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Analytical results and sample locality map of rock-and-soil samples from aerial gamma-ray anomalies, Getchell gold trend, Humboldt County, Nevada

By

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INTRODUCTION

Aerial gamma-ray spectrometer anomalies in the Getchell gold trend of the Osgood Mountains in Humboldt County, Nevada (fig. 1), have been investigated for their significance to gold deposits (Pitkin, 1991b). Ground field work in October and November 1989 and November 1990 obtained rock-and-soil samples for selected anomalies and other geologic features of interest. Geochemical analyses were done on the samples, and this report presents the analytical results. An earlier report (Pitkin, 1991a) described geochemical analyses for most samples collected during the 1989 field season. A final report (Pitkin, in preparation) will discuss all aspects of the investigation, focusing on the utility of aerial gamma-ray measurements in gold exploration. This work is part of the U.S. Geological Survey Getchell gold trend demonstration project (Hoover, Grauch, and others, 1991). The geochemical methods applied to the rock-and-soil samples were proposed by R.W. Leinz of the Branch of Geochemistry, U.S. Geological Survey (oral commun., 1989).

AERIAL SURVEY

Helicopter-borne gamma-ray spectrometry data for the Getchell project were obtained on 1/4-mile spaced flight lines oriented N 58° W and flown at a nominal 400-ft above ground level. The spectrometer used a 2048 cubic inch sodium iodide detector system to monitor the variation of high energy photopeaks in the uranium-238 and thorium-232 decay series for uranium (U) and thorium (Th) distribution, and the variation of the photopeak of potassium-40 for potassium (K) distribution. Calibration of the spectrometer at sites of known radioelement concentrations (Geodata International, Inc., 1977; Ward, 1978) enabled conversion of observed photopeak variations to quantitative values in parts per million (ppm) for U and Th and percent (%) for K. Equilibrium is assumed in the uranium-238 and thorium-232 decay series. Further details of the aerial survey are given in TerraSense (1989).

SAMPLING METHOD

To determine locations for field examination and sample collection, radioelement data as U, K, and Th contour maps (TerraSense, 1989) and color composite maps (not published) were examined together with geologic maps (Erickson and Marsh, 1974a; 1974b; Hotz and Willden, 1964; Willden, 1964) for the study area. Locations thought to be anomalous or to have significance for gold deposits were compiled (Pitkin, 1991b), all along aerial flight lines. These locations were visited in the field and rock-and-soil samples were obtained. Where possible, bedrock was sampled rather than soil or non-bedrock locations. Also visited and sampled were geologic targets of opportunity and locations within the Preble, Hansen Creek, and Summer Camp open-pit gold mines. Plate 1 (in pocket) is the sample location map for this study.

At sample locations, a portable gamma-ray spectrometer was operated to determine U, K, and Th concentrations and assure location positioning along aerial flight lines and within (mostly) and outside (on occasion) aerial anomalies. The portable spectrometer monitored the same radioisotope photopeaks as the aerial spectrometer (TerraSense, 1989), and was quantitatively calibrated to give concentration values in parts per million (ppm) for U and Th and in percent (%) for K, using a 300-sec counting time. The 3" diameter 3"-thick sodium iodide detector of the spectrometer was suspended within an adjustable tripod 12" to 18" above ground surface. In this configuration, gamma-rays detected effectively were from a circular area about 3' in diameter. Detection depth could not be determined, but was probably a maximum of 18". Care was taken to choose locations as flat as possible to achieve as near 2 pi detection geometry as possible. Elevating of the detector results in averaging of minor inhomogeneities at ground surface. Samples were taken from the rock, rock-and-soil, or soil present within the area defined by the tripod. It was not possible to completely sample this area, but comparative results (see tables -b) indicate representative success for most samples. Duval, Reimer, and others (1990) report on a similar investigation that includes the comparison of aerial and ground gamma-ray measurements.

DESCRIPTION OF TABLES

Tables 1 through 5 are organized on the basis of the rationale for collection of the samples listed in the specific table.

Table 1 includes 27 samples collected from bedrock aerial anomaly sites and composed mostly of rock fragments.

Table 2 includes 12 samples collected from two areas of gold mineralization and aerial and ground uranium gamma-ray anomalies and composed mostly of rock fragments.

Table 3 includes 14 samples collected from an area of known pediment gold mineralization (E.L. Kretschmer, oral commun., 1990) and composed mostly of soil with occasional rock fragments.

Table 4 includes 28 samples collected from areas of pediment aerial anomalies and composed mostly of soil with occasional rock fragments. The samples of Table 4 include a set of 3 samples from the same site (90JP044, -45, and -46), where one of the set (-46) was taken from 6" below the surface after the surface samples (-44 and -45) were taken and the intervening material was removed.

Five other sets of samples (90JP048 and -49, -50 and -51, -55 and -56, -58 and -59, and -60 and -61) are surface-and-6" depth pairs. The 6" depth sample was taken after the intervening material was removed.

Table 5 includes 19 samples collected from the Preble (5), Hansen Creek (8), and Summer Camp (6) open-pit gold mines. These samples were either from drill cuttings (Preble and Summer Camp) or rock fragments (Hansen Creek) from mine workings.

Tables 1 through 5 each include -a, -b, -c, -d, -e, and -f parts. In all parts of tables 1 through 5, the dashed line for an element indicates that element was not detected by that analytical method. The -a tables include the field sample number, the laboratory sample number, sample locations in latitude and longitude, a brief description of the physical sample (rock, rock-&-soil, soil), and the sample collection date. The field sample number is listed on each part of each table; these numbers correspond to the numbers shown on the sample location map (plate 1).

