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Spectrographic analyses of insoluble-residue samples, Joplin 1° x 2° quadrangle, Kansas and Missouri: Drill hole nos. 4, 5, and 6

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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 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. 4 (#9A Kepley - KGS), drill hole no. 5 (#1 Altendorf - KGS),and drill hole no. 6 (#1 Wert - KGS) are given in this report. Drill hole no. 4 is located in sec. 2, T. 27 S., R. 18 E. in Neosho County, Kansas; drill hole no. 5 is located in sec. 2, T. 33 S., R. 16 E. in Montgomery County, Kansas; drill hole no. 6 is located in sec. 17, T. 31 S., R. 21 E. in Labette County, Kansas (fig.1). Data for the insoluble-residue samples from drill holes 4, 5, and 6 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 Kansas Geological Survey.

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 then 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 in 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:

<u>For those given in percent</u>:

Calcium	0.05
Iron	0.05
Magnesium	0.02
Titanium	0.002

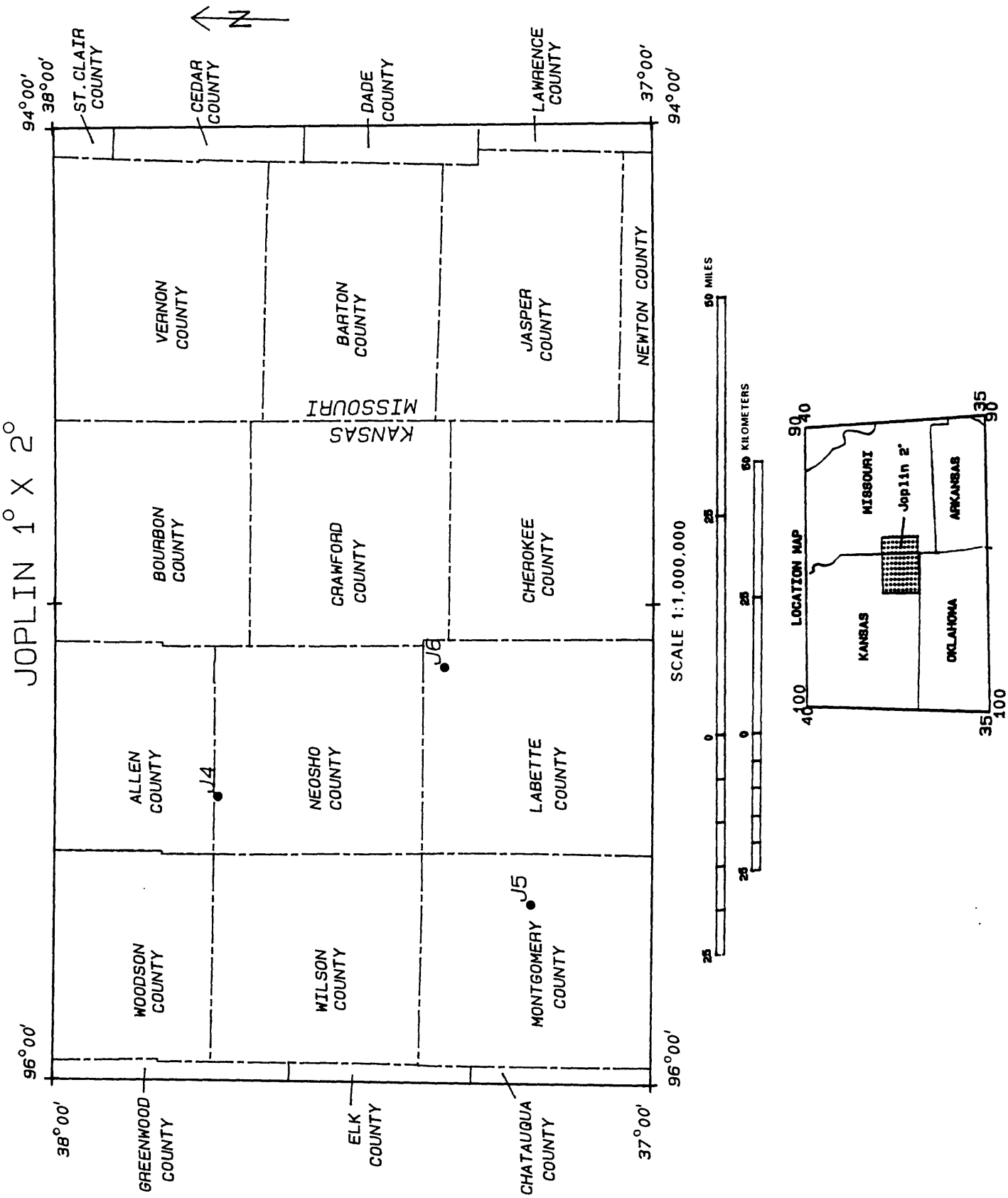

Figure 1. Locations of drill holes 4, 5, and 6, Joplin 1° x 2° quadrangle, Missouri and Kansas.

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 a seven-character code beginning with the letter J, signifying Joplin. The next number signifies the USGS drill-hole number. The letter R appears after the drill hole number and signifies insoluble residue. The next 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:

Code	Formation
20	Pennsylvanian Undifferentiated
31	Ms-D Chattanooga Shale
40	Mississippian Undifferentiated
60	Ordovician Undiferentiated
79	Arbuckle
84	Bonneterre Dolomite
85	Lamotte Sandstone
87	Post Bonneterre Cambrian Undifferentiated
89	Transition Zone

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 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) 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 the Kansas Geological Survey, Dr. Lee Gerhard, State Geologist, and their staffs, for making these drill-hole samples available from their sample libraries.

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. 4, 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
J4R0695	37 43 39	95 24 17	2.0	.50	.05	.70	100	N	N	N
J4R0700	37 43 39	95 24 17	5.0	.70	<.05	.70	100	N	N	N
J4R0705	37 43 39	95 24 17	5.0	.70	<.05	.70	150	N	N	N
J4R0720	37 43 39	95 24 17	5.0	1.00	<.05	1.00	150	N	N	N
J4R0730	37 43 39	95 24 17	2.0	1.00	<.05	.70	100	N	N	N
J4R0740	37 43 39	95 24 17	5.0	1.00	<.05	1.00	150	N	N	N
J4R0750	37 43 39	95 24 17	7.0	1.00	<.05	1.00	150	N	N	N
J4R0760	37 43 39	95 24 17	5.0	1.00	<.05	.50	150	1.0	N	N
J4R0770	37 43 39	95 24 17	10.0	.70	.05	.30	200	3.0	N	N
J4R0780	37 43 39	95 24 17	3.0	1.00	<.05	.70	150	N	N	N
J4R0790	37 43 39	95 24 17	7.0	1.00	<.05	1.00	150	N	N	N
J4R0800	37 43 39	95 24 17	5.0	1.00	<.05	.70	200	.5	N	N
J4R0810	37 43 39	95 24 17	7.0	1.00	.05	.70	300	N	N	N
J4R0820	37 43 39	95 24 17	5.0	.70	<.05	.50	150	N	N	N
J4R0823	37 43 39	95 24 17	7.0	1.00	<.05	.50	150	N	N	N
J4R0825	37 43 39	95 24 17	5.0	.70	<.05	.50	150	N	N	N
J4R0827	37 43 39	95 24 17	5.0	1.00	<.05	.70	200	N	N	N
J4R0830	37 43 39	95 24 17	5.0	1.00	<.05	.50	200	N	N	N
J4R0840	37 43 39	95 24 17	7.0	1.00	<.05	.50	200	N	N	N
J4R0850	37 43 39	95 24 17	7.0	1.00	<.05	.50	200	N	N	N
J4R0860	37 43 39	95 24 17	5.0	1.00	<.05	.70	150	N	N	N
J4R0870	37 43 39	95 24 17	7.0	1.00	<.05	.70	200	N	N	N
J4R0880	37 43 39	95 24 17	5.0	.50	<.05	.50	200	.7	N	N
J4R0890	37 43 39	95 24 17	5.0	.70	<.05	.50	200	N	N	N
J4R0900	37 43 39	95 24 17	3.0	.70	<.05	.70	150	N	N	N
J4R0910	37 43 39	95 24 17	3.0	1.00	<.05	.50	200	N	N	N
J4R0920	37 43 39	95 24 17	5.0	1.00	<.05	1.00	200	N	N	N
J4R0930	37 43 39	95 24 17	5.0	1.00	<.05	.70	200	N	N	N
J4R0940	37 43 39	95 24 17	5.0	1.00	<.05	.70	200	N	N	N
J4R0950	37 43 39	95 24 17	5.0	1.00	<.05	1.00	300	N	N	N
J4R0960	37 43 39	95 24 17	3.0	.70	<.05	.50	200	N	N	N
J4R0970	37 43 39	95 24 17	5.0	1.00	<.05	1.00	200	N	N	N
J4R0980	37 43 39	95 24 17	3.0	.70	<.05	.50	200	N	N	N
J4R0990	37 43 39	95 24 17	2.0	.50	<.05	.30	100	N	N	N
J4R1000	37 43 39	95 24 17	2.0	.30	<.05	.20	100	N	N	N
J4R1010	37 43 39	95 24 17	2.0	.20	<.05	.15	100	N	N	N
J4R1020	37 43 39	95 24 17	.7	.10	<.05	.10	50	N	N	N
J4R1030	37 43 39	95 24 17	1.0	.20	<.05	.15	70	N	N	N
J4R1040	37 43 39	95 24 17	.7	.10	<.05	.15	30	N	N	N
J4R1050	37 43 39	95 24 17	2.0	.20	<.05	.20	50	N	N	N
J4R1060	37 43 39	95 24 17	7.0	1.00	<.05	.50	150	N	N	N
J4R1070	37 43 39	95 24 17	7.0	1.00	<.05	.70	200	N	N	N
J4R1090	37 43 39	95 24 17	5.0	.50	.10	.30	70	N	N	N
J4R1100	37 43 39	95 24 17	5.0	.50	.20	.30	100	N	N	N
J4R1110	37 43 39	95 24 17	1.5	.30	.05	.20	70	N	N	N

TAPLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 4, 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
J4R0695	100	700	1.0	N	N	7	50	10	50	N	<20	20
J4R0700	100	500	1.0	N	N	7	50	30	50	N	<20	30
J4R0705	100	300	1.0	N	N	10	70	50	50	N	<20	30
J4R0720	100	500	1.5	N	N	10	100	30	70	N	<20	30
J4R0730	100	300	1.0	N	N	7	70	30	50	N	<20	20
J4R0740	100	500	1.0	N	N	10	100	30	50	N	<20	20
J4R0750	100	700	1.0	N	N	15	100	50	50	5	<20	30
J4R0760	100	500	2.0	N	N	15	300	150	50	50	<20	100
J4R0770	100	1,500	1.5	N	N	20	500	200	30	70	<20	200
J4R0780	100	500	1.0	N	N	15	100	20	50	N	<20	30
J4R0790	100	500	1.5	N	N	15	150	50	50	N	<20	50
J4R0800	100	500	1.0	N	N	15	100	50	50	5	<20	70
J4R0810	100	700	1.5	N	N	20	150	50	50	N	<20	50
J4R0820	100	500	1.5	N	N	15	100	20	50	N	<20	50
J4R0823	100	500	1.5	N	N	15	150	70	50	N	<20	50
J4R0825	100	500	1.5	N	N	15	150	50	30	N	<20	50
J4R0827	100	500	1.0	N	N	15	150	30	50	N	<20	70
J4R0830	100	500	1.5	N	N	10	100	30	50	N	<20	70
J4R0840	100	500	2.0	N	N	20	200	500	50	N	<20	100
J4R0850	100	500	1.5	N	N	20	150	100	50	N	<20	70
J4R0860	100	500	1.5	N	N	20	150	30	50	N	<20	70
J4R0870	100	500	1.5	N	N	20	200	20	50	N	<20	70
J4R0880	100	500	1.0	N	N	15	100	50	50	7	<20	70
J4R0890	100	500	1.5	N	N	15	100	30	30	N	<20	50
J4R0900	100	300	1.0	N	N	15	70	50	30	N	<20	50
J4R0910	70	200	1.0	N	N	15	50	30	20	N	<20	50
J4R0920	100	500	1.0	N	N	15	70	50	30	N	<20	50
J4R0930	100	500	1.0	N	N	15	50	30	50	N	<20	50
J4R0940	100	300	1.0	N	N	10	50	30	50	N	<20	50
J4R0950	100	500	1.0	N	N	20	50	50	50	N	<20	50
J4R0960	100	300	1.0	N	N	10	70	30	30	N	<20	30
J4R0970	100	500	1.0	N	N	15	70	50	50	N	<20	50
J4R0980	70	150	1.0	N	N	10	50	30	30	N	N	30
J4R0990	50	100	1.0	N	N	7	30	20	20	N	N	20
J4R1000	50	100	<1.0	N	N	5	20	20	30	N	N	20
J4R1010	50	70	<1.0	N	N	5	10	50	20	N	N	15
J4R1020	20	50	N	N	N	5	100	5	N	N	N	15
J4R1030	50	100	<1.0	N	N	N	200	7	20	N	N	15
J4R1040	20	50	N	N	N	N	N	5	30	N	N	10
J4R1050	30	150	<1.0	N	N	5	10	20	20	5	N	15
J4R1060	100	300	1.5	N	N	20	100	50	50	10	N	70
J4R1070	150	500	1.5	N	N	20	150	50	50	N	<20	100
J4R1090	100	200	1.0	N	N	10	70	50	N	N	N	30
J4R1100	100	100	1.0	N	N	10	50	50	N	15	N	30
J4R1110	70	50	<1.0	N	N	5	50	15	N	N	N	20

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 4, 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.#
J4R0695	10	N	10	N	150	150	N	15	N	200	N	20
J4R0700	15	N	10	N	100	150	N	30	N	300	N	20
J4R0705	20	N	15	N	150	200	N	20	N	300	N	20
J4R0720	20	N	15	N	150	200	N	30	N	300	N	20
J4R0730	15	N	15	N	100	200	N	20	N	200	N	20
J4R0740	15	N	20	N	150	200	N	30	N	200	N	20
J4R0750	150	N	20	N	150	200	N	30	N	200	N	20
J4R0760	70	N	15	N	100	300	N	20	300	150	N	20
J4R0770	100	N	15	N	150	500	N	20	700	200	N	20
J4R0780	15	N	20	N	150	200	N	30	N	200	N	20
J4R0790	20	N	20	N	150	300	N	30	N	200	N	20
J4R0800	20	N	15	N	150	200	N	30	N	300	N	20
J4R0810	20	N	20	N	200	300	N	30	N	200	N	20
J4R0820	30	N	20	N	150	300	N	20	N	200	N	20
J4R0823	100	N	20	N	300	300	N	30	N	200	N	20
J4R0825	50	N	15	N	200	200	N	20	N	200	N	20
J4R0827	30	N	15	N	200	200	N	30	N	300	N	20
J4R0830	30	N	15	N	200	200	N	30	N	300	N	20
J4R0840	20	N	20	N	150	300	N	30	N	200	N	20
J4R0850	20	N	20	N	150	300	N	20	N	150	N	20
J4R0860	20	N	20	N	150	300	N	20	N	200	N	20
J4R0870	15	N	20	N	150	500	N	30	N	200	N	20
J4R0880	30	N	15	N	200	200	N	30	N	200	N	20
J4R0890	20	N	10	N	150	200	N	20	N	200	N	20
J4R0900	15	N	10	N	100	200	N	30	N	200	N	20
J4R0910	15	N	10	N	N	200	N	20	N	300	N	20
J4R0920	15	N	15	N	100	200	N	30	N	200	N	20
J4R0930	10	N	15	N	100	200	N	30	N	300	N	20
J4R0940	15	N	15	N	100	200	N	30	N	300	N	20
J4R0950	20	N	15	N	100	200	N	30	N	300	N	20
J4R0960	15	N	10	N	100	200	N	20	N	300	N	20
J4R0970	15	N	15	N	100	200	N	30	N	300	N	20
J4R0980	20	N	10	N	100	200	N	20	N	200	N	20
J4R0990	10	N	7	N	N	100	N	15	N	300	N	20
J4R1000	N	N	<5	N	N	70	N	10	N	200	N	20
J4R1010	10	N	<5	N	N	50	N	10	N	100	N	20
J4R1020	N	N	N	N	N	20	N	<10	N	100	N	20
J4R1030	10	N	N	N	N	30	N	10	N	150	N	20
J4R1040	N	N	N	N	100	20	N	<10	N	100	N	20
J4R1050	N	N	N	N	100	50	N	15	N	300	N	20
J4R1060	30	N	20	N	100	200	N	20	N	150	N	20
J4R1070	50	N	20	N	100	300	N	30	N	200	N	20
J4R1090	15	N	10	N	100	100	N	15	N	100	N	40
J4R1100	15	N	10	N	100	100	N	15	N	100	N	40
J4R1110	10	N	5	N	100	70	N	10	N	70	N	40

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 4, 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
J4R1120	37 43 39	95 24 17	5.0	.70	.10	.50	100	N	N	N
J4R1130	37 43 39	95 24 17	.3	.05	.05	.07	10	N	N	N
J4R1150	37 43 39	95 24 17	.5	.03	<.05	.05	15	N	N	N
J4R1160	37 43 39	95 24 17	.5	.07	<.05	.07	10	N	N	N
J4R1170	37 43 39	95 24 17	.5	.03	<.05	.03	15	N	N	N
J4R1180	37 43 39	95 24 17	.5	.03	<.05	.05	10	N	N	N
J4R1190	37 43 39	95 24 17	.5	.02	<.05	.02	15	N	N	N
J4R1200	37 43 39	95 24 17	.5	.03	<.05	.03	10	N	N	N
J4R1210	37 43 39	95 24 17	.7	.03	<.05	.05	15	N	N	N
J4R1220	37 43 39	95 24 17	.5	.03	<.05	.05	15	N	N	N
J4R1230	37 43 39	95 24 17	2.0	.05	<.05	.07	50	N	N	N
J4R1240	37 43 39	95 24 17	5.0	.05	<.05	.07	100	N	N	N
J4R1250	37 43 39	95 24 17	5.0	.15	<.05	.10	150	N	N	N
J4R1260	37 43 39	95 24 17	5.0	.10	<.05	.07	150	N	N	N
J4R1270	37 43 39	95 24 17	1.5	.10	<.05	.07	70	N	N	N
J4R1280	37 43 39	95 24 17	5.0	.20	<.05	.10	100	N	N	N
J4R1290	37 43 39	95 24 17	1.0	.07	<.05	.07	20	N	N	N
J4R1300	37 43 39	95 24 17	5.0	.50	.05	.30	150	.5	N	N
J4R1310	37 43 39	95 24 17	3.0	.50	.07	.50	150	.5	N	N
J4R1320	37 43 39	95 24 17	7.0	.50	.10	.50	200	1.0	N	N
J4R1330	37 43 39	95 24 17	7.0	.50	.05	.50	50	1.0	N	N
J4R1340	37 43 39	95 24 17	5.0	.50	<.05	.30	100	<.5	N	N
J4R1350	37 43 39	95 24 17	5.0	.70	<.05	.20	70	N	N	N
J4R1360	37 43 39	95 24 17	7.0	1.00	<.05	.50	150	N	N	N
J4R1370	37 43 39	95 24 17	7.0	1.00	<.05	.50	100	N	N	N
J4R1380	37 43 39	95 24 17	3.0	1.00	.05	.50	100	N	N	N
J4R1390	37 43 39	95 24 17	5.0	1.00	<.05	.30	100	N	N	N
J4R1400	37 43 39	95 24 17	2.0	.20	<.05	.15	30	N	N	N
J4R1410	37 43 39	95 24 17	3.0	.15	.05	.15	150	N	N	N
J4R1420	37 43 39	95 24 17	3.0	.50	<.05	.20	70	N	N	N
J4R1430	37 43 39	95 24 17	5.0	.50	.05	.20	100	N	N	N
J4R1440	37 43 39	95 24 17	2.0	.10	.05	.15	50	N	N	N
J4R1450	37 43 39	95 24 17	1.5	.07	<.05	.10	50	N	N	N
J4R1460	37 43 39	95 24 17	1.0	.10	<.05	.10	15	N	N	N
J4R1470	37 43 39	95 24 17	.7	.10	<.05	.10	20	N	N	N

TAPLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 4, 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
J4R1120	100	200	1.0	N	N	15	100	500	N	10	<20	50
J4R1130	50	30	N	N	N	N	N	5	N	N	N	15
J4R1150	50	20	N	N	N	N	N	7	N	N	N	15
J4R1160	30	20	N	N	N	N	N	5	N	N	N	15
J4R1170	30	<20	N	N	N	N	N	10	N	N	N	15
J4R1180	30	<20	N	N	N	N	N	5	N	N	N	15
J4R1190	30	<20	N	N	N	N	N	15	N	N	N	10
J4R1200	30	20	N	N	N	N	N	5	N	N	N	7
J4R1210	30	20	N	N	N	N	N	7	N	N	N	15
J4R1220	30	30	N	N	N	N	N	5	N	N	N	10
J4R1230	50	30	N	N	N	10	N	50	N	N	N	30
J4R1240	30	30	N	N	N	15	N	200	N	<5	N	70
J4R1250	50	70	<1.0	N	N	20	20	50	N	7	N	100
J4R1260	30	30	N	N	N	15	10	50	N	5	N	100
J4R1270	30	30	N	N	N	10	N	20	N	7	N	50
J4R1280	50	100	N	N	N	15	20	50	N	15	N	100
J4R1290	20	200	N	N	N	5	10	10	N	N	N	50
J4R1300	100	150	1.0	N	N	15	50	700	50	15	<20	150
J4R1310	70	700	1.0	N	N	20	70	50	50	5	<20	200
J4R1320	100	500	1.0	N	N	20	50	500	50	7	<20	200
J4R1330	100	500	1.0	N	N	15	50	500	50	10	<20	100
J4R1340	70	150	<1.0	N	N	15	50	50	N	10	<20	50
J4R1350	100	150	1.0	N	N	10	70	70	N	<5	<20	30
J4R1360	100	200	1.0	N	N	15	100	70	N	10	<20	30
J4R1370	100	200	1.0	N	N	20	100	100	N	7	<20	50
J4R1380	100	200	1.0	N	N	20	100	50	50	10	<20	50
J4R1390	70	300	1.5	N	N	20	100	70	N	30	<20	70
J4R1400	50	150	<1.0	N	N	10	15	20	N	30	N	20
J4R1410	50	150	<1.0	N	N	5	15	30	N	50	N	20
J4R1420	50	200	<1.0	N	N	15	30	100	N	20	N	50
J4R1430	50	150	1.0	N	N	20	50	70	N	20	N	50
J4R1440	30	100	<1.0	N	N	10	10	20	N	7	N	50
J4R1450	20	100	<1.0	N	N	15	N	50	N	N	N	70
J4R1460	20	100	<1.0	N	N	N	N	10	N	N	N	20
J4R1470	20	70	<1.0	N	N	N	10	10	N	N	N	20

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 4, 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.#
J4R1120	20	N	15	N	150	150	N	20	N	150	N	40
J4R1130	N	N	N	N	N	30	N	N	N	20	N	40
J4R1150	N	N	N	N	N	30	N	N	N	15	N	40
J4R1160	N	N	N	N	N	50	N	N	N	20	N	40
J4R1170	N	N	N	N	N	15	N	N	N	10	N	40
J4R1180	N	N	N	N	N	15	N	N	N	10	N	40
J4R1190	N	N	N	N	N	N	N	N	N	10	N	40
J4R1200	N	N	N	N	N	N	N	N	700	10	N	40
J4R1210	N	N	N	N	N	10	N	N	N	10	N	40
J4R1220	N	N	N	N	N	15	N	N	N	15	N	40
J4R1230	N	N	5	N	N	20	N	10	N	30	N	40
J4R1240	20	N	N	N	N	20	50	N	300	20	N	40
J4R1250	30	N	5	N	N	50	N	<10	500	30	N	40
J4R1260	50	N	N	N	N	20	N	N	500	20	N	40
J4R1270	10	N	N	N	N	20	N	N	N	30	N	40
J4R1280	30	N	<5	N	N	50	70	10	N	50	N	40
J4R1290	N	N	N	N	N	15	N	N	N	20	N	40
J4R1300	50	N	15	N	200	150	N	20	N	150	N	40
J4R1310	100	N	15	N	300	200	50	30	N	150	N	40
J4R1320	70	N	10	N	200	150	N	20	N	100	N	40
J4R1330	70	N	15	N	300	200	N	20	N	150	N	40
J4R1340	50	N	10	N	N	150	N	15	N	100	N	40
J4R1350	20	N	10	N	N	200	N	15	N	70	N	31
J4R1360	15	N	15	N	N	500	N	20	N	100	N	31
J4R1370	15	N	10	N	N	200	N	15	N	100	N	31
J4R1380	50	N	20	N	150	200	N	20	N	100	N	31
J4R1390	50	N	15	N	N	300	N	20	N	100	N	31
J4R1400	10	N	N	N	N	70	N	N	N	50	N	31
J4R1410	10	N	N	N	N	50	N	N	N	50	N	60
J4R1420	30	N	10	N	N	150	N	10	N	70	N	60
J4R1430	50	N	10	N	N	150	N	15	N	70	N	60
J4R1440	10	N	<5	N	N	70	N	N	N	50	N	60
J4R1450	15	N	N	N	N	30	N	N	N	30	N	60
J4R1460	N	N	N	N	N	30	N	N	N	30	N	60
J4R1470	N	N	N	N	N	30	N	N	N	50	N	60

