

UNITED STATES DEPARTMENT OF THE INTERIOR
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**Spectrographic analyses of insoluble-residue samples,
Joplin 1° x 2° quadrangle, Missouri and Kansas:
Drill hole nos. 134, 135, and 136.**

By

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

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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). The drill hole information is not company confidential and none of the drill holes intersect economically significant mineralized ground.

The analytical results for drill hole no. 134 (#27087- MGLS), drill hole no. 135 (#28327 - MGLS), and drill hole no. 136 (#28390 - MGLS) are given in this report. Drill hole no. 134 is located in sec. 28, T. 36 N., R. 28 W. in Cedar County, Missouri; drill hole no. 135 is located in sec. 15, T. 33 N., R. 28 W. in Cedar County, Missouri; drill hole no. 136 is located in sec. 29, T. 30 N., R. 28 W. in Dade County, Missouri (fig.1). Data for the insoluble-residue samples from drill holes 134, 135, and 136 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:

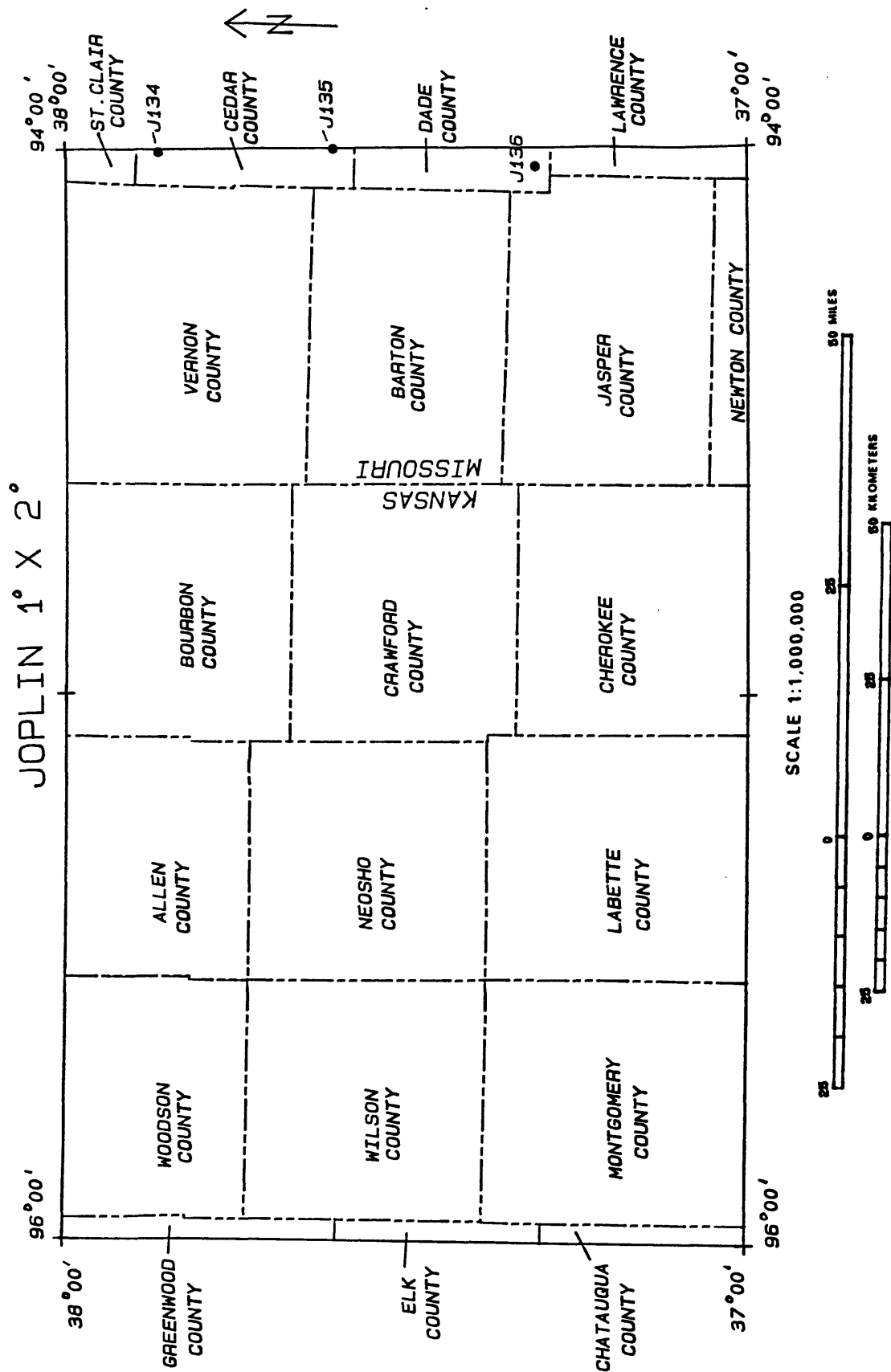


Figure 1. Locations of drill holes 134, 135, and 136, Joplin 1° x 2° quadrangle, Missouri and Kansas.