The -b tables include concentrations of K (%), U (ppm), Th (ppm) as determined by aerial and ground gamma-ray measurements, and delayed neutron activation analyses (dnaa) for U (ppm) and Th (ppm) and the coefficient of variation for each dnaa value. The aerial concentrations are ranges of % and ppm because they were derived by extrapolation from contour interval intersections plotted along flight lines on 1:24,000-scale contour maps prepared by TerraSense (1989). The ground concentrations are single values of % and ppm as they represent single (most often) measurements at aerial anomaly locations.

The -c tables include the individual analyses for Au, Hg, W, and F, and the 10-element inductively coupled plasma-atomic emission spectrometry (ICP-AES) analysis, all as described in table 6.

The -d, -e, and -f tables include the 40-element inductively coupled plasma-atomic emission spectrometry (ICP-AES) analysis, all as described in table 6. Ag, Au, Bi, Eu, Ho, Sn, Ta, and U are not included in the -d, -e, and -f tables since all analytical results for these elements were below their respective lower determination limits for this analysis.

Table 6 lists the analytical methods used in this study, the elements analyzed, their lower detection limits, and the reference that describes the specific method.

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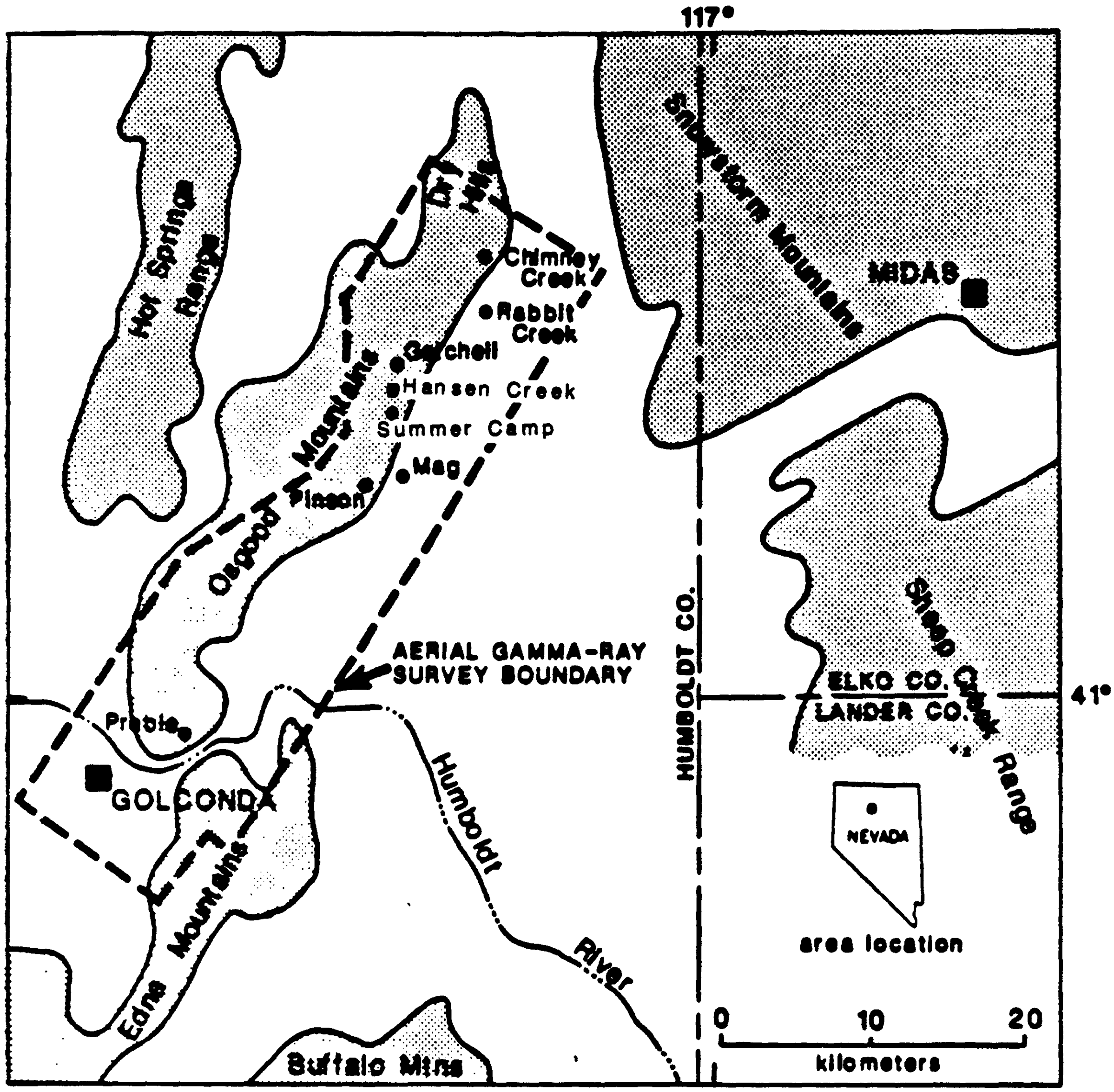

Fig. 1. Map showing sketched boundary of aerial gamma-ray survey area, gold deposits (black dot and name), and towns (black square and name). Shaded areas approximate extent of upland areas. Modified from Pitkin (1991b).

