

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

**Spectrographic analyses of insoluble-residue samples,  
Joplin 1° x 2° quadrangle, Missouri and Kansas:  
Drill hole nos. 128, 129, and 130**

By

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Prepared in cooperation with the Kansas Geological Survey and the Missouri Division of Geology and Land Survey.

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S. Geological Survey.

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## INTRODUCTION

Geochemical studies of the Joplin 1° x 2° quadrangle, Missouri and Kansas, were begun in 1983 as part of a multidisciplinary study of the quadrangle by the U.S. Geological Survey, the Missouri Division of Geology and Land Survey, and the Kansas Geological Survey. The purpose of the study was to assess the mineral resource potential of the area by integrated geologic, geochemical, and geophysical studies.

The geochemical work has been directed at the characterization of the sedimentary rocks in the quadrangle through spectrographic analyses of dilute-hydrochloric-acid insoluble-residue samples of whole rock from widely-spaced drill holes. Drill holes have been selected for study from the sample libraries of the Missouri Division of Geology and Land Survey (MGLS) and the Kansas Geological Survey (KGS). None of the holes are company confidential and none intersect economically significant mineralized ground.

The analytical results for drill hole no. 128 (#22030 - MGLS), drill hole no. 129 (#27071 - MGLS), and drill hole no. 130 (#26999 - MGLS) are given in this report. Drill hole no. 128 is located in sec. 5, T. 35 N., R. 31 W. in Vernon County, Missouri; drill hole no. 129 is located in sec. 24, T. 30 N., R. 31 W. in Jasper County, Missouri; drill hole no. 130 is located in sec. 28, T. 30 S., R. 25 E. in Crawford County, Kansas (fig. 1). Data for the insoluble-residue samples from drill holes 128, 129, and 130 are listed in tables 1, 2, and 3 respectively. Well name, well number, township, range, and county allow for identification and location of files at the Missouri Division of Geology.

## PREPARATION AND ANALYSIS OF SAMPLES

Insoluble residues were prepared by dissolving approximately 80 grams of crushed carbonate rock in repeated applications of 1:5 hydrochloric acid until the carbonate was removed. The samples were then filtered and dried overnight at 50 °C.

The samples were pulverized to minus 140 mesh (0.105 mm) in a vertical grinder equipped with ceramic plates. Some insoluble-residue samples contained only a few milligrams of material, and these were hand ground with an agate mortar and pestle. A hand magnet was passed over the insoluble-residue samples before grinding to remove filings or chips of drill bit that might have been present.

Each sample was analyzed semiquantitatively for 31 elements using a six-step D.C.-arc optical-emission spectrographic method (Grimes and Marranzino, 1968).

The semiquantitative spectrographic values are reported as six steps per order of magnitude (1, 0.7, 0.5, 0.3, 0.2, and 0.15) and are approximate geometric midpoints of the concentration ranges. The precision is shown to be within one adjoining reporting interval on each side of the reported value 83 percent of the time and within two adjoining intervals on each side of the reported value 96 percent of the time (Motooka and Grimes, 1976).

The visual lower limits of determination for the 31 elements that were determined spectrographically for this report are as follows:

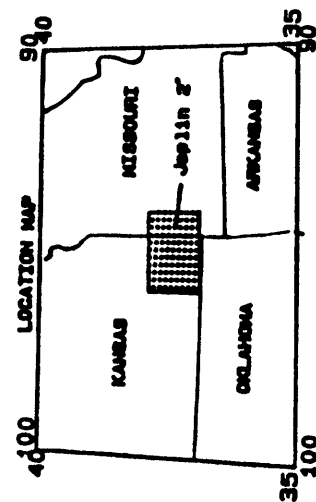
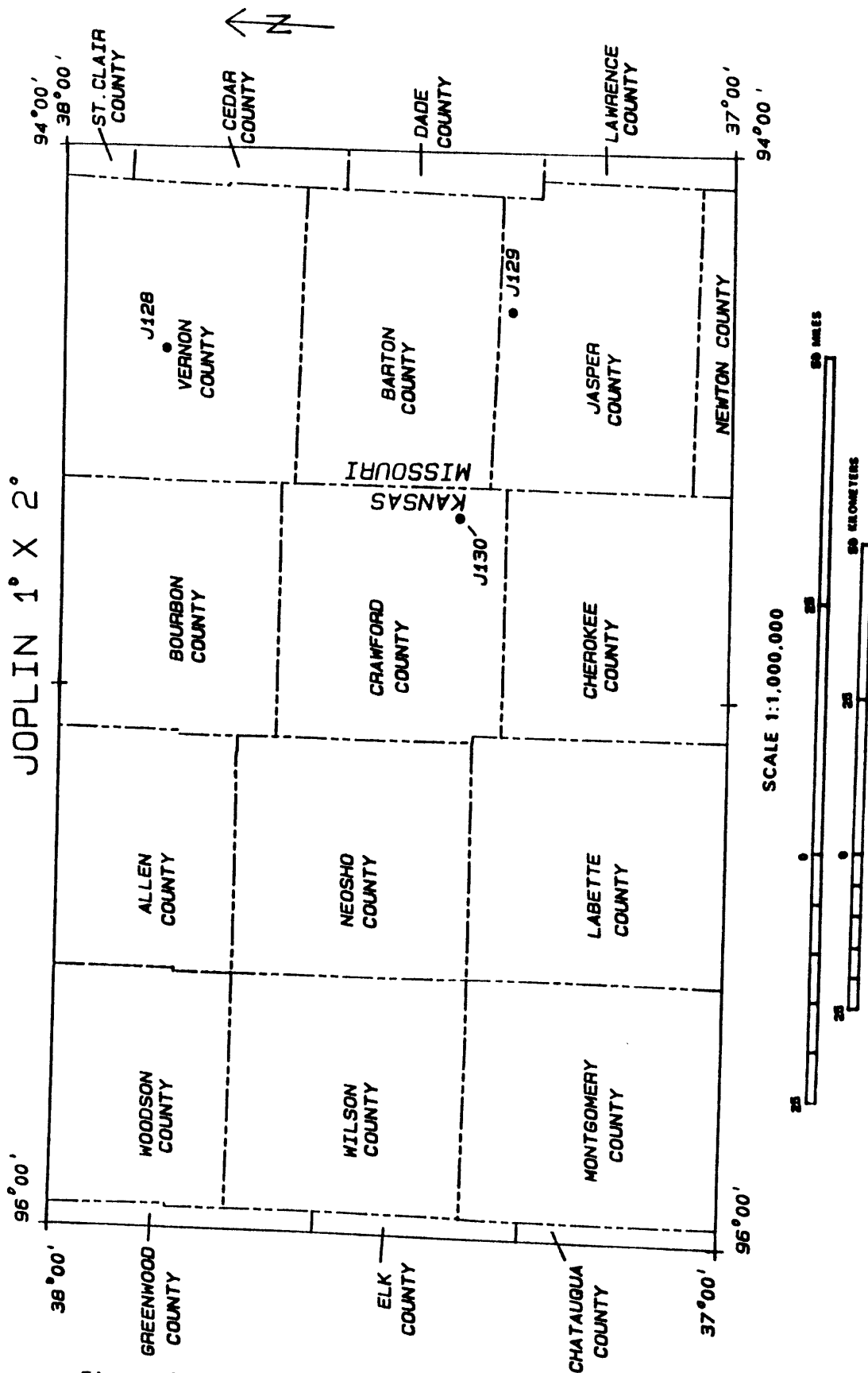


Figure 1. Locations of drill holes 128, 129, and 130, Joplin 1° x 2° quadrangle, Missouri and Kansas.

