

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. 119, 120, and 121**

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 emission 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. 119 (#27378 - MGLS), drill hole no. 120 (#12632 - MGLS), and drill hole no. 121 (#20387 - MGLS) are given in this report. Drill hole no. 119 is located in sec. 26, T. 29 N., R. 25 E. in Crawford County, Kansas; drill hole no. 120 is located in sec. 1, T. 27 N., R. 32 W. in Jasper County, Missouri; drill hole no. 121 is located in sec. 35, T. 31 N., R. 29 W. in Barton County, Missouri (fig. 1). Spectrographic data for the insoluble-residue samples from drill holes 119, 120, and 121 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:

For those given in percent:

Calcium	0.05
Iron	0.05
Magnesium	0.02
Titanium	0.002

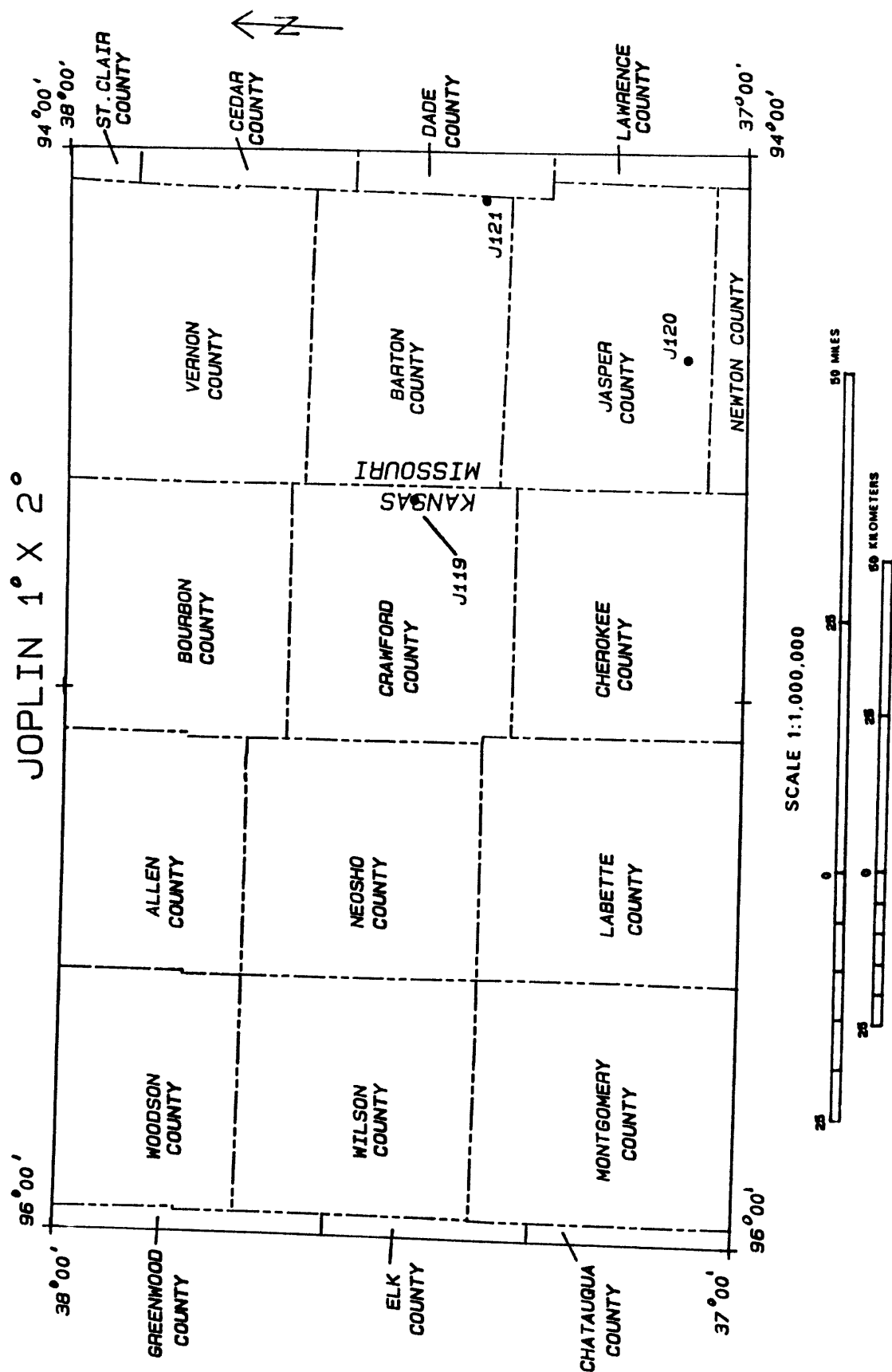


Figure 1. Locations of drill holes 119, 120, and 121, Joplin 1° x 2° quadrangle, Missouri and Kansas.