Table 1a. Sample numbers, locations, and descriptions of rock-and-soil samples from bedrock aerial anomaly sites in the Getchell gold trend. [Sample locations shown on Plate 1. Calc, effervesed with dilute HCl; do, ditto]

Field Sample Number	Lab Sample Number	Location Latitude	Location Longitude	Sample Description	Date Collected
89JP001	D344204	40° 56'21.6"	117° 24'51.0"	phyllitic shale	19 Oct 89
89JP002	D344205	40° 56'23.4"	117° 24'55.8"	do	do
89JP003	D344206	40° 57'54.0"	117° 25'21.0"	do & soil	do
89JP004	D344207	40° 57'49.8"	117° 25'16.8"	do & soil	do
89JP005	D344208	40° 57'49.8"	117° 25'12.0"	do & soil	do
89JP006	D344209	41° 08'09.0"	117° 17'37.2"	phyllitic shale	20 Oct 89
89JP007	D344210	41° 08'07.2"	117° 17'32.4"	do	do
89JP008	D344211	41° 07'55.8"	117° 17'10.8"	do, calc	do
89JP009	D344212	41° 05'42.6"	117° 19'31.2"	do	21 Oct 89
89JP010	D344213	41° 05'36.6"	117° 19'18.0"	do, calc	do
89JP027	D344230	41° 04'49.2"	117° 20'20.4"	phyllite & quartzite	1 Nov 89
89JP028	D344231	41° 04'45.0"	117° 20'30.6"	vein quartz & phyllite	do
89JP029	D344232	41° 04'43.2"	117° 20'30.0"	green phyllite	do
89JP030	D344233	41° 04'41.4"	117° 20'29.4"	do	do
90JP001	D371993	41° 06'12.0"	117° 20'51.0"	do	1 Nov 90
90JP002	D378638	41° 06'07.8"	117° 20'43.2"	gray-black quartzite	do
90JP003	D373414	41° 06'06.0"	117° 20'39.0"	do	do
90JP004	D378646	41° 03'36.0"	117° 22'54.0"	soil & rock fragments	2 Nov 90
90JP005	D378647	41° 03'30.6"	117° 22'45.0"	do	do
90JP006	D371994	41° 04'12.0"	117° 22'32.4"	green phyllite	do
90JP022	D373415	41° 05'19.2"	117° 20'03.6"	brown & green phyllite	4 Nov 90
90JP023	D378658	41° 05'17.4"	117° 20'00.0"	brown phyllite	do
90JP024	D373416	41° 05'21.6"	117° 20'09.6"	soil & rock fragments	do
90JP026	D378653	41° 05'25.2"	117° 20'16.2"	soil	do
90JP027	D371995	41° 05'48.0"	117° 20'00.0"	soil & rock fragments	do
90JP028	D378639	41° 05'40.8"	117° 19'43.8"	soil & green phyllite	do
90JP029	D371996	41° 05'38.4"	117° 19'39.0"	green phyllite	do

Table 1b. K, U, and Th concentrations from aerial measurements, K, U, and Th concentrations from ground measurements, and delayed neutron activation analyses (dnaa) for U and Th of rock-and-soil samples from bedrock aerial anomaly sites in the Getchell gold trend. [CV, coefficient of variation; do, ditto]

Field Sample Number	Aerial concentrations			Ground concentrations			DNAA			
	K,%	U,ppm	Th,ppm	K,%	U,ppm	Th,ppm	U,ppm	CV	Th,ppm	CV
89JP001	3.4-3.6	4.0-4.5	16-18	2.9	6.2	21.5	5.7	2	25.2	6
89JP002	3.6-3.8	3.5-4.0	16-18	4.1	4.3	20.7	2.9	3	14.7	7
89JP003	3.0-3.2	3.5-4.0	18-20	3.0	6.6	27.4	6.6	2	28.0	5
89JP004	3.2-3.4	3.0-3.5	18-20	4.2	4.8	21.4	5.0	2	13.1	9
89JP005	3.4-3.6	3.0-3.5	16-17	5.2	7.4	29.7	5.3	2	16.2	8
89JP006	4.6-4.8	2.5-3.0	18-19	3.3	5.2	19.4	4.2	2	14.6	7
89JP007	4.6-4.8	2.5-3.0	17-18	5.2	10.0	24.6	7.8	2	15.2	9
89JP008	2.4-2.6	3.5-4.0	10-11	2.8	8.1	13.2	6.6	2	11.6	11
89JP009	3.2-3.4	2.0-2.5	15-16	4.0	5.1	23.6	6.3	2	17.9	8
89JP010	2.4-2.6	1.5-2.0	11-12	2.1	3.4	11.4	2.7	3	2.9	27
89JP027	2.8-3.0	2.0-2.5	16-17	2.7	3.9	14.7	2.0	3	5.0	16
89JP028	off flight line			1.8	3.4	13.9	1.1	5	4.4	15
89JP029	do			3.3	4.0	18.9	3.3	3	15.9	6
89JP030	do			2.8	4.1	15.5	3.4	3	50.7	3
90JP001	2.6-2.8	1.5-2.0	13-14	not available			3.8	3	18.6	6
90JP002	2.8-3.0	1.5-2.0	11-12	do			2.9	4	13.2	8
90JP003	2.8-3.0	1.5-2.0	11-12	do			1.8	4	9.6	8
90JP004	2.6-2.8	1.0-1.5	13	2.4	4.4	14.2	3.4	4	13.6	10
90JP005	2.8-3.0	2.0-2.5	14	2.8	4.5	15.2	3.7	4	13.8	10
90JP006	2.8-3.0	2.0-2.5	14-15	3.4	6.5	18.2	4.3	3	17.8	7
90JP022	2.8-3.0	2.5-3.0	14-15	3.7	5.8	19.4	3.1	3	13.0	7
90JP023	2.8-3.0	2.5-3.0	12-13	2.7	5.6	16.4	4.2	3	14.9	10
90JP024	3.0-3.2	3.5-4.0	14-15	3.2	5.8	18.0	3.8	3	16.1	7
90JP026	2.4-2.6	2.0-2.5	12-13	2.6	4.8	16.9	3.6	3	11.1	11
90JP027	1.8-2.0	1.5-2.0	9-10	1.6	3.4	10.9	4.3	3	14.2	9
90JP028	3.0-3.2	2.0-2.5	15-16	2.7	4.7	17.6	4.0	3	15.4	8
90JP029	3.0-3.2	2.0-2.5	15-16	2.9	4.4	20.3	4.4	3	13.8	8