**For those given in percent:**

Calcium	0.05
Iron	0.05
Magnesium	0.02
Titanium	0.002

**For those given in ppm:**

Antimony	100	Molybdenum	5
Arsenic	200	Nickel	5
Barium	20	Niobium	20
Beryllium	1	Scandium	5
Bismuth	10	Silver	0.5
Boron	10	Strontium	100
Cadmium	20	Thorium	100
Chromium	10	Tin	10
Cobalt	5	Tungsten	50
Copper	5	Vanadium	10
Gold	10	Yttrium	10
Lanthanum	20	Zinc	200
Lead	10	Zirconium	10
Manganese	10		

**DESCRIPTION OF DATA TABLES**

Each sample is identified by an eight-character code beginning with the letter J, signifying Joplin. The next three digits signify the USGS drill-hole number. The last four digits identify the depth of the sample from the drill-hole collar. Most samples are composites of approximate 10-foot intervals, dependent upon the original sample intervals and upon the amount of sample material available for analysis.

The stratigraphic unit of the sample is identified by a coded number in the last column of tables 1 through 3. The code and formation names are as follows:

<b><u>Code</u></b>	<b><u>Formation</u></b>
20	Pennsylvanian Undifferentiated
40	Mississippian Undifferentiated
65	Cotter Dolomite
66	Jefferson City Dolomite
67	Roubidoux Formation
68	Gasconade Dolomite
69	Gunter Sandstone Member
71	Davis Shale
81	Emminence
82	Potosi
83	Derby / Doerun

## EXPLANATION OF DATA

The columns in tables 1 through 3 have headings of sample, elements, and formation. The letter S over the columns signifies emission-spectrographic data.

Iron, magnesium, calcium, and titanium are reported in weight percent (%); all other elements are in parts per million. Other symbols shown on the tables are:

- N = Not detected at the limit of determination;
- < = Detected, but below the limit of determination shown; and
- > = Greater than the limit of determination shown.

Because of the formatting used in the computer program that produced tables 1-3, some of the elements listed in these tables (Fe, Mg, Ca, Ti, Ag, and Be) may carry one or more nonsignificant zeros to the right of the significant digits. The analyst did not determine these elements to the accuracy suggested by the extra zeros.

## RASS

Upon completion of all analytical work, the information from the samples is entered into a computer-based file called RASS (Rock Analysis Storage System). This RASS file contains both descriptive geological information and analytical data. Any or all of this information may be retrieved and placed in a standard form (STATPAC) for computerized statistical manipulation or publication (VanTrump and Miesch, 1977).

## ACKNOWLEDGMENTS

The authors wish to thank the Missouri Division of Geology and Land Survey--Dr. Wallace B. Howe, former Director, and Dr. J. Hadley Williams, Director, and their staffs for making these drill-hole samples available from their sample library.

## REFERENCES

- Grimes, D.J., and Marranzino, A.P., 1968, Direct-current arc and alternating-current spark emission spectrographic field methods for the semiquantitative analysis of geologic materials: U.S. Geological Survey Circular 591, 6 p.
- Motooka, J.M., and Grimes, D.J., 1976, Analytical precision of one-sixth order semiquantitative spectrographic analyses: U.S. Geological Survey Circular 738, 25 p.
- VanTrump, George, Jr., and Miesch, A.T., 1977, The U.S. Geological Survey RASS-STATPAC system for management and statistical reduction of geochemical data: Computers and Geosciences, v. 3, p. 475-488.

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 128, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s
J1280130	37 50 45	94 22 15	5.00	.70	.10	.300	100	N	N	N
J1280150	37 50 45	94 22 15	2.00	.50	.30	.200	30	N	N	N
J1280170	37 50 45	94 22 15	10.00	1.00	.70	.300	50	<.5	N	N
J1280190	37 50 45	94 22 15	15.00	1.50	1.00	.500	30	<.5	N	N
J1280210	37 50 45	94 22 15	10.00	1.00	.70	.500	50	<.5	N	N
J1280230	37 50 45	94 22 15	5.00	1.50	.70	.300	20	<.5	N	N
J1280250	37 50 45	94 22 15	3.00	.50	1.50	.150	30	<.5	N	N
J1280270	37 50 45	94 22 15	7.00	1.50	1.00	.500	20	<.5	N	N
J1280290	37 50 45	94 22 15	3.00	.70	1.50	.200	20	.5	N	N
J1280300	37 50 45	94 22 15	3.00	.30	.50	.300	30	<.5	N	N
J1280320	37 50 45	94 22 15	.30	.03	<.05	.002	N	N	N	N
J1280340	37 50 45	94 22 15	.50	.10	.07	.020	N	N	N	N
J1280360	37 50 45	94 22 15	.15	.20	.20	.020	N	N	N	N
J1280375	37 50 45	94 22 15	.10	.10	.30	.015	N	N	N	N
J1280395	37 50 45	94 22 15	1.50	.15	.15	.100	10	N	N	N
J1280415	37 50 45	94 22 15	10.00	1.00	.30	.300	15	<.5	N	N
J1280425	37 50 45	94 22 15	5.00	2.00	2.00	.500	20	N	N	N
J1280445	37 50 45	94 22 15	.70	.10	.20	.150	<10	N	N	N
J1280465	37 50 45	94 22 15	.30	.10	.20	.050	<10	N	N	N
J1280490	37 50 45	94 22 15	1.50	.50	1.50	.150	15	N	N	N
J1280510	37 50 45	94 22 15	1.00	1.50	2.00	.070	20	N	N	N
J1280530	37 50 45	94 22 15	.15	.70	1.00	.020	<10	N	N	N
J1280550	37 50 45	94 22 15	.20	1.00	1.50	.020	<10	N	N	N
J1280570	37 50 45	94 22 15	.30	.07	.10	.010	<10	N	N	N
J1280590	37 50 45	94 22 15	.10	.05	.07	.015	<10	N	N	N
J1280610	37 50 45	94 22 15	.10	.02	<.05	.005	<10	N	N	N
J1280630	37 50 45	94 22 15	.70	.30	.50	.015	<10	N	N	N
J1280650	37 50 45	94 22 15	.50	.30	.50	.015	N	N	N	N
J1280670	37 50 45	94 22 15	.15	1.00	1.50	.015	10	N	N	N
J1280690	37 50 45	94 22 15	.10	.02	.07	.002	<10	N	N	N
J1280710	37 50 45	94 22 15	.20	.03	.05	.010	N	N	N	N
J1280730	37 50 45	94 22 15	.05	<.02	N	.003	N	N	N	N
J1280750	37 50 45	94 22 15	.30	<.02	<.05	.005	N	N	N	N
J1280770	37 50 45	94 22 15	.10	<.02	<.05	.005	N	N	N	N
J1280785	37 50 45	94 22 15	<.05	<.02	N	.007	N	N	N	N
J1280805	37 50 45	94 22 15	.15	.02	<.05	.005	N	N	N	N
J1280825	37 50 45	94 22 15	.15	.03	.05	.002	N	N	N	N
J1280840	37 50 45	94 22 15	.20	.05	.07	.010	N	N	N	N
J1280855	37 50 45	94 22 15	.10	.02	.07	.002	N	N	N	N
J1280875	37 50 45	94 22 15	.10	.02	.05	.002	N	N	N	N
J1280895	37 50 45	94 22 15	.20	<.02	N	<.002	N	N	N	N
J1280915	37 50 45	94 22 15	.05	<.02	N	.002	N	N	N	N
J1280935	37 50 45	94 22 15	.05	.05	.05	.100	N	N	N	N
J1280955	37 50 45	94 22 15	<.05	.03	.05	<.002	N	N	N	N
J1280975	37 50 45	94 22 15	.05	.30	.30	.007	N	N	N	N

