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# Analytical results and sample locality map of stream-sediment, heavy-mineral-concentrate, and rock samples from the Canaan Mountain (UT-040-143) and The Watchman (UT-040-149) Wilderness Study Areas, Kane and Washington Counties, Utah

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## STUDIES RELATED TO WILDERNESS

Bureau of Land Management Wilderness Study Areas

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and the U.S. Bureau of Mines to conduct mineral surveys on certain areas to determine the mineral values, if any that may be present. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a geochemical survey of the Canaan Mountain Wilderness Study Area (WSA), Kane and Washington Counties, Utah (UT-040-143), and The Watchman Wilderness Study Area, Washington County, Utah (UT-040-149).

## INTRODUCTION

In June 1985, the U.S. Geological Survey conducted a reconnaissance geochemical survey of the Canaan Mountain and The Watchman Wilderness Study Areas, Kane and Washington Counties, Utah.

The Canaan Mountain WSA comprises about 59.4 $mi^2$ (154 $km^2$) (32,800 acres) in the southeast corner of Washington County, and The Watchman WSA comprises about 0.94 $mi^2$ (2.4 $km^2$) (600 acres) in east-central Washington, County, Utah, and lies about 1 mi (1.61 km) southeast of Rockville, Utah (see fig. 1). Access to the study area is provided on the north by State Highway 15, on the south by State Highway 59, and on the west by jeep trails.

The geology of the study area consists of nearly flat lying sedimentary rocks that are Triassic to Jurassic in age. The oldest unit exposed in the study area is the Chinle formation which is further divided into the Shinarump member and the Petrified Forest member. Overlying the Chinle formation is the Moenave formation, which consists of the Dinosaur Canyon member, the Whitmore Point member and the Springdale sandstone. Overlying the Moenave formation is the Kayenta formation, which is a water-lain sandstone. The youngest unit in the study area is the Navajo formation, a sandstone formed from aeolean sand dunes.

## METHODS OF STUDY

### Sample Media

Analyses of the stream-sediment samples represent the chemical constituents of the rock material eroded from the drainage basin upstream from each sample site. Such information is useful in identifying those basins which contain concentrations of elements that may be related to mineral deposits. Heavy-mineral-concentrate samples provide information about the chemistry of certain minerals in rock material eroded from the drainage basin upstream from each sample site. The selective concentration of minerals, many of which may be ore related, permits determination of some elements that are not easily detected in stream-sediment samples.

Analyses of unaltered or unmineralized rock samples provide background geochemical data for individual rock units. On the other hand, analyses of altered or mineralized rocks, where present, may provide useful geochemical information about the major- and trace-element assemblages associated with a mineralizing system.

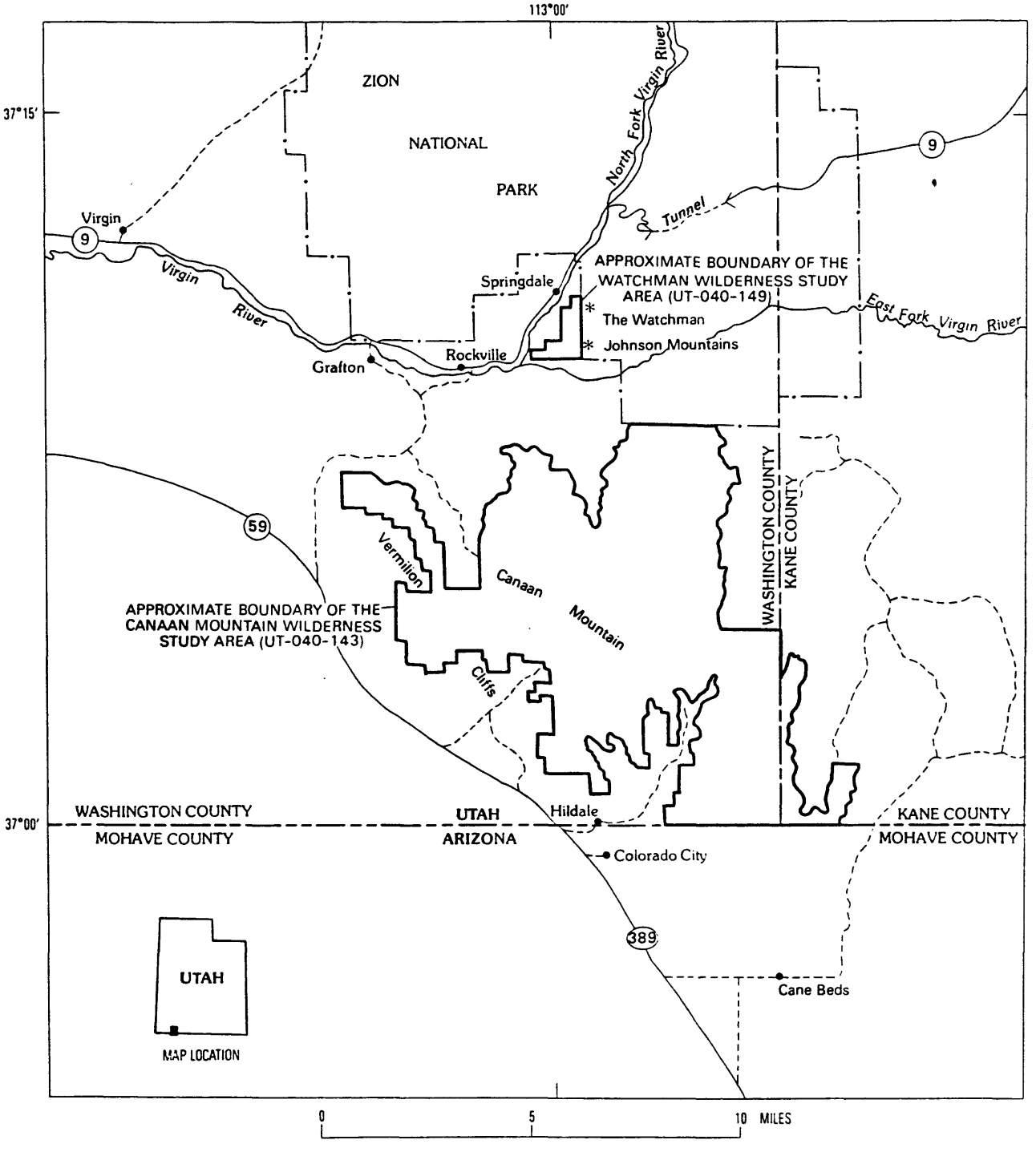


Figure 1. Location map of the Canaan Mountain (UT-040-143) and The Watchman (UT-040-149) Wilderness Study Areas, Kane and Washington Counties, Utah.

## Sample Collection

For the Canaan Mountains WSA, 71 heavy-mineral-concentrate and 78 stream-sediment samples were collected; for The Watchman WSA, nine stream-sediment samples were collected (plate 1). Where suitable outcrop was available, rock samples were collected. For the Canaan Mountains WSA, 48 rocks were collected; for The Watchman WSA, 2 rocks were collected. In the Canaan Mountain WSA the average sampling density was one sample site per 0.76 $mi^2$ for the stream sediments, one sample site per 0.84 $mi^2$ for the heavy-mineral concentrates, and one sample site per 1.2 $mi^2$ for the rocks. In The Watchman WSA the average sampling density was one sample per .1 $mi^2$ for the stream sediments, and one sample per 0.47 $mi^2$ for the rocks. The area of the drainage basins sampled ranged from 0.5 $mi^2$ to 2.0 $mi^2$.

### Stream-sediment samples

The stream-sediment samples consisted of active alluvium collected primarily from first-order (unbranched) and second-order (below the junction of two first-order) streams as shown on USGS topographic maps (scale = 1:48,000). Each sample was composited from several localities within an area that may extend as much as 50 ft from the site plotted on the map.

### Heavy-mineral-concentrate samples

Heavy-mineral-concentrate samples were collected from the same active alluvium as the stream-sediment samples. Each bulk sample was screened with a 2.0-mm (10-mesh) screen to remove the coarse material. The less than 2.0-mm fraction was panned until most of the quartz, feldspar, organic material, and clay-sized material were removed.

### Rock samples

Rock samples were collected from various types of occurrences in the vicinity of the plotted site location. Samples were collected from unaltered and altered rocks. Table 7 gives a description of the rock samples.

## Sample Preparation

The stream-sediment samples were air dried, then sieved using 80-mesh (0.17-mm) stainless-steel sieves. The portion of the sediment passing through the sieve was saved for analysis.

After air drying, bromoform (specific gravity 2.85) was used to remove the remaining quartz and feldspar from the heavy-mineral-concentrate samples that had been panned in the field. The resultant heavy-mineral sample was separated into three fractions using a large electromagnet (in this case a modified Frantz Isodynamic Separator). The most magnetic material, primarily magnetite, was not analyzed. The second fraction, largely ferromagnesian silicates and iron oxides, was saved for archival storage. The third fraction (the least magnetic material which may include the nonmagnetic ore minerals, zircon, sphene, etc.) was split using a Jones splitter. One split was hand ground for spectrographic analysis; the other split was saved for mineralogical analysis. These magnetic separates are the same separates that would be produced by using a Frantz Isodynamic Separator set at a slope of 15° and a tilt of 10° with a current of 0.2 ampere to remove the magnetite and

ilmenite, and a current of 0.6 ampere to split the remainder of the sample into paramagnetic and nonmagnetic fractions.

Rock samples were crushed and then pulverized to minus 0.15 mm with ceramic plates.

## Sample Analysis

### Spectrographic method

The heavy-mineral-concentrate, 22 rock, and 71 stream-sediment samples from the Canaan Mountains WSA were analyzed for 31 elements using semiquantitative, direct-current arc emission spectrographic methods. The analyses for heavy-mineral-concentrate samples were performed by analysts in the Branch of Exploration Geochemistry using the method of Grimes and Marranzino (1968); analyses for stream-sediment and rock samples were performed by analysts in the Branch of Analytical Chemistry using a modified method of Myers and others (1961) and by Crock and others (1987). The elements analyzed and their lower limits of determination are listed in table 1. For arsenic (As), gold (Au), cadmium (Cd), lanthanum (La), and thorium (Th), the lower limits of determination of the two analytical methods differ. The values in the parentheses are the limits of determination for Myers and others (1961). Spectrographic results were obtained by visual comparison of spectra derived from the sample against spectra obtained from standards made from pure oxides and carbonates. Standard concentrations are geometrically spaced over any given order of magnitude of concentration as follows: 100, 50, 20, 10, and so forth. Samples whose concentrations are estimated to fall between those values are assigned values of 70, 30, 15, and so forth. The precision of the analytical method is approximately plus or minus one reporting interval at the 83 percent confidence level and plus or minus two reporting intervals at the 96 percent confidence level (Motooka and Grimes, 1976). Values determined for the major elements, iron, magnesium, calcium, and titanium, are given in weight percent; all others are given in parts per million (micrograms/gram). DC arc emission spectrographic data for samples from the Canaan Mountain WSA are listed in tables 4, 5A and 6A.

### Chemical methods

Seven stream-sediment and 26 rock samples from the Canaan Mountain WSA and 9 stream-sediment and 2 rock samples from The Watchman WSA were analyzed for 40 elements using an inductively coupled argon plasma-atomic emission spectroscopic method (Crock and others, 1983). The elements analyzed and their limits of determination are listed in table 2. The analytical data for the stream-sediment and rock samples are given in tables 5B and 6B, respectively.

The rock and stream-sediment samples from the two study areas were also analyzed by atomic absorption (AA), inductively coupled plasma-atomic emission spectroscopy (ICP), and/or delayed neutron activation (DN). These samples were analyzed for gold (Au) and mercury (Hg) using the atomic absorption method, for arsenic (As), antimony (Sb), zinc (Zn), bismuth (Bi), and cadmium (Cd) using an inductively coupled plasma-atomic absorption spectroscopic method, and for thorium and uranium using a delayed neutron activation method.

Analytical results for heavy-mineral-concentrate, stream-sediment, and rock samples from the two study areas are listed in tables 4, 5A, 5B, 6A, and 6B, respectively.

## DATA STORAGE SYSTEM

Upon completion of all analytical work, the analytical results were entered into either the Branch of Geochemistry computer data base called PLUTO or RASS (Rock Analysis Storage System). These data bases contain both descriptive geological information and analytical data. Any or all of this information may be retrieved and converted to a binary form (STATPAC) for computerized statistical analysis or publication (VanTrump and Miesch, 1977).

## DESCRIPTION OF DATA TABLES

Tables 4-6B list the results of analyses for the samples of heavy-mineral concentrate, stream sediment, and rock, respectively. For the three tables, the data are arranged so that column 1 contains the USGS-assigned sample numbers. Samples with an "85CM" or "CM" prefix were collected from the Canaan Mountain WSA; samples with a "TW" prefix were collected from The Watchman WSA. These numbers correspond to the numbers shown on the site location map (plate. 1). Columns in which the element headings show the letter "s" below the element symbol are emission spectrographic analyses; "aa" indicates atomic absorption analyses; "icp" indicates inductively coupled plasma-atomic emission spectroscopy; and "dn" indicates delayed neutron activation analyses. A letter "N" in the tables indicates that a given element was looked for but not detected at the lower limit of determination shown for that element in table 1. If an element was observed but was below the lowest reporting value, a "less than" symbol (<) was entered in the tables in front of the lower limit of determination. If an element was observed but was above the highest reporting value, a "greater than" symbol (>) was entered in the tables in front of the upper limit of determination. If an element was not looked for in a sample, two dashes (--) are entered in tables 4-6B in place of an analytical value. Because of the formatting used in the computer program that produced tables 4, 5A, and 6A, some of the elements listed in these tables (Fe, Mg, Ca, Ti, Ag, and Be) carry one or more nonsignificant digits to the right of the significant digits. The analysts did not determine these elements to the accuracy suggested by the extra zeros.