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, 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
J5R0160	37 12 12	95 37 43	5.0	1.50	<.05	.50	200	N	N	N
J5R0170	37 12 12	95 37 43	3.0	1.00	.10	.30	150	N	N	N
J5R0180	37 12 12	95 37 43	5.0	1.00	.10	.30	300	<.5	N	N
J5R0190	37 12 12	95 37 43	5.0	1.00	.20	.30	200	<.5	N	N
J5R0200	37 12 12	95 37 43	3.0	.70	.07	.30	200	N	N	N
J5R0210	37 12 12	95 37 43	5.0	1.00	.05	.50	200	1.0	N	N
J5R0220	37 12 12	95 37 43	7.0	1.00	.05	.50	200	N	N	N
J5R0230	37 12 12	95 37 43	5.0	1.50	.50	.50	200	<.5	N	N
J5R0240	37 12 12	95 37 43	5.0	1.00	.05	.30	100	N	N	N
J5R0250	37 12 12	95 37 43	3.0	.70	.20	.20	200	.5	N	N
J5R0260	37 12 12	95 37 43	7.0	1.00	.30	.50	300	.5	N	N
J5R0270	37 12 12	95 37 43	5.0	.70	.05	.50	100	N	N	N
J5R0280	37 12 12	95 37 43	5.0	1.00	.05	.30	100	N	N	N
J5R0290	37 12 12	95 37 43	5.0	1.00	.05	.50	150	N	N	N
J5R0310	37 12 12	95 37 43	5.0	1.00	.10	.50	200	1.0	N	N
J5R0320	37 12 12	95 37 43	7.0	1.50	.20	.50	200	N	N	N
J5R0330	37 12 12	95 37 43	5.0	1.00	.07	.50	200	N	N	N
J5R0340	37 12 12	95 37 43	5.0	1.50	.07	.70	200	N	N	N
J5R0350	37 12 12	95 37 43	5.0	1.00	.05	.70	200	N	N	N
J5R0360	37 12 12	95 37 43	5.0	1.00	.05	.70	200	N	N	N
J5R0370	37 12 12	95 37 43	2.0	1.00	.05	.50	200	N	N	N
J5R0380	37 12 12	95 37 43	3.0	1.00	.05	.50	200	N	N	N
J5R0390	37 12 12	95 37 43	5.0	1.00	.05	.70	200	N	N	N
J5R0400	37 12 12	95 37 43	5.0	1.00	.05	1.00	200	N	N	N
J5R0410	37 12 12	95 37 43	5.0	1.00	.07	.70	200	N	N	N
J5R0420	37 12 12	95 37 43	5.0	1.00	.05	.50	150	N	N	N
J5R0430	37 12 12	95 37 43	5.0	1.00	<.05	.70	200	N	N	N
J5R0440	37 12 12	95 37 43	5.0	1.00	.05	.70	200	N	N	N
J5R0450	37 12 12	95 37 43	3.0	.70	.07	.30	150	N	N	N
J5R0460	37 12 12	95 37 43	7.0	1.00	.30	.30	500	N	N	N
J5R0470	37 12 12	95 37 43	5.0	1.00	.07	.30	200	.7	N	N
J5R0480	37 12 12	95 37 43	5.0	1.00	.20	.20	150	.5	N	N
J5R0490	37 12 12	95 37 43	5.0	1.00	<.05	.30	200	N	N	N
J5R0500	37 12 12	95 37 43	3.0	1.00	<.05	.30	200	N	N	N
J5R0510	37 12 12	95 37 43	1.5	.50	<.05	.20	200	N	N	N
J5R0520	37 12 12	95 37 43	2.0	.50	<.05	.30	100	N	N	N
J5R0540	37 12 12	95 37 43	1.0	.15	.05	.20	70	N	N	N
J5R0550	37 12 12	95 37 43	5.0	.30	.50	.20	200	<.5	N	N
J5R0560	37 12 12	95 37 43	5.0	.50	.70	.20	200	.7	N	N
J5R0570	37 12 12	95 37 43	5.0	.50	.30	.30	200	.5	N	N
J5R0580	37 12 12	95 37 43	3.0	.50	.30	.20	200	2.0	N	N
J5R0590	37 12 12	95 37 43	5.0	.70	.20	.20	200	1.5	N	N
J5R0600	37 12 12	95 37 43	3.0	.50	.20	.20	100	5.0	N	N
J5R0610	37 12 12	95 37 43	5.0	.50	.30	.15	150	5.0	N	N
J5R0620	37 12 12	95 37 43	7.0	.70	.07	.30	200	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, 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
J5R0160	100	500	3.0	N	N	15	100	30	30	N	<20	50
J5R0170	150	300	3.0	N	N	7	100	30	20	N	<20	50
J5R0180	150	300	3.0	N	N	10	150	50	20	N	<20	100
J5R0190	100	200	3.0	N	N	15	100	50	20	N	<20	100
J5R0200	100	200	3.0	N	N	10	100	50	30	N	<20	70
J5R0210	150	700	3.0	N	N	20	100	70	30	N	<20	100
J5R0220	150	700	5.0	N	N	15	100	50	30	N	<20	70
J5R0230	150	500	3.0	N	N	15	100	50	30	N	<20	100
J5R0240	100	200	3.0	N	N	15	100	50	30	N	<20	50
J5R0250	100	100	3.0	N	N	10	100	50	20	5	N	100
J5R0260	150	200	3.0	N	N	20	100	70	20	N	<20	100
J5R0270	100	500	3.0	N	N	7	100	30	20	N	<20	50
J5R0280	100	200	3.0	N	N	5	70	30	20	N	<20	30
J5R0290	100	200	3.0	N	N	7	100	30	30	N	<20	30
J5R0310	150	700	5.0	N	N	10	150	70	30	15	<20	100
J5R0320	200	500	5.0	N	N	15	100	50	30	N	<20	70
J5R0330	150	200	3.0	N	N	10	100	50	50	N	<20	50
J5R0340	150	300	3.0	N	N	15	100	50	50	N	<20	70
J5R0350	150	300	3.0	N	N	15	100	50	30	N	<20	50
J5R0360	150	200	3.0	N	N	10	100	20	30	N	<20	30
J5R0370	100	300	3.0	N	N	10	70	30	30	N	<20	30
J5R0380	100	500	3.0	N	N	10	70	50	30	N	<20	30
J5R0390	100	300	3.0	N	N	15	100	30	30	N	<20	50
J5R0400	100	200	3.0	N	N	15	100	50	50	N	<20	50
J5R0410	150	200	3.0	N	N	15	100	50	30	N	<20	50
J5R0420	100	200	3.0	N	N	10	100	30	50	N	<20	50
J5R0430	150	200	3.0	N	N	10	100	30	50	N	<20	50
J5R0440	100	200	3.0	N	N	15	100	30	50	N	<20	50
J5R0450	100	150	2.0	N	N	7	70	30	30	N	<20	50
J5R0460	100	300	3.0	N	N	15	100	50	50	N	<20	50
J5R0470	150	200	3.0	N	N	15	100	70	50	10	<20	100
J5R0480	100	150	3.0	N	N	10	100	70	50	7	<20	70
J5R0490	70	200	3.0	N	N	15	100	50	50	N	<20	50
J5R0500	70	150	2.0	N	N	10	70	50	30	<5	<20	30
J5R0510	50	100	1.5	N	N	7	30	15	20	5	<20	20
J5R0520	50	100	1.5	N	N	10	50	20	30	N	<20	20
J5R0540	30	150	1.0	N	N	5	20	7	30	N	<20	7
J5R0550	50	2,000	1.5	N	50	15	50	50	20	10	<20	50
J5R0560	70	1,000	2.0	N	50	15	70	70	N	30	<20	70
J5R0570	70	1,000	2.0	N	50	15	70	70	20	20	<20	70
J5R0580	100	150	3.0	N	N	10	200	100	20	30	<20	150
J5R0590	70	1,000	2.0	N	N	15	100	100	20	20	<20	100
J5R0600	100	150	3.0	N	30	10	500	150	20	70	<20	200
J5R0610	100	100	2.0	N	50	10	200	150	30	50	<20	150
J5R0620	100	500	3.0	N	N	15	100	50	50	N	<20	50

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, 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.#
J5R0160	20	N	15	10	200	200	N	20	N	100	N	20
J5R0170	10	N	10	N	150	150	N	20	N	100	N	20
J5R0180	20	N	10	N	200	150	N	20	300	100	N	20
J5R0190	20	N	10	N	100	200	N	20	N	100	N	20
J5R0200	15	N	15	N	100	150	N	20	N	100	N	20
J5R0210	30	N	15	10	150	200	N	20	200	100	N	20
J5R0220	15	N	15	N	150	200	N	20	N	150	N	20
J5R0230	20	N	15	10	150	200	N	20	N	100	N	20
J5R0240	20	N	15	N	100	150	N	20	N	150	N	20
J5R0250	20	N	10	N	100	150	N	20	200	100	N	20
J5R0260	50	N	15	N	100	200	N	20	200	150	N	20
J5R0270	15	N	10	N	N	100	N	20	N	150	N	20
J5R0280	10	N	10	N	N	100	N	20	N	150	N	20
J5R0290	N	N	10	N	100	100	N	20	N	200	N	20
J5R0310	150	N	15	N	100	150	N	20	2,000	200	N	20
J5R0320	30	N	15	N	150	150	N	20	N	200	N	20
J5R0330	15	N	15	N	100	150	N	20	N	300	N	20
J5R0340	30	N	15	N	100	200	N	20	N	200	N	20
J5R0350	20	N	15	N	150	150	N	20	200	300	N	20
J5R0360	15	N	10	N	100	100	N	20	N	300	N	20
J5R0370	10	N	10	N	100	100	N	20	N	300	N	20
J5R0380	10	N	10	N	100	100	N	20	N	300	N	20
J5R0390	20	N	15	N	150	150	N	20	N	300	N	20
J5R0400	15	N	15	N	100	150	N	30	N	300	N	20
J5R0410	10	N	15	N	100	150	N	30	N	300	N	20
J5R0420	10	N	15	N	100	150	N	30	N	200	N	20
J5R0430	10	N	15	N	100	150	N	30	N	200	N	20
J5R0440	10	N	15	N	100	150	N	30	N	200	N	20
J5R0450	20	N	10	N	N	100	N	20	N	100	N	20
J5R0460	20	N	15	N	150	150	<50	30	200	150	N	20
J5R0470	30	N	15	N	100	150	N	20	500	100	N	20
J5R0480	50	N	10	N	100	150	N	30	500	100	N	20
J5R0490	20	N	15	N	100	150	N	30	N	150	N	20
J5R0500	10	N	10	N	100	150	N	20	200	200	N	20
J5R0510	10	N	5	N	100	100	N	15	N	150	N	20
J5R0520	N	N	7	N	100	100	N	20	N	200	N	20
J5R0540	N	N	<5	N	100	70	N	10	500	150	N	20
J5R0550	20	N	10	N	300	150	<50	20	1,500	150	N	20
J5R0560	100	N	10	N	200	100	N	10	2,000	150	N	20
J5R0570	50	N	10	N	100	150	<50	15	3,000	100	N	20
J5R0580	50	N	15	N	100	300	N	15	500	100	N	20
J5R0590	50	N	10	N	200	200	<50	10	300	100	N	20
J5R0600	50	N	10	N	100	500	N	10	1,000	70	N	20
J5R0610	50	N	10	N	100	500	N	30	1,500	70	N	20
J5R0620	70	N	15	N	150	200	N	20	1,000	100	N	20