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 128, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
J1280130	100	150	1.5	N	N	50	100	200	50	N	N	70
J1280150	50	70	<1.0	N	N	5	20	10	20	N	N	30
J1280170	50	150	1.0	N	N	70	70	70	30	N	N	100
J1280190	100	100	1.5	N	N	15	100	20	50	N	N	70
J1280210	100	100	1.5	N	N	10	100	20	50	N	N	50
J1280230	70	70	1.0	N	N	15	70	15	20	N	N	30
J1280250	50	70	<1.0	N	N	10	30	10	20	N	N	20
J1280270	100	100	1.5	N	N	10	100	15	50	N	N	50
J1280290	70	100	<1.0	N	20	5	50	500	30	N	N	70
J1280300	100	70	<1.0	N	50	<5	30	10	20	N	N	15
J1280320	30	<20	N	N	N	N	N	N	N	N	<20	N
J1280340	50	30	N	N	N	N	<10	<5	N	N	N	N
J1280360	50	30	N	N	N	N	<10	<5	N	7	N	N
J1280375	50	30	N	N	N	N	N	N	N	<5	N	N
J1280395	50	50	N	N	N	N	20	5	N	<5	N	10
J1280415	200	150	<1.0	N	N	<5	70	20	20	10	N	20
J1280425	100	300	<1.0	N	N	10	50	50	20	N	<20	20
J1280445	30	50	N	N	N	N	10	<5	N	<5	N	5
J1280465	50	50	N	N	N	N	N	<5	N	N	N	<5
J1280490	50	70	N	N	N	<5	20	15	20	N	N	10
J1280510	50	150	N	N	N	<5	10	5	N	<5	N	5
J1280530	30	30	N	N	N	N	N	N	N	N	N	<5
J1280550	30	50	N	N	N	N	N	<5	N	N	N	<5
J1280570	30	30	N	N	N	N	10	70	N	N	N	<5
J1280590	30	30	N	N	N	N	<10	N	N	N	N	<5
J1280610	20	20	N	N	N	N	N	N	N	N	N	N
J1280630	50	30	N	N	N	N	10	<5	N	<5	N	5
J1280650	50	50	N	N	N	N	N	N	N	N	N	<5
J1280670	50	50	N	N	N	N	N	N	N	N	N	<5
J1280690	30	30	N	N	N	N	20	N	N	N	N	<5
J1280710	30	30	N	N	N	N	<10	N	N	N	N	<5
J1280730	10	30	N	N	N	N	N	N	N	N	N	<5
J1280750	10	20	N	N	N	N	<10	N	N	N	N	<5
J1280770	10	<20	N	N	N	N	N	N	N	N	N	N
J1280785	N	<20	N	N	N	N	<10	N	N	N	N	N
J1280805	10	50	N	N	N	N	N	N	N	N	N	<5
J1280825	20	50	N	N	N	N	N	N	N	N	N	<5
J1280840	50	70	N	N	N	N	N	5	N	N	N	<5
J1280855	30	50	N	N	N	N	N	N	N	N	N	<5
J1280875	30	50	N	N	N	N	N	N	N	N	N	<5
J1280895	20	<20	N	N	N	N	N	N	N	N	N	<5
J1280915	20	30	N	N	N	N	N	N	N	N	N	N
J1280935	20	70	N	N	N	N	N	N	N	N	N	<5
J1280955	20	50	N	N	N	N	N	N	N	N	N	<5
J1280975	15	20	N	N	N	N	N	<5	N	N	N	<5



TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 128, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Form #
J1280130	15	N	10	N	100	100	N	50	N	100	N	40
J1280150	N	N	<5	N	N	30	N	10	N	30	N	40
J1280170	30	N	10	30	<100	100	N	30	N	70	N	40
J1280190	20	N	15	N	100	100	N	30	N	200	N	40
J1280210	10	N	10	N	100	100	N	30	N	150	N	40
J1280230	15	N	5	N	<100	100	N	20	N	100	N	40
J1280250	N	N	5	N	<100	70	N	15	N	100	N	40
J1280270	15	N	10	N	<100	150	N	20	N	150	N	40
J1280290	70	100	5	1,000	<100	70	N	15	2,000	100	N	40
J1280300	<10	N	<5	N	N	50	N	10	3,000	200	N	40
J1280320	N	N	N	N	N	N	N	N	N	N	N	40
J1280340	N	N	N	N	N	10	N	N	N	<10	N	40
J1280360	N	N	N	N	N	10	N	N	N	<10	N	40
J1280375	N	N	N	N	N	<10	N	N	N	N	N	40
J1280395	N	N	<5	N	N	20	N	N	N	50	N	40
J1280415	30	N	5	N	N	150	N	20	N	300	N	40
J1280425	70	N	7	N	N	70	N	30	N	500	N	40
J1280445	N	N	N	N	N	10	N	N	N	100	N	40
J1280465	N	N	N	N	N	10	N	N	N	10	N	40
J1280490	<10	N	<5	30	N	20	N	10	200	70	<100	40
J1280510	N	N	N	N	N	15	N	N	N	100	N	66
J1280530	N	N	N	N	N	10	N	N	N	<10	N	66
J1280550	N	N	N	N	N	<10	N	N	N	<10	N	66
J1280570	N	N	N	N	N	N	N	N	N	N	N	66
J1280590	N	N	N	N	N	N	N	N	N	N	N	66
J1280610	N	N	N	N	N	N	N	N	N	N	N	66
J1280630	N	N	N	N	N	10	N	N	N	<10	N	66
J1280650	N	N	N	N	N	N	N	N	N	N	N	66
J1280670	N	N	N	N	N	<10	N	N	N	N	N	67
J1280690	N	N	N	N	N	N	N	N	N	N	N	67
J1280710	N	N	N	N	N	N	N	N	N	10	N	67
J1280730	N	N	N	N	N	N	N	N	N	20	N	67
J1280750	N	N	N	N	N	N	N	N	N	<10	N	67
J1280770	N	N	N	N	N	N	N	N	N	<10	N	67
J1280785	N	N	N	N	N	N	N	N	N	20	N	67
J1280805	N	N	N	15	N	N	N	N	N	<10	N	68
J1280825	N	N	N	N	N	N	N	N	N	N	N	68
J1280840	N	N	N	<10	N	N	N	N	N	N	N	68
J1280855	N	N	N	N	N	N	N	N	N	N	N	68
J1280875	N	N	N	N	N	N	N	N	N	N	N	68
J1280895	N	N	N	N	N	N	N	N	N	N	N	68
J1280915	N	N	N	N	N	N	N	N	N	N	N	68
J1280935	N	N	N	N	N	N	N	N	N	N	N	68
J1280955	N	N	N	N	N	N	N	N	N	N	N	68
J1280975	N	N	N	N	N	N	N	N	N	N	N	68

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 128, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s
J1280995	37 50 45	94 22 15	<.05	.03	<.05	.003	N	N	N	N
J1281015	37 50 45	94 22 15	.05	.02	<.05	.003	N	N	N	N
J1281035	37 50 45	94 22 15	.30	.05	.05	.015	N	N	N	N
J1281050	37 50 45	94 22 15	.10	<.02	N	.003	N	N	N	N
J1281065	37 50 45	94 22 15	.10	.02	N	<.002	N	N	N	N
J1281080	37 50 45	94 22 15	.70	<.02	N	.010	N	N	N	N
J1281095	37 50 45	94 22 15	1.00	<.02	N	.015	<10	N	N	N

Sample	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
J1280995	20	50	N	N	N	N	N	N	N	N	N	<5
J1281015	20	30	N	N	N	N	N	N	N	N	N	<5
J1281035	50	50	N	N	N	N	N	5	N	N	N	<5
J1281050	N	20	N	N	N	N	N	N	N	N	N	<5
J1281065	10	N	N	N	N	N	N	N	N	N	N	<5
J1281080	N	<20	N	N	N	N	10	7	N	N	N	5
J1281095	N	200	N	N	N	N	30	50	N	<5	N	5

Sample	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Form #
J1280995	N	N	N	N	N	N	N	N	N	N	N	68
J1281015	N	N	N	N	N	N	N	N	N	N	N	68
J1281035	N	N	N	N	N	N	N	N	N	N	N	68
J1281050	N	N	N	N	N	N	N	N	N	<10	N	69
J1281065	N	N	N	N	N	N	N	N	N	10	N	69
J1281080	N	N	N	30	N	N	N	N	N	10	N	81
J1281095	N	N	N	N	N	N	N	N	N	N	N	81