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 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:

<u>Code</u>	<u>Formation</u>
40	Mississippian Undifferentiated
65	Cotter Dolomite
66	Jefferson City Dolomite
67	Roubidoux Formation
68	Gasconade Dolomite
69	Gunter Sandstone Member
81	Emminence
82	Potosi
83	Derby / Doerun
93	Van Buren

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

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- 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. 119, 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
J1190460	37 30 25	94 38 28	.50	<.02	.20	.010	<10	N	N	N
J1190485	37 30 25	94 38 28	.15	<.02	<.05	.002	N	N	N	N
J1190500	37 30 25	94 38 28	.05	<.02	<.05	<.002	N	N	N	N
J1190510	37 30 25	94 38 28	.10	.02	.05	.002	N	N	N	N
J1190530	37 30 25	94 38 28	.15	.02	.15	.150	<10	N	N	N
J1190540	37 30 25	94 38 28	.07	<.02	.50	.100	<10	N	N	N
J1190550	37 30 25	94 38 28	.30	<.02	.30	.150	<10	N	N	N
J1190570	37 30 25	94 38 28	.20	.03	1.00	.150	<10	N	N	N
J1190580	37 30 25	94 38 28	.15	.03	.30	.100	N	N	N	N
J1190595	37 30 25	94 38 28	.30	.05	.30	.200	<10	N	N	N
J1190610	37 30 25	94 38 28	.10	<.02	.70	.100	<10	N	N	N
J1190625	37 30 25	94 38 28	.20	.10	1.50	.200	<10	N	N	N
J1190640	37 30 25	94 38 28	2.00	1.50	.20	.300	20	N	N	N
J1190655	37 30 25	94 38 28	3.00	2.00	.70	.300	50	N	N	N
J1190670	37 30 25	94 38 28	5.00	2.00	1.50	.500	50	N	N	N
J1190685	37 30 25	94 38 28	5.00	1.50	.20	.300	15	N	N	N
J1190700	37 30 25	94 38 28	1.50	1.00	.30	.150	10	N	N	N
J1190720	37 30 25	94 38 28	.50	.20	.15	.050	N	N	N	N
J1190740	37 30 25	94 38 28	.15	.20	.20	.030	N	N	N	N
J1190760	37 30 25	94 38 28	.70	.10	.07	.020	N	N	N	N
J1190780	37 30 25	94 38 28	.70	1.00	.70	.070	<10	N	N	N
J1190800	37 30 25	94 38 28	1.50	1.00	1.00	.070	10	N	N	N
J1190820	37 30 25	94 38 28	.50	.10	.10	.015	N	N	N	N
J1190840	37 30 25	94 38 28	.50	.10	<.05	.030	N	N	N	N
J1190860	37 30 25	94 38 28	.15	.05	<.05	.015	N	N	N	N
J1190875	37 30 25	94 38 28	2.00	.20	.10	.030	N	N	N	N
J1190890	37 30 25	94 38 28	1.50	.70	.70	.050	10	N	N	N
J1190910	37 30 25	94 38 28	.30	.07	.15	.020	N	N	N	N
J1190930	37 30 25	94 38 28	.20	.10	.20	.010	N	N	N	N
J1190950	37 30 25	94 38 28	.30	.05	<.05	.015	N	N	N	N
J1190970	37 30 25	94 38 28	.15	.07	.05	.015	N	N	N	N
J1190990	37 30 25	94 38 28	.05	.02	<.05	.005	N	N	N	N

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 119, 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
J1190460	50	20	N	N	N	N	N	<5	N	N	N	7
J1190485	30	20	N	N	N	N	N	N	N	N	N	N
J1190500	20	N	N	N	N	N	N	<5	N	N	N	N
J1190510	30	<20	N	N	N	N	N	N	N	N	N	<5
J1190530	30	20	N	N	N	N	N	N	N	N	N	<5
J1190540	30	30	N	N	N	N	N	N	N	N	N	<5
J1190550	50	20	N	N	100	<5	N	5	N	N	N	15
J1190570	50	30	N	N	N	<5	N	5	N	N	N	10
J1190580	50	30	N	N	N	N	N	N	N	N	N	5
J1190595	30	20	N	N	N	N	N	<5	N	N	N	5
J1190610	20	<20	N	N	N	N	N	N	N	N	N	<5
J1190625	20	20	N	N	N	N	N	N	N	N	N	<5
J1190640	50	150	N	N	N	<5	50	7	<20	<5	N	10
J1190655	100	300	1.5	N	N	7	100	15	20	<5	N	20
J1190670	100	150	1.0	N	N	10	100	20	20	<5	N	20
J1190685	70	150	3.0	N	N	15	70	20	<20	<5	N	150
J1190700	50	70	2.0	N	N	5	20	15	N	N	N	20
J1190720	30	30	N	N	N	N	N	10	N	N	N	7
J1190740	20	50	N	N	N	N	N	5	N	N	N	<5
J1190760	15	20	N	N	N	N	N	7	N	N	N	10
J1190780	70	150	<1.0	N	N	<5	10	5	N	N	N	10
J1190800	70	150	<1.0	N	N	<5	15	20	<20	<5	N	20
J1190820	30	30	N	N	N	N	N	<5	N	N	N	5
J1190840	30	30	N	N	N	N	N	<5	N	N	N	5
J1190860	30	20	N	N	N	N	N	<5	N	N	N	<5
J1190875	50	70	N	N	N	5	10	15	N	<5	N	30
J1190890	70	70	N	N	N	<5	10	10	N	<5	N	7
J1190910	30	50	N	N	N	N	N	<5	N	N	N	<5
J1190930	50	30	N	N	N	N	N	<5	N	N	N	<5
J1190950	20	30	N	N	N	N	N	<5	N	N	N	<5
J1190970	20	30	N	N	N	N	N	<5	N	N	N	N
J1190990	10	30	N	N	N	N	N	N	N	N	N	N