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:

<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

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. 134, 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
J1340140	37 51 37	94 0 21	1.50	.10	.05	.050	10	N	N	N
J1340160	37 51 37	94 0 21	1.50	.10	.15	.030	70	N	N	N
J1340180	37 51 37	94 0 21	1.00	.05	.10	.020	<10	N	N	N
J1340200	37 51 37	94 0 21	.70	.05	.15	.015	N	N	N	N
J1340220	37 51 37	94 0 21	.70	.02	.10	.015	N	N	N	N
J1340235	37 51 37	94 0 21	2.00	.20	.10	.050	200	N	N	N
J1340255	37 51 37	94 0 21	.50	.07	.15	.070	15	N	N	N
J1340275	37 51 37	94 0 21	.50	.10	.10	.150	15	N	N	N
J1340295	37 51 37	94 0 21	1.50	.10	2.00	.050	150	N	N	N
J1340315	37 51 37	94 0 21	.50	.05	.07	.050	N	N	N	N
J1340335	37 51 37	94 0 21	.50	.07	.05	.150	<10	N	N	N
J1340355	37 51 37	94 0 21	.05	.02	.05	<.002	N	N	N	N
J1340375	37 51 37	94 0 21	.10	.02	.07	.003	N	N	N	N
J1340395	37 51 37	94 0 21	1.00	.07	<.05	.100	100	N	N	N
J1340415	37 51 37	94 0 21	.10	.02	.05	.030	30	N	N	N
J1340435	37 51 37	94 0 21	.15	<.02	.07	.005	N	N	N	N
J1340450	37 51 37	94 0 21	.30	.50	.70	.010	10	N	N	N
J1340470	37 51 37	94 0 21	2.00	1.00	.20	.300	<10	N	N	N
J1340490	37 51 37	94 0 21	.70	.50	.20	.100	N	N	N	N
J1340510	37 51 37	94 0 21	.30	.05	.10	.002	N	N	N	N
J1340525	37 51 37	94 0 21	5.00	.15	.30	.100	100	N	N	N
J1340545	37 51 37	94 0 21	3.00	.70	.50	.003	10	<.5	N	N
J1340565	37 51 37	94 0 21	.20	.10	.15	.015	N	N	N	N
J1340585	37 51 37	94 0 21	.10	.07	.15	.005	N	N	N	N
J1340605	37 51 37	94 0 21	.15	.10	.10	.015	N	N	N	N
J1340625	37 51 37	94 0 21	.20	.15	.20	.015	N	N	N	N
J1340645	37 51 37	94 0 21	.10	.10	.10	.005	N	N	N	N
J1340665	37 51 37	94 0 21	.50	.15	.20	.015	N	N	N	N
J1340685	37 51 37	94 0 21	.20	.10	.15	.010	N	N	N	N
J1340700	37 51 37	94 0 21	.20	.15	.15	.015	N	N	N	N
J1340720	37 51 37	94 0 21	.20	.05	<.05	.005	N	N	N	N
J1340740	37 51 37	94 0 21	.20	.07	.05	.010	N	N	N	N
J1340760	37 51 37	94 0 21	<.05	.02	<.05	.002	N	N	N	N
J1340780	37 51 37	94 0 21	.20	.03	.05	.002	N	N	N	N
J1340800	37 51 37	94 0 21	.05	<.02	<.05	.002	N	N	N	N
J1340815	37 51 37	94 0 21	<.05	<.02	N	<.002	N	N	N	N
J1340830	37 51 37	94 0 21	<.05	<.02	N	.005	N	N	N	N
J1340850	37 51 37	94 0 21	.10	<.02	<.05	<.002	N	N	N	N
J1340870	37 51 37	94 0 21	.10	<.02	<.05	<.002	N	N	N	N
J1340890	37 51 37	94 0 21	.07	<.02	<.05	.003	N	N	N	N
J1340910	37 51 37	94 0 21	.07	<.02	.05	.002	N	N	N	N
J1340930	37 51 37	94 0 21	.05	<.02	<.05	N	N	N	N	N
J1340950	37 51 37	94 0 21	.05	.02	.05	.005	N	N	N	N
J1340970	37 51 37	94 0 21	.10	.02	<.05	<.002	N	N	N	N
J1340985	37 51 37	94 0 21	.05	.03	.05	.007	N	N	N	N
J1341000	37 51 37	94 0 21	<.05	<.02	.05	<.002	N	N	N	N

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 134, 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
J1340140	20	30	N	N	N	5	N	<5	N	N	N	20
J1340160	20	20	N	N	N	<5	N	<5	N	N	N	15
J1340180	30	20	N	N	N	5	N	5	N	N	N	15
J1340200	30	<20	N	N	N	<5	N	<5	N	N	N	10
J1340220	30	20	N	N	N	<5	N	<5	N	N	N	10
J1340235	30	20	<1	N	N	<5	N	<5	N	N	N	15
J1340255	30	20	N	N	N	<5	N	N	N	N	N	15
J1340275	30	30	<1	N	N	<5	20	<5	20	N	N	10
J1340295	20	20	N	N	N	<5	10	<5	N	N	N	10
J1340315	30	30	N	N	N	N	10	<5	N	N	N	5
J1340335	30	30	N	N	N	<5	20	15	N	N	N	10
J1340355	20	<20	N	N	N	N	10	<5	N	N	N	<5
J1340375	20	<20	N	N	N	N	N	N	N	N	N	N
J1340395	20	20	<1	N	N	N	<10	15	N	N	N	10
J1340415	20	N	N	N	N	N	N	N	N	N	N	<5
J1340435	20	N	N	N	N	N	N	N	N	N	N	5
J1340450	50	<20	N	N	N	N	N	5	N	<5	N	7
J1340470	30	150	<1	N	N	5	50	7	<20	N	N	15
J1340490	30	50	N	N	N	N	20	5	N	N	N	5
J1340510	20	30	N	N	N	N	N	N	N	N	N	N
J1340525	50	50	N	N	20	N	20	10	20	<5	N	10
J1340545	50	50	N	N	N	7	N	15	N	7	N	20
J1340565	50	30	N	N	N	N	N	30	N	N	N	5
J1340585	50	20	N	N	N	N	N	20	N	N	N	<5
J1340605	30	30	N	N	N	N	N	5	N	N	N	<5
J1340625	30	20	N	N	N	N	N	N	N	N	N	<5
J1340645	50	20	N	N	N	N	N	N	N	N	N	<5
J1340665	50	20	N	N	N	N	N	<5	N	N	N	<5
J1340685	50	20	N	N	N	N	N	N	N	N	N	<5
J1340700	50	30	N	N	N	N	N	<5	N	N	N	<5
J1340720	30	<20	N	N	N	N	N	N	N	N	N	N
J1340740	30	20	N	N	N	N	N	N	N	N	N	<5
J1340760	15	20	N	N	N	N	N	N	N	N	N	<5
J1340780	10	<20	N	N	N	N	N	N	N	N	N	<5
J1340800	15	N	N	N	N	N	N	70	N	N	N	N
J1340815	10	<20	N	N	N	N	N	N	N	N	N	<5
J1340830	10	N	N	N	N	N	N	N	N	N	N	<5
J1340850	10	20	N	N	N	N	N	N	N	N	N	N
J1340870	10	<20	N	N	N	N	N	N	N	N	N	<5
J1340890	30	20	N	N	N	N	N	N	N	N	N	<5
J1340910	30	20	N	N	N	N	N	N	N	N	N	<5
J1340930	20	20	N	N	N	N	N	N	N	N	N	N
J1340950	20	20	N	N	N	N	N	20	N	N	N	<5
J1340970	20	<20	N	N	N	N	N	N	N	N	N	<5
J1340985	20	<20	N	N	N	N	N	N	N	N	N	<5
J1341000	30	20	N	N	N	N	N	N	N	N	N	<5