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 129, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s
J1290035	37 19 52	94 17 32	1.50	.30	1.50	.020	30	N	N	N
J1290045	37 19 52	94 17 32	2.00	.05	.20	.030	1,500	N	N	N
J1290065	37 19 52	94 17 32	3.00	.02	.30	.020	700	N	N	N
J1290085	37 19 52	94 17 32	.30	.03	3.00	.015	10	N	N	N
J1290105	37 19 52	94 17 32	.20	.03	3.00	.015	10	N	N	N
J1290125	37 19 52	94 17 32	<.05	.02	1.50	.050	N	N	N	N
J1290140	37 19 52	94 17 32	.05	.03	3.00	<.002	N	N	N	N
J1290155	37 19 52	94 17 32	.50	.03	.70	.007	N	N	N	N
J1290170	37 19 52	94 17 32	.15	.05	<.05	.015	N	N	N	N
J1290190	37 19 52	94 17 32	.15	.10	.10	.005	N	N	N	N
J1290210	37 19 52	94 17 32	.15	.07	.07	.010	N	N	N	N
J1290230	37 19 52	94 17 32	.20	.50	.30	.020	N	N	N	N
J1290250	37 19 52	94 17 32	.10	.03	.10	.010	N	N	N	N
J1290270	37 19 52	94 17 32	<.05	.10	.15	.003	N	N	N	N
J1290285	37 19 52	94 17 32	.07	.20	2.00	.015	<10	N	N	N
J1290305	37 19 52	94 17 32	.05	.05	1.00	.005	N	N	N	N
J1290325	37 19 52	94 17 32	.15	.30	2.00	.020	N	N	N	N
J1290345	37 19 52	94 17 32	7.00	2.00	2.00	1.000	30	N	N	N
J1290350	37 19 52	94 17 32	5.00	3.00	5.00	.500	70	N	N	N
J1290370	37 19 52	94 17 32	5.00	5.00	7.00	.500	200	N	N	N
J1290390	37 19 52	94 17 32	1.00	2.00	5.00	.700	10	N	N	N
J1290410	37 19 52	94 17 32	1.00	1.00	.70	.150	<10	N	N	N
J1290430	37 19 52	94 17 32	7.00	1.00	.70	.150	10	N	N	N
J1290450	37 19 52	94 17 32	.70	.20	.10	.020	N	N	N	N
J1290470	37 19 52	94 17 32	1.50	1.00	1.50	.030	<10	N	N	N
J1290490	37 19 52	94 17 32	.20	1.00	1.00	.030	N	N	N	N
J1290510	37 19 52	94 17 32	1.50	1.50	.70	.300	10	N	N	N
J1290530	37 19 52	94 17 32	.30	.70	1.50	.020	N	N	N	N
J1290550	37 19 52	94 17 32	2.00	.15	.15	.015	<10	N	N	N
J1290570	37 19 52	94 17 32	.50	.70	.50	.015	N	N	N	N
J1290590	37 19 52	94 17 32	.70	.50	.30	.050	10	N	N	N
J1290610	37 19 52	94 17 32	10.00	1.50	.50	.500	20	N	N	N
J1290630	37 19 52	94 17 32	2.00	1.00	.70	.150	<10	N	N	N
J1290650	37 19 52	94 17 32	1.00	.30	.20	.020	N	N	N	N
J1290670	37 19 52	94 17 32	2.00	1.00	.50	.500	N	N	N	N
J1290690	37 19 52	94 17 32	3.00	2.00	.07	.700	10	N	N	N
J1290710	37 19 52	94 17 32	1.50	.70	.10	.200	N	N	N	N
J1290730	37 19 52	94 17 32	.05	.05	<.05	.002	N	N	N	N
J1290750	37 19 52	94 17 32	.10	.70	.20	.030	N	N	N	N
J1290765	37 19 52	94 17 32	1.50	.15	<.05	.020	N	N	N	N
J1290780	37 19 52	94 17 32	<.05	<.02	N	.002	N	N	N	N
J1290795	37 19 52	94 17 32	.05	.02	<.05	.003	N	N	N	N
J1290805	37 19 52	94 17 32	<.05	.02	N	.003	N	N	N	N
J1290825	37 19 52	94 17 32	3.00	1.00	.05	.500	<10	N	N	N
J1290845	37 19 52	94 17 32	.10	.50	.15	.050	N	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 129, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
J1290035	70	700	N	N	N	<5	<10	<5	N	N	N	5
J1290045	50	300	<1.0	N	N	20	10	<5	N	N	N	15
J1290065	30	200	<1.0	N	N	10	50	5	N	N	N	10
J1290085	50	30	N	N	N	N	10	15	N	N	N	5
J1290105	30	20	N	N	N	N	10	<5	N	N	N	<5
J1290125	70	<20	N	N	N	N	N	N	N	N	N	<5
J1290140	70	<20	N	N	N	N	N	N	N	N	N	<5
J1290155	100	20	N	N	N	N	<10	<5	N	N	N	5
J1290170	100	<20	N	N	N	N	N	N	N	N	N	<5
J1290190	70	20	N	N	N	N	<10	N	N	N	N	<5
J1290210	50	<20	N	N	N	N	N	N	N	<5	N	5
J1290230	50	<20	N	N	N	5	N	N	N	<5	N	15
J1290250	30	<20	N	N	N	N	N	N	N	N	N	<5
J1290270	50	N	N	N	N	N	N	N	N	N	N	<5
J1290285	50	20	N	N	N	N	<10	<5	N	N	N	5
J1290305	50	<20	N	N	N	N	N	5	N	N	N	5
J1290325	70	30	N	N	N	N	N	<5	N	N	N	5
J1290345	500	300	3.0	N	N	20	100	30	30	N	20	30
J1290350	150	200	2.0	N	N	10	50	20	20	N	N	20
J1290370	200	200	2.0	N	N	7	30	20	20	N	N	15
J1290390	100	100	N	N	N	N	10	10	N	N	N	10
J1290410	100	200	1.0	N	N	<5	20	10	N	<5	N	10
J1290430	100	300	<1.0	N	N	5	20	70	N	5	N	50
J1290450	50	100	N	N	N	N	N	<5	N	N	N	5
J1290470	100	70	N	N	N	N	10	20	N	N	N	7
J1290490	30	100	N	N	N	N	N	N	N	N	N	<5
J1290510	150	200	2.0	N	N	N	50	10	N	N	N	7
J1290530	70	100	N	N	N	N	N	<5	N	N	N	<5
J1290550	100	<20	N	N	N	N	<10	10	N	<5	N	5
J1290570	100	30	N	N	N	N	N	5	N	N	N	<5
J1290590	50	20	N	N	N	5	N	10	N	5	N	10
J1290610	200	150	1.0	N	N	10	30	50	N	15	N	30
J1290630	70	200	N	N	N	<5	10	15	N	<5	N	10
J1290650	100	50	N	N	N	N	N	10	N	N	N	5
J1290670	100	200	<1.0	N	N	<5	20	15	N	N	N	7
J1290690	200	200	3.0	N	N	N	100	20	N	<5	<20	20
J1290710	150	150	N	N	N	N	10	10	N	N	N	<5
J1290730	10	30	N	N	N	N	<10	<5	N	N	N	10
J1290750	20	30	N	N	N	N	<10	N	N	N	N	<5
J1290765	10	20	N	N	N	N	<10	10	N	<5	N	10
J1290780	10	<20	N	N	N	N	N	N	N	N	N	N
J1290795	10	20	N	N	N	N	<10	<5	N	N	N	10
J1290805	10	30	N	N	N	N	N	N	N	N	N	N
J1290825	100	200	1.0	N	N	N	10	30	N	5	N	10
J1290845	30	20	N	N	N	N	N	<5	N	N	N	<5

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 129, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Form #
J1290035	N	N	N	N	N	15	N	N	N	10	N	40
J1290045	10	N	N	N	N	20	N	N	N	15	N	40
J1290065	N	N	N	N	N	50	N	10	N	10	N	40
J1290085	<10	N	N	N	N	15	N	N	N	N	N	40
J1290105	N	N	N	N	N	10	N	N	N	N	N	40
J1290125	N	N	N	N	N	<10	N	N	N	N	N	40
J1290140	N	N	N	N	N	N	N	N	N	N	N	40
J1290155	N	N	N	N	N	N	N	N	N	N	N	40
J1290170	N	N	N	N	N	N	N	N	N	N	N	40
J1290190	N	N	N	N	N	N	N	N	N	N	N	40
J1290210	N	N	N	N	N	N	N	N	N	N	N	40
J1290230	N	N	N	N	N	10	N	N	N	N	N	40
J1290250	N	N	N	N	N	<10	N	N	N	N	N	40
J1290270	N	N	N	N	N	N	N	N	N	N	N	40
J1290285	N	N	N	N	N	15	N	N	N	N	N	40
J1290305	N	N	N	N	N	N	N	N	N	N	N	40
J1290325	N	N	N	N	N	10	N	N	N	N	N	65
J1290345	20	N	15	N	N	150	N	50	N	500	N	65
J1290350	15	N	10	N	N	100	N	30	N	150	N	65
J1290370	15	N	10	N	N	100	N	20	N	150	N	65
J1290390	10	N	N	N	N	20	N	N	N	30	N	65
J1290410	20	N	N	N	N	30	N	N	N	100	N	65
J1290430	15	N	N	N	N	15	N	N	N	70	N	65
J1290450	N	N	N	N	N	N	N	N	N	15	N	65
J1290470	N	N	N	N	N	N	N	N	N	<10	N	66
J1290490	N	N	N	N	N	N	N	N	N	20	N	66
J1290510	N	N	N	N	N	70	N	N	N	100	N	66
J1290530	N	N	N	N	N	10	N	N	N	N	N	66
J1290550	N	N	N	N	N	10	N	N	N	N	N	66
J1290570	N	N	N	N	N	<10	N	N	N	N	N	66
J1290590	<10	N	N	N	N	10	N	N	N	<10	N	66
J1290610	20	N	N	N	N	30	N	N	N	70	N	66
J1290630	15	N	N	N	N	20	N	N	N	70	N	66
J1290650	N	N	N	N	N	10	N	N	N	10	N	66
J1290670	10	N	N	N	N	70	N	N	N	200	N	67
J1290690	<10	N	<5	N	N	150	N	10	N	200	N	67
J1290710	N	N	N	N	N	20	N	N	N	50	N	67
J1290730	N	N	N	N	N	N	N	N	N	10	N	67
J1290750	N	N	N	N	N	<10	N	N	N	15	N	67
J1290765	<10	N	N	N	N	<10	N	N	N	10	N	67
J1290780	N	N	N	N	N	N	N	N	N	<10	N	67
J1290795	N	N	N	N	N	N	N	N	N	<10	N	67
J1290805	N	N	N	N	N	N	N	N	N	10	N	67
J1290825	10	N	N	30	N	30	N	N	N	200	N	68
J1290845	N	N	N	N	N	10	N	N	N	10	N	68