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 119, 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 #
J1190460	N	N	N	N	N	<10	N	N	200	<10	N	40
J1190485	N	N	N	N	N	N	N	N	N	N	N	40
J1190500	N	N	N	N	N	N	N	N	N	N	N	40
J1190510	N	N	N	N	N	N	N	N	N	N	N	40
J1190530	N	N	N	N	N	<10	N	N	<200	N	N	40
J1190540	N	N	N	N	N	<10	N	N	300	<10	N	40
J1190550	N	N	N	N	N	<10	N	N	5,000	N	N	40
J1190570	N	N	N	N	N	10	N	N	200	10	N	40
J1190580	N	N	N	N	N	N	N	N	N	N	N	40
J1190595	N	N	N	N	N	10	N	N	N	<10	N	40
J1190610	N	N	N	N	N	<10	N	N	N	N	N	40
J1190625	N	N	N	N	N	10	N	N	N	10	N	40
J1190640	15	N	<5	N	N	20	N	10	N	300	N	40
J1190655	30	N	7	N	N	100	N	15	N	150	N	40
J1190670	10	N	15	N	N	150	N	20	N	150	N	40
J1190685	15	N	10	N	N	200	N	15	N	100	N	40
J1190700	10	N	<5	N	N	70	N	N	N	100	N	66
J1190720	N	N	N	N	N	15	N	N	N	30	N	66
J1190740	N	N	N	N	N	10	N	N	N	10	N	66
J1190760	N	N	N	N	N	10	N	N	N	<10	N	66
J1190780	<10	N	N	N	N	15	N	N	N	30	N	66
J1190800	<10	N	N	N	150	20	N	N	N	50	N	66
J1190820	N	N	N	N	N	<10	N	N	N	<10	N	66
J1190840	N	N	N	N	N	10	N	N	N	50	N	66
J1190860	N	N	N	N	N	<10	N	N	N	<10	N	66
J1190875	<10	N	N	N	N	15	N	N	N	10	N	66
J1190890	<10	N	N	N	N	15	N	N	N	10	N	66
J1190910	N	N	N	N	N	<10	N	N	N	15	N	67
J1190930	N	N	N	N	N	N	N	N	N	N	N	67
J1190950	N	N	N	N	N	N	N	N	N	10	N	67
J1190970	N	N	N	N	N	N	N	N	N	10	N	67
J1190990	N	N	N	N	N	N	N	N	N	<10	N	67