## ACKNOWLEDGMENTS

A number of our colleagues also participated in the collection, preparation and analyses of these samples: collection, Judy Lewis, Kim Greene, and Randy Baker; preparation, Robin Sanchez; and analyses, Carol Gent and Janet Jones.

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TABLE 1.--Limits of determination for the direct-current arc emission spectrographic analysis of rocks and stream sediments, based on a 10-mg sample

[The values shown are the lower limits of determination assigned by the Grimes and Marranzino method, except for those values in parentheses, which are the lower values assigned by the Myers and others method. The spectrographic limits of determination for heavy-mineral-concentrate samples are based on a 5-mg sample, and are therefore two reporting intervals higher than the limits given for rocks.]

| Elements | Lower determination limit | | Upper determination limit |
|---|---|---|---|
| | Percent | | |
| Iron (Fe) | 0.05 | | 20 |
| Magnesium (Mg) | .02 | | 10 |
| Calcium (Ca) | .05 | | 20 |
| Titanium (Ti) | .002 | | 1 |
| | Parts per million | | |
| Manganese (Mn) | 10 | | 5,000 |
| Silver (Ag) | 0.5 | | 5,000 |
| Arsenic (As) | 200 | (700) | 10,000 |
| Gold (Au) | 10 | (15) | 500 |
| Boron (B) | 10 | | 2,000 |
| Barium (Ba) | 20 | | 5,000 |
| Beryllium (Be) | 1 | | 1,000 |
| Bismuth (Bi) | 10 | | 1,000 |
| Cadmium (Cd) | 20 | (30) | 500 |
| Cobalt (Co) | 5 | | 2,000 |
| Chromium (Cr) | 10 | | 5,000 |
| Copper (Cu) | 5 | | 20,000 |
| Lanthanum (La) | 20 | (30) | 1,000 |
| Molybdenum (Mo) | 5 | | 2,000 |
| Niobium (Nb) | 20 | | 2,000 |
| Nickel (Ni) | 5 | | 5,000 |
| Lead (Pb) | 10 | | 20,000 |
| Antimony (Sb) | 100 | | 10,000 |
| Scandium (Sc) | 5 | | 100 |
| Tin (Sn) | 10 | | 1,000 |
| Strontium (Sr) | 100 | | 5,000 |
| Vanadium (V) | 10 | | 10,000 |
| Tungsten (W) | 50 | | 10,000 |
| Yttrium (Y) | 10 | | 2,000 |
| Zinc (Zn) | 200 | | 10,000 |
| Zirconium (Zr) | 10 | | 1,000 |
| Thorium (Th) | 100 | (200) | 2,000 |

Table 2.--Limits of determination for the inductively coupled plasma-atomic emission spectroscopic (ICP) analysis of rocks and stream sediments, based on a .2000-g sample.

| Elements | Lower determination limit | Upper determination limit |
|---|---|---|
| | Percent | |
| Iron (Fe) | 0.050 | 25 |
| Calcium (Ca) | 0.050 | 50 |
| Titanium (Ti) | 0.005 | 25 |
| Aluminum (Al) | 0.050 | 50 |
| Sodium (Na) | 0.005 | 50 |
| Phosphorous (P) | 0.005 | 50 |
| Potassium (K) | 0.050 | 50 |
| Magnesium (Mg) | 0.005 | 5 |
| | Parts per million | |
| Barium (Ba) | 1.000 | 35,000 |
| Manganese (Mn) | 4.000 | 50,000 |
| Silver (Ag) | 2.000 | 10,000 |
| Arsenic (As) | 10.000 | 50,000 |
| Gold (Au) | 8.000 | 50,000 |
| Nickel (Ni) | 2.000 | 50,000 |
| Beryllium (Be) | 1.000 | 5,000 |
| Bismuth (Bi) | 10.000 | 50,000 |
| Cadmium (Cd) | 2.000 | 25,000 |
| Cobalt (Co) | 1.000 | 25,000 |
| Chromium (Cr) | 1.000 | 50,000 |
| Copper (Cu) | 1.000 | 15,000 |
| Lanthanum (La) | 2.000 | 50,000 |
| Molybdenum (Mo) | 2.000 | 50,000 |
| Niobium (Nb) | 4.000 | 50,000 |
| Vanadium (V) | 2.000 | 30,000 |
| Lead (Pb) | 4.000 | 50,000 |
| Scandium (Sc) | 2.000 | 50,000 |
| Tin (Sn) | 10.000 | 50,000 |
| Strontium (Sr) | 2.000 | 15,000 |
| Uranium (U) | 100.000 | 100,000 |
| Cerium (Ce) | 4.000 | 50,000 |
| Yttrium (Y) | 2.000 | 25,000 |
| Zinc (Zn) | 4.000 | 15,000 |
| Ytterbium (Yb) | 1.000 | 5,000 |
| Gallium (Ga) | 4.000 | 50,000 |
| Lithium (Li) | 2.000 | 50,000 |
| Tantalum (Ta) | 40.000 | 50,000 |
| Neodymium (Nd) | 4.000 | 50,000 |
| Holmium (Ho) | 4.000 | 5,000 |
| Thorium (Th) | 4.000 | 50,000 |
| Europium (Eu) | 2.000 | 5,000 |

**TABLE 3.--Chemical methods used**

[AA = atomic absorption; ICP = inductively coupled plasma spectroscopy; DN = delayed neutron]

| Element determined | Sample type | Method | Determination limit (micrograms/ gram or ppm) | Reference |
|---|---|---|---|---|
| Gold (Au) | rocks | AA | .1 | Modification of Thompson and others, 1968. |
| Mercury (Hg) | rocks | AA | 0.02 | Koirtyohann and Khalil, 1976. |
| Arsenic (As) | rocks | ICP | 5 | Crock and others, 1987 |
| Antimony (Sb) | rocks | ICP | 2 | |
| Zinc (Zn) | rocks | ICP | 2 | |
| Bismuth (Bi) | rocks | ICP | 2 | |
| Cadmium (Cd) | rocks | ICP | 0.1 | |
| Uranium (U) | sediments | DN | | Millard, 1976. |

TABLE 4. RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH

[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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 85CM108H | 37 0 28 | 112 51 41 | 3.0 | .10 | N | >1.0 | 2,000 | N | N | N |
| 85CM62H | 37 1 5 | 112 51 41 | 5.0 | .10 | N | >1.0 | 2,000 | N | N | N |
| 85CM61H | 37 3 56 | 112 51 48 | 2.0 | .20 | N | >1.0 | 2,000 | N | N | N |
| 85CM120H | 37 0 0 | 112 54 15 | 5.0 | .07 | N | >1.0 | 1,000 | N | N | N |
| 85CM106H | 37 2 28 | 112 53 45 | 2.0 | .15 | N | >1.0 | 2,000 | N | N | N |
| 85CM107H | 37 2 30 | 112 53 50 | 2.0 | .10 | N | >1.0 | 2,000 | N | N | N |
| 85CM60H | 37 0 37 | 112 57 9 | 10.0 | .07 | <.05 | >1.0 | 1,500 | N | N | N |
| 85CM59H | 37 0 39 | 112 57 12 | 10.0 | .20 | .15 | >1.0 | 1,500 | N | N | N |
| 85CM37H | 37 1 29 | 112 56 38 | 5.0 | .07 | <.05 | >1.0 | 2,000 | N | N | N |
| 85CM58H | 37 1 39 | 112 57 12 | 5.0 | .05 | <.05 | >1.0 | 1,500 | N | N | N |
| 85CM57H | 37 2 4 | 112 56 19 | 5.0 | .05 | N | >1.0 | 2,000 | N | N | N |
| 85CM104H | 37 2 11 | 112 57 2 | 7.0 | .07 | .05 | >1.0 | 1,500 | N | N | N |
| 85CM56H | 37 2 16 | 112 55 31 | 3.0 | .07 | N | >1.0 | 2,000 | N | N | N |
| 85CM103H | 37 2 26 | 112 56 22 | 15.0 | .50 | .20 | >1.0 | 1,500 | N | N | N |
| 85CM105H | 37 0 0 | 112 59 18 | 10.0 | .15 | .15 | >1.0 | 5,000 | N | N | N |
| 85CM39H | 37 1 8 | 112 58 12 | 7.0 | .10 | <.05 | >1.0 | 1,500 | N | N | N |
| 85CM38H | 37 1 9 | 112 58 11 | 7.0 | .10 | .05 | >1.0 | 2,000 | N | N | N |
| 85CM31H | 37 4 32 | 112 57 41 | 1.5 | .10 | N | >1.0 | 1,500 | N | N | N |
| 85CM55H | 37 3 30 | 112 55 17 | 5.0 | .07 | N | >1.0 | 2,000 | N | N | N |
| 85CM101H | 37 3 32 | 112 56 16 | 2.0 | .10 | N | >1.0 | 1,500 | N | N | N |
| 85CM102H | 37 3 38 | 112 56 12 | 2.0 | .20 | N | >1.0 | 2,000 | N | N | N |
| 85CM36H | 37 3 46 | 112 55 34 | 3.0 | .30 | N | >1.0 | 3,000 | N | N | N |
| 85CM35H | 37 3 51 | 112 55 5 | 2.0 | .20 | N | >1.0 | 1,500 | N | N | N |
| 85CM19H | 37 4 10 | 112 55 0 | 1.5 | .15 | N | >1.0 | 2,000 | N | N | N |
| 85CM18H | 37 4 11 | 112 55 5 | 1.5 | .07 | N | >1.0 | 2,000 | N | N | N |
| 85CM54H | 37 5 4 | 112 54 40 | 1.0 | .20 | N | >1.0 | 2,000 | N | N | N |
| 85CM34H | 37 6 0 | 112 54 59 | 1.5 | .15 | N | >1.0 | 2,000 | N | N | N |
| 85CM33H | 37 6 51 | 112 54 48 | 1.0 | .10 | N | >1.0 | 1,500 | N | N | N |
| 85CM17H | 37 5 36 | 112 55 15 | 1.5 | .10 | N | >1.0 | 1,500 | N | N | N |
| 85CM53H | 37 6 32 | 112 56 29 | .7 | .10 | N | >1.0 | 1,000 | N | N | N |
| 85CM32H | 37 7 20 | 112 56 10 | 1.5 | .20 | N | >1.0 | 1,000 | N | N | N |
| 85CM15H | 37 7 30 | 112 56 15 | 1.0 | .10 | N | >1.0 | 700 | N | N | N |
| 85CM52H | 37 7 20 | 112 57 2 | 1.0 | .10 | N | >1.0 | 1,500 | N | N | N |
| 85CM51H | 37 5 25 | 112 59 5 | 5.0 | .20 | .10 | >1.0 | 3,000 | N | N | N |
| 85CM50H | 37 5 29 | 112 59 7 | 5.0 | .15 | .05 | >1.0 | 2,000 | N | N | N |
| 85CM13H | 37 6 19 | 112 58 59 | 5.0 | .15 | .10 | >1.0 | 3,000 | N | N | N |
| 85CM30H | 37 6 39 | 112 59 7 | 10.0 | .20 | .07 | >1.0 | 1,500 | N | N | N |
| 85CM48H | 37 6 45 | 112 58 55 | 5.0 | .10 | .10 | 1.0 | 1,500 | N | N | N |
| 85CM12H | 37 7 10 | 112 59 1 | 10.0 | .15 | .10 | >1.0 | 2,000 | N | N | N |
| 85CM28H | 37 7 12 | 112 59 15 | 10.0 | .20 | .10 | >1.0 | 1,500 | N | N | N |
| 85CM49H | 37 7 21 | 112 59 20 | 7.0 | .70 | .70 | .2 | 3,000 | N | N | N |
| 85CM43H | 37 2 2 | 112 5 6 | 10.0 | 1.00 | .10 | 1.0 | 1,000 | N | N | N |
| 85CM20H | 37 0 45 | 112 0 33 | 10.0 | .30 | .07 | >1.0 | 2,000 | N | N | N |
| 85CM01H | 37 0 55 | 112 1 5 | 15.0 | .30 | .07 | >1.0 | 3,000 | N | N | N |
| 85CM40H | 37 1 59 | 112 1 19 | 10.0 | .15 | .10 | >1.0 | 2,000 | N | N | N |

