituminous
D173482	75032	Warrick	Yankeetown	375823N	871503W	Carbondale	Petersburg	Springfield	Bituminous
D173487	75037	Warrick	Folsomville	380757N	871444W	Carbondale	Petersburg	Springfield	Bituminous

Table 3. Sample location information for USCHEM data for coals in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Estimated rank
W188930	75039	Warrick	Lynnville	381356N	871802W	Carbondale	Dugger	Danville	Bituminous
W188931	75040	Warrick	Lynnville	381356N	871802W	Carbondale	Dugger	Danville	Bituminous
W190530	75065	Warrick	Folsomville	381238N	871328W	Carbondale	Petersburg	Springfield	Bituminous
W190531	75066	Warrick	Folsomville	381238N	871328W	Carbondale	Petersburg	Springfield	Bituminous
W190932	75095	Warrick	Boonville	380047N	871539W	Carbondale	Petersburg	Springfield	Bituminous
W190933	75096	Warrick	Boonville	380047N	871539W	Carbondale	Petersburg	Springfield	Bituminous
W191233	75096B	Warrick	Boonville	380047N	871539W	Carbondale	Petersburg	Springfield	Bituminous
W191052	75098	Warrick	Daylight	380654N	872432W	Carbondale	Dugger	Hymera	Bituminous
W191060	75099	Warrick	Daylight	380654N	872432W	Carbondale	Dugger	Hymera	Bituminous
W191239	75099C	Warrick	Daylight	380654N	872432W	Carbondale	Dugger	nde	Bone
W191053	75100	Warrick	Daylight	380654N	872432W	Carbondale	Dugger	Danville	Bituminous
W191061	75101	Warrick	Daylight	380654N	872432W	Carbondale	Dugger	Danville	Bituminous
W191057	75104	Warrick	Boonville	380516N	871615W	Carbondale	Petersburg	Springfield	Bituminous
W191058	75105	Warrick	Boonville	380517N	871615W	Carbondale	Petersburg	Springfield	Bituminous
W191044	75106	Warrick	Boonville	380514N	871544W	Carbondale	Petersburg	Springfield	Bituminous
W191045	75107	Warrick	Boonville	380514N	871545W	Carbondale	Petersburg	Springfield	Bituminous
W191040	75121	Warrick	Yankeetown	375738N	872046W	Carbondale	Petersburg	Springfield	Bituminous
W191039	75122	Warrick	Yankeetown	375738N	872046W	Carbondale	Petersburg	Springfield	Bituminous
W191276	75122B	Warrick	Yankeetown	375738N	872046W	Carbondale	Petersburg	Springfield	Bituminous
W192614	76001	Warrick	Daylight	380342N	872512W	Carbondale	Dugger	Hymera	Bituminous
W192615	76002	Warrick	Daylight	380342N	872512W	Carbondale	Dugger	Hymera	Bituminous
W194413	76002B	Warrick	Daylight	380342N	872512W	Carbondale	Dugger	Hymera	Bituminous
W192624	76012	Warrick	Boonville	380721N	872057W	Carbondale	Dugger	Hymera	Bituminous
W192625	76013	Warrick	Boonville	380721N	872057W	Carbondale	Dugger	Hymera	Bituminous
W192626	76014	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Bituminous
W194431	76014B	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Bituminous
W192627	76015	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Bituminous
W193124	76033	Warrick	De Gonia Springs	380530N	871407W	Carbondale	Petersburg	Springfield	Bituminous
W194464	76033A	Warrick	De Gonia Springs	380530N	871407W	Carbondale	Petersburg	Springfield	Bituminous
W193122	76034	Warrick	Boonville	380534N	871544W	Carbondale	Petersburg	Springfield	Bituminous
W193123	76035	Warrick	Boonville	380534N	871544W	Carbondale	Petersburg	Springfield	Bituminous
W194859	76052B	Warrick	Boonville	380541N	871539W	Carbondale	Petersburg	Springfield	Bituminous
W194862	76056	Warrick	Yankeetown	375846N	872202W	Carbondale	Petersburg	Springfield	Bituminous
W194836	76057C	Warrick	Boonville	380534N	871539W	Carbondale	Dugger	nde	Mudstone

Table 3a. Sample location information for USCHEM data for coal associated rocks in Indiana.
[nde means no data entered.]

USGS N.	IGS N.	County	Quadrangle (7.5′)	Latitude	Longitude	Group	Formation	Bed	Zone	Estimated rank
W191214	75085A	Clay	Center Point	392407N	870614W	Raccoon Creek	Brazil	nde	Roof	Shale
W191217	75089A	Clay	Staunton	392504N	871400W	Raccoon Creek	Staunton	Seelyville	Parting	Shale
W191218	75089B	Clay	Staunton	392504N	871400W	Raccoon Creek	Staunton	Seelyville	Parting	Shale
W191219	75091A	Clay	Staunton	392635N	871110W	Carbondale	Linton	nde	Roof	Shale
W191221	75091C	Clay	Staunton	392635N	871110W	Carbondale	Linton	nde	Roof	Shale
W191223	75091E	Clay	Staunton	392635N	871110W	Raccoon Creek	Staunton	nde	Underclay	Underclay
W191235	75097A	Clay	Jasonville	391225N	871142W	Carbondale	Linton	Survant	Parting	Shale
W191236	75097B	Clay	Jasonville	391225N	871142W	Carbondale	Petersburg	Survant	Parting	Shale
W194449	76023B	Clay	Center Point	392531N	870556W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W197289	77042A	Daviess	Alfordsville	383539N	865953W	Raccoon Creek	Staunton	Unnamed Staunton	Parting	Shale
W194425	76009A	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	nde	Roof	Shale
W194427	76009C	Dubois	Velpen	382224N	870054W	Raccoon Creek	Staunton	nde	Floor	Shale
W194403	76044A	Dubois	Velpen	382038N	870139W	Raccoon Creek	Staunton	nde	Roof	Shale
W194404	76044B	Dubois	Velpen	382038N	870139W	Raccoon Creek	Staunton	Unnamed Staunton	Parting	Clay
W196361	77005A	Dubois	Rusk	383041N	864625W	Raccoon Creek	Mansfield	nde	Roof	Shale
W196363	77006A	Dubois	Rusk	383043N	864559W	Raccoon Creek	Mansfield	nde	Roof	Shale
W196364	77006B	Dubois	Rusk	383043N	864559W	Raccoon Creek	Mansfield	nde	Floor	Claystone
W194406	76046A	Gibson	Oakland City	381855N	872220W	Carbondale	Dugger	nde	Roof	Shale
W194408	76048A	Gibson	Oakland City	381855N	872220W	Mcleansboro	Shelburn	nde	Roof	Shale
W194409	76048B	Gibson	Oakland City	381855N	872220W	Carbondale	Dugger	Danville	Parting	Shale
W194410	76048C	Gibson	Oakland City	381855N	872220W	Carbondale	Dugger	nde	Floor	Shale
W197282	77033A	Gibson	Oakland City	381852N	872221W	Mcleansboro	Shelburn	nde	Roof	Shale
W197283	77033B	Gibson	Oakland City	381852N	872221W	Carbondale	Dugger	Danville	Parting	Shale
W197284	77033C	Gibson	Oakland City	381852N	872221W	Carbondale	Dugger	Danville	Parting	Shale
W197285	77033D	Gibson	Oakland City	381852N	872221W	Carbondale	Dugger	nde	Floor	Underclay
W191278	75125B	Greene	Jasonville	390730N	871050W	Carbondale	Linton	nde	Seatearth	Shale
W194817	76049A	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Parting	Shale
W194818	76049B	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Parting	Shale
W194819	76049C	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Parting	Shale
W194820	76049D	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Parting	Shale
W194822	76049F	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Parting	Shale
W194824	76049H	Greene	Jasonville	390737N	871140W	Carbondale	Linton	Springfield	Parting	Shale
W194826	76049J	Greene	Jasonville	390737N	871140W	Carbondale	Linton	nde	Floor	Shale
W194441	76016A	Martin	Alfordsville	383442N	865231W	Raccoon Creek	Mansfield	nde	Roof	Shale
W194442	76016B	Martin	Alfordsville	383442N	865231W	Raccoon Creek	Mansfield	nde	Floor	Shale
W194443	76017A	Martin	Alfordsville	383442N	865231W	Raccoon Creek	Mansfield	nde	Roof	Shale
W197286	77041A	Martin	Rusk	383536N	864910W	Raccoon Creek	Mansfield	nde	Roof	Sandstone
W197288	77041C	Martin	Rusk	383536N	864910W	Raccoon Creek	Mansfield	nde	Floor	Underclay
W191203	75077A	Owen	Patricksburg	391710N	865736W	Raccoon Creek	Brazil	Upper Block	Parting	Shale
W191206	75081A	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Parting	Shale

Table 3a. Sample location information for USCHEM data for coal associated rocks in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Zone	Estimated rank
W191210	75083A	Owen	Clay City	391632N	870201W	Raccoon Creek	Brazil	Lower Block	Parting	Shale
W194456	76038B	Owen	Coal City	391443N	870132W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W196358	77001A	Owen	Coal City	391436N	870131W	Raccoon Creek	Brazil	nde	Roof	Shale
W196359	77001B	Owen	Coal City	391436N	870131W	Raccoon Creek	Brazil	Upper Block	Parting	Shale
W194416	76004A	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	nde	Roof	Shale
W194417	76004B	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	nde	Roof	Shale
W194418	76004C	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	St. Meinrad	Parting	Shale
W194420	76006A	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	nde	Roof	Shale
W196376	76006B	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	St. Meinrad	Floor	Underclay
W194422	76007B	Perry	Gatchel	380103N	864002W	Raccoon Creek	Mansfield	nde	Underclay	Underclay
W191226	75092C	Pike	Velpen	382104N	870609W	Carbondale	Linton	nde	Underclay	Underclay
W191229	75094A	Pike	Oakland City	382210N	871512W	Carbondale	Petersburg	nde	Underclay	Underclay
W191242	75103A	Pike	Winslow	382239N	871405W	Carbondale	Dugger	nde	Roof	Shale
W191243	75103B	Pike	Winslow	382239N	871405W	Carbondale	Petersburg	nde	Underclay	Underclay
W194445	76021A	Pike	Augusta	381810N	870850W	Carbondale	Petersburg	nde	Roof	Shale
W194446	76021B	Pike	Augusta	381810N	870850W	Carbondale	Linton	nde	Floor	Shale
W194858	76051	Pike	Sandy Hook	383148N	871341W	Carbondale	Petersburg	Springfield	nde	Bituminous
W194830	76051A	Pike	Sandy Hook	383148N	871341W	Carbondale	Dugger	nde	Roof	Shale
W194833	76054A	Pike	Augusta	382144N	871345W	Carbondale	Dugger	nde	Roof	Shale
W194834	76054B	Pike	Augusta	382144N	871345W	Carbondale	Petersburg	nde	Floor	Shale
W194837	76058A	Pike	Winslow	382725N	871437W	Carbondale	Petersburg	nde	Roof	Shale
W194838	76058B	Pike	Winslow	382725N	871437W	Carbondale	Petersburg	Springfield	Parting	Shale
W194840	76060A	Pike	Petersburg	382637N	871837W	Carbondale	Dugger	nde	Underclay	Underclay
W191250	75110A	Spencer	Santa Claus	380212N	865731W	Raccoon Creek	Brazil	nde	Roof	Shale
W191251	75110B	Spencer	Santa Claus	380212N	865731W	Raccoon Creek	Brazil	nde	Seatearth	Shale
W191252	75111A	Spencer	Santa Claus	380213N	865731W	Raccoon Creek	Brazil	nde	Roof	Shale
W191253	75111B	Spencer	Santa Claus	380213N	865731W	Raccoon Creek	Brazil	nde	Seatearth	Shale
W191254	75112A	Spencer	Santa Claus	380102N	865624W	Raccoon Creek	Mansfield	nde	Roof	Shale
W191255	75112B	Spencer	Santa Claus	380102N	865624W	Raccoon Creek	Mansfield	nde	Floor	Shale
W191256	75113A	Spencer	Santa Claus	380102N	865624W	Raccoon Creek	Mansfield	nde	Roof	Shale
W191257	75113B	Spencer	Santa Claus	380102N	865624W	Raccoon Creek	Mansfield	Unnamed Mansfield	Floor	Shale
W191258	75113C	Spencer	Santa Claus	380102N	865624W	Raccoon Creek	Mansfield	nde	Underclay	Underclay
W191259	75114A	Spencer	Dale	380847N	865751W	Raccoon Creek	Brazil	nde	Roof	Shale
W191260	75114B	Spencer	Dale	380847N	865751W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W191261	75115A	Spencer	Dale	380847N	865752W	Raccoon Creek	Brazil	nde	Roof	Sandstone
W191262	75115B	Spencer	Dale	380847N	865752W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W191263	75116A	Spencer	Dale	380835N	865555W	Raccoon Creek	Brazil	nde	Roof	Sandstone
W191264	75116B	Spencer	Dale	380835N	865555W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W191265	75117A	Spencer	Dale	380835N	865554W	Raccoon Creek	Brazil	nde	Roof	Sandstone
W191266	75117B	Spencer	Dale	380835N	865554W	Raccoon Creek	Brazil	nde	Underclay	Underclay

Table 3a. Sample location information for USCHEM data for coal associated rocks in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Zone	Estimated rank
W191267	75118A	Spencer	Santa Claus	380208N	865732W	Raccoon Creek	Staunton	nde	Roof	Shale
W191268	75118B	Spencer	Santa Claus	380208N	865732W	Raccoon Creek	Brazil	Buffaloville	Parting	Shale
W191269	75118C	Spencer	Santa Claus	380208N	865732W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W191270	75119A	Spencer	Santa Claus	380211N	865733W	Raccoon Creek	Staunton	nde	Roof	Shale
W191271	75119B	Spencer	Santa Claus	380211N	865733W	Raccoon Creek	Brazil	Buffaloville	Parting	Shale
W191272	75119C	Spencer	Santa Claus	380211N	865733W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W194400	76042A	Spencer	Dale	380744N	865526W	Raccoon Creek	Brazil	Unnamed Brazil	nde	Shale
W194402	76042C	Spencer	Dale	380744N	865526W	Raccoon Creek	Brazil	nde	Underclay	Underclay
W196367	77011A	Spencer	Dale	380943N	865645W	Raccoon Creek	Brazil	nde	Roof	Sandstone
W196369	77012A	Spencer	Dale	380943N	865645W	Raccoon Creek	Brazil	nde	Floor	Underclay
W196370	77014A	Spencer	Dale	380814N	865538W	Raccoon Creek	Brazil	nde	Roof	Shale
W196372	77015A	Spencer	Dale	380814N	865538W	Raccoon Creek	Brazil	nde	Floor	Underclay
W196373	77017A	Spencer	Dale	380814N	865741W	Raccoon Creek	Brazil	nde	Roof	Sandstone
W196375	77019A	Spencer	Dale	380814N	865741W	Raccoon Creek	Brazil	nde	Floor	Underclay
W191244	75108A	Sullivan	Dugger	390447N	871523W	Mcleansboro	Shelburn	nde	Roof	Shale
W191246	75108C	Sullivan	Dugger	390447N	871523W	Carbondale	Dugger	nde	Underclay	Underclay
W191247	75109A	Sullivan	Dugger	390447N	871522W	Mcleansboro	Shelburn	nde	Roof	Shale
W191249	75109C	Sullivan	Dugger	390447N	871522W	Carbondale	Dugger	nde	Underclay	Underclay
W194450	76026A	Sullivan	Hymera	391143N	872101W	Carbondale	Dugger	nde	Roof	Shale
W194451	76026B	Sullivan	Hymera	391143N	872101W	Carbondale	Dugger	Hymera	Parting	Shale
W194452	76026C	Sullivan	Hymera	391143N	872101W	Carbondale	Dugger	Hymera	Parting	Shale
W194453	76027A	Sullivan	Hymera	391143N	872101W	Carbondale	Dugger	Hymera	Parting	Shale
W194454	76027B	Sullivan	Hymera	391143N	872101W	Carbondale	Dugger	nde	Underclay	Underclay
W194457	76037A	Sullivan	Dugger	390349N	872023W	Mcleansboro	Shelburn	nde	Roof	Shale
W194458	76037B	Sullivan	Dugger	390349N	872023W	Carbondale	Dugger	nde	Underclay	Underclay
W194398	76039A	Sullivan	Jasonville	391235N	871440W	Carbondale	Dugger	nde	nde	Shale
W194399	76039B	Sullivan	Jasonville	391235N	871440W	Carbondale	Petersburg	Springfield	nde	Shale
W194827	76050A	Sullivan	Dugger	390349N	872023W	Carbondale	Dugger	Hymera	Parting	Shale
W194828	76050B	Sullivan	Dugger	390349N	872023W	Carbondale	Dugger	Hymera	Parting	Shale
W191273	75120A	Vermillion	Humrick	395422N	873046W	Carbondale	Dugger	Bucktown	Parting	Shale
W194459	76036A	Vermillion	Humrick	395344N	873017W	Carbondale	Dugger	nde	Roof	Shale
W194460	76036B	Vermillion	Humrick	395344N	873017W	Carbondale	Petersburg	nde	Underclay	Underclay
W196365	77010A	Vigo	Lewis	392209N	871628W	Carbondale	Petersburg	nde	Roof	Shale
W191230	75095A	Warrick	Boonville	380047N	871539W	Carbondale	Dugger	nde	Roof	Shale
W191231	75095B	Warrick	Boonville	380047N	871539W	Carbondale	Petersburg	nde	Underclay	Underclay
W191232	75096A	Warrick	Boonville	380047N	871539W	Carbondale	Dugger	nde	Roof	Shale
W191234	75096C	Warrick	Boonville	380047N	871539W	Carbondale	Petersburg	nde	Underclay	Underclay
W191237	75098A	Warrick	Daylight	380654N	872432W	Carbondale	Dugger	nde	Seatearth	Shale
W191238	75098B	Warrick	Daylight	380654N	872432W	Carbondale	Dugger	nde	Roof	Shale
W191240	75100A	Warrick	Daylight	380654N	872432W	Mcleansboro	Shelburn	nde	Roof	Shale

Table 3a. Sample location information for USCHEM data for coal associated rocks in Indiana. --continued

USGS N.	IGS N.	County	Quadrangle (7.5')	Latitude	Longitude	Group	Formation	Bed	Zone	Estimated rank
W191241	75101A	Warrick	Daylight	380654N	872432W	Mcleansboro	Shelburn	nde	Roof	Shale
W191274	75121A	Warrick	Yankeetown	375738N	872046W	Carbondale	Petersburg	nde	Underclay	Underclay
W191275	75122A	Warrick	Yankeetown	375738N	872046W	Carbondale	Dugger	nde	Roof	Shale
W191280	75122C	Warrick	Yankeetown	375738N	872046W	Carbondale	Petersburg	nde	Underclay	Underclay
W194414	76002C	Warrick	Daylight	380342N	872512W	Carbondale	Dugger	nde	Underclay	Underclay
W194415	76003A	Warrick	Daylight	380408N	872456W	Mcleansboro	Shelburn	nde	Roof	Shale
W194428	76012A	Warrick	Boonville	380721N	872057W	Carbondale	Dugger	nde	Roof	Mudstone
W194429	76012B	Warrick	Boonville	380721N	872057W	Carbondale	Dugger	nde	Underclay	Underclay
W194430	76014A	Warrick	Boonville	380721N	872015W	Mcleansboro	Shelburn	nde	Roof	Mudstone
W194432	76014C	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Parting	Shale
W194433	76014D	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Parting	Shale
W194435	76014E	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	nde	Underclay	Underclay
W194436	76015A	Warrick	Boonville	380721N	872015W	Mcleansboro	Shelburn	nde	Roof	Mudstone
W194437	76015B	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Parting	Shale
W194438	76015C	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Parting	Shale
W194439	76015D	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	Danville	Parting	Shale
W194440	76015E	Warrick	Boonville	380721N	872015W	Carbondale	Dugger	nde	Underclay	Underclay
W194465	76033B	Warrick	De Gonia Springs	380530N	871407W	Carbondale	Petersburg	nde	Underclay	Underclay
W194461	76034A	Warrick	Boonville	380534N	871544W	Carbondale	Dugger	nde	Roof	Shale
W194462	76034B	Warrick	Boonville	380534N	871544W	Carbondale	Petersburg	Springfield	Parting	Shale
W194463	76035A	Warrick	Boonville	380534N	871544W	Carbondale	Petersburg	Springfield	Parting	Shale
W194832	76052A	Warrick	Boonville	380541N	871539W	Carbondale	Petersburg	Springfield	Parting	Bone
W194835	76057A	Warrick	Boonville	380534N	871539W	Carbondale	Petersburg	Springfield	Parting	Shale
W194863	76057B	Warrick	Boonville	380534N	871539W	Carbondale	Petersburg	Springfield	nde	Bituminous

Table 4.--Major- and minor- oxide composition of the laboratory ash of 234 coal samples from Indiana.

[Values in percent. Coal ashed at 525 C. L means less than the value shown B, not determined. Sample number is USGS laboratory number. Field number is IGS identification number.]

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
D172302	18.1	44	25	0.40	1.1	0.23	3.1	12	1.2	0.099L	0.99	75012
W188940	7.6	23	14	.85	.43	.14	.83	55	.74	.11L	1.5	75049
W188941	6.4	34	21	1.1	.66	.18	1.2	37	.97	.094L	1.4	75050
W188942	10.1	34	19	.66	.60	.14	1.2	39	.69	.099L	1.2	75051
W188943	8.9	34	18	1.1	.80	.22	1.0	37	.79	.10L	2.3	75052
W190536	7.4	35	16	.95	.51	.22	.95	20	.99	1.0L	1.5	75079
W190537	10.5	41	13	1.4	.91	.31	1.5	16	.86	1.0L	1.9	75080
W191205	17.9	52	24	.40	.43	.58	1.6	16	1.5	.028	1.5	75080A
W190542	5.3	52	25	.68	.33	.20	1.2	7.0	1.4	1.2	.69	75085
W191215	44.7	57	29	.10	.83	.81	3.6	4.4	1.3	.020	1.2	75085B
W190543	4.5	52	28	1.6	.73	.27	1.4	3.6	1.4	1.0L	2.1	75086
W191216	38.7	58	29	.20	1.0	.85	3.4	3.9	1.3	.010	1.1	75086A
W190544	6.0	41	17	1.0	.30	.18	.77	15	1.2	1.0L	.51	75087
W190545	5.9	50	21	.85	.63	.20	1.1	9.7	1.3	1.0L	.77	75088
W190546	10.6	36	20	2.6	.73	.26	1.9	21	.73	1.0L	1.3	75089
W190547	12.5	33	17	4.0	.48	.26	.82	21	.43	1.0L	2.2	75090
W190548	14.8	43	25	.52	.90	.26	2.5	13	1.1	1.0L	.85	75091
W191220	28.5	39	24	.20	.78	.85	2.7	28	.90	.049	3.8	75091B
W191222	29.7	47	30	.20	1.0	.90	3.8	14	1.1	.030	1.9	75091D
W190934	8.6	35	22	.80	.76	.39	1.6	36	.90	.30	2.2	75097
W192632	6.0	55	28	.67	.43	.57	1.3	8.5	1.7	.42	.65	76023
W194447	21.9	56	29	.33	1.0	.20	3.3	6.4	1.3	.068	.49	76023A
W192633	5.6	53	28	.75	.43	.50	1.1	9.2	1.6	.63	.97	76024
W192634	16.9	1.7	B	B	B	.51	.34	B	B	B	B	76025
W194448	15.8	57	27	.41	.98	.16	2.8	5.1	1.3	.032	.48	76025A
W197297	10.9	20	11	.47	.20	.06	.48	65	.52	.18	1.1	77042
W197290	42.3	2.0	.6	.16	.02L	.01L	B	81	.04	B	14	77042B
W192620	15.2	42	15	8.4	.83	.35	1.5	19	.69	.059	7.2	76008
W194423	30.2	53	17	.39	.93	.32	3.3	16	.70	.070	2.1	76008A
W194424	9.1	44	17	.49	.61	.19	1.8	25	.88	.055	.90	76008B
W192621	14.1	41	14	1.2	0.65	0.28	1.4	35	0.75	0.34	1.9	76009
W194426	7.5	36	19	.84	.66	.15	1.6	27	.78	.040	2.0	76009B
W192622	8.7	42	17	.78	.81	.27	2.0	28	.90	.046	1.5	76010
W192623	14.1	38	17	.60	.46	.22	1.0	37	.64	.20	1.4	76011
W194393	13.2	24	9.9	.64	.32	.11	.74	49	.61	.091	1.0	76044

Table 4.--Major- and minor- oxide composition of the laboratory ash of 234 coal samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W194405	17.2	35	14	.37	.60	.15	1.9	35	.82	.017	1.3	76044C
W194394	12.0	31	13	.71	.40	.14	1.2	41	.74	.10	1.1	76045
W196342	3.2	38	30	1.2	.45	.12	.51	18	.70	.53	1.5	77005
W196362	37.2	53	33	.32	.91	.19	2.3	4.2	1.2	.11	.44	77005B
W196343	4.1	32	17	1.6	.53	.11	.74	33	.65	.71	1.7	77006
D172310	8.8	22	14	.69	.39	.10	1.1	50	.52	.10L	1.4	75024
D172311	13.1	26	12	1.8	.61	.12	1.9	44	.65	.099L	2.0	75025
D172312	15.8	20	8.8	9.3	.56	.11	1.5	39	.47	.14	7.1	75026
D172313	11.3	25	15	6.1	.50	.11	1.4	35	.60	.13	3.1	75027
D172314	10.0	42	19	2.5	.82	.15	2.7	22	.93	.10L	1.8	75028
D172315	22.2	11	4.5	5.2	.48	.08	.76	45	.22	.17	4.7	75029
W194395	41.9	51	29	.42	1.1	.30	3.5	6.6	1.3	.069	.80	76046
W194396	13.2	40	22	.43	.76	.18	2.3	23	1.0	.098	1.0	76047
W194407	44.1	50	26	.32	1.3	.27	3.9	8.7	1.1	.11	1.7	76047A
W194397	13.1	32	14	4.7	.61	.16	2.0	31	.79	.34	1.9	76048
W197293	18.2	40	22	.49	1.1	.23	2.6	27	.91	.11	1.8	77030
W197294	9.3	38	17	.67	.81	.22	2.3	37	.89	.18	1.9	77033
D172305	7.4	34	20	.67	.57	.14	1.3	25	1.1	.095L	.99	75015
W188946	6.7	34	18	.55	.66	.23	1.9	41	.80	.10L	1.2	75055
W188947	7.6	38	19	2.3	.73	.22	2.2	32	.84	.11L	.74	75056
W191042	10.6	36	22	3.2	0.98	0.53	2.1	25	1.0	1.6	2.6	75125
W191277	20.5	36	18	7.2	1.2	.50	2.2	24	.80	3.9	4.4	75125A
W191051	11.3	37	22	3.2	1.0	.73	1.9	29	1.1	1.3	3.0	75126
W191279	19.7	59	22	.30	.98	.57	3.9	3.7	1.2	.020	2.2	75126A
W194856	16.6	49	28	.61	1.1	.23	3.9	8.2	1.2	.078	1.1	76049
W194821	20.9	51	23	.48	1.1	.23	4.1	11	1.2	.10	1.1	76049E
W194823	20.6	44	20	.53	1.0	.19	3.6	20	.99	.13	1.4	76049G
W194825	43.0	35	17	.51	.85	.16	2.4	31	.78	.16	2.1	76049I
D172303	12.6	25	11	16	.50	.20	1.1	19	.63	.25	8.4	75013
W188948	9.2	44	21	2.3	.83	.30	2.2	24	.98	.098L	2.0	75057
W188949	9.3	48	22	4.5	1.0	.39	2.6	12	1.0	.097L	1.7	75058
W192628	16.5	53	26	.56	1.1	.57	4.2	6.9	1.2	.26	.65	76016
W192629	4.5	45	27	1.2	.83	.73	2.1	11	1.0	.33	.91	76017
W194444	40.1	57	26	.22	1.2	.20	3.5	6.9	.79	.020	.79	76017B
W197296	10.0	36	25	.56	.56	.13	1.3	32	.71	.12	1.4	77041
W197287	13.0	46	25	.60	.58	.12	1.2	21	1.4	.27	1.3	77041B
D172306	10.5	41	24	.57	.45	.13	1.0	18	.90	.16	1.3	75016
W190534	9.2	45	24	.34	.63	.16	1.1	15	.86	1.0L	.78	75077
W190535	9.2	40	25	.27	.37	.15	1.0	18	.87	1.0L	.75	75078
W191204	47.7	46	31	.06	.83	.80	2.9	10	1.3	.021	2.7	75078A

Table 4.--Major- and minor- oxide composition of the laboratory ash of 234 coal samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W190538	7.9	50	24	1.8	1.3	.54	2.0	3.9	1.0	1.0L	2.6	75081
W191207	27.8	54	33	.10	.61	.71	2.7	2.1	1.4	.10	.80	75081B
W191208	31.7	54	34	.20	.96	.84	3.1	2.0	1.3	.10	.70	75081C
W190539	8.9	50	32	1.2	.65	.22	2.3	2.4	1.2	1.4	.59	75082
W191209	25.7	47	32	.30	.73	.94	2.6	8.3	1.4	.40	1.5	75082A
W190540	7.4	54	26	1.4	0.86	0.27	2.0	3.8	1.1	1.0L	1.6	75083
W191211	19.2	53	36	.30	.56	.78	2.5	2.4	1.4	.30	1.0	75083B
W191212	43.7	52	33	.20	.96	.80	3.1	2.1	1.2	.30	.70	75083C
W190541	13.0	48	31	.71	.81	.27	2.4	5.0	1.2	1.0L	.59	75084
W191213	35.1	48	31	.30	.45	.74	2.5	11	1.2	.30	2.2	75084A
W193119	9.3	45	21	.92	.60	.62	1.6	20	1.3	1.1	.84	76038
W194455	7.8	53	32	.52	.83	.16	2.6	3.8	1.7	.051	.51	76038A
W194390	8.9	41	20	.72	.40	.14	1.4	24	1.2	.54	1.0	76041
W196338	9.8	55	33	.52	.73	.22	2.6	3.2	1.6	.27	.46	77001
W196360	18.3	52	34	.50	.83	.20	2.8	2.9	1.7	.21	.39	77001C
W188938	6.5	41	24	.49	.53	.13	.75	28	1.3	.58	.77	75047
W188939	7.7	44	24	.55	.40	.12	.86	23	1.4	.48	.71	75048
W192616	9.6	14	8.6	.75	.23	.05	.35	70	.23	.042	1.4	76004
W192617	9.2	12	8.7	.74	.25	.24	.38	71	.23	.054	1.4	76005
W194419	32.0	37	21	.22	.56	.14	2.1	25	.78	B	1.2	76005A
W192618	7.3	20	14	1.2	.41	.24	.80	56	.44	.096	2.1	76006
W192619	7.1	21	14	1.3	.45	.66	.93	55	.45	.11	2.0	76007
W194421	21.6	28	17	.28	.37	.07	1.3	38	.52	.028	1.0	76007A
W197291	3.5	36	28	1.3	.90	.19	1.5	23	.78	.17	2.5	77026
W197278	28.1	51	33	.34	1.0	.22	3.3	5.3	1.1	.17	.64	77026A
W197279	4.6	21	16	2.9	2.7	.32	.19	41	.09	.50	8.6	77026B
W197292	7.6	44	31	.60	.70	.15	2.2	17	.89	.14	.98	77029
W197280	25.4	47	25	.31	.85	.19	3.0	18	1.0	.12	.89	77029A
W197281	26.6	50	34	.35	1.0	.23	3.6	5.5	1.2	.10	.49	77029B
D173480	8.5	32	16	8.6	.63	.37	1.7	22	.82	.16	4.8	75030
D173481	7.6	42	21	4.5	.88	.28	2.3	16	1.1	.11L	1.6	75031
D173483	9.7	22	9.9	6.0	.39	.23	.92	45	.46	.12	2.9	75033
D173484	12.1	26	12	5.3	.44	.25	1.2	40	.48	.099L	3.1	75034
D173485	10.6	32	12	9.7	.47	.23	1.3	27	.62	.17	3.5	75035
D173486	18.1	15	5.6	30	.34	.13	.48	15	.25	.49	26	75036
W188932	12.4	53	25	0.58	1.5	0.42	3.8	11	1.0	0.11	0.96	75041
W188933	12.0	53	25	.56	1.5	.45	3.7	8.6	1.1	.18	1.3	75042
W190528	8.8	36	14	3.4	.66	1.1	1.6	25	.61	1.0L	2.5	75063
W190529	11.9	26	12	3.6	.70	.70	1.4	35	.56	1.0L	2.9	75064
W190532	8.6	40	16	3.6	.66	.20	1.8	21	.75	1.0L	2.5	75067

Table 4.--Major- and minor- oxide composition of the laboratory ash of 234 coal samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W190533	9.2	31	14	1.3	.65	.20	1.6	26	.66	1.0L	1.1	75068
W190929	8.7	33	20	.80	1.0	.58	1.4	36	.90	.49	2.0	75092
W191224	5.4	13	5.4	.70	.51	.15	.80	73	.70	.41	5.0	75092A
W191225	48.1	6.0	.9	B	.07	.38	.07	75	.09	B	18	75092B
W190930	8.7	30	18	.50	.90	.45	1.4	44	.80	.20	1.8	75093
W191227	5.4	15	8.2	.60	.28	.39	.60	69	.60	.20	2.6	75093A
W191228	33.2	60	24	.10	1.3	.67	2.8	5.6	1.2	.40	1.6	75093B
W190931	7.7	41	21	.50	1.2	.26	2.1	31	1.1	.026	1.9	75094
W191055	9.0	37	20	.60	.86	.57	1.6	35	.90	.20	2.1	75102
W191056	7.2	50	28	.30	.98	.40	2.2	13	1.2	.31	1.1	75103
W192630	9.4	30	17	2.7	.58	.24	1.4	40	.90	.085	2.5	76021
W192631	10.0	26	15	4.1	1.1	.50	1.4	46	.78	.11	2.9	76022
W194858	10.0	41	17	.76	.65	.19	2.2	24	.84	.050	1.4	76051B
W194860	8.1	43	20	1.7	.75	.16	2.4	21	1.1	.025	2.3	76053
W194861	9.0	50	23	.49	.56	.09	2.3	15	1.2	.17	1.0	76054
W194864	9.7	45	28	4.5	.78	.49	3.3	8.1	1.2	1.2	1.8	76058
W194839	36.8	49	25	.29	1.4	.47	4.1	12	1.0	.071	1.7	76058C
W194865	6.2	32	18	.73	.37	.14	1.7	31	.58	.11	1.2	76059
W194866	9.8	55	27	.52	1.2	.26	3.2	4.6	1.3	.24	.67	76060
W188934	2.9	35	16	3.9	1.0	.32	1.5	29	1.3	.14	6.7	75043
W188935	4.4	20	10	1.5	.45	.15	.61	60	.51	.16	2.2	75044
W188936	7.5	14	10	1.1	.32	.19	.26	69	.27	.093L	1.8	75045
W188937	7.4	34	26	1.0	0.51	0.22	0.86	36	0.62	0.14	2.0	75046
W191048	7.5	16	9.9	.60	.61	.50	.50	66	.50	.60	1.9	75110
W191050	6.5	14	8.4	1.8	.56	.58	.40	69	.50	.092	3.2	75111
W191047	5.1	39	21	.80	1.0	.57	1.5	30	1.0	.098	1.8	75112
W191038	4.6	45	24	.80	1.0	.39	1.6	22	1.1	.30	2.0	75113
W191035	10.3	46	25	.60	.76	.42	1.5	23	1.2	.50	1.8	75114
W191036	13.5	48	23	.50	.76	.55	1.1	22	1.3	.80	1.3	75115
W191037	7.3	45	26	1.4	1.2	.62	1.3	17	1.6	1.1	3.6	75116
W191034	9.5	42	23	.50	.81	.39	1.3	29	1.3	.20	1.6	75117
W191062	7.3	28	19	.60	.58	.63	.50	47	.40	.30	2.1	75118
W191041	7.7	23	14	.80	.63	.78	.60	55	.40	.19	2.4	75119
W194391	9.4	38	19	.61	.38	.14	1.1	28	1.1	.40	.73	76042
W194401	35.5	62	26	.39	1.1	.16	1.7	2.4	1.9	.43	.23	76042B
W194392	7.9	38	21	.66	.37	.12	1.0	27	1.1	.32	.80	76043
W196345	7.0	31	13	.77	.45	.20	.91	40	.87	.086	1.3	77011
W196368	40.7	66	24	.43	.43	.19	.94	2.2	1.9	.40	.55	77011B
W196346	7.3	37	23	.67	.38	.18	.78	26	1.1	.36	1.0	77012
W196347	7.2	32	15	.61	.38	.18	.89	37	.94	.17	1.0	77013

Table 4.--Major- and minor- oxide composition of the laboratory ash of 234 coal samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W196348	5.5	37	15	.72	.45	.14	1.1	31	.92	.055	1.2	77014
W196371	31.2	65	23	.44	.58	.18	1.6	2.4	1.6	.35	.40	77014B
W196349	7.7	40	24	.52	.37	.15	.98	21	1.2	.26	.87	77015
W196350	6.5	40	20	.61	.38	.15	1.1	26	1.1	.15	1.0	77016
W196351	6.2	14	6.3	.73	.35	.11	.33	60	.51	.016	1.8	77017
W196352	6.5	39	17	.71	.51	.15	1.5	29	1.2	.046	1.1	77018
W196374	19.3	57	29	.52	.55	.16	1.4	3.6	1.7	.62	.50	77018A
W196353	8.2	26	16	.48	.27	.10	.79	41	.82	.13	3.3	77019
W196354	6.8	27	13	.62	.37	.12	.87	43	.86	.074	1.9	77020
W196355	3.0	47	27	.84	.40	.13	.74	13	1.2	.033	1.2	77021
W196356	2.9	47	18	.91	.43	.15	.84	20	1.2	.034	1.5	77022
W196357	3.3	47	33	.80	.40	.12	.66	6.3	1.2	.061	1.0	77023
W197295	9.7	43	19	.40	.50	.15	1.9	31	.89	.052	.79	77037
D172304	17.7	43	15	.97	1.0	.49	2.7	21	.88	.10L	1.4	75014
D172307	13.2	38	15	1.9	.71	.27	1.9	27	.84	.098L	1.2	75017
D172308	12.1	48	18	2.2	1.0	.37	2.7	17	.97	.099L	1.3	75018
D172309	9.2	57	23	.47	1.2	.29	3.0	3.6	1.2	.098L	.38	75019
W191046	11.9	54	24	.50	1.4	.58	2.8	14	1.1	.059	1.5	75108
W191245	30.2	52	23	.20	1.7	.88	4.3	8.2	1.0	.020	2.8	75108B
W191049	10.0	56	23	.50	1.4	.31	2.9	14	1.2	.10	1.5	75109
W191248	34.7	40	16	.20	1.2	.57	2.8	31	.70	.30	4.9	75109B
W192635	9.8	38	16	.77	.66	.16	2.3	36	.91	1.6	.89	76026
W192636	10.1	35	14	5.2	.80	.18	1.8	33	.76	.050	5.0	76027
W193120	8.0	60	26	.51	1.2	.80	3.1	3.5	1.3	.050	.28	76037
W194388	8.8	50	22	.74	.65	.15	2.1	14	1.1	.045	.93	76039
W194389	9.0	46	19	.69	.30	.27	1.8	19	1.0	.011	1.3	76040
W194857	9.8	44	15	4.8	.76	.53	2.2	14	.93	.051	3.3	76050
W194829	41.4	60	21	.98	1.4	.73	3.2	7.1	1.1	.18	1.9	76050C
W188952	21.4	48	22	3.2	1.0	.76	2.8	16	1.0	.098L	2.2	75061
W188953	14.4	52	25	1.6	1.2	.93	3.0	10	1.1	.097L	1.6	75062
W191043	11.9	38	16	3.3	.86	.42	1.5	33	.80	.10	3.6	75120
W191059	14.5	31	16	6.2	.81	.67	1.1	36	.70	.021	4.9	75123
W191054	13.0	37	18	7.1	.98	.49	1.4	25	.80	.069	3.3	75124
W193121	11.9	25	11	6.4	.51	.61	1.1	38	.64	.14	5.0	76036
W188944	7.8	49	22	.72	.90	.24	2.1	19	.89	.10L	1.1	75053
W188945	6.5	46	21	.87	.80	.22	1.8	24	.88	.092L	1.9	75054
W188950	14.0	38	17	3.6	.73	.76	1.8	32	.76	.10L	3.7	75059
W188951	23.0	42	19	7.6	1.0	.82	2.5	18	.85	.10L	5.0	75060
W196339	9.1	35	7.4	11	.48	.12	.86	26	.49	.15	5.6	77002
W196340	13.1	43	13	8.9	.70	.12	1.6	16	.70	.008	.60	77003

Table 4.--Major- and minor- oxide composition of the laboratory ash of 234 coal samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W196341	11.1	42	11	8.1	.65	.12	1.4	20	.66	.072	4.4	77004
W196344	6.6	26	13	.60	.66	.19	.86	42	.83	.091	2.0	77010
W196366	41.0	57	26	.52	1.1	.28	2.4	4.2	1.1	.029	.60	77010B
D173482	8.5	42	19	3.8	.56	.45	1.7	21	1.0	.094L	1.6	75032
D173487	12.9	37	21	3.1	1.0	.17	2.3	20	.82	.10L	2.5	75037
W188930	6.7	44	24	6.7	.71	.27	2.0	15	1.1	.21	.45	75039
W188931	8.3	42	24	2.0	.80	.28	2.1	23	1.1	.60	1.3	75040
W190530	9.4	29	13	4.2	.78	.38	1.4	28	.55	1.0L	6.2	75065
W190531	8.3	29	15	5.6	.80	.47	1.5	20	.60	1.0L	3.9	75066
W190932	13.9	30	14	6.4	.96	.35	1.6	38	.70	.20	7.5	75095
W190933	11.9	36	17	7.6	1.4	0.40	2.1	24	0.80	0.60	7.8	75096
W191233	19.5	21	7.8	3.7	.33	.27	.80	58	.50	.051	5.1	75096B
W191052	15.7	17	9.1	27	.80	.45	.70	15	.40	.10	15	75098
W191060	21.4	21	11	23	.76	.23	.80	18	.40	.30	16	75099
W191239	31.2	26	9.9	17	.51	.39	1.2	23	.40	2.2	14	75099C
W191053	14.5	31	14	4.5	1.1	.45	1.9	34	.70	.50	3.2	75100
W191061	10.0	42	19	4.8	1.1	.73	2.2	23	.90	.70	4.0	75101
W191057	9.8	23	13	8.9	.81	.39	1.4	35	.60	.30	5.6	75104
W191058	9.5	39	18	4.6	1.0	.69	1.9	27	.90	.29	4.7	75105
W191044	8.6	44	19	4.6	1.1	.66	2.3	19	.90	.20	3.0	75106
W191045	10.1	49	21	2.9	1.2	.67	2.6	20	.90	.30	2.7	75107
W191040	9.2	42	21	9.5	.98	.61	1.9	13	1.0	.065	3.9	75121
W191039	12.5	35	16	5.8	.83	.46	1.6	37	.80	.080	3.3	75122
W191276	45.9	5.9	.7	.07	.10	.22	.01	83	.10	B	8.4	75122B
W192614	12.1	30	13	8.8	.56	.34	1.4	31	.68	.041	5.5	76001
W192615	12.7	37	15	7.8	.70	.46	1.7	24	.81	.071	5.1	76002
W194413	20.2	27	10	1.7	.40	.18	1.0	43	.59	.010	1.2	76002B
W192624	11.7	32	14	5.6	.45	.46	1.3	36	.69	.043	3.6	76012
W192625	15.7	35	12	7.3	.51	.49	1.4	31	.67	.038	4.2	76013
W192626	9.4	35	14	6.1	.90	.54	2.1	29	.80	.26	3.3	76014
W194431	46.9	59	24	.64	1.7	.70	3.6	4.1	1.3	.019	1.1	76014B
W192627	12.9	35	15	10	.93	.65	2.1	22	.75	.24	3.5	76015
W193124	6.3	51	27	1.4	1.1	.73	3.1	9.0	1.3	.68	.99	76033
W194464	35.6	54	31	.51	1.4	.27	4.5	2.7	1.2	.12	.58	76033A
W193122	10.2	47	19	6.1	1.0	1.3	2.6	10	.96	.059	4.1	76034
W193123	11.4	32	16	9.1	.80	.71	2.2	23	.83	.070	5.0	76035
W194859	5.5	53	28	1.1	.80	.19	2.9	6.5	1.3	.42	.85	76052B
W194862	10.5	44	17	6.9	.50	.55	1.8	17	1.1	.010	5.2	76056
W194863	12.7	41	20	.66	.60	.19	2.6	24	.96	.039	1.3	76057C

Table 4a.--Major- and minor- oxide composition of the laboratory ash of 144 coal associated rock samples from Indiana.

[Values in percent. Coal ashed at 525 C. L means less than the value shown B, not determined. Sample number is USGS laboratory number. Field number is IGS identification number.]