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 120, 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
J1200030	37 5 43	93 23 4	1.50	.30	.07	.150	100	N	N	N
J1200050	37 5 43	93 23 4	.50	.02	.10	.015	20	N	N	N
J1200070	37 5 43	93 23 4	.70	.02	.50	.005	20	N	N	N
J1200090	37 5 43	93 23 4	.05	.02	1.50	<.002	10	N	N	N
J1200110	37 5 43	93 23 4	.20	.02	.15	.002	N	N	N	N
J1200130	37 5 43	93 23 4	.50	.02	.20	.007	10	N	N	N
J1200150	37 5 43	93 23 4	.20	.05	1.50	.020	10	N	N	N
J1200170	37 5 43	93 23 4	.30	.10	1.50	.015	10	N	N	N
J1200190	37 5 43	93 23 4	1.00	.50	2.00	.150	20	N	N	N
J1200210	37 5 43	93 23 4	.30	.20	1.00	.030	N	N	N	N
J1200230	37 5 43	93 23 4	1.00	.50	2.00	.100	50	N	N	N
J1200250	37 5 43	93 23 4	.50	.10	.70	.030	15	N	N	N
J1200270	37 5 43	93 23 4	5.00	.50	.50	.200	50	<.5	N	N
J1200290	37 5 43	93 23 4	2.00	.20	.30	.050	<10	<.5	N	N
J1200310	37 5 43	93 23 4	1.50	1.00	.70	.500	<10	<.5	N	N
J1200330	37 5 43	93 23 4	.30	.70	1.00	.020	N	N	N	N
J1200350	37 5 43	93 23 4	.20	.30	.50	.020	N	N	N	N
J1200370	37 5 43	93 23 4	.70	.50	.20	.100	N	N	N	N
J1200390	37 5 43	93 23 4	.50	.15	.20	.030	N	N	<200	N
J1200410	37 5 43	93 23 4	.15	.03	.10	.020	N	N	<200	N
J1200430	37 5 43	93 23 4	.50	.10	.20	.015	30	N	<200	N
J1200450	37 5 43	93 23 4	1.50	.10	.20	.020	N	N	N	N
J1200470	37 5 43	93 23 4	.20	.30	.30	.020	N	N	N	N
J1200490	37 5 43	93 23 4	.20	.30	.50	.010	<10	N	N	N
J1200510	37 5 43	93 23 4	.30	.30	.50	.010	N	N	N	N
J1200530	37 5 43	93 23 4	.30	.50	.50	.020	N	N	N	N
J1200550	37 5 43	93 23 4	.15	.02	.05	.002	N	N	N	N
J1200570	37 5 43	93 23 4	.50	.05	.10	.005	N	N	N	N
J1200590	37 5 43	93 23 4	.07	<.02	N	<.002	N	N	N	N
J1200610	37 5 43	93 23 4	.70	.05	.05	.010	N	N	N	N
J1200630	37 5 43	93 23 4	.50	.02	<.05	.007	N	N	N	N
J1200650	37 5 43	93 23 4	.10	.10	.10	.007	N	N	N	N
J1200670	37 5 43	93 23 4	.20	.20	.15	.015	<10	N	N	N
J1200690	37 5 43	93 23 4	.10	.50	.70	.015	N	N	N	N
J1200710	37 5 43	93 23 4	.30	.07	<.05	.015	N	N	N	N
J1200730	37 5 43	93 23 4	.30	.02	<.05	.007	N	N	N	N
J1200750	37 5 43	93 23 4	.50	.20	.20	.020	N	N	N	N
J1200770	37 5 43	93 23 4	.30	.03	.05	.010	N	N	N	N
J1200790	37 5 43	93 23 4	.10	<.02	N	<.002	N	N	N	N
J1200810	37 5 43	93 23 4	.15	<.02	<.05	<.002	N	N	N	N
J1200830	37 5 43	93 23 4	.10	<.02	N	.002	N	N	N	N
J1200850	37 5 43	93 23 4	.30	<.02	<.05	<.002	N	N	N	N
J1200870	37 5 43	93 23 4	2.00	.05	.07	.003	N	N	N	N
J1200890	37 5 43	93 23 4	<.05	<.02	N	<.002	N	N	N	N
J1200910	37 5 43	93 23 4	<.05	<.02	N	<.002	N	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 120, 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
J1200030	70	100	1	N	N	<5	10	10	N	N	N	10
J1200050	30	<20	N	N	N	N	N	<5	N	N	N	5
J1200070	50	30	N	N	N	N	<10	<5	N	N	N	5
J1200090	100	20	N	N	N	N	N	<5	N	N	N	N
J1200110	70	50	N	N	N	N	<10	<5	N	N	N	5
J1200130	70	30	N	N	N	N	N	<5	N	N	N	7
J1200150	50	30	N	N	N	<5	N	<5	N	N	N	10
J1200170	50	50	N	N	N	<5	N	10	N	N	N	700
J1200190	70	150	<1	N	N	5	<10	5	N	N	N	50
J1200210	70	70	N	N	N	<5	N	5	N	N	N	30
J1200230	100	100	<1	N	N	5	10	7	N	N	N	30
J1200250	50	30	N	N	N	<5	<10	5	N	N	N	15
J1200270	70	100	1	N	50	15	10	70	N	N	N	70
J1200290	50	100	N	N	N	5	<10	50	N	N	N	30
J1200310	100	150	1	N	N	<5	<10	15	N	N	N	15
J1200330	50	50	N	N	N	N	N	5	N	N	N	<5
J1200350	30	50	N	N	N	N	N	<5	N	N	N	<5
J1200370	50	150	N	N	N	N	<10	<5	N	N	N	5
J1200390	70	500	N	N	N	N	N	5	N	N	N	7
J1200410	70	100	N	N	N	N	N	10	N	N	N	5
J1200430	70	70	N	N	N	N	N	<5	N	N	N	10
J1200450	50	100	N	N	N	N	N	10	N	<5	N	20
J1200470	30	50	N	N	N	N	N	<5	N	N	N	5
J1200490	70	100	N	N	N	N	N	N	N	N	N	<5
J1200510	50	50	N	N	N	N	N	15	N	N	N	<5
J1200530	30	70	N	N	N	N	N	<5	N	N	N	N
J1200550	50	50	N	N	N	N	N	N	N	N	N	N
J1200570	70	100	N	N	N	N	N	5	N	N	N	<5
J1200590	50	20	N	N	N	N	N	N	N	N	N	N
J1200610	50	50	N	N	N	N	N	5	N	N	N	5
J1200630	50	300	N	N	N	N	N	<5	N	N	N	<5
J1200650	30	50	N	N	N	N	N	10	N	N	N	N
J1200670	70	30	N	N	N	N	N	<5	N	<5	N	<5
J1200690	70	50	N	N	N	N	N	N	N	N	N	<5
J1200710	30	150	N	N	N	N	N	<5	N	N	N	<5
J1200730	50	1,500	N	N	N	N	N	<5	N	N	N	5
J1200750	70	100	N	N	N	N	N	15	N	N	N	<5
J1200770	30	100	N	N	N	N	N	<5	N	N	N	N
J1200790	20	20	N	N	N	N	N	<5	N	N	N	N
J1200810	20	30	N	N	N	N	N	20	N	N	N	N
J1200830	10	N	N	N	N	N	N	N	N	N	N	N
J1200850	10	50	N	N	N	N	N	100	N	N	N	N
J1200870	10	1,500	N	N	N	N	N	70	N	N	N	5
J1200890	20	50	N	N	N	N	N	N	N	N	N	N
J1200910	30	<20	N	N	N	N	N	N	N	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 120, 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 #
J1200030	N	N	<5	N	N	20	N	N	N	50	N	40
J1200050	N	N	N	N	N	<10	N	N	N	N	N	40
J1200070	N	N	N	N	N	10	N	N	N	N	N	40
J1200090	N	N	N	N	N	<10	N	N	N	N	N	40
J1200110	20	N	N	N	N	<10	N	N	200	N	N	40
J1200130	<10	N	N	N	N	<10	N	N	N	N	N	40
J1200150	N	N	N	N	N	10	N	N	N	10	N	40
J1200170	10	N	N	N	N	<10	N	N	500	N	N	40
J1200190	10	N	<5	N	N	30	N	N	N	30	N	40
J1200210	N	N	<5	N	N	15	N	N	N	15	N	40
J1200230	<10	N	7	N	N	50	N	N	N	30	N	40
J1200250	N	N	<5	N	N	20	N	N	N	15	N	40
J1200270	700	N	<5	N	N	20	N	15	3,000	200	N	40
J1200290	<10	N	N	N	N	10	N	N	N	50	N	65
J1200310	30	N	N	N	N	15	N	N	700	50	N	65
J1200330	N	N	N	N	N	10	N	N	N	10	N	65
J1200350	N	N	N	N	N	10	N	N	N	15	N	65
J1200370	10	N	N	N	N	15	N	N	N	150	N	65
J1200390	<10	N	N	N	N	10	N	N	N	30	N	65
J1200410	N	N	N	N	100	<10	N	N	N	10	N	65
J1200430	N	N	N	N	100	10	N	N	N	N	N	65
J1200450	N	N	N	N	N	10	N	N	N	10	N	65
J1200470	N	N	N	N	N	10	N	N	N	10	N	66
J1200490	N	N	N	N	N	N	N	N	N	<10	N	66
J1200510	N	N	N	N	N	N	N	N	N	10	N	66
J1200530	N	N	N	N	N	N	N	N	N	20	N	66
J1200550	N	N	N	N	N	N	N	N	N	N	N	66
J1200570	N	N	N	N	N	N	N	N	N	N	N	66
J1200590	N	N	N	N	N	N	N	N	N	N	N	66
J1200610	N	N	N	N	N	N	N	N	N	N	N	66
J1200630	N	N	N	N	N	N	N	N	N	N	N	66
J1200650	N	N	N	N	N	N	N	N	700	N	N	66
J1200670	N	N	N	N	N	N	N	N	N	N	N	66
J1200690	N	N	N	N	N	N	N	N	N	N	N	67
J1200710	N	N	N	N	N	N	N	N	N	<10	N	67
J1200730	10	N	N	N	N	N	N	N	N	N	N	67
J1200750	N	N	N	N	N	<10	N	N	N	10	N	67
J1200770	N	N	N	N	N	N	N	N	N	N	N	67
J1200790	N	N	N	N	N	N	N	N	N	N	N	67
J1200810	N	N	N	N	N	N	N	N	N	N	N	67
J1200830	N	N	N	N	N	N	N	N	N	15	N	67
J1200850	N	N	N	N	N	N	N	N	N	N	N	68
J1200870	<10	N	N	N	N	N	N	N	N	<10	N	68
J1200890	N	N	N	N	N	N	N	N	N	N	N	68
J1200910	N	N	N	N	N	N	N	N	N	N	N	68