TABLE 1--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 134, 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 #
J1340140	N	N	N	N	N	15	N	N	N	15	N	40
J1340160	N	N	N	N	N	15	N	N	N	20	N	40
J1340180	N	N	N	N	N	10	N	N	N	<10	N	40
J1340200	N	N	N	N	N	<10	N	N	N	<10	N	40
J1340220	N	N	N	N	N	<10	N	N	N	20	N	40
J1340235	N	N	<5	N	N	15	N	<10	<200	50	N	40
J1340255	N	N	<5	N	N	15	N	N	N	30	N	40
J1340275	N	N	5	N	N	20	N	10	N	70	N	40
J1340295	N	N	<5	N	N	15	N	10	200	100	N	40
J1340315	N	N	<5	N	N	10	N	<10	N	70	N	40
J1340335	N	N	<5	N	N	15	N	10	<200	100	N	40
J1340355	N	N	N	N	N	N	N	N	N	N	N	40
J1340375	N	N	N	N	N	N	N	N	N	N	N	40
J1340395	N	N	N	N	N	10	N	N	N	30	N	40
J1340415	N	N	N	N	N	<10	N	N	N	N	N	40
J1340435	N	N	N	N	N	<10	N	N	N	N	N	40
J1340450	N	N	N	N	N	<10	N	N	N	N	N	40
J1340470	100	N	<5	N	N	20	N	15	N	300	N	40
J1340490	N	N	N	N	N	10	N	N	N	150	N	40
J1340510	N	N	N	N	N	<10	N	N	N	10	N	40
J1340525	N	N	N	N	N	10	N	<10	3,000	70	N	40
J1340545	N	N	N	N	N	15	N	N	<200	20	N	66
J1340565	N	N	N	N	N	N	N	N	N	N	N	66
J1340585	N	N	N	N	N	N	N	N	N	N	N	66
J1340605	N	N	N	N	N	N	N	N	N	N	N	66
J1340625	N	N	N	N	N	N	N	N	N	N	N	66
J1340645	N	N	N	N	N	N	N	N	N	N	N	66
J1340665	N	N	N	N	N	N	N	N	N	N	N	66
J1340685	N	N	N	N	N	N	N	N	N	N	N	66
J1340700	N	N	N	N	N	<10	N	N	N	70	N	67
J1340720	N	N	N	N	N	N	N	N	N	N	N	67
J1340740	N	N	N	N	N	N	N	N	N	<10	N	67
J1340760	N	N	N	N	N	N	N	N	N	<10	N	67
J1340780	N	N	N	N	N	N	N	N	N	<10	N	67
J1340800	N	N	N	N	N	N	N	N	N	N	N	67
J1340815	N	N	N	N	N	N	N	N	N	N	N	67
J1340830	N	N	N	N	N	N	N	N	N	<10	N	67
J1340850	N	N	N	N	N	N	N	N	N	<10	N	68
J1340870	N	N	N	N	N	N	N	N	N	N	N	68
J1340890	N	N	N	N	N	N	N	N	N	N	N	68
J1340910	N	N	N	N	N	N	N	N	N	N	N	68
J1340930	N	N	N	N	N	N	N	N	N	N	N	68
J1340950	N	N	N	N	N	N	N	N	N	N	N	68
J1340970	N	N	N	N	N	N	N	N	N	N	N	68
J1340985	N	N	N	N	N	10	N	N	N	N	N	68
J1341000	N	N	N	N	N	N	N	N	N	N	N	68