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W191214	74.7	51	29	.30	1.1	.61	3.5	4.3	.90	.080	1.4	75085A
W191217	56.6	50	28	1.2	.85	.80	2.9	5.6	.90	.019	2.3	75089A
W191218	89.7	55	28	.20	.58	.74	3.0	4.6	1.1	.070	2.6	75089B
W191219	88.0	50	26	.10	1.1	.69	4.1	3.6	1.0	.010	1.1	75091A
W191221	59.8	55	29	.10	.78	.89	3.8	3.6	1.1	.060	1.3	75091C
W191223	83.0	59	30	.10	1.1	.71	4.5	3.0	1.3	B	1.5	75091E
W191235	85.4	55	27	.20	1.7	.61	4.5	4.6	.90	.040	1.9	75097A
W191236	78.6	54	32	.20	1.2	.73	3.6	3.4	1.1	B	1.7	75097B
W194449	91.4	64	26	.27	.78	.26	3.4	1.9	1.4	.050	.07	76023B
W197289	57.1	49	27	.18	1.1	.19	4.0	12	1.5	.070	1.8	77042A
W194425	69.4	50	13	4.6	1.1	.77	2.9	13	.75	.14	4.7	76009A
W194427	90.7	68	22	.50	.46	.04	.76	2.5	1.2	.010	.67	76009C
W194403	56.2	52	18	.42	1.4	.49	3.5	14	.80	.19	3.5	76044A
W194404	91.1	59	21	.36	.96	.30	3.1	3.9	1.1	.090	1.6	76044B
W196361	58.4	58	21	.26	1.7	.20	3.9	9.1	1.2	.070	1.3	77005A
W196363	52.0	52	19	.52	1.8	.20	3.5	14	1.1	.14	1.7	77006A
W196364	82.5	59	30	.39	.85	.22	2.3	2.3	1.2	.099	.17	77006B
W194406	70.8	54	27	.33	1.4	.24	3.9	4.5	1.2	.081	1.1	76046A
W194408	72.7	47	19	2.3	1.5	.40	3.6	12	.89	.41	4.6	76048A
W194409	51.0	1.4	B	.12	.50	.14	B	77	.03	B	3.3	76048B
W194410	88.9	57	23	1.2	1.2	.31	3.7	4.2	1.2	.65	1.9	76048C
W197282	85.4	50	22	.40	1.5	.39	4.0	15	.86	.15	4.6	77033A
W197283	51.0	13	7.0	.18	.25	.06	.87	61	.32	B	15	77033B
W197284	84.8	56	24	2.3	1.2	.24	3.8	4.3	1.1	1.4	2.0	77033C
W197285	89.9	52	26	1.9	1.2	.22	3.7	4.6	1.2	2.5	2.7	77033D
W191278	92.2	71	20	.01	1.2	.47	2.7	3.1	1.2	.050	.80	75125B
W194817	59.0	55	28	.34	1.2	.31	4.7	3.7	1.1	.020	.92	76049A
W194818	71.0	52	26	.32	1.2	.27	4.3	7.3	.99	.070	2.2	76049B
W194819	67.4	55	27	.31	1.3	.26	4.7	4.7	1.0	.019	1.5	76049C
W194820	76.2	47	20	.35	.93	.20	3.7	15	.98	.039	4.3	76049D
W194822	56.4	53	24	.38	1.2	.24	4.2	7.9	1.1	.069	1.6	76049F
W194824	77.7	57	23	.46	1.3	.26	4.3	5.4	1.2	.090	1.7	76049H
W194826	53.9	52	28	.52	1.4	.28	4.2	6.0	1.1	.21	1.9	76049J
W194441	97.7	84	11	.18	1.4	.15	1.2	.9	.83	.010	B	76016A
W194442	95.1	60	20	.41	.30	.07	3.3	10	1.1	.13	.67	76016B

Table 4a.--Major- and minor- oxide composition of the laboratory ash of 144 associated rock samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W194443	87.9	57	24	.23	1.6	.16	4.1	6.8	1.1	.020	.95	76017A
W197286	96.9	89	6.7	.12	.18	.07	.96	1.3	.67	.010	.64	77041A
W197288	72.1	65	25	.24	.68	.16	2.1	3.1	1.0	.050	.68	77041C
W191203	71.7	57	36	.02	.08	.65	.30	.3	1.2	.50	.70	75077A
W191206	68.1	54	27	.01	.78	.89	4.0	2.0	1.2	.010	.70	75081A
W191210	70.8	57	30	.07	.41	.67	4.2	1.8	1.3	B	.70	75083A
W194456	76.9	57	31	.32	1.1	.22	3.6	2.4	1.2	.020	.54	76038B
W196358	88.1	66	22	.27	1.2	.22	3.5	3.2	1.3	B	.07	77001A
W196359	56.6	59	28	.35	1.0	.31	4.9	2.2	1.5	.049	.20	77001B
W194416	91.5	71	8.9	.14	.56	.07	2.0	6.8	.67	B	3.9	76004A
W194417	77.3	53	19	.17	.93	.18	3.7	11	1.1	.030	4.0	76004B
W194418	85.2	59	27	.21	.86	.26	3.0	2.3	1.2	.040	.20	76004C
W196376	87.2	59	29	.20	.83	.26	3.5	2.3	1.2	.040	.38	76006A
W194420	64.8	47	21	.18	1.1	.19	4.0	14	.99	.049	3.5	76006B
W194422	93.1	76	16	.16	.43	.16	1.3	1.8	1.9	.020	.14	76007B
W191226	86.5	61	23	B	1.5	.61	2.9	5.1	1.1	.099	1.5	75092C
W191229	93.7	59	20	1.7	1.3	.23	4.0	3.2	1.1	.80	1.6	75094A
W191242	97.2	68	17	B	1.0	.80	2.9	3.7	1.0	.010	2.1	75103A
W191243	96.4	60	25	.20	1.5	.51	3.5	2.4	1.2	.050	1.0	75103B
W194445	93.9	59	21	.41	2.2	.94	4.0	5.4	1.0	.12	1.0	76021A
W194446	86.2	58	27	.24	1.5	.35	4.0	3.8	1.2	.030	.60	76021B
W194830	68.8	63	13	2.1	1.4	.63	3.2	6.5	.75	1.1	4.0	76051
W194831	90.0	61	18	.32	.83	.28	3.3	5.9	1.1	.010	4.5	76051A
W194833	94.5	62	21	.22	1.4	.78	3.9	4.4	1.0	.030	1.5	76054A
W194834	91.3	60	22	1.5	1.2	.16	4.4	2.9	1.1	2.2	1.1	76054B
W194837	80.6	59	24	.41	1.5	.34	4.5	3.6	1.0	.13	1.5	76058A
W194838	55.2	54	29	.40	1.6	.45	5.6	3.4	1.3	.091	.40	76058B
W194840	78.7	56	28	.31	1.6	.28	4.2	3.7	1.1	.050	.58	76060A
W191250	92.4	55	24	.30	1.5	.50	3.4	8.6	1.1	.090	4.7	75110A
W191251	86.0	64	25	.20	.53	.61	1.5	3.6	1.3	.40	3.1	75110B
W191252	87.7	54	24	.40	1.5	.54	3.5	10	1.1	.090	4.2	75111A
W191253	85.7	67	24	.10	.51	.46	1.1	3.6	1.4	.20	2.4	75111B
W191254	86.4	52	17	.40	2.0	.67	2.6	19	.90	.060	3.1	75112A
W191255	85.5	61	26	.06	1.2	.62	3.5	3.3	1.1	.011	1.5	75112B
W191256	89.5	59	19	.30	1.7	.70	2.8	12	1.0	.080	2.3	75113A
W191257	67.6	61	27	.09	1.0	.32	3.3	3.5	1.1	B	1.2	75113B
W191258	89.8	72	20	.02	.80	.59	2.5	1.6	1.0	.10	1.0	75113C
W191259	94.7	68	16	.10	1.2	.94	2.5	6.9	1.3	.030	1.5	75114A
W191260	92.5	64	25	.05	.86	.57	3.9	1.6	1.2	.010	1.5	75114B
W191261	96.2	75	16	.01	1.0	1.0	2.4	3.1	1.3	.20	.90	75115A

Table 4a.--Major- and minor- oxide composition of the laboratory ash of 144 associated rock samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W191262	92.0	67	24	.03	.78	.47	3.5	1.4	1.2	.020	1.0	75115B
W191263	98.0	84	7.9	B	.20	.71	1.0	4.8	1.0	.070	.70	75116A
W191264	93.9	68	25	B	.81	.49	3.3	1.5	1.2	B	.40	75116B
W191265	92.3	80	10	.04	.63	1.1	1.4	1.9	.90	.030	.90	75117A
W191266	93.9	65	24	.06	.90	.26	3.6	1.6	1.3	B	.80	75117B
W191267	62.2	42	20	.02	.86	.46	2.8	25	.80	.071	9.1	75118A
W191268	60.0	41	21	B	.68	.49	2.6	27	.70	.040	7.5	75118B
W191269	86.4	48	18	.07	.46	.39	1.4	20	.90	B	11	75118C
W191270	60.4	36	16	.07	.78	.49	2.4	34	.70	.060	10	75119A
W191271	62.1	38	20	B	.65	.45	2.3	30	.60	B	8.6	75119B
W191272	86.9	67	24	.20	.60	.45	2.0	3.3	1.2	B	2.0	75119C
W194400	74.4	67	12	.53	1.2	.88	2.1	9.7	1.0	.17	1.7	76042A
W194402	84.9	57	28	.29	1.1	.22	3.7	2.6	1.2	.009	.70	76042C
W196367	93.3	89	5.3	0.31	0.30	0.84	0.96	1.9	0.44	0.090	0.33	77011A
W196369	85.3	57	30	.38	1.1	.26	3.7	2.6	1.1	.030	.56	77012A
W196370	91.3	63	21	.38	1.6	.38	3.6	5.0	1.1	.10	1.0	77014A
W196372	89.8	65	23	.37	.91	.24	3.5	2.1	1.2	B	.42	77015A
W196373	98.2	87	7.7	.31	.37	.92	.92	1.8	1.1	.070	.15	77017A
W196375	93.8	71	18	.24	.73	.20	3.0	1.8	1.2	B	.26	77019A
W191244	98.1	66	18	.30	1.7	1.2	3.2	5.9	1.0	.070	1.8	75108A
W191246	94.7	62	27	.30	.76	.20	1.9	1.5	1.4	.20	1.4	75108C
W191247	97.2	63	19	.20	1.7	.86	3.4	4.7	.90	.050	1.9	75109A
W191249	89.8	64	27	.30	.65	.32	2.2	1.5	1.5	.20	1.3	75109C
W194450	91.4	56	23	.67	1.8	.31	4.6	7.1	1.1	.21	1.5	76026A
W194451	87.8	65	26	.64	.86	.24	3.1	2.1	1.2	.12	1.1	76026B
W194452	74.7	56	29	1.0	.53	.31	2.1	3.6	1.2	1.3	1.2	76026C
W194453	84.6	60	21	.47	.96	.22	3.1	2.6	1.2	.040	.61	76027A
W194454	84.6	57	22	0.38	0.83	0.31	3.3	6.5	1.2	0.11	3.6	76027B
W194457	94.1	64	18	.51	2.2	1.1	3.1	6.3	1.0	.10	.62	76037A
W194458	87.8	56	24	.49	.91	.18	3.0	2.4	1.3	.090	.55	76037B
W194398	63.2	59	18	1.0	2.0	.50	3.9	5.6	.90	.47	1.4	76039A
W194399	64.2	61	20	.37	1.3	.28	3.4	5.7	1.2	.020	1.3	76039B
W194827	71.6	28	11	.23	.48	.30	1.4	43	.58	.029	4.4	76050A
W194828	90.1	62	25	.56	.56	.78	2.4	2.2	1.3	.87	1.0	76050B
W191273	65.4	44	16	8.2	1.5	.73	2.9	13	.70	4.5	5.4	75120A
W194459	82.7	56	21	.68	1.4	.45	4.2	6.4	.93	.51	2.3	76036A
W194460	91.8	66	19	.38	1.2	.73	2.7	3.7	1.3	.040	1.7	76036B
W196365	65.6	45	13	2.2	1.5	.58	3.0	21	.65	.53	6.6	77010A
W191230	65.1	52	21	1.4	2.7	.84	4.2	8.7	.90	.40	4.5	75095A
W191231	85.9	33	12	.20	.70	.16	1.9	34	.60	.040	18	75095B

Table 4a.--Major- and minor- oxide composition of the laboratory ash of 144 associated rock samples from Indiana. --continued

Sample Number	Ash	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	TiO_2	P_2O_5	SO_3	Field Number
W191232	72.0	42	15	14	1.7	.53	2.9	6.3	.60	6.4	4.5	75096A
W191234	93.9	61	23	.30	2.2	.62	3.8	3.6	1.2	B	1.6	75096C
W191237	82.8	55	25	1.0	1.5	.80	3.8	5.1	1.1	.50	2.5	75098A
W191238	94.7	55	27	.50	.86	.66	3.2	3.7	1.1	.30	3.0	75098B
W191240	97.3	53	22	.50	2.5	.84	4.1	8.3	.90	.30	1.7	75100A
W191241	97.2	58	22	.40	2.2	.80	4.0	6.2	1.0	.070	.80	75101A
W191274	92.9	61	23	.30	1.7	.74	4.0	4.1	1.2	B	2.5	75121A
W191275	66.2	48	19	4.9	2.3	.86	3.6	8.0	.80	1.9	4.6	75122A
W191280	91.4	61	27	.05	2.2	.62	5.2	2.4	1.3	B	1.0	75122C
W194414	88.4	61	19	.25	1.1	.32	3.1	5.1	1.1	B	3.5	76002C
W194415	89.0	52	19	1.0	1.7	.58	3.9	9.7	.94	.15	4.8	76003A
W194428	71.1	49	23	.39	.56	.46	1.8	12	1.3	.75	3.7	76012A
W194429	80.0	61	20	.36	1.1	.58	3.0	4.7	1.1	.13	3.1	76012B
W194430	86.0	37	14	.69	1.0	.40	2.5	24	.61	.20	13	76014A
W194432	70.2	50	26	4.5	.48	.39	1.7	3.6	1.1	3.3	2.7	76014C
W194433	79.5	49	20	2.1	1.4	.43	3.3	8.7	.98	1.3	4.5	76014D
W194435	89.0	39	15	.70	1.2	.42	2.8	21	.69	.23	12	76014E
W194436	83.9	48	20	.38	1.1	.43	3.1	17	1.0	.020	2.6	76015A
W194437	53.0	51	25	3.3	1.2	0.58	2.1	4.2	1.1	2.5	3.1	76015B
W194438	66.9	59	24	.74	.60	.43	3.6	4.2	1.2	.33	1.5	76015C
W194439	82.8	28	12	20	1.3	.45	1.7	12	.51	.42	16	76015D
W194440	87.5	68	18	.32	.78	.20	.30	4.6	1.1	.11	.40	76015E
W194465	88.1	57	23	.38	1.5	.24	3.8	5.1	1.1	.13	2.0	76033B
W194461	67.5	33	9.9	3.4	1.0	.39	2.2	32	.59	.79	6.8	76034A
W194462	78.4	62	24	.50	1.3	.22	4.2	2.4	1.2	.040	1.2	76034B
W194463	54.2	44	22	.47	1.2	.19	3.6	16	.97	.079	4.0	76035A
W194832	62.4	64	18	.36	1.3	.40	3.2	6.6	1.2	.080	1.3	76052A
W194835	64.5	47	18	3.0	2.2	.47	4.1	11	.92	1.0	6.4	76057A
W194836	52.6	51	26	.48	1.4	.23	4.5	8.6	1.1	.070	2.1	76057B

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.

[Concentrations in percent or parts-per-million. L means less than the value shown; B, not determined; H, interference for an element which cannot be resolved by any routine method; S, after element title indicates determinations by automatic plate reading computer assisted, emission spectrographic analyses. For elements by emission spectrographic analysis, the standard deviation of any answer should be taken as plus 50% and minus 35%. Field number is IGS identification number. Sample number is USGS laboratory number.]

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
D172302	3.7	2.4	0.052	0.12	0.031	0.47	1.5	0.13	N	40	75012
W188940	.82	.56	.046	.020	.008	.053	2.9	.034	.065	3.2	75049
W188941	1.0	.71	.050	.026	.008	.064	1.7	.037	.047	1.8	75050
W188942	1.6	1.0	.048	.036	.010	.10	2.8	.042	.077	4.2	75051
W188943	1.4	.85	.070	.043	.014	.074	2.3	.042	.069	3.4	75052
W190536	1.2	.63	.050	.023	.012	.059	1.0	.044	.10	11	75079
W190537	2.0	.72	.10	.058	.024	.13	1.2	.054	.12	29	75080
W191205	4.4	2.2	.051	.046	.077	.24	2.0	.16	.14	8.1	75080A
W190542	1.3	.70	.026	.011	.008	.053	.26	.044	.039	.80	75085
W191215	12	6.8	.032	.22	.27	1.3	1.4	.35	.16	11	75085B
W190543	1.1	.67	.051	.020	.009	.052	.11	.038	.027	.40	75086
W191216	11	5.9	.055	.24	.24	1.1	1.1	.30	.14	9.0	75086A
W190544	1.1	.54	.043	.011	.008	.038	.63	.043	.10	8.3	75087
W190545	1.4	.66	.036	.022	.009	.054	.40	.046	.094	4.5	75088
W190546	1.8	1.1	.20	.047	.020	.17	1.6	.046	.086	6.4	75089
W190547	1.9	1.1	.36	.036	.024	.085	1.8	.032	.081	3.3	75090
W190548	3.0	2.0	.055	.080	.028	.31	1.3	.098	.13	20	75091
W191220	5.2	3.6	.041	.13	.18	.64	5.6	.15	.43	.10L	75091B
W191222	6.4	4.7	.042	.18	.20	.94	2.8	.20	.11	17	75091D
W190934	1.4	1.0	.049	.040	.025	.11	2.2	.046	.058	12	75097
W192632	1.5	.89	.029	.016	.025	.065	.36	.061	.053	2.1	76023
W194447	5.7	3.3	.052	.13	.033	.60	.98	.17	.55	19	76023A
W192633	1.4	.82	.030	.015	.021	.051	.36	.054	.078	3.4	76024
W192634	B	B	B	.052 .006	.042 .007	B	B	B	1.4 .14	5.0 .50	76025
W194448	4.2	2.2	.046	.093	.019	.37	.56	.12	.054	2.0	76025A
W197297	1.0	.66	.037	.013	.005	.044	5.0	.034	.097	14	77042
W197290	.40	.14	.048	.004L	.004L	B	24	.010	.20	79	77042B
W192620	3.0	1.2	.91	.076	.040	.19	2.0	.063	.015L	3.5	76008
W194423	7.5	2.7	.084	.17	.073	.83	3.4	.13	.076	20	76008A
W194424	1.8	.80	.032	.034	.013	.14	1.6	.048	.045	5.3	76008B
W192621	2.7	1.0	0.12	0.055	0.030	0.16	3.4	0.063	0.049	8.8	76009
W194426	1.3	.75	.045	.030	.008	.10	1.4	.035	.014	6.9	76009B
W192622	1.7	.79	.048	.043	.017	.14	1.7	.047	.068	5.8	76010
W192623	2.5	1.3	.060	.039	.023	.12	3.6	.054	.034	7.4	76011
W194393	1.5	.69	.060	.025	.011	.081	4.5	.048	.087	16	76044

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis. --continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W194405	2.8	1.2	.045	.062	.019	.27	4.2	.084	.083	24	76044C
W194394	1.7	.79	.061	.029	.012	.12	3.4	.053	.050	20	76045
W196342	.57	.51	.027	.009	.003	.014	.40	.013	.035	2.2	77005
W196362	9.1	6.5	.085	.20	.052	.71	1.1	.27	.097	5.2	77005B
W196343	.62	.36	.047	.013	.003	.025	.93	.016	.14	11	77006
D172310	.90	.65	.043	.021	.007	.081	3.1	.027	N	8.0	75024
D172311	1.6	.83	.17	.048	.012	.21	4.0	.051	N	15	75025
D172312	1.5	.74	1.0	.053	.013	.20	4.3	.044	N	25	75026
D172313	1.3	.90	.49	.034	.009	.13	2.8	.041	N	4.0	75027
D172314	2.0	1.0	.18	.049	.011	.22	1.5	.056	N	2.0	75028
D172315	1.1	.53	.82	.064	.013	.14	7.0	.029	N	5.0	75029
W194395	9.9	6.4	.13	.27	.092	1.2	1.9	.33	.050	21	76046
W194396	2.5	1.5	.041	.061	.017	.25	2.1	.079	.065	36	76047
W194407	10	6.0	.10	.34	.088	1.4	2.7	.29	.42	33	76047A
W194397	2.0	.94	.44	.048	.016	.22	2.8	.062	.054	31	76048
W197293	3.4	2.2	.064	.12	.031	.40	3.4	.099	.058	36	77030
W197294	1.7	.85	.044	.046	.015	.18	2.4	.050	.047	17	77033
D172305	1.2	.78	.035	.025	.008	.080	1.3	.049	N	5.0	75015
W188946	1.1	.64	.026	.027	.011	.11	1.9	.032	.054	5.9	75055
W188947	1.3	.76	.12	.033	.012	.14	1.7	.038	.048	4.7	75056
W191042	1.8	1.2	0.24	0.062	0.041	0.19	1.9	0.063	0.14	33	75125
W191277	3.4	1.9	1.1	.15	.076	.38	3.4	.098	.62	32	75125A
W191051	1.9	1.3	.26	.069	.061	.18	2.3	.074	.15	51	75126
W191279	5.4	2.3	.042	.12	.083	.64	.51	.14	.16	32	75126A
W194856	3.8	2.4	.072	.11	.028	.54	.95	.12	.051	10	76049
W194821	5.0	2.5	.072	.14	.035	.71	1.6	.15	.021L	9.1	76049E
W194823	4.2	2.2	.078	.13	.029	.62	2.8	.12	.031	18	76049G
W194825	6.9	3.9	.16	.22	.052	.86	9.3	.20	.12	50	76049I
D172303	1.5	.73	1.4	.038	.019	.12	1.7	.048	N	20	75013
W188948	1.9	1.0	.15	.046	.020	.17	1.5	.054	.082	3.9	75057
W188949	2.1	1.1	.30	.057	.027	.20	.78	.056	.052	1.6	75058
W192628	4.1	2.2	.066	.11	.069	.58	.80	.12	.084	5.3	76016
W192629	.94	.65	.039	.022	.024	.079	.35	.027	.059	8.9	76017
W194444	11	5.5	.063	.29	.060	1.2	1.9	.19	.60	35	76017B
W197296	1.7	1.3	.040	.034	.010	.11	2.2	.043	.12	7.5	77041
W197287	2.8	1.7	.056	.045	.012	.13	1.9	.11	.029	7.4	77041B
D172306	2.0	1.3	.043	.028	.010	.087	1.3	.057	N	20	75016
W190534	1.9	1.2	.022	.035	.011	.084	.96	.047	.11	10	75077
W190535	1.7	1.2	.018	.020	.010	.077	1.2	.048	.15	18	75078
W191204	10	7.8	.020	.24	.28	1.2	3.4	.37	.11	40	75078A

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis. --continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W190538	1.8	1.0	.10	.061	.032	.13	.22	.047	.054	1.4	75081
W191207	7.0	4.8	.020	.10	.15	.63	.41	.23	.058	2.0	75081B
W191208	7.9	5.7	.045	.18	.20	.82	.44	.25	.060L	1.9	75081C
W190539	2.1	1.5	.076	.035	.014	.17	.15	.064	.055	2.4	75082
W191209	5.6	4.4	.055	.11	.18	.56	1.5	.22	.44	25	75082A
W190540	1.9	1.0	0.074	0.038	0.015	0.12	0.20	0.049	0.036	0.70	75083
W191211	4.8	3.6	.041	.065	.11	.40	.32	.16	.056	1.9	75083B
W191212	11	7.5	.062	.25	.26	1.1	.64	.31	.083L	1.6	75083C
W190541	2.9	2.1	.066	.064	.026	.26	.45	.093	.11	17	75084
W191213	7.8	5.7	.075	.095	.19	.73	2.8	.25	.95	27	75084A
W193119	1.9	1.0	.061	.033	.043	.12	1.3	.072	.047	5.4	76038
W194455	1.9	1.3	.029	.039	.009	.17	.21	.079	.010	1.1	76038A
W194390	1.7	.95	.046	.021	.009	.10	1.5	.064	.098	5.8	76041
W196338	2.5	1.7	.036	.043	.016	.21	.22	.094	.025	.90	77001
W196360	4.4	3.3	.065	.091	.027	.43	.37	.19	.066	1.6	77001C
W188938	1.2	.83	.023	.021	.006	.041	1.3	.051	.15	5.5	75047
W188939	1.6	.98	.030	.018	.007	.055	1.2	.065	.12	7.2	75048
W192616	.61	.44	.051	.013	.004	.028	4.7	.013	.087	37	76004
W192617	.53	.42	.049	.014	.017	.029	4.6	.013	.086	25	76005
W194419	5.6	3.6	.050	.11	.032	.56	5.6	.15	.38	48	76005A
W192618	.68	.54	.063	.018	.013	.049	2.8	.019	.050	47	76006
W192619	.68	.53	.066	.019	.035	.055	2.7	.019	.052	28	76007
W194421	2.9	1.9	.043	.047	.011	.23	5.7	.067	.52	54	76007A
W197291	.58	.51	.031	.019	.005	.044	.55	.016	.088	11	77026
W197278	6.7	5.0	.068	.17	.045	.77	1.0	.19	.13	20	77026A
W197279	.46	.40	.094	.073	.011	.007	1.3	.002	.14	18	77026B
W197292	1.5	1.2	.033	.032	.008	.14	.90	.041	.099	18	77029
W197280	5.6	3.4	.056	.13	.036	.63	3.1	.16	.086	110	77029A
W197281	6.2	4.8	.066	.16	.045	.79	1.0	.19	.14	14	77029B
D173480	1.3	.72	.52	.032	.023	.12	1.3	.042	N	8.0	75030
D173481	1.5	.84	.24	.040	.016	.15	.85	.050	N	2.0	75031
D173483	1.0	.51	.42	.023	.017	.074	3.1	.027	N	5.0	75033
D173484	1.5	.77	.46	.032	.022	.12	3.4	.035	N	8.0	75034
D173485	1.6	.67	.73	.030	.018	.11	2.0	.039	N	5.0	75035
D173486	1.3	.54	3.9	.037	.017	.072	1.9	.027	.27	4.0	75036
W188932	3.1	1.6	0.051	0.11	0.038	0.39	0.95	0.074	0.060	13	75041
W188933	3.0	1.6	.048	.11	.040	.37	.72	.079	.055L	5.9	75042
W190528	1.5	.65	.21	.035	.072	.12	1.5	.032	.048	6.0	75063
W190529	1.4	.76	.31	.050	.062	.14	2.9	.040	.071	9.2	75064
W190532	1.6	.73	.22	.034	.013	.13	1.3	.039	.062	3.7	75067

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis. --continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W190533	1.3	.68	.085	.036	.014	.12	1.7	.036	.074	4.8	75068
W190929	1.3	.93	.050	.053	.037	.10	2.2	.047	.047	32	75092
W191224	.34	.15	.027	.017	.006	.036	2.8	.023	.33	57	75092A
W191225	1.3	.23	B	.019	.13	.028	25	.026	.31	950	75092B
W190930	1.2	.82	.031	.047	.029	.10	2.7	.042	.044	37	75093
W191227	.38	.23	.023	.009	.016	.027	2.6	.019	.24	59	75093A
W191228	9.3	4.3	.024	.25	.17	.77	1.3	.24	.096	9.8	75093B
W190931	1.5	.87	.027	.056	.015	.13	1.7	.051	.039	14	75094
W191055	1.6	.97	.039	.047	.038	.12	2.2	.049	.056	12	75102
W191056	1.7	1.1	.015	.042	.022	.13	.64	.052	.040	4.5	75103
W192630	1.3	.84	.18	.033	.017	.11	2.6	.051	.030	35	76021
W192631	1.2	.79	.29	.065	.037	.12	3.2	.047	.034	54	76022
W194858	1.9	.91	.054	.039	.014	.18	1.7	.050	.042	7.6	76051B
W194860	1.6	.86	.098	.036	.010	.16	1.2	.053	.032	2.2	76053
W194861	2.1	1.1	.031	.031	.006	.17	.96	.065	.064	9.3	76054
W194864	2.0	1.4	.31	.045	.035	.27	.55	.070	.059	37	76058
W194839	8.4	4.9	.076	.31	.13	1.3	3.1	.22	.055	90	76058C
W194865	.94	.59	.032	.014	.006	.088	1.4	.022	.028	19	76059
W194866	2.5	1.4	.036	.068	.019	.26	.32	.076	.071	2.9	76060
W188934	.47	.25	.081	.018	.007	.036	.59	.023	.040	4.1	75043
W188935	.41	.23	.047	.012	.005	.022	1.8	.013	.039	12	75044
W188936	.49	.40	.059	.014	.011	.016	3.6	.012	.089	4.0	75045
W188937	1.2	1.0	0.053	0.023	0.012	0.053	1.9	0.027	0.055	2.6	75046
W191048	.56	.39	.032	.028	.028	.031	3.5	.022	.13	28	75110
W191050	.42	.29	.084	.022	.028	.022	3.1	.019	.085	44	75111
W191047	.93	.58	.029	.031	.021	.064	1.1	.031	.19	8.2	75112
W191038	.96	.59	.026	.028	.013	.061	.70	.030	.11	6.7	75113
W191035	2.2	1.3	.044	.047	.032	.13	1.6	.074	.083	37	75114
W191036	3.0	1.6	.048	.062	.055	.12	2.1	.11	.12	36	75115
W191037	1.5	1.0	.073	.053	.034	.079	.88	.070	.13	23	75116
W191034	1.9	1.1	.034	.047	.028	.10	2.0	.074	.11	30	75117
W191062	.96	.73	.031	.025	.034	.030	2.4	.017	.034	5.6	75118
W191041	.81	.58	.044	.029	.045	.038	3.0	.018	.034	15	75119
W194391	1.7	.95	.041	.022	.009	.086	1.8	.062	.10	29	76042
W194401	10	4.8	.099	.23	.043	.50	.60	.40	.078	11	76042B
W194392	1.4	.89	.037	.017	.007	.066	1.5	.052	.16	25	76043
W196345	1.0	.47	.038	.019	.010	.053	1.9	.036	.050	41	77011
W196368	13	5.1	.12	.11	.057	.32	.63	.46	.085	11	77011B
W196346	1.2	.90	.035	.017	.009	.047	1.3	.048	.20	17	77012
W196347	1.1	.58	.031	.017	.009	.053	1.9	.041	.094	28	77013

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis. --continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W196348	.96	.43	.028	.015	.006	.050	1.2	.030	.072	16	77014
W196371	9.4	3.7	.098	.11	.040	.42	.52	.30	.037	5.8	77014B
W196349	1.4	.99	.029	.017	.008	.063	1.1	.055	.22	14	77015
W196350	1.2	.69	.028	.015	.007	.060	1.2	.043	.14	16	77016
W196351	.41	.21	.032	.013	.005	.017	2.6	.019	.068	52	77017
W196352	1.2	.60	.033	.020	.007	.081	1.3	.047	.034	31	77018
W196374	5.2	3.0	.072	.064	.023	.23	.49	.20	.056	12	77018A
W196353	.98	.68	.028	.013	.006	.054	2.3	.040	.31	95	77019
W196354	.84	.47	.030	.015	.006	.049	2.0	.035	.22	53	77020
W196355	.66	.43	.018	.007	.003	.018	.28	.022	.066	3.5	77021
W196356	.64	.28	.019	.008	.003	.020	.41	.021	.090	5.2	77022
W196357	.72	.57	.019	.008	.003	.018	.15	.024	.027	2.9	77023
W197295	1.9	.99	.028	.029	.011	.15	2.1	.052	.076	42	77037
D172304	3.6	1.4	.12	.11	.064	.40	2.6	.093	N	8.0	75014
D172307	2.3	1.0	.18	.056	.026	.21	2.5	.066	N	20	75017
D172308	2.7	1.2	.19	.074	.033	.27	1.4	.070	N	10	75018
D172309	2.4	1.1	.031	.068	.020	.23	.23	.066	N	1.0	75019
W191046	3.0	1.5	.042	.10	.051	.28	1.2	.078	.038	12	75108
W191245	7.3	3.7	.043	.30	.20	1.1	1.7	.18	.082	15	75108B
W191049	2.6	1.2	.036	.086	.023	.24	.96	.072	.036	9.0	75109
W191248	6.4	2.9	.050	.26	.15	.81	7.5	.15	.14	11	75109B
W192635	1.8	.81	.054	.039	.012	.19	2.5	.053	.044	20	76026
W192636	1.6	.74	.37	.048	.013	.15	2.4	.046	.018	27	76027
W193120	2.3	1.1	.029	.059	.047	.21	.20	.062	.013	.50	76037
W194388	2.0	1.0	.047	.034	.010	.15	.84	.058	.064	3.9	76039
W194389	1.9	.92	.044	.016	.018	.13	1.2	.054	.068	4.7	76040
W194857	2.0	.78	.34	.045	.038	.18	.97	.055	.019	7.9	76050
W194829	12	4.5	.29	.35	.22	1.1	2.1	.27	.041L	3.0	76050C
W188952	4.8	2.5	.49	.13	.12	.50	2.4	.13	.098L	15	75061
W188953	3.5	1.9	.16	.10	.099	.36	1.0	.095	.066L	5.6	75062
W191043	2.1	1.0	.28	.062	.037	.15	2.8	.057	.10	15	75120
W191059	2.1	1.2	.64	.071	.072	.13	3.7	.061	.068	100	75123
W191054	2.2	1.2	.66	.077	.047	.15	2.3	.062	.051	17	75124
W193121	1.4	.68	.54	.037	.054	.11	3.2	.046	.076	20	76036
W188944	1.8	.91	.040	.042	.014	.14	1.0	.042	.072	6.6	75053
W188945	1.4	.72	.040	.031	.010	.097	1.1	.034	.063	5.9	75054
W188950	2.5	1.3	.36	.062	.078	.21	3.1	.064	.066	43	75059
W188951	4.5	2.3	1.2	.14	.14	.48	2.9	.12	.11L	19	75060
W196339	1.5	.36	.71	.026	.008	.065	1.7	.027	.013	5.1	77002
W196340	2.6	.92	.83	.055	.011	.17	1.5	.055	.018	3.7	77003

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis. --continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W196341	2.2	.67	.64	.043	.010	.13	1.5	.044	.013	4.1	77004
W196344	.79	.44	.028	.026	.009	.047	1.9	.033	.012	3.8	77010
W196366	11	5.7	.15	.26	.086	.82	1.2	.27	.26	3.2	77010B
D173482	1.7	.85	.23	.029	.028	.12	1.2	.051	N	4.0	75032
D173487	2.2	1.4	.29	.081	.016	.25	1.8	.063	N	5.0	75037
W188930	1.4	.85	.32	.029	.013	.11	.70	.044	.080	5.3	75039
W188931	1.6	1.1	.12	.040	.017	.15	1.3	.055	.15	25	75040
W190530	1.3	.65	.28	.044	.026	.11	1.8	.031	.043	4.7	75065
W190531	1.1	.66	.33	.040	.029	.10	1.2	.030	.052	2.4	75066
W190932	1.9	1.0	.64	.081	.036	.19	3.7	.058	.072	11	75095
W190933	2.0	1.1	0.65	0.10	0.036	0.21	2.0	0.057	0.12	6.8	75096
W191233	1.9	.80	.52	.039	.039	.13	7.9	.058	.23	24	75096B
W191052	1.2	.76	3.0	.075	.052	.092	1.6	.038	.020L	2.4	75098
W191060	2.1	1.2	3.5	.098	.036	.14	2.6	.051	.028L	10	75099
W191239	3.8	1.6	3.9	.097	.090	.31	5.0	.075	.075L	28	75099C
W191053	2.1	1.1	.47	.096	.048	.23	3.5	.061	.045	17	75100
W191061	2.0	.98	.34	.069	.054	.18	1.6	.054	.013L	4.6	75101
W191057	1.0	.69	.62	.048	.028	.11	2.4	.035	.037	4.1	75104
W191058	1.7	.91	.31	.060	.048	.15	1.8	.051	.020	5.0	75105
W191044	1.8	.86	.28	.059	.042	.16	1.2	.046	.013	2.8	75106
W191045	2.3	1.1	.21	.076	.050	.22	1.4	.054	.032	3.2	75107
W191040	1.8	1.0	.62	.054	.041	.15	.86	.055	.010	3.9	75121
W191039	2.0	1.0	.52	.062	.042	.17	3.2	.060	.024	13	75122
W191276	1.3	.17	.023	.028	.073	.004	27	.027	.45	50	75122B
W192614	1.7	.85	.76	.041	.030	.14	2.6	.049	.021	13	76001
W192615	2.2	.99	.71	.053	.043	.18	2.2	.062	.013L	4.4	76002
W194413	2.5	1.1	.25	.048	.026	.17	6.1	.071	.11	53	76002B
W192624	1.7	.86	.47	.032	.040	.13	3.0	.048	.049	8.9	76012
W192625	2.6	.96	.82	.049	.056	.18	3.4	.063	.025	9.3	76013
W192626	1.6	.68	.41	.051	.038	.16	1.9	.045	.018	12	76014
W194431	13	5.8	.21	.47	.24	1.4	1.3	.37	.056	1.8	76014B
W192627	2.1	.99	.93	.072	.062	.23	2.0	.058	.013L	9.7	76015
W193124	1.5	.90	.063	.043	.034	.16	.40	.049	.023	7.2	76033
W194464	9.0	5.8	.13	.31	.071	1.3	.67	.26	.043	1.6	76033A
W193122	2.2	1.0	.44	.062	.10	.22	.71	.059	.013	1.4	76034
W193123	1.7	.95	.74	.055	.060	.21	1.8	.057	.026	3.8	76035
W194859	1.4	.80	.043	.026	.008	.13	.25	.043	.021	5.9	76052B
W194862	2.1	.93	.52	.031	.043	.16	1.3	.069	.015	6.9	76056
W194863	2.5	1.3	.060	.046	.018	.28	2.2	.073	.12	3.3	76057C

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
D172302	130	90	3.6	N	B	0.18L	N	5.4	27	B	75012
W188940	35G	16	3.5	.4L	3.0	.011	9.0	2.3	12	.40	75049
W188941	30G	20	2.5	.3L	3.0	.013	7.0	1.9	19	.50	75050
W188942	47G	15	2.0	.5L	2.0	.040	8.0	3.6	20	.85	75051
W188943	41G	14	2.1	.4L	3.0	.020	8.0	3.3	19	.60	75052
W190536	34G	27	2.8	.3L	6.0	.14	18	5.5	11	.30	75079
W190537	49G	39	3.3	.6	4.0	.36	21	6.5	13	.50	75080
W191205	120	79	5.7	7.2L	3.0	.061	17	9.5	37	1.5	75080A
W190542	25G	85	5.3	.2L	7.0	.050	40	8.3	10	.30	75085
W191215	110	330	4.9	18L	3.0	.28	56	26	65	5.6	75085B
W190543	21G	44	4.0	.2L	6.0	.095	28	8.2	8.8	.30	75086
W191216	89	270	4.6	15L	3.0	.070	45	22	59	4.4	75086A
W190544	28G	33	3.8	.3L	5.5	.052	18	6.5	8.8	.30	75087
W190545	27G	23	3.5	.3L	5.0	.14	14	6.2	7.6	.30	75088
W190546	49G	34	3.1	.5L	2.5	.071	18	3.0	14	1.1	75089
W190547	58G	40	4.7	.6L	2.0	.39	22	3.4	27	.70	75090
W190548	69G	120	7.0	.7L	4.0	.22	45	4.2	24	2.5	75091
W191220	160	130	8.8	11L	B	.37	54	13	54	3.5	75091B
W191222	210	560	6.2	13L	2.0	1.6	32	4.5	41	5.4	75091D
W190934	86G	31	3.4	1.9L	5.0	.40	21	3.7	10	.80	75097
W192632	60G	22	4.2	1.3L	6.0	.023	20	11	13	.30	76023
W194447	120	120	3.9	4.8L	3.4	.26	27	38	31	3.0	76023A
W192633	56G	20	3.9	1.2L	5.0	.20	28	10	11	.30	76024
W192634	170G 17	19 2.0	16 1.6	3.7L .4L	6.0	.51 .051	2.0.	10	3.3	.30L	76025
W194448	120	66	4.1	3.5L	3.0	.15	16	9.0	38	1.9	76025A
W197297	160	13	5.7	2.4L	6.3	.053	17	4.0	8.8	.30	77042
W197290	H	4.7	2.9	6.3L	3.6	.042L	10L	16	23L	1.1L	77042B
W192620	150G	97	3.8	3.3L	2.0	1.2	26	3.7	13	.70	76008
W194423	97	290	3.3	6.6L	1.1	2.1	120	31	41	2.6	76008A
W194424	64	17	5.1	2.0L	1.5	.12	9.0	8.8	16	1.0	76008B
W192621	140G	20	3.5	3.1L	1.0	0.065	15	9.2	15	1.3	76009
W194426	52	6.4	3.5	1.7L	2.4	.041	5.0	2.3	5.6	.50	76009B
W192622	87G	14	3.5	1.9L	4.0	.63	9.0	4.9	15	.70	76010
W192623	140G	31	4.2	3.1L	1.0	.056	120	32	12	1.2	76011
W194393	130G	9.4	3.6	2.9L	1.9	.20	7.0	7.0	11	.80	76044
W194405	110	21	2.6	3.8L	1.8	.021	12	17	24	1.8	76044C
W194394	120G	12	3.5	2.6L	1.8	.050	7.0	5.6	13	1.0	76045
W196342	32G	16	2.3	.5L	6.9	.14	10	21	6.6	.70L	77005
W196362	140	86	3.5	8.2L	4.4	.60	56	27	79	3.8	77005B
W196343	41G	13	1.6	.6L	2.5	.23	10	18	4.8	.20	77006

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
D172310	62	13	.88	N	B	.088L	N	2.6	8.8	B	75024
D172311	200	39	2.0	N	B	.13L	N	1.3	9.2	B	75025
D172312	160	32	1.6	N	B	.16L	N	1.6	11	B	75026
D172313	110	34	2.3	N	B	.11L	N	3.4	17	B	75027
D172314	200	50	3.0	N	B	.10L	N	1.0	10	B	75028
D172315	160	110	1.6	N	B	.22L	N	1.1	6.7	B	75029
W194395	110	170	3.5	9.2L	1.6	.96	110	7.4	72	6.2	76046
W194396	130G	32	3.0	2.9L	2.5	.098	35	10	25	1.6	76047
W194407	140	190	4.9	9.7L	1.2	.22	78	51	63	5.6	76047A
W194397	130G	38	2.0	2.9L	2.4	.093	13	4.1	9.5	.90	76048
W197293	120	36	3.1	4.0L	2.1	.35	37	11	25	1.9	77030
W197294	93G	20	2.2	2.0L	5.0	.071	8.0	6.7	12	.80	77033
D172305	110	15	3.7	N	B	.11	N	5.2	11	B	75015
W188946	31G	11	3.4	.3L	7.0	.015	7.0	3.8	10	.80	75055
W188947	35G	22	4.0	.4L	5.0	.011	8.0	4.3	12	.70	75056
W191042	110G	49	3.7	2.3L	2.0	0.11	18	6.7	15	1.3	75125
W191277	120	140	3.9	7.4L	3.0	5.7	34	19	24	1.5	75125A
W191051	150G	77	4.3	3.3L	1.0	.097	18	5.5	17	1.5	75126
W191279	130	100	4.9	7.1L	2.0	.10	24	3.1	24	3.4	75126A
W194856	120	65	2.8	3.7L	2.0	.16	31	4.5	31	2.1	76049
W194821	140	130	1.9	3.1L	1.4	.023	31	8.9	65	2.0	76049E
W194823	210G	64	1.5	3.1L	2.1	.043	29	6.8	29	2.1	76049G
W194825	64	95	1.5	6.5L	4.0L	.18	42	9.8	50	3.1	76049I
D172303	130	25	2.5	N	B	.13	N	3.8	13	B	75013
W188948	43G	20	3.5	.4L	2.0	.059	8.0	3.4	14	1.1	75057
W188949	43G	29	4.0	.4L	1.0	1.1	8.0	3.8	26	1.2	75058
W192628	160G	71	3.5	3.6L	6.0	.017	28	13	25	2.6	76016
W192629	45G	17	3.2	1.0L	9.0	.063	11	11	5.8	.30	76017
W194444	120	190	2.6	8.8L	3.2	.21	54	34	47	3.4	76017B
W197296	150	7.1	1.8	2.2L	9.9	1.1	6.5	10	15	.65	77041
W197287	130G	21	2.3	2.0L	8.6	.23	20	5.2	16	.70	77041B
D172306	100	73	5.3	N	B	.16	32	11	16	B	75016
W190534	43G	42	5.9	.4L	12	.14	13	4.6	13	.65	75077
W190535	43G	31	6.0	1.0	13	.24	14	8.2	16	.60	75078
W191204	91	210	4.8	19L	4.0	1.3	45	21	59	6.2	75078A
W190538	37G	56	3.6	.4L	23	.040	27	6.3	13	.75	75081
W191207	97	170	5.8	11L	5.0	.039	43	9.3	43	3.6	75081B
W191208	110	220	5.4	13L	5.0	.063	33	6.5	45	5.0	75081C
W190539	41G	120	4.2	.4L	8.0	.45	34	3.8	16	1.3	75082
W191209	100	250	4.4	10L	6.0	.23	64	23	42	3.5	75082A