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 120, 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
J1200930	37 5 43	93 23 4	<.05	<.02	.05	<.002	N	N	N	N
J1200950	37 5 43	93 23 4	<.05	<.02	<.05	N	N	N	N	N
J1200970	37 5 43	93 23 4	<.05	<.02	<.05	N	N	N	N	N
J1200990	37 5 43	93 23 4	.20	.02	.05	.002	<10	N	N	N
J1201010	37 5 43	93 23 4	.20	<.02	<.05	.003	N	N	N	N
J1201030	37 5 43	93 23 4	.07	.02	<.05	<.002	N	N	N	N
J1201050	37 5 43	93 23 4	.10	<.02	<.05	<.002	<10	N	N	N
J1201070	37 5 43	93 23 4	.05	<.02	<.05	N	N	N	N	N
J1201090	37 5 43	93 23 4	.20	.03	.05	.010	N	N	N	N
J1201110	37 5 43	93 23 4	.20	<.02	<.05	.005	N	N	N	N
J1201130	37 5 43	93 23 4	.50	.02	<.05	.015	N	N	N	N
J1201150	37 5 43	93 23 4	.10	<.02	<.05	<.002	N	N	N	N
J1201170	37 5 43	93 23 4	.50	<.02	<.05	.003	N	N	N	N
J1201190	37 5 43	93 23 4	.30	.02	.05	<.002	N	N	N	N
J1201210	37 5 43	93 23 4	.30	<.02	<.05	.010	N	N	N	N
J1201230	37 5 43	94 23 4	1.00	.02	.05	.005	N	N	N	N
J1201250	37 5 43	94 23 4	1.00	.07	.15	.010	<10	N	N	N
J1201270	37 5 43	94 23 4	2.00	.10	.20	.010	10	N	N	N
J1201290	37 5 43	94 23 4	3.00	.30	.20	.007	10	<.5	<200	N
J1201310	37 5 43	94 23 4	3.00	.50	1.00	.015	15	<.5	<200	N
J1201330	37 5 43	94 23 4	.50	.05	.10	.002	N	N	N	N
J1201350	37 5 43	94 23 4	.50	.05	.10	.030	N	N	N	N
J1201360	37 5 43	94 23 4	1.00	.15	.15	.300	10	N	N	N
J1201370	37 5 43	94 23 4	1.50	.20	.05	.150	10	N	N	N
J1201390	37 5 43	94 23 4	1.50	.70	.70	.150	<10	N	N	N
J1201402	37 5 43	94 23 4	3.00	3.00	3.00	.300	20	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 120, 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
J1200930	20	50	N	N	N	N	N	N	N	N	N	N
J1200950	20	50	N	N	N	N	N	N	N	N	N	N
J1200970	30	30	N	N	N	N	N	N	N	N	N	N
J1200990	30	20	N	N	N	N	N	5	N	N	N	5
J1201010	30	30	N	N	N	N	N	<5	N	N	N	N
J1201030	50	30	N	N	N	N	N	10	N	N	N	N
J1201050	50	20	N	N	N	N	N	N	N	N	N	N
J1201070	50	30	N	N	N	N	N	N	N	N	N	N
J1201090	50	200	N	N	N	N	N	<5	N	7	N	<5
J1201110	50	50	N	N	N	N	N	<5	N	<5	N	<5
J1201130	30	500	N	N	N	N	N	150	N	N	N	<5
J1201150	20	20	N	N	N	N	N	100	N	N	N	N
J1201170	50	150	N	N	N	N	N	<5	N	N	N	N
J1201190	30	200	N	N	N	N	N	5	N	N	N	<5
J1201210	50	50	N	N	N	N	N	<5	N	N	N	N
J1201230	30	700	N	N	N	N	N	10	N	<5	N	<5
J1201250	50	200	N	N	N	N	N	10	N	<5	N	5
J1201270	30	200	N	N	N	<5	N	20	N	<5	N	15
J1201290	20	50	N	N	N	<5	N	50	N	5	N	20
J1201310	30	100	N	N	N	<5	N	50	N	5	N	20
J1201330	30	500	N	N	N	N	N	5	N	N	N	N
J1201350	70	30	N	N	N	N	N	10	N	N	N	N
J1201360	100	50	N	N	N	<5	N	20	N	5	N	15
J1201370	70	200	N	N	N	<5	N	200	N	10	N	15
J1201390	100	70	N	N	N	<5	N	30	N	10	N	10
J1201402	150	200	1	N	N	5	<10	70	20	7	N	20