Table 1c. Au, Hg, W, F, and 10-element ICP-AES analyses of rock-and-soil samples from bedrock aerial anomaly sites in the Getchell gold trend. [F in %, all others in ppm]

Field Sample Number	----- ppm ---			%	------------ 10 element ICP-AES, ppm ----------									
	Au	Hg	W	F	Ag	As	Au	Bi	Cd	Cu	Mo	Pb	Sb	Zn
89JP001	—	—	1.0	0.04	—	2.7	—	—	0.063	2.3	0.22	29.0	—	23.0
89JP002	—	—	2.0	.02	—	4.0	—	—	.06	8.7	.53	40.0	—	23.0
89JP003	—	—	2.0	.03	—	6.9	—	—	.11	12.0	.31	96.0	—	32.0
89JP004	—	—	1.5	.02	—	51.0	—	—	.11	23.0	2.7	29.0	1.4	99.0
89JP005	—	0.2	2.0	.02	—	5.6	—	—	.095	21.0	.51	31.0	—	37.0
89JP006	.004	—	1.0	.02	—	.63	—	—	.066	3.9	.19	5.0	—	26.0
89JP007	—	—	12.0	.02	.058	1.9	—	1.0	.034	93.0	6.0	4.4	—	27.0
89JP008	—	—	2.0	.03	.11	4.2	—	—	.043	52.0	10.0	3.2	—	51.0
89JP009	—	—	2.0	.02	—	36.0	—	—	.032	7.0	.37	21.0	.75	100.0
89JP010	.002	.22	1.5	.04	.31	22.0	—	—	1.3	37.0	2.0	25.0	3.1	58.0
89JP027	—	—	1.0	.02	—	140.0	—	—	.052	1.8	.024	5.2	1.2	8.2
89JP028	.05	.02	1.0	.01	—	210.0	—	—	.031	2.5	.2	6.9	2.3	15.0
89JP029	.004	—	2.0	.04	—	89.0	—	—	.047	15.0	.18	14.0	7.2	31.0
89JP030	.002	—	2.0	.02	—	78.0	—	—	—	2.4	.19	7.2	.06	53.0
90JP001	—	.08	1.0	.04	—	5.1	—	2.3	.086	5.0	.27	6.6	.98	51.0
90JP002	.003	.02	—	.03	—	2.5	—	—	—	31.0	.97	6.0	—	35.0
90JP003	—	.04	—	.02	—	1.0	—	—	—	2.4	.21	10.0	—	1.4
90JP004	—	.04	—	.03	—	4.6	—	—	.48	16.0	.8	10.0	—	54.0
90JP005	—	.04	—	.03	—	4.0	—	—	.34	13.0	.88	.93	—	47.0
90JP006	—	.02	1.0	.04	—	.82	—	—	.048	9.3	.29	7.2	1.3	43.0
90JP022	.002	.04	—	.02	—	74.0	—	—	.064	19.0	.35	14.0	1.3	43.0
90JP023	.01	—	3.0	.03	—	220.0	—	—	.17	11.0	.54	11.0	3.6	52.0
90JP024	.005	.14	2.0	.02	—	94.0	—	—	.24	13.0	.64	42.0	3.6	54.0
90JP026	—	—	1.0	.02	—	4.7	—	—	.32	14.0	.72	9.6	.61	44.0
90JP027	—	.02	3.0	.03	—	4.6	—	—	.32	16.0	.55	12.0	1.2	44.0
90JP028	—	.02	2.0	.03	—	7.8	—	—	.19	16.0	.72	9.9	.62	47.0
90JP029	—	.02	3.0	.03	—	16.0	—	—	.27	16.0	.5	13.0	1.5	51.0

Table 1d. 40-element ICP-AES analysis (partial list) of rock-and-soil samples from bedrock aerial anomaly sites in the Getchell gold trend. [Major elements in %, minor in ppm]