TABLE 4. RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH--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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM108H | 2,000 | 150 | 2.0 | N | N | N | 1,000 | 5 | N | N | <20 |
| 85CM62H | 1,500 | 200 | 2.0 | N | N | N | 1,000 | <5 | N | N | <20 |
| 85CM61H | 2,000 | 200 | 2.0 | N | N | N | 1,000 | 5 | N | N | <20 |
| 85CM120H | 1,500 | 100 | 1.5 | N | N | N | 1,500 | 5 | N | N | <20 |
| 85CM106H | 2,000 | 200 | 2.0 | N | N | N | 1,000 | 10 | N | N | <20 |
| 85CM107H | 1,500 | 150 | 2.0 | N | N | N | 1,500 | 5 | N | N | N |
| 85CM60H | 700 | 3,000 | 1.0 | N | N | N | 1,000 | 7 | 50 | N | <20 |
| 85CM59H | 1,000 | 5,000 | <1.0 | N | N | N | 200 | 10 | 200 | N | 20 |
| 85CM37H | 1,000 | 1,500 | 1.0 | N | N | N | 1,000 | 5 | 50 | N | N |
| 85CM58H | 1,000 | 1,500 | 1.0 | N | N | N | 700 | 7 | <20 | N | <20 |
| 85CM57H | 500 | 2,000 | <1.0 | N | N | N | 2,000 | <5 | N | N | N |
| 85CM104H | 1,000 | 5,000 | <1.0 | N | N | N | 700 | 5 | 50 | N | 20 |
| 85CM56H | 1,000 | 300 | 2.0 | N | N | N | 2,000 | <5 | <20 | N | N |
| 85CM103H | 2,000 | >5,000 | 2.0 | N | N | N | 700 | 10 | 150 | N | <20 |
| 85CM105H | 1,000 | >5,000 | <1.0 | N | N | N | 1,000 | 7 | 70 | 15 | <20 |
| 85CM39H | 700 | 5,000 | <1.0 | N | N | N | 1,500 | 5 | 70 | N | <20 |
| 85CM38H | 1,000 | 5,000 | 1.5 | N | N | N | 1,500 | 150 | 70 | N | <20 |
| 85CM31H | 2,000 | 300 | 2.0 | N | N | N | 2,000 | <5 | N | N | <20 |
| 85CM55H | 1,500 | 100 | 2.0 | N | N | N | 2,000 | <5 | N | N | <20 |
| 85CM101H | 2,000 | 300 | 2.0 | N | N | N | 1,000 | <5 | N | N | 20 |
| 85CM102H | 2,000 | 150 | 3.0 | N | N | N | 5,000 | 5 | N | N | 20 |
| 85CM36H | 2,000 | 150 | 3.0 | N | N | N | 3,000 | 5 | N | N | <20 |
| 85CM35H | >2,000 | 200 | 3.0 | N | N | N | 1,500 | 5 | N | N | 20 |
| 85CM19H | 1,000 | 500 | 3.0 | N | N | N | 1,500 | <5 | N | N | <20 |
| 85CM18H | 1,000 | 150 | 2.0 | N | N | N | 1,500 | <5 | N | N | <20 |
| 85CM54H | >2,000 | 100 | 2.0 | N | N | N | 700 | <5 | N | N | <20 |
| 85CM34H | 2,000 | 1,500 | 2.0 | N | N | N | 2,000 | <5 | N | N | N |
| 85CM33H | 1,500 | 3,000 | <1.0 | N | N | N | 1,000 | <5 | N | N | <20 |
| 85CM17H | 1,000 | 5,000 | 2.0 | N | N | N | 1,500 | <5 | N | N | N |
| 85CM53H | 1,500 | 1,000 | 2.0 | N | N | N | 1,500 | N | N | N | N |
| 85CM32H | 2,000 | 700 | 3.0 | N | N | N | 1,000 | <5 | N | N | <20 |
| 85CM15H | 1,000 | 700 | <1.0 | N | N | N | 700 | N | N | N | <20 |
| 85CM52H | 2,000 | 500 | 2.0 | N | N | N | 1,500 | N | N | N | <20 |
| 85CM51H | 700 | >5,000 | <1.0 | N | N | N | 1,000 | 7 | 100 | 10 | 20 |
| 85CM50H | 1,000 | >5,000 | <1.0 | N | N | N | 700 | 5 | 70 | 7 | <20 |
| 85CM13H | 1,500 | >5,000 | <1.0 | N | N | N | 700 | 50 | 70 | <5 | 20 |
| 85CM30H | 1,000 | >5,000 | <1.0 | N | N | N | 700 | 20 | 100 | <5 | N |
| 85CM48H | 500 | >5,000 | <1.0 | N | N | 7 | 500 | 150 | 100 | 7 | 20 |
| 85CM12H | 1,000 | >5,000 | <1.0 | N | N | N | 700 | 30 | 100 | <5 | <20 |
| 85CM28H | 700 | >5,000 | <1.0 | N | N | N | 1,000 | 5 | <20 | N | <20 |
| 85CM49H | 1,000 | >15,000 | N | N | N | 20 | 200 | 15 | 150 | <15 | <70 |
| 85CM43H | 10 | >5,000 | N | N | N | 20 | 150 | 15 | 100 | N | N |
| 85CM20H | 500 | >5,000 | <1.0 | N | N | N | 700 | 5 | 100 | N | <20 |
| 85CM01H | 700 | >5,000 | 2.0 | N | N | N | 1,000 | 7 | 50 | 10 | <20 |
| 85CM40H | 700 | >5,000 | 1.5 | N | N | N | 700 | 10 | 70 | 10 | <20 |

TABLE 4. RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | Ni-ppm s | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM108H | 15 | 30 | N | 50 | N | <100 | 150 | N | 500 | N | >1,000 | N |
| 85CM62H | 15 | 20 | N | 70 | N | <100 | 200 | N | 500 | N | >1,000 | N |
| 85CM61H | 15 | 30 | N | 50 | N | <100 | 100 | N | 300 | N | >1,000 | N |
| 85CM120H | 15 | 30 | N | 50 | N | <100 | 200 | N | 300 | N | >1,000 | N |
| 85CM106H | 15 | 30 | N | 50 | N | <100 | 100 | N | 300 | N | >1,000 | N |
| 85CM107H | 15 | 30 | N | 70 | N | <100 | 150 | N | 500 | N | >1,000 | N |
| 85CM60H | 15 | 30 | N | 30 | N | 100 | 200 | N | 200 | N | >1,000 | N |
| 85CM59H | 15 | 30 | N | 20 | N | 150 | 200 | N | 150 | N | >1,000 | N |
| 85CM37H | 10 | 20 | N | 70 | N | <100 | 150 | N | 200 | N | >1,000 | N |
| 85CM58H | 15 | 30 | N | 50 | N | <100 | 100 | N | 150 | N | >1,000 | N |
| 85CM57H | 15 | 15 | N | 50 | N | <100 | 150 | N | 200 | N | >1,000 | N |
| 85CM104H | 10 | 30 | N | 20 | N | 200 | 200 | N | 150 | N | >1,000 | N |
| 85CM56H | 15 | 15 | N | 50 | N | <100 | 100 | N | 200 | N | >1,000 | N |
| 85CM103H | 15 | 50 | N | 30 | N | 300 | 200 | N | 200 | N | >1,000 | N |
| 85CM105H | 15 | 50 | N | 20 | N | 300 | 200 | N | 100 | N | >1,000 | N |
| 85CM39H | 15 | 30 | N | 30 | N | 100 | 200 | N | 150 | N | >1,000 | N |
| 85CM38H | 15 | 30 | N | 30 | N | 100 | 200 | N | 150 | N | >1,000 | N |
| 85CM31H | 15 | 15 | N | 70 | <10 | <100 | 70 | N | 300 | N | >1,000 | N |
| 85CM55H | 15 | 15 | N | 70 | N | <100 | 100 | N | 300 | N | >1,000 | N |
| 85CM101H | 15 | 15 | N | 50 | N | 100 | 70 | N | 150 | N | >1,000 | N |
| 85CM102H | 20 | 20 | N | 30 | N | <100 | 150 | N | 150 | N | >1,000 | N |
| 85CM36H | 15 | 15 | N | 30 | N | <100 | 100 | N | 150 | N | >1,000 | N |
| 85CM35H | 20 | 30 | N | 30 | N | <100 | 100 | N | 200 | N | >1,000 | N |
| 85CM19H | 15 | 20 | N | 30 | N | <100 | 70 | N | 200 | N | >1,000 | N |
| 85CM18H | 15 | 20 | N | 70 | N | <100 | 70 | N | 300 | N | >1,000 | N |
| 85CM54H | 15 | 30 | N | 50 | N | <100 | 50 | N | 200 | N | >1,000 | N |
| 85CM34H | 15 | 20 | N | 70 | N | <100 | 100 | N | 300 | N | >1,000 | N |
| 85CM33H | 15 | 20 | N | 50 | N | <100 | 70 | N | 300 | N | >1,000 | N |
| 85CM17H | 20 | 20 | N | 50 | N | <100 | 70 | N | 500 | N | >1,000 | N |
| 85CM53H | 15 | 20 | N | 50 | N | <100 | 50 | N | 500 | N | >1,000 | N |
| 85CM32H | 15 | 15 | N | 30 | N | <100 | 70 | N | 200 | N | >1,000 | N |
| 85CM15H | 10 | 15 | N | 20 | N | <100 | 50 | N | 200 | N | >1,000 | N |
| 85CM52H | 15 | 20 | N | 50 | N | <100 | 50 | N | 300 | N | >1,000 | N |
| 85CM51H | 15 | 50 | N | 30 | N | 500 | 200 | N | 150 | N | >1,000 | N |
| 85CM50H | 15 | 30 | N | 30 | N | 500 | 200 | N | 200 | N | >1,000 | N |
| 85CM13H | 15 | 50 | N | 30 | N | 3,000 | 200 | N | 200 | N | >1,000 | N |
| 85CM30H | 15 | 50 | N | 30 | N | 2,000 | 300 | N | 150 | N | >1,000 | N |
| 85CM48H | 10 | 30 | N | 10 | N | 5,000 | 200 | N | 100 | N | >1,000 | N |
| 85CM12H | 15 | 30 | N | 30 | N | 500 | 300 | N | 200 | N | >1,000 | N |
| 85CM28H | 15 | 15 | N | 30 | N | 500 | 200 | N | 200 | N | >1,000 | N |
| 85CM49H | 30 | 500 | N | <15 | N | 1,000 | 300 | N | 150 | N | 3,000 | N |
| 85CM43H | 70 | 15 | N | <5 | N | 200 | 300 | N | 30 | 200 | 1,000 | N |
| 85CM20H | 15 | 20 | N | 20 | N | 200 | 200 | N | 150 | N | >1,000 | N |
| 85CM01H | 15 | 30 | N | 20 | N | 200 | 200 | N | 100 | N | >1,000 | N |
| 85CM40H | 20 | 30 | N | 30 | N | 300 | 200 | N | 150 | N | >1,000 | N |

TABLE 4. RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH--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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 85CM21H | 37 2 14 | 113 1 4 | 15.0 | .30 | .10 | >1.0 | 5,000 | N | N | N |
| 85CM03H | 37 2 55 | 113 1 9 | 10.0 | .10 | <.05 | >1.0 | 2,000 | N | N | N |
| 85CM02H | 37 3 1 | 113 1 13 | 10.0 | .15 | <.05 | >1.0 | 2,000 | N | N | N |
| 85CM42H | 37 2 38 | 113 2 40 | 20.0 | .20 | .07 | >1.0 | 5,000 | N | N | N |
| 85CM41H | 37 4 39 | 113 2 42 | 15.0 | .20 | .07 | >1.0 | 3,000 | N | N | N |
| 85CM22H | 37 2 46 | 113 2 45 | 10.0 | .20 | .07 | >1.0 | 2,000 | N | N | N |
| 85CM04H | 37 3 14 | 113 3 48 | 15.0 | .30 | .10 | >1.0 | 5,000 | N | N | N |
| 85CM23H | 37 4 16 | 113 5 17 | 15.0 | .20 | .05 | >1.0 | 3,000 | N | N | N |
| 85CM24H | 37 6 6 | 113 5 37 | 10.0 | .50 | .20 | >1.0 | 5,000 | N | N | N |
| 85CM05H | 37 5 16 | 113 4 14 | 10.0 | .20 | .05 | >1.0 | 3,000 | N | N | N |
| 85CM06H | 37 5 35 | 113 4 11 | 15.0 | .10 | .15 | >1.0 | 1,000 | 20.00 | N | N |
| 85CM44H | 37 5 55 | 113 4 38 | 20.0 | .30 | .05 | >1.0 | 3,000 | N | N | N |
| 85CM26H | 37 6 35 | 113 2 35 | 15.0 | .50 | .15 | >1.0 | 3,000 | N | N | N |
| 85CM07H | 37 6 55 | 113 2 50 | 20.0 | .30 | .10 | >1.0 | 2,000 | 5.00 | N | N |
| 85CM47H | 37 6 39 | 113 2 38 | 15.0 | .10 | .15 | .7 | 1,000 | N | N | N |
| 85CM08H | 37 7 25 | 113 2 32 | 20.0 | .20 | .10 | >1.0 | 2,000 | N | N | N |
| 85CM09H | 37 7 29 | 113 2 32 | 15.0 | .07 | .10 | >1.0 | 1,500 | N | N | N |
| 85CM29H | 37 8 15 | 113 59 12 | 15.0 | .10 | .10 | .3 | 700 | N | N | N |
| 85CM11H | 37 8 26 | 113 59 19 | 20.0 | .20 | .15 | >1.0 | 1,500 | N | N | N |
| 85CM10H | 37 8 45 | 113 58 9 | 15.0 | .50 | .20 | >1.0 | 2,000 | N | N | N |
| 85CM14H | 37 8 38 | 113 57 8 | 5.0 | .50 | .15 | >1.0 | 2,000 | N | N | N |
| 85CM16H | 37 8 6 | 113 55 23 | 1.0 | .15 | <.05 | >1.0 | 1,500 | N | N | N |
| 85CM45H | 37 8 22 | 113 5 1 | 20.0 | .05 | .05 | >1.0 | 700 | N | N | N |
| 85CM46H | 37 7 58 | 113 4 56 | 10.0 | .05 | .10 | >1.0 | 1,500 | N | N | N |
| 85CM25H | 37 8 23 | 113 4 8 | 10.0 | .07 | .05 | 1.0 | 500 | N | N | N |
| 85CM27H | 37 9 18 | 113 1 18 | 10.0 | .10 | .05 | >1.0 | 1,000 | N | N | N |