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, 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
J5R0630	37 12 12	95 37 43	7.0	.70	<.05	.30	300	N	N	N
J5R0640	37 12 12	95 37 43	7.0	.50	.05	.70	500	N	N	N
J5R0650	37 12 12	95 37 43	5.0	.70	.05	.70	300	N	N	N
J5R0660	37 12 12	95 37 43	5.0	.50	.07	.50	200	1.0	N	N
J5R0670	37 12 12	95 37 43	3.0	.70	.05	.70	200	1.0	N	N
J5R0680	37 12 12	95 37 43	3.0	.50	<.05	.50	200	N	N	N
J5R0690	37 12 12	95 37 43	3.0	.50	<.05	.50	200	N	N	N
J5R0700	37 12 12	95 37 43	3.0	.50	.05	.50	150	.5	N	N
J5R0710	37 12 12	95 37 43	2.0	.30	.05	.50	150	N	N	N
J5R0720	37 12 12	95 37 43	2.0	.50	<.05	.50	200	N	N	N
J5R0730	37 12 12	95 37 43	3.0	.50	<.05	.50	200	N	N	N
J5R0740	37 12 12	95 37 43	2.0	.50	<.05	.50	200	N	N	N
J5R0750	37 12 12	95 37 43	2.0	.50	<.05	.50	200	N	N	N
J5R0760	37 12 12	95 37 43	3.0	.50	<.05	.50	150	N	N	N
J5R0770	37 12 12	95 37 43	1.5	.30	<.05	.50	100	N	N	N
J5R0780	37 12 12	95 37 43	2.0	.50	<.05	.50	150	N	N	N
J5R0790	37 12 12	95 37 43	2.0	.50	<.05	.50	200	N	N	N
J5R0800	37 12 12	95 37 43	2.0	.50	<.05	.50	200	N	N	N
J5R0810	37 12 12	95 37 43	2.0	.50	<.05	.30	200	N	N	N
J5R0820	37 12 12	95 37 43	3.0	.70	<.05	.30	200	<.5	N	N
J5R0830	37 12 12	95 37 43	3.0	.50	.10	.30	200	2.0	N	N
J5R0840	37 12 12	95 37 43	3.0	.50	.07	.30	200	1.5	N	N
J5R0850	37 12 12	95 37 43	1.5	.50	<.05	.50	50	N	N	N
J5R0860	37 12 12	95 37 43	1.5	.50	<.05	.50	70	<.5	N	N
J5R0870	37 12 12	95 37 43	1.5	.30	<.05	.50	50	N	N	N
J5R0880	37 12 12	95 37 43	2.0	.50	<.05	.50	50	N	N	N
J5R0890	37 12 12	95 37 43	2.0	.50	<.05	.50	100	N	N	N
J5R0900	37 12 12	95 37 43	5.0	1.00	<.05	.70	150	N	N	N
J5R0910	37 12 12	95 37 43	3.0	.70	<.05	.50	100	N	N	N
J5R0920	37 12 12	95 37 43	5.0	1.00	<.05	.50	150	N	N	N
J5R0930	37 12 12	95 37 43	5.0	1.00	.05	.70	200	N	N	N
J5R0940	37 12 12	95 37 43	5.0	1.00	<.05	.70	200	N	N	N
J5R0950	37 12 12	95 37 43	1.5	.30	<.05	.20	70	N	N	N
J5R0960	37 12 12	95 37 43	5.0	1.00	<.05	.50	150	N	N	N
J5R0970	37 12 12	95 37 43	5.0	.70	<.05	.50	100	N	N	N
J5R0980	37 12 12	95 37 43	2.0	1.00	<.05	.50	100	N	N	N
J5R0990	37 12 12	95 37 43	3.0	1.00	<.05	.50	150	N	N	N
J5R1000	37 12 12	95 37 43	3.0	.70	.05	.50	150	N	N	N
J5R1010	37 12 12	95 37 43	5.0	1.00	.05	.50	150	N	N	N
J5R1020	37 12 12	95 37 43	5.0	1.00	.10	.50	200	N	N	N
J5R1030	37 12 12	95 37 43	5.0	1.00	.05	.50	100	N	N	N
J5R1040	37 12 12	95 37 43	5.0	.50	.07	.20	100	N	N	N
J5R1050	37 12 12	95 37 43	1.5	.20	.07	.20	100	N	N	N
J5R1060	37 12 12	95 37 43	2.0	.20	.07	.15	50	N	N	N
J5R1070	37 12 12	95 37 43	2.0	.20	.05	.20	100	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, JOPLIN 1 x 2 QUADRANGLE, MISSOURI AND KANSAS.--Continued

Sample	P-ppm s	Pb-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
J5R0630	100	300	3.0	N	N	15	100	50	50	N	<20	50
J5R0640	150	700	3.0	N	N	15	100	100	50	7	<20	100
J5R0650	100	500	3.0	N	N	15	100	50	30	N	<20	70
J5R0660	100	200	3.0	N	N	15	100	100	30	20	<20	150
J5R0670	150	300	3.0	N	N	10	100	70	50	N	<20	70
J5R0680	100	150	3.0	N	N	15	70	30	30	N	<20	70
J5R0690	100	150	3.0	N	N	15	100	50	50	N	<20	70
J5R0700	100	150	3.0	N	N	15	100	70	50	5	<20	100
J5R0710	100	100	3.0	N	N	15	70	70	50	N	<20	50
J5R0720	100	150	2.0	N	N	15	70	20	50	N	<20	50
J5R0730	100	150	3.0	N	N	20	70	30	50	N	<20	50
J5R0740	100	150	3.0	N	N	15	70	20	50	N	<20	50
J5R0750	100	300	2.0	N	N	15	70	30	50	5	<20	50
J5R0760	100	200	3.0	N	N	15	100	30	50	5	<20	50
J5R0770	100	200	3.0	N	N	15	70	50	50	N	<20	50
J5R0780	70	200	3.0	N	N	15	70	15	50	N	<20	30
J5R0790	100	150	3.0	N	N	15	70	20	50	N	<20	50
J5R0800	100	150	3.0	N	N	15	70	30	50	N	<20	50
J5R0810	100	150	3.0	N	N	10	70	30	50	N	<20	30
J5R0820	100	200	3.0	N	N	15	100	20	50	N	<20	50
J5R0830	100	150	3.0	N	N	20	150	100	50	10	<20	200
J5R0840	100	150	3.0	N	N	15	100	100	50	7	<20	100
J5R0850	100	150	3.0	N	N	10	100	30	50	N	<20	50
J5R0860	100	150	3.0	N	N	15	100	50	50	<5	<20	50
J5R0870	100	200	3.0	N	N	10	100	20	50	N	<20	50
J5R0880	100	150	3.0	N	N	15	100	50	70	N	<20	50
J5R0890	100	200	5.0	N	N	10	100	30	50	N	<20	50
J5R0900	100	200	5.0	N	N	20	100	70	70	N	<20	100
J5R0910	100	150	3.0	N	N	15	100	50	50	N	<20	100
J5R0920	100	150	5.0	N	N	15	100	50	50	N	<20	70
J5R0930	100	150	5.0	N	N	15	100	50	50	N	<20	100
J5R0940	100	200	3.0	N	N	20	100	50	50	N	<20	100
J5R0950	100	150	3.0	N	N	5	100	20	30	N	<20	30
J5R0960	100	150	3.0	N	N	15	100	50	50	N	<20	100
J5R0970	100	150	3.0	N	N	15	100	50	50	N	<20	100
J5R0980	100	200	3.0	N	N	10	100	50	50	N	<20	70
J5R0990	100	200	3.0	N	N	15	100	50	50	N	<20	70
J5R1000	100	150	3.0	N	N	15	100	50	50	N	<20	70
J5R1010	100	150	3.0	N	N	10	100	50	50	N	<20	70
J5R1020	100	150	3.0	N	N	15	100	50	50	N	<20	100
J5R1030	100	150	3.0	N	N	15	100	50	70	N	<20	70
J5R1040	100	100	3.0	N	N	10	70	30	30	N	<20	70
J5R1050	100	100	1.0	N	N	7	50	10	20	N	<20	30
J5R1060	100	100	N	N	N	5	50	10	30	N	<20	30
J5R1070	100	100	1.5	N	N	7	50	15	30	N	<20	30

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, 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.#
J5R0630	50	N	15	N	150	200	N	20	N	100	N	20
J5R0640	70	N	15	N	150	150	N	20	N	200	N	20
J5R0650	30	N	15	N	100	150	N	20	N	200	N	20
J5R0660	50	N	15	N	N	200	N	20	200	150	N	20
J5R0670	20	N	15	N	200	150	N	30	N	200	N	20
J5R0680	20	N	15	N	100	150	N	20	N	150	N	20
J5R0690	20	N	15	N	150	200	N	20	<200	100	N	20
J5R0700	30	N	15	N	100	150	N	20	700	150	N	20
J5R0710	20	N	15	N	100	150	N	20	<200	200	N	20
J5R0720	10	N	15	N	150	150	N	30	N	200	N	20
J5R0730	10	N	15	N	150	150	N	30	N	150	N	20
J5R0740	10	N	15	N	150	150	N	30	N	200	N	20
J5R0750	15	N	10	N	150	150	N	20	200	200	N	20
J5R0760	15	N	15	N	150	150	N	20	200	200	N	20
J5R0770	15	N	15	N	100	150	N	20	N	200	N	20
J5R0780	10	N	15	N	100	150	N	20	N	200	N	20
J5R0790	10	N	15	N	150	150	N	30	200	150	N	20
J5R0800	50	N	15	N	150	150	N	30	N	150	N	20
J5R0810	20	N	15	N	150	150	N	30	<200	150	N	20
J5R0820	30	N	15	N	150	150	N	20	<200	100	N	20
J5R0830	150	N	15	N	100	150	N	20	1,500	100	N	20
J5R0840	70	N	15	N	100	150	N	30	1,500	150	N	20
J5R0850	30	N	15	N	150	150	N	30	200	150	N	20
J5R0860	30	N	15	N	150	150	N	30	<200	200	N	20
J5R0870	15	N	15	N	150	150	N	30	N	100	N	20
J5R0880	15	N	15	N	100	200	N	30	N	150	N	20
J5R0890	15	N	15	N	100	150	N	30	N	150	N	20
J5R0900	20	N	20	N	100	200	N	50	N	150	N	20
J5R0910	20	N	15	N	100	150	N	30	N	100	N	20
J5R0920	30	N	15	N	100	150	N	30	<200	150	N	20
J5R0930	30	N	20	N	100	200	N	30	<200	150	N	20
J5R0940	30	N	20	N	100	200	N	30	500	150	N	20
J5R0950	15	N	10	N	N	100	N	20	N	50	N	20
J5R0960	30	N	20	N	100	200	N	30	<200	150	N	20
J5R0970	50	N	20	N	100	200	N	30	N	100	N	20
J5R0980	30	N	15	N	100	200	N	30	N	100	N	20
J5R0990	30	N	20	N	100	200	N	30	<200	150	N	20
J5R1000	20	N	15	N	100	150	N	30	300	200	N	20
J5R1010	15	N	15	N	100	200	N	50	500	200	N	20
J5R1020	30	N	15	N	100	150	N	30	N	150	N	20
J5R1030	50	N	20	N	100	200	N	50	N	150	N	20
J5R1040	15	N	10	N	100	150	N	20	1,000	100	N	20
J5R1050	<10	N	7	N	100	100	N	15	N	100	N	40
J5R1060	<10	N	5	N	100	100	N	10	N	70	N	40
J5R1070	<10	N	7	N	100	150	N	15	<200	100	N	40