Field Sample Number	%								ppm			
	Al	Ca	Fe	K	Mg	Na	P	Ti	Mn	As	Ba	Be
89JP001	5.8	3.5	2.3	2.7	0.54	1.09	0.05	0.2	991.0	—	592.0	2.0
89JP002	6.6	0.2	3.5	2.9	.55	1.46	.03	.18	964.0	—	1150.0	3.0
89JP003	6.4	0.3	3.1	2.5	.5	.98	.06	.15	320.0	10.0	532.0	2.0
89JP004	4.3	0.5	7.9	1.8	.17	.14	.06	.11	929.0	60.0	384.0	2.0
89JP005	7.1	2.3	4.8	2.9	.32	.6	.06	.2	1060.0	—	536.0	2.0
89JP006	5.1	1.1	3.0	2.6	.7	1.07	.06	.24	620.0	—	684.0	2.0
89JP007	7.9	4.4	2.4	2.9	.98	.67	.06	.33	381.0	—	912.0	2.0
89JP008	4.6	4.3	1.4	2.5	.99	.47	.08	.2	177.0	—	1070.0	2.0
89JP009	7.8	.08	4.2	3.2	.7	.16	.05	.24	230.0	50.0	910.0	2.0
89JP010	1.2	15.0	1.1	.5	.17	.04	.22	.03	226.0	30.0	2910.0	—
89JP027	1.7	.2	1.7	1.1	.14	.03	.11	.03	44.0	150.0	408.0	1.0
89JP028	0.9	.1	1.1	.5	.05	.02	.04	.02	115.0	250.0	206.0	—
89JP029	5.5	.3	3.8	3.2	.48	.31	.14	.11	153.0	100.0	854.0	2.0
89JP030	3.5	.3	2.2	2.1	.3	.39	.12	.07	78.0	90.0	810.0	2.0
90JP001	8.0	.3	6.8	4.3	.95	.05	.15	.19	810.0	10.0	750.0	3.0
90JP002	3.6	.3	6.3	2.1	.4	.03	.16	.12	60.0	—	710.0	3.0
90JP003	2.4	.3	1.1	1.4	.2	.02	.12	.05	75.0	—	680.0	—
90JP004	7.2	1.6	2.5	2.2	.72	1.7	.07	.33	650.0	10.0	900.0	2.0
90JP005	7.0	1.6	2.2	2.2	.63	1.7	.08	.3	570.0	10.0	920.0	2.0
90JP006	12.0	.1	4.9	3.9	.93	.56	.05	.19	230.0	10.0	610.0	3.0
90JP022	5.2	.3	3.3	2.6	.38	.31	.12	.14	430.0	76.0	1100.0	2.0
90JP023	5.7	.6	2.9	2.6	.39	.5	.1	.14	280.0	180.0	1100.0	2.0
90JP024	6.8	.7	3.5	2.9	.53	.59	.1	.2	430.0	92.0	1100.0	2.0
90JP026	6.6	1.5	2.3	2.0	.63	1.5	.08	.33	590.0	10.0	840.0	2.0
90JP027	7.3	1.7	2.4	2.3	.72	1.7	.07	.36	640.0	—	920.0	2.0
90JP028	7.4	1.6	2.5	2.3	.68	1.7	.06	.33	520.0	10.0	970.0	2.0
90JP029	7.7	1.7	2.7	2.5	.78	1.7	.07	.36	640.0	20.0	1100.0	2.0

Table 1e. 40-element ICP-AES analysis (partial list) of rock-and-soil samples from bedrock aerial anomaly sites in the Getchell gold trend. [All values in ppm]

Field Sample Number	ppm								
	Cd	Ce	Co	Cr	Cu	Ga	La	Li	Mo	Nb
89JP001	__	107.0	9.0	44.0	5.0	14.0	48.0	27.0	__	9.0
89JP002	__	71.0	14.0	42.0	14.0	16.0	32.0	15.0	__	10.0
89JP003	__	87.0	12.0	50.0	15.0	14.0	38.0	39.0	__	8.0
89JP004	__	50.0	18.0	34.0	29.0	10.0	25.0	20.0	__	6.0
89JP005	__	10.0	16.0	55.0	26.0	17.0	39.0	21.0	__	10.0
89JP006	__	63.0	7.0	38.0	6.0	12.0	30.0	28.0	__	10.0
89JP007	__	82.0	7.0	70.0	131.0	19.0	46.0	28.0	7.0	21.0
89JP008	__	37.0	7.0	51.0	53.0	11.0	22.0	12.0	8.0	7.0
89JP009	__	74.0	21.0	87.0	9.0	19.0	37.0	57.0	__	13.0
89JP010	__	14.0	7.0	14.0	52.0	__	11.0	11.0	__	__
89JP027	__	44.0	3.0	9.0	3.0	__	15.0	7.0	__	__
89JP028	__	22.0	2.0	6.0	5.0	__	8.0	9.0	__	__
89JP029	__	80.0	14.0	42.0	20.0	13.0	33.0	19.0	__	5.0
89JP030	__	67.0	4.0	23.0	3.0	9.0	27.0	12.0	__	__
90JP001	__	120.0	19.0	64.0	4.0	19.0	62.0	34.0	__	4.0
90JP002	__	49.0	10.0	29.0	32.0	8.0	19.0	11.0	3.0	__
90JP003	__	76.0	3.0	14.0	6.0	5.0	29.0	4.0	__	__
90JP004	__	55.0	9.0	38.0	22.0	18.0	31.0	33.0	__	10.0
90JP005	__	53.0	9.0	34.0	19.0	17.0	30.0	28.0	__	10.0
90JP006	__	120.0	16.0	97.0	8.0	28.0	72.0	62.0	__	5.0
90JP022	__	89.0	10.0	48.0	22.0	13.0	41.0	13.0	__	__
90JP023	__	59.0	7.0	45.0	12.0	14.0	29.0	14.0	__	4.0
90JP024	__	86.0	11.0	53.0	16.0	17.0	45.0	30.0	__	6.0
90JP026	__	57.0	10.0	36.0	20.0	16.0	32.0	28.0	__	10.0
90JP027	__	72.0	11.0	41.0	21.0	18.0	42.0	28.0	__	8.0
90JP028	__	50.0	10.0	41.0	22.0	17.0	30.0	31.0	__	12.0
90JP029	__	77.0	12.0	44.0	21.0	8.0	45.0	33.0	__	9.0