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W190540	34G	49	4.5	0.3L	11	0.16	26	5.6	12	0.65	75083
W191211	100	150	7.1	7.7L	6.0	.019L	39	9.0	37	1.9	75083B
W191212	100	250	4.8	17L	4.0	.044L	42	7.1	61	7.5	75083C
W190541	60G	110	4.1	.6L	9.0	.48	32	4.6	31	1.7	75084
W191213	110	220	5.3	14L	5.0	.67	55	43	47	3.3	75084A
W193119	93G	86	4.2	2.0L	8.0	.11	23	3.3	12	.75	76038
W194455	78G	19	4.9	1.7L	7.5	.008L	8.0	5.7	29	.70	76038A
W194390	89G	44	6.5	2.0L	8.3	1.2	16	8.1	7.0	.40	76041
W196338	98G	48	2.4	1.5L	8.3	.098	22	9.1	20	1.4	77001
W196360	110	57	2.7	4.0L	7.3	.16	43	12	37	2.8	77001C
W188938	30G	23	2.6	.3L	3.0	.013	32	8.4	21	.30	75047
W188939	36G	24	4.0	.5	4.0	.017	29	7.9	27	.30	75048
W192616	96G	7.7	4.2	2.1L	3.0	.024	6.0	8.2	7.0	.50L	76004
W192617	92G	7.7	4.4	2.0L	4.0	.029	10	16	6.9	.50L	76005
W194419	130	58	2.1	7.0L	2.9	1.9	38	84	77	2.8	76005A
W192618	73G	7.3	2.3	1.6L	3.0	.23	8.0	9.3	7.2	.40	76006
W192619	71G	8.5	2.3	1.6L	4.0	.22	9.0	27	9.4	.50L	76007
W194421	140	20	2.0	4.8L	3.1	1.4	23	110	43	.90	76007A
W197291	70	5.3	2.0	.8L	3.9	.17	8.0	12	8.6	.30	77026
W197278	170	120	2.6	4.2L	2.1	.13	71	11	52	3.2	77026A
W197279	12	7.8	.25	.7L	2.4	3.5	9.0	12	21L	.70L	77026B
W197292	110	11	2.2	1.7L	3.8	.12	20	13	17	.90	77029
W197280	250G	94	2.5	3.8L	2.1	.025L	52	9.4	38	2.4	77029A
W197281	85G	110	2.1	4.0L	3.2	.15	54	8.6	49	5.0	77029B
D173480	85	13	1.7	N	B	.085L	B	B	B	B	75030
D173481	110	15	2.3	N	B	.30	B	B	B	B	75031
D173483	68	15	.97	N	B	.44	B	B	B	B	75033
D173484	85	18	.85	N	B	3.0	B	B	B	B	75034
D173485	74	16	1.1	N	B	.11L	B	B	B	B	75035
D173486	54	27	.91	N	B	1.4	B	B	B	B	75036
W188932	58G	59	4.5	0.6L	5.0	0.055	16	4.9	19	1.6	75041
W188933	56G	60	4.6	.6	4.0	.050	22	4.3	23	1.7	75042
W190528	41G	32	1.8	.4L	2.0	1.2	10	2.7	9.3	.60	75063
W190529	55G	32	2.8	.6L	2.0	.37	10	2.5	12	.90	75064
W190532	40G	28	3.2	.4L	3.0	.28	8.0	4.1	9.9	.80	75067
W190533	43G	23	2.8	.4L	2.0	.20	11	3.9	9.7	.90	75068
W190929	87G	49	3.5	1.9L	7.0	.087	18	3.5	11	1.2	75092
W191224	76	18	5.4	2.8L	16	.054	3.0	8.3	18	.90L	75092A
W191225	27	16	2.2	25L	2.0	.11	2.0	26	4.1	.40	75092B
W190930	87G	17	3.0	1.9L	5.0	.096	9.0	3.6	9.5	1.1	75093

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W191227	27	11	7.0	2.8L	7.0	.059	3.0	9.3	6.8	.20	75093A
W191228	66	660	5.0	17L	2.0	.13	120	15	81	4.7	75093B
W190931	77G	16	1.8	1.7L	3.0	.14	9.0	9.2	11	.70	75094
W191055	120G	22	3.2	2.6L	5.0	1.2	11	8.1	9.6	.80	75102
W191056	94G	24	3.5	2.1L	5.0	1.9	9.0	6.5	11	.70	75103
W192630	94G	18	3.9	2.1L	2.0	.037	10	2.8	11	1.0	76021
W192631	100G	13	4.0	2.2L	2.0	.057	9.0	3.3	9.3	.85	76022
W194858	61	18	1.6	2.2L	1.7	1.6	12	3.0	11	.80	76051B
W194860	81G	42	2.7	1.8L	2.0	.29	11	3.9	10	1.0	76053
W194861	90G	26	2.3	2.0L	8.8	9.0	8.0	12	12	.90	76054
W194864	97G	63	3.0	2.1L	.9	.058	25	3.6	14	1.4	76058
W194839	92	120	1.8	5.5L	2.5	.037L	42	7.9	48	4.3	76058C
W194865	62G	11	2.6	1.4L	5.9	.093	6.0	13	4.5	.40	76059
W194866	89	50	3.6	2.2L	3.9	.16	20	9.6	16	1.4	76060
W188934	13G	16	2.0	.1L	13	.015	7.0	1.6	13	.30	75043
W188935	20G	8.0	2.2	.2L	9.0	.035	6.0	5.2	11	.30	75044
W188936	35G	12	3.2	.3L	2.0	.12	21	8.3	13	.30	75045
W188937	34G	16	3.5	0.3L	3.0	0.96	23	8.0	13	0.50	75046
W191048	97G	12	4.7	2.2L	4.0	.18	3.0	10	13	.30	75110
W191050	84G	11	4.7	1.9	3.0	.14	2.0	5.1	5.9	.70L	75111
W191047	66G	13	3.7	1.5L	8.0	.23	8.0	14	7.3	.40	75112
W191038	46G	15	3.3	1.0L	9.0	.13	9.0	11	8.2	.40	75113
W191035	100G	50	4.3	2.3L	4.0	.23	34	22	17	.80	75114
W191036	130G	81	5.0	3.0L	5.0	.089	46	14	25	.90	75115
W191037	73G	61	4.5	1.6L	14	.028	48	4.9	18	.40	75116
W191034	95G	26	4.2	2.1L	6.0	.22	19	26	17	.90	75117
W191062	95G	15	3.4	2.1L	2.0	1.6	12	7.4	9.1	.30	75118
W191041	77G	19	3.2	1.7L	2.0	1.1	11	9.4	7.9	.30	75119
W194391	94G	37	4.3	2.1L	6.4	.19	22	25	17	.70	76042
W194401	110	270	9.2	7.8L	4.1	.092	120	13	59	4.1	76042B
W194392	79G	24	4.9	1.7L	4.3	.10	23	22	11	.60	76043
W196345	70G	11	2.8	1.1L	4.9	.084	6.0	6.9	7.1	.50	77011
W196368	110	190	8.1	9.0L	2.7	.041L	140	17	54	2.5	77011B
W196346	73G	20	2.4	1.1L	4.8	.020	22	29	15	.30	77012
W196347	72G	13	2.3	1.1L	4.5	.063	10	13	12	.40	77013
W196348	55G	10	2.2	.8L	2.8	.041	4.0	5.1	6.2	.40	77014
W196371	140	140	5.6	6.9L	2.0	.031L	120	11	48	2.8	77014B
W196349	77G	22	2.7	1.2L	3.8	.17	15	29	17	.30	77015
W196350	65G	16	2.3	1.0L	3.3	.12	7.0	18	12	.40	77016
W196351	62G	6.2	3.2	.9L	4.2	.30	2.0	9.7	3.1	.70L	77017

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W196352	65G	11	2.0	1.0L	4.7	.047	6.0	7.1	7.0	.90	77018
W196374	110	98	6.6	4.2L	3.8	.019L	100	5.5	49	2.2	77018A
W196353	82G	14	2.3	1.2L	4.7	3.5	13	32	19	.40	77019
W196354	68G	11	2.4	1.0L	4.8	1.2	7.0	15	10	.40	77020
W196355	30G	6.3	3.9	.5L	18	.17	4.0	12	7.2	.20	77021
W196356	29G	5.2	3.2	.4L	20	.049	3.0	6.6	5.0	.20	77022
W196357	33G	8.3	3.3	.5L	16	.43	5.0	19	10	.60L	77023
W197295	97G	13	3.6	2.1L	11	.23	13	16	9.9	.80	77037
D172304	120	88	2.7	N	B	.18	N	5.3	18	B	75014
D172307	130	66	2.6	N	B	1.3	N	9.2	20	B	75017
D172308	180	60	3.6	N	B	.42	N	3.6	18	B	75018
D172309	180	46	2.8	N	B	.092L	N	9.2	14	B	75019
W191046	150G	40	4.3	3.5L	6.0	.27	10	7.0	14	1.4	75108
W191245	140	160	6.0	11L	7.0	4.5	27	8.6	39	3.6	75108B
W191049	130G	36	4.0	2.9L	7.0	.12	10	6.5	14	1.3	75109
W191248	110	140	4.2	13L	8.0	1.7	23	12	32	2.4	75109B
W192635	98G	19	3.1	2.2L	3.0	.055	10	4.8	13	.70	76026
W192636	100G	14	2.6	2.2L	2.0	.089	4.5	3.2	11	.55	76027
W193120	80G	28	3.4	1.8L	4.0	.28	9.0	9.0	12	1.0	76037
W194388	88G	13	3.3	1.9L	4.2	2.0	13	5.8	11	.80	76039
W194389	90G	17	3.3	2.0L	3.7	.058	14	7.3	13	.70	76040
W194857	98G	21	1.7	2.2L	2.0	.043	5.0	2.8	11	.80	76050
W194829	75	120	1.8	6.2L	1.9	.099	30	9.3	47	3.3	76050C
W188952	99G	64	3.2	1.0L	5.0	.039	29	8.2	26	2.3	75061
W188953	67G	55	3.7	.7L	5.0	.014L	20	5.9	19	1.7	75062
W191043	120G	18	2.5	2.6L	2.0	.56	7.0	5.5	25	.70	75120
W191059	190G	25	3.0	4.2L	2.0	.17	6.0	10	16	.60	75123
W191054	170G	26	3.1	3.8L	2.0	.096	6.0	8.5	15	.90	75124
W193121	120G	14	2.7	2.6L	2.0	.86	9.0	6.3	12	.60	76036
W188944	36G	18	6.1	.4L	5.0	1.0	8.0	5.1	12	1.7	75053
W188945	30G	13	5.9	.3L	5.0	4.3	7.0	5.9	9.7	1.4	75054
W188950	65G	32	3.3	.6L	6.0	.020	15	8.0	24	1.7	75059
W188951	110G	85	3.0	1.1L	4.5	.13	22	8.5	26	2.3	75060
W196339	91G	13	1.4	1.4L	2.3	.45	4.0	1.4	8.1	.40	77002
W196340	130G	30	2.0	2.0L	2.0	.43	5.5	5.6	11	1.0	77003
W196341	110G	22	2.0	1.7L	2.1	.24	5.0	3.6	12	.85	77004
W196344	66G	15	2.6	1.0L	2.3	.79	6.0	5.3	8.5	1.3	77010
W196366	160	78	4.0	9.0L	1.0	.37	160	9.2	68	9.4	77010B
D173482	85	17	1.3	N	B	.51	B	B	B	B	75032
D173487	64	26	1.9	N	B	.26	B	B	B	B	75037

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W188930	31G	30	5.4	.3L	4.0	.11	12	5.3	14	.65	75039
W188931	39G	42	4.6	.4L	3.0	.20	37	8.5	19	.90	75040
W190530	44G	18	1.8	.4L	1.0	.16	9.0	3.0	8.7	.60	75065
W190531	39G	25	2.5	.4L	1.0	.30	16	3.0	11	.80	75066
W190932	90	28	3.1	3.1L	3.0	1.2	10	3.0	21	1.0	75095
W190933	120G	37	3.1	2.6L	2.0	2.7	12	3.3	28	1.2	75096
W191233	39	41	6.0	10L	3.0	.49	7.0	2.6	13	1.1	75096B
W191052	140	38	1.9	4.6L	2.0	.075	5.0	2.2	8.6	.40	75098
W191060	130	60	2.6	6.2L	2.0	.32	12	4.3	15	.80	75099
W191239	150	270	4.7	16L	4.6	.19	47	8.2	24	1.4	75099C
W191053	190G	46	2.8	4.2L	2.0	.28	12	5.7	17	1.1	75100
W191061	130G	44	3.1	2.9L	2.0	.23	8.0	3.5	17	.90	75101
W191057	82	24	2.6	2.8L	1.0	.80	7.0	2.2	8.9	.60	75104
W191058	120G	26	2.4	2.8L	1.0	.15	8.0	2.5	12	.70	75105
W191044	110G	34	1.4	2.5L	2.0	.17	9.0	2.1	11	.80	75106
W191045	130G	36	1.7	2.9L	2.0	.097	12	2.8	75	1.0	75107
W191040	92G	29	2.3	2.0L	3.0	.17	12	3.7	13	.70	75121
W191039	130G	24	2.4	2.8L	2.0	.15	11	3.3	11	.80	75122
W191276	11L	8.3	.83	17L	1.0	.60	2.0	.90	3.1	1.0L	75122B
W192614	120G	29	3.1	2.7L	2.0	.28	6.5	5.1	12	.80	76001
W192615	130G	36	2.4	2.8L	2.0	.25	8.0	6.1	12	.90	76002
W194413	65	16	2.0	4.4L	2.1	.40	8.0	5.5	11	1.3	76002B
W192624	120G	22	2.8	2.6L	4.0	.32	9.0	5.3	11	.70	76012
W192625	160G	27	2.7	3.5L	4.0	.82	11	8.6	14	.85	76013
W192626	94G	25	2.4	2.1L	3.0	.10	5.0	3.0	15	.70	76014
W194431	140	290	3.2	10L	1.4	.047L	45	3.1	46	4.5	76014B
W192627	130G	53	2.6	2.8L	3.0	.15	7.0	5.1	17	1.0	76015
W193124	63G	26	2.4	1.4L	1.0	.095	12	2.1	10	.70	76033
W194464	160	160	2.7	7.8L	2.2L	.38	46	4.7	52	6.8	76033A
W193122	100G	36	2.3	2.2L	2.0	.19	9.0	2.3	13	1.1	76034
W193123	110G	40	2.2	2.5L	2.0	.25	10	2.0	11	.90	76035
W194859	55G	29	3.1	1.2L	1.4	.15	15	3.1	10	.60	76052B
W194862	100G	26	2.7	2.3L	1.0	.060	8.0	2.2	11	.90	76056
W194863	69	33	2.5	2.8L	3.7	.24	14	4.0	30	1.2	76057C

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
D172302	26	B	N	N	140	9.1	N	9.1	N	0.12	75012
W188940	4.5	1.1L	.35L	.18	23	5.4	1.6L	6.2	.70	.030	75049
W188941	5.1	.94L	.30L	.17	31	4.3	1.4L	2.7	.40	.028	75050
W188942	7.0	1.5L	.47L	.26	49	7.3	2.2L	3.7	.60	.038	75051
W188943	6.7	1.3L	.41L	.27	44	6.0	1.9L	3.0	.70	.020	75052
W190536	13	1.1L	.34L	.40	24	3.6	1.6L	9.5	.50	.17	75079
W190537	14	1.5L	.49L	.39	36	4.5	2.3L	12	.80	.33	75080
W191205	38	11L	3.4L	.26	92	5.2	2.3	9.8	2.0	.13	75080A
W190542	16	3.8	1.8	.89	22	6.6	1.1L	29	.40	.020	75085
W191215	28	26L	8.5L	.88	240	19	5.8L	3.8L	2.7	.055	75085B
W190543	12	2.1	1.4	.66	26	4.6	.97L	19	.50	.010	75086
W191216	23	23L	7.4L	.64	240	14	5.0L	3.4	2.3	.083	75086A
W190544	11	.88L	.28L	.30	18	4.0	1.3L	17	.50	.20	75087
W190545	8.9	.87L	.64	.23	26	3.0	1.3L	13	.40	.13	75088
W190546	26	1.6L	1.4	.35	50	7.3	2.3L	1.2	.50	.069	75089
W190547	13	1.8L	6.4	1.0	54	10	8.1	4.3	1.0	.069	75090
W190548	40	2.2L	2.6	1.2	87	8.0	3.2L	17	1.0	.10	75091
W191220	240	17L	5.4L	.53	200	13	3.7L	11	2.0	.26	75091B
W191222	59	19L	5.9L	.64	320	18	4.2L	23	1.8	.13	75091D
W190934	15	2.8L	.86L	.51	120	3.9	2.7	3.9	.50	.14	75097
W192632	16	1.9L	.90	.57	20L	2.9	2.1	11	.50	.040	76023
W194447	20	7.0L	2.2L	.64	170	9.2	2.4	7.0	1.2	.28	76023A
W192633	17	1.8L	.84	.92	20	3.0	2.1	9.5	.50	.040	76024
✓ W192634	32 3.2	5.4L .54L	1.7L .17L	.10	20L	22 2.2	1.1L .11L	160 16.	.10	.13	76025
W194448	14	5.1L	1.6L	.32	280	7.1	1.2	7.1	1.5	.065	76025A
W197297	11	3.5L	1.1L	.40	42	7.5	2.6	17	.30	.24	77042
W197290	4.2L	9.3L	4.2L	.30	20L	9.3	9.3	3.7	1.0L	1.2	77042B
W192620	11	4.9L	1.5L	.62	64	3.8	1.5L	13	.65	.075	76008
W194423	16	12	8.8	3.6	320	9.7	9.1	7.6	1.5	.23	76008A
W194424	25	2.9L	1.6	.24	200	8.6	1.9	35	.50	.19	76008B
W192621	17	4.5L	1.4L	0.55	80	4.1	2.1	13	0.40	0.11	76009
W194426	9.0	2.4L	.75L	.16	220	3.5	.51L	13	.30	.13	76009B
W192622	10	2.8L	.87L	.19	46	2.8	1.3	7.8	.40	.11	76010
W192623	17	8.7	4.5	2.4	57	3.4	12	17	.50	.083	76011
W194393	13	4.2L	1.8	.21	20L	6.2	.90L	17	.40	.050	76044
W194405	26	5.5L	1.7L	.23	170	7.7	1.2L	17	.70	.14	76044C
W194394	11	3.8L	1.2L	.26	32	6.1	1.2L	25	.40	.095	76045
W196342	11	.93	.32L	.29	56	2.7	1.1	13	.50L	.056	77005
W196362	41	12L	3.7L	.74	260	16	2.5L	5.2	1.9	.075	77005B
W196343	12	.90L	.45	.33	42	3.8	.90	19	.35	.10	77006

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
D172310	9.5	B	B	N	70	4.4	B	6.2	N	.44	75024
D172311	10	B	B	N	70	3.9	B	6.6	N	.13	75025
D172312	11	B	B	N	75	4.7	B	11	N	.070	75026
D172313	15	B	N	N	45	3.4	N	5.7	N	.070	75027
D172314	8.8	B	N	N	60	3.0	N	2.0	N	.040	75028
D172315	5.8	B	B	N	85	4.4	B	11	N	.080	75029
W194395	96	13L	4.2L	1.5	180	18	2.8L	2.3	2.6	.040	76046
W194396	36	4.2L	1.3L	.85	57	7.0	2.2	15	.80	.063	76047
W194407	88	14L	4.4L	1.0	280	25	3.0L	7.5	2.2	.045	76047A
W194397	11	4.2L	1.3L	.22	22	6.4	.89L	12	.50	.10	76048
W197293	47	5.8L	1.8L	.81	100	8.0	2.7	15	.90	.32	77030
W197294	11	3.0L	.93L	.17	28	3.6	.63L	6.9	.50	.27	77033
D172305	9.5	B	N	N	50	5.2	N	37	N	.10	75015
W188946	4.4	.98L	.31L	.12	32	4.1	1.4L	6.7	.30	.053	75055
W188947	5.3	1.1L	.48	.12	58	4.3	1.6L	6.3	.40	.022	75056
W191042	21	3.4L	1.1L	0.38	96	5.7	2.1	14	0.60	0.14	75125
W191277	20	11L	5.3	2.2	780	14	15	5.7	1.0	.28	75125A
W191051	19	4.9L	1.5L	.30	80	5.7	4.5	14	.60	.25	75126
W191279	20	10L	3.3L	.22	150	6.3	2.2L	6.7	1.3	.23	75126A
W194856	50	5.3L	1.7L	.50	110	9.8	1.5	4.6	1.1	.18	76049
W194821	40	4.6L	2.1L	.47	600	8.2	1.8	4.2	1.6	.030	76049E
W194823	39	4.5L	2.1L	.38	160	9.5	1.4L	8.4	1.1	.085	76049G
W194825	77	9.5L	4.3L	.96	290	14	6.9	1.5	1.6	.28	76049I
D172303	8.8	B	N	N	50	3.8	N	38	N	.19	75013
W188948	6.5	1.4L	.89	.17	70	3.2	2.0L	11	.50	.12	75057
W188949	7.4	1.4L	.43L	.17	60	3.4	2.0L	17	.60	.067	75058
W192628	25	5.3L	1.7L	.42	89	6.6	1.1L	13	1.0	.14	76016
W192629	11	1.4L	.45	.17	20	2.8	.86	13	.20	.090	76017
W194444	64	13L	4.0L	1.1	410	21	2.7L	5.6	2.3	.18	76017B
W197296	14	3.2L	1.0L	.13	59	4.9	.68L	9.4	.35	.21	77041
W197287	18	2.9L	1.3L	.23	52	3.9	2.1	3.8	.80	.066	77041B
D172306	26	B	N	N	60	7.4	N	32	N	.080	75016
W190534	21	1.4L	2.0	.27	31	6.5	2.0L	21	.50	.042	75077
W190535	22	1.4L	1.5	.27	28	6.5	2.0L	24	.50	.069	75078
W191204	26	28L	9.1L	.73	340	17	6.2L	4.1L	2.2	.21	75078A
W190538	11	2.3	.69	.45	42	6.5	1.7L	16	.65	.010L	75081
W191207	44	16L	5.3L	.54	150	12	3.6L	3.1	1.5	.28	75081B
W191208	27	19L	6.0L	.60	200	15	4.1L	8.6	1.7	.050	75081C
W190539	24	4.2	2.9	.84	87	7.6	1.9L	32	.60	.080	75082
W191209	54	15L	4.9L	1.4	150	12	5.4	9.0	1.7	.30	75082A

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W190540	13	1.9	0.88	0.47	58	6.1	1.6L	18	0.55	0.069	75083
W191211	42	11L	3.6L	.58	120	8.4	3.1	3.6	1.1	.025	75083B
W191212	30	26L	8.3L	.60	320	19	5.7L	3.8L	2.1	.016	75083C
W190541	29	1.9L	2.0	.67	60	10	2.8L	21	.60	.20	75084
W191213	56	21L	6.7L	2.2	200	16	5.6	13	1.5	.35	75084A
W193119	19	3.0L	1.1	.68	81	4.1	3.3	14	.55	.068	76038
W194455	9.4	2.5L	.78L	.11	60	6.7	.53L	10	.80	.085	76038A
W194390	18	2.8L	.89L	.35	76	11	2.7	32	.40	.010L	76041
W196338	25	2.2L	.98L	.52	140	5.0	1.4	13	.70	.010L	77001
W196360	37	5.9L	1.8L	.55	72	9.9	1.2L	13	1.1	.010L	77001C
W188938	9.8	.96L	.30L	.66	31	3.1	1.4L	7.1	.60	.13	75047
W188939	12	1.1L	.63	.50	30	5.0	1.7L	8.6	.80	.10	75048
W192616	17	3.1L	.96L	.28	21	5.5	1.1	4.3	.10	.28	76004
W192617	16	2.9	1.2	.30	20L	5.8	1.7	7.5	.20	.21	76005
W194419	58	10L	3.2L	.74	150	13	2.2L	1.8	1.6	.56	76005A
W192618	11	2.3L	.73L	.29	20L	6.2	.95	15	.30	.49	76006
W192619	11	2.3L	.71L	.28	22	6.9	.78	16	.30	.28	76007
W194421	54	6.9L	2.2L	.59	420	14	1.5L	4.1	.90	.80	76007A
W197291	15	1.1L	.35L	.24	28	4.9	.46	21	.20	.22	77026
W197278	34	6.2L	2.8L	1.2	110	12	4.2	3.9	1.4	.12	77026A
W197279	8.3	1.0L	.46L	.69	130	1.2	1.7	1.8	.90L	.39	77026B
W197292	24	2.4L	.76L	.48	48	5.7	.75	11	.40	.38	77029
W197280	30	5.6L	2.5L	.90	450	12	4.3	9.9	1.2	.34	77029A
W197281	43	5.9L	2.7L	.93	160	11	3.2	1.1	1.2	.085	77029B
D173480	6.5	N	N	B	30	2.6	N	6.0	N	.080	75030
D173481	5.3	N	N	B	45	2.3	N	5.3	N	.070	75031
D173483	6.6	B	B	B	40	B	B	N	N	.060	75033
D173484	16	B	B	B	45	B	B	N	N	.12	75034
D173485	6.8	B	B	B	35	B	B	3.2	N	.050	75035
D173486	10	B	B	B	30	B	B	N	N	.080	75036
W188932	9.3	1.8L	1.6	0.29	54	6.4	2.7L	14	0.80	0.015	75041
W188933	12	1.8L	.78	.38	89	6.8	2.6L	9.6	.90	.025	75042
W190528	8.6	1.3L	1.6	.24	29	2.8	2.1	6.5	.40	.069	75063
W190529	7.3	1.7L	.55L	.21	33	4.2	3.1	9.8	.40	.11	75064
W190532	7.7	1.3L	.40L	.16	28	3.3	1.8L	10	.40	.069	75067
W190533	8.3	1.4L	1.3	.17	36	3.5	2.0L	13	.40	.050	75068
W190929	11	2.8L	1.2	.42	160	3.7	2.5	15	.40	.28	75092
W191224	18	4.1L	1.3L	.14	40	5.9	.86L	49	1.1	.25	75092A
W191225	20	37L	53L	.16	20L	14	12L	10	.20	2.4	75092B
W190930	7.8	2.8L	.87L	.21	150	3.4	1.9	14	.40	.30	75093

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W191227	8.6	4.1L	1.3L	.14	56	7.6	1.8	59	.20	.47	75093A
W191228	23	25L	8.0L	2.6	780	11	6.0	3.7L	5.8	.098	75093B
W190931	6.5	2.5L	.77L	.13	45	2.5	.52L	11	.50	.088	75094
W191055	7.0	3.9L	1.5	.25	60	3.4	.82L	9.0	.40	.14	75102
W191056	7.2	3.1L	1.1	.17	68	2.7	.94	11	.40	.055	75103
W192630	10	3.0L	.94L	.24	20L	4.2	1.6	16	.50	.25	76021
W192631	8.5	3.2L	1.0L	.19	20	4.5	1.0L	18	.40	.25	76022
W194858	11	3.2L	1.0L	.23	64	3.5	.68L	6.4	.50	.20	76051B
W194860	6.9	2.6L	.81L	.22	39	3.0	.55L	5.3	.40	.24	76053
W194861	21	2.9L	.90L	.16	32	4.3	.61L	11	.60	.20	76054
W194864	23	3.1L	.97L	.66	88	5.0	3.3	8.2	.50	.28	76058
W194839	40	8.1L	3.7L	.55	370	12	4.4	4.4	1.8	.070	76058C
W194865	4.8	2.0L	.68	.18	50	2.7	.42L	13	.20	.30	76059
W194866	16	3.1L	.98L	.45	76	5.7	1.1	16	.60	.10	76060
W188934	8.4	.43L	.70	.15	44	3.0	.43L	6.3	.30	.070	75043
W188935	7.9	.65L	.20L	.14	37	2.8	.95L	5.2	.70	.048	75044
W188936	7.5	1.1L	.35L	.39	32	3.4	1.1L	1.9	.70	.080	75045
W188937	8.9	1.1L	1.5	0.37	60	3.6	1.6L	4.0	0.30	0.034	75046
W191048	11	3.2L	.98L	.11	56	6.9	.68L	21	.30	.060	75110
W191050	5.9	2.8L	.85L	.13	40	7.8	.59L	18	.40L	.095	75111
W191047	8.2	2.2L	.66	.16	100	4.4	1.3	20	.30	.060	75112
W191038	7.8	1.5L	.55	.18	28	3.1	.78	14	.40	.060	75113
W191035	23	3.3L	1.5	.92	88	6.0	4.9	23	.70	.15	75114
W191036	38	4.3L	1.6	.93	52	6.3	5.1	26	1.1	.13	75115
W191037	22	3.0	2.0	.93	44	5.6	3.7	18	.60	.050	75116
W191034	28	3.0L	1.9	.34	48	5.1	2.6	14	.60	.070	75117
W191062	5.8	3.7	.95L	.31	56	2.6	2.6	5.8	.20	.058	75118
W191041	6.7	2.5L	.77L	.23	37	2.4	.52L	5.9	.50	.050	75119
W194391	26	3.0L	.94L	.47	20L	7.3	.94L	20	.70	.018	76042
W194401	140	11L	4.6	1.5	170	13	2.4L	1.6L	3.2	.073	76042B
W194392	25	2.5L	1.2	.43	20L	7.8	2.4	26	.40	.018	76043
W196345	18	1.5L	.98	.16	68	4.4	.48L	18	.30	.14	77011
W196368	140	13L	5.3	2.3	330	11	4.9	1.9L	3.2	.010	77011B
W196346	26	1.6L	.73L	.42	88	4.2	1.1	18	.40	.050	77012
W196347	21	1.6L	.72L	.24	72	4.6	.49L	18	.40	.056	77013
W196348	14	1.2L	.66	.13	64	3.2	.37L	18	.20	.075	77014
W196371	87	10L	3.7	1.6	40	9.0	3.4	2.4	2.3	.035	77014B
W196349	28	1.7L	.77L	.26	60	3.9	.52L	14	.40	.13	77015
W196350	21	1.4L	.65L	.22	13	4.2	1.0	16	.20	.028	77016
W196351	9.3	1.4L	.62L	.10	66	6.8	.42L	H	.50L	.14	77017

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W196352	21	1.4L	.65L	.09	68	4.6	.44L	17	.30	.055	77018
W196374	81	6.2L	2.3	1.4	190	6.0	2.9	3.1	1.6	.035	77018A
W196353	25	1.8L	.82L	.22	34	5.2	.56L	H	.30	.30	77019
W196354	18	1.5L	.68L	.17	26	6.7	.46L	29	.30	.11	77020
W196355	13	1.0	.54	.16	76	2.7	.63	7.2	.30	.055	77021
W196356	8.1	1.0	.46	.17	35	1.7	.84	4.6	.20	.028	77022
W196357	19	1.1	.53	.15	80	3.6	.73	8.9	.30	.010L	77023
W197295	19	3.1L	.97L	.39	40	5.1	1.4	16	.50	.050	77037
D172304	9.2	B	B	N	95	5.3	B	5.3	N	.14	75014
D172307	11	B	B	N	65	4.0	B	26	N	.14	75017
D172308	8.5	B	B	N	70	6.1	B	12	N	.080	75018
D172309	9.8	B	B	N	70	6.4	B	18	N	.020	75019
W191046	9.4	5.1L	1.5L	.28	76	6.2	1.1L	19	.70	.055	75108
W191245	11	17L	5.4L	.48	420	14	3.6L	15	2.4	.085	75108B
W191049	6.6	4.3L	1.3L	.21	72	4.8	1.9	17	.60	.045	75109
W191248	10	19L	6.2L	.41	260	12	4.2L	16	2.5	.11	75109B
W192635	7.4	3.1L	.98L	.16	29	3.8	.67L	9.8	.50	.15	76026
W192636	10	3.2L	1.0L	.16	37	3.1	.69L	9.0	.40	.087	76027
W193120	9.6	2.6L	.80	.18	48	3.6	.65	18	.50	.010	76037
W194388	11	2.8L	.88L	.30	170	3.6	.60L	11	.50	.040	76039
W194389	14	2.9L	.99	.28	20L	3.7	2.2	12	.50	.018	76040
W194857	6.8	3.1L	.98L	.12	40	4.5	.67L	7.2	.40	.28	76050
W194829	17	9.1L	4.1L	.52	290	9.9	2.8L	.62L	2.4	.12	76050C
W188952	10	3.1L	1.3	.42	120	8.4	4.6L	15	1.3	.071	75061
W188953	7.2	2.1L	.68	.31	90	6.4	3.1L	14	.90	.032	75062
W191043	11	3.8L	1.2L	.13	40	3.5	.81L	5.6	.50	.080	75120
W191059	14	6.2L	1.9L	.12	32	4.9	1.3L	13	.50	.15	75123
W191054	8.5	5.6L	1.7L	.12	56	4.4	3.3	14	.50	.050	75124
W193121	7.4	3.8L	1.2L	.20	43	1.4	1.2L	9.6	.40	.23	76036
W188944	11	5.6	1.5	.25	60	6.4	1.7L	19	.50	.035	75053
W188945	8.5	.96L	1.1	.24	52	5.7	1.4L	21	.40	.050	75054
W188950	6.7	2.1L	.65L	.25	62	5.2	3.0L	14	.70	.19	75059
W188951	11	3.4L	1.1L	.36	110	8.3	4.9L	16	1.1	.077	75060
W196339	8.6	2.0L	.91L	.09	32	1.3	1.4	5.6	.55	.055	77002
W196340	17	2.9L	1.3L	.09	180	2.5	.89L	3.3	.40	.090	77003
W196341	13	2.4L	1.1L	.11	120	1.9	1.7	4.2	.35	.020	77004
W196344	9.9	1.6	.66L	.14	120	3.7	1.2	16	.35	.015	77010
W196366	53	13L	4.1L	3.0	250	20	7.4	3.1	2.8	.080	77010B
D173482	5.3	B	B	B	30	2.6	B	6.0	N	.10	75032
D173487	35	N	N	B	70	B	N	9.0	N	.14	75037

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W188930	12	.98L	1.4	.24	37	6.8	1.5	17	.45	.060	75039
W188931	24	1.2L	.39L	.58	53	8.9	1.8L	18	.90	.10	75040
W190530	9.1	1.4L	.44L	.22	24	2.4	2.2	5.2	.30	.080	75065
W190531	11	1.2L	1.3	.40	34	3.0	2.6L	5.7	.40	.080	75066
W190932	6.7	4.4L	1.4L	.18	140	3.1	2.9	10	.50	.19	75095
W190933	6.9	3.8L	1.2L	0.18	170	3.1	2.3	12	0.50	0.15	75096
W191233	4.1	15L	4.7L	.15	54	8.8	3.1L	9.8	.40	.22	75096B
W191052	7.7	6.8L	2.0L	.12	24	3.3	3.0	2.0	.40	.063	75098
W191060	14	9.2L	2.8L	.31	140	4.1	4.3	2.8	.60	.073	75099
W191239	31	24L	7.5L	1.0	780	10	7.5L	44	1.2	.24	75099C
W191053	11	6.2L	1.9L	.22	180	5.5	1.3L	2.5	.60	.13	75100
W191061	11	4.3L	1.3L	.20	100	4.3	.91L	6.4	.60	.065	75101
W191057	5.0	4.2L	1.3L	.16	68	3.4	.89L	4.2	.30	.10	75104
W191058	6.7	4.1L	1.2L	.14	80	3.2	.86L	5.7	.40	.055	75105
W191044	5.9	3.7L	1.1L	.16	160	3.1	1.7	5.3	.40	.063	75106
W191045	8.8	4.3L	1.3L	.20	120	3.2	2.0	4.6	.50	.060	75107
W191040	6.3	2.9L	.92L	.21	56	2.5	1.5	12	.50	.071	75121
W191039	6.3	4.0L	1.3L	.20	60	2.9	2.9	8.6	.50	.15	75122
W191276	6.4	24L	7.8L	.07	130	12	5.0L	3.6L	.50L	1.2	75122B
W192614	12	3.9L	1.2L	.16	42	4.2	1.2L	9.7	.50	.075	76001
W192615	12	4.1L	1.3L	.19	57	3.7	1.3L	11	.60	.060	76002
W194413	15	6.5L	2.0L	.18	290	5.9	1.4L	1.2	.45	.16	76002B
W192624	15	3.7L	1.2L	.24	48	3.5	.80L	6.9	.50	.11	76012
W192625	17	5.0L	1.6L	.28	46	3.8	1.6L	11	.60	.083	76013
W192626	6.8	3.0L	.94L	.11	46	3.0	.64L	7.2	.60	.095	76014
W194431	17	15L	4.7L	.38	450	11	3.2L	2.2L	2.7	.32	76014B
W192627	8.1	4.1L	1.3L	.11	45	4.3	.88L	12	.60	.087	76015
W193124	12	2.0L	.82	.23	61	2.5	1.1	8.8	.40	.062	76033
W194464	61	11L	3.6L	.59	450	14	2.4L	1.8	2.1	.16	76033A
W193122	7.2	3.3L	1.0L	.19	61	2.7	1.4	4.4	.50	.070	76034
W193123	11	3.6L	1.4	.23	48	2.2	1.1L	4.9	.40	.090	76035
W194859	8.8	1.8L	.66	.35	36	3.7	1.1	12	.40	.17	76052B
W194862	4.7	3.4L	1.1L	.14	39	3.5	2.1	7.4	.60	.26	76056
W194863	15	4.1L	1.3L	.23	50	5.0	.86L	13	.80	.24	76057C

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
D172302	N	13	50	N	13	5.4	3.6	N	27	79L	75012
W188940	.24L	2.0	4.3	.09	12	1.9	1.1L	5.2L	15	35L	75049
W188941	.20L	3.0	6.1	.09	10	1.8	.94L	4.4L	8.1	26L	75050
W188942	.32L	2.0	8.6	.16	18	2.1	1.5L	6.9L	11	44L	75051
W188943	.28L	4.0	12	.14	15	1.6	1.3L	6.1L	9.3	39L	75052
W190536	.23L	11	10	.07	11	2.8	1.9	13	49	320L	75079
W190537	.33L	13	11	.09	42	4.9	2.2	7.2L	56	460L	75080
W191205	2.3L	9.0	38	.16	13	3.4	8.8	20	63	22	75080A
W190542	.77	21	5.8	.10	6.8	1.3	1.6	32	53	280	75085
W191215	5.8L	31	80	.35	38	1.8L	14	42	110	39	75085B
W190543	.52	15	5.0	.08	7.9	.68	1.5	23	45	200L	75086
W191216	5.0L	25	74	.30	66	1.5L	10	33L	110	17	75086A
W190544	1.9L	10	9.6	.08	11	.92	1.5	8.9	57	260L	75087
W190545	.19L	8.0	8.9	.07	10	.44	1.2	5.5	37	260L	75088
W190546	.33L	10	17	.15	23	4.5	1.6L	7.2L	22	460L	75089
W190547	.40L	11	19	.31	56	3.9	2.5	25	18	550L	75090
W190548	.47L	23	36	.24	15	3.1	2.2L	10L	24	650L	75091
W191220	3.7L	B	51	.01L	34	11	10	29	77	61	75091B
W191222	4.2L	20	74	.27	30	3.0	3.6	28L	36	39	75091D
W190934	.58L	12	8.4	.12	13	2.3	2.6	18	14	110	75097
W192632	.41L	11	10	.12	3.4	.49	.56	17	66	110	76023
W194447	1.5L	16	37	.15	18	1.1	3.9	14	160	66	76023A
W192633	.56L	14	7.8	.13	3.8	.36	1.3	17	73	150	76024
✓ W192634	1.1L .11L	1.0	15 1.5	.06	22 2.2	3.2 .32	4.2 .42	7.8L .78L	20 5.2	B	76025
W194448	1.1L	10	25	.14	13	.32L	2.8	10	140	22	76025A
W197297	.74L	8.5	5.7	.11	20	1.3	1.4	7.4	17	87	77042
W197290	2.9L	B	4.2L	.14	9.7	25	4.2	19L	9.7	B	77042B
W192620	1.0L	13	7.3	.12	94	2.3	1.2	12	24	39	76008
W194423	3.0	45	9.7	.73	220	10	2.8	79	130	92	76008A
W194424	.62L	4.0	4.6	.16	18	4.3	2.5	6.6	29	22	76008B
W192621	0.96L	8.0	8.2	0.17	32	4.2	1.8	11	27	210	76009
W194426	.51L	3.0	3.5	.08	23	1.7	.74	3.5L	18	13	76009B
W192622	.59L	4.0	4.8	.19	24	5.7	1.5	4.0L	19	17	76010
W192623	2.8	62	8.2	.38	27	2.7	2.0	55	49	120	76011
W194393	.90L	3.0	5.1	.11	42	4.1	2.0	6.1L	29	52	76044
W194405	1.2L	6.0	9.1	.13	26	4.0	3.6	7.9L	38	13	76044C
W194394	.82L	4.0	5.8	.11	47	4.0	2.5	5.5L	36	52	76045
W196342	.48L	6.5	3.8	.04	4.5	.61	.70	7.0	51	74	77005
W196362	2.5L	36	160	.24	45	.82L	3.1	17L	71	180	77005B
W196343	.28L	6.0	3.2	.05	11	.70	.39	4.9	27	130	77006

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
D172310	B	8.8	6.0	B	8.8	2.6	N	13	8.8	39L	75024
D172311	B	N	5.0	B	20	9.2	N	B	13	57L	75025
D172312	B	N	3.8	B	79	16	N	B	32	96	75026
D172313	N	7.9	9.7	N	34	3.4	2.3	N	11	66	75027
D172314	N	N	8.4	N	20	5.0	2.0	B	7.0	44L	75028
D172315	B	N	3.6	B	67	6.7	N	B	4.4	170	75029
W194395	2.8L	55	210	.66	110	3.2	4.1	22	30	130	76046
W194396	.90L	17	37	.32	32	3.3	2.0	9.0	34	57	76047
W194407	3.0L	43	62	.41	57	10	6.6	22	140	210	76047A
W194397	.89L	8.0	12	.10	31	3.9	1.8	6.0L	10	200	76048
W197293	1.2L	19	49	.32	86	3.3	1.6	15	35	87	77030
W197294	.63L	4.0	8.1	.08	20	2.9	2.0	4.3L	16	74	77033
D172305	N	5.2	8.0	N	11	1.5	1.5	N	7.4	31L	75015
W188946	.21L	3.0	3.5	.07	11	.61	.98L	4.6L	8.4	31L	75055
W188947	.24L	4.0	4.3	.07	25	.50	1.1L	5.2L	9.3	35L	75056
W191042	0.72L	11	12	0.10	28	3.4	3.1	15	29	740	75125
W191277	3.5L	14	13	.35	35	2.9	4.7	39	47	3,500	75125A
W191051	1.0L	11	14	.08	25	5.3	5.2	18	28	640	75126
W191279	2.2L	15	65	.14	16	5.7	3.2	15L	15	17	75126A
W194856	1.1L	16	32	.23	17	4.0	2.0	18	18	57	76049
W194821	1.4L	17	29	.19	20	1.8	4.6	13	21	92	76049E
W194823	1.4L	15	23	.19	19	2.5	1.2	9.5L	16	120	76049G
W194825	2.9L	21	47	.28	47	7.3	1.2	20L	35	300	76049I
D172303	N	N	6.0	N	88	6.3	N	B	13	140	75013
W188948	.29L	3.0	5.4	.10	18	6.7	1.4L	6.3L	11	39L	75057
W188949	.29L	4.0	5.4	.11	43	4.2	1.4L	6.3L	13	39L	75058
W192628	1.1L	17	28	.15	23	1.1	1.6	11	31	190	76016
W192629	.31L	8.0	6.3	.07	5.4	.95	.59	7.2	23	66	76017
W194444	2.7L	31	44	.24	68	4.4	4.4	27	68	35	76017B
W197296	.68L	4.0	17	.07	11	1.5	.65	4.6L	23	52	77041
W197287	.88L	13	40	.11	20	2.3	2.2	7.0	13	150	77041B
D172306	N	16	20	N	16	1.6	2.1	21	32	74	75016
W190534	.29L	8.0	17	.11	14	1.9	2.3	6.3L	21	400L	75077
W190535	.29L	9.0	13	.13	11	2.2	1.7	9.2L	50	400L	75078
W191204	6.2L	27	140	.32	43	1.9L	6.2	41L	91	44	75078A
W190538	.54	16	8.7	.09	14	.52	1.2L	15	18	350L	75081
W191207	3.6L	26	69	.24	14	1.1L	6.7	27	21	120	75081B
W191208	4.1L	21	86	.26	32	1.3L	7.6	27L	23	140	75081C
W190539	1.0	19	36	.21	9.7	.78	1.3L	24	39	550	75082
W191209	3.3L	38	75	.28	9.8	2.8	5.9	69	130	450	75082A