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 135, 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
J1350115	37 36 32	94 0 10	3.00	.70	.30	.300	20	N	N	N
J1350135	37 36 32	94 0 10	.50	.07	5.00	.015	10	N	N	N
J1350155	37 36 32	94 0 10	.20	.02	.20	.015	N	N	N	N
J1350175	37 36 32	94 0 10	3.00	<.02	.50	.015	<10	<.5	N	N
J1350195	37 36 32	94 0 10	7.00	.30	.70	.200	70	.5	N	N
J1350215	37 36 32	94 0 10	.07	.02	2.00	.010	10	N	N	N
J1350235	37 36 32	94 0 10	.15	<.02	1.50	.002	<10	N	N	N
J1350255	37 36 32	94 0 10	.30	<.02	3.00	<.002	<10	N	N	N
J1350275	37 36 32	94 0 10	<.05	<.02	1.50	<.002	<10	N	N	N
J1350295	37 36 32	94 0 10	<.05	<.02	.30	<.002	N	N	N	N
J1350315	37 36 32	94 0 10	.50	.20	.50	.030	<10	N	N	N
J1350335	37 36 32	94 0 10	<.05	.10	.30	.002	N	N	N	N
J1350355	37 36 32	94 0 10	.10	.15	1.00	.015	<10	N	N	N
J1350370	37 36 32	94 0 10	.30	.05	1.50	.015	<10	N	N	N
J1350380	37 36 32	94 0 10	.05	<.02	.20	<.002	N	N	N	N
J1350400	37 36 32	94 0 10	.07	.02	.30	.007	N	N	N	N
J1350420	37 36 32	94 0 10	.70	.30	1.00	.150	<10	N	N	N
J1350440	37 36 32	94 0 10	.70	.70	.70	.500	10	N	N	N
J1350460	37 36 32	94 0 10	3.00	1.00	.10	.500	20	N	N	N
J1350480	37 36 32	94 0 10	3.00	1.00	<.05	.700	20	N	N	N
J1350500	37 36 32	94 0 10	3.00	1.50	.07	.500	20	N	N	N
J1350520	37 36 32	94 0 10	1.50	.50	1.50	.150	20	N	N	N
J1350535	37 36 32	94 0 10	1.50	.70	1.00	.150	15	N	N	N
J1350555	37 36 32	94 0 10	1.50	.50	.70	.200	15	N	N	N
J1350575	37 36 32	94 0 10	.20	.10	.10	.015	N	N	N	N
J1350595	37 36 32	94 0 10	.30	.30	.50	.070	N	N	N	N
J1350615	37 36 32	94 0 10	.70	.07	.05	.020	N	N	N	N
J1350635	37 36 32	94 0 10	.70	.05	.10	.030	N	N	N	N
J1350650	37 36 32	94 0 10	1.00	.20	.07	.100	<10	N	N	N
J1350670	37 36 32	94 0 10	.30	.20	.15	.020	N	N	N	N
J1350690	37 36 32	94 0 10	.50	.30	.30	.030	N	N	N	N
J1350710	37 36 32	94 0 10	.70	.07	.10	.030	N	N	N	N
J1350730	37 36 32	94 0 10	.70	.30	.20	.020	N	N	N	N
J1350750	37 36 32	94 0 10	.70	.20	.15	.020	N	N	N	N
J1350770	37 36 32	94 0 10	.30	.02	<.05	.010	N	N	N	N
J1350790	37 36 32	94 0 10	.30	.02	.05	.015	N	N	N	N
J1350810	37 36 32	94 0 10	.20	.50	<.05	.050	N	N	N	N
J1350830	37 36 32	94 0 10	.10	<.02	<.05	.010	N	N	N	N
J1350850	37 36 32	94 0 10	.07	<.02	<.05	.010	N	N	N	N
J1350870	37 36 32	94 0 10	.30	<.02	<.05	.010	N	N	N	N
J1350890	37 36 32	94 0 10	.15	.02	<.05	.010	N	N	N	N
J1350910	37 36 32	94 0 10	.50	.05	.05	.020	N	N	N	N
J1350930	37 36 32	94 0 10	.20	.02	.05	.010	N	N	N	N
J1350950	37 36 32	94 0 10	.20	<.02	<.05	.002	N	N	N	N
J1350970	37 36 32	94 0 10	.20	.02	.05	.010	<10	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 135, 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
J1350115	50	70	1.5	N	N	20	100	<5	20	N	N	70
J1350135	20	30	N	N	N	N	<10	<5	N	N	N	5
J1350155	20	<20	N	N	N	N	N	<5	N	N	N	5
J1350175	30	20	N	N	N	<5	<10	10	N	N	N	30
J1350195	50	70	<1.0	N	N	50	150	50	20	N	N	150
J1350215	30	20	N	N	N	N	<10	<5	N	N	N	<5
J1350235	30	<20	N	N	N	N	N	<5	N	N	N	<5
J1350255	15	<20	N	N	N	N	N	<5	N	N	N	<5
J1350275	15	<20	N	N	N	N	N	5	N	N	N	N
J1350295	15	<20	N	N	N	N	N	N	N	N	N	N
J1350315	50	20	N	N	N	N	10	<5	N	N	N	7
J1350335	30	<20	N	N	N	N	N	<5	N	N	N	<5
J1350355	30	20	N	N	N	N	N	<5	N	N	N	<5
J1350370	20	<20	N	N	N	N	N	100	N	N	N	<5
J1350380	15	N	N	N	N	N	N	<5	N	N	N	<5
J1350400	20	<20	N	N	N	N	N	<5	N	N	N	<5
J1350420	70	50	<1.0	N	N	5	50	<5	N	N	N	50
J1350440	100	200	N	N	N	<5	100	<5	N	N	20	7
J1350460	100	200	1.0	N	N	5	150	10	<20	N	20	10
J1350480	70	150	1.5	N	N	10	100	15	<20	N	<20	15
J1350500	100	150	2.0	N	N	15	150	20	20	N	<20	20
J1350520	70	70	1.0	N	N	10	30	5	N	N	N	15
J1350535	70	70	<1.0	N	N	<5	30	<5	N	N	N	10
J1350555	50	70	<1.0	N	N	5	20	30	N	N	N	10
J1350575	30	30	N	N	N	N	N	70	N	N	N	<5
J1350595	50	50	N	N	N	N	10	<5	N	N	N	<5
J1350615	50	30	N	N	N	N	N	15	N	N	N	5
J1350635	50	50	N	N	N	N	N	<5	N	N	N	5
J1350650	50	50	N	N	N	N	<10	<5	N	N	N	5
J1350670	30	30	N	N	N	N	N	<5	N	N	N	5
J1350690	50	50	N	N	N	N	N	<5	N	N	N	<5
J1350710	50	50	N	N	N	N	N	5	N	N	N	7
J1350730	30	30	N	N	N	N	N	30	N	N	N	5
J1350750	50	30	N	N	N	N	N	5	N	N	N	<5
J1350770	20	<20	N	N	N	N	N	<5	N	N	N	<5
J1350790	20	20	N	N	N	N	N	<5	N	N	N	<5
J1350810	30	30	N	N	N	N	N	<5	N	N	N	<5
J1350830	10	<20	N	N	N	N	N	N	N	N	N	N
J1350850	10	<20	N	N	N	N	N	<5	N	N	N	N
J1350870	15	<20	N	N	N	N	N	<5	N	N	N	<5
J1350890	20	20	N	N	N	N	N	<5	N	N	N	<5
J1350910	20	30	N	N	N	N	N	<5	N	N	N	<5
J1350930	20	20	N	N	N	N	N	20	N	N	N	<5
J1350950	20	20	N	N	N	N	N	<5	N	N	N	<5
J1350970	20	20	N	N	N	N	N	<5	N	N	N	<5