Table 1f. 40-element ICP-AES analysis (concluding list) of rock- and-soil samples from bedrock aerial anomaly sites in the Getchell gold trend. [All values in ppm]

Field Sample Number	Nd	Ni	Pb	Sc	Sr	Th	V	Y	Yb	Zn
89JP001	48.0	15.0	24.0	10.0	46.0	23.0	38.0	35.0	4.0	45.0
89JP002	35.0	23.0	30.0	10.0	42.0	13.0	39.0	21.0	2.0	47.0
89JP003	40.0	19.0	73.0	9.0	36.0	26.0	40.0	22.0	2.0	48.0
89JP004	29.0	30.0	18.0	9.0	100.0	14.0	32.0	18.0	2.0	128.0
89JP005	42.0	32.0	23.0	12.0	97.0	17.0	47.0	26.0	3.0	92.0
89JP006	26.0	11.0	16.0	6.0	95.0	14.0	29.0	16.0	2.0	35.0
89JP007	40.0	28.0	9.0	12.0	225.0	15.0	245.0	28.0	3.0	65.0
89JP008	19.0	45.0	4.0	7.0	176.0	7.0	276.0	16.0	2.0	104.0
89JP009	32.0	43.0	16.0	12.0	43.0	16.0	67.0	13.0	2.0	141.0
89JP010	16.0	15.0	19.0	2.0	771.0	—	74.0	14.0	—	86.0
89JP027	17.0	5.0	4.0	3.0	35.0	4.0	10.0	11.0	1.0	20.0
89JP028	11.0	4.0	5.0	—	20.0	—	8.0	5.0	—	22.0
89JP029	33.0	15.0	12.0	9.0	61.0	9.0	42.0	19.0	2.0	64.0
89JP030	31.0	7.0	6.0	6.0	39.0	11.0	31.0	16.0	1.0	40.0
90JP001	57.0	31.0	13.0	13.0	47.0	19.0	67.0	26.0	3.0	75.0
90JP002	24.0	19.0	6.0	6.0	68.0	9.0	38.0	18.0	2.0	45.0
90JP003	28.0	4.0	8.0	3.0	56.0	7.0	19.0	12.0	1.0	11.0
90JP004	26.0	14.0	18.0	8.0	310.0	10.0	69.0	20.0	2.0	77.0
90JP005	25.0	12.0	18.0	8.0	320.0	10.0	64.0	19.0	2.0	69.0
90JP006	57.0	45.0	15.0	19.0	78.0	20.0	88.0	12.0	2.0	86.0
90JP022	39.0	20.0	11.0	9.0	48.0	13.0	42.0	19.0	2.0	76.0
90JP023	29.0	15.0	15.0	9.0	91.0	15.0	48.0	19.0	2.0	70.0
90JP024	39.0	20.0	38.0	10.0	130.0	15.0	59.0	20.0	2.0	83.0
90JP026	26.0	23.0	17.0	8.0	280.0	11.0	70.0	19.0	2.0	68.0
90JP027	37.0	15.0	23.0	9.0	330.0	16.0	75.0	22.0	2.0	66.0
90JP028	24.0	15.0	18.0	9.0	320.0	10.0	73.0	20.0	2.0	67.0
90JP029	36.0	16.0	26.0	9.0	340.0	16.0	77.0	21.0	2.0	80.0

Table 2a. Sample numbers, locations, and descriptions of rock-and-soil samples from two areas of gold mineralization and aerial and ground gamma-ray uranium anomalies in the Getchell gold trend. [Sample locations shown on Plate 1. do, ditto]

Field Sample Number	Lab Sample Number	Location Latitude	Location Longitude	Sample Description	Date Collected
90JP030	D373417	41° 13'35.4"	117° 14'13.2"	Turquoise Ridge, slate fragments & soil	5Nov90
90JP031	D373418	41° 13'37.2"	117° 14'16.2"	do	do
90JP032	D371997	41° 13'39.6"	117° 14'22.2"	do	do
90JP033	D371998	41° 13'34.2"	117° 14'11.4"	do	do
90JP034	D373419	41° 13'33.6"	117° 14'09.0"	do	do
90JP035	D373420	41° 13'31.2"	117° 14'03.0"	do	do
90JP068	D373426	41° 16'10.2"	117° 12'08.4"	red phyllite fragments & soil	7Nov90
90JP069	D378645	same location		do & calcite fragments	do
90JP070	D372003	41° 16'02.4"	117° 12'22.8"	red phyllite fragments & soil	do
90JP071	D372004	41° 16'00.6"	117° 12'19.8"	do & calcite fragments	do
90JP072	D373427	41° 16'04.2"	117° 12'25.8"	red phyllite fragments & soil	do
90JP073	D373428	41° 15'52.8"	117° 12'33.8"	do	do