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W190540	0.59	15	8.9	0.08	18	0.79	1.8	17	17	320L	75083
W191211	2.5L	23	40	.20	23	.77L	6.0	29	19	250	75083B
W191212	5.7L	26	140	.35	26	1.7L	9.2	38L	26	570	75083C
W190541	1.9L	19	27	.16	11	1.1	1.9L	21	37	570L	75084
W191213	4.6L	32	110	.38	8.8	3.9	6.7	60	130	460	75084A
W193119	.63L	12	12	.11	8.5	.43	2.0L	16	20	450	76038
W194455	.53L	6.0	11	.08	8.6	.20	2.0	4.5	43	17	76038A
W194390	.61L	9.0	7.3	.07	8.9	1.2	2.0	20	68	210	76041
W196338	.67L	14	20	.12	7.7	.93	1.4	9.8	29	110	77001
W196360	1.2L	29	59	.18	14	.99	3.7	11	48	170	77001C
W188938	4.4L	16	12	.07	6.4	1.3	1.1	4.4L	43	170	75047
W188939	.24L	14	15	.10	9.4	1.4	1.1L	5.2L	59	160	75048
W192616	.65L	2.0	5.6	.14	12	1.5	1.2	5.2	22	17	76004
W192617	.63L	4.0	6.3	.09	13	1.9	1.5	13	22	22	76005
W194419	2.2L	21	42	.25	18	3.5	2.8	17	110	B	76005A
W192618	.50L	3.0	8.0	.16	15	1.0	.52	3.4L	31	31	76006
W192619	.48L	4.0	8.5	.09	14	1.1	.78	5.0	34	35	76007
W194421	1.5L	11	22	.17	14	5.2	1.7	9.9L	170	26	76007A
W197291	.24L	4.0	4.2	.09	7.0	.77	.23	2.0	22	26	77026
W197278	1.9L	36	96	.31	16	.98	3.4	31	34	210	77026A
W197279	.69L	2.0	2.3	.03	51	1.3	.10L	6.0	12	100	77026B
W197292	.52L	10	14	.15	8.4	.84	.63	5.3	21	48	77029
W197280	3.8L	25	61	.29	22	1.7	5.1	30	38	130	77029A
W197281	1.8L	30	82	.30	29	.59L	3.2	22	29	120	77029B
D173480	N	B	4.9	B	26	.85	1.7L	N	6.0	61	75030
D173481	N	B	6.5	B	15	.76	2.3	11L	5.3	35L	75031
D173483	B	B	2.9	B	19	1.9	1.9L	B	6.8	52	75033
D173484	B	B	3.6	B	36	2.4	2.4L	18L	8.5	52L	75034
D173485	B	B	3.4	B	32	1.6	2.1L	B	7.4	79	75035
D173486	B	B	2.7	B	180	2.7	3.6L	B	13	390	75036
W188932	0.39L	8.0	7.9	0.13	24	2.0	1.8L	8.4L	24	61	75041
W188933	.38L	11	8.0	.14	24	2.3	1.9	8.2L	23	96	75042
W190528	.28L	5.0	4.5	.09	24	8.8	1.3L	6.0L	11	380L	75063
W190529	.38L	5.0	4.3	.09	72	H	1.7L	8.1L	12	520L	75064
W190532	.27L	4.0	4.0	.07	36	8.9	2.2	5.9L	12	380L	75067
W190533	.29L	6.0	4.7	.09	16	12	1.6	6.3L	11	400L	75068
W190929	.59L	9.0	8.6	.10	18	2.5	3.0	17	11	190	75092
W191224	1.3L	1.0	.76	.11	16	8.1	8.6	5.9L	48	96	75092A
W191225	7.7L	1.0	5.3	.11L	120	36	3.7L	53L	43	B	75092B
W190930	.59L	5.0	6.4	.09	8.7	2.8	3.0	6.8	12	74	75093

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W191227	.86L	1.0	1.5	.10	7.6	10	5.9	5.9L	81	48	75093A
W191228	5.3L	70	56	.48	70	1.7L	13	100	40	580	75093B
W190931	.52L	5.0	6.9	.07	11	1.2	2.2	3.9	21	8.7	75094
W191055	.82L	6.0	8.1	.08	9.9	5.7	2.9	9.9	28	79	75102
W191056	.66L	5.0	7.9	.07	5.1	4.8	2.1	6.8	27	96	75103
W192630	.64L	5.0	7.3	.10	25	1.8	1.9	7.2	10	35	76021
W192631	.68L	4.0	5.4	.10	25	1.1	.74	4.6L	9.5	48	76022
W194858	.68L	6.0	4.0	.11	16	5.3	1.1	6.6	10	22	76051B
W194860	.55L	6.0	3.8	.10	21	1.7	1.3	4.9	8.9	8.7	76053
W194861	.61L	5.0	5.4	.10	16	8.5	1.4	4.1L	34	66	76054
W194864	.66L	13	12	.14	20	2.8	1.7	16	12	510	76058
W194839	2.5L	23	52	.23	48	.81L	1.9	17L	24	110	76058C
W194865	.42L	3.0	2.5	.06	8.7	2.0	1.7	2.9L	28	31	76059
W194866	.67L	11	14	.13	9.8	2.4	1.7	17	24	100	76060
W188934	.09L	3.0	.67	.11	5.0	1.4	.67	2.0L	7.2	17	75043
W188935	.14L	2.0	.97	.08	32	1.1	.71	3.0L	10	31	75044
W188936	.24L	9.0	2.7	.10	62	1.8	1.3	5.1L	17	31L	75045
W188937	5.0L	11	7.4	0.13	23	1.9	1.1L	5.0L	24	44	75046
W191048	.68L	2.0	2.3	.07	13	7.1	3.0	4.7L	71	200	75110
W191050	.59L	1.0	1.2	.05	13	1.8	2.0	4.9	49	26	75111
W191047	.46L	5.0	2.9	.06	7.1	2.2	2.0	6.6	46	22	75112
W191038	.31L	7.0	2.8	.07	5.5	1.2	1.5	6.9	22	61	75113
W191035	.70L	19	14	.17	6.6	1.8	3.7	31	32	220	75114
W191036	1.4L	26	23	.20	9.6	3.1	6.6	45	32	470	75115
W191037	.50L	30	8.0	.17	10	1.9	4.1	35	21	350	75116
W191034	.65L	10	14	.13	5.9	2.5	4.2	20	36	83	75117
W191062	.66L	6.0	4.4	.10	23	2.5	1.1	9.5	18	96	75118
W191041	.52L	7.0	3.1	.09	28	4.2	1.9	12	17	66	75119
W194391	.64L	12	13	.16	7.5	1.9	1.4	10	43	170	76042
W194401	2.4L	57	85	.49	14	6.0	12	46	29	670	76042B
W194392	.54L	13	11	.14	6.8	2.4	1.6	14	51	110	76043
W196345	.48L	3.0	6.4	.11	11	2.7	2.2	3.4	45	26	77011
W196368	2.8L	72	120	.60	15	4.5	14	69	37	710	77011B
W196346	.50L	13	15	.14	4.7	1.2	.80	7.3	58	110	77012
W196347	.49L	6.0	9.4	.10	12	1.2	1.0	4.1	30	52	77013
W196348	.37L	2.0	5.3	.09	7.2	1.5	1.4	2.5L	36	13	77014
W196371	2.1L	58	94	.42	17	3.0	6.6	37	25	480	77014B
W196349	.52L	8.0	18	.12	3.9	1.9	.59	4.9	75	87	77015
W196350	.44L	4.0	10	.11	5.7	1.4	.72	3.4	50	44	77016
W196351	.42L	1.0	1.4	.08	9.3	4.4	1.3	2.9L	45	4.4	77017

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W196352	.44L	3.0	6.1	.11	6.5	1.0	.72	3.0L	16	13	77018
W196374	1.3L	54	58	.29	8.9	1.9	5.2	48	21	520	77018A
W196353	.56L	7.0	9.0	.08	5.4	3.9	1.6	5.6	98	48	77019
W196354	.46L	4.0	5.2	.09	6.5	2.4	1.2	3.1L	52	22	77020
W196355	.26	2.0	3.3	.09	3.0	.57	.63	1.9	63	4.4	77021
W196356	.35	2.0	1.6	.10	3.2	.75	.67	1.8	35	4.4	77022
W196357	.25	3.0	5.3	.10	3.2	.46	.83	2.1	96	8.7	77023
W197295	.66L	6.0	7.9	.11	7.7	1.4	1.1	4.5L	21	22	77037
D172304	B	N	9.6	B	35	3.5	3.5	B	12	79L	75014
D172307	B	13	5.7	B	26	26	2.6	N	40	57L	75017
D172308	B	N	8.5	B	36	1.8	2.4	B	12	52L	75018
D172309	B	6.4	8.5	B	14	N	1.8	N	46	39L	75019
W191046	1.1L	5.0	12	.11	12	2.3	2.4	7.4L	30	31	75108
W191245	3.6L	16	16	.22	85	1.1L	12	24L	36	26	75108B
W191049	.91L	5.0	7.8	.09	10	2.3	3.1	6.2L	32	44	75109
W191248	4.2L	7.0	15	.23	69	2.2	3.5	28L	45	450	75109B
W192635	9.8L	6.0	6.4	.08	20	1.9	2.5	5.3	23	690	76026
W192636	.69L	2.0	4.7	.09	57	2.3	.87	4.6L	8.7	22	76027
W193120	.54L	5.0	6.8	.08	11	.78	2.2	4.6	41	17	76037
W194388	.88L	6.0	6.4	.13	16	12	1.2	5.4	21	17	76039
W194389	.61L	6.0	14	.16	7.0	16	1.9	14	26	4.4	76040
W194857	.67L	3.0	3.9	.07	46	.61	.98	4.5L	6.7	22	76050
W194829	2.8L	16	21	.21	120	.91L	5.4	19L	16	330	76050C
W188952	.68L	15	51	.16	59	1.3	3.1L	15L	36	92L	75061
W188953	.46L	11	37	.14	36	.31L	2.1L	9.8L	24	61L	75062
W191043	.81L	4.0	6.2	.13	48	8.0	1.8	6.7	25	52	75120
W191059	1.3L	3.0	23	.07	90	4.5	3.9	9.0L	30	13	75123
W191054	1.2L	3.0	23	.08	90	3.1	3.8	8.1L	27	39	75124
W193121	.81L	3.0	3.9	.08	120	9.2	2.6L	5.5L	38	74	76036
W188944	.25L	4.0	4.1	.19	17	3.8	1.1L	5.3L	47	35L	75053
W188945	.21L	3.0	3.1	.20	21	45	.96L	4.4L	54	26L	75054
W188950	.44L	8.0	17	.11	80	1.7	2.1L	9.5L	30	61L	75059
W188951	3.4L	11	39	.13	230	1.3	3.4L	16L	30	100L	75060
W196339	.62L	2.0	2.9	.06	150	1.5	.39	4.2L	3.3	61	77002
W196340	.89L	3.0	9.3	.06	110	.88	1.1	6.0L	8.8	4.4	77003
W196341	.75L	3.0	7.1	.06	110	1.7	1.3	5.1L	7.7	35	77004
W196344	.45L	3.5	4.0	.11	28	2.4	1.1	4.6	42	26	77010
W196366	2.8L	89	74	.43	38	1.1	6.2	78	45	52	77010B
D173482	B	B	12	B	17	1.7	2.6	N	6.0	35L	75032
D173487	N	B	16	B	26	3.9	2.6	19	13	57L	75037

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W188930	4.6L	6.5	6.4	.16	15	2.8	1.1	4.6L	31	61	75039
W188931	.26L	18	9.1	.17	15	2.9	1.2L	5.7L	48	220	75040
W190530	.30L	5.0	4.2	.08	30	3.6	1.4L	6.4L	8.8	410L	75065
W190531	.26L	8.0	5.5	.13	40	4.5	1.2L	5.7L	12	360L	75066
W190932	.95L	5.0	8.9	.08	56	15	3.2	6.8	11	120	75095
W190933	0.81L	6.0	7.4	0.02L	51	14	3.3	11	14	310	75096
W191233	3.1L	4.0	8.0	.07	53	45	4.1	21L	12	44	75096B
W191052	1.4L	3.0	4.9	.08	41	2.0	1.1	9.7L	8.2	70	75098
W191060	1.9L	6.0	13	.13	150	5.1	2.6	19	15	280	75099
W191239	5.0L	22	9.0	.48	500	41	4.7	66	53	3,000	75099C
W191053	1.3L	6.0	16	.07	39	4.5	4.9	9.0L	10	310	75100
W191061	.91L	4.0	6.8	.06	34	2.1	4.6	11	9.8	310	75101
W191057	.89L	4.0	3.7	.07	41	6.9	1.7	7.4	9.0	130	75104
W191058	.86L	4.0	4.3	.07	31	9.0	3.0	5.9L	9.1	120	75105
W191044	.78L	5.0	4.8	.08	26	8.4	1.5	7.1	9.5	74	75106
W191045	.92L	6.0	6.1	.11	20	12	2.8	10	11	130	75107
W191040	.63L	6.0	9.2	.08	64	2.9	2.3	10	12	26	75121
W191039	.85L	6.0	11	.08	50	6.0	3.0	9.9	7.8	44	75122
W191276	5.0L	2.0	4.6L	.03	8.3	46	3.5	36L	5.0	B	75122B
W192614	.82L	3.0	12	.14	59	3.1	2.8	5.6L	19	22	76001
W192615	.86L	4.0	11	.17	46	.90	1.4	5.8L	19	39	76002
W194413	1.4L	4.5	13	.15	21	2.6	1.3	9.3L	7.9	8.7	76002B
W192624	.80L	5.0	11	.16	46	2.5	1.6	5.4L	16	22	76012
W192625	1.1L	6.0	11	.15	72	3.0	1.4	7.2L	27	26	76013
W192626	.64L	3.0	5.5	.07	56	2.3	2.1	4.3L	5.6	100	76014
W194431	3.2L	26	89	.27	84	1.0L	4.4	22L	11	39	76014B
W192627	.88L	4.0	8.9	.08	85	1.3	2.3	5.9L	7.6	140	76015
W193124	.43L	6.0	5.7	.08	7.6	5.3	1.4	8.2	14	190	76033
W194464	2.4L	31	89	.38	21	2.2	4.3	20	17	190	76033A
W193122	.69L	5.0	4.8	.10	50	9.2	2.0	6.6	10	26	76034
W193123	.78L	5.0	5.8	.09	65	3.9	2.5L	5.2L	8.8	35	76035
W194859	.37L	8.0	3.9	.11	8.3	2.2	.88	10	9.9	100	76052B
W194862	.71L	5.0	12	.06	57	4.9	2.1	4.8L	8.2	4.4	76056
W194863	.86L	6.0	13	.09	15	12	1.9	6.7	15	22	76057C

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
D172302	19	N	N	B	2.8	9.0	2.2	N	N	54	75012
W188940	5.2	1.2	.52L	18L	.22	3.1	1.4L	.60	1.1L	8.2	75049
W188941	2.7	.79	.44L	22L	.16	2.9	3.1	.90	.94L	12	75050
W188942	2.0L	1.0L	.69L	22L	.24	4.4	1.7L	.70	1.5L	12	75051
W188943	2.3	.89L	.61L	21L	.20	3.5	2.6	.90	1.3L	17	75052
W190536	19	2.3L	.50L	19L	.69	2.5	3.4	2.2	1.1L	79	75079
W190537	36	2.3	.72L	12	.92	3.3	4.8	2.3	1.5L	90	75080
W191205	29	23L	2.3L	22	1.4	6.9	6.8	1.6	2.3L	50	75080A
W190542	14	7.6	.36L	19L	1.5	3.3	2.8	4.6	.78L	140	75085
W191215	40	58L	5.8L	89	.76	12	7.6	4.2	5.8L	94	75085B
W190543	14	4.4	.31L	17L	1.4	3.2	2.5	3.3	.66L	97	75086
W191216	29	50L	5.0L	63	1.0	11	8.2	3.3	5.0L	66	75086A
W190544	23	1.8	.41L	17L	.84	2.8	3.6	1.7	.88L	36	75087
W190545	15	1.4	.40L	13L	.65	2.5	2.4	1.3	.87L	28	75088
W190546	5.6	2.1	.72L	18	.80	3.7	3.1	1.6	1.6L	25	75089
W190547	2.1	3.3	.85L	20L	.30	6.5	2.8	3.8	1.8L	160	75090
W190548	33	3.6	1.0L	35	2.1	7.7	3.1	5.6	2.2L	410	75091
W191220	130	37L	3.7L	4.0L	.020L	5.2	6.6	B	3.7L	110	75091B
W191222	45	42L	4.2L	72	1.6	11	2.8	2.9	4.2L	100	75091D
W190934	17	5.8L	.58L	13	.69	3.1	2.2	2.7	.58L	76	75097
W192632	21	4.3	.41L	6.0	.91	3.5	4.0	B	.41L	78	76023
W194447	90	15L	1.5L	46L	1.3	9.1	15	3.0	1.5L	46	76023A
W192633	23	3.8L	.38L	10L	1.2	3.7	4.0	B	.67	95	76024
W192634	240 24	11L 1.1L	1.1L 1.1L	6.0L	1.5	2.4	3.4	B	1.1L 1.1L	20 2.0	76025
W194448	6.3	11L	1.1L	29	.90	7.7	2.0	1.5	1.1L	28	76025A
W197297	36	7.4L	.74L	27L	.75	4.1	4.5	1.8	1.1	50	77042
W197290	190	29L	2.9L	46L	.70	.74	14	.50	H	2.4	77042B
W192620	9.1	10L	1.0L	10	.46	3.2	3.3	B	1.0L	21	76008
W194423	12	21L	2.1L	48	1.5	5.6	7.8	3.4	2.1L	7.6	76008A
W194424	13	6.2L	.62L	13	.20	4.0	2.7	1.1	.62L	6.2	76008B
W192621	18	9.6L	0.96L	15	0.34	2.6	4.4	B	0.96L	12	76009
W194426	7.1	5.1L	.51L	4.0	.50	2.0	3.8	.60	.51L	6.5	76009B
W192622	28	5.9L	.59L	10	.38	2.0	11	B	.59L	7.7	76010
W192623	23	18	.96L	22L	.16	2.3	3.3	B	.96L	5.6	76011
W194393	11	9.0L	.90L	19	.40	1.8	3.6	.90	.90L	5.3	76044
W194405	9.6	12L	1.2L	26	.40	4.9	3.6	1.1	1.2L	7.9	76044C
W194394	26	8.2L	.82L	24L	.30	2.0	3.1	1.1	.82L	5.3	76045
W196342	9.0	3.8	.22L	32L	1.7	1.5	.91	1.4	.05L	80	77005
W196362	23	25L	2.5L	40	2.4	12	2.9	4.1	2.5L	97	77005B
W196343	11	3.8	.28L	32L	2.6	1.7	1.5	1.6	.06L	45	77006

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
D172310	30	N	N	B	.80	4.4	11	N	N	13	75024
D172311	41	B	N	B	.40	2.0	2.9	B	N	20	75025
D172312	24	B	N	B	3.5	1.1	5.3	B	N	32	75026
D172313	6.8	N	N	B	.50	2.3	2.6	N	N	34	75027
D172314	2.5	B	N	B	.30	2.0	4.6	B	N	20	75028
D172315	12	B	N	B	.50	2.2	4.7	B	N	33	75029
W194395	29	28L	2.8L	93	2.5	18	4.1	8.1	2.8L	80	76046
W194396	40	9.0L	.90L	17	4.0	6.3	2.8	4.2	.90L	22	76047
W194407	37	30L	3.0L	130	5.0	14	3.1	5.9	3.0L	110	76047A
W194397	13	8.9L	.89L	14	.60	2.6	1.9	1.3	.89L	62	76048
W197293	42	12L	1.2L	30	3.8	6.9	2.4	3.9	1.2L	24	77030
W197294	16	6.3L	.63L	18	.90	2.5	1.3	.80	.63L	23	77033
D172305	17	N	N	B	.30	3.7	2.6	N	N	11	75015
W188946	13	.67L	.46L	20L	.34	2.1	1.2L	.60	.98L	8.4	75055
W188947	5.9	.76L	.52L	11	.29	2.2	2.0	.60	1.1L	12	75056
W191042	24	7.2L	0.72L	28L	4.3	3.9	4.1	2.0	1.0	130	75125
W191277	47	23L	2.3L	28	3.8	8.4	9.0	7.4	2.3L	110	75125A
W191051	31	12	1.0L	23L	2.3	3.2	4.5	1.7	1.0L	180	75126
W191279	26	22L	2.2L	33	1.7	3.9	5.9	1.4	2.2L	190	75126A
W194856	12	11L	1.1L	38	1.9	3.0	1.5	2.6	1.7	41	76049
W194821	12	14L	1.4L	40	.90	6.2	2.4L	2.6	.31L	59	76049E
W194823	12	14L	1.4L	38	1.0	7.2	3.3	2.8	.31L	43	76049G
W194825	60	29L	2.9L	61	2.2	9.0	3.7	4.6	.69	69	76049I
D172303	23	B	N	B	2.8	1.9	2.9	B	N	38	75013
W188948	2.5	.92L	.63L	16	3.0	2.3	3.8	.80	1.4L	12	75057
W188949	2.5	.93L	.63L	34	.99	2.7	2.3	.80	1.4L	13	75058
W192628	18	11L	1.1L	33	1.1	5.5	1.9	B	1.1L	110	76016
W192629	7.7	3.1L	.31L	8.0	.67	1.6	1.5	B	.95	44	76017
W194444	56	27L	2.7L	68	1.5	9.2	4.7	5.5	2.7L	48	76017B
W197296	7.9	6.8L	.68L	24L	2.0	4.0	2.2	.60	.73	4.2	77041
W197287	3.4	8.8L	.88L	9.0	.30	2.7	2.9	1.2	.22	140	77041B
D172306	25	N	N	B	1.6	7.4	3.8	N	N	100	75016
W190534	12	1.8	.63L	12	.50	4.0	3.4	1.3	1.7	35	75077
W190535	17	1.8	.75	20L	.97	4.8	4.9	1.3	1.4L	31	75078
W191204	29	62L	6.2L	79	1.1	13	5.4	3.9	6.2L	62	75078A
W190538	7.9	2.5	.54L	15	1.1	3.4	2.3	2.5	1.2L	83	75081
W191207	31	36L	3.6L	37	.68	11	8.1	3.1	3.6L	140	75081B
W191208	23	41L	4.1L	55	.91	9.5	5.1	3.0	4.1L	130	75081C
W190539	7.7	5.5	.61L	16	1.1	4.8	1.6	4.1	1.3L	320	75082
W191209	33	33L	3.3L	45	1.8	11	7.5	7.0	3.3L	390	75082A

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W190540	6.5	3.5	0.50L	19L	1.1	3.2	2.3	2.7	1.1L	130	75083
W191211	23	25L	2.5L	30	.58	9.6	7.3	3.1	2.5L	190	75083B
W191212	28	57L	5.7L	66	.55	13	6.9	3.1	5.7L	110	75083C
W190541	11	3.1	.89L	20	1.3	5.6	3.5	3.1	1.9L	300	75084
W191213	33	46L	4.6L	40	1.8	11	8.5	8.7	4.6L	240	75084A
W193119	6.0	6.3L	.63L	22L	.55	3.4	2.2	3.3	.63L	200	76038
W194455	5.1	5.3L	.53L	17L	.90	3.4	1.7	.60	.53L	14	76038A
W194390	12	6.1L	.61L	21L	.70	2.4	2.1	1.5	.61L	130	76041
W196338	17	6.7L	.67L	29	1.4	4.4	3.4	2.3	.49	120	77001
W196360	26	12L	1.2L	61	1.7	10	3.9	3.5	1.8	99	77001C
W188938	15	1.7	.44L	24L	.72	3.5	4.5	3.5	.96L	94	75047
W188939	18	1.6	.52L	26L	.78	3.7	5.2	2.9	1.1L	89	75048
W192616	25	6.5L	.65L	10L	1.3	4.2	3.5	B	.74	4.3	76004
W192617	23	6.3L	.63L	9.0L	1.4	3.0	2.1	B	.63L	8.3	76005
W194419	38	22L	2.2L	34	3.0	12	12	3.5	2.2L	17	76005A
W192618	18	5.0L	.50L	11L	1.1	4.4	3.2	B	.80	9.5	76006
W192619	16	4.8L	.48L	11L	1.9	3.9	2.3	B	.85	8.5	76007
W194421	63	15L	1.5L	14	3.7	9.2	13	2.8	1.5L	8.6	76007A
W197291	9.8	2.4L	.24L	17L	2.2	2.4	2.1	1.1	.42	8.8	77026
W197278	34	19L	1.9L	47	.85	9.9	4.7	6.3	.84	200	77026A
W197279	4.0	3.1L	.31L	29L	.60	.47	4.0	2.8	.07L	8.3	77026B
W197292	14	5.2L	.52L	22L	1.6	5.0	3.7	2.3	.52L	16	77029
W197280	46	17L	1.7L	40	1.8	8.4	4.4	4.2	.38L	110	77029A
W197281	23	18L	1.8L	41	.60	8.6	4.2	4.9	.72	77	77029B
D173480	2.1	N	N	B	.50	B	1.8	B	N	17	75030
D173481	1.9	N	N	B	.40	B	1.9	B	N	11	75031
D173483	2.9	B	N	B	.90	B	13	B	N	15	75033
D173484	4.8	N	N	B	1.7	B	13	B	N	18	75034
D173485	2.7	B	N	B	.50	B	.90	B	N	16	75035
D173486	6.3	B	N	B	1.0	B	1.7	B	N	54	75036
W188932	17	1.2L	0.84L	42L	1.1	4.2	0.50	1.3	1.8L	22	75041
W188933	10	2.1	.82L	35	.99	4.2	.70	1.8	1.8L	46	75042
W190528	1.1	1.5	.60L	14	1.4	1.8	2.2	1.1	1.3L	12	75063
W190529	1.2L	2.2	.81L	16	1.9	2.1	2.3	1.1	1.7L	17	75064
W190532	1.5	1.4	.59L	14	.78	1.9	2.3	.70	1.3L	13	75067
W190533	4.9	1.7	.63L	17	.59	1.9	2.2	.90	1.4L	11	75068
W190929	27	5.9L	.59L	13	.93	3.0	2.7	2.1	.82	96	75092
W191224	190	13L	.86L	22L	7.1	4.2	3.2	.50	2.7	12	75092A
W191225	87	77L	7.7L	31	6.6	.70	11	.20	7.7L	8.7	75092B
W190930	43	8.7L	.59L	17	1.2	2.5	2.0	.90	.59L	26	75093

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W191227	230	8.6L	.86L	22L	6.8	4.1	2.5	.70	.86L	22	75093A
W191228	13	53L	5.3L	83	.91	14	4.5	13	5.3L	730	75093B
W190931	30	5.2L	.52L	15	.74	1.9	1.4	.70	.58	3.4	75094
W191055	14	8.2L	.82L	20L	.72	2.0	2.0	1.1	.83	35	75102
W191056	6.4	6.6L	.66L	11	.76	2.0	2.1	.80	1.2	18	75103
W192630	38	6.4L	.64L	10	1.1	3.1	1.8	B	.64L	16	76021
W192631	51	6.8L	.68L	11	1.7	3.3	1.8	B	.68L	14	76022
W194858	3.0	6.8L	.68L	16	1.1	2.2	2.5	1.2	.68L	16	76051B
W194860	3.1	5.5L	.55L	15	.30	2.1	1.5	1.1	.55L	11	76053
W194861	12	6.1L	.61L	18	.70	2.8	3.2	.80	.61L	9.9	76054
W194864	5.8	6.6L	.66L	21	1.0	3.7	2.4	2.7	.66L	160	76058
W194839	70	25L	2.5L	78	2.0	9.6	1.8	3.4	.55L	99	76058C
W194865	33	4.2L	.42L	19L	.70	2.5	1.5	.60	.42L	11	76059
W194866	14	6.7L	.67L	17	4.6	3.6	.65	2.2	.67L	78	76060
W188934	2.8	.58	.20L	23L	.57	1.6	2.6	.70	.43L	7.9	75043
W188935	.88L	1.0	.30L	18L	.25	1.2	1.2L	.60	.65L	6.6	75044
W188936	1.7	2.1	.51L	24L	.12	1.4	2.3	1.7	1.1L	8.4	75045
W188937	2.0	1.7	0.50L	26L	0.12	2.4	2.2	1.8	1.1L	10	75046
W191048	30	6.8L	.68L	20L	1.9	4.6	5.5	.40	1.3	3.9	75110
W191050	40	5.9L	.59L	19L	1.2	3.4	4.4	.50	.85	3.6	75111
W191047	28	4.6L	.46L	20L	1.5	2.0	2.9	.80	.77	20	75112
W191038	7.8	5.1	.31L	21L	1.6	2.0	1.5	1.0	.51	25	75113
W191035	37	10	.70L	30L	3.2	4.7	4.9	4.9	.70L	97	75114
W191036	54	15	.92L	36L	4.2	5.4	6.8	6.1	.92L	220	75115
W191037	42	8.0	.50L	29L	3.3	4.6	6.4	5.2	.50L	180	75116
W191034	57	6.5L	.65L	29L	3.2	3.8	4.4	1.8	1.0	41	75117
W191062	.73L	8.8	.66L	16L	.38	2.7	2.1	1.5	.66L	20	75118
W191041	.85	5.2L	.52L	23L	.52	2.0	2.4	1.3	.52L	21	75119
W194391	38	6.4L	.64L	26L	2.5	3.6	5.1	2.2	.64L	72	76042
W194401	57	24L	2.4L	52	1.2	7.9	11	8.5	2.4L	430	76042B
W194392	28	5.4L	.54L	23L	3.0	2.9	4.8	2.2	.54L	57	76043
W196345	16	4.8L	.48L	41L	1.4	2.3	3.1	.65	.11L	18	77011
W196368	100	28L	2.8L	62L	.80	7.5	13	13	2.8L	490	77011B
W196346	37	5.8	.50L	43L	3.8	4.1	4.6	2.4	.11L	47	77012
W196347	23	4.9L	.49L	39L	2.0	2.9	4.2	1.1	.11L	28	77013
W196348	13	3.7L	.37L	28L	1.9	1.9	3.1	.50	.08L	9.9	77014
W196371	62	21L	2.1L	57L	1.4	7.2	6.9	9.1	2.1L	280	77014B
W196349	44	5.2L	.52L	38L	4.0	4.5	5.5	1.5	.12L	43	77015
W196350	23	4.4L	.44L	31L	3.0	3.2	3.1	.90	.10L	27	77016
W196351	34	4.2L	.42L	31L	2.3	2.6	4.0	.40	H	8.7	77017

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W196352	11	4.4L	.44L	30L	3.2	2.1	2.0	.60	.10L	9.1	77018
W196374	75	13L	1.3L	42	1.6	6.1	5.9	8.7	1.3L	290	77018A
W196353	61	5.6L	.56L	40L	7.4	4.0	5.9	1.2	.12L	28	77019
W196354	40	4.6L	.46L	32L	4.4	3.0	3.5	.70	.10L	16	77020
W196355	6.9	2.0L	.20L	25L	.50	2.3	3.6	.60	.05L	6.0	77021
W196356	6.4	2.0L	.20L	22L	.30	.97	4.1	.60	.04L	5.8	77022
W196357	8.6	2.2L	.22L	23L	1.3	3.6	1.9	.60	.12	6.9	77023
W197295	28	6.6L	.66L	15	2.3	2.9	4.9	1.9	.66L	3.9	77037
D172304	4.4	B	N	B	1.5	3.5	2.8	B	N	27	75014
D172307	15	N	N	B	1.4	2.6	7.3	N	N	92	75017
D172308	12	B	N	B	.70	3.6	5.5	B	N	24	75018
D172309	14	N	N	B	6.9	4.6	.80	N	N	18	75019
W191046	20	11L	1.1L	26L	15	3.8	.80	1.2	1.1L	18	75108
W191245	11	36L	3.6L	56	1.0	8.9	1.2	2.2	3.6L	54	75108B
W191049	12	9.1L	.91L	25L	1.9	3.3	.70	.90	.91L	19	75109
W191248	28	42L	4.2L	51	1.3	5.0	1.1	1.8	4.2L	35	75109B
W192635	28	6.7L	.67L	14	1.7	2.4	1.8	B	3.3	25	76026
W192636	30	6.9L	.69L	9.0	.48	2.5	2.3	B	.69L	14	76027
W193120	39	5.4L	.54L	17	4.5	3.1	.90	.80	.54L	13	76037
W194388	3.9	6.0L	.60L	9.0	.50	2.4	1.5	1.4	.60L	12	76039
W194389	9.9	6.1L	.61L	16	.50	2.3	1.7	B	.61L	16	76040
W194857	7.8	6.7L	.67L	25L	.30	2.4	1.2	.50	.67L	14	76050
W194829	7.9	28L	2.8L	62	.40	8.4	3.1	2.4	.62L	66	76050C
W188952	43	2.1L	1.5L	36	2.0	5.8	1.9	2.4	3.1L	35	75061
W188953	20	1.7	.98L	28	1.5	3.8	1.8	.01L	2.1L	41	75062
W191043	10	8.1L	.81L	25L	1.4	2.4	6.9	.80	1.4	57	75120
W191059	81	13L	1.3L	15	3.8	2.9	2.2	.50	1.3L	17	75123
W191054	16	12L	1.2L	15	3.1	3.2	1.4	.60	1.2L	21	75124
W193121	14	8.1L	.81L	20	1.1	2.3	3.9	1.2	.81L	18	76036
W188944	6.3	1.1	.53L	16	2.4	3.6	1.8	.01L	1.1L	11	75053
W188945	9.1	.65L	.44L	21	2.2	2.8	3.2	.90	.96L	9.6	75054
W188950	48	1.8	.95L	34	1.9	3.2	1.6	1.3	2.1L	15	75059
W188951	46	2.9	1.6L	32	2.8	6.2	2.0	1.7	3.4L	31	75060
W196339	.91L	6.2L	.62L	36L	1.3	.97	2.7	.40	.14L	17	77002
W196340	3.3	8.9L	.89L	43L	.55	2.3	1.6	.40	.20L	25	77003
W196341	3.2	7.5L	.75L	17	.70	1.7	2.0	.40	.17L	26	77004
W196344	9.9	4.5L	.45L	36L	1.0	3.4	1.5	.60	.10L	15	77010
W196366	23	28L	2.8L	97	1.2	18	11L	15	2.8L	53	77010B
D173482	2.1	N	N	B	.40	B	1.6	B	N	13	75032
D173487	6.5	N	N	B	.60	B	4.1	B	N	19	75037

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W188930	8.0	1.3	.46L	30L	1.9	2.9	1.1	1.2	.98L	26	75039
W188931	18	1.8	.57L	33L	2.5	4.1	1.6	3.1	1.2L	130	75040
W190530	1.0	1.3	.64L	21L	.48	1.8	1.8	.90	1.4L	11	75065
W190531	1.7	1.7	.57L	16	.50	2.7	2.1	1.9	1.2L	12	75066
W190932	4.2	9.5L	.95L	19	1.7	2.1	5.2	.90	1.2	14	75095
W190933	5.2	8.1L	0.81L	21	1.7	2.3	5.9	1.2	1.2	21	75096
W191233	2.7	31L	3.1L	33L	1.4	1.8	5.5	.60	3.1L	18	75096B
W191052	1.6	14L	1.4L	24L	.29	2.3	1.1	.60	1.4L	66	75098
W191060	2.8	19L	1.9L	22L	.34	3.5	2.2	1.4	1.9L	110	75099
W191239	11	50L	5.0L	27	.60	4.6	6.0	6.3	5.0L	470	75099C
W191053	1.5	13L	1.3L	15	.31	2.5	1.7	1.0	1.3L	36	75100
W191061	1.5	9.1L	.91L	17L	.25	2.2	1.1	1.0	.91L	31	75101
W191057	.98L	8.9L	.89L	17L	1.2	1.5	2.7	.80	.89L	13	75104
W191058	.95	8.6L	.86L	9.0	.23	1.6	2.6	.70	.89	15	75105
W191044	1.3	7.8L	.78L	21L	.67	1.7	1.8	.90	.78L	17	75106
W191045	1.6	9.2L	.92L	23L	.81	2.0	2.0	1.1	.92L	24	75107
W191040	5.8	6.3L	.63L	22L	.76	2.1	1.8	1.1	.63L	18	75121
W191039	6.6	8.5L	.85L	23L	.81	2.1	2.0	1.0	.85L	12	75122
W191276	4.6L	50L	5.0L	36L	.35	.47	6.0	.30	5.0L	7.3	75122B
W192614	6.7	8.2L	.82L	9.5	.32	3.0	1.6	B	.82L	25	76001
W192615	6.2	8.6L	.86L	12	.43	2.3	1.4	B	.86L	17	76002
W194413	12	14L	1.4L	20	.50	1.9	2.7	.70	1.4L	9.1	76002B
W192624	5.3	8.0L	.80L	14L	.34	3.4	1.6	B	.80L	13	76012
W192625	9.4	11L	1.1L	17	.43	3.2	1.7	B	1.1L	15	76013
W192626	5.2	6.4L	.64L	12	.41	2.1	1.1	B	.64L	13	76014
W194431	11	32L	3.2L	130	.20	7.3	1.2	2.7	3.2L	61	76014B
W192627	3.6	8.8L	.88L	21	.50	2.9	1.3	B	.88L	23	76015
W193124	7.6	4.3L	.43L	12	.84	2.1	1.2	1.2	.43L	35	76033
W194464	19	24L	2.4L	93	1.1	12	4.0	3.4	2.4L	150	76033A
W193122	3.2	6.9L	.69L	16	1.5	2.5	1.7	1.1	.69L	20	76034
W193123	3.5	7.8L	.78L	20L	.47	2.3	2.0	1.1	.78L	22	76035
W194859	3.9	3.7L	.37L	12	.90	2.6	1.1	1.6	.37L	60	76052B
W194862	2.4	7.1L	.71L	12	.90	2.1	2.0	.70	.71L	17	76056
W194863	8.1	8.6L	.86L	17	1.1	4.0	5.2	1.4	.86L	17	76057C

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
D172302	N	N	N	6.5	N	N	2.1	54	N	13	75012
W188940	.040	.19	35L	.40L	.35L	.24L	.77	9.7	.42	4.6	75049
W188941	.10	.16	30L	1.3	.30L	.20L	.97	8.6	B	4.2	75050
W188942	.11	.27	47L	.50L	.47L	.32L	1.1	34	B	4.4	75051
W188943	.11	.30	41L	2.0	.41L	.28L	.91	26	B	3.3	75052
W190536	.11	.15	34L	1.1	.34L	.23L	.39	12	.44	6.6	75079
W190537	.12	.13	49L	1.5	.49L	.34	2.3	20	.70L	7.6	75080
W191205	.31	.27	B	3.9	3.4L	1.5L	1.4	55	.45	14	75080A
W190542	.12	.42	25L	1.4	.25L	.17L	.80	27	.41	12	75085
W191215	.66	.79	B	8.7	8.5L	3.8L	2.6	94	1.5	29	75085B
W190543	.090	.25	21L	1.1	.21L	.14L	.38	15	.81L	9.0	75086
W191216	.52	.49	B	6.9	7.4L	3.3L	2.4	74	1.1	19	75086A
W190544	.13	.25	28L	1.3	.28L	.30	.37	13	1.0L	7.5	75087
W190545	.080	.15	27L	1.1	.27L	.19L	1.0L	9.6	.64L	6.7	75088
W190546	.15	.28	49L	3.1	.49L	.33L	4.3	35	.46	8.7	75089
W190547	.10	.89	58L	2.7	.58L	.40L	4.4	98	1.0L	33	75090
W190548	.24	.70	69L	4.7	.69L	.47L	2.7	44	1.8L	15	75091
W191220	.29	.35	B	12	8.0L	2.5L	6.1	150	.13L	13	75091B
W191222	.35	.53	B	6.9	5.9L	2.8L	2.9	92	.60	15	75091D
W190934	.090	.39	B	1.6	.86L	.40L	1.0	15	.36	8.5	75097
W192632	.12	.33	B	1.4	.60L	.28L	.66	14	.29	7.8	76023
W194447	.37	.66L	B	4.3	2.2L	1.0L	1.7	31	.20	8.8	76023A
W192633	.11	.26	B	1.4	.56L	.26L	.69	12	.38	7.3	76024
W192634	.20L	.28L	B	.30	1.7L .17L	.78L .078L	.34	24 2.4	.21	29 2.9	76025
W194448	.22	.46L	B	3.5	1.6L	.73L	1.6	60	.20	6.6	76025A
W197297	.15	.25	B	1.0	1.1L	.50L	1.1	8.1	.55	5.8	77042
W197290	.42L	.47	B	2.2L	1.4L	1.9L	.11L	1.4	.80L	13	77042B
W192620	.13	.32	B	1.6	1.5L	.70L	1.7	14	.30	7.3	76008
W194423	.34	2.2	B	3.9	3.0L	1.4L	31	66	.50	54	76008A
W194424	.33L	.22	B	1.4	1.7	.42L	1.8	36	.30	10	76008B
W192621	0.070	0.42	B	1.8	1.4L	0.65L	2.6	14	0.20	9.4	76009
W194426	.28L	.32L	B	.90	.75L	.35L	2.6	6.1	.10	2.6	76009B
W192622	.070	.27	B	1.2	.87L	.40L	12	23	.25	5.5	76010
W192623	.77L	1.9	B	1.6	1.4L	.65L	1.2	10	.51L	38	76011
W194393	.41L	.20	B	1.0	1.3L	.61L	2.8	12	.50	H	76044
W194405	.20	.60L	B	2.7	1.7L	.79L	1.8	31	.60	H	76044C
W194394	.42L	.26	B	1.2	1.2L	.55L	1.2	13	.50	H	76045
W196342	.22L	.25	B	.50	.10L	.15L	.81	4.8	.25	3.5	77005
W196362	.50	.44	B	6.7	3.7L	1.7L	2.9	52	.80	6.0	77005B
W196343	.22L	.21	B	.45	.13L	.19L	.69	3.3	.35	3.3	77006

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
D172310	N	B	N	N	N	B	2.3	18	N	4.4	75024
D172311	N	B	N	N	N	B	1.2	20	N	6.6	75025
D172312	N	B	N	18	N	B	17	24	N	3.2	75026
D172313	N	N	N	N	N	N	1.3	23	N	7.9	75027
D172314	N	N	N	N	N	N	.86	20	N	7.0	75028
D172315	N	B	N	N	N	B	1.0	11	N	4.4	75029
W194395	.66	1.1	B	15	4.2L	1.9L	7.6	84	1.5	12	76046
W194396	.17	.52	B	4.3	1.3L	.61L	7.1	36	.80	6.5	76047
W194407	.59	.49	B	11	4.4L	2.0L	8.0	110	.50	12	76047A
W194397	.46L	.51L	B	1.4	7.7	.60L	1.4	11	.60	3.7	76048
W197293	.25	.66	B	5.0	1.8L	.84L	5.9	36	.20	7.8	77030
W197294	.13	.12	B	1.5	.93L	.43L	1.3	12	.50	3.5	77033
D172305	N	N	N	4.1	N	N	.72	15	N	5.2	75015
W188946	.11	.28L	31L	.40L	.31L	.21L	.46	8.1	B	2.2	75055
W188947	.11	.28L	35L	1.1	.35L	.24L	.67	12	B	1.9	75056
W191042	0.13	0.22	B	1.7	1.1L	0.49L	1.9	23	0.52	6.8	75125
W191277	.51	2.1	B	3.4	3.5L	1.6L	2.5	27	1.2L	64	75125A
W191051	.12	.15	B	1.9	1.5L	.70L	2.2	31	.38	9.7	75126
W191279	.32	.15	B	5.0	3.3L	1.5L	2.1	32	.75	5.7	75126A
W194856	.31	.36	B	4.8	1.7L	.76L	4.6	38	.15	7.5	76049
W194821	.27	.40	B	5.0	.67L	.96L	6.8	98	.30L	5.2	76049E
W194823	.27	.38	B	4.5	.66L	.95L	9.5	51	.30L	2.9	76049G
W194825	.36	.77	B	7.0	1.4L	2.0L	11	64	.40L	7.7	76049I
D172303	N	N	N	5.5	N	N	.49	19	N	8.8	75013
W188948	.17	.17	43L	1.6	.43L	.29L	1.5	15	B	3.8	75057
W188949	.23	.15	43L	1.7	.43L	.29L	1.4	13	B	4.0	75058
W192628	.24	.30	B	3.7	1.7L	.76L	1.7	25	.58	5.6	76016
W192629	.080	.38L	B	.80	.45L	.21L	.43	6.3	.35	3.9	76017
W194444	.48	.48	B	7.5	4.0L	1.8L	4.6	64	.10	11	76017B
W197296	.10	.11	B	1.6	1.0L	.46L	1.1	12	.85	1.5	77041
W197287	.22	.23	B	3.0	.42L	.60L	.51	14	.50	2.9	77041B
D172306	N	N	N	N	N	N	.68	32	N	16	75016
W190534	.11	.23	43L	1.6	.43L	.29L	.39	36	.58	13	75077
W190535	.10	.25	43L	1.8	.43L	.29L	.69	48	.68L	11	75078
W191204	.64	.69	B	9.1	9.1L	4.1L	3.1	91	1.0	19	75078A
W190538	.14	.21	37L	1.9	.37L	.25L	.95	20	1.2L	6.9	75081
W191207	.42	.39	B	8.5	5.3L	2.4L	4.3	78	.71	13	75081B
W191208	.47	.51	B	6.7	6.0L	2.7L	3.0	73	1.2	17	75081C
W190539	.15	.65	41L	2.5	.41L	.29	1.4	30	.85L	21	75082
W191209	.34	.93	B	6.9	4.9L	2.2L	4.6	82	1.3	25	75082A