TABLE 4. RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH --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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM21H | 700 | >5,000 | 2.0 | N | N | 15 | 1,000 | 15 | 150 | 30 | <20 |
| 85CM03H | 1,000 | 1,500 | 1.5 | N | N | N | 1,500 | 7 | 50 | N | <20 |
| 85CM02H | 1,500 | 2,000 | 2.0 | N | N | N | 1,500 | 7 | 50 | N | <20 |
| 85CM42H | 700 | >5,000 | 1.0 | N | N | 20 | 1,000 | 10 | 100 | 10 | <20 |
| 85CM41H | 1,000 | >5,000 | 1.5 | N | N | N | 700 | 10 | 150 | 5 | 20 |
| 85CM22H | 1,000 | >5,000 | 1.0 | N | N | N | 700 | 7 | 50 | 5 | <20 |
| 85CM04H | 700 | >5,000 | 1.5 | N | N | N | 1,000 | 7 | 100 | 20 | <20 |
| 85CM23H | 1,000 | >5,000 | 2.0 | N | N | N | 1,000 | 7 | 50 | 20 | <20 |
| 85CM24H | 1,000 | >5,000 | 1.5 | N | N | N | 700 | 10 | 70 | 20 | 20 |
| 85CM05H | 700 | >5,000 | 1.0 | N | N | N | 2,000 | 7 | 70 | 5 | <20 |
| 85CM06H | 500 | >5,000 | 1.5 | N | N | 20 | 500 | 20 | 70 | 5 | 30 |
| 85CM44H | 1,000 | >5,000 | 1.0 | N | N | N | 1,000 | 100 | 100 | 20 | <20 |
| 85CM26H | 700 | >5,000 | 1.5 | N | N | N | 700 | 15 | 70 | 50 | <20 |
| 85CM07H | 1,000 | >5,000 | 1.0 | N | N | N | 1,000 | 30 | 100 | 5 | <20 |
| 85CM47H | 100 | >5,000 | 3.0 | N | N | 7 | 200 | 70 | 50 | 5 | N |
| 85CM08H | 700 | >5,000 | 2.0 | N | N | N | 500 | 100 | 100 | <5 | <20 |
| 85CM09H | 500 | >5,000 | 1.5 | N | N | 7 | 100 | 30 | 50 | <5 | 20 |
| 85CM29H | 70 | >5,000 | 5.0 | N | N | 7 | 20 | 15 | 100 | N | N |
| 85CM11H | 150 | >5,000 | 2.0 | N | N | N | 200 | 100 | 100 | N | <20 |
| 85CM10H | 500 | >5,000 | <1.0 | N | N | 7 | 1,500 | 70 | 100 | 7 | <20 |
| 85CM14H | 2,000 | >5,000 | 2.0 | N | N | N | 1,500 | 5 | <20 | N | <20 |
| 85CM16H | 2,000 | 2,000 | 2.0 | N | N | N | 2,000 | <5 | N | N | N |
| 85CM45H | 20 | >5,000 | 1.0 | N | N | 20 | 50 | 20 | 100 | N | N |
| 85CM46H | 200 | >5,000 | 1.5 | N | N | 10 | 300 | 30 | 70 | 15 | N |
| 85CM25H | 150 | >5,000 | 3.0 | N | N | 7 | 50 | 50 | 70 | <5 | N |
| 85CM27H | 100 | >5,000 | 1.0 | N | N | 20 | 300 | 150 | 100 | N | <20 |

TABLE 4. RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH --Continued

| Sample | Ni-ppm s | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM21H | 30 | 50 | N | 50 | N | 500 | 500 | N | 150 | N | >1,000 | N |
| 85CM03H | 20 | 20 | N | 50 | N | <100 | 200 | N | 200 | N | >1,000 | N |
| 85CM02H | 20 | 30 | N | 50 | N | <100 | 200 | N | 200 | N | >1,000 | N |
| 85CM42H | 30 | 30 | N | 50 | N | 300 | 500 | N | 150 | N | >1,000 | N |
| 85CM41H | 20 | 30 | N | 50 | N | 150 | 500 | N | 200 | N | >1,000 | N |
| 85CM22H | 20 | 20 | N | 50 | N | 150 | 300 | N | 200 | N | >1,000 | N |
| 85CM04H | 20 | 50 | N | 50 | N | 500 | 500 | N | 100 | N | >1,000 | N |
| 85CM23H | 20 | 30 | N | 50 | N | 500 | 500 | N | 200 | N | >1,000 | N |
| 85CM24H | 20 | 100 | N | 30 | N | 500 | 500 | N | 150 | N | >1,000 | N |
| 85CM05H | 20 | 30 | N | 30 | N | 300 | 500 | N | 150 | N | >1,000 | N |
| 85CM06H | 15 | 20 | N | 10 | N | 1,000 | 700 | N | 50 | N | >1,000 | N |
| 85CM44H | 20 | 100 | N | 30 | N | 500 | 500 | N | 150 | N | >1,000 | N |
| 85CM26H | 20 | 100 | N | 20 | N | 500 | 500 | N | 150 | N | >1,000 | N |
| 85CM07H | 20 | 50 | N | 30 | N | 500 | 300 | N | 200 | N | >1,000 | N |
| 85CM47H | 10 | 100 | N | 10 | N | 2,000 | 700 | N | 100 | N | 1,000 | N |
| 85CM08H | 20 | 50 | N | 20 | N | 500 | 700 | N | 100 | N | >1,000 | N |
| 85CM09H | 10 | 30 | N | <5 | N | 2,000 | 500 | N | 50 | N | >1,000 | N |
| 85CM29H | 10 | 100 | N | <5 | N | 3,000 | 700 | N | 100 | N | 1,000 | N |
| 85CM11H | 15 | 50 | N | 15 | N | 500 | 700 | N | 70 | N | 1,000 | N |
| 85CM10H | 15 | 50 | N | 20 | N | 5,000 | 500 | N | 100 | N | >1,000 | N |
| 85CM14H | 20 | 15 | N | 30 | N | 300 | 200 | N | 200 | N | >1,000 | N |
| 85CM16H | 15 | 15 | N | 70 | N | 100 | 100 | N | 500 | N | >1,000 | N |
| 85CM45H | 15 | 30 | N | <5 | N | 500 | 500 | N | 50 | 200 | 500 | N |
| 85CM46H | 10 | 30 | N | <5 | N | 1,000 | 300 | N | 150 | N | >1,000 | N |
| 85CM25H | 10 | 50 | N | 10 | N | 700 | 500 | N | 150 | N | 1,000 | N |
| 85CM27H | 15 | 30 | N | 15 | N | 500 | 500 | N | 200 | N | >1,000 | N |

TABLE 5A. RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH

| 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 | B-ppm s | Ba-ppm s |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM108S | 37 0 28 | 112 51 41 | .20 | <.02 | <.05 | .030 | 20 | N | N | N | 15 | 200 |
| 85CM62S | 37 1 5 | 112 51 41 | .10 | <.02 | <.05 | .020 | 20 | N | N | N | 15 | 150 |
| 85CM61S | 37 3 56 | 112 51 48 | .15 | .02 | <.05 | .030 | 30 | N | N | N | 10 | 200 |
| 85CM120S | 37 0 15 | 112 54 15 | .15 | <.02 | <.05 | .030 | 30 | N | N | N | 15 | 150 |
| 85CM106S | 37 2 28 | 112 53 45 | .15 | <.02 | <.05 | .030 | 20 | N | N | N | 20 | 200 |
| 85CM107S | 37 2 30 | 112 53 50 | .15 | <.02 | <.05 | .030 | 15 | N | N | N | 30 | 150 |
| 85CM60S | 37 0 37 | 112 57 9 | .30 | .30 | .70 | .050 | 100 | N | N | N | 20 | 300 |
| 85CM59S | 37 0 39 | 112 57 12 | .70 | .70 | 1.50 | .070 | 200 | N | N | N | 30 | 500 |
| 85CM37S | 37 1 29 | 112 56 38 | .30 | .15 | .30 | .050 | 70 | N | N | N | 20 | 300 |
| 85CM58S | 37 1 39 | 112 57 12 | .15 | .05 | .15 | .030 | 30 | N | N | N | 10 | 200 |
| 85CM57S | 37 2 4 | 112 56 19 | .50 | .20 | .50 | .100 | 150 | N | N | N | 20 | 150 |
| 85CM104S | 37 2 11 | 112 57 2 | .30 | .30 | .70 | .050 | 100 | N | N | N | 15 | 300 |
| 85CM56S | 37 2 16 | 112 55 31 | .10 | <.02 | <.05 | .020 | 15 | N | N | N | 15 | 150 |
| 85CM103S | 37 2 26 | 112 56 22 | .70 | .70 | 1.00 | .100 | 150 | N | N | N | 20 | 300 |
| 85CM105S | 37 0 0 | 112 59 18 | .50 | .70 | 1.00 | .050 | 150 | N | N | N | 15 | 300 |
| 85CM39S | 37 1 8 | 112 58 12 | .30 | .20 | .50 | .030 | 70 | N | N | N | 20 | 300 |
| 85CM38S | 37 1 9 | 112 58 11 | .15 | .07 | .15 | .030 | 50 | N | N | N | 15 | 200 |
| 85CM31S | 37 4 32 | 112 57 41 | .10 | <.02 | <.05 | .020 | 20 | N | N | N | 15 | 150 |
| 85CM55S | 37 3 30 | 112 55 17 | .10 | <.02 | <.05 | .020 | 15 | N | N | N | 15 | 150 |
| 85CM101S | 37 3 32 | 112 56 16 | .07 | <.02 | <.05 | .010 | 15 | N | N | N | 15 | 150 |
| 85CM102S | 37 3 38 | 112 56 12 | .10 | <.02 | <.05 | .015 | 20 | N | N | N | <10 | 100 |
| 85CM36S | 37 3 46 | 112 55 34 | .10 | <.02 | <.05 | .015 | 30 | N | N | N | 15 | 150 |
| 85CM35S | 37 3 51 | 112 55 5 | .10 | <.02 | <.05 | .020 | 15 | N | N | N | 15 | 150 |
| 85CM19S | 37 4 10 | 112 55 0 | .07 | <.02 | <.05 | .015 | 15 | N | N | N | 15 | 150 |
| 85CM18S | 37 4 11 | 112 55 5 | .10 | <.02 | <.05 | .030 | 20 | N | N | N | 30 | 150 |
| 85CM54S | 37 5 4 | 112 54 40 | .15 | <.02 | <.05 | .015 | 20 | N | N | N | 15 | 200 |
| 85CM34S | 37 6 0 | 112 54 59 | .15 | .02 | <.05 | .030 | 30 | N | N | N | 20 | 150 |
| 85CM33S | 37 6 51 | 112 54 48 | .15 | <.02 | <.05 | .020 | 15 | N | N | N | 20 | 150 |
| 85CM17S | 37 5 36 | 112 55 15 | .15 | <.02 | <.05 | .015 | 20 | N | N | N | 15 | 150 |
| 85CM53S | 37 6 32 | 112 56 29 | .10 | <.02 | <.05 | .020 | 10 | N | N | N | 20 | 150 |
| 85CM32S | 37 7 20 | 112 56 10 | .15 | .02 | <.05 | .020 | 30 | N | N | N | 20 | 200 |
| 85CM15S | 37 7 30 | 112 56 15 | .15 | <.02 | <.05 | .015 | 20 | N | N | N | 20 | 150 |
| 85CM52S | 37 7 20 | 112 57 2 | .15 | .02 | <.05 | .020 | 15 | N | N | N | 10 | 200 |
| 85CM51S | 37 5 25 | 112 59 5 | .70 | .70 | 2.00 | .100 | 200 | N | N | N | 50 | 300 |
| 85CM50S | 37 5 29 | 112 59 7 | .30 | .50 | 1.00 | .070 | 150 | N | N | N | 20 | 300 |
| 85CM13S | 37 6 19 | 112 58 59 | 1.00 | .70 | 1.50 | .100 | 200 | N | N | N | 50 | 300 |
| 85CM30S | 37 6 39 | 112 59 7 | 1.50 | 1.00 | 3.00 | .150 | 300 | N | N | N | 50 | 300 |
| 85CM48S | 37 6 45 | 112 58 55 | 1.50 | 1.00 | 1.50 | .100 | 300 | N | N | N | 30 | 200 |
| 85CM12S | 37 7 10 | 112 59 1 | .70 | .70 | 1.00 | .100 | 150 | N | N | N | 30 | 300 |
| 85CM28S | 37 7 12 | 112 59 15 | .70 | .70 | 1.50 | .100 | 150 | N | N | N | 50 | 500 |
| 85CM49S | 37 7 21 | 112 59 20 | 2.00 | .70 | 1.00 | .150 | 150 | N | N | N | 50 | 200 |
| 85CM43S | 37 2 2 | 112 5 6 | 2.00 | .50 | .70 | .150 | 200 | N | N | N | 20 | 500 |
| 85CM20S | 37 0 45 | 112 0 33 | .50 | .30 | .70 | .070 | 150 | N | N | N | 30 | 300 |
| 85CM01S | 37 0 55 | 112 1 5 | .50 | .50 | .70 | .050 | 150 | N | N | N | 30 | 300 |
| 85CM40S | 37 1 59 | 112 1 19 | .50 | .30 | .70 | .050 | 150 | N | N | N | 20 | 300 |