Table 2b. K, U, and Th concentrations from aerial measurements, K, U, and Th concentrations from ground measurements, and delayed neutron activation analyses (dnaa) for U and Th of rock-and-soil samples from two areas of gold mineralization and aerial and ground gamma-ray uranium anomalies in the Getchell gold trend. [CV, coefficient of variation]

Field Sample Number	Aerial concentrations			Ground concentrations			DNAA			
	K,%	U,ppm	Th,ppm	K,%	U,ppm	Th,ppm	U,ppm	CV	Th,ppm	CV
90JP030	2.2-2.4	2.0-2.5	8-9	1.6	5.8	8.9	6.6	2	7.9	15
90JP031	2.2-2.4	2.0-2.5	9-10	1.4	3.8	9.8	3.9	2	9.8	10
90JP032	2.2-2.4	1.5-2.0	10-11	1.8	3.6	10.4	4.2	3	11.7	9
90JP033	2.2-2.4	2.0-2.5	9-10	1.6	6.7	11.0	5.5	2	12.1	10
90JP034	2.2-2.4	2.0-2.5	9-10	1.4	5.5	10.4	6.1	2	10.9	11
90JP035	2.4-2.6	1.5-2.0	10-11	2.0	3.7	12.0	4.4	2	7.9	14
90JP068	2.4-2.6	2.0-2.5	10-11	1.8	4.4	8.0	3.9	3	9.5	11
90JP069	2.4-2.6	2.0-2.5	10-11	2.0	4.5	10.1	4.9	3	10.0	16
90JP070	2.4-2.6	2.5-3.0	10-11	2.1	5.0	10.2	3.7	3	13.1	7
90JP071	2.4-2.6	2.0-2.5	10-11	1.6	3.6	10.8	3.6	3	11.7	9
90JP072	2.4-2.6	2.5-3.0	10-11	2.1	4.8	10.1	3.8	3	9.3	11
90JP073	2.4-2.6	2.0-2.5	9-10	2.0	4.7	10.5	4.1	3	7.8	13

Table 2c. Au, Hg, W, F, and 10-element ICP-AES analyses of rock-and-soil samples from two areas of gold mineralization and aerial and ground gamma-ray uranium anomalies in the Getchell gold trend. [F in %, all others in ppm]

Field Sample Number	--- ppm ---			%	------------ 10-element ICP-AES, ppm ------------									
	Au	Hg	W	F	Ag	As	Au	Bi	Cd	Cu	Mo	Pb	Sb	Zn
90JP030	0.22	2.4	9.0	0.07	0.23	420.0	0.24	--	1.1	45.0	5.6	82.0	23.0	77.0
90JP031	.041	1.0	8.0	.06	.078	190.0	--	--	.42	32.0	2.4	28.0	19.0	79.0
90JP032	.014	1.0	5.0	.03	--	69.0	--	--	.61	29.0	2.0	15.0	4.0	68.0
90JP033	.1	1.0	9.0	.04	.097	180.0	--	.74	.48	43.0	2.5	23.0	8.9	58.0
90JP034	.029	2.1	6.0	.04	.24	250.0	--	--	.85	57.0	5.1	50.0	11.0	64.0
90JP035	.03	1.3	8.0	.05	.12	150.0	--	--	.53	41.0	2.4	24.0	7.6	110.0
90JP068	.005	.4	2.0	.04	.12	22.0	--	--	.28	20.0	3.9	11.0	2.8	77.0
90JP069	.004	.6	2.0	.05	.25	46.0	--	--	.42	76.0	6.3	16.0	6.7	120.0
90JP070	.004	.06	3.0	.03	.2	25.0	--	--	.47	26.0	1.9	17.0	3.4	110.0
90JP071	.006	.08	4.0	.03	.26	23.0	--	--	.59	26.0	1.4	34.0	4.0	100.0
90JP072	.004	.06	3.0	.04	.61	35.0	--	--	.4	27.0	3.0	30.0	6.2	89.0
90JP073	.003	.1	1.0	.04	.22	24.0	--	--	.51	27.0	3.2	11.0	1.7	140.0

Table 2d. 40-element ICP-AES analysis (partial list) of rock-and-soil samples from two areas of gold mineralization and aerial and ground gamma-ray uranium anomalies in the Getchell gold trend. [Major elements in %, minor in ppm]

Field Sample Number	%								ppm			
	Al	Ca	Fe	K	Mg	Na	P	Ti	Mn	As	Ba	Be
90JP030	5.1	1.5	2.7	1.8	0.6	0.79	0.28	0.18	790.0	380.0	710.0	2.0
90JP031	5.2	1.2	2.6	1.8	.73	.72	.21	.24	720.0	190.0	630.0	2.0
90JP032	7.5	1.8	2.9	2.3	.86	1.6	.1	.41	640.0	67.0	1000.0	2.0
90JP033	7.3	1.8	2.8	2.3	.92	1.4	.13	.39	620.0	160.0	990.0	2.0
90JP034	4.4	.92	2.5	1.5	.57	.58	.2	.23	400.0	260.0	620.0	2.0
90JP035	6.6	1.3	3.3	2.2	.76	.88	.19	.29	640.0	150.0	880.0	2.0
90JP068	5.4	1.3	2.4	2.4	.99	.08	.06	.21	120.0	27.0	450.0	1.0
90JP069	6.0	2.1	3.1	2.5	.86	.16	.07	.17	120.0	44.0	420.0	2.0
90JP070	7.3	1.6	2.9	2.3	.94	1.5	.07	.38	630.0	34.0	840.0	2.0
90JP071	7.4	1.9	2.9	2.3	.98	1.6	.09	.36	680.0	29.0	850.0	2.0
90JP072	5.7	.9	2.6	2.2	.66	.62	.09	.25	390.0	46.0	590.0	2.0
90JP073	5.5	2.3	2.4	2.3	1.2	.54	.14	.24	350.0	31.0	600.0	2.0