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W190540	0.13	0.21	34L	1.7	0.34L	0.23L	0.87	18	0.59	8.0	75083
W191211	.26	.35	B	7.1	3.6L	1.7L	3.6	69	.52	15	75083B
W191212	.58	.67	B	9.7	8.3L	3.8L	3.8	92	.94	19	75083C
W190541	.19	.45	60L	3.3	.60L	.41L	1.9	44	.48	14	75084
W191213	.56	1.4	B	7.6	6.7L	3.0L	4.9	88	.84	33	75084A
W193119	.16	.38	B	1.7	.93L	.43L	.58	13	.46	8.8	76038
W194455	.16	.25L	B	2.5	.78L	.36L	1.8	39	.40	2.3	76038A
W194390	.48L	.18	B	.90	.89L	.41L	1.9	16	2.2	H	76041
W196338	.19	.34	B	3.2	.31L	.45L	2.0	20	.30	5.0	77001
W196360	.33	.69	B	5.8	1.8L	.84L	3.7	42	.70	4.6	77001C
W188938	.15	.19	30L	1.7	.30L	.21L	2.0	14	B	3.4	75047
W188939	.12	.13	36L	1.8	.36L	.25	2.2	20	B	2.7	75048
W192616	.28L	.32	B	.60	.96L	.44L	.82	9.4	.65	7.8	76004
W192617	.28L	.22	B	.60	.92L	.42L	.63	9.2	.77	9.2	76005
W194419	.68L	.38	B	9.4	3.2L	1.5L	6.9	67	.70	7.4	76005A
W192618	.31L	.34	B	.70	.73L	.34L	.95	8.8	.71	3.9	76006
W192619	.32L	.31	B	.90	.71L	.33L	.71	9.2	.68	4.3	76007
W194421	.55L	.76L	B	5.5	2.2L	.99L	6.1	50	.50	5.4	76007A
W197291	.24L	.16	B	1.4	.63	.16L	1.4	6.3	.90	1.7	77026
W197278	.37	.61	B	8.5	.90L	1.3L	3.8	62	.75	13	77026A
W197279	.47L	.45	B	2.0L	.15L	.21L	.21L	.60	.50L	3.7	77026B
W197292	.080	.29	B	2.8	.76L	.35L	2.6	14	1.0	2.1	77029
W197280	.32	.61	B	5.7	.81L	1.2L	2.9	53	.80	18	77029A
W197281	.40	.46	B	7.5	.85L	1.2L	3.7	51	.95	9.8	77029B
D173480	B	B	N	B	N	N	.41	13	B	6.0	75030
D173481	B	B	N	B	N	N	.34	11	B	5.3	75031
D173483	B	B	N	B	N	B	.79	6.8	B	4.9	75033
D173484	B	B	N	B	N	B	1.6	18	B	6.1	75034
D173485	B	B	N	B	N	B	.91	11	B	5.3	75035
D173486	B	B	N	B	N	B	1.4	13	B	9.1	75036
W188932	0.18	0.25	58L	2.4	0.58L	0.39L	1.2	22	B	8.1	75041
W188933	.18	.18	56L	3.0	.56L	.38L	1.6	27	B	10	75042
W190528	.095	.20	41L	1.4	.41L	.28L	2.7	15	.55	7.0	75063
W190529	.11	.19	55L	1.3	.55L	.38L	1.7	18	.30	9.3	75064
W190532	.060	.11	40L	1.2	.40L	.27L	.44	15	.32	8.0	75067
W190533	.090	.15	43L	1.3	.43L	.29L	.63	13	.50L	7.2	75068
W190929	.090	.19	B	1.3	.87L	.40L	.78	17	.37	7.3	75092
W191224	.050	.13	B	.50	1.3L	.59L	4.2	59	.81L	5.4	75092A
W191225	.030	.98L	B	.40	12L	5.3L	1.0L	7.2	1.8L	1.7L	75092B
W190930	.070	.16	B	1.1	.87L	.40L	1.0	11	.47	6.7	75093

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W191227	.020	.17	B	.60	1.3L	.59L	5.5	16	.82L	8.6	75093A
W191228	.88	1.4	B	14	8.0L	3.7L	3.8	100	1.2	32	75093B
W190931	.090	.41L	B	1.3	.77L	.35L	.33	11	.26	3.2	75094
W191055	.090	.15	B	1.1	1.2L	.56L	.69	14	.41	8.8	75102
W191056	.090	.16	B	1.3	.94L	.45L	.68	12	.36	6.3	75103
W192630	.13	.27	B	1.3	.94L	.43L	.87	12	.57	6.1	76021
W192631	.14	.38L	B	1.2	1.0L	.46L	.71	7.1	.37	3.6	76022
W194858	.090	.16	B	1.7	1.0L	.46L	3.6	31	.10	3.8	76051B
W194860	.090	.19	B	1.4	.81L	.37L	1.4	11	.10	4.6	76053
W194861	.15L	.16	B	1.6	.90L	.41L	1.8	14	.50	4.0	76054
W194864	.12	.35	B	2.6	.97L	.45L	2.1	21	.10	9.7	76058
W194839	.48	.45	B	7.3	1.2L	1.7L	3.6	44	.50L	5.5	76058C
W194865	.13L	.39L	B	.70	.62L	.29L	1.1	8.1	.30	3.6	76059
W194866	.15	.24	B	2.6	.98L	.45L	2.0	21	.20	6.2	76060
W188934	.090	.12	13L	1.0	.13L	.09L	1.7	7.9	B	5.2	75043
W188935	.060	.16	20L	.30L	.20L	.14L	2.4	6.6	B	3.8	75044
W188936	.52L	.23	35L	1.1	.35L	.24L	.65	7.8	B	6.0	75045
W188937	0.57L	0.22	35	1.5	0.34L	0.23L	1.6	17	B	8.1	75046
W191048	.040	.16	B	.60	.98L	.47L	1.3	31	.28	6.8	75110
W191050	.030	.11	B	.40	.85L	.40L	.68	11	.36	5.6	75111
W191047	.050	.15	B	.90	.66L	.32L	.68	11	.34	6.6	75112
W191038	.060	.15	B	1.0	.46L	.21L	.53	8.7	.46	5.1	75113
W191035	.13	.47	B	2.3	1.0L	.47L	.75	20	.42	13	75114
W191036	.19	.60	B	3.2	1.4L	.62L	1.1	27	.40	16	75115
W191037	.11	.56	B	1.8	.73L	.34L	.73	18	.29	13	75116
W191034	.11	.24	B	1.8	.95L	.44L	.60	18	.40	11	75117
W191062	.33L	.17	B	.90	.95L	.45L	2.4	12	.72	9.5	75118
W191041	.14	.17	B	.70	.77L	.35L	1.6	11	.67	8.5	75119
W194391	.12	.31	B	1.6	.94L	.43L	1.4	15	.40	H	76042
W194401	.76	.98	B	9.6	3.6L	1.6L	3.2	71	1.4	22	76042B
W194392	.10	.62	B	1.4	.79L	.36L	.98	19	1.1	H	76043
W196345	.21L	.22	B	.90	.22L	.32L	.76	11	.30	7.7	77011
W196368	.87	1.4	B	10	4.1L	1.9L	3.4	57	1.5	41	77011B
W196346	.25L	.35	B	1.5	.23L	.34L	.87	12	.40	4.2	77012
W196347	.23L	.74L	B	1.0	.23L	.33L	.82	9.4	.20	4.5	77013
W196348	.17L	.25	B	.60	.18L	.25L	.65	8.3	.20	6.1	77014
W196371	.59	.99	B	7.8	3.1L	1.4L	2.7	53	1.2	19	77014B
W196349	.25L	.29	B	1.8	1.0	.35L	1.1	15	.30	3.4	77015
W196350	.22L	.22	B	1.2	.21L	.30L	.91	10	.30	3.9	77016
W196351	.21L	.69L	B	.40	.20L	.29L	.94	6.8	.30	4.5	77017

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W196352	.19L	.25	B	.90	.21L	.30L	.92	6.4	.20	3.4	77018
W196374	.48	.61	B	6.0	1.9L	.89L	1.9	50	1.1	15	77018A
W196353	.26L	.34	B	1.2	.26L	.38L	1.2	16	.40	3.4	77019
W196354	.22L	.67L	B	.70	.22L	.31L	.90	9.5	.30	3.6	77020
W196355	.19L	.34	B	.80	.096L	.14L	.85	6.3	1.3	4.5	77021
W196356	.16L	.23	B	.50	.093L	.13L	.77	4.1	.20	4.9	77022
W196357	.18L	.38	B	.80	.11L	.15L	1.2	14	1.2	5.3	77023
W197295	.13	.33	B	1.6	.97L	.45L	1.8	14	.90	2.6	77037
D172304	N	B	N	N	N	B	.69	27	N	3.5	75014
D172307	N	B	N	N	N	B	4.8	26	N	6.6	75017
D172308	N	B	N	N	N	B	1.8	24	N	6.1	75018
D172309	N	B	N	N	N	B	3.5	18	N	4.6	75019
W191046	.13	.24	B	1.8	1.5L	.74L	1.4	18	.33	6.4	75108
W191245	.34	.31	B	5.1	5.4L	2.4L	1.8	85	1.6L	18	75108B
W191049	.13	.17	B	1.7	1.3L	.62L	.99	16	.28	7.2	75109
W191248	.25	.33	B	3.3	6.2L	2.8L	1.7	62	1.1L	11	75109B
W192635	.12	.33L	B	1.1	.98L	.45L	.44	18	.32	4.8	76026
W192636	.090	.18	B	.95	1.0L	.46L	2.3	14	.24	3.9	76027
W193120	.15	.11	B	1.5	.80L	.37L	.74	15	.49L	5.0	76037
W194388	.31L	.16	B	1.7	.88L	.40L	5.7	22	1.7	3.5	76039
W194389	.13	.47L	B	1.7	.90L	.41L	6.5	31	1.0	8.5	76040
W194857	.15	.41L	B	1.2	.98L	.45L	.69	9.6	.10	1.9	76050
W194829	.47	.35	B	5.6	1.3L	1.9L	2.4	50	.30L	7.5	76050C
W188952	.35	.22	99L	3.7	.99L	.68L	1.4	29	B	6.1	75061
W188953	.40	.23	67L	2.9	.67L	.46L	.89	22	B	6.9	75062
W191043	.13	.13	B	1.3	1.2L	.55L	5.2	20	.33	6.2	75120
W191059	.10	.16	B	1.7	1.9L	.90L	.53	23	1.0L	6.7	75123
W191054	.12	.17	B	1.9	1.7L	.81L	.71	21	.50L	6.6	75124
W193121	.090	.17	B	1.3	1.2L	.55L	9.3	18	.54L	7.6	76036
W188944	.14	.22	36L	1.4	.36L	.25L	2.7	15	B	7.2	75053
W188945	.060	.27	30L	1.3	.30L	.21L	2.0	9.0	B	4.7	75054
W188950	.17	.24	65L	1.8	.65L	.44L	.68	16	B	6.8	75059
W188951	.31	.26	110L	3.5	1.1L	.73L	1.1	26	.45	5.8	75060
W196339	.18L	.55L	B	.70	.29L	.42L	1.8	3.8	.55	2.5	77002
W196340	.11	.68L	B	1.6	.42L	.60L	.85	11	.30	2.5	77003
W196341	.085	.60L	B	1.3	.36L	.51L	1.2	11	.40	3.2	77004
W196344	.19L	.62L	B	1.1	.21L	.30L	1.2	9.2	.25	5.3	77010
W196366	.50	1.2	B	7.4	4.1L	1.9L	7.4	120	1.1	19	77010B
D173482	B	B	N	B	N	B	.63	13	B	4.3	75032
D173487	B	B	N	B	N	N	3.6	39	B	13	75037

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W188930	.12	.26	31L	1.7	.31L	.21L	1.4	18	.52	9.6	75039
W188931	.11	.31	39L	3.2	.39L	.26L	2.6	34	B	4.1	75040
W190530	.080	.17	44L	1.1	.44L	.30L	1.4	13	.36	6.5	75065
W190531	.095	.27	39L	1.9	.39L	.26L	1.1	20	.52	7.9	75066
W190932	.13	.12	B	1.6	1.4L	.64L	6.8	35	.39	4.9	75095
W190933	0.10	0.13	B	1.6	1.2L	0.55L	8.7	65	0.39	6.7	75096
W191233	.11	.64L	B	1.5	4.7L	2.1L	1.5	37	.40	7.4	75096B
W191052	.070	.13	B	1.2	2.0L	.97L	2.0	16	.42	6.3	75098
W191060	.10	.26	B	1.9	2.8L	1.3L	3.9	34	.92L	13	75099
W191239	.18	.77	B	3.6	7.5L	3.4L	41	81	1.3	69	75099C
W191053	.13	.13	B	1.7	1.9L	.90L	.55	22	.45	7.0	75100
W191061	.12	.12	B	1.3	1.3L	.62L	.35	24	.79L	8.0	75101
W191057	.080	.13	B	1.0	1.3L	.61L	1.8	24	.47	4.7	75104
W191058	.12	.19L	B	1.2	1.2L	.59L	3.6	66	.48	4.5	75105
W191044	.10	.11	B	1.3	1.1L	.53L	2.8	17	.35	4.3	75106
W191045	.12	.14	B	1.6	1.5	.63L	5.1	28	.63	6.8	75107
W191040	.12	.17	B	1.4	.92L	.42L	.65	16	.46	7.9	75121
W191039	.14	.21	B	1.6	1.3L	.58L	1.2	16	.44	5.9	75122
W191276	.030	.69L	B	.30	7.8L	3.6L	.17	3.2	1.2L	1.9	75122B
W192614	.12	.22	B	1.3	1.2L	.56L	1.4	19	.30	9.0	76001
W192615	2.0	.20	B	1.8	1.3L	.58L	1.9	17	.23	6.9	76002
W194413	.39L	.31	B	1.7	2.0L	.93L	.62	5.9	.10	4.4	76002B
W192624	.090	.49L	B	1.5	1.2L	.54L	2.0	20	.33	7.1	76012
W192625	.13	.34	B	1.7	1.6L	.72L	1.3	17	.30	6.8	76013
W192626	.10	.36L	B	1.0	.94L	.43L	1.4	21	.35	3.3	76014
W194431	.45	.95	B	8.3	4.7L	2.2L	1.9	33	1.0	8.4	76014B
W192627	.15	.44L	B	1.6	1.3L	.59L	1.4	19	.38	3.5	76015
W193124	.090	.15	B	1.5	.63L	.29L	2.2	16	.39	4.9	76033
W194464	.57	.56	B	10	3.6L	1.6L	4.3	75	5.3L	11	76033A
W193122	.13	.17	B	1.7	1.0L	.47L	3.3	19	.82	5.6	76034
W193123	.11	.16	B	1.6	1.1L	.52L	1.7	17	.28	6.2	76035
W194859	.090	.15	B	1.4	.83L	.25L	1.4	14	.40	4.7	76052B
W194862	.14	.13	B	1.7	1.1L	.48L	.66	15	.10	4.7	76056
W194863	.19	.16	B	2.1	1.3L	.58L	15	120	.20	3.2	76057C

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
D172302	B	25	36	75012
W188940	.40L	5.6	7.6	75049
W188941	.50	8.3	16	75050
W188942	.50L	19	9.5	75051
W188943	.80	12	9.3	75052
W190536	.40	19	51	75079
W190537	.50	18	59	75080
W191205	.80	52	210	75080A
W190542	.85	16	43	75085
W191215	2.1	280	120	75085B
W190543	.70	38	35	75086
W191216	1.7	110	97	75086A
W190544	.55	17	47	75087
W190545	.40	34	35	75088
W190546	1.0	13	48	75089
W190547	2.4	29	100	75090
W190548	1.8	30	59	75091
W191220	1.1	71	150	75091B
W191222	1.4	230	59	75091D
W190934	.70	52	28	75097
W192632	.60	9.0	19	76023
W194447	1.0	150	35	76023A
W192633	.70	62	11	76024
W192634	.40	270 2.7	34 3.4	76025
W194448	.90	110	35	76025A
W197297	.70	9.3	14	77042
W197290	1.0	5.5	1.9L	77042B
W192620	.65	460	17	76008
W194423	4.4	420	22	76008A
W194424	.80	8.8	17	76008B
W192621	0.90	14	12	76009
W194426	.40	11	5.3	76009B
W192622	.60	62	14	76010
W192623	3.0	25	20	76011
W194393	.60	8.7	10	76044
W194405	.80	14	21	76044C
W194394	.60	7.2	14	76045
W196342	.30	45	8.6	77005
W196362	1.3	140	28	77005B
W196343	.40	66	6.2	77006

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
D172310	B	9.7	6.2	75024
D172311	B	12	13	75025
D172312	B	11	11	75026
D172313	B	17	7.9	75027
D172314	B	11	15	75028
D172315	B	8.9	4.4	75029
W194395	4.0	120	30	76046
W194396	1.9	17	9.9	76047
W194407	2.3	62	75	76047A
W194397	.60	9.2	13	76048
W197293	1.9	40	10	77030
W197294	.50	9.3	18	77033
D172305	B	73	11	75015
W188946	.40L	7.4	3.9	75055
W188947	.30	6.1	5.3	75056
W191042	0.70	9.2	36	75125
W191277	3.0	1,100	37	75125A
W191051	.50	7.9	71	75126
W191279	.80	4.3	33	75126A
W194856	1.3	68	17	76049
W194821	1.2	19	19	76049E
W194823	1.1	15	8.7	76049G
W194825	1.6	28	17	76049I
D172303	B	14	13	75013
W188948	.40	15	16	75057
W188949	.55	110	13	75058
W192628	.90	25	12	76016
W192629	.40	21	5.9	76017
W194444	1.5	76	32	76017B
W197296	.40	66	5.5	77041
W197287	.70	35	11	77041B
D172306	B	84	16	75016
W190534	.60	77	54	75077
W190535	.80	88	36	75078
W191204	1.8	670	72	75078A
W190538	.60	15	53	75081
W191207	1.3	31	69	75081B
W191208	1.4	44	76	75081C
W190539	1.7	48	56	75082
W191209	1.8	51	59	75082A

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W190540	0.50	38	52	75083
W191211	1.0	14	60	75083B
W191212	1.7	44	87	75083C
W190541	1.2	38	61	75084
W191213	2.4	200	56	75084A
W193119	.75	23	26	76038
W194455	.50	14	19	76038A
W194390	.40	120	14	76041
W196338	.80	36	13	77001
W196360	1.1	62	20	77001C
W188938	.40L	16	25	75047
W188939	.30	7.7	25	75048
W192616	.80	13	6.6	76004
W192617	.50	29	7.0	76005
W194419	1.5	160	28	76005A
W192618	.90	61	6.9	76006
W192619	.60	59	6.6	76007
W194421	1.0	110	14	76007A
W197291	.40	42	3.2	77026
W197278	1.8	34	31	77026A
W197279	.20	1,300	.83	77026B
W197292	.90	29	4.7	77029
W197280	1.8	13	48	77029A
W197281	1.7	43	23	77029B
D173480	B	9.2	8.5	75030
D173481	B	180	11	75031
D173483	B	39	6.8	75033
D173484	B	53	8.5	75034
D173485	B	13	7.4	75035
D173486	B	64	5.4	75036
W188932	0.70	22	27	75041
W188933	.60	24	36	75042
W190528	.60	88	52	75063
W190529	.60	20	69	75064
W190532	.50	48	47	75067
W190533	.60	29	41	75068
W190929	.60	12	32	75092
W191224	.50	4.6	140	75092A
W191225	8.1	10	5.8	75092B
W190930	.50	17	23	75093

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W191227	.40	5.9	40	75093A
W191228	3.2	46	240	75093B
W190931	.40	18	28	75094
W191055	.50	38	28	75102
W191056	.40	36	23	75103
W192630	.60	10	16	76021
W192631	.55	10	7.7	76022
W194858	.60	230	8.7	76051B
W194860	.60	42	11	76053
W194861	.60	300	12	76054
W194864	.80	12	19	76058
W194839	1.5	26	20	76058C
W194865	.30	32	14	76059
W194866	.70	50	15	76060
W188934	.40	6.4	12	75043
W188935	.30L	6.2	3.3	75044
W188936	.50	31	4.6	75045
W188937	0.60	300	7.0	75046
W191048	.50	67	54	75110
W191050	.30	97	16	75111
W191047	.40	170	14	75112
W191038	.40	110	18	75113
W191035	1.1	78	37	75114
W191036	1.4	10	100	75115
W191037	1.0	9.5	38	75116
W191034	.70	39	45	75117
W191062	.50	150	9.5	75118
W191041	.50	270	13	75119
W194391	1.0	53	9.4	76042
W194401	3.2	11	130	76042B
W194392	.70	28	12	76043
W196345	.80	29	19	77011
W196368	4.1	9.0	110	77011B
W196346	.90	8.0	8.8	77012
W196347	.80	19	9.4	77013
W196348	.70	18	13	77014
W196371	2.7	11	56	77014B
W196349	1.0	110	5.9	77015
W196350	.70	71	6.5	77016
W196351	.60	120	17	77017

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W196352	.80	20	6.2	77018
W196374	1.6	21	60	77018A
W196353	.60	1,600	16	77019
W196354	.60	170	8.8	77020
W196355	.70	30	5.7	77021
W196356	.70	12	6.4	77022
W196357	.70	79	14	77023
W197295	.80	48	4.9	77037
D172304	B	14	27	75014
D172307	B	120	20	75017
D172308	B	39	24	75018
D172309	.46	52	18	75019
W191046	.60	230	23	75108
W191245	1.6	3,300	270	75108B
W191049	.50	56	35	75109
W191248	1.4	1,000	170	75109B
W192635	.40	11	25	76026
W192636	.45	12	17	76027
W193120	.50	79	26	76037
W194388	.70	160	6.2	76039
W194389	.70	17	20	76040
W194857	.40	8.1	6.3	76050
W194829	1.3	36	54	76050C
W188952	.80	51	18	75061
W188953	.70	9.9	29	75062
W191043	.50	110	29	75120
W191059	.40	39	42	75123
W191054	.40	20	42	75124
W193121	.60	190	24	76036
W188944	.70	30	14	75053
W188945	.90	290	6.1	75054
W188950	.60	13	40	75059
W188951	.80	200	22	75060
W196339	.30	18	6.3	77002
W196340	.40	28	20	77003
W196341	.35	18	18	77004
W196344	.75	30	13	77010
W196366	2.6	98	66	77010B
D173482	B	31	13	75032
D173487	B	33	19	75037

Table 5.--Major-, minor-, and trace element composition of 234 coal samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W188930	.85	19	27	75039
W188931	.80	37	33	75040
W190530	.60	19	10	75065
W190531	.90	23	31	75066
W190932	.40	28	33	75095
W190933	0.50	89	45	75096
W191233	.40	14	57	75096B
W191052	.50	19	24	75098
W191060	.70	64	62	75099
W191239	2.1	17	72	75099C
W191053	.30	35	62	75100
W191061	.40	140	63	75101
W191057	.30	34	15	75104
W191058	.30	19	37	75105
W191044	.30	10	18	75106
W191045	.40	10	36	75107
W191040	.50	17	40	75121
W191039	.50	9.5	43	75122
W191276	.40L	11	3.6L	75122B
W192614	.80	110	41	76001
W192615	.90	95	24	76002
W194413	.80	73	9.7	76002B
W192624	.90	160	32	76012
W192625	.75	150	22	76013
W192626	.40	31	34	76014
W194431	1.6	30	61	76014B
W192627	.40	44	30	76015
W193124	.50	14	9.4	76033
W194464	1.9	34	50	76033A
W193122	.50	14	25	76034
W193123	.50	32	21	76035
W194859	.60	23	8.3	76052B
W194862	.50	6.5	21	76056
W194863	.60	39	17	76057C

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

[Concentrations in percent or parts-per-million. L means less than the value shown; B, not determined; H, interference for an element which cannot be resolved by any routine method; S, after element title indicates determinations by automatic plate reading computer assisted, emission spectrographic analyses. For elements by emission spectrographic analysis, the standard deviation of any answer should be taken as plus 50% and minus 35%. Field number is IGS identification number. Sample number is USGS laboratory number.]