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, 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
J5R1080	37 12 12	95 37 43	1.5	.20	.05	.20	70	1.0	N	N
J5R1090	37 12 12	95 37 43	2.0	.30	.05	.20	100	<.5	N	N
J5R1100	37 12 12	95 37 43	1.5	.15	.10	.20	100	<.5	N	N
J5R1110	37 12 12	95 37 43	1.5	.15	.10	.20	70	<.5	N	N
J5R1020	37 12 12	95 37 43	1.0	.10	.07	.10	30	N	N	N
J5R1130	37 12 12	95 37 43	.7	.07	.15	.10	50	N	N	N
J5R1140	37 12 12	95 37 43	.5	.07	.05	.10	20	N	N	N
J5R1150	37 12 12	95 37 43	.2	.05	.05	.05	30	N	N	N
J5R1160	37 12 12	95 37 43	.5	.05	.05	.10	20	N	N	N
J5R1170	37 12 12	95 37 43	.5	.05	.05	.07	15	N	N	N
J5R1180	37 12 12	95 37 43	.5	.10	.05	.10	20	N	N	N
J5R1190	37 12 12	95 37 43	.7	.10	.07	.10	50	N	N	N
J5R1200	37 12 12	95 37 43	.5	.10	.10	.10	20	N	N	N
J5R1210	37 12 12	95 37 43	.5	.10	.10	.15	20	N	N	N
J5R1220	37 12 12	95 37 43	.5	.10	.10	.10	20	N	N	N
J5R1230	37 12 12	95 37 43	.3	.07	.10	.10	20	N	N	N
J5R1240	37 12 12	95 37 43	1.5	.15	.20	.20	100	N	N	N
J5R1250	37 12 12	95 37 43	.7	.10	.10	.15	70	N	N	N
J5R1260	37 12 12	95 37 43	.7	.15	.15	.15	50	N	N	N
J5R1270	37 12 12	95 37 43	.7	.15	.10	.15	30	N	N	N
J5R1280	37 12 12	95 37 43	1.0	.15	.20	.15	50	N	N	N
J5R1300	37 12 12	95 37 43	2.0	.30	.20	.30	150	.5	N	N
J5R1310	37 12 12	95 37 43	2.0	.30	.20	.30	200	N	N	N
J5R1320	37 12 12	95 37 43	5.0	.50	.15	.30	200	N	N	N
J5R1330	37 12 12	95 37 43	5.0	1.50	.15	.70	200	N	N	N
J5R1340	37 12 12	95 37 43	5.0	1.00	.07	.50	200	N	N	N
J5R1350	37 12 12	95 37 43	5.0	1.50	.07	.50	200	N	N	N
J5R1360	37 12 12	95 37 43	5.0	1.50	.07	.50	150	N	N	N
J5R1370	37 12 12	95 37 43	5.0	1.00	.07	.50	150	N	N	N
J5R1380	37 12 12	95 37 43	1.5	.20	.05	.20	50	N	N	N
J5R1390	37 12 12	95 37 43	1.5	.20	.07	.15	70	N	N	N
J5R1400	37 12 12	95 37 43	5.0	.70	.07	.30	100	N	N	N
J5R1410	37 12 12	95 37 43	1.5	.20	.10	.20	50	N	N	N
J5R1420	37 12 12	95 37 43	2.0	.30	.05	.20	50	N	N	N
J5R1430	37 12 12	95 37 43	3.0	.20	.07	.20	70	N	N	N
J5R1440	37 12 12	95 37 43	2.0	.30	.10	.20	50	N	N	N
J5R1450	37 12 12	95 37 43	2.0	.50	.07	.20	30	N	N	N
J5R1460	37 12 12	95 37 43	3.0	.50	.07	.30	50	N	N	N
J5R1470	37 12 12	95 37 43	1.0	.20	.10	.20	50	N	N	N
J5R1480	37 12 12	95 37 43	1.0	.20	.15	.15	30	N	N	N
J5R1490	37 12 12	95 37 43	2.0	.70	.50	.20	70	N	N	N
J5R1500	37 12 12	95 37 43	.7	.15	.07	.10	20	N	N	N
J5R1510	37 12 12	95 37 43	1.5	.20	.10	.20	50	N	N	N
J5R1520	37 12 12	95 37 43	2.0	.30	.10	.20	50	N	N	N
J5R1530	37 12 12	95 37 43	5.0	.30	.15	.15	30	N	<200	N
J5R1540	37 12 12	95 37 43	2.0	.20	.10	.15	70	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 5, 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
J5R1080	100	100	1.5	N	N	5	70	15	30	N	<20	30
J5R1090	100	100	1.0	N	N	5	50	15	20	5	<20	20
J5R1100	50	100	1.0	N	30	5	50	20	20	7	<20	30
J5R1110	50	70	1.0	N	N	7	70	20	20	5	<20	30
J5R1020	50	50	N	N	N	5	20	5	N	N	N	15
J5R1130	50	50	N	N	N	N	20	5	N	N	N	7
J5R1140	50	100	N	N	N	N	20	<5	N	N	N	5
J5R1150	50	30	N	N	N	N	10	5	N	N	N	5
J5R1160	50	50	N	N	N	N	10	5	N	N	N	5
J5R1170	50	50	N	N	N	N	10	<5	N	N	N	5
J5R1180	50	50	N	N	N	N	10	<5	N	N	N	7
J5R1190	50	50	N	N	N	5	10	5	N	5	N	15
J5R1200	50	50	N	N	N	N	10	<5	N	N	N	5
J5R1210	50	150	N	N	N	N	10	5	N	N	N	10
J5R1220	50	50	N	N	N	N	10	5	N	N	N	10
J5R1230	50	50	N	N	N	N	10	<5	N	N	N	7
J5R1240	50	100	1.0	N	N	15	20	15	20	10	<20	50
J5R1250	50	70	N	N	N	N	50	5	N	N	N	10
J5R1260	50	70	N	N	N	N	20	5	N	N	N	10
J5R1270	50	50	N	N	N	N	20	5	N	N	N	10
J5R1280	50	50	N	N	N	N	30	5	N	N	N	15
J5R1300	70	150	3.0	N	N	15	100	50	30	10	<20	100
J5R1310	100	150	3.0	N	N	10	70	20	20	10	<20	100
J5R1320	100	200	3.0	N	N	20	70	70	20	15	<20	100
J5R1330	100	200	5.0	N	N	20	100	50	30	N	<20	100
J5R1340	100	200	3.0	N	N	20	100	100	20	N	<20	50
J5R1350	100	200	3.0	N	N	15	100	70	30	N	<20	50
J5R1360	100	200	5.0	N	N	15	100	50	50	N	<20	50
J5R1370	100	200	3.0	N	N	15	100	50	50	N	<20	50
J5R1380	70	200	1.0	N	N	5	30	20	20	N	<20	15
J5R1390	50	300	N	N	N	5	20	15	20	5	N	10
J5R1400	100	200	2.0	N	N	10	70	50	N	30	N	50
J5R1410	70	150	1.0	N	N	7	50	50	N	20	N	20
J5R1420	100	150	1.5	N	N	7	50	20	N	50	N	20
J5R1430	100	150	1.5	N	N	7	50	30	N	15	N	30
J5R1440	100	150	1.5	N	N	7	70	20	20	10	N	30
J5R1450	100	150	2.0	N	N	7	50	20	N	30	N	15
J5R1460	100	100	2.0	N	N	10	70	20	N	20	N	20
J5R1470	70	150	1.0	N	N	5	30	20	N	20	N	15
J5R1480	70	100	<1.0	N	N	<5	30	30	N	7	N	10
J5R1490	100	200	1.5	N	N	10	70	50	N	20	N	30
J5R1500	70	100	<1.0	N	N	<5	15	10	N	15	N	10
J5R1510	100	150	<1.0	N	N	5	50	10	20	7	N	15
J5R1520	100	200	1.0	N	N	10	50	30	N	70	N	20
J5R1530	100	150	N	N	N	<5	30	30	N	30	N	20
J5R1540	100	100	<1.0	N	N	5	30	20	N	30	N	20

TAPLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUF SAMPLES FROM DRILL HOLE NO. 5, 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.#
J5R1080	10	N	7	N	100	100	N	15	N	150	N	40
J5R1090	<10	N	7	N	100	100	N	15	N	100	N	40
J5R1100	20	N	7	N	100	100	N	10	2,000	100	N	40
J5R1110	10	N	5	N	100	70	N	<10	300	100	N	40
J5R1020	N	N	N	N	N	30	N	N	N	30	N	40
J5R1130	N	N	N	N	N	30	N	N	N	30	N	40
J5R1140	N	N	N	N	N	30	N	N	N	50	N	40
J5R1150	N	N	N	N	N	10	N	N	N	20	N	40
J5R1160	N	N	N	N	N	20	N	N	N	30	N	40
J5R1170	N	N	N	N	N	15	N	N	<200	20	N	40
J5R1180	N	N	N	N	N	30	N	N	200	30	N	40
J5R1190	N	N	N	N	N	30	N	N	<200	30	N	40
J5R1200	N	N	N	N	N	20	N	N	<200	30	N	40
J5R1210	N	N	N	N	N	30	N	N	<200	50	N	40
J5R1220	N	N	N	N	N	30	N	N	<200	30	N	40
J5R1230	N	N	N	N	N	15	N	N	<200	30	N	40
J5R1240	N	N	7	N	N	50	N	10	<200	150	N	40
J5R1250	N	N	N	N	N	20	N	10	500	150	N	40
J5R1260	N	N	N	N	N	30	N	N	1,000	50	N	40
J5R1270	N	N	N	N	N	30	N	N	<200	50	N	40
J5R1280	N	N	N	N	N	30	N	N	N	50	N	40
J5R1300	50	N	10	N	N	150	N	15	<200	100	N	40
J5R1310	20	N	10	N	N	150	N	15	<200	200	N	40
J5R1320	50	N	10	N	N	150	N	15	<200	150	N	40
J5R1330	30	N	15	N	N	200	N	20	500	200	N	40
J5R1340	20	N	15	N	N	200	N	30	200	200	N	40
J5R1350	30	N	15	N	N	200	N	30	<200	150	N	79
J5R1360	20	N	15	N	N	150	N	30	<200	200	N	79
J5R1370	30	N	15	N	N	200	N	30	<200	200	N	79
J5R1380	10	N	5	N	N	70	N	15	N	150	N	79
J5R1390	10	N	N	N	N	30	N	10	N	100	N	79
J5R1400	20	N	7	N	N	100	N	15	N	100	N	79
J5R1410	15	N	5	N	N	70	N	10	N	100	N	79
J5R1420	10	N	5	N	N	50	N	<10	N	100	N	79
J5R1430	10	N	5	N	N	50	N	10	<200	100	N	79
J5R1440	15	N	7	N	N	70	N	15	<200	150	N	79
J5R1450	15	N	5	N	N	50	N	<10	200	70	N	79
J5R1460	15	N	7	N	N	50	N	15	N	100	N	79
J5R1470	10	N	5	N	N	30	N	10	N	100	N	79
J5R1480	10	N	<5	N	N	30	N	<10	N	50	N	79
J5R1490	30	N	5	N	N	70	N	<10	N	100	N	79
J5R1500	N	N	N	N	N	20	N	N	N	50	N	79
J5R1510	10	N	5	N	N	50	N	10	N	70	N	79
J5R1520	30	N	<5	N	100	50	N	10	N	100	N	79
J5R1530	10	N	5	N	N	30	N	10	N	70	N	79
J5R1540	70	N	5	N	N	20	N	10	N	50	N	79

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 6, 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
J6R0538	37 20 52	95 8 4	1.50	.05	.07	.050	30	N	N	N
J6R0558	37 20 52	95 8 4	1.00	.07	.07	.050	50	N	N	N
J6R0580	37 20 52	95 8 4	.10	<.02	.05	.005	<10	N	N	N
J6R0600	37 20 52	95 8 4	.30	<.02	<.05	.010	15	N	N	N
J6R0620	37 20 52	95 8 4	.20	<.02	.10	.007	10	N	N	N
J6R0640	37 20 52	95 8 4	.30	<.02	.15	.010	10	N	N	N
J6R0660	37 20 52	95 8 4	.10	<.02	<.05	.002	10	N	N	N
J6R0690	37 20 52	95 8 4	.05	<.02	<.05	.003	<10	N	N	N
J6R0712	37 20 52	95 8 4	.15	<.02	<.05	.007	10	N	N	N
J6R0733	37 20 52	95 8 4	.15	<.02	<.05	.007	<10	N	N	N
J6R0753	37 20 52	95 8 4	.10	<.02	<.05	.010	<10	N	N	N
J6R0773	37 20 52	95 8 4	.20	<.02	<.05	.007	<10	N	N	N
J6R0794	37 20 52	95 8 4	2.00	.10	.10	.020	50	N	N	N
J6R0816	37 20 52	95 8 4	3.00	.20	.20	.300	50	N	N	N
J6R0835	37 20 52	95 8 4	10.00	1.00	.07	.500	100	N	N	N
J6R0853	37 20 52	95 8 4	2.00	.15	.10	.050	15	N	N	N
J6R0875	37 20 52	95 8 4	1.50	.05	.05	.020	70	N	N	N
J6R0898	37 20 52	95 8 4	.50	.07	.05	.030	30	N	N	N
J6R0920	37 20 52	95 8 4	2.00	.20	.05	.150	70	N	N	N
J6R0940	37 20 52	95 8 4	10.00	.10	<.05	.100	500	N	N	N
J6R0960	37 20 52	95 8 4	1.50	.07	.05	.030	50	N	N	N
J6R0977	37 20 52	95 8 4	2.00	.10	.07	.030	50	N	N	N
J6R1000	37 20 52	95 8 4	3.00	.05	<.05	.020	300	N	N	N
J6R1022	37 20 52	95 8 4	2.00	.05	<.05	.030	500	N	N	N
J6R1042	37 20 52	95 8 4	3.00	.07	.05	.050	300	N	N	N
J6R1060	37 20 52	95 8 4	1.50	.03	.05	.020	100	N	N	N
J6R1076	37 20 52	95 8 4	.70	.02	<.05	.015	70	N	N	N
J6R1100	37 20 52	95 8 4	1.50	.03	.05	.010	100	N	N	N
J6R1200	37 20 52	95 8 4	.30	.03	.05	.015	30	N	N	N
J6R1222	37 20 52	95 8 4	.50	.03	.05	.010	50	N	N	N
J6R1242	37 20 52	95 8 4	1.00	.10	.10	.030	200	N	N	N
J6R1265	37 20 52	95 8 4	1.00	.10	.15	.050	200	N	N	N
J6R1285	37 20 52	95 8 4	1.50	.05	.05	.020	200	N	N	N
J6R1305	37 20 52	95 8 4	.50	.02	<.05	.010	50	N	N	N
J6R1321	37 20 52	95 8 4	.50	.02	<.05	.010	50	N	N	N
J6R1338	37 20 52	95 8 4	.70	.03	.05	.015	200	N	N	N
J6R1360	37 20 52	95 8 4	.50	.02	<.05	.007	100	N	N	N
J6R1378	37 20 52	95 8 4	2.00	.05	.05	.020	150	N	N	N
J6R1398	37 20 52	95 8 4	1.50	.03	.05	.020	500	N	N	N
J6R1420	37 20 52	95 8 4	1.50	.05	.07	.030	300	N	N	N
J6R1437	37 20 52	95 8 4	2.00	.03	<.05	.020	200	N	N	N
J6R1457	37 20 52	95 8 4	.30	.02	<.05	.010	30	N	N	N
J6R1475	37 20 52	95 8 4	1.00	.03	.05	.010	150	N	N	N
J6R1496	37 20 52	95 8 4	.20	.03	.05	.005	20	N	N	N
J6R1516	37 20 52	95 8 4	1.50	<.02	<.05	.007	20	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 6, 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
J6R0538	100	30	N	N	N	N	15	5	N	N	N	20
J6R0558	70	30	1.0	N	N	N	20	10	N	N	N	30
J6R0580	50	<20	N	N	N	N	N	N	N	N	N	N
J6R0600	70	<20	N	N	N	N	N	N	N	N	N	N
J6R0620	70	<20	N	N	N	N	N	N	N	N	N	N
J6R0640	70	<20	N	N	N	N	10	N	N	N	N	N
J6R0660	100	<20	N	N	N	N	N	N	N	N	N	N
J6R0690	100	<20	N	N	N	N	N	N	N	N	N	N
J6R0712	70	<20	N	N	N	N	N	N	N	N	N	N
J6R0733	100	<20	N	N	N	N	N	N	N	N	N	N
J6R0753	70	<20	N	N	N	N	N	N	N	N	N	N
J6R0773	70	<20	N	N	N	N	N	N	N	N	N	N
J6R0794	50	20	N	N	N	10	N	7	N	N	N	200
J6R0816	100	70	N	N	N	10	30	7	N	N	N	70
J6R0835	200	150	2.0	N	N	50	150	50	N	N	N	100
J6R0853	70	50	<1.0	N	N	5	N	10	N	N	N	20
J6R0875	70	30	<1.0	N	N	N	N	5	N	N	N	5
J6R0898	70	30	<1.0	N	N	N	N	<5	N	N	N	N
J6R0920	100	150	1.5	N	N	N	30	30	N	N	N	10
J6R0940	50	150	1.5	N	N	20	20	50	N	N	N	20
J6R0960	70	70	<1.0	N	N	N	10	5	N	N	N	N
J6R0977	70	70	1.0	N	N	N	20	20	N	N	N	10
J6R1000	70	50	1.0	N	N	N	10	7	N	N	N	N
J6R1022	70	50	1.0	N	N	N	N	5	N	N	N	10
J6R1042	70	50	1.5	N	N	N	10	20	N	N	N	15
J6R1060	70	50	1.0	N	N	N	N	10	N	N	N	7
J6R1076	70	50	<1.0	N	N	N	N	<5	N	N	N	5
J6R1100	70	50	<1.0	N	N	N	N	10	N	N	N	7
J6R1200	50	50	<1.0	N	N	N	N	<5	N	N	N	N
J6R1222	50	50	N	N	N	N	N	<5	N	N	N	N
J6R1242	50	200	1.0	N	N	N	N	5	N	N	N	5
J6R1265	50	150	<1.0	N	N	N	N	5	N	N	N	5
J6R1285	50	70	1.0	N	N	N	N	7	N	N	N	5
J6R1305	15	20	N	N	N	N	N	N	N	N	N	N
J6R1321	10	20	N	N	N	N	N	N	N	N	N	N
J6R1338	N	30	N	N	N	N	N	<5	N	N	N	N
J6R1360	10	20	N	N	N	N	N	500	N	N	N	N
J6R1378	20	50	N	N	N	N	N	10	N	N	N	7
J6R1398	20	100	N	N	N	N	N	5	N	N	N	7
J6R1420	30	70	N	N	N	N	N	7	N	N	N	5
J6R1437	30	100	1.0	N	N	N	N	10	N	N	N	10
J6R1457	30	<20	N	N	N	N	N	N	N	N	N	5
J6R1475	20	30	<1.0	N	N	N	N	<5	N	N	N	5
J6R1496	20	20	N	N	N	N	N	N	N	N	N	N
J6R1516	20	30	N	N	N	N	N	7	N	N	N	5