TABLE 5A. RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | 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 | Pb-ppm s | Sb-ppm s |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM108S | N | N | N | N | <10 | <5 | N | N | N | <5 | <10 | N |
| 85CM62S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM61S | N | N | N | N | 15 | <5 | N | N | N | <5 | N | N |
| 85CM120S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM106S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM107S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM60S | N | N | N | N | <10 | <5 | N | N | N | <5 | 10 | N |
| 85CM59S | N | N | N | <5 | <10 | 7 | N | N | N | <5 | 10 | N |
| 85CM37S | N | N | N | N | <10 | <5 | N | N | N | <5 | <10 | N |
| 85CM58S | N | N | N | N | <10 | <5 | N | N | N | <5 | <10 | N |
| 85CM57S | N | N | N | N | 50 | <5 | N | N | N | <5 | N | N |
| 85CM104S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM56S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM103S | N | N | N | <5 | 15 | 7 | N | N | N | <5 | <10 | N |
| 85CM105S | N | N | N | <5 | <10 | 5 | N | N | N | <5 | N | N |
| 85CM39S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM38S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM31S | N | N | N | N | 70 | <5 | N | N | N | <5 | N | N |
| 85CM55S | N | N | N | N | 70 | <5 | N | N | N | <5 | N | N |
| 85CM101S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM102S | N | N | N | N | 70 | <5 | N | N | N | <5 | N | N |
| 85CM36S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM35S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM19S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM18S | N | N | N | N | <10 | <5 | N | N | N | N | N | N |
| 85CM54S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM34S | N | N | N | N | <10 | <5 | N | N | N | N | N | N |
| 85CM33S | N | N | N | N | <10 | <5 | N | N | N | N | N | N |
| 85CM17S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM53S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM32S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM15S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM52S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM51S | N | N | N | <5 | 10 | 7 | N | N | <20 | <5 | N | N |
| 85CM50S | N | N | N | N | <10 | <5 | N | N | <20 | <5 | 10 | N |
| 85CM13S | <1 | N | N | <5 | 15 | 10 | N | N | <20 | <5 | 10 | N |
| 85CM30S | <1 | N | N | 5 | 20 | 10 | N | N | <20 | 5 | 15 | N |
| 85CM48S | <1 | N | N | 5 | 15 | 10 | N | N | <20 | 5 | 15 | N |
| 85CM12S | N | N | N | <5 | 15 | 7 | N | N | <20 | <5 | 10 | N |
| 85CM28S | N | N | N | <5 | 10 | 7 | N | N | <20 | <5 | 10 | N |
| 85CM49S | 1 | N | N | 5 | 15 | 7 | N | N | <20 | 5 | 15 | N |
| 85CM43S | N | N | N | 5 | 15 | 7 | N | N | <20 | 5 | 10 | N |
| 85CM20S | N | N | N | <5 | 15 | <5 | N | N | <20 | <5 | 10 | N |
| 85CM01S | N | N | N | <5 | <10 | <5 | N | N | <20 | <5 | 10 | N |
| 85CM40S | N | N | N | N | <10 | <5 | N | N | <20 | <5 | 10 | N |

TABLE 5A. RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | 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 | Th-ppm dn | U-ppm dn |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM108S | <5 | N | <100 | <10 | N | <10 | N | 150 | N | 1.40 | .528 |
| 85CM62S | N | N | <100 | N | N | N | N | 30 | N | <1.00 | .382 |
| 85CM61S | N | N | <100 | <10 | N | N | N | 70 | N | <1.10 | .428 |
| 85CM120S | N | N | <100 | <10 | N | N | N | 150 | N | <1.20 | .905 |
| 85CM106S | N | N | <100 | <10 | N | N | N | 150 | N | <1.10 | .593 |
| 85CM107S | N | N | <100 | <10 | N | N | N | 70 | N | 1.30 | .561 |
| 85CM60S | N | N | <100 | <10 | N | <10 | N | 150 | N | 3.35 | 1.230 |
| 85CM59S | <5 | N | <100 | 20 | N | <10 | N | 150 | N | 5.55 | 1.750 |
| 85CM37S | N | N | <100 | <10 | N | <10 | N | 200 | N | 2.20 | 1.060 |
| 85CM58S | N | N | <100 | <10 | N | <10 | N | 100 | N | 1.80 | .751 |
| 85CM57S | <5 | N | <100 | 10 | N | 15 | N | 700 | N | <2.00 | 3.220 |
| 85CM104S | N | N | <100 | <10 | N | <10 | N | 200 | N | 2.60 | 1.130 |
| 85CM56S | N | N | <100 | <10 | N | N | N | 300 | N | <1.20 | 1.010 |
| 85CM103S | <5 | N | <100 | 15 | N | 10 | N | 150 | N | 4.92 | 1.710 |
| 85CM105S | N | N | <100 | 10 | N | <10 | N | 200 | N | 3.64 | 1.400 |
| 85CM39S | N | N | <100 | <10 | N | <10 | N | 100 | N | 2.20 | 1.430 |
| 85CM38S | N | N | <100 | <10 | N | N | N | 100 | N | <1.20 | .778 |
| 85CM31S | N | N | <100 | <10 | N | N | N | 100 | N | <1.20 | .663 |
| 85CM55S | N | N | <100 | <10 | N | <10 | N | 300 | N | 1.60 | 1.100 |
| 85CM101S | N | N | <100 | <10 | N | N | N | 15 | N | <1.00 | .400 |
| 85CM102S | N | N | <100 | <10 | N | N | N | 150 | N | <1.20 | 1.030 |
| 85CM36S | N | N | <100 | <10 | N | N | N | 100 | N | <1.50 | .423 |
| 85CM35S | N | N | <100 | <10 | N | N | N | 70 | N | <1.50 | .392 |
| 85CM19S | N | N | <100 | N | N | N | N | 70 | N | <1.50 | .432 |
| 85CM18S | N | N | <100 | <10 | N | N | N | 300 | N | <1.60 | .785 |
| 85CM54S | N | N | <100 | <10 | N | N | N | 150 | N | 1.70 | .454 |
| 85CM34S | N | N | <100 | <10 | N | N | N | 300 | N | 1.90 | .671 |
| 85CM33S | N | N | <100 | <10 | N | N | N | 200 | N | <1.60 | .700 |
| 85CM17S | N | N | <100 | <10 | N | N | N | 300 | N | <1.50 | .599 |
| 85CM53S | N | N | <100 | <10 | N | N | N | 150 | N | <1.50 | .524 |
| 85CM32S | N | N | <100 | N | N | <10 | N | 50 | N | 2.00 | .428 |
| 85CM15S | N | N | <100 | N | N | N | N | 70 | N | <1.10 | .481 |
| 85CM52S | N | N | <100 | N | N | N | N | 100 | N | <1.10 | .541 |
| 85CM51S | <5 | N | <100 | 15 | N | <10 | N | 150 | N | 4.94 | 1.410 |
| 85CM50S | N | N | <100 | <10 | N | <10 | N | 150 | N | 2.20 | 1.220 |
| 85CM13S | 5 | N | 100 | 20 | N | 10 | N | 200 | N | 7.21 | 2.230 |
| 85CM30S | 5 | N | 150 | 30 | N | 10 | N | 100 | N | 7.31 | 3.400 |
| 85CM48S | 5 | N | 100 | 30 | N | 10 | N | 100 | N | 6.23 | 2.600 |
| 85CM12S | <5 | N | <100 | 15 | N | <10 | N | 300 | N | 4.24 | 1.610 |
| 85CM28S | <5 | N | <100 | 15 | N | <10 | N | 200 | N | 6.34 | 1.980 |
| 85CM49S | 7 | N | 150 | 30 | N | 10 | N | 70 | N | 11.00 | 2.720 |
| 85CM43S | 5 | N | <100 | 50 | N | 10 | N | 200 | N | 7.11 | 2.150 |
| 85CM20S | N | N | <100 | <10 | N | <10 | N | 200 | N | 3.56 | 1.420 |
| 85CM01S | N | N | <100 | <10 | N | <10 | N | 150 | N | 3.23 | 1.020 |
| 85CM40S | N | N | <100 | <10 | N | <10 | N | 150 | N | 3.00 | 1.280 |

TABLE 5A. RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH --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 | B-ppm s | Ba-ppm s |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM21S | 37 2 14 | 113 1 4 | .50 | .50 | 1.50 | .050 | 150 | N | N | N | 15 | 300 |
| 85CM03S | 37 2 55 | 113 1 9 | .30 | .15 | .20 | .050 | 50 | N | N | N | 30 | 200 |
| 85CM02S | 37 3 1 | 113 1 13 | .50 | .20 | .30 | .050 | 100 | N | N | N | 30 | 300 |
| 85CM42S | 37 2 38 | 113 2 40 | .70 | .70 | 1.50 | .070 | 300 | N | N | N | 30 | 300 |
| 85CM41S | 37 4 39 | 113 2 42 | .50 | .50 | 1.00 | .070 | 150 | N | N | N | 30 | 300 |
| 85CM22S | 37 2 46 | 113 2 45 | .70 | .70 | 1.50 | .070 | 150 | N | N | N | 30 | 300 |
| 85CM04S | 37 3 14 | 113 3 48 | .70 | .70 | 1.50 | .100 | 200 | N | N | N | 30 | 300 |
| 85CM23S | 37 4 16 | 113 5 17 | .30 | .20 | .70 | .050 | 150 | N | N | N | 50 | 200 |
| 85CM24S | 37 6 6 | 113 5 37 | .70 | .70 | 2.00 | .070 | 150 | N | N | N | 20 | 300 |
| 85CM05S | 37 5 16 | 113 4 14 | .70 | .50 | 1.00 | .070 | 150 | N | N | N | 20 | 300 |
| 85CM06S | 37 5 35 | 113 4 11 | .70 | .70 | 1.50 | .100 | 150 | N | N | N | 30 | 300 |
| 85CM44S | 37 5 55 | 113 4 38 | .70 | .70 | 1.50 | .100 | 150 | N | N | N | 30 | 300 |
| 85CM26S | 37 6 35 | 113 2 35 | .70 | .50 | .70 | .070 | 150 | N | N | N | 30 | 300 |
| 85CM07S | 37 3 55 | 113 2 50 | 1.00 | .70 | 1.50 | .100 | 150 | N | N | N | 30 | 700 |
| 85CM47S | 37 6 39 | 113 2 38 | .70 | .15 | .50 | .150 | 150 | N | N | N | 50 | 300 |
| 85CM08S | 37 7 25 | 113 2 32 | .50 | .30 | .70 | .070 | 150 | N | N | N | 15 | 500 |
| 85CM09S | 37 7 29 | 113 2 32 | 1.00 | .70 | 2.00 | .100 | 150 | N | N | N | 50 | 700 |
| 85CM29S | 37 8 15 | 113 59 12 | 1.50 | .70 | .70 | .150 | 150 | N | N | N | 30 | 150 |
| 85CM11S | 37 8 26 | 113 59 19 | 1.50 | .70 | .70 | .150 | 150 | N | N | N | 30 | 500 |
| 85CM10S | 37 8 45 | 113 58 9 | 1.00 | 1.00 | 1.50 | .100 | 200 | N | N | N | 30 | 300 |
| 85CM14S | 37 8 38 | 113 57 8 | .30 | .30 | .70 | .030 | 70 | N | N | N | 20 | 300 |
| 85CM16S | 37 8 6 | 113 55 23 | .15 | .02 | <.05 | .020 | 50 | N | N | N | 10 | 300 |
| 85CM45S | 37 8 22 | 113 5 4 | 3.00 | 1.50 | 1.50 | .200 | 300 | N | N | N | 15 | 1,500 |
| 85CM46C | 37 7 58 | 113 4 56 | .70 | .70 | 1.50 | .100 | 150 | N | N | N | 10 | 300 |
| 85CM25C | 37 8 23 | 113 4 8 | 3.00 | .70 | .70 | .150 | 150 | N | N | N | 20 | 700 |
| 85CM27C | 37 9 18 | 113 1 18 | 1.00 | .70 | 1.00 | .100 | 300 | N | N | N | 20 | 300 |

TABLE 5A. RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | 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 | Pb-ppm s | Sb-ppm s |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM21S | <1 | N | N | N | <10 | <5 | N | N | N | <5 | 10 | N |
| 85CM03S | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N |
| 85CM02S | N | N | N | N | 10 | <5 | N | N | <20 | N | N | N |
| 85CM42S | N | N | N | <5 | 30 | <5 | N | N | <20 | <5 | 10 | N |
| 85CM41S | N | N | N | <5 | <10 | <5 | N | N | <20 | <5 | 10 | N |
| 85CM22S | N | N | N | <5 | 15 | 7 | N | N | <20 | <5 | 10 | N |
| 85CM04S | N | N | N | <5 | 30 | 7 | N | N | <20 | <5 | 10 | N |
| 85CM23S | N | N | N | N | <10 | <5 | N | N | <20 | <5 | N | N |
| 85CM24S | N | N | N | <5 | 10 | 5 | N | N | <20 | <5 | 10 | N |
| 85CM05S | N | N | N | <5 | 10 | 5 | N | N | <20 | <5 | 10 | N |
| 85CM06S | N | N | N | <5 | 20 | 7 | N | N | <20 | <5 | 10 | N |
| 85CM44S | N | N | N | <5 | 30 | 7 | N | N | <20 | <5 | 10 | N |
| 85CM26S | N | N | N | <5 | <10 | 5 | N | N | <20 | <5 | 10 | N |
| 85CM07S | N | N | N | <5 | 20 | 7 | N | N | <20 | <5 | 10 | N |
| 85CM47S | N | N | N | <5 | 20 | <5 | 30 | N | <20 | N | 10 | N |
| 85CM08S | N | N | N | N | 7 | <5 | 50 | N | N | <5 | N | N |
| 85CM09S | N | N | N | <5 | 15 | 7 | N | N | N | <5 | 10 | N |
| 85CM29S | <1 | N | N | 7 | 20 | 20 | N | N | N | <5 | 15 | N |
| 85CM11S | <1 | N | N | 5 | 30 | 7 | N | N | N | <5 | 15 | N |
| 85CM10S | N | N | N | <5 | 15 | 7 | N | N | N | 7 | 10 | N |
| 85CM14S | N | N | N | N | 10 | <5 | N | N | N | <5 | 10 | N |
| 85CM16S | N | N | N | N | <10 | <5 | N | N | N | 5 | 10 | N |
| 85CM45S | N | N | N | 7 | 30 | 15 | 150 | N | <20 | 10 | 15 | N |
| 85CM46C | N | N | N | <5 | 70 | 7 | N | N | N | <5 | 10 | N |
| 85CM25C | 1 | N | N | 7 | 15 | 20 | <30 | N | <20 | <5 | 15 | N |
| 85CM27C | N | N | N | N | 10 | 5 | N | N | <20 | <5 | 10 | N |