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W191214	18	11	.16	.51	.34	2.2	2.2	.40	.14L	5.1	75085A
W191217	13	8.2	.48	.29	.33	1.4	2.2	.31	.11L	10	75089A
W191218	23	13	.13	.31	.49	2.2	2.9	.59	.17L	9.2	75089B
W191219	20	12	.063	.60	.45	3.0	2.2	.53	.18	16	75091A
W191221	15	9.1	.043	.28	.39	1.9	1.5	.39	.11L	9.2	75091C
W191223	23	13	.059	.56	.44	3.1	1.7	.65	.16L	4.8	75091E
W191235	22	12	.12	.85	.38	3.2	2.7	.46	.20L	14	75097A
W191236	20	13	.11	.58	.42	2.4	1.9	.52	.19L	6.1	75097B
W194449	27	13	.18	.43	.17	2.6	1.2	.77	.091L	3.4	76023B
W197289	13	8.1	.073	.37	.080	1.9	4.6	.53	.097	5.3	77042A
W194425	16	4.8	2.3	.46	.39	1.7	6.5	.31	.30	130	76009A
W194427	29	10	.32	.25	.027	.57	1.6	.65	.18	1.9	76009C
W194403	14	5.2	.17	.48	.20	1.6	5.4	.27	.26	39	76044A
W194404	25	9.9	.23	.53	.20	2.4	2.5	.60	.20	7.9	76044B
W196361	16	6.4	.11	.58	.087	1.9	3.7	.42	.058L	8.8	77005A
W196363	13	5.2	.19	.57	.078	1.5	5.2	.34	.052L	11	77006A
W196364	23	13	.23	.42	.13	1.6	1.3	.59	.083L	18	77006B
W194406	18	10	.17	.60	.13	2.3	2.2	.51	.25	19	76046A
W194408	16	7.4	1.2	.65	.22	2.2	6.1	.39	.073L	170	76048A
W194409	.33	B	.044	.15	.051	B	27	.009	.44	150	76048B
W194410	24	11	.76	.67	.20	2.7	2.6	.64	.14	18	76048C
W197282	20	9.9	.24	.78	.25	2.8	8.9	.44	.085L	140	77033A
W197283	3.1	1.9	.066	.076	.023	.37	22	.098	.16	200	77033B
W197284	22	11	1.4	.63	.15	2.7	2.5	.55	.085L	19	77033C
W197285	22	13	1.2	.63	.14	2.7	2.9	.62	.51	15	77033D
W191278	30	9.7	.007	.68	.32	2.1	2.0	.66	.16L	2.4	75125B
W194817	15	8.6	.14	.43	.14	2.3	1.5	.39	.077	7.2	76049A
W194818	17	9.6	.16	.50	.14	2.5	3.6	.42	.24	46	76049B
W194819	17	9.7	.15	.52	.13	2.6	2.2	.40	.12	29	76049C
W194820	17	8.0	.19	.43	.11	2.3	7.7	.45	.084	76	76049D
W194822	14	7.3	.15	.40	.10	2.0	3.1	.37	.068	30	76049F
W194824	21	9.3	.26	.59	.15	2.8	2.9	.56	.078L	24	76049H
W194826	13	7.8	.20	.46	.11	1.9	2.3	.36	.054L	16	76049J
W194441	38	5.7	.13	.81	.11	.98	.59	.49	.098L	3.6	76016A
W194442	27	9.8	.28	.17	.047	2.6	6.7	.63	.10	4.8	76016B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W194443	23	11	.14	.83	.11	3.0	4.2	.58	.088L	2.6	76017A
W197286	40	3.4	.083	.11	.047	.77	.87	.39	.097L	5.7	77041A
W197288	22	9.4	.12	.30	.087	1.2	1.5	.44	.079	5.8	77041C
W191203	19	14	.010	.036	.34	.18	.15	.52	.14L	3.5	75077A
W191206	17	9.7	.005	.32	.45	2.3	.95	.49	.13L	2.7	75081A
W191210	19	11	.035	.18	.35	2.5	.89	.55	.13L	1.4	75083A
W194456	21	13	.18	.49	.12	2.3	1.3	.55	.077L	4.2	76038B
W196358	27	10	.17	.66	.14	2.6	2.0	.69	.11	1.2	77001A
W196359	16	8.3	.14	.36	.13	2.3	.87	.51	.057L	1.4	77001B
W194416	31	4.3	.091	.31	.045	1.5	4.3	.37	.092L	43	76004A
W194417	19	7.7	.094	.43	.10	2.4	5.8	.51	.077L	54	76004B
W194418	23	12	.13	.44	.16	2.1	1.4	.61	.11	6.9	76004C
W196376	24	13	.12	.44	.17	2.5	1.4	.63	.087L	6.8	76006A
W194420	14	7.2	.083	.43	.091	2.2	6.3	.38	.065L	33	76006B
W194422	33	8.1	.11	.24	.11	1.0	1.2	1.1	.20	2.7	76007B
W191226	24	11	B	.77	.39	2.1	3.1	.57	.25	17	75092C
W191229	26	9.9	1.1	.75	.16	3.1	2.1	.62	.37	6.5	75094A
W191242	31	8.8	B	.58	.57	2.3	2.5	.58	.23L	6.7	75103A
W191243	27	13	.14	.85	.37	2.8	1.6	.69	.23L	5.3	75103B
W194445	26	10	.27	1.2	.66	3.1	3.5	.56	.094L	9.7	76021A
W194446	23	12	.15	.78	.22	2.9	2.3	.62	.11	5.0	76021B
W194830	20	4.7	1.0	.58	.32	1.8	3.1	.31	2.1	28	76051
W194831	26	8.6	.21	.45	.19	2.5	3.7	.59	.090L	12	76051A
W194833	27	10	.15	.80	.55	3.1	2.9	.57	.095L	18	76054A
W194834	25	10	.98	.67	.11	3.3	1.9	.60	.22	9.7	76054B
W194837	22	10	.24	.73	.20	3.0	2.0	.48	.081L	9.4	76058A
W194838	14	8.5	.16	.52	.18	2.6	1.3	.43	.055L	4.5L	76058B
W194840	21	12	.17	.75	.17	2.8	2.0	.52	.079L	4.3	76060A
W191250	24	12	.20	.82	.34	2.6	5.6	.61	.17L	29	75110A
W191251	26	12	.12	.27	.39	1.1	2.2	.67	.38	18	75110B
W191252	22	11	.25	.77	.35	2.6	6.3	.58	.16	21	75111A
W191253	27	11	.061	.27	.29	.79	2.2	.72	.29	9.9	75111B
W191254	21	7.8	.25	1.0	.43	1.9	12	.47	.16L	6.9	75112A
W191255	24	12	.037	.64	.39	2.5	2.0	.56	.20	6.1	75112B
W191256	25	9.1	.19	.89	.46	2.1	7.2	.54	.16L	5.8	75113A
W191257	19	9.7	.043	.41	.16	1.9	1.7	.45	.27	11	75113B
W191258	30	9.3	.013	.43	.39	1.9	1.0	.54	.16L	5.2	75113C
W191259	30	8.2	.068	.71	.66	2.0	4.6	.74	.17L	12	75114A
W191260	28	12	.033	.48	.39	3.0	1.0	.66	.17L	6.9	75114B
W191261	34	8.1	.007	.59	.71	1.9	2.1	.75	.18	10	75115A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W191262	29	12	.020	.43	.32	2.7	.90	.66	.17L	4.5	75115B
W191263	38	4.1	B	.12	.52	.82	3.3	.59	.18L	9.6	75116A
W191264	30	12	B	.46	.34	2.6	.98	.67	.18	1.7	75116B
W191265	34	5.1	.026	.35	.78	1.1	1.2	.50	.16L	4.7	75117A
W191266	29	12	.040	.51	.18	2.8	1.1	.73	.16L	3.8	75117B
W191267	12	6.4	.009	.32	.21	1.5	11	.30	.11L	38	75118A
W191268	11	6.5	B	.25	.22	1.3	11	.25	.10L	33	75118B
W191269	19	8.2	.043	.24	.25	1.0	12	.47	.15L	71	75118C
W191270	10	5.1	.030	.28	.22	1.2	14	.25	.10L	48	75119A
W191271	11	6.5	B	.24	.20	1.2	13	.22	.11L	34	75119B
W191272	27	11	.12	.31	.29	1.4	2.0	.62	.15L	13	75119C
W194400	23	4.7	.28	.55	.48	1.3	5.0	.45	.074L	47	76042A
W194402	23	13	.18	.55	.14	2.6	1.5	.61	.17	10	76042C
W196367	39	2.6	0.21	0.17	0.58	0.75	1.2	0.25	0.10	47	77011A
W196369	23	13	.23	.54	.16	2.6	1.6	.56	.12	7.6	77012A
W196370	27	10	.25	.87	.26	2.7	3.2	.60	.091L	17	77014A
W196372	27	11	.24	.49	.16	2.6	1.3	.65	.12	5.1	77015A
W196373	40	4.0	.22	.22	.67	.75	1.2	.65	.098L	5.7	77017A
W196375	31	9.1	.16	.41	.14	2.3	1.2	.67	.094L	5.8	77019A
W191244	30	9.4	.21	.98	.87	2.6	4.0	.59	.18L	5.5	75108A
W191246	27	14	.20	.43	.14	1.5	.99	.79	.23	9.1	75108C
W191247	28	10	.14	.97	.62	2.8	3.2	.52	.18	7.7	75109A
W191249	27	13	.19	.35	.22	1.6	.94	.81	.16	5.0	75109C
W194450	24	11	.44	1.0	.21	3.5	4.5	.60	.091L	18	76026A
W194451	26	12	.40	.46	.16	2.3	1.3	.63	.15	3.0	76026B
W194452	20	11	.53	.24	.17	1.3	1.9	.54	.31	7.4	76026C
W194453	24	9.5	.28	.49	.14	2.2	1.5	.61	.14	1.8	76027A
W194454	23	10	0.23	0.42	0.19	2.3	3.8	0.61	0.18	45	76027B
W194457	28	9.1	.34	1.2	.73	2.4	4.1	.56	.094L	3.7	76037A
W194458	23	11	.31	.48	.11	2.2	1.5	.68	.17	4.1	76037B
W194398	17	6.0	.45	.76	.23	2.1	2.5	.34	5.1	20	76039A
W194399	18	6.8	.17	.49	.13	1.8	2.6	.46	.13	14	76039B
W194827	9.2	4.2	.12	.21	.16	.84	22	.25	.24	210	76050A
W194828	26	12	.36	.31	.52	1.8	1.4	.70	.090L	3.5	76050B
W191273	13	5.6	3.8	.58	.35	1.6	5.8	.27	1.6	23	75120A
W194459	22	9.0	.40	.72	.27	2.9	3.7	.46	2.0	43	76036A
W194460	28	9.0	.25	.69	.50	2.1	2.4	.71	.092L	3.8	76036B
W196365	14	4.4	1.0	.59	.28	1.6	9.6	.26	.60	79	77010A
W191230	16	7.1	.65	1.0	.40	2.3	4.0	.35	4.8	20	75095A
W191231	13	5.2	.12	.36	.10	1.4	20	.31	.34	89	75095B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Si (percent)	Al (percent)	Ca (percent)	Mg (percent)	Na (percent)	K (percent)	Fe (percent)	Ti (percent)	Ag-S (ppm)	As (ppm)	Field Number
W191232	14	5.8	7.2	.72	.28	1.7	3.2	.26	4.5	13	75096A
W191234	27	11	.20	1.2	.43	3.0	2.4	.67	.23L	2.1	75096C
W191237	21	11	.59	.74	.49	2.6	3.0	.55	.20L	8.9	75098A
W191238	24	13	.34	.49	.46	2.5	2.4	.62	.34	15	75098B
W191240	24	11	.35	1.5	.60	3.3	5.6	.52	.23L	34	75100A
W191241	26	11	.28	1.3	.57	3.2	4.2	.58	.23L	9.1	75101A
W191274	26	11	.20	.93	.51	3.1	2.7	.67	.16L	6.1	75121A
W191275	15	6.6	2.3	.92	.42	2.0	3.7	.32	3.7	17	75122A
W191280	26	13	.033	1.2	.42	4.0	1.5	.71	.16L	3.6	75122C
W194414	25	8.9	.16	.58	.21	2.3	3.2	.58	.18	16	76002C
W194415	22	9.0	.64	.89	.38	2.9	6.0	.50	.089L	42	76003A
W194428	16	8.6	.20	.24	.24	1.1	5.7	.55	.28	130	76012A
W194429	23	8.3	.21	.52	.34	2.0	2.6	.53	.26	17	76012B
W194430	15	6.1	.42	.54	.26	1.8	14	.31	.086L	250	76014A
W194432	16	9.7	2.3	.20	.20	.99	1.8	.46	.37	8.0	76014C
W194433	18	8.5	1.2	.67	.25	2.2	4.8	.47	.080L	15	76014D
W194435	16	6.9	.44	.65	.28	2.1	13	.37	.17	18	76014E
W194436	19	8.7	.23	.54	.27	2.2	9.9	.50	.084L	180	76015A
W194437	13	7.1	1.2	0.38	0.23	0.93	1.6	0.35	0.11	44	76015B
W194438	19	8.5	.35	.24	.21	2.0	2.0	.48	.46	9.5	76015C
W194439	11	5.1	12	.65	.27	1.2	6.8	.25	.099	4.6	76015D
W194440	28	8.5	.20	.41	.13	.22	2.8	.58	.088L	20	76015E
W194465	24	11	.24	.81	.16	2.8	3.1	.58	.35	17	76033B
W194461	10	3.5	1.6	.42	.20	1.2	15	.24	1.2	94	76034A
W194462	23	9.8	.28	.61	.13	2.7	1.3	.56	.13	2.7	76034B
W194463	11	6.3	.18	.38	.076	1.6	6.2	.31	.15	18	76035A
W194832	19	5.8	.16	.48	.19	1.7	2.9	.45	.062L	52	76052A
W194835	14	6.2	1.4	.84	.23	2.2	4.9	.36	2.3	54	76057A
W194836	12	7.3	.18	.45	.089	2.0	3.2	.35	.10	7.9	76057B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W191214	97	420	6.4	30L	2.0	.22	84	41	120	8.9	75085A
W191217	140	250	4.3	23L	1.0	.35	83	11	77	6.3	75089A
W191218	120	400	5.1	36L	1.0L	.11	87	9.6	96	8.7	75089B
W191219	130	600	8.5	35L	2.0L	.12	160	57	100	9.9	75091A
W191221	140	360	9.0	24L	1.0	.19	85	10	75	7.8	75091C
W191223	130	1,700	6.1	33L	4.0	.17	83	17	110	8.3	75091E
W191235	160	770	8.1	44L	3.0L	.15	83	17	78	6.2	75097A
W191236	200	710	7.9	41L	2.0	.22	95	10	94	10	75097B
W194449	160	470	3.7	20L	2.0L	.091L	93	6.2	110	8.5	76023B
W197289	110	180	6.3	8.6L	2.7	.21	41	11	74	9.2	77042A
W194425	76	220	4.0	15L	1.3	3.1	58	33	60	4.1	76009A
W194427	100	100	2.1	20L	.5L	.091L	47	4.2	110	6.6	76009C
W194403	130	150	4.7	12L	1.6	1.5	54	34	77	4.5	76044A
W194404	230	320	9.1	20L	1.6L	.091L	140	11	69	14	76044B
W196361	110	250	2.8	13L	1.8	.093	66	31	60	4.1	77005A
W196363	120	180	2.9	11L	1.0	.094	59	40	57	3.5	77006A
W196364	160	350	6.2	18L	1.5L	.091	110	11	120	7.3	77006B
W194406	180	280	4.5	16L	1.8L	.99	150	9.1	100	9.7	76046A
W194408	95	260	2.9	16L	7.4	.47	81	29	97	6.4	76048A
W194409	14	2.7	.51	11L	1.3	2.1	5.0L	2.7	11L	1.3L	76048B
W194410	120	280	3.1	20L	1.6L	.098	76	19	85	9.7	76048C
W197282	77	350	2.8	13L	5.1	.30	94	20	92	7.5	77033A
W197283	H	22	1.1	7.7L	2.3	.44	13	1.9	9.2	1.2	77033B
W197284	110	330	4.2	13L	.9	.20	100	19	73	8.7	77033C
W197285	130	900	7.9	13L	2.1L	.27	350	27	130	10	77033D
W191278	110	490	3.4	33L	2.0	.26	88	14	77	4.8	75125B
W194817	88	310	2.7	8.9L	4.6L	.35	67	8.5	81	7.3	76049A
W194818	85	290	2.6	11L	4.7L	.13	78	22	69	6.6	76049B
W194819	94	220	2.0	10L	4.6L	.18	82	16	70	7.7	76049C
W194820	66	220	2.4	11L	5.0L	.12	83	15	68	6.7	76049D
W194822	90	260	2.3	8.5L	3.7L	.062	79	15	68	5.4	76049F
W194824	85	370	3.2	12L	6.0L	.078L	96	17	85	6.9	76049H
W194826	97	150	3.2	8.1L	4.0L	.054L	82	13	79	6.3	76049J
W194441	140	330	3.8	21L	1.4L	.17	97	14	77	4.8	76016A
W194442	67	210	2.1	21L	1.0L	.095L	47	9.8	86	3.6	76016B
W194443	110	290	3.6	19L	.8L	.19	46	7.7	38	2.6	76017A
W197286	51	150	1.5	15L	.4	.21	50	6.3	48	1.8	77041A
W197288	110	180	3.2	11L	2.8	1.9	75	13	130	5.6	77041C
W191203	56	790	17	29L	3.0	.11	180	4.4	75	1.1	75077A
W191206	100	500	5.0	27L	2.0	.068L	57	7.5	72	7.0	75081A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W191210	92	540	5.2	28L	2.0	.071L	60	5.5	76	7.9	75083A
W194456	130	330	3.6	17L	.8	.077L	61	4.1	110	9.5	76038B
W196358	130	350	3.1	19L	1.5L	.088L	110	9.6	83	5.8	77001A
W196359	120	330	2.5	12L	2.9	.057L	87	4.9	62	13	77001B
W194416	60	170	2.5	20L	1.0	.092L	58	17	58	3.2	76004A
W194417	100	310	3.6	17L	1.2	.18	71	34	80	5.5	76004B
W194418	110	370	4.3	19L	.8L	.49	120	18	110	9.2	76004C
W196376	110	310	3.5	19L	1.9L	.47	130	15	110	9.3	76006A
W194420	100	190	3.7	14L	1.3	.065L	62	36	74	5.6	76006B
W194422	130	150	2.5	20L	.5L	.093L	75	6.6	100	4.3	76007B
W191226	120	950	7.6	45L	2.0	.36	79	18	79	6.1	75092C
W191229	180	1,000	12	49L	2.0	.17	110	8.6	89	8.7	75094A
W191242	110	860	4.2	51L	3.0L	5.2	85	14	64	4.2	75103A
W191243	130	670	7.6	50L	2.0	.17	120	12	120	9.7	75103B
W194445	120	370	2.8	21L	1.7L	.094L	83	19	94	8.8	76021A
W194446	150	660	4.9	19L	2.0L	.095	110	9.9	100	9.0	76021B
W194830	56	240	.69L	10L	2.2	140	120	13	240	4.0	76051
W194831	69	310	3.1	14L	4.1L	.090L	99	12	75	7.6	76051A
W194833	78	390	2.7	14L	4.6L	.86	93	16	82	7.1	76054A
W194834	86	590	6.2	14L	4.8L	2.4	170	13	93	7.6	76054B
W194837	89	350	3.1	12L	5.2L	.19	72	9.9	90	8.4	76058A
W194838	110	270	1.9	8.3L	4.5L	.055L	35	4.1	74	10	76058B
W194840	94	420	3.0	12L	5.1L	.079	82	12	96	10	76060A
W191250	84	790	5.1	35L	3.0L	.26	89	23	92	7.3	75110A
W191251	120	1,300	9.5	33L	3.0L	.086L	120	48	95	6.0	75110B
W191252	75	690	4.8	33L	2.0	.14	89	28	87	6.7	75111A
W191253	120	280	7.3	33L	2.0	.19	130	23	94	5.0	75111B
W191254	54	390	4.4	33L	1.0	.12	85	15	67	4.3	75112A
W191255	85	500	5.1	32L	1.0	.14	90	19	94	7.1	75112B
W191256	62	460	4.6	34L	1.0	.090L	86	15	69	4.4	75113A
W191257	81	370	4.9	26L	2.0	.18	74	28	85	6.4	75113B
W191258	66	370	4.0	34L	1.0	.090L	88	14	70	4.8	75113C
W191259	67	440	3.2	36L	1.0L	.095L	110	15	76	3.2	75114A
W191260	88	680	4.5	35L	1.0	.13	110	13	87	7.5	75114B
W191261	94	330	3.3	37L	1.0	.13	110	13	72	2.3	75115A
W191262	88	550	3.7	35L	1.0	.12	96	9.4	87	7.4	75115B
W191263	48	140	1.5	37L	1.0	.098L	59	1.7	42	1.3	75116A
W191264	92	690	5.8	34L	1.0	.094L	85	5.9	85	8.8	75116B
W191265	51	210	2.4	33L	1.0L	.10	79	12	49	1.5	75117A
W191266	90	630	5.5	34L	1.0	.13	86	15	84	7.6	75117B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W191267	60	230	4.2	22L	3.0	.49	68	33	59	3.6	75118A
W191268	72	210	3.7	22L	4.0	.96	65	39	45	3.2	75118B
W191269	56	1,400	4.0	31L	1.0	.55	130	33	64	6.1	75118C
W191270	53	190	4.3	22L	3.0	.60	58	26	53	3.4	75119A
W191271	62	210	3.3	22L	4.0	1.1	60	35	42	3.3	75119B
W191272	96	300	5.0	31L	2.0	.41	100	14	86	7.6	75119C
W194400	100	250	2.6	16L	1.3	.82	85	29	52	2.2	76042A
W194402	150	440	4.8	19L	1.7L	.25	80	26	110	11	76042C
W196367	52	93	1.6	21L	1.5L	0.093L	46	7.8	21	0.90	77011A
W196369	150	360	5.2	19L	1.6L	.094	90	20	110	11	77012A
W196370	140	530	3.4	20L	1.6L	.091L	97	21	110	7.0	77014A
W196372	130	480	4.4	20L	1.5L	.090L	97	8.9	91	8.5	77015A
W196373	110	82	1.3	22L	1.7L	.098L	86	5.5	48	.90	77017A
W196375	130	410	3.3	21L	1.5L	.094L	87	13	72	7.9	77019A
W191244	74	430	4.8	37L	3.0L	.098L	72	15	74	5.4	75108A
W191246	110	480	7.0	36L	3.0L	.19	200	8.5	120	11	75108C
W191247	87	440	4.7	37L	3.0L	.19	76	24	79	6.3	75109A
W191249	120	400	6.2	34L	3.0L	.090L	120	6.9	130	10	75109C
W194450	130	480	4.1	20L	2.0L	.091L	110	15	95	7.4	76026A
W194451	160	340	3.2	19L	1.8L	.088L	71	4.3	76	12	76026B
W194452	210	750	4.8	16L	2.6L	.090	330	13	61	8.6	76026C
W194453	150	340	3.3	19L	1.7L	.085L	50	4.1	77	10	76027A
W194454	120	300	3.0	19L	2.5L	0.10	130	11	100	9.6	76027B
W194457	120	330	2.4	21L	2.2L	.094L	78	17	84	6.2	76037A
W194458	180	400	5.8	19L	2.2L	.088L	130	5.2	130	13	76037B
W194398	150	270	5.6	14L	7.8	14	67	17	630	5.2	76039A
W194399	150	210	3.8	14L	1.8	.15	64	21	81	6.9	76039B
W194827	H	93	.86	11L	4.2L	.72	36	8.7	35	4.3	76050A
W194828	150	660	3.2	14L	5.1L	.090L	270	12	68	13	76050B
W191273	92	290	3.5	24L	4.0	12	77	13	440	4.3	75120A
W194459	190	340	2.8	18L	2.5L	.74	140	12	820	7.5	76036A
W194460	150	220	2.6	20L	2.1L	.24	87	17	100	8.9	76036B
W196365	85	110	2.2	14L	1.4	1.4	64	17	210	4.7	77010A
W191230	140	560	7.8	34L	4.0	53	54	17	320	6.0	75095A
W191231	59	490	4.9	45L	3.0L	.84	130	91	46	4.2	75095B
W191232	120	500	9.4	37L	2.0	94	210	12	230	4.8	75096A
W191234	180	940	8.1	49L	2.0L	.17	54	8.9	120	11	75096C
W191237	170	830	5.9	43L	3.0L	.12	80	21	95	8.3	75098A
W191238	210	1,500	7.0	49L	2.0	.095L	130	10	120	11	75098B
W191240	170	880	7.9	51L	3.0L	.097L	82	20	96	8.4	75100A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	B-S (ppm)	Ba-S (ppm)	Be-S (ppm)	Bi-S (ppm)	Br (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Field Number
W191241	150	740	6.7	51L	3.0L	.31	82	20	90	7.7	75101A
W191274	130	330	5.9	33L	1.0	.93	77	15	100	10	75121A
W191275	110	480	5.2	24L	3.0	93	100	16	260	5.0	75122A
W191280	120	390	5.3	33L	1.0L	.091L	67	12	110	10	75122C
W194414	120	750	3.4	19L	.4	.088L	110	25	82	10	76002C
W194415	110	250	2.3	20L	2.3	.68	77	21	130	8.3	76003A
W194428	110	630	5.1	16L	1.6	.092	170	15	110	6.9	76012A
W194429	120	310	3.9	18L	1.0L	.11	130	25	91	12	76012B
W194430	58	190	1.6	19L	2.9	1.0	70	17	83	5.6	76014A
W194432	210	700	4.7	15L	.9	.17	160	13	47	7.9	76014C
W194433	110	460	2.7	17L	.9L	.22	110	20	75	7.8	76014D
W194435	98	630	2.7	20L	.8L	.12	51	30	99	13	76014E
W194436	65	190	2.2	18L	3.2	.48	70	19	77	5.2	76015A
W194437	100	240	2.9	12L	1.6	0.16	40	4.4	39	5.0	76015B
W194438	170	520	3.8	15L	1.0	.25	120	12	52	6.6	76015C
W194439	120	490	2.7	18L	.8L	.083L	64	16	86	9.4	76015D
W194440	59	390	2.0	19L	1.2L	.11	47	31	52	5.3	76015E
W194465	170	880	4.3	19L	2.4L	.18	100	23	99	9.4	76033B
W194461	56	110	1.9	15L	2.2L	47	61	10	170	4.5	76034A
W194462	170	350	1.9	17L	2.2L	.094	94	7.7	90	18	76034B
W194463	110	310	2.5	12L	1.0	.11	70	12	66	6.7	76035A
W194832	81	450	2.5	9.4L	3.8L	.45	61	21	59	4.4	76052A
W194835	64	1,700	2.2	9.7L	4.8	90	96	23	320	5.1	76057A
W194836	100	170	2.3	7.9L	4.3L	.28	78	9.2	63	7.8	76057B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W191214	49	44L	14L	1.2	450	20	9.7L	6.4L	3.2	.14	75085A
W191217	68	33L	11L	1.2	320	25	7.4L	4.9L	2.7	.083	75089A
W191218	50	53L	17L	1.3	620	28	12L	7.7L	4.1	.095	75089B
W191219	77	52L	17L	2.3	650	38	11L	7.6L	3.6	.078	75091A
W191221	180	35L	11L	1.3	370	26	7.8L	5.1L	2.7	.078	75091C
W191223	56	49L	16L	1.3	610	37	11L	7.1L	4.9	.035	75091E
W191235	55	65L	20L	1.7	600	51	14L	9.4L	3.4	.050	75097A
W191236	71	60L	19L	1.3	510	50	13L	8.6L	3.9	.086	75097B
W194449	33	29L	9.1L	1.5	770	43	6.2L	4.2L	5.7	.011	76023B
W197289	19	13L	5.7L	.80	480	37	3.9L	.86L	4.3	.21	77042A
W194425	58	22L	6.9L	.95	660	17	6.9	3.2L	3.4	.11	76009A
W194427	46	29L	9.1L	.78	420	20	6.2L	4.2L	5.7	.11	76009C
W194403	37	18L	5.6L	1.8	540	19	3.8L	3.3	1.9	.040	76044A
W194404	91	29L	9.1L	1.6	700	39	10	4.2L	4.4	.085	76044B
W196361	29	19L	5.8L	.90	400	18	4.0L	3.0	4.0	.15	77005A
W196363	34	17L	5.2L	.84	540	18	3.8	8.3	3.9	.065	77006A
W196364	40	26L	8.3L	1.3	380	33	5.6L	3.8L	4.7	.010L	77006B
W194406	360	23L	7.1L	1.5	580	47	4.8L	3.3L	3.9	.12	76046A
W194408	65	23L	7.3L	2.4	580	23	4.9L	3.3L	3.4	.040	76048A
W194409	120	16L	5.1L	.90L	20L	13	5.1L	2.3L	.80L	.081	76048B
W194410	79	28L	8.9L	2.5	780	29	6.0L	4.1L	4.5	.020	76048C
W197282	43	19L	8.5L	1.3	860	31	10	1.3L	2.9	.25	77033A
W197283	9.2	11L	5.1L	.16	460	7.7	11	.77L	.50	.83	77033B
W197284	81	19L	8.5L	4.3	2,100	25	12	1.3L	4.3	.066	77033C
W197285	140	20L	11	8.8	2,100	30	22	1.3L	4.1	.066	77033D
W191278	27	49L	16L	1.2	550	20	10L	7.2L	8.7L	.022	75125B
W194817	88	13L	5.9L	.88	580	24	4.0L	.89L	2.9	.15	76049A
W194818	120	16L	7.1L	1.2	600	20	5.1	1.1L	2.9	.35	76049B
W194819	130	15L	6.7L	1.2	570	20	4.6L	1.0L	2.7	.20	76049C
W194820	47	17L	7.6L	1.1	640	19	7.6	1.1L	2.9	.36	76049D
W194822	90	12L	5.6L	1.1	200	20	5.1	.85L	2.6	.12	76049F
W194824	58	17L	7.8L	1.4	600	25	5.3L	1.2L	3.8	.10	76049H
W194826	54	12L	5.4L	1.1	580	14	3.7L	2.2	2.7	.085	76049J
W194441	25	31L	9.8L	1.6	740	27	9.7	4.5L	9.5	.010L	76016A
W194442	16	30L	9.5L	.69	240	11	6.5L	4.4L	9.5	.010L	76016B
W194443	35	28L	8.8L	.84	690	30	6.0L	4.0L	3.6	.018	76017A
W197286	9.7L	21L	9.7L	.60	29	3.6	6.6L	1.5L	13	.010L	77041A
W197288	40	16L	7.2L	.86	460	18	7.9	1.1L	5.8	.015	77041C
W191203	140	42L	14L	3.3	120	7.2	9.3L	6.2L	4.2	.020	75077A
W191206	30	40L	13L	.87	400	28	8.9L	5.9L	3.1	.034	75081A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W191210	22	42L	13L	.94	440	23	9.2L	6.1L	3.5	.016	75083A
W194456	27	25L	7.7L	1.0	690	38	5.2L	3.5L	3.4	.028	76038B
W196358	22	28L	8.8L	1.4	420	36	6.0L	4.1L	6.7	.010L	77001A
W196359	21	18L	5.7L	.99	380	29	3.8L	3.5	3.4	.014	77001B
W194416	18	29L	9.2L	.98	330	12	6.2L	4.2L	6.4	.20	76004A
W194417	32	25L	7.7L	1.1	580	30	5.3L	3.6L	5.8	.19	76004B
W194418	85	27L	8.5L	2.1	640	42	6.1	3.9L	4.8	.16	76004C
W196376	54	28L	8.7L	1.9	440	29	5.9L	4.0L	4.7	.030	76006A
W194420	29	21L	6.5L	1.0	740	32	4.4L	4.1	2.9	.40	76006B
W194422	4.7	30L	9.3L	1.2	290	24	6.3L	4.3L	14	.32	76007B
W191226	41	66L	21L	1.3	420	29	14L	9.5L	6.8	.090	75092C
W191229	56	71L	22L	2.2	650	37	15L	10L	5.0	.023	75094A
W191242	28	74L	23L	1.5	420	21	16L	11L	7.8	.013	75103A
W191243	45	73L	23L	1.6	650	37	15L	11L	5.9	.010L	75103B
W194445	32	30L	9.4L	1.5	1,000	40	6.4L	4.3L	5.2	.050	76021A
W194446	47	28L	8.6L	1.3	730	36	5.9L	4.0L	6.6	.073	76021B
W194830	130	15L	6.9L	1.6	760	12	6.9	1.0L	3.3	.40	76051
W194831	17	20L	9.0L	1.2	460	21	8.6	1.4L	7.0	.12	76051A
W194833	29	21L	9.5L	1.3	520	24	7.9	1.4L	4.8	.050	76054A
W194834	83	20L	9.1L	4.8	870	22	13	1.4L	4.8	.030	76054B
W194837	89	18L	8.1L	2.0	690	24	6.3	1.2L	3.6	.075	76058A
W194838	34	12L	5.5L	.44	570	18	3.8L	.83L	2.9	.085	76058B
W194840	61	17L	7.9L	.94	610	29	5.4L	1.2L	3.7	.10	76060A
W191250	21	51L	17L	1.3	510	30	11L	7.5L	4.6	.022	75110A
W191251	77	47L	15L	2.0	300	25	10L	7.0L	7.1	.095	75110B
W191252	24	48L	16L	1.2	550	22	11L	7.1L	4.0	.046	75111A
W191253	25	47L	15L	1.3	200	18	10L	6.9L	7.3	.13	75111B
W191254	18	48L	16L	1.5	370	21	10L	7.0L	5.1	.013	75112A
W191255	25	47L	15L	1.3	650	30	10L	6.9L	4.6	.022	75112B
W191256	24	49L	16L	1.5	360	23	11L	7.2L	5.9	.013	75113A
W191257	29	37L	12L	1.0	360	24	8.1L	5.5L	3.8	.075	75113B
W191258	44	49L	16L	1.4	340	21	11L	7.3L	6.5	.013	75113C
W191259	27	52L	17L	1.9	240	24	11L	7.7L	11	.010L	75114A
W191260	29	51L	17L	1.8	610	31	11L	7.5L	5.3	.022	75114B
W191261	28	53L	17L	1.8	360	19	12L	7.8L	12	.022	75115A
W191262	30	51L	17L	1.6	480	27	11L	7.5L	7.5	.028	75115B
W191263	12	54L	18L	.88	100	6.0	12L	7.9L	17	.010L	75116A
W191264	29	50L	16L	1.3	650	27	10L	7.3L	6.2	.010L	75116B
W191265	18	49L	16L	1.3	450	6.1	10L	7.2L	13	.010L	75117A
W191266	37	50L	16L	1.8	450	36	10L	7.3L	6.3	.015	75117B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W191267	25	33L	11L	1.1	350	16	6.8L	4.9L	2.2	.16	75118A
W191268	47	32L	10L	.75	260	11	6.6L	4.7L	1.9	.10	75118B
W191269	37	46L	15L	2.3	190	16	11	6.7L	4.2	.44	75118C
W191270	50	32L	10L	.99	200	11	6.6L	4.7L	1.9	.25	75119A
W191271	43	33L	11L	.79	260	9.9	6.8L	4.8L	1.7	.14	75119B
W191272	29	46L	15L	1.5	400	20	9.6L	6.8L	6.6	.060	75119C
W194400	25	24L	7.4L	1.6	56	19	5.1L	3.4L	6.9	.020	76042A
W194402	45	27L	8.5L	.95	1,500	51	5.8L	3.9L	3.9	.064	76042C
W196367	9.3L	30L	9.3L	1.4	220	6.3	6.3L	4.3L	4.3	0.085	77011A
W196369	44	27L	8.5L	1.0	470	41	5.8L	3.9L	3.6	.050	77012A
W196370	28	29L	9.1L	1.6	620	31	6.2L	4.2L	4.6	.060	77014A
W196372	25	29L	9.0L	1.4	500	38	6.1L	4.1L	4.9	.040	77015A
W196373	9.8L	31L	9.8L	1.3	200	5.1	6.7L	4.5L	18	.015	77017A
W196375	21	30L	9.4L	1.4	680	25	6.4L	4.3L	7.2	.050	77019A
W191244	28	54L	18L	1.3	530	21	12L	7.9L	5.0	.015	75108A
W191246	83	52L	17L	1.8	170	25	11L	7.7L	6.3	.020	75108C
W191247	24	53L	17L	1.3	620	25	12L	7.9L	5.0	.010	75109A
W191249	28	49L	16L	1.1	280	23	11L	7.3L	7.3	.010L	75109C
W194450	30	29L	9.1L	1.8	1,100	35	6.9	4.2L	4.2	.018	76026A
W194451	19	28L	8.8L	1.7	690	25	6.0L	4.0L	5.0	.085	76026B
W194452	34	24L	9.7	7.2	1,000	26	16	3.4L	4.2	.12	76026C
W194453	11	27L	8.5L	1.1	680	28	5.8L	3.9L	5.0	.065	76027A
W194454	46	27L	8.5L	1.0	610	19	5.8L	3.9L	5.0	0.21	76027B
W194457	33	30L	9.4L	1.4	650	41	6.4L	4.3L	5.1	.010L	76037A
W194458	70	28L	8.8L	1.5	680	35	6.0L	4.0L	5.6	.062	76037B
W194398	140	20L	6.3L	1.0	1,800	23	4.3L	2.9L	2.7	.14	76039A
W194399	44	21L	6.4L	.84	390	21	4.4L	3.0L	4.5	.085	76039B
W194827	13	16L	7.2L	.46	170	10	15	1.1L	2.0	.11	76050A
W194828	27	20L	9.0L	3.5	630	19	6.7	1.4L	4.9	.12	76050B
W191273	92	35L	11L	1.8	2,100	18	9.2	5.1L	2.0	.16	75120A
W194459	170	26L	8.3L	1.5	1,200	25	5.6L	3.8L	3.6	.28	76036A
W194460	28	29L	9.2L	1.3	470	23	6.2L	4.2L	9.4	.040	76036B
W196365	210	21L	6.6L	1.2	560	10	7.9	3.0L	2.0	.18	77010A
W191230	120	49L	16L	1.0	650	34	10L	7.2L	2.4	.47	75095A
W191231	26	65L	21L	2.1	400	19	21L	9.4L	2.7	2.0	75095B
W191232	59	55L	17L	4.0	220	21	17L	7.9L	2.7	.61	75096A
W191234	22	71L	23L	.65	620	36	15L	10L	6.2	.063	75096C
W191237	32	63L	20L	1.5	780	43	13L	9.1L	4.0	.10	75098A
W191238	160	72L	23L	2.5	510	59	15L	10L	4.3	.070	75098B
W191240	36	74L	23L	1.4	780	47	16L	11L	3.8	.010L	75100A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Cu (ppm)	Dy-S (ppm)	Er-S (ppm)	Eu (ppm)	F (ppm)	Ga-S (ppm)	Gd-S (ppm)	Ge-S (ppm)	Hf (ppm)	Hg (ppm)	Field Number
W191241	34	74L	23L	1.5	510	47	16L	11L	4.3	.010L	75101A
W191274	38	49L	16L	1.0	730	30	10L	7.2L	5.8	.070	75121A
W191275	120	35L	11L	2.2	1,900	21	7.3L	5.2L	2.3	.63	75122A
W191280	30	48L	16L	.99	400	23	10L	7.1L	5.9	.045	75122C
W194414	67	28L	8.8L	1.7	660	31	6.0L	4.1L	4.3	.088	76002C
W194415	34	28L	8.9L	1.2	660	29	6.1L	4.1L	3.1	.20	76003A
W194428	110	23L	7.1L	2.4	580	26	4.8L	3.3L	3.8	.22	76012A
W194429	88	26L	8.0L	1.7	900	30	5.4L	3.7L	4.3	.18	76012B
W194430	27	28L	8.6L	2.3	640	18	5.8L	4.0L	2.5	.47	76014A
W194432	77	22L	7.0L	2.8	2,400	12	11	3.2L	3.4	.25	76014C
W194433	30	25L	8.0L	2.3	1,700	32	5.4L	3.7L	3.6	.25	76014D
W194435	34	28L	8.9L	.69	1,100	35	8.2	4.1L	4.6	.18	76014E
W194436	26	27L	8.4L	1.7	640	20	5.7L	3.9L	2.3	.29	76015A
W194437	12	17L	5.3L	0.50	340	10	6.9	2.4L	2.4	0.56	76015B
W194438	80	21L	6.7L	2.1	1,900	12	5.7	3.1L	3.3	.29	76015C
W194439	26	26L	8.3L	1.0	1,200	31	5.6L	3.8L	4.3	.11	76015D
W194440	25	28L	8.8L	.57	620	17	7.8	4.0L	2.2	.15	76015E
W194465	36	28L	8.8L	1.2	890	43	6.0L	4.1L	4.7	.18	76033B
W194461	65	22L	6.8L	1.0	1,200	14	4.6L	3.1L	2.0	.39	76034A
W194462	16	25L	7.8L	.97	1,100	33	5.3L	3.6L	4.6	.063	76034B
W194463	70	17L	5.4L	.99	560	24	3.8	3.1	2.7	.29	76035A
W194832	26	14L	6.2L	1.0	300	12	4.2L	.94L	5.6	.22	76052A
W194835	140	14L	6.5L	1.5	880	25	5.5	.97L	2.5	.53	76057A
W194836	53	12L	5.3L	.80	560	21	5.2	.79L	2.9	.15	76057B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W191214	9.7L	55	120	.43	90	3.0L	8.2	64L	150	260	75085A
W191217	7.4L	49	210	.44	68	4.2	4.6	55	50	48	75089A
W191218	12L	50	320	.52	110	3.6L	9.0	77L	51	280	75089B
W191219	11L	67	150	.61	150	3.5L	9.7	97	97	39	75091A
W191221	7.8L	44	190	.55	66	4.1	4.5	51L	44	160	75091C
W191223	11L	49	140	.59	130	3.3L	17	71L	54	B	75091E
W191235	14L	46	94	.57	67	6.5	25	94L	81	150	75097A
W191236	13L	55	310	.61	79	4.1L	23	94	65	B	75097B
W194449	6.2L	55	230	.66	36	1.8L	16	42L	46	200	76023B
W197289	3.9L	24	160	.61	63	1.3L	13	27	30	170	77042A
W194425	4.7L	29	19	.41	240	10	10	32L	140	420	76009A
W194427	6.2L	27	36	.50	46	2.0L	22	45	34	39	76009C
W194403	3.8L	25	22	.24	620	34	5.6	26L	150	470	76044A
W194404	6.2L	75	45	.73	150	3.6	24	42L	49	360	76044B
W196361	4.0L	38	64	.32	180	1.3L	8.2	27L	50	180	77005A
W196363	3.5L	32	57	.33	1,200	1.9	5.7	24L	73	320	77006A
W196364	5.6L	68	390	.47	82	1.8L	15	47	80	360	77006B
W194406	4.8L	79	200	.84	110	9.9	19	42	59	250	76046A
W194408	4.9L	40	60	.64	800	8.7	8.0	33L	80	1,300	76048A
W194409	3.5L	B	36	.08L	51	56	4.4	23L	6.6	B	76048B
W194410	6.0L	30	60	.77	140	2.0L	9.8	41L	52	2,500	76048C
W197282	5.8L	50	110	.49	680	3.1	6.0	39L	67	560	77033A
W197283	3.5L	6.0	32	.06	16	18	1.7	23L	4.7	B	77033B
W197284	5.8L	44	93	1.2	120	2.0	12	59	74	5,200	77033C
W197285	6.1L	160	130	.97	140	4.2	20	190	99	10,000	77033D
W191278	10L	47	75	.68	180	3.3L	13	72L	38	200	75125B
W194817	4.0L	38	150	.37	71	1.3L	6.5	27L	31	52	76049A
W194818	4.8L	41	150	.46	92	13	3.2	33L	59	220	76049B
W194819	4.6L	44	140	.44	94	5.1	3.9	31L	40	57	76049C
W194820	5.2L	45	76	.42	91	3.4	2.8	35L	36	130	76049D
W194822	3.8L	44	85	.41	68	2.0	2.5	26L	37	170	76049F
W194824	5.3L	57	100	.49	130	1.7L	7.6	47	42	310	76049H
W194826	3.7L	46	100	.39	86	1.1L	5.3	25L	34	490	76049J
W194441	6.6L	53	57	.56	560	2.1L	24	45L	34	44	76016A
W194442	6.5L	23	100	.38	26	2.1L	10	44L	34	540	76016B
W194443	6.0L	26	58	.32	1,800	2.1	17	40L	30	79	76017A
W197286	6.6L	25	24	.39	34	2.1L	16	45L	16	44	77041A
W197288	4.9L	42	220	.40	37	7.0	13	47	79	160	77041C
W191203	9.3L	100	160	.46	18	2.9L	15	110	29	1,600	75077A
W191206	8.9L	35	160	.45	39	2.7L	4.2	59L	24	31	75081A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W191210	9.2L	37	200	.49	34	2.8L	16	61L	19	B	75083A
W194456	5.2L	41	240	.54	66	1.7L	8.5	35L	28	66	76038B
W196358	6.0L	61	160	.67	150	1.9L	15	41L	29	B	77001A
W196359	3.8L	53	180	.45	39	1.2L	8.5	38	16	120	77001B
W194416	6.2L	33	33	.35	330	2.8	11	42L	71	B	76004A
W194417	5.3L	40	58	.43	310	3.7	8.5	36	85	100	76004B
W194418	5.8L	67	250	.58	58	1.9L	13	71	64	150	76004C
W196376	5.9L	70	300	.59	68	1.9L	14	40L	50	150	76006A
W194420	4.4L	37	58	.37	170	2.3	3.8	30L	84	140	76006B
W194422	6.3L	40	340	.83	27	2.0L	34	88	34	83	76007B
W191226	14L	45	140	.57	250	4.5L	21	95L	95	380	75092C
W191229	15L	51	34	.55	110	4.9L	27	200	67	3,300	75094A
W191242	16L	46	46	.54	250	5.1L	23	110L	58	44	75103A
W191243	15L	65	75	.58	130	5.0L	18	110L	68	210	75103B
W194445	6.4L	46	71	.48	430	1.9L	13	43L	43	490	76021A
W194446	5.9L	61	190	.53	150	1.7L	16	50	42	110	76021B
W194830	4.7L	59	22	1.1	400	590	1.5L	43	420	3,300	76051
W194831	6.1L	53	40	.51	73	2.0L	6.5	41L	39	39	76051A
W194833	6.4L	52	51	.48	270	2.1L	9.3	43L	35	120	76054A
W194834	6.2L	58	24	.66	100	2.0L	4.9	100	42	8,800	76054B
W194837	5.5L	41	150	.61	140	1.8L	9.7	37L	41	460	76058A
W194838	3.8L	21	130	.43	66	3.0	4.7	25L	19	220	76058B
W194840	5.4L	48	200	.50	120	1.7L	3.8	36L	42	170	76060A
W191250	11L	51	62	.53	400	3.5L	15	75L	75	360	75110A
W191251	10L	76	220	.49	45	3.3L	14	70L	140	1,500	75110B
W191252	11L	47	67	.48	160	3.3L	13	71L	67	350	75111A
W191253	10L	75	330	.52	55	3.3L	16	69L	100	750	75111B
W191254	10L	44	43	.54	2,600	4.6	9.5	70L	33	230	75112A
W191255	10L	51	74	.51	100	3.2L	6.7	69L	68	39	75112B
W191256	11L	45	48	.54	1,600	3.4L	14	72L	41	310	75113A
W191257	8.1L	43	66	.42	74	2.6L	5.7	55L	81	B	75113B
W191258	11L	47	55	.51	79	3.4L	8.9	73L	43	390	75113C
W191259	11L	58	42	.78	660	3.6L	13	77L	47	120	75114A
W191260	11L	57	92	.59	46	3.5L	10	92	42	39	75114B
W191261	12L	52	33	.74	170	3.7L	11	78L	47	840	75115A
W191262	11L	49	92	.62	33	3.5L	12	75L	38	79	75115B
W191263	12L	29	12	.59	16	3.7L	13	79L	8.8	300	75116A
W191264	10L	44	130	.63	81	3.4L	32	73L	34	B	75116B
W191265	10L	39	21	.58	180	3.3L	18	72L	29	120	75117A
W191266	10L	42	130	.63	70	3.4L	22	73L	57	B	75117B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W191267	6.8L	36	26	.41	1,000	24	8.7	49L	75	190	75118A
W191268	6.6L	37	24	.32	570	9.6	7.8	47L	78	100	75118B
W191269	9.5L	66	33	.48	1,600	6.7	15	67L	140	B	75118C
W191270	6.6L	31	22	.42	1,000	33	5.5	47L	60	160	75119A
W191271	6.8L	34	26	.32	610	8.7	4.5	48L	62	B	75119B
W191272	9.6L	59	43	.54	43	3.1L	30	68L	75	B	75119C
W194400	5.1L	42	25	.60	1,300	2.8	15	34L	89	550	76042A
W194402	5.8L	46	130	.55	42	2.0	18	39L	65	35	76042C
W196367	6.3L	22	12	0.32	73	2.1L	10	43L	21	370	77011A
W196369	5.8L	54	180	.57	56	1.9L	12	45	58	110	77012A
W196370	6.2L	56	100	.53	240	2.0L	8.3	42L	52	400	77014A
W196372	6.1L	54	140	.59	44	2.0L	14	50	36	B	77015A
W196373	6.7L	45	15	.66	88	2.2L	19	45L	16	300	77017A
W196375	6.4L	48	180	.70	41	2.1L	23	43L	32	B	77019A
W191244	12L	39	47	.47	560	3.7L	16	79L	42	300	75108A
W191246	11L	110	210	.55	30	3.6L	29	110	61	830	75108C
W191247	12L	42	41	.48	270	3.7L	6.2	79L	58	210	75109A
W191249	11L	70	190	.60	290	3.4L	35	73L	44	790	75109C
W194450	6.2L	61	110	.55	650	1.8L	14	60	37	840	76026A
W194451	6.0L	39	110	.57	60	1.8L	14	47	25	460	76026B
W194452	5.1L	190	160	.60	150	1.5L	10	170	40	4,200	76026C
W194453	5.8L	30	70	.58	110	1.7L	21	39L	16	150	76027A
W194454	5.8L	74	42	0.47	110	4.7	8.5	39L	40	410	76027B
W194457	6.4L	43	47	.56	820	2.1L	12	43L	40	410	76037A
W194458	6.0L	69	97	.55	22	1.9L	11	57	34	350	76037B
W194398	4.3L	30	30	.88	130	130	13	37	370	1,300	76039A
W194399	4.4L	37	40	.50	120	5.1	9.6	30L	42	57	76039B
W194827	4.9L	19	45	.20	58	15	4.2	33L	23	92	76050A
W194828	6.1L	170	120	.59	180	2.0L	9.9	76	36	3,400	76050B
W191273	7.2L	35	27	.94	180	54	6.5	60	300	13,000	75120A
W194459	5.6L	98	36	.56	120	24	7.8	70	79	1,800	76036A
W194460	6.2L	51	74	.59	230	2.0L	21	42L	39	160	76036B
W196365	4.5L	35	25	.50	720	18	6.5	37	45	1,500	77010A
W191230	10L	28	40	.69	200	640	9.1	85	510	1,100	75095A
W191231	14L	70	37	.29	51	21	15	130	180	150	75095B
W191232	12L	96	31	3.1	240	350	12	270	220	20,000	75096A
W191234	15L	31	150	.46	190	4.9L	24	100L	60	B	75096C
W191237	13L	42	58	.48	290	4.3L	17	120	77	1,800	75098A
W191238	15L	69	130	.50	56	4.9L	23	150	90	1,200	75098B
W191240	16L	45	63	.53	690	5.1L	25	110	88	1,300	75100A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ho-S (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mn (ppm)	Mo-S (ppm)	Nb-S (ppm)	Nd-S (ppm)	Ni-S (ppm)	P (ppm)	Field Number
W191241	16L	45	60	.49	540	5.1L	22	110L	87	300	75101A
W191274	10L	43	65	.51	140	3.3L	22	72L	58	B	75121A
W191275	7.3L	43	38	.07L	240	240	9.3	93	240	5,500	75122A
W191280	10L	39	80	.54	160	3.3L	20	71L	54	B	75122C
W194414	6.0L	59	50	.37	120	1.9L	16	41L	57	B	76002C
W194415	6.1L	42	71	.45	630	2.7	4.5	41L	30	580	76003A
W194428	4.8L	86	160	.37	55	16	11	61	92	2,300	76012A
W194429	5.4L	84	55	.47	88	2.8	8.8	61	88	450	76012B
W194430	5.8L	35	58	.47	950	12	5.6	40L	86	750	76014A
W194432	4.8L	99	220	.56	400	1.5L	12	51	55	10,000	76014C
W194433	5.4L	54	54	.64	330	3.4	8.0	37L	37	4,500	76014D
W194435	6.1L	36	190	.30	200	2.0L	9.8	41L	61	900	76014E
W194436	5.7L	35	58	.42	1,500	21	9.2	39L	84	74	76015A
W194437	3.6L	23	85	0.26	69	5.8	11	24L	14	5,800	76015B
W194438	4.5L	75	190	.52	360	1.5L	9.4	49	42	970	76015C
W194439	5.6L	37	91	.45	210	1.8L	11	38L	35	1,500	76015D
W194440	6.0L	32	59	.19	740	7.5	8.7	40L	40	420	76015E
W194465	6.0L	60	110	.56	130	7.5	19	41L	70	500	76033B
W194461	4.6L	31	17	.70	180	240	6.0	31L	120	2,300	76034A
W194462	5.3L	57	50	.46	94	1.7L	12	36L	27	140	76034B
W194463	3.7L	41	65	.32	65	8.1	4.3	25L	37	190	76035A
W194832	4.2L	32	62	.43	110	2.1	8.1	29L	69	220	76052A
W194835	4.4L	46	45	.38	280	370	2.3	30L	410	2,800	76057A
W194836	3.6L	43	130	.33	41	2.1	5.0	24L	29	160	76057B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W191214	72	97L	9.7L	120	.51	18	12	5.9	9.7L	160	75085A
W191217	17	74L	7.4L	80	1.4	13	3.4	6.3	7.4L	230	75089A
W191218	23	120L	12L	120	1.0	17	5.9	6.3	12L	220	75089B
W191219	47	110L	11L	150	1.1	22	1.3	11	11L	240	75091A
W191221	37	78L	7.8L	100	1.2	20	3.4	6.2	7.8L	260	75091C
W191223	23	110L	11L	140	.87	18	1.7	6.2	11L	190	75091E
W191235	15	140L	14L	160	.82	18	1.6	7.5	14L	250	75097A
W191236	22	130L	13L	150	1.2	18	2.3	7.5	13L	260	75097B
W194449	19	62L	6.2L	150	.40	23	.37	7.5	6.2L	120	76023B
W197289	44	39L	3.9L	140	.50	16	5.4	3.0	.86L	110	77042A
W194425	350	47L	4.7L	90	5.3	9.6	12	5.2	4.7L	69	76009A
W194427	15	62L	6.2L	52	.60	15	2.1L	4.0	6.2L	37	76009C
W194403	48	38L	3.8L	79	2.9	10	20	8.4	3.8L	51	76044A
W194404	20	62L	6.2L	190	.60	18	7.7	8.8	6.2L	200	76044B
W196361	26	40L	4.0L	130	.60	11	3.4	5.1	4.0L	53	77005A
W196363	17	35L	3.5L	75	2.3	9.5	3.6	4.6	3.5L	43	77006A
W196364	31	56L	5.6L	170	.60	19	1.1	8.1	5.6L	200	77006B
W194406	37	48L	4.8L	170	2.6	23	4.3	8.9	4.8L	190	76046A
W194408	130	49L	4.9L	120	6.5	14	5.2	11	4.9L	110	76048A
W194409	66	35L	3.5L	46L	1.3	.74	4.7	.10	3.5L	1.1	76048B
W194410	50	60L	6.0L	170	2.5	19	3.6	12	6.0L	98	76048C
W197282	140	58L	5.8L	150	5.1	15	2.3	6.8	1.3L	200	77033A
W197283	5.1L	35L	3.5L	53L	1.9	2.0	2.0	.80	.77L	8.2	77033B
W197284	45	58L	5.8L	120	1.9	22	5.1	15	4.1	230	77033C
W197285	38	61L	6.1L	140	2.1	22	2.3	36	2.2	4,300	77033D
W191278	11	100L	10L	110	.55	13	.50	6.6	10L	110	75125B
W194817	27	40L	4.0L	130	1.4	16	1.7	4.8	3.0	110	76049A
W194818	70	48L	4.8L	130	6.5	15	8.4	6.9	1.1L	130	76049B
W194819	61	46L	4.6L	130	6.4	15	4.2	7.1	3.0	110	76049C
W194820	33	52L	5.2L	120	3.3	14	2.5	6.4	1.1L	140	76049D
W194822	33	38L	3.8L	93	3.3	13	3.2	6.4	.85L	140	76049F
W194824	35	53L	5.3L	140	3.7	17	2.7	7.7	1.2L	190	76049H
W194826	36	37L	3.7L	110	1.9	16	3.2L	6.1	.81L	150	76049J
W194441	26	66L	6.6L	110	.40	15	1.5	8.4	6.6L	92	76016A
W194442	9.5L	65L	6.5L	54	.40	9.1	.82	3.4	6.5L	76	76016B
W194443	18	60L	6.0L	65	.20	8.4	1.1	4.1	6.0L	78	76017A
W197286	14	66L	6.6L	36	.40	5.2	.43	3.5	2.2	26	77041A
W197288	22	49L	4.9L	79	1.0	15	1.4	4.8	4.0	150	77041C
W191203	44	93L	9.3L	39L	.54	11	12	16	9.3L	1,100	75077A
W191206	30	89L	8.9L	130	.69	16	5.7	4.6	8.9L	110	75081A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W191210	28	92L	9.2L	130	.48	17	4.9	4.8	9.2L	120	75083A
W194456	15	52L	5.2L	160	.50	20	2.3	5.2	5.2L	110	76038B
W196358	27	60L	6.0L	160	.20	17	4.3	8.2	6.0L	81	77001A
W196359	31	38L	3.8L	180	.60	17	3.6	5.7	3.8L	100	77001B
W194416	27	62L	6.2L	85	.90	8.8	3.0L	4.8	6.2L	50	76004A
W194417	54	53L	5.3L	130	1.7	14	1.9	5.5	5.3L	85	76004B
W194418	26	58L	5.8L	120	.70	20	2.6	9.5	5.8L	150	76004C
W196376	29	59L	5.9L	200	.90	21	2.3	11	5.9L	120	76006A
W194420	59	44L	4.4L	130	2.0	15	2.9	5.0	4.4L	58	76006B
W194422	17	63L	6.3L	55	.60	13	B	5.8	6.3L	47	76007B
W191226	55	140L	14L	100	1.5	15	6.4	6.7	14L	200	75092C
W191229	15	150L	15L	220	.64	17	.20	11	15L	360	75094A
W191242	12	160L	16L	140	3.0	13	.40	7.0	16L	190	75103A
W191243	13	150L	15L	210	.69	17	B	8.4	15L	96	75103B
W194445	9.4L	64L	6.4L	220	.50	19	1.9L	6.5	6.4L	100	76021A
W194446	22	59L	5.9L	170	.70	20	2.4	7.7	5.9L	130	76021B
W194830	25	47L	4.7L	100	12	10	120	13	2.3	130	76051
W194831	49	61L	6.1L	140	1.2	16	1.1	7.2	1.4L	130	76051A
W194833	26	64L	6.4L	160	1.2	17	3.1L	7.1	4.1	150	76054A
W194834	26	62L	6.2L	190	.70	19	3.3L	24	3.7	180	76054B
W194837	25	55L	5.5L	150	1.4	20	2.3	8.8	3.1	190	76058A
W194838	17	38L	3.8L	150	.70	15	3.7	2.4	3.1	100	76058B
W194840	65	54L	5.4L	160	1.8	21	2.2	6.1	4.1	190	76060A
W191250	44	110L	11L	140	.81	17	2.1	6.8	11L	150	75110A
W191251	52	100L	10L	72	.89	21	3.2	9.6	10L	860	75110B
W191252	47	110L	11L	160	.64	17	2.8	6.0	11L	110	75111A
W191253	37	100L	10L	55	.80	18	3.5	7.5	10L	340	75111B
W191254	16	100L	10L	120	.42	15	1.2	6.9	10L	100	75112A
W191255	26	100L	10L	210	.70	19	1.6	6.3	10L	130	75112B
W191256	16	110L	11L	120	.39	14	1.8	6.8	11L	120	75113A
W191257	27	81L	8.1L	150	1.1	16	1.8	4.9	8.1L	100	75113B
W191258	21	110L	11L	120	.47	14	2.5	6.6	11L	110	75113C
W191259	17	110L	11L	110	.46	13	1.2	8.4	11L	130	75114A
W191260	54	110L	11L	180	.60	21	2.6	8.3	11L	170	75114B
W191261	29	120L	12L	61	.46	11	.50	7.5	12L	110	75115A
W191262	44	110L	11L	150	.80	19	2.2	7.4	11L	110	75115B
W191263	22	120L	12L	52L	.30	5.4	.40	4.5	12L	39	75116A
W191264	26	100L	10L	220	.52	19	1.4	6.7	10L	92	75116B
W191265	10	100L	10L	57	.36	7.2	.40	6.1	10L	46	75117A
W191266	30	100L	10L	170	.55	19	4.2	7.0	10L	110	75117B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W191267	7.5	68L	6.8L	100	1.2	9.5	11	5.5	6.8L	110	75118A
W191268	9.6	66L	6.6L	98	.65	7.7	8.2	4.4	6.6L	53	75118B
W191269	86	95L	9.5L	80	4.8	12	2.7	11	9.5L	52	75118C
W191270	11	85	6.6L	98	1.6	8.6	13	5.3	6.6L	79	75119A
W191271	6.8	68L	6.8L	70	.63	7.8	8.3	3.9	6.8L	45	75119B
W191272	37	96L	9.6L	120	.83	15	2.1	7.2	9.6L	96	75119C
W194400	42	51L	5.1L	66	1.2	10	2.2	8.0	5.1L	89	76042A
W194402	48	58L	5.8L	180	1.0	21	3.4	5.5	5.8L	100	76042C
W196367	33	63L	6.3L	100L	0.60	4.6	1.3	6.3	6.3L	42	77011A
W196369	38	58L	5.8L	230	.50	22	1.8	6.4	5.8L	120	77012A
W196370	34	62L	6.2L	180	.70	17	1.3	8.8	6.2L	110	77014A
W196372	35	61L	6.1L	180	.50	20	2.0	7.9	6.1L	130	77015A
W196373	22	67L	6.7L	78	.30	5.4	.33	7.6	6.7L	28	77017A
W196375	23	64L	6.4L	200	.60	17	.92	7.7	6.4L	69	77019A
W191244	11	120L	12L	130	.52	14	B	6.1	12L	130	75108A
W191246	38	110L	11L	140	.96	18	.60	9.5	11L	640	75108C
W191247	12	120L	12L	140	.55	15	.40	6.3	12L	140	75109A
W191249	31	110L	11L	140	1.1	19	.80	5.9	11L	440	75109C
W194450	18	62L	6.2L	200	.60	18	.49	9.8	6.2L	310	76026A
W194451	15	60L	6.0L	190	.80	16	2.1	7.9	6.0L	110	76026B
W194452	37	51L	5.1L	91	1.1	12	4.7	35	5.1L	2,200	76026C
W194453	8.5L	58L	5.8L	200	.60	14	1.8	4.8	5.8L	78	76027A
W194454	63	58L	5.8L	120	2.3	17	4.0	7.0	5.8L	330	76027B
W194457	9.4L	64L	6.4L	120	.70	15	1.6L	6.9	6.4L	100	76037A
W194458	29	60L	6.0L	230	1.1	20	.11	8.7	6.0L	260	76037B
W194398	32	43L	4.3L	120	7.4	13	83	7.5	4.3L	55	76039A
W194399	14	44L	4.4L	120	.70	14	2.2	4.2	4.4L	62	76039B
W194827	28	59	4.9L	72	1.1	5.8	10	2.3	1.1L	19	76050A
W194828	33	61L	6.1L	130	1.0	13	3.9	21	2.6	3,900	76050B
W191273	26	72L	7.2L	84	2.7	10	54	9.6	7.2L	160	75120A
W194459	12	56L	5.6L	150	4.1	17	27	12	5.6L	1,300	76036A
W194460	16	62L	6.2L	160	1.0	16	.88	7.2	6.2L	81	76036B
W196365	51	45L	4.5L	110	8.3	11	20	6.6	5.5	72	77010A
W191230	20	100L	10L	120	7.6	12	66	5.5	13	120	75095A
W191231	440	140L	14L	110	5.5	7.8	3.9	10	14L	37	75095B
W191232	29	120L	12L	85	5.4	12	70	21	12L	450	75096A
W191234	11	150L	15L	200	.66	18	.40	3.9	15L	81	75096C
W191237	18	130L	13L	160	.67	16	2.0	7.3	13L	300	75098A
W191238	38	150L	15L	160	2.3	18	3.9	13	15L	2,900	75098B
W191240	14	160L	16L	180	1.1	19	B	6.8	16L	420	75100A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Pb (ppm)	Pr-S (ppm)	Pt-S (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Se (ppm)	Sm (ppm)	Sn-S (ppm)	Sr-S (ppm)	Field Number
W191241	21	160L	16L	200	.75	18	B	6.7	16L	350	75101A
W191274	45	100L	10L	250	1.1	18	.30	5.5	10L	78	75121A
W191275	36	73L	7.3L	100	6.7	11	62	11	11	150	75122A
W191280	20	100L	10L	210	26	17	.30	5.1	10L	78	75122C
W194414	65	60L	6.0L	160	1.4	15	3.3L	7.0	6.0L	110	76002C
W194415	58	61L	6.1L	160	2.8	16	2.1	5.4	6.1L	79	76003A
W194428	27	48L	4.8L	69	2.0	16	19	14	4.8L	2,100	76012A
W194429	38	54L	5.4L	220	1.6	17	2.7L	8.4	5.4L	180	76012B
W194430	290	58L	5.8L	93	15	12	4.2	9.3	5.8L	86	76014A
W194432	28	48L	4.8L	59	.40	9.2	9.0	13	4.8L	1,600	76014C
W194433	18	54L	5.4L	160	.60	16	4.0	10	5.4L	130	76014D
W194435	23	61L	6.1L	200	.80	14	.95	3.4	6.1L	120	76014E
W194436	170	57L	5.7L	100	8.3	11	3.4	7.8	5.7L	100	76015A
W194437	8.0	36L	3.6L	94	0.40	7.1	4.1	2.8	3.6L	74	76015B
W194438	25	45L	4.5L	83	.30	9.1	9.7	10	4.5L	1,600	76015C
W194439	25	56L	5.6L	180	.55	15	3.6	5.0	5.6L	120	76015D
W194440	22	60L	6.0L	89	1.0	10	2.1	2.6	6.0L	290	76015E
W194465	25	60L	6.0L	170	1.9	17	1.4	7.5	6.0L	180	76033B
W194461	10	46L	4.6L	79	25	8.0	77	8.0	4.6L	88	76034A
W194462	13	53L	5.3L	200	1.1	16	1.5	5.8	5.3L	130	76034B
W194463	15	37L	3.7L	130	.95	12	4.8	5.9	3.7L	87	76035A
W194832	51	42L	4.2L	96	1.9	11	1.5	4.9	.94L	110	76052A
W194835	71	44L	4.4L	110	10	12	77	11	1.0	140	76057A
W194836	31	36L	3.6L	120	.50	13	3.1	4.9	.79L	130	76057B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W191214	.69	.92	B	14	14L	6.4L	3.6	140	2.0	26	75085A
W191217	.68	.86	B	14	11L	4.9L	6.9	160	.98	20	75089A
W191218	1.3	.80	B	18	17L	7.7L	5.6	120	2.3	15	75089B
W191219	.92	1.6	B	18	17L	7.6L	6.8	150	2.6	36	75091A
W191221	.76	.93	B	17	11L	5.1L	9.0	140	1.2	23	75091C
W191223	.96	.88	B	14	16L	7.1L	4.9	170	2.0	21	75091E
W191235	.90	1.2	B	16	20L	9.4L	5.7	220	1.3	59	75097A
W191236	1.2	1.1	B	18	19L	8.6L	6.9	240	1.8	56	75097B
W194449	1.4	1.0	B	17	9.1L	4.2L	5.3	130	4.1L	25	76023B
W197289	1.1	.77	B	13	1.8L	2.6L	4.3	86	1.5	29	77042A
W194425	.58	.77	B	8.0	9.0	3.2L	27	120	.80	35	76009A
W194427	1.3	.71	B	16	9.1L	4.2L	4.9	120	2.3	24	76009C
W194403	.57	1.1	B	6.7	5.6L	2.6L	28	96	1.5L	11	76044A
W194404	1.3	.88	B	12	9.1L	4.2L	6.8	75	1.2	28	76044B
W196361	.70	.75	B	9.6	5.8L	2.7L	3.4	51	1.1	12	77005A
W196363	.70	.87	B	8.5	5.2L	2.4L	3.1	40	.90	8.3	77006A
W196364	1.2	.69	B	12	8.3L	3.8L	4.6	99	1.6	16	77006B
W194406	.94	.84	B	25	7.1L	3.3L	12	160	1.7	22	76046A
W194408	.73	1.7	B	13	7.3L	3.3L	14	87	2.4	24	76048A
W194409	.50L	1.0L	B	1.0L	5.1L	2.3L	.15	2.4	1.7L	H	76048B
W194410	1.2	2.1	B	16	8.9L	4.1L	5.9	84	1.5	16	76048C
W197282	.94	.79	B	15	2.7L	3.9L	5.7	94	1.6	15	77033A
W197283	.24	.88L	B	2.0	43	2.3L	.18	5.1	.80L	1.8	77033B
W197284	1.0	3.5	B	15	2.7L	3.9L	8.9	82	1.6	72	77033C
W197285	1.3	4.3	B	20	2.9L	4.1L	14	130	2.4	86	77033D
W191278	1.0	1.2	B	14	16L	7.2L	4.1	120	1.9	28	75125B
W194817	.69	.74	B	12	1.9L	2.7L	5.6	110	.60L	12	76049A
W194818	.73	.97	B	15	2.3L	3.3L	5.6	65	.60L	14	76049B
W194819	.61	.88	B	14	2.2L	3.1L	5.5	74	.60L	8.8	76049C
W194820	.85	.99	B	12	2.4L	3.5L	4.4	63	.60L	13	76049D
W194822	.68	.85	B	12	1.8L	2.6L	8.5	100	.40L	7.3	76049F
W194824	1.1	.91	B	16	2.5L	3.6L	9.5	93	.80L	18	76049H
W194826	.72	.70	B	13	1.7L	2.5L	6.0	81	.50L	12	76049J
W194441	1.4	1.0	B	14	9.8L	4.5L	4.9	98	1.8	22	76016A
W194442	.83	.48	B	8.1	9.5L	4.4L	3.0	59	1.1	18	76016B
W194443	.52	.59	B	7.1	8.8L	4.0L	4.9	84	1.4L	18	76017A
W197286	.72	.36	B	7.1	3.1L	4.5L	3.6	45	.90	23	77041A
W197288	.72	.56	B	9.9	2.3L	3.3L	3.5	170	1.0	25	77041C
W191203	1.0	1.6	B	15	14L	6.2L	4.8	170	1.8	44	75077A
W191206	.97	.77	B	13	13L	5.9L	4.3	120	1.8	22	75081A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W191210	1.0	.80	B	12	13L	6.1L	3.9	110	2.1	29	75083A
W194456	1.1	.58	B	14	7.7L	3.5L	4.5	100	4.4L	15	76038B
W196358	1.2	1.0	B	13	8.8L	4.1L	4.0	87	1.9	12	77001A
W196359	1.1	.72	B	11	5.7L	2.6L	4.8	74	1.8	14	77001B
W194416	.61	.56	B	8.5	9.2L	4.2L	3.6	66	1.0	16	76004A
W194417	.69	.70	B	10	7.7L	3.6L	5.2	120	1.2	15	76004B
W194418	.99	1.1	B	16	8.5L	3.9L	8.5	170	2.4	29	76004C
W196376	1.3	1.3	B	17	8.7L	4.0L	7.5	120	1.7	30	76006A
W194420	.76	.64	B	9.7	6.5L	3.0L	5.3	91	1.2	6.1	76006B
W194422	1.7	1.0	B	16	9.3L	4.3L	5.3	140	2.7	52	76007B
W191226	1.3	.95	B	17	21L	9.5L	4.0	170	1.3	54	75092C
W191229	1.1	1.4	B	13	22L	10L	5.5	140	1.7	76	75094A
W191242	.98	1.1	B	12	23L	11L	4.3	140	2.8	49	75103A
W191243	1.4	1.1	B	17	23L	11L	4.7	180	2.3	35	75103B
W194445	1.2	.82	B	13	9.4L	4.3L	3.6	110	2.6	10	76021A
W194446	1.1	.75	B	16	8.6L	4.0L	5.6	140	2.0	26	76021B
W194830	.48	1.0	B	8.1	35	3.2L	140	690	.50L	35	76051
W194831	1.1	1.1	B	14	2.9L	4.1L	5.1	68	.50L	21	76051A
W194833	1.2	1.1	B	14	3.0L	4.3L	3.8	83	.50L	15	76054A
W194834	1.1	2.8	B	14	2.9L	4.2L	4.3	58	.60L	31	76054B
W194837	1.4	1.6	B	14	2.6L	3.7L	6.5	97	.60L	25	76058A
W194838	.92	.42	B	11	1.8L	2.5L	3.2	77	.60L	5.4	76058B
W194840	1.0	.95	B	16	2.5L	3.6L	5.4	94	.60L	11	76060A
W191250	1.2	.93	B	13	17L	7.5L	4.4	170	2.0	41	75110A
W191251	1.1	1.1	B	15	15L	7.0L	5.7	160	2.0	34	75110B
W191252	.82	.51	B	13	16L	7.1L	4.7	140	1.4	30	75111A
W191253	1.4	.67	B	16	15L	6.9L	5.6	120	1.9	27	75111B
W191254	.75	1.2	B	11	16L	7.0L	3.4	86	1.1	29	75112A
W191255	.77	.87	B	13	15L	6.9L	3.5	160	1.4	29	75112B
W191256	.91	1.3	B	12	16L	7.2L	3.6	110	1.2	46	75113A
W191257	.85	1.1	B	11	12L	5.5L	2.9	160	.91	20	75113B
W191258	.85	.95	B	12	16L	7.3L	3.1	130	1.3	36	75113C
W191259	1.2	1.4	B	14	17L	7.7L	5.2	95	1.7	28	75114A
W191260	1.1	1.0	B	14	17L	7.5L	4.0	170	1.7	40	75114B
W191261	1.3	1.2	B	14	17L	7.8L	4.7	90	1.1	32	75115A
W191262	1.2	.88	B	16	17L	7.5L	4.3	150	1.9	33	75115B
W191263	1.1	.75	B	9.5	18L	7.9L	3.0	44	.64	28	75116A
W191264	1.1	1.2	B	16	16L	7.3L	4.4	150	1.9	46	75116B
W191265	1.0	.83	B	11	16L	7.2L	3.1	54	.86	37	75117A
W191266	1.2	1.1	B	15	16L	7.3L	4.6	160	1.9	38	75117B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W191267	.72	.55	B	8.2	11L	4.9L	10	81	.79	18	75118A
W191268	.47	.43	B	7.8	10L	4.7L	8.0	58	.85	22	75118B
W191269	1.0	1.4	B	11	28	6.7L	4.3	95	1.2	51	75118C
W191270	.51	.65	B	7.4	10L	4.7L	11	72	.66	21	75119A
W191271	.34	.32	B	7.2	17	4.8L	5.8	47	.94	18	75119B
W191272	1.1	1.3	B	15	15L	6.8L	4.3	110	1.9	50	75119C
W194400	.86	1.0	B	9.1	7.4L	3.4L	4.6	82	1.3	19	76042A
W194402	1.1	.68	B	15	8.5L	3.9L	4.0	150	1.8	12	76042C
W196367	0.33	1.0	B	5.2	9.3L	4.3L	2.1	32	1.7L	22	77011A
W196369	1.2	.76	B	15	8.5L	3.9L	4.2	150	1.9	22	77012A
W196370	.79	1.1	B	14	9.1L	4.2L	3.7	100	1.7	16	77014A
W196372	1.2	.93	B	14	9.0L	4.1L	4.2	130	1.5	24	77015A
W196373	1.2	1.2	B	11	9.8L	4.5L	3.4	36	2.0L	21	77017A
W196375	1.4	1.1	B	15	9.4L	4.3L	4.1	110	1.8	40	77019A
W191244	.97	.95	B	11	18L	7.9L	3.8	110	1.4	42	75108A
W191246	1.3	.94	B	18	17L	7.7L	7.8	150	1.8	44	75108C
W191247	.99	.96	B	11	17L	7.9L	3.6	120	2.1	30	75109A
W191249	1.3	.69	B	18	16L	7.3L	9.2	160	2.2	37	75109C
W194450	1.1	1.1	B	16	9.1L	4.2L	4.1	140	4.1L	28	76026A
W194451	1.1	1.2	B	15	8.8L	4.0L	4.0	76	2.4	32	76026B
W194452	1.1	2.3	B	16	7.5L	3.4L	4.1	61	3.7	41	76026C
W194453	1.4	.84	B	14	8.5L	3.9L	4.3	72	1.9	26	76027A
W194454	1.5	0.50	B	14	8.5L	3.9L	14	80	5.6L	13	76027B
W194457	1.4	.81	B	11	9.4L	4.3L	3.2	84	5.0L	9.4	76037A
W194458	1.7	.62	B	18	8.8L	4.0L	4.0	130	5.1L	18	76037B
W194398	.61	.65	B	8.4	11	2.9L	69	600	1.0	16	76039A
W194399	.84	.51	B	11	6.4L	3.0L	3.9	100	1.2	9.6	76039B
W194827	.46	.97L	B	5.9	25	3.3L	1.6	23	.50L	8.6	76050A
W194828	1.3	1.3	B	16	2.9L	4.1L	3.6	59	.60L	17	76050B
W191273	.51	1.5	B	7.6	11L	5.1L	79	190	.71	78	75120A
W194459	.95	.66	B	11	8.3L	3.8L	58	250	5.8L	9.9	76036A
W194460	1.7	.86	B	17	9.2L	4.2L	5.8	140	3.1	17	76036B
W196365	.51	.95	B	8.8	6.6L	3.0L	19	85	.90	21	77010A
W191230	.68	.54	B	9.9	31	7.2L	52	850	.71	28	75095A
W191231	.43	1.0	B	6.5	21L	9.4L	4.3	80	1.9L	37	75095B
W191232	.61	2.5	B	6.0	29	7.9L	290	1,400	2.5L	270	75096A
W191234	1.4	.61	B	14	23L	10L	5.3	170	1.7	29	75096C
W191237	1.0	.96	B	15	20L	9.1L	3.2	160	2.0	47	75098A
W191238	1.2	.85	B	22	23L	10L	4.8	250	2.4	22	75098B
W191240	.93	1.1	B	13	23L	11L	3.2	230	1.3	58	75100A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Ta (ppm)	Tb (ppm)	Te-S (ppm)	Th (ppm)	Tl-S (ppm)	Tm-S (ppm)	U (ppm)	V-S (ppm)	W (ppm)	Y-S (ppm)	Field Number
W191241	.96	1.1	B	13	23L	11L	3.2	200	1.7	49	75101A
W191274	1.2	.91	B	14	16L	7.2L	3.4	120	1.7	33	75121A
W191275	.74	1.3	B	8.7	19	5.2L	110	730	1.4	62	75122A
W191280	1.3	.66	B	14	16L	7.1L	3.3	120	1.8	31	75122C
W194414	.98	.75	B	13	8.8L	4.1L	6.6	87	1.5	11	76002C
W194415	.82	.77	B	13	8.9L	4.1L	4.6	78	1.1	8.8	76003A
W194428	1.0	.53	B	19	7.1L	3.3L	12	130	1.8	6.6	76012A
W194429	1.3	1.0	B	15	8.0L	3.7L	5.6	96	2.2	13	76012B
W194430	.58	1.4	B	11	8.6L	4.0L	9.7	120	.90	14	76014A
W194432	.95	1.7	B	15	7.0L	3.2L	4.5	43	1.7	53	76014C
W194433	.90	1.4	B	13	8.0L	3.7L	4.3	49	1.9	23	76014D
W194435	1.4	.36	B	18	8.9L	4.1L	3.2	110	2.3	7.7	76014E
W194436	.71	1.2	B	11	8.4L	3.9L	9.8	100	1.3	11	76015A
W194437	0.73	0.62L	B	7.8	5.3L	2.4L	2.0	33	0.90	12	76015B
W194438	.62	1.4	B	14	6.7L	3.1L	3.7	41	1.8	36	76015C
W194439	1.0	.59	B	14	8.3L	3.8L	3.3	70	1.8	13	76015D
W194440	.61	.34	B	6.6	8.8L	4.0L	1.5	55	2.0L	8.8	76015E
W194465	1.6	.70	B	15	8.8L	4.1L	8.5	120	5.9L	17	76033B
W194461	.44	.69	B	6.2	21	3.1L	68	430	5.3L	18	76034A
W194462	1.6	.71	B	13	7.8L	3.6L	4.4	110	3.5	11	76034B
W194463	.60	.47	B	9.5	11	2.5L	11	76	5.6L	5.4	76035A
W194832	.71	.88	B	9.8	2.0L	2.9L	3.9	61	.40L	17	76052A
W194835	.52	1.5	B	11	17	3.0L	69	320	.50L	17	76057A
W194836	.74	.51	B	9.2	1.7L	2.4L	4.0	74	.50L	5.8	76057B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W191214	2.3	220	150	75085A
W191217	2.4	74	62	75089A
W191218	3.0	52	84	75089B
W191219	3.7	120	97	75091A
W191221	3.5	55	51	75091C
W191223	3.4	100	170	75091E
W191235	3.8	100	220	75097A
W191236	3.9	72	200	75097B
W194449	4.0	54	110	76023B
W197289	3.5	51	180	77042A
W194425	2.1	280	150	76009A
W194427	2.9	44	180	76009C
W194403	2.1	130	25	76044A
W194404	4.4	26	250	76044B
W196361	2.5	110	57	77005A
W196363	2.1	120	57	77006A
W196364	3.0	150	170	77006B
W194406	4.5	180	220	76046A
W194408	3.5	56	73	76048A
W194409	.40L	660	2.3L	76048B
W194410	4.7	45	53	76048C
W197282	2.9	57	46	77033A
W197283	.50	10	18	77033B
W197284	7.3	78	70	77033C
W197285	6.3	90	160	77033D
W191278	3.9	66	220	75125B
W194817	2.6	140	77	76049A
W194818	3.1	62	29	76049B
W194819	3.1	94	32	76049C
W194820	2.9	28	37	76049D
W194822	2.6	27	26	76049F
W194824	3.5	37	85	76049H
W194826	2.7	40	54	76049J
W194441	3.6	180	470	76016A
W194442	2.4	32	250	76016B
W194443	1.9	130	250	76017A
W197286	2.1	56	580	77041A
W197288	2.3	100	210	77041C
W191203	3.2	52	230	75077A
W191206	2.7	40	82	75081A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W191210	2.9	41	120	75083A
W194456	2.8	36	41	76038B
W196358	3.8	88	110	77001A
W196359	3.2	79	41	77001B
W194416	2.1	37	190	76004A
W194417	2.6	44	85	76004B
W194418	3.6	130	100	76004C
W196376	3.9	120	100	76006A
W194420	2.3	40	43	76006B
W194422	4.9	23	590	76007B
W191226	3.8	130	370	75092C
W191229	3.9	120	360	75094A
W191242	3.7	200	370	75103A
W191243	3.8	130	220	75103B
W194445	3.1	100	58	76021A
W194446	3.3	69	190	76021B
W194830	3.5	1,800	96	76051
W194831	3.6	42	110	76051A
W194833	3.4	100	130	76054A
W194834	5.0	280	73	76054B
W194837	4.3	97	89	76058A
W194838	2.8	35	28	76058B
W194840	3.8	87	28	76060A
W191250	3.7	180	220	75110A
W191251	3.2	150	310	75110B
W191252	2.9	120	180	75111A
W191253	3.0	81	240	75111B
W191254	3.4	160	170	75112A
W191255	3.3	140	170	75112B
W191256	3.5	150	260	75113A
W191257	2.6	140	110	75113B
W191258	3.3	130	220	75113C
W191259	4.9	100	410	75114A
W191260	3.8	110	180	75114B
W191261	4.9	70	320	75115A
W191262	3.7	67	180	75115B
W191263	3.6	15	840	75116A
W191264	3.8	84	410	75116B
W191265	3.6	70	660	75117A
W191266	3.9	130	260	75117B