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 135, 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 #
J1350115	10	N	7	N	N	70	N	30	N	100	N	40
J1350135	N	N	N	N	N	<10	N	N	N	N	N	40
J1350155	N	N	N	N	N	10	N	N	N	<10	N	40
J1350175	N	N	N	N	N	N	N	N	200	10	N	40
J1350195	30	N	5	N	N	50	N	<10	<200	100	N	40
J1350215	N	N	N	N	N	<10	N	N	N	N	N	40
J1350235	N	N	N	N	N	<10	N	N	N	N	N	40
J1350255	N	N	N	N	N	N	N	N	N	N	N	40
J1350275	N	N	N	N	N	N	N	N	N	N	N	40
J1350295	N	N	N	N	N	N	N	N	N	N	N	40
J1350315	N	N	N	N	N	10	N	N	500	30	N	40
J1350335	N	N	N	N	N	N	N	N	N	N	N	40
J1350355	N	N	N	N	N	<10	N	N	1,000	<10	N	40
J1350370	15	N	N	N	N	N	N	N	N	10	N	40
J1350380	N	N	N	N	N	N	N	N	N	N	N	40
J1350400	N	N	N	N	N	N	N	N	N	<10	N	40
J1350420	N	N	<5	N	N	20	N	10	N	150	N	40
J1350440	<10	N	N	N	N	20	N	15	N	1,000	N	40
J1350460	15	N	N	N	N	70	N	20	N	500	N	40
J1350480	10	N	N	N	N	70	N	15	N	300	N	40
J1350500	10	N	10	N	N	100	N	30	N	200	N	40
J1350520	N	N	<5	N	N	30	N	10	N	100	N	40
J1350535	<10	N	<5	N	N	50	N	10	N	150	N	40
J1350555	N	N	<5	N	N	50	N	N	N	150	N	66
J1350575	N	N	N	N	N	N	N	N	N	<10	N	66
J1350595	N	N	N	N	N	15	N	N	N	150	N	66
J1350615	N	N	N	N	N	10	N	N	N	15	N	66
J1350635	N	N	N	N	N	15	N	N	N	20	N	66
J1350650	N	N	N	N	N	20	N	N	N	20	N	66
J1350670	N	N	N	N	N	10	N	N	N	10	N	67
J1350690	N	N	N	N	N	15	N	N	N	10	N	67
J1350710	N	N	N	N	N	10	N	N	N	10	N	67
J1350730	N	N	N	N	N	10	N	N	N	10	N	67
J1350750	N	N	N	N	N	<10	N	N	N	15	N	67
J1350770	N	N	N	N	N	N	N	N	N	<10	N	67
J1350790	N	N	N	N	N	N	N	N	N	15	N	67
J1350810	N	N	N	N	N	20	N	N	N	20	N	67
J1350830	N	N	N	N	N	N	N	N	N	<10	N	67
J1350850	N	N	N	N	N	N	N	N	N	10	N	67
J1350870	N	N	N	N	N	N	N	N	N	<10	N	68
J1350890	N	N	N	N	N	N	N	N	N	N	N	68
J1350910	N	N	N	N	N	10	N	N	N	N	N	68
J1350930	N	N	N	N	N	N	N	N	N	N	N	68
J1350950	N	N	N	N	N	N	N	N	N	N	N	68
J1350970	N	N	N	N	N	N	N	N	N	N	N	68