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 129, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s
J1290865	37 19 52	94 17 32	.15	.10	.05	.015	<10	N	N	N
J1290885	37 19 52	94 17 32	.05	.02	<.05	.015	N	N	N	N
J1290905	37 19 52	94 17 32	2.00	.07	.07	.020	N	N	N	N
J1290925	37 19 52	94 17 32	.05	.03	.05	.010	N	N	N	N
J1290945	37 19 52	94 17 32	.15	.50	<.05	.050	N	N	N	N
J1290965	37 19 52	94 17 32	.30	.70	.05	.150	N	N	N	N
J1290985	37 19 52	94 17 32	2.00	1.50	<.05	1.000	N	N	N	N
J1291005	37 19 52	94 17 32	20.00	3.00	.20	>1.000	30	<.5	N	N
J1291025	37 19 52	94 17 32	.20	.20	.20	.020	N	N	N	N
J1291045	37 19 52	94 17 32	5.00	1.00	.15	.300	10	<.5	<200	N
J1291055	37 19 52	94 17 32	1.00	.50	.20	.150	15	N	N	N
J1291075	37 19 52	94 17 32	.05	.10	N	.015	N	N	N	N
J1291095	37 19 52	94 17 32	.05	.02	N	.005	N	N	N	N
J1291115	37 19 52	94 17 32	.20	.15	.07	.020	N	N	N	N
J1291135	37 19 52	94 17 32	.15	.20	<.05	.030	<10	N	N	N
J1291155	37 19 52	94 17 32	10.00	.70	.30	.150	>5,000	<.5	N	N
J1291175	37 19 52	94 17 32	5.00	.70	.15	.150	>5,000	N	N	N
J1291205	37 19 52	94 17 32	10.00	1.50	1.50	.500	1,000	<.5	N	N
J1291230	37 19 52	94 17 32	>20.00	2.00	.30	.200	200	1.0	N	N
J1291250	37 19 52	94 17 32	3.00	.20	.20	.010	<10	N	N	N
J1291270	37 19 52	94 17 32	5.00	.20	.20	.050	30	N	N	N
J1291300	37 19 52	94 17 32	.50	.15	.15	.010	N	N	N	N
J1291320	37 19 52	94 17 32	20.00	.20	.05	.015	20	<.5	300	N
J1291340	37 19 52	94 17 32	15.00	1.50	.10	.500	50	2.0	N	N
J1291360	37 19 52	94 17 32	10.00	2.00	1.00	.500	20	<.5	N	N
J1291380	37 19 52	94 17 32	7.00	1.50	.70	.300	15	N	N	N
J1291390	37 19 52	94 17 32	3.00	2.00	1.50	.500	20	N	N	N
J1291405	37 19 52	94 17 32	3.00	2.00	2.00	.500	15	N	N	N
J1291425	37 19 52	94 17 32	5.00	3.00	3.00	.700	30	N	N	N
J1291445	37 19 52	94 17 32	1.50	1.50	.20	.500	<10	N	N	N
J1291465	37 19 52	94 17 32	1.50	1.50	.50	.300	10	N	N	N
J1291485	37 19 52	94 17 32	1.50	1.50	.30	.500	10	N	N	N
J1291505	37 19 52	94 17 32	1.00	1.00	.20	.200	10	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 129, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
J1290865	50	N	N	N	N	N	150	10	N	<5	N	50
J1290885	30	N	N	N	N	N	N	<5	N	N	N	N
J1290905	30	<20	N	N	N	N	<10	70	N	5	N	15
J1290925	20	N	N	N	N	N	N	10	N	N	N	5
J1290945	50	50	N	N	N	N	N	N	N	N	N	<5
J1290965	50	20	N	N	N	N	<10	10	N	7	N	7
J1290985	70	100	1.5	N	N	5	30	20	N	70	N	10
J1291005	500	500	7.0	N	N	15	150	100	<20	70	20	50
J1291025	20	50	N	N	N	N	N	N	N	50	N	<5
J1291045	70	150	2.0	N	N	50	20	150	N	1,000	N	50
J1291055	70	1,000	N	N	N	N	15	30	N	10	N	7
J1291075	10	50	N	N	N	N	N	30	N	N	N	N
J1291095	10	N	N	N	N	N	N	5	N	N	N	N
J1291115	20	50	N	N	N	N	<10	10	N	5	N	5
J1291135	50	50	N	N	N	N	N	5	N	70	N	5
J1291155	100	700	1.5	N	N	50	150	20	20	20	N	30
J1291175	150	150	1.5	N	N	50	50	20	<20	<5	N	50
J1291205	70	200	2.0	N	N	15	150	70	20	7	N	50
J1291230	150	200	3.0	N	N	30	150	300	30	15	N	150
J1291250	30	30	N	N	N	5	<10	20	N	N	N	15
J1291270	70	50	N	N	N	N	N	100	N	N	N	20
J1291300	50	70	N	N	N	N	N	<5	N	N	N	<5
J1291320	<10	20	N	N	N	10	10	200	N	10	N	100
J1291340	50	200	1.0	N	N	15	30	200	20	20	<20	70
J1291360	100	300	1.5	N	N	10	20	70	20	15	<20	50
J1291380	70	300	1.5	N	N	5	20	50	50	5	N	20
J1291390	50	700	1.0	N	N	<5	15	30	30	N	N	15
J1291405	70	700	1.5	N	N	<5	15	30	30	N	N	10
J1291425	200	1,000	2.0	N	N	7	20	30	70	<5	20	15
J1291445	50	700	1.0	N	N	<5	N	10	20	N	N	5
J1291465	100	1,000	1.5	N	N	5	N	10	20	N	N	5
J1291485	70	700	1.0	N	N	5	N	5	<20	N	<20	<5
J1291505	100	700	1.0	N	N	<5	N	7	20	N	N	<5