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 120, 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 #
J1200930	N	N	N	N	N	N	N	N	N	N	N	68
J1200950	N	N	N	N	N	N	N	N	N	N	N	68
J1200970	N	N	N	N	N	N	N	N	N	N	N	68
J1200990	N	N	N	N	N	N	N	N	N	N	N	68
J1201010	N	N	N	N	N	N	N	N	N	N	N	68
J1201030	N	N	N	N	N	N	N	N	N	N	N	93
J1201050	N	N	N	N	N	N	N	N	N	N	N	93
J1201070	N	N	N	N	N	N	N	N	N	N	N	93
J1201090	N	N	N	N	N	N	N	N	N	N	N	93
J1201110	N	N	N	N	N	N	N	N	N	N	N	93
J1201130	N	N	N	N	N	N	N	N	N	15	N	69
J1201150	N	N	N	N	N	N	N	N	N	N	N	81
J1201170	N	N	N	N	N	N	N	N	N	N	N	81
J1201190	N	N	N	N	N	N	N	N	N	N	N	81
J1201210	N	N	N	N	N	N	N	N	N	N	N	81
J1201230	N	N	N	N	N	N	N	N	N	20	N	81
J1201250	<10	N	N	15	N	N	N	N	N	30	N	81
J1201270	20	N	N	20	N	N	N	N	N	70	N	81
J1201290	15	N	N	N	N	<10	N	N	N	N	N	81
J1201310	10	N	N	N	N	<10	N	N	N	N	N	81
J1201330	20	N	N	10	N	N	N	N	N	N	N	81
J1201350	N	N	N	N	N	N	N	N	N	N	N	82
J1201360	10	N	N	N	N	N	N	N	N	<10	N	82
J1201370	20	N	N	N	N	10	N	N	N	70	N	82
J1201390	<10	N	N	N	N	10	N	N	1,000	50	N	83
J1201402	50	N	N	N	N	20	N	10	1,000	200	N	83