TABLE 5A. RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH --Continued

| Sample | 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 | Th-ppm dn | U-ppm dn |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM21S | N | N | <100 | 10 | N | <10 | N | 200 | <200 | 3.34 | 1.430 |
| 85CM03S | N | N | <100 | <10 | N | <10 | N | 300 | <200 | 2.60 | 1.350 |
| 85CM02S | N | N | <100 | <10 | N | <10 | N | 300 | <200 | 2.20 | 1.300 |
| 85CM42S | N | N | <100 | 15 | N | <10 | N | 200 | <200 | 2.90 | 1.890 |
| 85CM41S | N | N | <100 | <10 | N | <10 | N | 150 | <200 | 2.20 | 1.500 |
| 85CM22S | <5 | N | <100 | 10 | N | <10 | N | 150 | <200 | <1.80 | 1.400 |
| 85CM04S | <5 | N | <100 | 15 | N | <10 | N | 150 | <200 | 3.10 | 1.780 |
| 85CM23S | N | N | <100 | <10 | N | N | N | 150 | <200 | <1.70 | .862 |
| 85CM24S | <5 | N | <100 | 15 | N | <10 | N | 100 | <200 | 2.50 | 1.310 |
| 85CM05S | N | N | <100 | 10 | N | 20 | N | 200 | <200 | <1.90 | 1.530 |
| 85CM06S | <5 | N | <100 | 15 | N | <10 | N | 150 | <200 | 4.30 | 1.700 |
| 85CM44S | <5 | N | <100 | 15 | N | <10 | N | 200 | <200 | 4.77 | 1.480 |
| 85CM26S | N | N | <100 | 10 | N | 10 | N | 200 | <200 | <1.90 | 1.440 |
| 85CM07S | 5 | N | <100 | 30 | N | <10 | N | 100 | <200 | 6.40 | 2.570 |
| 85CM47S | N | N | <100 | 15 | N | 20 | N | 500 | <200 | 4.20 | 2.250 |
| 85CM08S | N | N | <100 | 10 | N | <10 | N | 150 | <200 | 2.80 | 1.220 |
| 85CM09S | 5 | N | 100 | 30 | N | 10 | N | 150 | <200 | 7.17 | 2.100 |
| 85CM29S | 7 | N | 100 | 70 | N | 10 | N | 100 | <200 | 16.10 | 4.810 |
| 85CM11S | 5 | N | 100 | 30 | N | <10 | N | 150 | <200 | 8.95 | 2.510 |
| 85CM10S | <5 | N | <100 | 20 | N | <10 | N | 150 | <200 | 6.21 | 1.950 |
| 85CM14S | N | N | <100 | <10 | N | N | N | 150 | <200 | 2.40 | .845 |
| 85CM16S | N | N | <100 | <10 | N | N | N | 70 | <200 | <1.50 | .601 |
| 85CM45S | 7 | N | 150 | 100 | N | 15 | N | 300 | <200 | 13.50 | 3.610 |
| 85CM46C | <5 | N | <100 | 15 | N | <10 | N | 150 | <200 | 5.00 | 1.360 |
| 85CM25C | 7 | N | 150 | 70 | N | 10 | N | 100 | <200 | 13.70 | 4.150 |
| 85CM27C | <5 | N | <100 | 30 | N | <10 | N | 150 | N | 3.30 | 1.780 |

TABLE 5B. RESULTS OF ICP ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH

| Sample | Latitude | Longitude | Ba-ppm icp | Fe-pct icp | Mg-pct icp | Ca-pct icp | Ti-pct icp | Mn-ppm icp | Ag-ppm icp | As-ppm icp | Au-ppm icp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CM-14 | 37 7 33 | 113 8 38 | 2,800 | 5.60 | .63 | .79 | .47 | 570 | <2 | <10 | <8 |
| CM8607 | 37 5 45 | 113 4 30 | 290 | .63 | .80 | 1.70 | .07 | 240 | <2 | <10 | <8 |
| CM8608 | 37 6 45 | 112 59 5 | 200 | .32 | .29 | .61 | .03 | 110 | <2 | <10 | <8 |
| CM8610 | 37 7 12 | 113 59 0 | 190 | .33 | .29 | .56 | .04 | 94 | <2 | <10 | <8 |
| CM8611 | 37 8 4 | 112 54 15 | 2,200 | 1.60 | .28 | 1.20 | .10 | 230 | <2 | <10 | <8 |
| CM8614 | 37 6 55 | 113 3 0 | 1,700 | 3.70 | .64 | 1.50 | .33 | 700 | <2 | <10 | <8 |
| CM8618 | 37 5 30 | 113 8 0 | 2,100 | 2.60 | .56 | 1.10 | .21 | 460 | <2 | <10 | <8 |
| TW-01 | 37 9 49 | 112 58 48 | 440 | 1.40 | 1.70 | 1.90 | .16 | 340 | <2 | <10 | <8 |
| TW-02 | 37 9 49 | 113 0 10 | 540 | 1.70 | 2.20 | 2.80 | .18 | 470 | <2 | <10 | <8 |
| TW-03 | 37 9 49 | 113 0 18 | 460 | 1.20 | 1.30 | 2.00 | .15 | 360 | <2 | <10 | <8 |
| TW-04 | 37 10 48 | 113 0 28 | 480 | 2.40 | 1.20 | 2.00 | .25 | 340 | <2 | <10 | <8 |
| TW-05 | 37 10 20 | 113 0 15 | 750 | 3.20 | .99 | 1.10 | .34 | 270 | <2 | <10 | <8 |
| TW-06 | 37 10 25 | 113 0 12 | 750 | 2.70 | 1.90 | 5.90 | .23 | 890 | <2 | <10 | <8 |
| TW-07 | 37 10 38 | 113 0 1 | 750 | 1.50 | 1.50 | 2.20 | .18 | 430 | <2 | <10 | <8 |
| TW-08 | 37 10 46 | 113 0 0 | 480 | 1.20 | 1.30 | 2.00 | .15 | 370 | <2 | <10 | <8 |
| TW-09 | 37 10 37 | 113 0 17 | 420 | .77 | .77 | 1.50 | .10 | 250 | <2 | <10 | <8 |

TABLE 5B. RESULTS OF ICP ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | Ni-ppm icp | Be-ppm icp | Bi-ppm icp | Cd-ppm icp | Co-ppm icp | Cr-ppm icp | Cu-ppm icp | La-ppm icp | Mo-ppm icp | Nb-ppm icp | V-ppm icp | Pb-ppm icp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CM-14 | 10 | 2 | <10 | <2 | 13 | 30 | 30 | 43 | <2 | -- | 130 | 23 |
| CM8607 | 5 | <1 | <10 | <2 | 3 | 5 | 5 | 11 | <2 | <4 | 14 | 5 |
| CM8608 | 3 | <1 | <10 | <2 | 1 | 1 | 1 | 5 | <2 | <4 | 6 | 4 |
| CM8610 | 3 | <1 | <10 | <2 | <1 | 1 | 3 | 5 | <2 | <4 | 7 | <4 |
| CM8611 | 3 | <1 | <10 | <2 | 4 | 5 | 9 | 13 | <2 | <4 | 42 | 6 |
| CM8614 | 8 | 1 | <10 | <2 | 8 | 19 | 24 | 32 | <2 | 7 | 91 | 16 |
| CM8618 | 7 | <1 | <10 | <2 | 7 | 12 | 15 | 23 | <2 | 4 | 62 | 11 |
| TW-01 | 8 | <1 | <10 | <2 | 5 | 20 | 9 | 17 | <2 | <4 | 29 | 9 |
| TW-02 | 11 | <1 | <10 | <2 | 7 | 26 | 9 | 20 | <2 | <4 | 38 | 11 |
| TW-03 | 7 | <1 | <10 | <2 | 5 | 19 | 10 | 15 | <2 | <4 | 28 | 10 |
| TW-04 | 9 | 1 | <10 | <2 | 7 | 20 | 13 | 27 | <2 | <4 | 54 | 13 |
| TW-05 | 9 | 2 | <10 | <2 | 8 | 25 | 16 | 45 | <2 | 6 | 73 | 19 |
| TW-06 | 13 | 1 | <10 | <2 | 10 | 26 | 36 | 24 | <2 | <4 | 76 | 14 |
| TW-07 | 8 | <1 | <10 | <2 | 5 | 20 | 11 | 17 | <2 | <4 | 37 | 9 |
| TW-08 | 7 | <1 | <10 | <2 | 5 | 19 | 9 | 15 | <2 | <4 | 29 | 9 |
| TW-09 | 5 | <1 | <10 | <2 | 3 | 15 | 7 | 10 | <2 | <4 | 19 | 8 |

TABLE 5B. RESULTS OF ICP ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | Sc-ppm icp | Sn-ppm icp | Sr-ppm icp | U-ppm icp | Ce-ppm icp | Y-ppm icp | Zn-ppm icp | Al-pct icp | Na-pct icp | K-pct icp | P-pct icp | Yb-ppm icp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CM-14 | 10 | <20 | 240 | <100 | 79 | 21 | 53 | 7.8 | .55 | 1.30 | .050 | 3 |
| CM8607 | 2 | <10 | 46 | <100 | 17 | 6 | 10 | 2.0 | .19 | 1.30 | .020 | <1 |
| CM8608 | <2 | <10 | 28 | <100 | 9 | 3 | 6 | 1.2 | .08 | .81 | .008 | <1 |
| CM8610 | <2 | <10 | 26 | <100 | 8 | 3 | 5 | 1.1 | .08 | .77 | .009 | <1 |
| CM8611 | <2 | <10 | 85 | <100 | 25 | 7 | 10 | 1.1 | .07 | .38 | .010 | <1 |
| CM8614 | 7 | <10 | 170 | <100 | 58 | 21 | 31 | 5.1 | .35 | 1.20 | .040 | 2 |
| CM8618 | 6 | <10 | 150 | <100 | 42 | 15 | 24 | 4.5 | .31 | .98 | .030 | 2 |
| TW-01 | 5 | <10 | 78 | <100 | 37 | 11 | 24 | 3.8 | .36 | 2.20 | .040 | 1 |
| TW-02 | 6 | <10 | 110 | <100 | 42 | 14 | 31 | 4.7 | .61 | 2.20 | .050 | 2 |
| TW-03 | 4 | <10 | 97 | <100 | 32 | 10 | 22 | 3.4 | .37 | 1.70 | .030 | 1 |
| TW-04 | 7 | <10 | 150 | <100 | 51 | 15 | 30 | 5.9 | .39 | 1.30 | .040 | 2 |
| TW-05 | 9 | <10 | 210 | <100 | 87 | 20 | 34 | 7.2 | .36 | 1.10 | .040 | 3 |
| TW-06 | 9 | <10 | 170 | <100 | 45 | 16 | 31 | 6.6 | .29 | 1.40 | .050 | 2 |
| TW-07 | 4 | <10 | 130 | <100 | 34 | 12 | 22 | 3.6 | .47 | 1.50 | .040 | 2 |
| TW-08 | 4 | <10 | 99 | <100 | 29 | 10 | 17 | 3.4 | .45 | 1.50 | .030 | 1 |
| TW-09 | 3 | <10 | 78 | <100 | 20 | 7 | 14 | 2.6 | .29 | 1.40 | .030 | <1 |

TABLE 5B. RESULTS OF ICP ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | Ga-ppm icp | Li-ppm icp | Ta-ppm icp | Th-ppm icp | Nd-ppm icp | Eu-ppm icp | Ho-ppm icp | Th-ppm dn | U-ppm dn |
|---|---|---|---|---|---|---|---|---|---|
| CM-14 | 17 | 40 | <40 | 14 | 38 | <2 | <4 | 17.70 | 5.000 |
| CM8607 | <4 | 16 | <40 | <4 | 7 | <2 | <4 | -- | -- |
| CM8608 | <4 | 9 | <40 | <4 | <4 | <2 | <4 | -- | -- |
| CM8610 | <4 | 9 | <40 | <4 | 5 | <2 | <4 | -- | -- |
| CM8611 | <4 | 9 | <40 | <4 | 9 | <2 | <4 | -- | -- |
| CM8614 | 10 | 23 | <40 | 10 | 24 | <2 | <4 | -- | -- |
| CM8618 | 8 | 24 | <40 | 7 | 18 | <2 | <4 | -- | -- |
| TW-01 | 8 | 38 | <40 | 5 | 16 | <2 | <4 | 4.30 | 1.800 |
| TW-02 | 10 | 52 | <40 | 6 | 19 | <2 | <4 | 7.51 | 2.270 |
| TW-03 | 7 | 25 | <40 | 5 | 13 | <2 | <4 | 5.25 | 1.730 |
| TW-04 | 12 | 33 | <40 | 10 | 23 | <2 | <4 | 11.20 | 2.800 |
| TW-05 | 16 | 38 | <40 | 15 | 39 | <2 | <4 | 13.50 | 4.480 |
| TW-06 | 15 | 32 | <40 | 9 | 21 | <2 | <4 | 2.70 | .778 |
| TW-07 | 7 | 28 | <40 | 6 | 16 | <2 | <4 | 6.56 | 1.980 |
| TW-08 | 7 | 25 | <40 | 5 | 13 | <2 | <4 | 5.26 | 1.590 |
| TW-09 | 5 | 16 | <40 | <4 | 9 | <2 | <4 | 2.80 | .652 |