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 135, 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
J1350990	37 36 32	94 0 10	.15	.05	.10	.015	N	N	N	N
J1351010	37 36 32	94 0 10	.15	.03	<.05	.015	N	N	N	N
J1351030	37 36 32	94 0 10	.15	.02	<.05	.015	N	N	N	N
J1351050	37 36 32	94 0 10	.30	.03	<.05	.015	N	N	N	N
J1351070	37 36 32	94 0 10	.15	.03	<.05	.015	N	N	N	N
J1351090	37 36 32	94 0 10	.30	.07	<.05	.020	N	N	N	N
J1351105	37 36 32	94 0 10	.30	.02	<.05	.015	N	N	N	N
J1351115	37 36 32	94 0 10	.30	.02	<.05	.010	N	N	N	N
J1351130	37 36 32	94 0 10	.05	.02	N	.015	N	N	N	N
J1351145	37 36 32	94 0 10	.05	<.02	N	.015	N	N	N	N
J1351165	37 36 32	94 0 10	1.50	.20	.05	.100	<10	N	N	N
J1351185	37 36 32	94 0 10	1.00	.10	.50	.100	15	N	N	N
J1351200	37 36 32	94 0 10	3.00	1.00	.07	.300	50	N	N	N
J1351215	37 36 32	94 0 10	5.00	2.00	.10	.500	50	N	N	N

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 135, 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
J1350990	20	<20	N	N	N	N	70	N	N	N	N	<5
J1351010	20	<20	N	N	N	N	N	N	N	N	N	<5
J1351030	20	<20	N	N	N	N	N	<5	N	N	N	<5
J1351050	15	<20	N	N	N	N	N	N	N	N	N	<5
J1351070	30	<20	N	N	N	N	N	N	N	N	N	<5
J1351090	30	<20	N	N	N	N	N	30	N	N	N	<5
J1351105	20	20	N	N	N	N	N	5	N	N	N	5
J1351115	20	20	N	N	N	N	N	<5	N	N	N	<5
J1351130	10	N	N	N	N	N	N	N	N	N	N	<5
J1351145	<10	N	N	N	N	N	N	N	N	N	N	<5
J1351165	15	30	N	N	N	N	N	150	N	N	N	15
J1351185	50	30	N	N	N	N	70	5	N	<5	N	5
J1351200	200	70	1.5	N	N	5	100	700	<20	5	N	20
J1351215	500	100	3.0	N	N	15	100	30	30	<5	N	50

TABLE 2--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 135, 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 #
J1350990	N	N	N	N	N	N	N	N	N	10	N	68
J1351010	N	N	N	N	N	N	N	N	N	<10	N	68
J1351030	N	N	N	N	N	N	N	N	N	N	N	68
J1351050	N	N	N	N	N	N	N	N	N	10	N	68
J1351070	N	N	N	N	N	N	N	N	N	N	N	68
J1351090	N	N	N	N	N	10	N	N	N	70	N	68
J1351105	N	N	N	N	N	N	N	N	N	<10	N	68
J1351115	N	N	N	N	N	N	N	N	N	N	N	68
J1351130	N	N	N	N	N	N	N	N	N	10	N	69
J1351145	N	N	N	N	N	N	N	N	N	200	N	69
J1351165	N	N	N	N	N	15	N	N	N	100	N	81
J1351185	N	N	N	N	N	15	N	N	N	150	N	81
J1351200	10	N	<5	N	N	70	N	15	N	300	N	81
J1351215	30	N	7	N	N	100	N	20	N	200	N	81