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 6, 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.#
J6R0538	N	N	N	N	N	N	N	N	N	30	N	20
J6P0558	N	N	N	N	N	70	N	N	N	20	N	20
J6R0580	N	N	N	N	N	N	N	N	N	N	N	20
J6R0600	N	N	N	N	N	N	N	N	N	N	N	20
J6R0620	N	N	N	N	N	N	N	N	N	N	N	20
J6R0640	N	N	N	N	N	N	N	N	N	N	N	20
J6R0660	N	N	N	N	N	N	N	N	N	N	N	20
J6R0690	N	N	N	N	N	N	N	N	N	N	N	20
J6R0712	N	N	N	N	N	N	N	N	N	N	N	20
J6R0733	N	N	N	N	N	N	N	N	N	N	N	20
J6R0753	N	N	N	N	N	N	N	N	N	N	N	20
J6R0773	N	N	N	N	N	N	N	N	N	N	N	20
J6R0794	N	N	N	N	N	N	N	N	N	N	N	20
J6R0816	10	N	N	N	N	20	N	10	N	200	N	20
J6R0835	20	N	N	N	N	200	N	10	N	150	N	20
J6R0853	N	N	N	N	N	10	N	N	N	10	N	20
J6R0875	N	N	N	N	N	N	N	N	200	10	N	20
J6R0898	N	N	N	N	N	N	N	N	N	10	N	20
J6R0920	10	N	N	N	N	30	N	N	N	100	N	60
J6R0940	<10	N	N	N	N	50	N	10	N	30	N	60
J6R0960	N	N	N	N	N	N	N	N	N	30	N	60
J6R0977	N	N	N	N	N	20	N	N	500	30	N	60
J6R1000	N	N	N	N	N	10	N	N	N	N	N	60
J6R1022	N	N	N	N	N	20	N	N	N	20	N	60
J6R1042	N	N	N	N	N	30	N	N	N	30	N	60
J6R1060	N	N	N	N	N	20	N	N	N	10	N	60
J6R1076	N	N	N	N	N	15	N	N	N	N	N	60
J6R1100	N	N	N	N	N	15	N	N	N	N	N	60
J6R1200	N	N	N	N	N	10	N	N	N	N	N	60
J6R1222	N	N	N	N	N	10	N	N	N	N	N	60
J6R1242	N	N	N	N	N	15	N	N	N	30	N	60
J6R1265	N	N	N	N	N	20	N	N	N	20	N	60
J6R1285	N	N	N	N	N	20	N	N	N	30	N	60
J6R1305	N	N	N	N	N	10	N	N	N	20	N	60
J6R1321	N	N	N	N	N	10	N	N	N	20	N	60
J6R1338	N	N	N	N	N	10	N	N	N	N	N	60
J6R1360	10	N	N	N	N	10	N	N	N	50	N	60
J6R1378	N	N	N	N	N	20	N	N	N	20	N	60
J6R1398	N	N	N	N	N	15	N	N	N	30	N	60
J6R1420	N	N	N	N	N	15	N	N	N	N	N	60
J6R1437	N	N	N	N	N	30	N	N	N	20	N	60
J6R1457	N	N	N	N	N	15	N	N	N	N	N	60
J6R1475	N	N	N	N	N	15	N	N	N	N	N	60
J6R1496	N	N	N	N	N	<10	N	N	N	N	N	60
J6P1516	N	N	N	N	N	<10	N	N	N	N	N	60

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 6, 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
J6R1536	37 20 52	95 8 4	1.00	.02	<.05	.007	15	N	N	N
J6R1557	37 20 52	95 8 4	2.00	.07	.10	.015	50	N	N	N
J6R1576	37 20 52	95 8 4	2.00	.02	.05	.015	70	N	N	N
J6R1598	37 20 52	95 8 4	7.00	.07	.07	.030	150	N	N	N
J6R1619	37 20 52	95 8 4	10.00	.15	.05	.200	1,000	N	N	N
J6R1639	37 20 52	95 8 4	5.00	.10	.07	.100	200	.5	N	N
J6R1657	37 20 52	95 8 4	7.00	.20	.30	.150	200	N	N	N
J6R1670	37 20 52	95 8 4	20.00	.05	.05	.100	200	.5	200	N
J6R1682	37 20 52	95 8 4	20.00	.05	.05	.030	100	.5	N	N
J6R1690	37 20 52	95 8 4	5.00	.05	.05	.050	100	5.0	N	N
J6R1708	37 20 52	95 8 4	7.00	.15	.05	.150	150	1.0	300	N
J6R1721	37 20 52	95 8 4	7.00	.30	.07	.300	70	N	N	N
J6R1733	37 20 52	95 8 4	5.00	.30	.05	.200	100	N	N	N
J6R1754	37 20 52	95 8 4	3.00	.30	<.05	.300	50	N	N	N
J6R1774	37 20 52	95 8 4	2.00	.20	<.05	.300	50	N	N	N
J6R1801	37 20 52	95 8 4	1.50	.10	<.05	.200	70	N	N	N
J6R1818	37 20 52	95 8 4	1.50	.15	<.05	.200	50	N	N	N
J6R1838	37 20 52	95 8 4	.30	.03	<.05	.050	30	N	N	N
J6R1859	37 20 52	95 8 4	.50	.07	<.05	.100	20	N	N	N
J6R1880	37 20 52	95 8 4	.50	.03	<.05	.030	20	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 6, 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
J6R1536	50	20	N	N	N	N	N	<5	N	N	N	N
J6R1557	50	30	N	N	N	N	N	10	N	N	N	15
J6R1576	30	<20	N	N	N	N	N	20	N	N	N	15
J6R1598	30	30	1.5	N	N	N	10	70	N	20	N	30
J6R1619	50	700	2.0	N	N	15	50	70	N	20	N	50
J6R1639	30	300	1.0	N	N	N	20	50	N	10	N	30
J6R1657	50	200	<1.0	N	N	N	20	70	N	10	N	30
J6R1670	15	700	N	N	N	7	15	100	N	10	N	50
J6R1682	10	200	N	N	N	N	N	70	N	10	N	30
J6R1690	15	300	<1.0	N	N	N	N	50	N	N	N	20
J6R1708	20	100	2.0	N	N	10	20	300	N	20	N	30
J6R1721	30	500	2.0	N	N	10	10	70	N	5	N	20
J6R1733	30	500	2.0	N	N	15	20	50	N	5	N	20
J6R1754	30	500	2.0	N	N	7	20	30	N	7	N	20
J6R1774	50	700	3.0	N	N	N	10	30	N	N	N	10
J6R1801	50	700	3.0	N	N	N	30	30	N	N	N	20
J6R1818	30	700	3.0	N	N	N	N	30	N	N	N	10
J6R1838	15	100	1.5	N	N	50	200	5	N	N	N	N
J6R1859	30	150	2.0	N	N	15	50	7	N	N	N	N
J6R1880	20	70	1.0	N	N	N	N	5	N	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 6, 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.#
J6R1536	N	N	N	N	N	<10	N	N	N	N	N	60
J6R1557	N	N	N	N	N	15	N	N	N	30	N	60
J6R1576	N	N	N	N	N	10	N	N	N	N	N	87
J6R1598	10	N	N	N	N	20	N	N	300	10	N	87
J6R1619	15	N	N	N	N	100	N	N	N	70	N	87
J6R1639	10	N	N	N	N	30	N	N	N	70	N	87
J6R1657	50	N	N	N	N	30	N	N	N	100	N	87
J6R1670	70	N	N	N	N	30	N	N	500	50	N	87
J6R1682	70	N	N	N	N	15	N	N	N	50	N	87
J6R1690	30	N	N	N	N	10	N	N	N	50	N	87
J6R1708	100	N	N	N	N	20	N	N	N	70	N	87
J6R1721	200	N	N	N	N	20	N	15	N	150	N	84
J6R1733	150	N	N	N	N	20	N	20	N	100	N	84
J6R1754	100	N	N	N	N	30	N	30	N	150	N	84
J6R1774	100	N	N	N	N	20	N	20	N	150	N	84
J6R1801	50	N	N	N	N	50	N	20	N	200	N	84
J6R1818	50	N	N	N	N	20	N	20	N	200	N	84
J6R1838	N	N	N	N	N	<10	N	N	N	200	N	84
J6R1859	10	N	N	N	N	10	N	20	N	200	N	89
J6R1880	10	N	N	N	N	10	N	10	N	200	N	85