TABLE 6A. RESULTS OF ANALYSES OF ROCK SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH

| 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 | B-ppm s | Ba-ppm s |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM22R2 | 37 2 46 | 113 2 45 | 15.00 | .02 | .30 | .003 | 20 | 15.0 | N | N | 20 | 70 |
| 85CM06R | 37 5 35 | 113 4 11 | 1.00 | 1.50 | 3.00 | .200 | 300 | N | N | N | 100 | 300 |
| 85CM26R | 37 6 35 | 113 2 35 | 1.00 | 1.50 | 3.00 | .150 | 300 | N | N | N | 50 | 300 |
| 85CM22R3 | 37 2 46 | 113 2 45 | .20 | .10 | 10.00 | .030 | 300 | N | N | N | 10 | 300 |
| 85CM25R | 37 8 23 | 113 4 8 | 7.00 | 1.50 | .70 | .150 | 200 | N | N | N | 10 | 150 |
| 85CM48R | 37 6 45 | 112 58 55 | .50 | 2.00 | 2.00 | .030 | 300 | N | N | N | 10 | 200 |
| 85CM32R | 37 7 20 | 112 56 10 | 7.00 | .05 | .10 | .030 | >5,000 | N | N | N | 15 | 1,500 |
| 85CM23R | 37 4 16 | 113 5 17 | .50 | .50 | 10.00 | .005 | 500 | <.5 | N | N | <10 | 150 |
| 85CM36R | 37 3 46 | 112 55 34 | .15 | .02 | .10 | .030 | 100 | N | N | N | 30 | 300 |
| 85CM28R | 37 7 12 | 112 59 15 | .70 | .10 | 7.00 | .007 | 300 | N | N | N | 15 | 200 |
| 85CM22R1 | 37 2 46 | 113 2 45 | .50 | 7.00 | 15.00 | .015 | 1,000 | N | N | N | 30 | 70 |
| 5CM120R1 | 37 0 15 | 112 54 15 | .30 | .15 | .30 | .070 | 50 | N | N | N | 30 | 500 |
| 85CM30R | 37 6 39 | 112 59 7 | .50 | 7.00 | 15.00 | .015 | 700 | 1.0 | N | N | 70 | 3,000 |
| 85CM31R | 37 4 32 | 112 57 41 | .30 | .03 | .05 | .015 | 300 | N | N | N | 10 | 300 |
| 85CM21R | 37 2 14 | 112 1 4 | .10 | 5.00 | 15.00 | .010 | 1,000 | N | N | N | N | 150 |
| 85CM33R | 37 6 51 | 112 54 48 | .30 | .05 | .10 | .015 | 70 | N | N | N | 10 | 150 |
| 85CM43R | 37 2 2 | 113 5 6 | 7.00 | 7.00 | 7.00 | 1.000 | 1,000 | N | N | N | N | 1,000 |
| 85CM24R | 37 6 6 | 113 5 37 | .50 | 1.50 | 7.00 | .100 | 300 | N | N | N | 30 | 700 |
| 85CM35R | 37 3 51 | 112 55 5 | .20 | .02 | .05 | .010 | 70 | N | N | N | 20 | 150 |
| 85CM55R | 37 3 30 | 112 55 17 | .20 | <.02 | <.05 | .007 | 100 | N | N | N | 10 | 70 |
| 8CM120R2 | 37 0 15 | 112 54 15 | 15.00 | .02 | <.05 | .010 | 300 | N | N | N | 15 | 70 |
| 85CM20R | 37 0 42 | 113 0 32 | 1.50 | 2.00 | 3.00 | .150 | 300 | N | N | N | 50 | 300 |

TABLE 6A. RESULTS OF ANALYSES OF ROCK SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | 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 | Pb-ppm s | Sb-ppm s | Sc-ppm s | Sn-ppm s |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM22R2 | N | N | N | 10 | <10 | 70 | N | N | N | 7 | 10 | N | N | N |
| 85CM06R | N | N | N | 5 | 50 | 7 | N | N | <20 | <5 | 15 | N | <5 | N |
| 85CM26R | N | N | N | <5 | 15 | 7 | N | N | <20 | <5 | 10 | N | <5 | N |
| 85CM22R3 | N | N | N | 7 | <10 | 7 | N | N | N | 5 | 15 | N | N | N |
| 85CM25R | N | N | N | 30 | <10 | 30 | N | N | <20 | 15 | <10 | N | 5 | N |
| 85CM48R | N | N | N | <5 | <10 | 7 | N | N | N | <5 | N | N | N | N |
| 85CM32R | N | N | N | 10 | <10 | 7 | N | N | N | 5 | N | N | N | N |
| 85CM23R | N | N | N | N | <10 | 30 | N | N | N | <5 | N | N | N | N |
| 85CM36R | N | N | N | N | <10 | <5 | N | N | <20 | <5 | N | N | N | N |
| 85CM28R | N | N | N | <5 | <10 | 7 | N | N | N | <5 | N | N | N | N |
| 85CM22R1 | N | N | N | <5 | 15 | 30 | N | N | N | <5 | <10 | N | N | N |
| 5CM120R1 | N | N | N | N | <10 | <5 | N | N | N | <5 | <10 | N | N | N |
| 85CM30R | N | N | N | N | <10 | 15 | N | N | N | <5 | N | N | N | N |
| 85CM31R | N | N | N | N | <10 | 5 | N | N | <20 | <5 | N | N | N | N |
| 85CM21R | N | N | N | N | <10 | 7 | N | N | N | <5 | N | N | N | N |
| 85CM33R | N | N | N | N | <10 | 5 | N | N | N | <5 | <10 | N | N | N |
| 85CM43R | N | N | N | 30 | 300 | 30 | 70 | N | 50 | 100 | <10 | N | 30 | N |
| 85CM24R | N | N | N | N | 15 | 7 | N | N | <20 | <5 | <10 | N | <5 | N |
| 85CM35R | N | N | N | N | <10 | <5 | N | N | N | <5 | N | N | N | N |
| 85CM55R | N | N | N | N | <10 | 7 | N | N | N | <5 | N | N | N | N |
| 8CM120R2 | 1.5 | N | N | 15 | <10 | 7 | N | N | N | 30 | 15 | N | 15 | N |
| 85CM20R | N | N | N | <5 | 15 | 10 | N | N | N | <5 | 15 | N | 5 | N |

TABLE 6A. RESULTS OF ANALYSES OF ROCK SAMPLES FROM THE CANAAN MOUNTAIN WILDERNESS STUDY AREA, KANE AND WASHINGTON COUNTIES, UTAH --Continued

| Sample | Sr-ppm s | V-ppm s | W-ppm s | Y-ppm s | Zn-ppm s | Zr-ppm s | Th-ppm s | As-ppm icp | Bi-ppm icp | Cd-ppm icp | Sb-ppm icp | Zn-ppm icp | Hg-ppm aa | Au-ppm aa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85CM22R2 | N | N | N | N | N | N | N | <5 | <2 | .3 | <2 | <2 | <.02 | <.1 |
| 85CM06R | <100 | 20 | N | 10 | N | 200 | N | <5 | <2 | .1 | <2 | 12 | <.02 | <.1 |
| 85CM26R | <100 | 15 | N | 10 | N | 300 | N | <5 | <2 | .2 | <2 | 20 | <.02 | <.1 |
| 85CM22R3 | <100 | <10 | N | N | N | 30 | N | <5 | <2 | .2 | <2 | 15 | <.02 | <.1 |
| 85CM25R | <100 | 30 | N | 15 | N | 150 | N | <5 | <2 | .7 | <2 | 71 | <.02 | <.1 |
| 85CM48R | <100 | 15 | N | 10 | N | 30 | N | <5 | <2 | .1 | 2 | 7 | <.02 | <.1 |
| 85CM32R | <100 | <10 | N | N | N | 150 | N | 60 | <2 | .4 | <2 | 13 | <.02 | <.1 |
| 85CM23R | <100 | <10 | N | N | N | 30 | N | <5 | <2 | .2 | <2 | 13 | <.02 | <.1 |
| 85CM36R | <100 | <10 | N | N | N | 30 | N | <5 | <2 | <.1 | <2 | <2 | <.02 | <.1 |
| 85CM28R | <100 | 10 | N | <10 | N | 20 | N | <5 | <2 | .2 | <2 | 12 | <.02 | <.1 |
| 85CM22R1 | <100 | <10 | N | <10 | N | 10 | N | <5 | <2 | .1 | 10 | 9 | <.02 | <.1 |
| 5CM120R1 | <100 | <10 | N | <10 | N | 200 | N | <5 | <2 | <.1 | <2 | 4 | <.02 | <.1 |
| 85CM30R | 150 | 15 | N | 10 | N | 30 | N | 16 | <2 | .1 | 6 | <2 | .03 | <.1 |
| 85CM31R | <100 | <10 | N | N | N | 30 | N | <5 | <2 | <.1 | <2 | 5 | <.02 | <.1 |
| 85CM21R | <100 | 30 | N | 10 | N | 15 | N | <5 | <2 | <.1 | 11 | 2 | <.02 | <.1 |
| 85CM33R | <100 | <10 | N | <10 | N | 50 | N | <5 | <2 | <.1 | <2 | 3 | <.02 | <.1 |
| 85CM43R | 500 | 200 | N | 30 | N | 150 | N | <5 | <2 | 1.2 | <2 | 53 | <.02 | <.1 |
| 85CM24R | <100 | 30 | N | 10 | N | 150 | N | <5 | <2 | <.1 | <2 | 6 | <.02 | <.1 |
| 85CM35R | <100 | N | N | N | N | 50 | N | <5 | <2 | <.1 | <2 | 4 | <.02 | <.1 |
| 85CM55R | N | N | N | <10 | N | 50 | N | <5 | <2 | <.1 | <2 | 3 | <.02 | <.1 |
| 8CM120R2 | <100 | 70 | N | <10 | 200 | 30 | N | 86 | <2 | 2.1 | <2 | 170 | <.02 | <.1 |
| 85CM20R | <100 | 30 | N | 10 | N | 70 | N | <5 | <2 | .3 | 3 | 14 | <.02 | <.1 |

TABLE 6B. RESULTS OF ICP ANALYSES OF ROCK SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH

| Sample | Latitude | Longitude | Ba-ppm icp | Fe-pct icp | Mg-pct icp | Ca-pct icp | Ti-pct icp | Mn-ppm icp | Ag-ppm icp | As-ppm icp | Au-ppm icp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CM-01 | 37 7 33 | 113 8 38 | 340 | 4.80 | 1.00 | .40 | .42 | 140 | <2 | <10 | <8 |
| CM-02 | 37 7 33 | 113 8 38 | 500 | 1.50 | .73 | .23 | .41 | 77 | <2 | <10 | <8 |
| CM-03 | 37 7 33 | 113 8 38 | 1,700 | .53 | .37 | .36 | .13 | 850 | <2 | <10 | <8 |
| CM-04 | 37 7 33 | 113 8 38 | 260 | 3.30 | 1.20 | .57 | .43 | 120 | <2 | <10 | <8 |
| CM-05 | 37 7 33 | 113 8 38 | 620 | 5.10 | .92 | .27 | .52 | 220 | <2 | <10 | <8 |
| CM-06 | 37 7 33 | 113 8 38 | 1,400 | 4.60 | .87 | .54 | .46 | 180 | <2 | <10 | <8 |
| CM-07 | 37 7 33 | 113 8 38 | 660 | 5.20 | 1.20 | .46 | .39 | 230 | <2 | <10 | <8 |
| CM-08 | 37 7 33 | 113 8 38 | 48 | 5.70 | .79 | .40 | .47 | 130 | <2 | <10 | <8 |
| CM-09 | 37 7 33 | 113 8 38 | 770 | 5.70 | 1.10 | .53 | .42 | 210 | <2 | <10 | <8 |
| CM-10 | 37 7 33 | 113 8 38 | 610 | 4.80 | 1.30 | 1.70 | .51 | 1,000 | <2 | <10 | <8 |
| CM-11 | 37 7 33 | 113 8 38 | 150 | 5.90 | .95 | .44 | .42 | 140 | <2 | <10 | <8 |
| CM-12 | 37 7 33 | 113 8 38 | 490 | 5.30 | .22 | .58 | .59 | 790 | <2 | <10 | <8 |
| CM-13 | 37 7 33 | 113 8 38 | 660 | 4.60 | .29 | .84 | .55 | 930 | <2 | <10 | <8 |
| CM8601 | 37 3 17 | 113 2 55 | 3,500 | 1.90 | 4.80 | 8.20 | .17 | 930 | <2 | <10 | <8 |
| CM8602 | 37 3 17 | 113 2 55 | 310 | 4.80 | 2.40 | .78 | .35 | 260 | <2 | 80 | <8 |
| CM8603 | 37 5 30 | 113 3 50 | 640 | 1.00 | 3.50 | 6.20 | .15 | 640 | <2 | <10 | <8 |
| CM8604 | 37 5 30 | 113 3 50 | 390 | 1.10 | 2.60 | 4.10 | .16 | 510 | <2 | <10 | <8 |
| CM8605 | 37 5 30 | 113 3 50 | 350 | .72 | .66 | .22 | .11 | 94 | <2 | <10 | <8 |
| CM8606 | 37 5 30 | 113 3 50 | 2,700 | .38 | 5.50 | 11.00 | .01 | 970 | <2 | <10 | <8 |
| CM8609 | 37 7 12 | 113 59 0 | 1,400 | .36 | 3.40 | 29.00 | .03 | 26,000 | <2 | <10 | <8 |
| CM8612A | 37 8 15 | 113 3 28 | 270 | 1.10 | .10 | .28 | .06 | 92 | 5 | 10 | <8 |
| CM8612B | 37 8 15 | 113 3 28 | 410 | .89 | .07 | .20 | .10 | 130 | <2 | 10 | <8 |
| CM8613 | 37 6 55 | 113 3 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| CM8615 | 37 6 55 | 113 3 0 | 570 | 1.50 | .17 | 1.50 | .08 | 250 | <2 | 20 | <8 |
| CM8616 | 37 5 50 | 113 7 55 | 830 | .42 | .05 | .26 | .07 | 280 | <2 | <10 | <8 |
| CM8617 | 37 5 30 | 113 8 0 | 590 | .58 | .06 | .62 | .04 | 180 | <2 | <10 | <8 |
| TW-10 | 37 10 48 | 113 0 28 | 740 | 3.20 | 1.10 | .23 | .15 | 120 | <2 | <10 | <8 |
| TW-11 | 37 10 25 | 113 0 12 | 2,900 | .16 | .51 | 35.00 | .01 | 2,400 | <2 | <10 | <8 |