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 136, 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
J1360050	37 18 30	94 2 17	.07	<.02	1.00	.002	<10	N	N	N
J1360070	37 18 30	94 2 17	.10	.05	10.00	.003	10	N	N	N
J1360090	37 18 30	94 2 17	.15	.02	2.00	.002	<10	N	N	N
J1360110	37 18 30	94 2 17	2.00	.20	1.50	.100	10	N	N	N
J1360120	37 18 30	94 2 17	.50	.02	.30	.010	<10	N	N	N
J1360135	37 18 30	94 2 17	.15	.02	2.00	.003	<10	N	N	N
J1360155	37 18 30	94 2 17	1.00	.07	.50	.010	<10	N	N	N
J1360175	37 18 30	94 2 17	.50	.05	.70	.015	<10	N	N	N
J1360195	37 18 30	94 2 17	.15	.05	1.00	.010	<10	N	N	N
J1360215	37 18 30	94 2 17	.15	.50	5.00	.010	<10	N	N	N
J1360235	37 18 30	94 2 17	.20	.10	.70	.010	N	N	N	N
J1360255	37 18 30	94 2 17	.05	.05	2.00	.007	N	N	N	N
J1360275	37 18 30	94 2 17	.10	.07	.30	.005	N	N	N	N
J1360295	37 18 30	94 2 17	1.50	.30	.70	.070	10	1.0	N	N
J1360300	37 18 30	94 2 17	1.00	1.00	1.00	.150	<10	N	N	N
J1360320	37 18 30	94 2 17	3.00	1.00	1.00	.150	10	N	N	N
J1360340	37 18 30	94 2 17	1.00	.30	.70	.020	<10	N	N	N
J1360360	37 18 30	94 2 17	1.00	.15	.30	.015	N	N	N	N
J1360380	37 18 30	94 2 17	2.00	.05	.10	.015	N	N	N	N
J1360400	37 18 30	94 2 17	.70	.10	.05	.015	N	N	N	N
J1360420	37 18 30	94 2 17	.50	.15	.10	.015	<10	N	N	N
J1360440	37 18 30	94 2 17	.50	.05	.05	.010	N	N	N	N
J1360460	37 18 30	94 2 17	.70	.10	.10	.020	<10	N	N	N
J1360480	37 18 30	94 2 17	.70	.05	<.05	.015	N	N	N	N
J1360500	37 18 30	94 2 17	1.00	.50	.70	.020	<10	N	N	N
J1360520	37 18 30	94 2 17	1.50	1.00	2.00	.150	10	N	N	N
J1360540	37 18 30	94 2 17	3.00	.70	1.00	.020	<10	<.5	N	N
J1360565	37 18 30	94 2 17	10.00	.70	.70	.150	<10	<.5	N	N
J1360585	37 18 30	94 2 17	5.00	.50	.50	.030	N	<.5	N	N
J1360605	37 18 30	94 2 17	5.00	1.00	2.00	.200	<10	<.5	N	N
J1360625	37 18 30	94 2 17	1.50	.10	.10	.015	N	N	N	N
J1360645	37 18 30	94 2 17	1.50	1.00	1.50	.020	N	N	N	N
J1360665	37 18 30	94 2 17	5.00	.70	.30	.100	<10	.5	N	N
J1360685	37 18 30	94 2 17	>20.00	.30	.05	.020	20	1.5	N	N
J1360700	37 18 30	94 2 17	.50	.30	.05	.030	N	N	N	N
J1360715	37 18 30	94 2 17	.50	<.02	<.05	.005	<10	N	N	N
J1360735	37 18 30	94 2 17	3.00	.05	.05	.020	<10	<.5	N	N
J1360755	37 18 30	94 2 17	1.00	.10	<.05	.020	50	N	N	N
J1360780	37 18 30	94 2 17	1.00	.10	.15	.010	N	N	N	N
J1360800	37 18 30	94 2 17	.50	.20	.15	.002	N	N	N	N
J1360820	37 18 30	94 2 17	1.00	.10	.20	.020	30	N	N	N
J1360840	37 18 30	94 2 17	1.00	.20	.15	.030	10	N	N	N
J1360860	37 18 30	94 2 17	.20	.05	<.05	.015	<10	N	N	N
J1360880	37 18 30	94 2 17	.30	.10	.10	.020	<10	N	N	N
J1360900	37 18 30	94 2 17	.10	.20	.10	.015	N	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 136, 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
J1360050	30	50	N	N	N	N	N	N	N	N	N	<5
J1360070	20	30	N	N	N	N	N	N	N	N	<20	<5
J1360090	30	30	N	N	N	N	N	N	N	N	<20	<5
J1360110	50	30	N	N	N	<5	30	10	N	N	N	20
J1360120	30	20	N	N	N	N	N	<5	N	N	N	<5
J1360135	30	20	N	N	N	N	N	N	N	N	N	<5
J1360155	50	30	N	N	N	N	N	5	N	N	N	10
J1360175	50	30	N	N	N	N	N	<5	N	N	N	5
J1360195	50	30	N	N	N	N	N	N	N	N	N	<5
J1360215	50	30	N	N	N	N	N	N	N	N	N	5
J1360235	30	20	N	N	N	N	N	N	N	N	N	<5
J1360255	30	<20	N	N	N	N	N	N	N	N	N	<5
J1360275	50	<20	N	N	N	N	N	N	N	N	N	<5
J1360295	50	50	N	N	N	N	10	5	N	N	N	7
J1360300	50	50	<1	N	N	N	10	<5	N	N	N	5
J1360320	50	50	<1	N	N	<5	<10	10	N	N	N	10
J1360340	30	30	N	N	N	N	N	<5	N	N	N	<5
J1360360	30	150	N	N	N	N	N	20	N	N	N	5
J1360380	50	100	N	N	N	<5	N	20	N	N	N	10
J1360400	50	50	N	N	N	N	N	5	N	N	N	<5
J1360420	30	50	N	N	N	N	N	<5	N	N	N	<5
J1360440	50	50	N	N	N	N	N	5	N	N	N	<5
J1360460	50	200	N	N	N	N	<10	15	N	N	N	5
J1360480	30	30	N	N	N	N	N	5	N	N	N	5
J1360500	50	70	N	N	N	N	<10	5	N	N	N	5
J1360520	50	100	N	N	N	N	<10	7	N	N	N	5
J1360540	50	70	N	N	N	<5	N	20	N	<5	N	10
J1360565	50	100	N	N	N	5	20	20	N	<5	N	20
J1360585	30	30	N	N	N	<5	N	20	N	<5	N	20
J1360605	50	100	N	N	N	N	10	15	N	<5	N	15
J1360625	20	50	N	N	N	N	N	<5	N	N	N	15
J1360645	20	30	N	N	N	N	N	10	N	N	N	10
J1360665	20	50	<1	N	N	N	N	15	N	N	N	15
J1360685	<10	70	<1	N	N	7	20	70	N	5	N	50
J1360700	15	50	N	N	N	N	N	N	N	N	N	<5
J1360715	10	30	N	N	N	N	N	N	N	N	N	<5
J1360735	10	70	N	N	N	N	N	10	N	<5	N	10
J1360755	10	70	N	N	N	N	N	5	N	N	N	<5
J1360780	15	50	N	N	N	N	N	15	N	N	N	<5
J1360800	15	<20	N	N	N	N	N	N	N	N	N	N
J1360820	15	30	N	N	N	N	N	5	N	N	N	5
J1360840	20	70	N	N	N	N	10	<5	N	N	<20	10
J1360860	15	20	N	N	N	N	N	N	N	N	N	<5
J1360880	15	30	N	N	N	N	<10	<5	N	N	N	<5
J1360900	20	50	N	N	N	N	<10	N	N	N	N	<5