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 121, 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
J1210040	37 23 9	93 5 34	.20	<.02	.05	.005	<10	N	N	N
J1210065	37 23 9	93 5 34	2.00	.02	.30	.020	10	<.5	N	N
J1210080	37 23 9	93 5 34	.05	<.02	.50	.002	N	N	<200	N
J1210100	37 23 9	93 5 34	<.05	<.02	.10	.010	N	N	N	N
J1210105	37 23 9	93 5 34	10.00	2.00	.30	.700	70	.5	N	N
J1210120	37 23 9	93 5 34	1.00	.50	.20	.100	15	N	N	N
J1210140	37 23 9	93 5 34	1.50	.50	.15	.100	20	N	N	N
J1210160	37 23 9	93 5 34	1.00	.50	<.05	.070	N	N	N	N
J1210180	37 23 9	93 5 34	<.05	<.02	<.05	.002	N	N	N	N
J1210200	37 23 9	93 5 34	.15	<.02	.05	.010	N	N	N	N
J1210220	37 23 9	93 5 34	.05	.05	1.00	.015	N	N	N	N
J1210240	37 23 9	93 5 34	2.00	<.02	.70	.010	N	N	N	N
J1210260	37 23 9	93 5 34	.70	<.02	.70	.010	N	N	N	N
J1210285	37 23 9	93 5 34	1.50	.07	.20	.020	N	N	N	N
J1210300	37 23 9	93 5 34	2.00	1.00	.70	.300	15	N	N	N
J1210330	37 23 9	93 5 34	15.00	2.00	1.00	.500	30	N	N	N
J1210350	37 23 9	93 5 34	15.00	1.00	.30	.200	50	<.5	N	N
J1210360	37 23 9	93 5 34	3.00	1.00	.15	.200	<10	N	N	N
J1210375	37 23 9	93 5 34	.20	.30	.15	.020	N	N	N	N
J1210390	37 23 9	93 5 34	1.00	.30	.10	.030	N	N	N	N
J1210405	37 23 9	93 5 34	2.00	.30	.20	.030	N	N	N	N
J1210420	37 23 9	93 5 34	.20	.05	.05	.005	N	N	N	N
J1210440	37 23 9	93 5 34	.15	.10	.10	.015	N	N	N	N
J1210460	37 23 9	93 5 34	.05	.10	.15	.020	N	N	N	N
J1210480	37 23 9	93 5 34	.20	.15	.10	.015	N	N	N	N
J1210500	37 23 9	93 5 34	.20	.15	.15	.020	N	N	N	N
J1210520	37 23 9	93 5 34	.30	.03	.05	.002	N	N	N	N
J1210540	37 23 9	93 5 34	.20	<.02	<.05	.002	N	N	N	N
J1210555	37 23 9	93 5 34	.05	.02	<.05	.003	N	N	N	N
J1210565	37 23 9	93 5 34	<.05	<.02	<.05	.002	N	N	N	N
J1210580	37 23 9	93 5 34	.50	.50	.30	.015	N	N	N	N
J1210600	37 23 9	93 5 34	.50	.30	.30	.015	N	N	N	N
J1210620	37 23 9	93 5 34	.50	.03	.05	.015	N	N	N	N
J1210640	37 23 9	93 5 34	.30	.03	.10	.030	N	N	N	N
J1210660	37 23 9	93 5 34	.50	<.02	<.05	<.002	N	N	N	N
J1210680	37 23 9	93 5 34	.50	<.02	<.05	.050	N	N	N	N
J1210700	37 23 9	93 5 34	.50	.02	N	.015	N	N	N	N
J1210720	37 23 9	93 5 34	.20	<.02	N	N	N	N	N	N
J1210740	37 23 9	93 5 34	<.05	<.02	<.05	<.002	N	N	N	N
J1210760	37 23 9	93 5 34	.10	<.02	N	<.002	N	N	N	N
J1210780	37 23 9	93 5 34	.30	<.02	.07	.002	N	N	N	N
J1210800	37 23 9	93 5 34	.05	<.02	N	<.002	N	N	N	N
J1210820	37 23 9	93 5 34	<.05	<.02	.05	<.002	N	N	N	N
J1210840	37 23 9	93 5 34	.10	<.02	<.05	.002	N	N	N	N
J1210870	37 23 9	93 5 34	.50	<.02	<.05	.003	N	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 121, 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
J1210040	70	50	N	N	N	N	N	N	N	N	N	N
J1210065	50	70	N	N	150	<5	<10	70	N	N	N	10
J1210080	30	30	N	N	N	N	N	N	N	N	N	N
J1210100	30	50	N	N	N	N	N	N	N	N	N	N
J1210105	700	150	2.0	N	N	20	150	70	150	N	20	150
J1210120	70	50	<1.0	N	N	<5	10	7	N	N	N	50
J1210140	150	50	<1.0	N	N	<5	10	15	20	N	N	15
J1210160	100	30	N	N	N	N	<10	5	N	N	N	10
J1210180	20	<20	N	N	N	N	N	N	N	N	N	N
J1210200	50	<20	N	N	N	N	N	N	N	N	N	N
J1210220	70	20	N	N	N	N	N	N	N	N	N	N
J1210240	30	20	N	N	N	<5	N	<5	N	N	N	10
J1210260	50	20	N	N	N	N	N	N	N	N	N	<5
J1210285	50	20	N	N	N	N	N	<5	N	N	N	5
J1210300	200	300	1.0	N	N	<5	100	5	20	N	N	5
J1210330	300	200	1.5	N	N	10	100	20	N	N	N	50
J1210350	100	200	1.0	N	N	10	30	30	N	N	N	70
J1210360	70	150	<1.0	N	N	5	50	15	20	N	N	20
J1210375	70	70	N	N	N	N	N	N	N	N	N	N
J1210390	50	300	N	N	N	<5	<10	10	N	N	N	10
J1210405	30	150	N	N	N	5	N	30	N	<5	N	15
J1210420	30	30	N	N	N	N	N	N	N	N	N	N
J1210440	50	50	N	N	N	N	N	N	N	N	N	N
J1210460	100	50	N	N	N	N	N	N	N	N	N	N
J1210480	70	700	N	N	N	N	N	N	N	N	N	N
J1210500	70	500	N	N	N	N	N	N	N	N	N	N
J1210520	50	30	N	N	N	N	N	N	N	N	N	N
J1210540	50	20	N	N	N	N	N	N	N	N	N	N
J1210555	50	20	N	N	N	N	N	N	N	N	N	N
J1210565	70	70	N	N	N	N	N	N	N	N	N	N
J1210580	50	50	N	N	N	N	N	<5	N	N	N	N
J1210600	100	50	N	N	N	N	N	N	N	N	N	N
J1210620	50	50	N	N	N	N	N	N	N	N	N	N
J1210640	30	300	N	N	N	N	N	N	N	N	N	N
J1210660	20	1,500	N	N	N	N	N	N	N	N	N	N
J1210680	30	150	N	N	N	N	N	N	N	N	N	N
J1210700	50	30	N	N	N	N	N	N	N	N	N	N
J1210720	10	200	N	N	N	N	N	N	N	N	N	N
J1210740	30	50	N	N	N	N	N	N	N	N	N	N
J1210760	20	50	N	N	N	N	N	N	N	N	N	N
J1210780	20	50	N	N	N	N	N	<5	N	N	N	<5
J1210800	10	20	N	N	N	N	N	N	N	N	N	N
J1210820	30	20	N	N	N	N	N	N	N	N	N	N
J1210840	15	<20	N	N	N	N	N	N	N	N	N	N
J1210870	15	20	N	N	N	N	N	<5	N	N	N	<5