TABLE 6B. RESULTS OF ICP ANALYSES OF ROCK SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | Ni-ppm icp | Be-ppm icp | Bi-ppm icp | Cd-ppm icp | Co-ppm icp | Cr-ppm icp | Cu-ppm icp | La-ppm icp | Mo-ppm icp | Nb-ppm icp | V-ppm icp | Pb-ppm icp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CM-01 | 17 | 5 | <10 | <2 | 11 | 29 | 22 | 49 | <2 | -- | 75 | 27 |
| CM-02 | 23 | 3 | <10 | <2 | 31 | 27 | 110 | 51 | 3 | -- | 81 | 32 |
| CM-03 | 16 | 1 | <10 | <2 | 20 | 5 | 34 | 36 | <2 | -- | 24 | 20 |
| CM-04 | 10 | 3 | <10 | <2 | 9 | 29 | 41 | 69 | <2 | -- | 96 | 28 |
| CM-05 | 10 | 2 | <10 | <2 | 10 | 20 | 29 | 49 | <2 | -- | 97 | 21 |
| CM-06 | 17 | 3 | <10 | <2 | 12 | 43 | 22 | 11 | <2 | -- | 100 | 18 |
| CM-07 | 17 | 3 | <10 | <2 | 18 | 23 | 14 | 58 | <2 | -- | 77 | 24 |
| CM-08 | 17 | 2 | <10 | <2 | 16 | 43 | 22 | 16 | <2 | -- | 140 | 20 |
| CM-09 | 14 | 2 | <10 | <2 | 22 | 21 | 14 | 38 | <2 | -- | 98 | 19 |
| CM-10 | 10 | 1 | <10 | <2 | 24 | 20 | 100 | 29 | <2 | -- | 150 | 11 |
| CM-11 | 15 | 2 | <10 | <2 | 16 | 32 | 43 | 96 | <2 | -- | 120 | 29 |
| CM-12 | 4 | <1 | <10 | <2 | 5 | 31 | 27 | 12 | <2 | -- | 130 | 23 |
| CM-13 | 5 | <1 | <10 | <2 | 8 | 17 | 12 | 29 | <2 | -- | 85 | 19 |
| CM8601 | 20 | 1 | <10 | <2 | 10 | 28 | 14 | 21 | <2 | 6 | 59 | 11 |
| CM8602 | 43 | 2 | <10 | <2 | 16 | 67 | 11 | 38 | 4 | 10 | 110 | 9 |
| CM8603 | 11 | <1 | <10 | <2 | 4 | 14 | 15 | 19 | <2 | <4 | 28 | 7 |
| CM8604 | 10 | <1 | <10 | <2 | 5 | 12 | 5 | 20 | <2 | <4 | 26 | 12 |
| CM8605 | 8 | <1 | <10 | <2 | 3 | 8 | 4 | 12 | <2 | <4 | 24 | 7 |
| CM8606 | 3 | <1 | <10 | <2 | 3 | 1 | 3 | 4 | <2 | <4 | 33 | <4 |
| CM8609 | 5 | <1 | <10 | <2 | 5 | 4 | 48 | 21 | 4 | <4 | 45 | 7 |
| CM8612A | 5 | <1 | <10 | <2 | 5 | 6 | 17 | 27 | <2 | <4 | 19 | 17 |
| CM8612B | 3 | <1 | <10 | <2 | 4 | 6 | 17 | 50 | <2 | <4 | 17 | 39 |
| CM8613 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| CM8615 | 6 | <1 | <10 | <2 | 4 | 7 | 8 | 24 | <2 | <4 | 16 | 12 |
| CM8616 | 8 | <1 | <10 | <2 | 6 | 2 | 23 | 47 | <2 | <4 | 15 | 16 |
| CM8617 | 4 | <1 | <10 | <2 | 4 | 3 | 7 | 24 | <2 | <4 | 12 | 11 |
| TW-10 | 8 | 1 | <10 | <2 | 8 | 13 | 10 | 19 | <2 | <4 | 29 | 8 |
| TW-11 | <2 | <1 | <10 | <2 | 3 | 3 | 36 | 19 | <2 | <4 | 31 | <4 |

TABLE 6B. RESULTS OF ICP ANALYSES OF ROCK SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | Sc-ppm icp | Sn-ppm icp | Sr-ppm icp | U-ppm icp | Ce-ppm icp | Y-ppm icp | Zn-ppm icp | Al-pct icp | Na-pct icp | K-pct icp | P-pct icp | Yb-ppm icp | Ga-ppm icp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CM-01 | 12 | <20 | 300 | <100 | 84 | 41 | 51 | 9.40 | .61 | 2.10 | .020 | 5 | 21 |
| CM-02 | 11 | <20 | 150 | <100 | 97 | 34 | 36 | 8.70 | .60 | 2.50 | .020 | 4 | 18 |
| CM-03 | 2 | <20 | 130 | <100 | 69 | 14 | 22 | 5.30 | .99 | 1.80 | .009 | 1 | 9 |
| CM-04 | 13 | <20 | 250 | <100 | 130 | 27 | 48 | 9.90 | .21 | 1.00 | .030 | 3 | 22 |
| CM-05 | 10 | <20 | 170 | <100 | 89 | 38 | 50 | 8.50 | .47 | 2.20 | .020 | 5 | 18 |
| CM-06 | 17 | <20 | 180 | <100 | 17 | 8 | 64 | 11.00 | .96 | .48 | .020 | 1 | 26 |
| CM-07 | 13 | <20 | 210 | <100 | 100 | 29 | 75 | 9.90 | 1.00 | 2.30 | .070 | 4 | 22 |
| CM-08 | 18 | <20 | 130 | <100 | 23 | 9 | 46 | 11.00 | .82 | .63 | .030 | 1 | 25 |
| CM-09 | 14 | <20 | 280 | <100 | 64 | 23 | 61 | 10.00 | 1.20 | 1.50 | .070 | 3 | 20 |
| CM-10 | 18 | <20 | 260 | <100 | 49 | 16 | 79 | 9.20 | 1.50 | 1.40 | .120 | 2 | 19 |
| CM-11 | 15 | <20 | 190 | <100 | 190 | 50 | 63 | 11.00 | .77 | 1.30 | .030 | 6 | 22 |
| CM-12 | 9 | <20 | 78 | <100 | 17 | 6 | 18 | 8.10 | .10 | .19 | .010 | 1 | 16 |
| CM-13 | 9 | <20 | 110 | <100 | 57 | 6 | 46 | 10.00 | .17 | .89 | .010 | 1 | 20 |
| CM8601 | 7 | <10 | 320 | <100 | 43 | 14 | 41 | 4.50 | .44 | 1.90 | .040 | 2 | 8 |
| CM8602 | 16 | <10 | 110 | <100 | 65 | 21 | 130 | 8.90 | .40 | 3.50 | .060 | 3 | 18 |
| CM8603 | 4 | <10 | 96 | <100 | 36 | 13 | 14 | 3.80 | .83 | 1.60 | .040 | 2 | 7 |
| CM8604 | 5 | <10 | 88 | <100 | 36 | 14 | 14 | 4.20 | 1.00 | 1.50 | .040 | 2 | 7 |
| CM8605 | 3 | <10 | 46 | <100 | 22 | 8 | 13 | 3.60 | .57 | 1.40 | .020 | <1 | 5 |
| CM8606 | <2 | <10 | 200 | <100 | 12 | 7 | <2 | .34 | .05 | .10 | .006 | <1 | <4 |
| CM8609 | 3 | <10 | 1,200 | <100 | 38 | 17 | <2 | 1.10 | .12 | .16 | .010 | 2 | 19 |
| CM8612A | <2 | <10 | 71 | <100 | 51 | 6 | 5 | 1.20 | .05 | .19 | .060 | <1 | <4 |
| CM8612B | 2 | <10 | 120 | <100 | 93 | 7 | 3 | 1.70 | .04 | .28 | .030 | <1 | <4 |
| CM8613 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| CM8615 | 2 | <10 | 57 | <100 | 46 | 9 | 9 | 2.10 | .03 | .23 | .010 | 1 | <4 |
| CM8616 | 2 | <10 | 100 | <100 | 84 | 22 | 6 | 1.30 | .02 | .14 | .060 | 1 | <4 |
| CM8617 | <2 | <10 | 56 | <100 | 45 | 8 | 6 | .92 | .03 | .13 | .020 | <1 | <4 |
| TW-10 | 3 | <10 | 59 | <100 | 37 | 9 | 57 | 4.20 | .61 | 1.10 | .030 | 1 | 13 |
| TW-11 | <2 | <10 | 490 | <100 | 39 | 22 | 3 | .42 | .03 | .07 | .010 | 2 | <4 |

TABLE 6B. RESULTS OF ICP ANALYSES OF ROCK SAMPLES FROM THE CANAAN MOUNTAIN AND THE WATCHMAN WILDERNESS STUDY AREAS, KANE AND WASHINGTON COUNTIES, UTAH--Continued

| Sample | Li-ppm icp | Ta-ppm icp | Th-ppm icp | Nd-ppm icp | Eu-ppm icp | Ho-ppm icp | Th-ppm dn | U-ppm dn | Au-ppm aa |
|---|---|---|---|---|---|---|---|---|---|
| CM-01 | 48 | <40 | 18 | 41 | <2 | <4 | 17.40 | 2.96 | -- |
| CM-02 | 31 | <40 | 16 | 46 | 2 | <4 | 17.20 | 12.10 | -- |
| CM-03 | 20 | <40 | 9 | 33 | <2 | <4 | 13.70 | 9.22 | -- |
| CM-04 | 46 | <40 | 19 | 62 | 2 | <4 | 18.00 | 4.56 | -- |
| CM-05 | 39 | <40 | 24 | 46 | 2 | <4 | 22.40 | 6.08 | -- |
| CM-06 | 55 | <40 | 18 | 7 | <2 | <4 | 14.90 | 5.29 | -- |
| CM-07 | 41 | <40 | 18 | 45 | <2 | <4 | 17.80 | 3.00 | -- |
| CM-08 | 67 | <40 | 18 | 10 | <2 | <4 | 15.30 | 4.27 | -- |
| CM-09 | 47 | <40 | 11 | 33 | <2 | <4 | 9.35 | 3.72 | -- |
| CM-10 | 9 | <40 | 7 | 25 | <2 | <4 | 7.90 | 3.06 | -- |
| CM-11 | 54 | <40 | 11 | 93 | 5 | <4 | 11.30 | 4.81 | -- |
| CM-12 | 41 | <40 | 16 | 6 | <2 | <4 | 15.80 | 5.02 | -- |
| CM-13 | 35 | <40 | 13 | 25 | <2 | <4 | 9.07 | 2.49 | -- |
| CM8601 | 58 | <40 | 6 | 18 | <2 | <4 | -- | -- | -- |
| CM8602 | 66 | <40 | 10 | 31 | <2 | <4 | -- | -- | -- |
| CM8603 | 28 | <40 | <4 | 16 | <2 | <4 | -- | -- | -- |
| CM8604 | 24 | <40 | 4 | 18 | <2 | <4 | -- | -- | -- |
| CM8605 | 26 | <40 | <4 | 9 | <2 | <4 | -- | -- | -- |
| CM8606 | 11 | <40 | <4 | <4 | <2 | <4 | -- | -- | -- |
| CM8609 | 5 | <40 | 10 | 11 | <2 | <4 | -- | -- | -- |
| CM8612A | 12 | <40 | <4 | 17 | <2 | <4 | 2.30 | 1.82 | <.1 |
| CM8612B | 15 | <40 | <4 | 28 | <2 | <4 | 4.50 | 2.31 | <.1 |
| CM8613 | -- | -- | -- | -- | -- | -- | <1.50 | .26 | -- |
| CM8615 | 12 | <40 | <4 | 18 | <2 | <4 | 5.17 | 1.75 | <.1 |
| CM8616 | 9 | <40 | <4 | 35 | <2 | <4 | 3.80 | 1.83 | <.1 |
| CM8617 | 7 | <40 | <4 | 17 | <2 | <4 | 2.80 | 1.90 | <.1 |
| TW-10 | 49 | <40 | 4 | 16 | <2 | <4 | 2.80 | 1.61 | -- |
| TW-11 | 3 | <40 | <4 | 14 | <2 | <4 | <4.00 | 3.02 | -- |

Table 7. Description of rock samples

| | |
|---|---|
| **CANAAN MOUNTAIN WSA rocks** | |
| 85CM16R | sandstone |
| 85CM20R | sandstone |
| 85CM21R | sandstone |
| 85CM22R1 | sandstone |
| 85CM22R2 | sandstone |
| 85CM22R3 | sandstone |
| 85CM23R | sandstone |
| 85CM24R | sandstone |
| 85CM25R | sandstone |
| 85CM26R | sandstone |
| 85CM28R | sandstone |
| 85CM30R | jasper |
| 85CM31R | sandstone |
| 85CM32R | sandstone |
| 85CM33R | sandstone |
| 85CM35R | sandstone |
| 85CM36R | sandstone |
| 85CM43R | basalt |
| 85CM48R | sandstone |
| 85CM55R | sandstone |
| 85CM120R1 | sandstone |
| 85CM120R2 | sandstone |
| CM-01 | shale, slightly radioactive |
| CM-02 | shale, slightly radioactive |
| CM-03 | sandstone, slightly radioactive |
| CM-04 | shale |
| CM-05 | shale |
| CM-06 | shale |
| CM-07 | shale |
| CM-08 | shale |
| CM-09 | shale |
| CM-10 | shale |
| CM-11 | shale |
| CM-12 | shale |
| CM-13 | shale |
| CM8601 | Moenave shale |
| CM8602 | Moenave siltstone |
| CM8603 | Moenave shale |
| CM8604 | Moenave siltstone |
| CM8605 | Moenave sandstone |
| CM8606 | Moenave chert |
| CM8609 | Chinle limestone concretion |
| CM8612A | Chinle conglomerate |
| CM8612B | Chinle conglomerate |
| CM8613 | travertine |
| CM8615 | Chinle conglomerate |
| CM8616 | Chinle conglomerate |
| CM8617 | Chinle conglomerate w/10 mm socket |
| **THE WATCHMAN WSA rocks** | |
| TW-10 | sandstone |
| TW-11 | limy nodule |