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 129, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Form #
J1290865	N	N	N	N	N	<10	N	N	N	N	N	68
J1290885	N	N	N	N	N	N	N	N	N	<10	N	68
J1290905	N	N	N	N	N	15	N	N	N	N	N	68
J1290925	N	N	N	N	N	<10	N	N	N	N	N	68
J1290945	N	N	N	N	N	50	N	N	N	<10	N	68
J1290965	N	N	N	N	N	70	N	N	N	10	N	68
J1290985	<10	N	N	N	N	150	N	N	N	70	N	68
J1291005	30	N	20	<10	N	500	N	20	N	500	N	68
J1291025	N	N	N	N	N	<10	N	N	N	N	N	68
J1291045	30	N	N	<10	N	30	N	N	N	100	N	68
J1291055	<10	N	N	N	N	15	N	N	N	100	N	68
J1291075	N	N	N	N	N	<10	N	N	N	100	N	69
J1291095	N	N	N	N	N	N	N	N	N	<10	N	81
J1291115	N	N	N	N	N	15	N	N	N	10	N	81
J1291135	N	N	N	N	N	10	N	N	N	10	N	81
J1291155	20	N	<5	N	N	300	N	10	N	70	N	81
J1291175	20	N	<5	N	N	100	N	N	N	70	N	81
J1291205	50	N	<5	N	N	300	N	15	<200	70	N	81
J1291230	100	N	<5	N	N	150	N	N	200	100	N	81
J1291250	N	N	N	N	N	<10	N	N	N	N	N	82
J1291270	50	N	N	N	N	30	N	N	N	20	N	82
J1291300	N	N	N	N	N	N	N	N	N	N	N	82
J1291320	70	N	<5	N	N	N	N	N	200	N	N	83
J1291340	200	N	<5	<10	N	50	N	10	<200	200	N	83
J1291360	70	N	<5	<10	N	70	N	10	<200	150	N	83
J1291380	50	N	<5	N	<100	20	N	15	N	150	N	83
J1291390	30	N	N	N	<100	30	N	20	N	150	N	83
J1291405	30	N	N	N	<100	30	N	20	N	150	N	83
J1291425	20	N	<5	<10	100	70	N	50	N	300	N	71
J1291445	15	N	N	N	N	15	N	20	N	200	N	71
J1291465	10	N	<5	N	100	15	N	20	N	200	N	71
J1291485	15	N	N	N	N	15	N	20	N	300	N	71
J1291505	15	N	N	N	<100	15	N	15	N	150	N	71



TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 130, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s
J1300160	37 24 25	94 40 30	1.00	.30	1.50	.100	10	N	N	N
J1300160	37 24 25	94 40 30	.70	.15	3.00	.020	10	N	N	N
J1300170	37 24 25	94 40 30	5.00	.70	7.00	.150	700	N	N	N
J1300180	37 24 25	94 40 30	10.00	.05	.20	.030	50	N	N	N
J1300190	37 24 25	94 40 30	.70	.02	2.00	.015	10	N	N	N
J1300200	37 24 25	94 40 30	.10	.02	5.00	.015	20	N	N	N
J1300320	37 24 25	94 40 30	.70	.05	.10	.010	<10	N	N	N
J1300340	37 24 25	94 40 30	.07	.15	.10	.003	N	N	N	N
J1300360	37 24 25	94 40 30	.20	.05	1.50	.007	<10	N	N	N
J1300380	37 24 25	94 40 30	.15	.15	3.00	.010	<10	N	N	N
J1300400	37 24 25	94 40 30	.07	.10	1.00	.015	N	N	N	N
J1300420	37 24 25	94 40 30	.15	.20	2.00	.020	<10	N	N	N
J1300440	37 24 25	94 40 30	.20	.20	5.00	.020	15	N	N	N
J1300475	37 24 25	94 40 30	.10	.20	1.50	.010	<10	N	N	N
J1300495	37 24 25	94 40 30	3.00	5.00	5.00	.700	70	N	N	N
J1300520	37 24 25	94 40 30	5.00	2.00	3.00	.300	70	N	N	N
J1300550	37 24 25	94 40 30	3.00	2.00	3.00	.200	30	N	N	N
J1300600	37 24 25	94 40 30	1.00	.30	.20	.070	20	N	N	N
J1300620	37 24 25	94 40 30	.50	.50	.50	.020	<10	N	N	N
J1300640	37 24 25	94 40 30	.30	.70	.70	.020	N	N	N	N
J1300660	37 24 25	94 40 30	.20	.70	.70	.015	N	N	N	N
J1300680	37 24 25	94 40 30	.20	.50	.70	.050	N	N	N	N
J1300700	37 24 25	94 40 30	.20	.30	.30	.020	N	N	N	N
J1300720	37 24 25	94 40 30	.20	.70	.70	.050	N	N	N	N
J1300740	37 24 25	94 40 30	1.00	.70	.70	.030	N	N	N	N
J1300760	37 24 25	94 40 30	.30	.30	.50	.030	N	N	200	N
J1300780	37 24 25	94 40 30	.70	.50	.30	.150	<10	N	N	N
J1300800	37 24 25	94 40 30	.70	.15	.20	.020	N	N	N	N
J1300820	37 24 25	94 40 30	.20	.20	.15	.020	N	N	N	N
J1300840	37 24 25	94 40 30	.20	.10	.15	.030	N	N	N	N
J1300860	37 24 25	94 40 30	.20	.15	.05	.030	N	N	N	N
J1300880	37 24 25	94 40 30	<.05	.03	.07	.002	N	N	N	N
J1300900	37 24 25	94 40 30	<.05	<.02	<.05	.007	N	N	N	N
J1300920	37 24 25	94 40 30	.50	.50	.05	.070	N	N	N	N
J1300940	37 24 25	94 40 30	.10	.02	<.05	.010	N	N	N	N
J1300960	37 24 25	94 40 30	.30	.20	.05	.030	N	N	N	N
J1300980	37 24 25	94 40 30	.05	.05	.07	.015	N	N	N	N
J1301000	37 24 25	94 40 30	.05	<.02	<.05	<.002	N	N	N	N
J1301020	37 24 25	94 40 30	.05	.02	.05	<.002	N	N	N	N
J1301040	37 24 25	94 40 30	<.05	.02	.07	.003	N	N	N	N
J1301050	37 24 25	94 40 30	.50	1.00	.10	.200	N	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 130, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
J1300160	30	50	<1	N	N	5	100	<5	20	N	N	15
J1300160	20	<20	N	N	N	N	N	N	N	N	N	5
J1300170	50	50	1	N	N	10	100	5	50	N	N	30
J1300180	30	20	<1	N	N	5	N	5	<20	N	N	20
J1300190	15	<20	N	N	N	<5	N	<5	N	N	N	10
J1300200	20	<20	N	N	N	N	<10	N	N	N	N	<5
J1300320	50	<20	N	N	N	N	N	<5	N	<5	N	7
J1300340	30	<20	N	N	N	N	N	N	N	N	N	<5
J1300360	30	<20	N	N	N	N	N	N	N	N	N	<5
J1300380	30	<20	N	N	N	N	N	<5	N	N	N	5
J1300400	20	<20	N	N	N	N	N	N	N	N	N	<5
J1300420	20	<20	N	N	N	N	N	N	N	N	N	5
J1300440	30	20	N	N	N	N	N	N	N	N	N	7
J1300475	15	<20	N	N	N	N	N	N	N	N	N	<5
J1300495	200	300	3	N	N	15	150	30	50	N	<20	15
J1300520	150	200	5	N	N	15	100	20	30	N	N	30
J1300550	50	200	<1	N	N	5	30	15	N	N	N	15
J1300600	70	50	<1	N	N	<5	N	10	N	70	N	10
J1300620	30	50	N	N	N	N	N	10	N	15	N	10
J1300640	50	50	N	N	N	N	N	5	N	30	N	5
J1300660	30	30	N	N	N	N	N	<5	N	5	N	5
J1300680	30	70	N	N	N	N	N	5	N	N	N	5
J1300700	30	50	N	N	N	N	N	<5	N	N	N	<5
J1300720	50	100	N	N	N	N	N	<5	N	N	N	<5
J1300740	30	70	N	N	N	N	N	10	N	N	N	5
J1300760	30	30	N	N	N	N	<10	<5	N	N	N	<5
J1300780	50	150	<1	N	N	N	<10	7	N	N	N	7
J1300800	20	50	N	N	N	N	N	<5	N	N	N	<5
J1300820	20	30	N	N	N	N	N	<5	N	N	N	<5
J1300840	20	30	N	N	N	N	N	<5	N	N	N	<5
J1300860	20	30	N	N	N	N	N	<5	N	N	N	<5
J1300880	15	<20	N	N	N	N	N	N	N	N	N	N
J1300900	10	20	N	N	N	N	N	N	N	N	N	<5
J1300920	30	50	N	N	N	N	<10	5	N	5	N	5
J1300940	10	<20	N	N	N	N	N	<5	N	N	N	N
J1300960	20	20	N	N	N	N	N	30	N	N	N	<5
J1300980	15	30	N	N	N	N	N	<5	N	N	N	<5
J1301000	10	<20	N	N	N	N	N	N	N	N	N	<5
J1301020	10	<20	N	N	N	N	N	N	N	N	N	N
J1301040	10	<20	N	N	N	N	N	N	N	N	N	N
J1301050	70	50	1	N	N	N	20	<5	N	N	N	5

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 130, JOPLIN 1 x 2 QUADRANGLE,  
MISSOURI AND KANSAS.--Continued

Sample	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Form #
J1300160	N	N	5	N	N	15	N	30	N	150	N	20
J1300160	N	N	N	N	N	<10	N	N	N	<10	N	20
J1300170	10	N	10	N	100	20	N	70	<200	30	N	20
J1300180	10	N	N	N	N	10	N	N	N	10	N	40
J1300190	N	N	N	N	N	<10	N	N	N	N	N	40
J1300200	N	N	N	N	N	10	N	N	N	10	N	40
J1300320	N	N	N	N	N	10	N	N	N	N	N	40
J1300340	N	N	N	N	N	N	N	N	N	N	N	40
J1300360	N	N	N	N	N	N	N	N	N	N	N	40
J1300380	N	N	N	N	N	<10	N	N	<200	N	N	40
J1300400	N	N	N	N	N	<10	N	N	N	N	N	40
J1300420	N	N	N	N	N	15	N	N	N	<10	N	40
J1300440	N	N	N	N	N	<10	N	N	N	<10	N	40
J1300475	N	N	N	N	N	<10	N	N	N	N	N	40
J1300495	15	N	20	N	100	150	N	50	N	200	N	40
J1300520	50	N	10	N	100	70	N	15	N	150	N	40
J1300550	10	N	5	N	<100	20	N	10	N	150	N	65
J1300600	<10	N	N	N	N	10	N	N	N	70	N	66
J1300620	<10	N	N	N	N	<10	N	N	N	20	N	66
J1300640	N	N	N	N	N	<10	N	N	N	20	N	66
J1300660	N	N	N	N	N	<10	N	N	N	<10	N	66
J1300680	N	N	N	N	N	15	N	N	N	15	N	66
J1300700	N	N	N	N	N	<10	N	N	N	<10	N	66
J1300720	N	N	N	N	N	10	N	N	N	15	N	66
J1300740	<10	N	N	N	N	15	N	N	N	15	N	66
J1300760	<10	N	N	N	N	20	N	N	N	10	N	66
J1300780	<10	N	N	N	N	20	N	N	N	50	N	66
J1300800	N	N	N	N	N	N	N	N	N	10	N	67
J1300820	N	N	N	N	N	N	N	N	N	10	N	67
J1300840	N	N	N	N	N	<10	N	N	N	20	N	67
J1300860	N	N	N	N	N	10	N	N	N	30	N	67
J1300880	N	N	N	N	N	N	N	N	N	N	N	67
J1300900	N	N	N	N	N	N	N	N	N	10	N	67
J1300920	N	N	N	N	N	20	N	N	N	20	N	68
J1300940	N	N	N	N	N	N	N	N	N	10	N	68
J1300960	N	N	N	N	N	15	N	N	N	<10	N	68
J1300980	N	N	N	N	N	<10	N	N	N	N	N	68
J1301000	N	N	N	N	N	N	N	N	N	N	N	68
J1301020	N	N	N	N	N	N	N	N	N	N	N	68
J1301040	N	N	N	N	N	N	N	N	N	N	N	68
J1301050	N	N	N	N	N	200	N	N	N	50	N	68