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 136, 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 #
J1360050	N	N	N	N	N	N	N	N	N	N	N	40
J1360070	N	N	N	N	N	N	N	N	N	N	N	40
J1360090	N	N	N	N	N	N	N	N	N	N	N	40
J1360110	N	N	N	N	N	70	N	N	N	15	N	40
J1360120	N	N	N	N	N	N	N	N	N	N	N	40
J1360135	N	N	N	N	N	N	N	N	N	N	N	40
J1360155	N	N	N	N	N	N	N	N	N	10	N	40
J1360175	N	N	N	N	N	10	N	N	N	<10	N	40
J1360195	N	N	N	N	N	N	N	N	<200	N	N	40
J1360215	N	N	N	N	N	N	N	N	N	N	N	40
J1360235	10	N	N	N	N	N	N	N	N	N	N	40
J1360255	N	N	N	N	N	N	N	N	N	N	N	40
J1360275	N	N	N	N	N	N	N	N	N	N	N	40
J1360295	N	N	N	N	N	15	N	N	N	20	N	40
J1360300	N	N	N	N	N	20	N	N	N	50	N	40
J1360320	N	N	N	N	N	20	N	N	N	100	N	40
J1360340	N	N	N	N	N	10	N	N	N	30	N	65
J1360360	N	N	N	N	N	<10	N	N	N	15	N	65
J1360380	N	N	N	N	N	N	N	N	N	10	N	65
J1360400	N	N	N	N	N	N	N	N	N	10	N	66
J1360420	N	N	N	N	N	N	N	N	300	<10	N	66
J1360440	N	N	N	N	N	N	N	N	N	<10	N	66
J1360460	N	N	N	N	N	<10	N	N	N	50	N	66
J1360480	N	N	N	N	N	10	N	N	N	<10	N	66
J1360500	N	N	N	N	N	N	N	N	N	<10	N	66
J1360520	N	N	N	N	N	20	N	N	N	70	N	66
J1360540	N	N	N	N	N	10	N	N	N	10	N	66
J1360565	10	N	N	N	N	20	N	N	N	20	N	66
J1360585	<10	N	N	N	N	10	N	N	700	15	N	67
J1360605	<10	N	N	N	N	20	N	N	N	30	N	67
J1360625	N	N	N	N	N	N	N	N	N	N	N	67
J1360645	N	N	N	N	N	10	N	N	N	10	N	67
J1360665	N	N	N	N	N	20	N	N	N	20	N	67
J1360685	10	N	N	N	N	15	N	N	N	N	N	67
J1360700	N	N	N	N	N	10	N	N	N	20	N	67
J1360715	N	N	N	N	N	N	N	N	N	N	N	67
J1360735	N	N	N	N	N	10	N	N	N	10	N	68
J1360755	N	N	N	N	N	15	N	N	N	20	N	68
J1360780	N	N	N	N	N	<10	N	N	N	N	N	68
J1360800	N	N	N	N	N	N	N	N	N	N	N	68
J1360820	N	N	N	N	N	10	N	N	N	<10	N	68
J1360840	N	N	N	N	N	20	N	20	N	10	N	68
J1360860	N	N	N	N	N	N	N	N	N	N	N	68
J1360880	N	N	N	N	N	<10	N	N	N	<10	N	68
J1360900	N	N	N	N	N	20	N	N	N	N	N	68

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 136, 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
J1360920	37 18 30	94 2 17	1.00	.30	.05	.070	N	N	N	N
J1360940	37 18 30	94 2 17	.10	.05	<.05	.010	N	N	N	N
J1360960	37 18 30	94 2 17	.15	.15	.20	.015	N	N	N	N
J1360980	37 18 30	94 2 17	.30	.07	.05	.015	N	N	N	N
J1361000	37 18 30	94 2 17	15.00	1.00	.10	.500	10	<.5	N	N
J1361020	37 18 30	94 2 17	5.00	.30	.15	.100	<10	N	N	N
J1361035	37 18 30	94 2 17	3.00	.50	.15	.070	<10	N	N	N
J1361060	37 18 30	94 2 17	.20	.05	<.05	.015	<10	N	N	N
J1361075	37 18 30	94 2 17	1.50	.20	<.05	.020	<10	N	N	N
J1361100	37 18 30	94 2 17	3.00	1.00	.15	.200	10	N	N	N

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 136, 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
J1360920	20	30	<1	N	N	N	10	<5	N	N	N	5
J1360940	N	N	N	N	N	N	N	<5	N	N	N	N
J1360960	N	20	N	N	N	N	N	<5	N	N	<20	<5
J1360980	N	<20	N	N	N	N	N	<5	N	N	<20	<5
J1361000	70	200	1	N	N	5	100	70	N	<5	<20	50
J1361020	20	50	<1	N	N	<5	<10	100	N	N	N	20
J1361035	20	50	<1	N	N	<5	10	100	N	N	N	20
J1361060	N	<20	N	N	N	N	N	N	N	N	N	<5
J1361075	N	20	N	N	N	<5	<10	10	N	N	N	7
J1361100	70	50	1	N	N	70	20	20	N	N	N	20

TABLE 3--SPECTROGRAPHIC ANALYSES OF INSOLUBLE-RESIDUE SAMPLES FROM DRILL HOLE NO. 136, 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 #
J1360920	N	N	N	N	N	150	N	N	N	10	N	68
J1360940	N	N	N	N	N	10	N	N	N	N	N	68
J1360960	N	N	N	N	N	10	N	N	N	N	N	68
J1360980	N	N	N	N	N	<10	N	N	N	N	N	68
J1361000	<10	N	5	N	N	100	N	20	N	100	N	68
J1361020	N	N	N	N	N	10	N	10	N	20	N	68
J1361035	N	N	N	N	N	15	N	N	N	20	N	68
J1361060	N	N	N	N	N	<10	N	N	N	<10	N	69
J1361075	N	N	N	N	N	10	N	N	N	10	N	69
J1361100	N	N	5	N	N	30	N	N	N	50	N	81