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W191267	2.1	140	75	75118A
W191268	1.7	150	140	75118B
W191269	3.3	95	220	75118C
W191270	2.1	43	79	75119A
W191271	1.7	93	75	75119B
W191272	3.5	170	320	75119C
W194400	3.6	120	150	76042A
W194402	3.2	290	54	76042C
W196367	2.0	52	170	77011A
W196369	3.2	120	80	77012A
W196370	3.5	140	62	77014A
W196372	3.8	51	84	77015A
W196373	4.1	35	630	77017A
W196375	4.4	94	240	77019A
W191244	3.3	92	330	75108A
W191246	3.5	92	430	75108C
W191247	3.1	80	160	75109A
W191249	3.6	55	500	75109C
W194450	3.6	100	70	76026A
W194451	3.6	22	110	76026B
W194452	3.9	19	69	76026C
W194453	3.5	29	230	76027A
W194454	2.5	22	100	76027B
W194457	3.1	76	60	76037A
W194458	3.2	130	110	76037B
W194398	2.7	1,300	180	76039A
W194399	3.0	150	90	76039B
W194827	1.2	24	59	76050A
W194828	3.8	12	75	76050B
W191273	3.4	1,000	85	75120A
W194459	2.0	130	40	76036A
W194460	3.7	140	260	76036B
W196365	2.7	58	49	77010A
W191230	1.9	1,400	110	75095A
W191231	1.9	46	270	75095B
W191232	6.9	2,300	290	75096A
W191234	2.9	53	240	75096C
W191237	3.2	83	220	75098A
W191238	3.3	51	140	75098B
W191240	3.4	97	300	75100A

Table 5a.--Major-, minor-, and trace element composition of 144 coal associated samples from Indiana reported on a whole-coal basis.--continued

Sample Number	Yb (ppm)	Zn (ppm)	Zr-S (ppm)	Field Number
W191241	3.4	120	230	75101A
W191274	3.3	58	260	75121A
W191275	3.0	3,000	150	75122A
W191280	3.2	57	230	75122C
W194414	2.4	88	190	76002C
W194415	2.8	69	44	76003A
W194428	2.3	16	59	76012A
W194429	2.6	110	74	76012B
W194430	2.8	77	38	76014A
W194432	3.8	22	120	76014C
W194433	4.0	51	42	76014D
W194435	1.7	48	88	76014E
W194436	2.6	55	69	76015A
W194437	1.5	28	110	76015B
W194438	3.3	27	80	76015C
W194439	2.6	45	99	76015D
W194440	1.2	27	130	76015E
W194465	3.3	88	180	76033B
W194461	1.6	740	59	76034A
W194462	2.7	61	59	76034B
W194463	1.8	37	33	76035A
W194832	2.8	110	120	76052A
W194835	2.7	1,300	55	76057A
W194836	2.1	43	42	76057B

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.

[All analyses except heat contents, free-swelling indexes and ash-fusion temperatures in percent. For each sample number, the analyses are reported three ways: first, as-received; second, moisture free; and third, moisture and ash free. All analyses by Coal Analysis Section, Department of Energy, Pittsburgh, Pa. G for ash-fusion temperatures means greater than. Lab number is the USGS laboratory number. The U.S.G.S. makes no claims as to the accuracy of rank calculated from these parameters.]

	PROXIMATE ANALYSIS				ULTIMATE ANALYSIS					HEAT CONTENT	
SAMPLE NUMBER	MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	KCAL/KG	BTU/LB
D172302	6.6	35.8	40.8	16.8	5.0	61.3	1.3	13.3	2.3	6,100	10,980
	---	38.3	43.7	18.0	4.6	65.6	1.4	8.0	2.5	6,530	11,760
	---	46.7	53.3	---	5.6	80.0	1.7	9.7	3.0	7,960	14,330
W188940	13.0	36.8	43.2	7.0	6.0	62.9	1.3	18.7	4.1	6,320	11,380
	---	42.3	49.7	8.0	5.2	72.3	1.5	8.2	4.7	7,270	13,080
	---	46.0	54.0	---	5.7	78.6	1.6	8.9	5.1	7,900	14,230
W188941	8.3	38.3	47.3	6.1	5.7	66.9	1.3	17.0	3.0	6,650	11,970
	---	41.8	51.6	6.7	5.2	73.0	1.4	10.5	3.3	7,250	13,050
	---	44.7	55.3	---	5.6	78.2	1.5	11.2	3.5	7,770	13,980
W188942	10.4	37.9	42.1	9.6	5.8	62.4	1.2	16.6	4.4	6,310	11,350
	---	42.3	47.0	10.7	5.2	69.6	1.3	8.2	4.9	7,040	12,670
	---	47.4	52.6	---	5.8	78.0	1.5	9.2	5.5	7,880	14,190
W188943	12.8	37.3	41.7	8.2	5.9	60.9	1.2	20.3	3.5	6,190	11,140
	---	42.8	47.8	9.4	5.1	69.8	1.4	10.2	4.0	7,100	12,780
	---	47.2	52.8	---	5.7	77.1	1.5	11.3	4.4	7,830	14,100
W190536	13.1	32.2	48.5	6.2	5.6	64.3	1.0	21.4	1.5	6,340	11,420
	---	37.1	55.8	7.1	4.8	74.0	1.2	11.2	1.7	7,300	13,140
	---	39.9	60.1	---	5.1	79.7	1.2	12.1	1.9	7,860	14,150
W190537	14.0	30.1	45.4	10.5	5.6	58.5	.9	22.4	2.1	5,680	10,230
	---	35.0	52.8	12.2	4.7	68.0	1.0	11.6	2.4	6,610	11,900
	---	39.9	60.1	---	5.4	77.5	1.2	13.2	2.8	7,530	13,550
W190542	15.6	30.8	48.8	4.8	6.2	64.9	1.2	22.2	.7	6,390	11,510
	---	36.5	57.8	5.7	5.3	76.9	1.4	9.9	.8	7,580	13,640
	---	38.7	61.3	---	5.6	81.5	1.5	10.5	.9	8,030	14,460
W190543	9.0	34.9	47.5	8.6	5.5	64.7	1.1	16.4	3.7	6,400	11,520
	---	38.4	52.2	9.5	4.9	71.1	1.2	9.2	4.1	7,030	12,660
	---	42.4	57.6	---	5.5	78.5	1.3	10.2	4.5	7,770	13,980
W190544	13.0	23.4	57.7	5.9	5.7	65.1	1.1	20.8	1.4	6,460	11,620
	---	26.9	66.3	6.8	4.9	74.8	1.3	10.6	1.6	7,420	13,360
	---	28.9	71.1	---	5.2	80.3	1.4	11.4	1.7	7,960	14,330
W190545	10.4	33.6	46.1	9.9	5.5	61.0	.6	19.2	3.8	6,130	11,040
	---	37.5	51.5	11.0	4.8	68.1	.7	11.1	4.2	6,850	12,320
	---	42.2	57.8	---	5.5	76.5	.8	12.5	4.8	7,700	13,850

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
D172302	2.8	0.08	1.48	0.74	0.0	0	0	0
	---	.09	1.58	.79				
	---	.10	1.93	.97				
W188940	.0	.37	2.48	1.24	1.5	1,110	1,140	1,165
	---	.43	2.85	1.43				
	---	.46	3.10	1.55				
W188941	.0	.53	.89	1.61	1.5	1,070	1,100	1,125
	---	.58	.97	1.76				
	---	.62	1.04	1.88				
W188942	.0	.28	2.01	2.15	3.0	1,095	1,120	1,150
	---	.31	2.24	2.40				
	---	.35	2.51	2.69				
W188943	.0	.48	1.33	1.73	1.5	1,090	1,115	1,175
	---	.55	1.53	1.98				
	---	.61	1.68	2.19				
W190536	.0	.46	.67	.41	1.0	1,120	1,205	1,270
	---	.53	.77	.47				
	---	.57	.83	.51				
W190537	.0	.12	.47	1.53	.0	1,065	1,120	1,155
	---	.14	.55	1.78				
	---	.16	.62	2.03				
W190542	.0	.07	.30	.31	1.0	1,540	1,600	1,600
	---	.08	.36	.37				
	---	.09	.38	.39				
W190543	.0	.45	1.20	2.01	1.5	1,110	1,140	1,195
	---	.49	1.32	2.21				
	---	.55	1.46	2.44				
W190544	.0	.28	.39	.69	2.0	1,290	1,315	1,370
	---	.32	.45	.79				
	---	.35	.48	.85				
W190545	.0	.67	1.17	1.95	1.5	1,110	1,140	1,165
	---	.75	1.31	2.18				
	---	.84	1.47	2.4	.PA			

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	ULTIMATE ANALYSIS HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	HEAT CONTENT KCAL/KG	BTU/LB
W190546	13.7	22.4	57.8	6.1	5.6	65.0	0.9	21.5	0.9	6,390	11,500
	---	26.0	67.0	7.1	4.7	75.3	1.0	10.8	1.0	7,400	13,330
	---	27.9	72.1	---	5.1	81.0	1.1	11.6	1.1	7,970	14,340
W190547	8.5	34.3	45.8	11.4	5.5	60.9	.8	16.3	5.1	6,140	11,060
	---	37.5	50.1	12.5	5.0	66.6	.9	9.6	5.6	6,720	12,090
	---	42.8	57.2	---	5.7	76.0	1.0	10.9	6.4	7,670	13,810
W190548	12.0	30.8	43.6	13.6	5.5	58.0	.9	19.5	2.5	5,820	10,470
	---	35.0	49.5	15.5	4.7	65.9	1.0	10.0	2.8	6,610	11,900
	---	41.4	58.6	---	5.6	78.0	1.2	11.9	3.4	7,820	14,070
W190934	9.1	32.5	51.0	7.4	5.6	64.9	1.4	18.1	2.6	6,470	11,640
	---	35.8	56.1	8.1	5.0	71.4	1.5	11.0	2.9	7,120	12,810
	---	38.9	61.1	---	5.5	77.7	1.7	12.0	3.1	7,750	13,940
W192632	15.4	30.5	48.7	5.4	6.0	64.8	1.3	21.7	.8	6,410	11,530
	---	36.1	57.6	6.4	5.1	76.6	1.5	9.5	.9	7,570	13,630
	---	38.5	61.5	---	5.4	81.8	1.6	10.1	1.0	8,090	14,560
W192633	16.1	30.1	49.2	4.6	6.3	65.3	1.3	21.7	.8	6,380	11,480
	---	35.9	58.6	5.5	5.4	77.8	1.5	8.8	1.0	7,600	13,680
	---	38.0	62.0	---	5.7	82.3	1.6	9.3	1.0	8,040	14,480
W192634	16.2	32.8	49.0	2.0	6.1	67.1	1.4	22.4	.8	6,600	11,890
	---	39.1	58.5	2.4	5.1	80.1	1.7	9.5	1.0	7,880	14,180
	---	40.1	59.9	---	5.3	82.0	1.7	9.8	1.0	8,070	14,530
W192620	11.1	31.6	42.9	14.4	5.2	59.7	1.2	16.7	2.9	5,930	10,670
	---	35.5	48.3	16.2	4.5	67.2	1.3	7.7	3.3	6,670	12,010
	---	42.4	57.6	---	5.3	80.1	1.6	9.2	3.9	7,960	14,330
W192621	10.8	35.3	41.6	12.3	5.4	59.1	1.1	17.6	4.5	5,940	10,690
	---	39.6	46.6	13.8	4.7	66.3	1.2	9.0	5.0	6,660	11,980
	---	45.9	54.1	---	5.5	76.9	1.4	10.4	5.9	7,720	13,900
W192622	9.7	32.4	50.0	7.9	5.6	65.4	1.3	17.3	2.5	6,500	11,700
	---	35.9	55.4	8.7	5.0	72.4	1.4	9.6	2.8	7,200	12,960
	---	39.3	60.7	---	5.5	79.4	1.6	10.5	3.0	7,890	14,200
W192623	8.8	31.0	47.2	13.0	5.3	59.8	1.1	15.8	5.0	6,010	10,820
	---	34.0	51.8	14.3	4.7	65.6	1.2	8.7	5.5	6,590	11,860
	---	39.6	60.4	---	5.5	76.5	1.4	10.2	6.4	7,680	13,830
W194393	2.1	39.0	45.2	13.6	4.8	64.7	1.2	7.9	7.7	6,660	11,980
	---	39.8	46.2	13.9	4.7	66.1	1.2	6.2	7.9	6,800	12,240
	---	46.3	53.6	---	5.4	76.7	1.4	7.2	9.1	7,900	14,210

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W190546	0.0	0.14	0.22	0.59	1.5	1,300	1,325	1,450
	---	.16	.25	.68				
	---	.17	.27	.74				
W190547	.0	.92	2.15	2.04	1.0	1,070	1,125	1,155
	---	1.01	2.35	2.23				
	---	1.15	2.68	2.55				
W190548	.0	.12	1.52	.90	1.0	1,350	1,425	1,440
	---	.14	1.73	1.02				
	---	.16	2.04	1.21				
W190934	6.0	.75	1.09	.79	1.0	1,070	1,125	1,180
	---	.83	1.20	.87				
	---	.90	1.31	.95				
W192632	.0	.02	.32	.44	1.0	1,470	1,530	1,540
	---	.02	.38	.52				
	---	.03	.40	.56				
W192633	.0	.02	.22	.55	1.0	1,470	1,520	1,540
	---	.02	.26	.66				
	---	.03	.28	.69				
W192634	13.1	.10	.30	.50	1.0	1,240	1,290	1,345
	---	.12	.36	.60				
	---	.12	.37	.61				
W192620	6.7	.50	1.50	.90	1.0	1,130	1,165	1,190
	---	.56	1.69	1.01				
	---	.67	2.01	1.21				
W192621	.0	.03	2.31	2.13	1.0	1,055	1,100	1,420
	---	.03	2.59	2.39				
	---	.04	3.00	2.77				
W192622	6.9	.50	1.00	1.00	1.0	1,320	1,375	1,400
	---	.55	1.11	1.11				
	---	.61	1.21	1.21				
W192623	6.0	.80	2.70	1.50	1.0	1,150	1,205	1,230
	---	.88	2.96	1.64				
	---	1.02	3.45	1.92				
W194393	.0	.02	6.10	1.59	5.0	1,130	1,180	1,240
	---	.02	6.23	1.62				
	---	.02	7.24	1.89				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	ULTIMATE ANALYSIS HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	HEAT CONTENT KCAL/KG	BTU/LB
W194394	2.2	40.1	44.4	13.3	4.9	65.4	1.2	8.8	6.4	6,700	12,060
	---	41.0	45.4	13.6	4.8	66.9	1.2	7.0	6.5	6,850	12,330
	---	47.5	52.5	---	5.5	77.4	1.4	8.1	7.6	7,930	14,270
D172310	13.3	34.3	39.3	13.1	5.4	56.4	1.0	17.9	6.2	5,790	10,420
	---	39.6	45.3	15.1	4.5	65.1	1.2	7.0	7.2	6,680	12,020
	---	46.6	53.4	---	5.3	76.6	1.4	8.3	8.4	7,870	14,160
D172311	13.3	34.3	39.3	13.1	5.4	56.4	1.0	17.9	6.2	5,790	10,420
	---	39.6	45.3	15.1	4.5	65.1	1.2	7.0	7.2	6,680	12,020
	---	46.6	53.4	---	5.3	76.6	1.4	8.3	8.4	7,870	14,160
D172312	13.3	34.3	39.3	13.1	5.4	56.4	1.0	17.9	6.2	5,790	10,420
	---	39.6	45.3	15.1	4.5	65.1	1.2	7.0	7.2	6,680	12,020
	---	46.6	53.4	---	5.3	76.6	1.4	8.3	8.4	7,870	14,160
D172313	11.0	38.0	39.2	11.8	5.5	59.6	1.0	15.9	6.2	6,090	10,960
	---	42.7	44.0	13.3	4.8	67.0	1.1	6.9	7.0	6,840	12,310
	---	49.2	50.8	---	5.5	77.2	1.3	7.9	8.0	7,890	14,200
D172314	11.0	38.0	39.2	11.8	5.5	59.6	1.0	15.9	6.2	6,090	10,960
	---	42.7	44.0	13.3	4.8	67.0	1.1	6.9	7.0	6,840	12,310
	---	49.2	50.8	---	5.5	77.2	1.3	7.9	8.0	7,890	14,200
D172315	11.0	38.0	39.2	11.8	5.5	59.6	1.0	15.9	6.2	6,090	10,960
	---	42.7	44.0	13.3	4.8	67.0	1.1	6.9	7.0	6,840	12,310
	---	49.2	50.8	---	5.5	77.2	1.3	7.9	8.0	7,890	14,200
W194395	2.8	25.0	27.3	44.9	3.5	39.1	.9	9.8	1.9	3,850	6,930
	---	25.7	28.1	46.2	3.3	40.2	.9	7.5	2.0	3,960	7,130
	---	47.8	52.2	---	6.1	74.8	1.7	14.0	3.6	7,360	13,250
W194396	5.1	34.1	45.0	15.8	4.9	61.7	1.4	12.6	3.5	6,160	11,090
	---	35.9	47.4	16.6	4.6	65.0	1.5	8.5	3.7	6,490	11,680
	---	43.1	56.9	---	5.5	78.0	1.8	10.2	4.4	7,790	14,020
W194397	6.2	37.2	43.9	12.7	5.1	62.4	1.4	13.6	4.8	6,280	11,300
	---	39.7	46.8	13.5	4.7	66.5	1.5	8.6	5.1	6,690	12,040
	---	45.9	54.1	---	5.4	76.9	1.7	10.0	5.9	7,740	13,930
D172305	6.5	43.5	43.5	6.5	5.8	70.0	1.3	13.9	2.5	7,100	12,780
	---	46.5	46.5	7.0	5.4	74.9	1.4	8.7	2.7	7,590	13,670
	---	50.0	50.0	---	5.8	80.5	1.5	9.3	2.9	8,160	14,690
W188946	8.4	38.1	47.2	6.3	5.7	66.3	1.3	17.7	2.7	6,660	11,980
	---	41.6	51.5	6.9	5.2	72.4	1.4	11.2	2.9	7,270	13,080
	---	44.7	55.3	---	5.6	77.7	1.5	12.0	3.2	7,800	14,040

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W194394	0.0	0.04	4.88	1.52	5.0	1,180	1,240	1,295
	---	.04	4.99	1.55				
	---	.05	5.78	1.80				
D172310	8.8	.26	4.68	1.29	.0	0	0	0
	---	.30	5.40	1.49				
	---	.35	6.36	1.75				
D172311	8.8	.26	4.68	1.29	.0	0	0	0
	---	.30	5.40	1.49				
	---	.35	6.36	1.75				
D172312	8.8	.26	4.68	1.29	.0	0	0	0
	---	.30	5.40	1.49				
	---	.35	6.36	1.75				
D172313	8.0	.26	4.31	1.64	.0	0	0	0
	---	.29	4.84	1.84				
	---	.34	5.58	2.12				
D172314	8.0	.26	4.31	1.64	.0	0	0	0
	---	.29	4.84	1.84				
	---	.34	5.58	2.12				
D172315	8.0	.26	4.31	1.64	.0	0	0	0
	---	.29	4.84	1.84				
	---	.34	5.58	2.12				
W194395	.6	.02	1.44	.40	.0	1,540	1,540	1,540
	---	.02	1.48	.41				
	---	.04	2.75	.76				
W194396	1.6	.02	2.86	.58	2.0	1,275	1,330	1,390
	---	.02	3.01	.61				
	---	.03	3.62	.73				
W194397	1.4	.55	3.08	1.11	3.0	1,155	1,215	1,270
	---	.59	3.28	1.18				
	---	.68	3.80	1.37				
D172305	3.3	.04	1.34	1.07	.0	0	0	0
	---	.04	1.43	1.14				
	---	.05	1.54	1.23				
W188946	.0	.57	1.02	1.09	1.5	1,070	1,100	1,125
	---	.62	1.11	1.19				
---	.67	1.20	1.28					

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	ULTIMATE ANALYSIS HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	HEAT CONTENT KCAL/KG	BTU/LB
W188947	12.5	33.8	46.7	7.0	6.0	64.3	1.3	19.0	2.4	6,370	11,460
	---	38.6	53.4	8.0	5.3	73.5	1.5	9.0	2.7	7,280	13,100
	---	42.0	58.0	---	5.7	79.9	1.6	9.8	3.0	7,910	14,240
W191042	9.7	35.6	45.4	9.3	5.7	63.4	1.4	17.7	2.5	6,320	11,380
	---	39.4	50.3	10.3	5.1	70.2	1.6	10.1	2.8	7,000	12,600
	---	44.0	56.0	---	5.7	78.3	1.7	11.2	3.1	7,810	14,050
W191051	9.3	32.8	47.8	10.1	5.2	62.8	1.1	18.0	2.8	6,280	11,310
	---	36.2	52.7	11.1	4.6	69.2	1.2	10.7	3.1	6,930	12,470
	---	40.7	59.3	---	5.2	77.9	1.4	12.1	3.5	7,800	14,030
D172303	6.3	38.7	44.9	10.1	5.1	66.4	1.2	14.0	3.2	6,620	11,920
	---	41.3	47.9	10.8	4.7	70.9	1.3	9.0	3.4	7,070	12,720
	---	46.3	53.7	---	5.3	79.4	1.4	10.0	3.8	7,920	14,260
W188948	11.2	36.3	44.2	8.3	5.9	64.0	1.2	17.5	3.1	6,390	11,510
	---	40.9	49.8	9.3	5.2	72.1	1.4	8.5	3.5	7,200	12,960
	---	45.1	54.9	---	5.8	79.5	1.5	9.4	3.9	7,940	14,300
W188949	6.5	38.3	46.2	9.0	5.5	67.8	1.2	14.1	2.4	6,730	12,120
	---	41.0	49.4	9.6	5.1	72.5	1.3	8.9	2.6	7,200	12,960
	---	45.3	54.7	---	5.7	80.2	1.4	9.8	2.8	7,970	14,340
W192628	12.1	32.2	40.7	15.0	5.5	57.9	1.2	19.4	1.0	5,720	10,300
	---	36.6	46.3	17.1	4.7	65.9	1.4	9.8	1.1	6,510	11,720
	---	44.2	55.8	---	5.7	79.4	1.6	11.9	1.4	7,850	14,130
W192629	11.1	34.6	50.6	3.7	5.8	69.3	1.4	19.0	.9	6,810	12,260
	---	38.9	56.9	4.2	5.1	78.0	1.6	10.3	1.0	7,660	13,790
	---	40.6	59.4	---	5.4	81.3	1.6	10.7	1.1	7,990	14,390
D172306	5.7	35.7	50.2	8.4	5.2	70.2	1.3	12.8	2.1	6,900	12,420
	---	37.9	53.2	8.9	4.8	74.4	1.4	8.2	2.2	7,320	13,170
	---	41.6	58.4	---	5.3	81.7	1.5	9.0	2.4	8,030	14,460
W190534	15.6	27.1	48.7	8.6	5.5	59.6	.9	23.7	1.7	5,810	10,450
	---	32.1	57.7	10.2	4.5	70.6	1.1	11.7	2.0	6,880	12,380
	---	35.8	64.2	---	5.0	78.6	1.2	13.0	2.2	7,660	13,790
W190535	13.6	28.0	50.0	8.4	5.6	60.5	.9	22.1	2.5	5,920	10,650
	---	32.4	57.9	9.7	4.7	70.0	1.0	11.6	2.9	6,850	12,330
	---	35.9	64.1	---	5.2	77.6	1.2	12.8	3.2	7,590	13,650
W190538	21.4	27.0	43.8	7.8	5.6	54.0	.9	31.3	.4	5,010	9,020
	---	34.4	55.7	9.9	4.1	68.7	1.1	15.6	.5	6,380	11,480
	---	38.1	61.9	---	4.6	76.3	1.3	17.3	.6	7,080	12,740

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W188947	0.0	0.21	1.22	0.95	4.0	1,115	1,145	1,170
	---	.24	1.39	1.09				
	---	.26	1.52	1.18				
W191042	.0	.42	1.79	.26	1.0	1,080	1,140	1,170
	---	.47	1.98	.29				
	---	.52	2.21	.32				
W191051	.0	.75	1.46	.62	1.0	1,030	1,180	1,250
	---	.83	1.61	.68				
	---	.93	1.81	.77				
D172303	2.8	.07	1.82	1.33	.0	0	0	0
	---	.07	1.94	1.42				
	---	.08	2.18	1.59				
W188948	.0	.15	1.19	1.73	4.0	1,115	1,165	1,290
	---	.17	1.34	1.95				
	---	.19	1.48	2.15				
W188949	.0	.17	.57	1.62	3.5	1,195	1,220	1,250
	---	.18	.61	1.73				
	---	.20	.67	1.92				
W192628	.0	.02	.21	.81	1.0	1,540	1,540	1,540
	---	.02	.24	.92				
	---	.03	.29	1.11				
W192629	8.2	.20	.13	.52	1.0	1,100	1,145	1,195
	---	.22	.15	.58				
	---	.23	.15	.61				
D172306	2.3	.01	1.30	.76	.0	0	0	0
	---	.01	1.38	.81				
	---	.01	1.51	.88				
W190534	.0	.02	.42	1.30	.0	1,430	1,470	1,495
	---	.02	.50	1.54				
	---	.03	.55	1.72				
W190535	.0	.71	.85	.90	.0	1,430	1,505	1,540
	---	.82	.98	1.04				
	---	.91	1.09	1.15				
W190538	.0	.04	.06	.35	.0	1,540	1,600	1,600
	---	.05	.08	.45				
	---	.06	.08	.49				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	ULTIMATE ANALYSIS HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	HEAT CONTENT KCAL/KG	BTU/LB
W190539	15.3	29.4	46.5	8.8	5.6	61.4	1.1	22.3	0.8	5,970	10,740
	---	34.7	54.9	10.4	4.6	72.5	1.3	10.3	.9	7,040	12,680
	---	38.7	61.3	---	5.1	80.9	1.4	11.5	1.1	7,860	14,150
W190540	14.4	29.3	48.8	7.5	5.9	62.9	.9	22.2	.6	6,160	11,080
	---	34.2	57.0	8.8	5.0	73.5	1.1	11.0	.7	7,190	12,940
	---	37.5	62.5	---	5.5	80.5	1.2	12.0	.8	7,880	14,190
W190541	14.5	28.5	44.8	12.2	5.8	58.5	.9	21.5	1.1	5,740	10,340
	---	33.3	52.4	14.3	4.9	68.4	1.1	10.1	1.3	6,720	12,090
	---	38.9	61.1	---	5.7	79.8	1.2	11.7	1.5	7,840	14,110
W193119	13.9	28.7	49.1	8.3	5.6	63.3	1.2	20.0	1.7	6,220	11,200
	---	33.3	57.0	9.6	4.7	73.5	1.4	8.9	2.0	7,230	13,010
	---	36.9	63.1	---	5.2	81.4	1.5	9.8	2.2	8,000	14,390
W194390	4.2	37.4	52.0	6.4	5.4	73.0	1.4	11.8	2.0	7,230	13,010
	---	39.0	54.3	6.7	5.1	76.2	1.5	8.4	2.1	7,540	13,580
	---	41.8	58.2	---	5.5	81.7	1.6	9.0	2.2	8,080	14,550
W188938	14.1	34.7	44.4	6.8	6.1	63.7	1.2	20.3	1.9	6,270	11,280
	---	40.4	51.7	7.9	5.3	74.2	1.4	9.0	2.2	7,300	13,130
	---	43.9	56.1	---	5.7	80.5	1.5	9.8	2.4	7,920	14,260
W188939	14.6	34.1	44.5	6.8	6.0	62.8	1.2	21.4	1.8	6,280	11,300
	---	39.9	52.1	8.0	5.1	73.5	1.4	9.9	2.1	7,350	13,230
	---	43.4	56.6	---	5.6	79.9	1.5	10.7	2.3	7,990	14,380
W192616	8.1	36.1	46.7	9.1	5.4	63.5	1.2	15.3	5.5	6,450	11,610
	---	39.3	50.8	9.9	4.9	69.1	1.3	8.8	6.0	7,020	12,630
	---	43.6	56.4	---	5.4	76.7	1.4	9.8	6.6	7,790	14,020
W192617	9.7	38.4	46.8	5.1	5.8	67.0	1.3	17.8	2.9	6,730	12,120
	---	42.5	51.8	5.6	5.2	74.2	1.4	10.2	3.2	7,460	13,420
	---	45.1	54.9	---	5.5	78.6	1.5	10.8	3.4	7,900	14,230
W192618	9.5	36.3	45.5	8.7	5.6	63.3	1.2	15.9	5.3	6,410	11,540
	---	40.1	50.3	9.6	5.0	69.9	1.3	8.2	5.9	7,080	12,750
	---	44.4	55.6	---	5.6	77.4	1.5	9.1	6.5	7,840	14,110
W192619	11.7	36.1	46.2	6.0	5.7	64.4	1.3	19.2	3.4	6,440	11,600
	---	40.9	52.3	6.8	5.0	72.9	1.5	10.0	3.9	7,300	13,130
	---	43.9	56.1	---	5.3	78.3	1.6	10.7	4.1	7,830	14,090
D173480	9.7	40.8	42.0	7.5	5.7	66.7	1.3	15.6	3.2	6,640	11,950
	---	45.2	46.5	8.3	5.1	73.9	1.4	7.7	3.5	7,350	13,230
	---	49.3	50.7	---	5.6	80.6	1.6	8.4	3.9	8,020	14,430