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 121, 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 #
J1210040	N	N	N	N	N	N	N	N	<200	N	N	40
J1210065	N	N	N	N	N	10	N	N	>10,000	20	N	40
J1210080	N	N	N	N	N	N	N	N	N	N	N	40
J1210100	N	N	N	N	N	N	N	N	N	N	N	40
J1210105	30	N	20	N	100	150	N	50	N	150	N	40
J1210120	N	N	<5	N	N	15	N	N	N	15	N	40
J1210140	N	N	5	N	N	20	N	N	N	20	N	40
J1210160	N	N	N	N	N	15	N	N	N	10	N	40
J1210180	N	N	N	N	N	N	N	N	N	N	N	40
J1210200	N	N	N	N	N	N	N	N	N	N	N	40
J1210220	N	N	N	N	N	N	N	N	N	N	N	40
J1210240	N	N	N	N	N	N	N	N	N	N	N	40
J1210260	N	N	N	N	N	N	N	N	N	N	N	40
J1210285	N	N	N	N	N	10	N	N	N	<10	N	40
J1210300	<10	N	5	N	N	50	N	30	N	300	N	40
J1210330	15	N	10	N	N	200	N	20	N	200	N	40
J1210350	15	N	5	N	N	20	N	<10	N	150	N	40
J1210360	10	N	5	N	N	30	N	10	N	70	N	65
J1210375	70	N	N	N	N	N	N	N	N	10	N	65
J1210390	70	N	N	N	N	10	N	N	N	15	N	65
J1210405	70	N	N	N	N	10	N	N	N	20	N	65
J1210420	70	N	N	N	N	N	N	N	N	N	N	66
J1210440	70	N	N	N	N	N	N	N	N	10	N	66
J1210460	70	N	N	N	N	N	N	N	N	10	N	66
J1210480	70	N	N	N	N	N	N	N	N	N	N	66
J1210500	70	N	N	N	N	N	N	N	N	N	N	66
J1210520	70	N	N	N	N	N	N	N	N	N	N	66
J1210540	70	N	N	N	N	N	N	N	N	N	N	66
J1210555	70	N	N	N	N	N	N	N	N	N	N	66
J1210565	70	N	N	N	N	N	N	N	N	N	N	66
J1210580	70	N	N	N	N	N	N	N	N	N	N	66
J1210600	70	N	N	N	N	N	N	N	N	N	N	66
J1210620	70	N	N	N	N	N	N	N	N	N	N	66
J1210640	70	N	N	N	N	N	N	N	N	N	N	67
J1210660	70	N	N	N	N	N	N	N	N	N	N	67
J1210680	70	N	N	N	N	N	N	N	N	<10	N	67
J1210700	N	N	N	N	N	<10	N	N	N	N	N	67
J1210720	N	N	N	N	N	N	N	N	N	N	N	67
J1210740	N	N	N	N	N	N	N	N	N	N	N	67
J1210760	N	N	N	N	N	N	N	N	N	N	N	68
J1210780	N	N	N	N	N	N	N	N	N	N	N	68
J1210800	N	N	N	N	N	N	N	N	N	N	N	68
J1210820	N	N	N	N	N	N	N	N	N	N	N	68
J1210840	N	N	N	N	N	N	N	N	N	N	N	68
J1210870	N	N	N	N	N	N	N	N	N	N	N	68

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 121, 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
J1210895	37 23 9	93 5 34	.15	<.02	<.05	.002	N	N	N	N
J1210915	37 23 9	93 5 34	3.00	1.50	.10	.300	<10	N	N	N
J1211010	37 23 9	93 5 34	2.00	.50	.30	.020	<10	N	N	N
J1211030	37 23 9	93 5 34	.05	<.02	N	.015	N	N	N	N
J1211050	37 23 9	93 5 34	.70	<.02	N	.005	N	N	N	N
J1211070	37 23 9	93 5 34	1.00	.50	.05	.150	<10	N	N	N
J1211100	37 23 9	93 5 34	1.50	.20	.10	.030	10	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 121, 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
J1210895	20	<20	N	N	N	N	N	N	N	N	N	N
J1210915	100	150	1.5	N	N	N	30	15	N	5	N	5
J1211010	50	150	N	N	N	N	N	70	N	<5	N	5
J1211030	N	N	N	N	N	N	N	N	N	N	N	N
J1211050	N	N	N	N	N	N	N	<5	N	N	N	<5
J1211070	70	100	<1.0	N	N	<5	10	15	N	N	N	7
J1211100	50	100	N	N	N	<5	N	15	N	<5	N	15

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 121, 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 #
J1210895	N	N	N	N	N	N	N	N	N	N	N	68
J1210915	<10	<100	<5	N	N	200	N	<10	<200	70	N	68
J1211010	N	<100	<5	N	<100	<10	N	N	N	50	N	68
J1211030	N	N	N	N	N	N	N	N	N	10	N	69
J1211050	N	N	N	N	N	N	N	N	N	10	N	81
J1211070	N	N	N	N	N	50	N	N	<200	50	N	81
J1211100	N	N	N	N	N	<10	N	N	N	50	N	81