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W190539	0.0	0.02	0.08	0.70	1.0	1,540	1,600	1,600
	---	.02	.09	.83				
	---	.03	.11	.92				
W190540	.0	.02	.13	.42	1.0	1,525	1,540	1,600
	---	.02	.15	.49				
	---	.03	.17	.54				
W190541	.0	.03	.41	.65	1.0	1,540	1,600	1,600
	---	.04	.48	.76				
	---	.04	.56	.89				
W193119	10.6	.22	.98	.46	1.0	1,180	1,230	1,295
	---	.26	1.14	.53				
	---	.28	1.26	.59				
W194390	1.5	.01	1.37	.58	1.5	1,180	1,235	1,295
	---	.01	1.43	.61				
	---	.01	1.53	.65				
W188938	.0	.39	.74	.76	1.0	1,180	1,230	1,265
	---	.45	.86	.88				
	---	.49	.94	.96				
W188939	.0	.31	.69	.80	1.0	1,275	1,305	1,330
	---	.36	.81	.94				
	---	.39	.88	1.02				
W192616	5.1	.60	3.90	.90	1.0	1,320	1,375	1,400
	---	.65	4.24	.98				
	---	.72	4.71	1.09				
W192617	6.3	.40	1.80	.70	.0	1,120	1,155	1,190
	---	.44	1.99	.78				
	---	.47	2.11	.82				
W192618	6.4	.60	4.20	.40	1.5	1,375	1,435	1,460
	---	.66	4.64	.44				
	---	.73	5.13	.49				
W192619	8.4	.60	1.90	.90	1.0	1,105	1,150	1,180
	---	.68	2.15	1.02				
	---	.73	2.31	1.09				
D173480	4.4	.02	1.45	1.71	.0	0	0	0
	---	.02	1.61	1.89				
	---	.02	1.75	2.07				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

	PROXIMATE ANALYSIS				ULTIMATE ANALYSIS					HEAT CONTENT	
NUMBER	VOLATILE MOISTURE	FIXED MATTER	CARBON	ASH	HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	KCAL/KG	BTU/LB
D173481	10.0	40.7	42.5	6.8	5.8	66.6	1.3	16.8	2.7	6,650	11,970
	---	45.2	47.2	7.6	5.2	74.0	1.4	8.8	3.0	7,390	13,300
	---	48.9	51.1	---	5.6	80.0	1.6	9.5	3.2	7,990	14,390
D173483	9.5	39.1	42.9	8.5	5.6	64.6	1.2	14.8	5.3	6,530	11,760
	---	43.2	47.4	9.4	5.0	71.4	1.3	7.0	5.9	7,220	12,990
	---	47.7	52.3	---	5.5	78.8	1.5	7.8	6.5	7,970	14,340
D173484	7.5	41.2	40.8	10.5	5.5	64.2	1.1	12.9	5.8	6,510	11,720
	---	44.5	44.1	11.4	5.0	69.4	1.2	6.7	6.3	7,040	12,670
	---	50.2	49.8	---	5.7	78.3	1.3	7.6	7.1	7,940	14,290
D173485	8.2	41.4	38.7	11.7	5.4	64.0	1.1	13.6	4.2	6,350	11,430
	---	45.1	42.2	12.7	4.9	69.7	1.2	6.9	4.6	6,920	12,450
	---	51.7	48.3	---	5.6	79.9	1.4	7.9	5.2	7,930	14,270
D173486	8.2	41.4	38.7	11.7	5.4	64.0	1.1	13.6	4.2	6,350	11,430
	---	45.1	42.2	12.7	4.9	69.7	1.2	6.9	4.6	6,920	12,450
	---	51.7	48.3	---	5.6	79.9	1.4	7.9	5.2	7,930	14,270
W188932	8.4	33.0	45.6	13.0	5.4	62.9	1.4	15.9	1.4	6,160	11,090
	---	36.0	49.8	14.2	4.9	68.7	1.5	9.2	1.5	6,730	12,110
	---	42.0	58.0	---	5.7	80.0	1.8	10.7	1.8	7,840	14,110
W188933	8.1	32.5	47.2	12.2	5.3	63.4	.5	17.4	1.2	6,350	11,430
	---	35.4	51.4	13.3	4.8	69.0	.5	11.1	1.3	6,910	12,440
	---	40.8	59.2	---	5.5	79.5	.6	12.8	1.5	7,970	14,340
W190528	6.3	39.4	45.7	8.6	5.7	65.4	1.1	15.0	4.2	6,610	11,890
	---	42.0	48.8	9.2	5.3	69.8	1.2	10.0	4.5	7,050	12,690
	---	46.3	53.7	---	5.9	76.9	1.3	11.0	4.9	7,760	13,970
W190529	6.4	35.9	46.6	11.1	5.3	63.2	.9	14.1	5.4	6,370	11,470
	---	38.4	49.8	11.9	4.9	67.5	1.0	9.0	5.8	6,810	12,250
	---	43.5	56.5	---	5.6	76.6	1.1	10.2	6.5	7,720	13,900
W190532	7.6	35.4	49.0	8.0	5.8	65.9	1.0	15.9	3.4	6,580	11,840
	---	38.3	53.0	8.7	5.4	71.3	1.1	9.9	3.7	7,120	12,810
	---	41.9	58.1	---	5.9	78.1	1.2	10.8	4.0	7,790	14,030
W190533	15.3	22.8	57.7	4.2	5.5	65.8	1.1	22.9	.5	6,440	11,590
	---	26.9	68.1	5.0	4.5	77.7	1.3	11.0	.6	7,600	13,680
	---	28.3	71.7	---	4.7	81.7	1.4	11.6	.6	8,000	14,400
W190929	6.7	32.8	52.7	7.8	5.7	66.4	1.4	16.0	2.7	6,630	11,940
	---	35.2	56.5	8.4	5.3	71.2	1.5	10.8	2.9	7,110	12,790
	---	38.4	61.6	---	5.8	77.7	1.6	11.7	3.2	7,760	13,960

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
D173481	5.1	0.01	0.81	1.92	0.0	0	0	0
	---	.01	.90	2.13				
	---	.01	.97	2.31				
D173483	5.0	.03	3.20	2.07	.0	0	0	0
	---	.03	3.54	2.29				
	---	.04	3.90	2.52				
D173484	4.0	.01	3.41	2.40	.0	0	0	0
	---	.01	3.69	2.59				
	---	.01	4.16	2.93				
D173485	4.4	.05	2.07	2.06	.0	0	0	0
	---	.05	2.25	2.24				
	---	.06	2.58	2.57				
D173486	4.4	.05	2.07	2.06	.0	0	0	0
	---	.05	2.25	2.24				
	---	.06	2.58	2.57				
W188932	.0	.27	.34	.81	1.5	1,255	1,280	1,340
	---	.29	.37	.88				
	---	.34	.43	1.03				
W188933	.0	.46	.46	.28	1.0	1,385	1,440	1,490
	---	.50	.50	.30				
	---	.58	.58	.35				
W190528	.0	.48	1.38	2.31	4.0	1,045	1,075	1,100
	---	.51	1.47	2.47				
	---	.56	1.62	2.71				
W190529	.0	.75	2.99	1.70	3.0	1,100	1,175	1,210
	---	.80	3.19	1.82				
	---	.91	3.62	2.06				
W190532	.0	.52	1.42	1.46	1.5	1,050	1,120	1,155
	---	.56	1.54	1.58				
	---	.62	1.68	1.73				
W190533	.0	.01	.06	.42	1.5	1,540	1,600	1,600
	---	.01	.07	.50				
	---	.01	.07	.52				
W190929	2.5	.75	.79	1.18	1.0	1,120	1,180	1,240
	---	.80	.85	1.26				
	---	.88	.92	1.38				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	ULTIMATE ANALYSIS HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	HEAT CONTENT KCAL/KG	BTU/LB
W190930	7.6	35.9	48.5	8.0	5.6	65.3	1.4	16.1	3.6	6,510	11,720
	---	38.9	52.5	8.7	5.1	70.7	1.5	10.1	3.9	7,040	12,680
	---	42.5	57.5	---	5.6	77.4	1.7	11.1	4.3	7,710	13,880
W190931	10.0	29.9	53.2	6.9	5.5	64.4	1.4	19.3	2.5	6,350	11,420
	---	33.2	59.1	7.7	4.9	71.6	1.6	11.6	2.8	7,050	12,690
	---	36.0	64.0	---	5.3	77.5	1.7	12.5	3.0	7,640	13,740
W191055	9.2	34.3	48.4	8.1	5.6	64.2	1.4	17.7	3.0	6,360	11,440
	---	37.8	53.3	8.9	5.0	70.7	1.5	10.5	3.3	7,000	12,600
	---	41.5	58.5	---	5.5	77.6	1.7	11.5	3.6	7,690	13,830
W191056	9.0	36.0	48.9	6.1	5.8	67.5	1.0	18.2	1.4	6,650	11,970
	---	39.6	53.7	6.7	5.3	74.2	1.1	11.2	1.5	7,310	13,150
	---	42.4	57.6	---	5.7	79.5	1.2	12.0	1.6	7,830	14,100
W192630	8.0	40.7	43.1	8.2	5.7	65.5	1.5	15.5	3.6	6,640	11,960
	---	44.2	46.8	8.9	5.2	71.2	1.6	9.1	3.9	7,220	13,000
	---	48.6	51.4	---	5.7	78.2	1.8	10.0	4.3	7,930	14,270
W192631	9.4	39.2	42.7	8.7	5.6	63.5	1.4	16.6	4.2	6,440	11,590
	---	43.3	47.1	9.6	5.0	70.1	1.5	9.1	4.6	7,110	12,790
	---	47.9	52.1	---	5.6	77.5	1.7	10.1	5.1	7,860	14,150
W188934	12.7	35.8	48.7	2.8	5.7	63.3	.8	25.8	1.6	6,330	11,390
	---	41.0	55.8	3.2	4.9	72.5	.9	16.6	1.8	7,250	13,050
	---	42.4	57.6	---	5.1	74.9	.9	17.2	1.9	7,490	13,480
W188935	7.0	40.1	48.6	4.3	5.9	68.5	1.3	16.7	3.3	6,840	12,320
	---	43.1	52.3	4.6	5.5	73.7	1.4	11.3	3.5	7,360	13,250
	---	45.2	54.8	---	5.8	77.2	1.5	11.8	3.7	7,720	13,890
W188936	5.7	38.3	48.2	7.8	5.4	64.6	.9	15.5	5.8	6,660	11,980
	---	40.6	51.1	8.3	5.1	68.5	1.0	11.1	6.2	7,060	12,700
	---	44.3	55.7	---	5.5	74.7	1.0	12.1	6.7	7,690	13,850
W188937	5.3	42.1	45.1	7.5	5.7	68.4	1.3	13.5	3.6	6,830	12,290
	---	44.5	47.6	7.9	5.4	72.2	1.4	9.3	3.8	7,210	12,980
	---	48.3	51.7	---	5.9	78.4	1.5	10.1	4.1	7,830	14,090
W191048	9.8	32.8	50.8	6.6	5.5	63.9	1.4	18.7	3.9	6,370	11,470
	---	36.4	56.3	7.3	4.9	70.8	1.6	11.1	4.3	7,060	12,720
	---	39.2	60.8	---	5.3	76.4	1.7	11.9	4.7	7,620	13,720
W191050	10.7	31.7	51.4	6.2	5.7	64.6	1.0	18.5	4.0	6,430	11,570
	---	35.5	57.6	6.9	5.1	72.3	1.1	10.1	4.5	7,200	12,960
	---	38.1	61.9	---	5.4	77.7	1.2	10.8	4.8	7,730	13,920

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W190930	2.7	1.04	1.27	1.27	1.0	1,095	1,155	1,215
	---	1.13	1.37	1.37				
	---	1.23	1.50	1.50				
W190931	6.3	.93	.49	1.06	1.0	1,150	1,215	1,270
	---	1.03	.54	1.18				
	---	1.12	.59	1.28				
W191055	.0	.20	2.26	.54	1.0	1,050	1,125	1,200
	---	.22	2.49	.59				
	---	.24	2.73	.65				
W191056	.0	.25	.28	.89	1.0	1,360	1,415	1,445
	---	.27	.31	.98				
	---	.29	.33	1.05				
W192630	.0	.32	1.79	1.59	4.0	1,045	1,100	1,150
	---	.35	1.95	1.73				
	---	.38	2.14	1.90				
W192631	.0	.02	2.27	1.92	1.0	1,030	1,090	1,140
	---	.02	2.51	2.12				
	---	.02	2.77	2.34				
W188934	.0	.11	.15	1.30	.0	1,035	1,070	1,095
	---	.13	.17	1.49				
	---	.13	.18	1.54				
W188935	.0	.49	1.05	1.79	1.5	1,070	1,080	1,095
	---	.53	1.13	1.92				
	---	.55	1.18	2.02				
W188936	.0	.87	3.13	1.80	1.0	1,100	1,135	1,150
	---	.92	3.32	1.91				
	---	1.01	3.62	2.08				
W188937	.0	.38	1.22	1.98	1.5	1,140	1,180	1,365
	---	.40	1.29	2.09				
	---	.44	1.40	2.27				
W191048	.0	.08	2.36	1.45	1.0	1,090	1,145	1,170
	---	.09	2.62	1.61				
	---	.10	2.82	1.73				
W191050	.0	.72	2.46	.86	1.0	1,095	1,150	1,195
	---	.81	2.75	.96				
	---	.87	2.96	1.03				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS				ULTIMATE ANALYSIS					HEAT CONTENT	
	MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	KCAL/KG	BTU/LB
W191047	12.8	32.3	50.2	4.7	5.8	66.2	1.4	20.2	1.7	6,510	11,710
	---	37.0	57.6	5.4	5.0	75.9	1.6	10.1	1.9	7,460	13,430
	---	39.2	60.8	---	5.3	80.2	1.7	10.7	2.1	7,890	14,190
W191038	11.0	33.2	51.4	4.4	5.9	67.6	1.6	19.1	1.4	6,640	11,960
	---	37.3	57.8	4.9	5.3	76.0	1.8	10.5	1.6	7,470	13,440
	---	39.2	60.8	---	5.5	79.9	1.9	11.0	1.7	7,850	14,140
W191035	8.8	32.3	48.9	10.0	5.5	63.6	1.3	17.4	2.2	6,330	11,390
	---	35.4	53.6	11.0	5.0	69.7	1.4	10.5	2.4	6,940	12,490
	---	39.8	60.2	---	5.6	78.3	1.6	11.8	2.7	7,790	14,030
W191036	8.4	32.4	46.5	12.7	5.3	62.0	1.2	16.6	2.2	6,110	10,990
	---	35.4	50.8	13.9	4.8	67.7	1.3	10.0	2.4	6,670	12,000
	---	41.1	58.9	---	5.5	78.6	1.5	11.6	2.8	7,740	13,930
W191037	15.9	30.2	47.3	6.6	5.7	60.0	1.2	25.8	.7	5,760	10,360
	---	35.9	56.2	7.8	4.7	71.3	1.4	13.9	.8	6,840	12,320
	---	39.0	61.0	---	5.1	77.4	1.5	15.1	.9	7,430	13,370
W191034	10.1	32.6	47.8	8.8	5.5	63.3	1.3	18.5	2.6	6,290	11,330
	---	36.3	53.2	9.8	4.9	70.4	1.4	10.6	2.9	7,000	12,600
	---	40.2	58.9	---	5.4	78.1	1.6	11.7	3.2	7,760	13,970
W191062	8.5	37.3	47.5	6.7	5.7	65.0	1.0	17.8	3.8	6,580	11,850
	---	40.8	51.9	7.3	5.2	71.0	1.1	11.2	4.2	7,190	12,950
	---	44.0	56.0	---	5.6	76.7	1.2	12.1	4.5	7,760	13,970
W191041	7.8	35.9	49.4	6.9	5.6	65.2	1.3	16.8	4.2	6,580	11,840
	---	38.9	53.6	7.5	5.1	70.7	1.4	10.7	4.6	7,130	12,840
	---	42.1	57.9	---	5.5	76.4	1.5	11.6	4.9	7,710	13,880
W194391	3.8	37.6	49.2	9.4	5.1	69.1	1.4	11.9	3.2	6,900	12,430
	---	39.1	51.1	9.8	4.9	71.8	1.5	8.9	3.3	7,180	12,920
	---	43.3	56.7	---	5.4	79.6	1.6	9.8	3.7	7,950	14,320
W194392	3.8	38.8	49.7	7.7	5.2	71.1	1.4	11.8	2.7	7,080	12,740
	---	40.3	51.7	8.0	5.0	73.9	1.5	8.8	2.8	7,360	13,240
	---	43.8	56.2	---	5.4	80.3	1.6	9.5	3.1	8,000	14,390
D172304	7.5	35.6	41.5	15.4	5.2	61.1	1.2	13.6	3.5	6,130	11,030
	---	38.5	44.9	16.6	4.7	66.1	1.3	7.5	3.8	6,620	11,920
	---	46.2	53.8	---	5.7	79.2	1.6	9.0	4.5	7,950	14,310
D172307	5.0	39.2	43.7	12.1	5.1	65.1	1.2	12.0	4.5	6,590	11,860
	---	41.3	46.0	12.7	4.8	68.5	1.3	8.0	4.7	6,940	12,480
	---	47.3	52.7	---	5.5	78.5	1.4	9.1	5.4	7,950	14,310

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W191047	0.0	0.10	0.76	0.86	1.3	1,120	1,155	1,195
	---	.11	.87	.99				
	---	.12	.92	1.04				
W191038	.0	.43	1.16	.15	1.0	1,130	1,220	1,315
	---	.48	1.30	.17				
	---	.51	1.37	.18				
W191035	.0	.04	1.14	1.04	1.0	1,115	1,255	1,325
	---	.04	1.25	1.14				
	---	.05	1.40	1.28				
W191036	.0	.03	1.26	.95	1.0	1,125	1,250	1,290
	---	.03	1.38	1.04				
	---	.04	1.60	1.20				
W191037	.0	.02	.11	.57	.0	1,175	1,240	1,305
	---	.02	.13	.68				
	---	.03	.14	.74				
W191034	.0	.67	1.56	.56	1.0	1,120	1,155	1,195
	---	.75	1.74	.62				
	---	.83	1.92	.69				
W191062	.0	.77	1.55	1.52	1.0	1,040	1,090	1,165
	---	.84	1.69	1.66				
	---	.91	1.83	1.79				
W191041	.0	.49	2.39	1.36	1.0	1,065	1,120	1,140
	---	.53	2.59	1.48				
	---	.57	2.80	1.59				
W194391	.9	.01	2.30	.88	3.5	1,125	1,175	1,235
	---	.01	2.39	.91				
	---	.01	2.65	1.01				
W194392	.9	.02	1.21	1.46	4.0	1,125	1,185	1,245
	---	.02	1.26	1.52				
	---	.02	1.37	1.65				
D172304	3.2	.15	2.01	1.34	.0	0	0	0
	---	.16	2.17	1.45				
	---	.19	2.61	1.74				
D172307	2.3	.03	2.70	1.76	.0	0	0	0
	---	.03	2.84	1.85				
	---	.04	3.26	2.12				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	ULTIMATE ANALYSIS HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	HEAT CONTENT KCAL/KG	BTU/LB
D172308	6.3	38.4	44.5	10.8	5.3	66.2	1.3	13.9	2.5	6,630	11,930
	---	41.0	47.5	11.5	4.9	70.7	1.4	8.9	2.7	7,070	12,730
	---	46.3	53.7	---	5.5	79.9	1.6	10.0	3.0	7,990	14,390
D172309	8.8	33.1	49.8	8.3	5.4	68.1	1.5	16.3	.4	6,660	11,990
	---	36.3	54.6	9.1	4.8	74.7	1.6	9.3	.4	7,300	13,150
	---	39.9	60.1	---	5.3	82.1	1.8	10.2	.5	8,040	14,460
W191046	11.5	32.9	44.8	10.8	5.7	61.9	1.3	18.7	1.6	6,120	11,010
	---	37.2	50.6	12.2	5.0	69.9	1.5	9.6	1.8	6,910	12,440
	---	42.3	57.7	---	5.7	79.7	1.7	10.9	2.1	7,870	14,170
W191049	12.7	31.3	46.9	9.1	6.1	62.2	1.0	20.2	1.4	6,190	11,140
	---	35.9	53.7	10.4	5.4	71.2	1.1	10.2	1.6	7,090	12,760
	---	40.0	60.0	---	6.0	79.5	1.3	11.4	1.8	7,910	14,250
W192635	13.8	31.2	46.1	8.9	5.6	60.2	1.3	20.7	3.3	5,970	10,750
	---	36.2	53.5	10.3	4.7	69.8	1.5	9.8	3.8	6,930	12,470
	---	40.4	59.6	---	5.3	77.9	1.7	10.9	4.3	7,730	13,910
W192636	15.6	30.5	44.8	9.1	5.8	59.4	1.2	21.6	2.9	5,910	10,630
	---	36.1	53.1	10.8	4.8	70.4	1.4	9.2	3.4	7,000	12,590
	---	40.5	59.5	---	5.4	78.9	1.6	10.3	3.9	7,840	14,120
W193120	15.0	28.4	49.5	7.1	5.8	63.7	1.4	21.5	.3	6,230	11,220
	---	33.4	58.2	8.4	4.9	74.9	1.6	9.6	.4	7,330	13,200
	---	36.5	63.5	---	5.3	81.8	1.8	10.5	.4	8,000	14,400
W194388	4.6	42.8	44.0	8.6	5.1	68.6	1.2	13.3	3.2	6,920	12,460
	---	44.9	46.1	9.0	4.8	71.9	1.3	9.7	3.4	7,250	13,060
	---	49.3	50.7	---	5.3	79.0	1.4	10.6	3.7	7,970	14,350
W194389	5.7	39.9	45.5	8.9	5.6	67.7	1.2	12.9	3.7	6,820	12,280
	---	42.3	48.3	9.4	5.3	71.8	1.3	8.3	3.9	7,230	13,020
	---	46.7	53.3	---	5.8	79.3	1.4	9.2	4.3	7,990	14,370
W188952	10.8	32.1	37.1	20.0	5.2	54.0	.8	17.1	2.9	5,340	9,610
	---	36.0	41.6	22.4	4.5	60.5	.9	8.4	3.3	5,990	10,770
	---	46.4	53.6	---	5.8	78.0	1.2	10.8	4.2	7,720	13,890
W188953	11.7	35.1	40.6	12.6	5.5	59.7	1.1	19.5	1.6	5,990	10,780
	---	39.8	46.0	14.3	4.8	67.6	1.2	10.3	1.8	6,780	12,210
	---	46.4	53.6	---	5.5	78.9	1.5	12.0	2.1	7,910	14,240
W191043	9.2	36.6	43.7	10.5	5.7	60.8	1.2	17.4	4.4	6,130	11,040
	---	40.3	48.1	11.6	5.2	67.0	1.3	10.2	4.8	6,750	12,160
	---	45.6	54.4	---	5.8	75.7	1.5	11.5	5.5	7,640	13,750

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
D172308	2.4	0.02	1.44	1.04	0.0	0	0	0
	---	.02	1.54	1.11				
	---	.02	1.74	1.25				
D172309	3.6	.01	.13	.22	.0	0	0	0
	---	.01	.14	.24				
	---	.01	.16	.27				
W191046	.0	.02	.85	.71	1.0	1,195	1,305	1,340
	---	.02	.96	.80				
	---	.03	1.09	.91				
W191049	.0	.13	.83	.45	1.0	1,175	1,315	1,370
	---	.15	.95	.52				
	---	.17	1.06	.58				
W192635	9.9	.64	1.77	.89	1.0	1,120	1,165	1,225
	---	.74	2.05	1.03				
	---	.83	2.29	1.15				
W192636	.0	.02	1.48	1.36	1.0	1,065	1,110	1,145
	---	.02	1.75	1.61				
	---	.03	1.97	1.81				
W193120	9.2	.01	.09	.23	1.0	1,505	1,540	1,540
	---	.01	.11	.27				
	---	.01	.12	.30				
W194388	.9	.01	1.40	1.83	5.0	1,340	1,400	1,455
	---	.01	1.47	1.92				
	---	.01	1.61	2.11				
W194389	1.7	.01	1.58	2.11	4.0	1,170	1,230	1,290
	---	.01	1.68	2.24				
	---	.01	1.85	2.47				
W188952	.0	.40	.67	1.80	1.5	1,145	1,170	1,205
	---	.45	.75	2.02				
	---	.58	.97	2.60				
W188953	.0	.06	.52	1.01	3.5	1,290	1,320	1,445
	---	.07	.59	1.14				
	---	.08	.69	1.33				
W191043	.0	.98	2.74	.71	1.0	1,045	1,085	1,120
	---	1.08	3.02	.78				
	---	1.22	3.41	.88				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	ULTIMATE ANALYSIS HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	HEAT CONTENT KCAL/KG	BTU/LB
W191059	11.0	32.1	43.6	13.3	5.3	56.8	0.8	19.0	4.8	5,720	10,290
	---	36.1	49.0	14.9	4.6	63.8	.9	10.4	5.4	6,420	11,560
	---	42.4	57.6	---	5.4	75.0	1.1	12.2	6.3	7,550	13,590
W191054	11.6	31.9	45.0	11.5	5.4	59.7	.9	19.3	3.2	5,920	10,660
	---	36.1	50.9	13.0	4.7	67.5	1.0	10.2	3.6	6,700	12,060
	---	41.5	58.5	---	5.3	77.6	1.2	11.7	4.2	7,700	13,860
W193121	10.0	35.2	44.5	10.3	5.6	60.2	1.2	17.6	5.1	6,150	11,070
	---	39.1	49.4	11.4	5.0	66.9	1.3	9.7	5.7	6,830	12,300
	---	44.2	55.8	---	5.6	75.5	1.5	10.9	6.4	7,710	13,880
W188944	12.3	37.3	43.3	7.1	6.1	64.3	1.2	18.6	2.7	6,400	11,520
	---	42.5	49.4	8.1	5.4	73.3	1.4	8.7	3.1	7,300	13,140
	---	46.3	53.7	---	5.9	79.8	1.5	9.5	3.3	7,940	14,290
W188945	6.5	38.5	48.7	6.3	5.6	68.6	1.2	15.5	2.8	6,850	12,330
	---	41.2	52.1	6.7	5.2	73.4	1.3	10.4	3.0	7,330	13,190
	---	44.2	55.8	---	5.6	78.7	1.4	11.1	3.2	7,860	14,140
W188950	10.3	36.1	40.7	12.9	5.5	59.5	1.1	17.2	3.8	6,020	10,840
	---	40.2	45.4	14.4	4.9	66.3	1.2	9.0	4.2	6,710	12,080
	---	47.0	53.0	---	5.7	77.5	1.4	10.5	4.9	7,840	14,110
W188951	11.5	32.0	35.0	21.5	5.1	52.9	.9	16.3	3.3	5,190	9,350
	---	36.2	39.5	24.3	4.3	59.8	1.0	6.9	3.7	5,870	10,560
	---	47.8	52.2	---	5.7	79.0	1.3	9.1	4.9	7,750	13,960
D173482	10.8	38.0	43.9	7.3	5.8	65.1	1.3	17.6	2.9	6,500	11,700
	---	42.6	49.2	8.2	5.2	73.0	1.5	9.0	3.3	7,290	13,120
	---	46.4	53.6	---	5.6	79.5	1.6	9.8	3.5	7,940	14,290
D173487	11.3	35.2	42.2	11.3	5.5	61.6	1.2	17.0	3.4	6,130	11,030
	---	39.7	47.6	12.7	4.8	69.4	1.4	7.8	3.8	6,910	12,440
	---	45.5	54.5	---	5.5	79.6	1.6	9.0	4.4	7,920	14,250
W188930	9.5	33.1	51.0	6.4	5.6	67.6	1.4	17.6	1.4	6,560	11,800
	---	36.6	56.4	7.1	5.0	74.7	1.5	10.1	1.5	7,240	13,040
	---	39.4	60.6	---	5.4	80.4	1.7	10.9	1.7	7,790	14,030
W188931	7.4	32.0	52.3	8.3	5.3	66.0	1.0	17.2	2.2	6,450	11,610
	---	34.6	56.5	9.0	4.8	71.3	1.1	11.5	2.4	6,970	12,540
	---	38.0	62.0	---	5.3	78.3	1.2	12.6	2.6	7,650	13,770
W190530	9.8	32.5	48.6	9.1	5.5	61.4	.9	18.8	4.3	6,130	11,030
	---	36.0	53.9	10.1	4.9	68.1	1.0	11.2	4.8	6,790	12,230
	---	40.1	59.9	---	5.4	75.7	1.1	12.4	5.3	7,560	13,600

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W191059	0.0	1.08	2.60	1.09	1.0	1,040	1,090	1,105
	---	1.21	2.92	1.22				
	---	1.43	3.43	1.44				
W191054	.0	.63	1.66	.93	1.0	1,090	1,130	1,165
	---	.71	1.88	1.05				
	---	.82	2.16	1.21				
W193121	7.1	.79	2.42	1.89	1.0	1,070	1,125	1,165
	---	.88	2.69	2.10				
	---	.99	3.04	2.37				
W188944	.0	.49	.37	1.82	2.5	1,115	1,145	1,230
	---	.56	.42	2.08				
	---	.61	.46	2.26				
W188945	.0	.57	.34	1.87	1.5	1,110	1,140	1,165
	---	.61	.36	2.00				
	---	.65	.39	2.14				
W188950	.0	.42	2.09	1.27	2.5	1,115	1,165	1,280
	---	.47	2.33	1.42				
	---	.55	2.72	1.65				
W188951	.0	.49	1.78	1.03	1.5	1,105	1,130	1,160
	---	.55	2.01	1.16				
	---	.73	2.66	1.54				
D173482	5.0	.05	1.12	1.73	.0	0	0	0
	---	.06	1.26	1.94				
	---	.06	1.37	2.11				
D173487	6.1	.01	1.82	1.60	.0	0	0	0
	---	.01	2.05	1.80				
	---	.01	2.35	2.07				
W188930	.0	.13	.52	.76	1.5	1,155	1,170	1,190
	---	.14	.57	.84				
	---	.15	.62	.90				
W188931	.0	.30	.74	1.17	1.5	1,160	1,190	1,320
	---	.32	.80	1.26				
	---	.36	.88	1.39				
W190530	.0	1.28	1.49	1.50	1.0	1,075	1,140	1,180
	---	1.42	1.65	1.66				
	---	1.58	1.84	1.85				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS				ULTIMATE ANALYSIS					HEAT CONTENT	
	MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	KCAL/KG	BTU/LB
W190531	9.1	34.6	48.2	8.1	5.8	64.3	1.0	17.5	3.3	6,400	11,520
	---	38.1	53.0	8.9	5.3	70.7	1.1	10.4	3.6	7,040	12,670
	---	41.8	58.2	---	5.8	77.7	1.2	11.4	4.0	7,730	13,910
W190932	8.4	31.7	47.4	12.5	5.1	60.4	1.2	16.1	4.8	6,000	10,800
	---	34.6	51.7	13.6	4.5	65.9	1.3	9.4	5.2	6,550	11,790
	---	40.1	59.9	---	5.3	76.4	1.5	10.9	6.1	7,580	13,650
W190933	9.0	32.6	48.0	10.4	5.4	62.0	1.3	17.7	3.2	6,150	11,060
	---	35.8	52.7	11.4	4.8	68.1	1.4	10.7	3.5	6,750	12,160
	---	40.4	59.6	---	5.5	76.9	1.6	12.0	4.0	7,630	13,730
W191052	8.9	36.4	41.5	13.2	5.2	61.3	1.0	16.2	3.1	6,070	10,930
	---	40.0	45.6	14.5	4.6	67.3	1.1	9.1	3.4	6,670	12,000
	---	46.7	53.3	---	5.4	78.7	1.3	10.6	4.0	7,790	14,030
W191060	7.3	36.4	37.7	18.6	5.0	57.4	1.2	13.7	4.1	5,670	10,200
	---	39.3	40.7	20.1	4.5	61.9	1.3	7.8	4.4	6,110	11,000
	---	49.1	50.9	---	5.7	77.5	1.6	9.7	5.5	7,650	13,770
W191053	8.6	34.2	43.6	13.6	5.3	58.8	.9	16.3	5.1	5,940	10,700
	---	37.4	47.7	14.9	4.8	64.3	1.0	9.5	5.6	6,500	11,710
	---	44.0	56.0	---	5.6	75.6	1.2	11.1	6.6	7,640	13,750
W191061	8.8	35.8	46.3	9.1	5.6	63.5	1.0	17.7	3.1	6,370	11,460
	---	39.3	50.8	10.0	5.1	69.6	1.1	10.8	3.4	6,980	12,570
	---	43.6	56.4	---	5.6	77.3	1.2	12.0	3.8	7,750	13,960
W191057	8.0	37.5	45.6	8.9	5.4	63.8	.9	16.7	4.3	6,440	11,600
	---	40.8	49.6	9.7	4.9	69.3	1.0	10.4	4.7	7,000	12,610
	---	45.1	54.9	---	5.4	76.8	1.1	11.5	5.2	7,760	13,960
W191058	9.0	35.8	46.6	8.6	5.7	64.0	1.0	16.9	3.8	6,430	11,570
	---	39.3	51.2	9.5	5.2	70.3	1.1	9.8	4.2	7,060	12,710
	---	43.4	56.6	---	5.7	77.7	1.2	10.8	4.6	7,800	14,040
W191044	7.8	35.7	48.7	7.8	5.4	66.1	1.4	16.1	3.2	6,630	11,930
	---	38.7	52.8	8.5	4.9	71.7	1.5	9.9	3.5	7,190	12,940
	---	42.3	57.7	---	5.4	78.3	1.7	10.9	3.8	7,850	14,140
W191045	8.2	35.8	47.0	9.0	5.5	64.1	1.4	16.6	3.4	6,450	11,610
	---	39.0	51.2	9.8	5.0	69.8	1.5	10.1	3.7	7,030	12,650
	---	43.2	56.8	---	5.5	77.4	1.7	11.2	4.1	7,790	14,020
W191040	10.0	33.9	48.0	8.1	5.7	64.6	1.4	17.9	2.3	6,410	11,530
	---	37.7	53.3	9.0	5.1	71.8	1.6	10.0	2.6	7,120	12,810
	---	41.4	58.6	---	5.6	78.9	1.7	11.0	2.8	7,820	14,080

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W190531	0.0	0.66	1.08	1.56	1.0	1,115	1,175	1,240
	---	.73	1.19	1.72				
	---	.80	1.30	1.88				
W190932	3.0	.91	2.40	1.54	.0	1,040	1,090	1,145
	---	.99	2.62	1.68				
	---	1.15	3.03	1.95				
W190933	5.9	.69	.91	1.62	1.0	1,130	1,180	1,235
	---	.76	1.00	1.78				
	---	.86	1.13	2.01				
W191052	.0	.35	1.54	1.17	1.0	1,195	1,245	1,300
	---	.38	1.69	1.28				
	---	.45	1.98	1.50				
W191060	.0	.24	3.34	.52	1.0	1,145	1,190	1,240
	---	.26	3.60	.56				
	---	.32	4.51	.70				
W191053	.0	.62	3.14	1.35	1.0	1,040	1,070	1,090
	---	.68	3.44	1.48				
	---	.80	4.04	1.74				
W191061	.0	.44	1.07	1.61	1.0	1,055	1,100	1,155
	---	.48	1.17	1.77				
	---	.54	1.30	1.96				
W191057	.0	.53	1.90	1.91	1.0	1,020	1,055	1,085
	---	.58	2.07	2.08				
	---	.64	2.29	2.30				
W191058	.0	.44	1.34	1.97	2.0	1,035	1,080	1,105
	---	.48	1.47	2.16				
	---	.53	1.63	2.39				
W191044	.0	.02	1.18	2.00	3.5	1,055	1,105	1,140
	---	.02	1.28	2.17				
	---	.02	1.40	2.37				
W191045	.0	.22	1.23	1.90	2.0	1,100	1,155	1,180
	---	.24	1.34	2.07				
	---	.27	1.49	2.29				
W191040	.0	.30	.59	1.40	1.0	1,185	1,230	1,250
	---	.33	.66	1.56				
	---	.37	.72	1.71				

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	PROXIMATE ANALYSIS				ULTIMATE ANALYSIS					HEAT CONTENT	
	MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	HYDROGEN	CARBON	NITROGEN	OXYGEN	SULFUR	KCAL/KG	BTU/LB
W191039	8.7	32.9	46.8	11.6	5.3	60.7	1.4	16.5	4.5	6,090	10,960
	---	36.0	51.3	12.7	4.7	66.5	1.5	9.6	4.9	6,670	12,000
	---	41.3	58.7	---	5.4	76.2	1.8	11.0	5.6	7,640	13,750
W192614	9.6	34.8	44.6	11.0	5.4	61.6	1.4	16.6	4.0	6,160	11,080
	---	38.5	49.3	12.2	4.8	68.1	1.5	8.9	4.4	6,810	12,260
	---	43.8	56.2	---	5.5	77.6	1.8	10.2	5.0	7,750	13,960
W192615	9.7	34.5	44.0	11.8	5.4	60.6	1.4	17.1	3.7	6,040	10,870
	---	38.2	48.7	13.1	4.8	67.1	1.6	9.4	4.1	6,690	12,030
	---	43.9	56.1	---	5.5	77.2	1.8	10.8	4.7	7,690	13,840
W192624	10.0	34.8	44.7	10.5	5.5	61.2	1.4	17.2	4.2	6,120	11,010
	---	38.7	49.7	11.7	4.9	68.0	1.6	9.2	4.7	6,800	12,230
	---	43.8	56.2	---	5.5	77.0	1.8	10.5	5.3	7,690	13,850
W192625	10.6	32.4	42.4	14.6	5.1	56.9	1.3	17.5	4.7	5,700	10,270
	---	36.2	47.4	16.3	4.4	63.6	1.5	9.0	5.3	6,380	11,480
	---	43.3	56.7	---	5.2	76.1	1.7	10.8	6.3	7,620	13,720
W192626	9.4	37.0	45.1	8.5	5.5	64.0	1.4	17.2	3.3	6,370	11,460
	---	40.8	49.8	9.4	4.9	70.6	1.5	9.8	3.6	7,030	12,650
	---	45.1	54.9	---	5.4	78.0	1.7	10.8	4.0	7,760	13,960
W192627	9.3	36.0	43.4	11.3	5.4	61.6	1.3	16.9	3.4	6,120	11,020
	---	39.7	47.8	12.5	4.8	67.9	1.4	9.5	3.7	6,750	12,150
	---	45.3	54.7	---	5.5	77.6	1.6	10.9	4.3	7,710	13,880
W193124	14.6	28.8	50.9	5.7	5.7	64.4	1.6	21.6	.9	6,310	11,350
	---	33.7	59.6	6.7	4.8	75.4	1.9	10.1	1.1	7,380	13,290
	---	36.1	63.9	---	5.1	80.8	2.0	10.8	1.1	7,910	14,240
W193122	8.6	34.4	47.6	9.4	5.5	65.1	1.3	16.0	2.6	6,510	11,720
	---	37.6	52.1	10.3	5.0	71.2	1.4	9.1	2.8	7,130	12,830
	---	42.0	58.0	---	5.5	79.4	1.6	10.2	3.2	7,940	14,300
W193123	8.9	34.9	46.9	9.3	5.5	64.0	1.4	15.9	4.0	6,430	11,580
	---	38.3	51.5	10.2	5.0	70.3	1.5	8.8	4.4	7,060	12,710
	---	42.7	57.3	---	5.5	78.2	1.7	9.8	4.9	7,860	14,160

Table 6.--Proximate and ultimate anlyses, heat content, forms of sulfur, free-swelling index and ash-fusion temperature determinations for 184 bituminous coal samples from Indiana.--continued

SAMPLE NUMBER	AIR-DRIED LOSS	FORMS OF SULFUR			FREE SWELLING INDEX	ASH FUSION TEMPERATURE, C		
		SULFATE	PYRITIC	ORGANIC		INITIAL DEFORMATION	SOFTENING	FLUID
W191039	0.0	0.06	1.77	2.65	1.0	1,075	1,120	1,135
	---	.07	1.94	2.90				
	---	.08	2.22	3.32				
W192614	6.6	.50	2.00	1.40	1.0	1,095	1,160	1,185
	---	.55	2.21	1.55				
	---	.63	2.52	1.76				
W192615	6.5	.60	1.40	1.60	1.0	1,110	1,165	1,190
	---	.66	1.55	1.77				
	---	.76	1.78	2.04				
W192624	6.6	.70	2.10	1.40	1.0	1,255	1,320	1,340
	---	.78	2.33	1.56				
	---	.88	2.64	1.76				
W192625	7.2	.70	2.80	1.20	1.0	1,210	1,265	1,290
	---	.78	3.13	1.34				
	---	.94	3.74	1.60				
W192626	5.7	.50	1.30	1.50	1.0	1,100	1,150	1,210
	---	.55	1.43	1.66				
	---	.61	1.58	1.83				
W192627	5.6	.55	1.35	1.53	1.0	1,175	1,230	1,265
	---	.61	1.49	1.69				
	---	.69	1.70	1.93				
W193124	8.6	.02	.29	.62	1.0	1,405	1,455	1,490
	---	.02	.34	.73				
	---	.03	.36	.78				
W193122	6.1	.15	.58	1.89	4.0	1,210	1,275	1,325
	---	.16	.63	2.07				
	---	.18	.71	2.30				
W193123	5.4	.23	1.75	1.98	4.0	1,165	1,210	1,255
	---	.25	1.92	2.17				
	---	.28	2.14	2.42				

Table 7.--Arithmetic mean, observed range of ash content and contents of 10 major and minor oxides in the laboratory ash of 234 samples of Indiana coal.

[All USGS samples were ashed at 515 C; all data are in percent, -- indicate no data, Illinois samples are recalulated to an ash basis.]

Oxide	Arithmetic mean	Observed range		Arithmetic mean Gluskoter 1977 114 Illinois samples
		Minimum	Maximum	
(Ash)	14.37	2.9	48.1	11
SIO2	39	2	66	46.7
AL2O3	20	.6	36	20.6
CAO	2.5	.06	30	8.6
MGO	.75	.02	2.7	.76
NA2O	.35	.01	1.3	.61
K2O	1.8	.01	4.5	1.86
FE2O3	25	2	83	26
TIO2	.93	.04	1.9	.91
P2O5	.31	.01	3.9	.13
SO3	2.52	.23	26	--

Table 7a.--Arithmetic mean and observed range of concentrations of trace elements in 234 coal samples from Indiana.

[All data are in parts-per-million and are reported on a whole-coal basis; -- indicate no data.]

Element	Arithmetic mean	Observed range		Arithmetic mean Gluskoter 1977 114 Illinois samples
		Minimum	Maximum	
AG	0.11	0.01	1.4	0.03
AS	20	.1	950	14
B	93	11	250	110
BA	58	4.7	660	100
BE	3.4	.25	16	1.7
BR	4.3	.9	23	13
CD	.45	.01	9	2.2
CE	23	2.0	160	14
CO	9.7	.9	110	7.3
CR	21	3.1	81	18
CS	1.4	.2	9.4	1.4
CU	20	4.1	240	14
EU	.46	.07	3.6	.26
F	105	13	780	67
GA	6.4	1.2	25	3.2
GD	2.3	.37	15	
GE	12	.62	160	6.9
HF	.8	.1	5.8	.54
HG	.14	.01	2.4	.2
LA	12	1	89	6.8
LI	20	.67	210	
LU	.15	.01	.73	.09
MN	33	4	500	53
MO	4.3	.2	46	8.1
NB	2.7	.1	14	--
ND	14	1.8	100	--
NI	34	3.3	520	21
PB	23	.73	240	32
RB	28	4	130	19
SB	1.5	.02	15	1.3
SC	4.3	.47	18	2.7
SE	3.6	.5	15	2.2
SM	2.2	.01	15	1.2
SN	1.3	.04	7.7	3.8
SR	60	2.4	730	35
TA	.23	.02	2	.15
TB	.38	.11	2.2	.22
TH	2.8	.3	18	2.1
U	2.5	.11	42	1.5
V	28	.6	150	32
W	.61	.1	5.3	.82
Y	8.8	1.5	69	
YB	.93	.2	8.1	.56
ZN	92	4.3	3300	250
ZR	32	.83	270	47

Table 7b.--Arithmetic mean and observed range, of proximate and ultimate analyses, heat of combustion, forms of sulfur, and ash-fusion temperature of 141 coal samples from Indiana.

[All values are in percent except Btu/lb, ash-fusion temperatures, and free-swelling index and are reported on the as-received basis. F = 9/5 C + 32; Kcal/kg = 0.556 (Btu/lb). -- indicate no data]

	Arithmetic mean	Observed range		Arithmetic mean Gluskoter 1977
		Minimum	Maximum	114 Illinois samples
Proximate and ultimate analyses				
Moisture	9.92	2.1	21.4	9.4
Volatile matter	34.58	22.4	43.5	40
Fixed carbon	45.85	27.3	57.8	49
Ash	9.65	2.0	44.9	11
Hydrogen	5.53	3.5	6.3	5
Carbon	63.10	39.1	73.0	70
Nitrogen	1.18	.5	1.6	1.3
Oxygen	17.47	7.9	31.1	8.2
Sulfur	3.14	.3	7.7	3.6
Heat of combustion				
KCal/KG	6297	3853	7234	7068
Btu/lb	11325	6929	13010	12712
Forms of sulfur				
Sulfate	0.33	0.01	1.28	0.1
Pyritic	1.56	.06	6.10	2
Organic	1.23	.15	2.65	1.6
Ash-fusion temperature o C				
Initial deformation	1171	1018	1528	--
Softening temperature	1230	1057	1600	--
Fluid temperature	1275	1085	1600	--
Free-Swelling index	6.94	.4	9	--