Table 2e. 40-element ICP-AES analysis (partial list) of rock-and-soil samples from two areas of gold mineralization and aerial and ground gamma-ray uranium anomalies in the Getchell gold trend. [All values in ppm]

Field Sample Number	Cd	Ce	Co	Cr	Cu (ppm)	Ga	La	Li	Mo	Nb
90JP030	__	60.0	10.0	67.0	51.0	15.0	38.0	25.0	5.0	__
90JP031	__	57.0	12.0	43.0	40.0	13.0	32.0	31.0	2.0	4.0
90JP032	__	73.0	12.0	54.0	36.0	19.0	44.0	34.0	__	10.0
90JP033	__	68.0	11.0	72.0	53.0	18.0	42.0	34.0	4.0	10.0
90JP034	__	48.0	8.0	64.0	72.0	13.0	30.0	26.0	6.0	__
90JP035	__	63.0	12.0	65.0	50.0	16.0	38.0	36.0	2.0	5.0
90JP068	__	54.0	7.0	210.0	23.0	13.0	35.0	45.0	5.0	__
90JP069	__	36.0	7.0	440.0	75.0	15.0	25.0	24.0	6.0	4.0
90JP070	__	67.0	11.0	110.0	31.0	17.0	41.0	35.0	2.0	9.0
90JP071	__	63.0	12.0	87.0	31.0	18.0	39.0	36.0	__	9.0
90JP072	__	56.0	7.0	150.0	33.0	13.0	36.0	24.0	3.0	__
90JP073	__	55.0	8.0	210.0	33.0	13.0	36.0	26.0	3.0	__

Table 2f. 40-element ICP-AES analysis (concluding list) of rock-and-soil samples from two areas of gold mineralization and aerial and ground uranium gamma-ray anomalies sites in the Getchell gold trend. [All values in ppm]

Field Sample Number	ppm									
	Nd	Ni	Pb	Sc	Sr	Th	V	Y	Yb	Zn
90JP030	31.0	32.0	79.0	8.0	450.0	9.0	260.0	24.0	2.0	95.0
90JP031	27.0	25.0	32.0	8.0	210.0	9.0	130.0	19.0	2.0	110.0
90JP032	35.0	26.0	27.0	10.0	330.0	14.0	120.0	22.0	2.0	98.0
90JP033	34.0	24.0	33.0	10.0	390.0	13.0	190.0	22.0	3.0	83.0
90JP034	23.0	34.0	49.0	7.0	320.0	8.0	340.0	20.0	2.0	89.0
90JP035	30.0	30.0	23.0	10.0	240.0	10.0	120.0	22.0	2.0	150.0
90JP068	30.0	43.0	11.0	10.0	63.0	8.0	100.0	17.0	2.0	98.0
90JP069	22.0	69.0	19.0	12.0	90.0	9.0	140.0	20.0	2.0	120.0
90JP070	31.0	36.0	29.0	10.0	290.0	10.0	93.0	22.0	2.0	140.0
90JP071	32.0	34.0	38.0	10.0	300.0	14.0	87.0	21.0	2.0	140.0
90JP072	30.0	40.0	28.0	9.0	150.0	9.0	91.0	22.0	2.0	120.0
90JP073	31.0	55.0	12.0	9.0	150.0	9.0	95.0	25.0	2.0	190.0

Table 3a. Sample numbers, locations, and descriptions of soil samples from an area of known pediment gold mineralization in the Getchell gold trend. [Sample locations shown on Plate 1. do, ditto]

Field Sample Number	Lab Sample Number	Location Latitude	Location Longitude	Sample Description	Date Collected
90JP008	D372005	41° 09'28.2"	117° 14'05.4"	Soil and occasional rock fragments	3Nov90
90JP009	D373429	41° 09'22.8"	117° 13'54.0"	do	do
90JP010	D378648	41° 09'19.2"	117° 13'48.0"	do	do
90JP011	D373430	41° 09'14.4"	117° 13'38.4"	do	do
90JP012	D378649	41° 09'09.0"	117° 13'27.0"	do	do
90JP013	D373431	41° 09'45.6"	117° 14'13.2"	do	do
90JP014	D373432	41° 09'42.0"	117° 14'05.4"	do	do
90JP015	D372006	41° 09'39.6"	117° 14'00.0"	do	do
90JP016	D378650	41° 09'41.4"	117° 13'58.8"	do	do
90JP017	D378651	41° 09'37.2"	117° 14'02.4"	do	do
90JP018	D373433	41° 09'34.2"	117° 13'49.2"	do	do
90JP019	D373434	41° 09'28.8"	117° 13'38.4"	do	do
90JP020	D378652	41° 09'23.4"	117° 13'27.0"	do	do
90JP021	D372007	41° 09'18.0"	117° 13'15.0"	do	do

Table 3b. K, U, and Th concentrations from aerial measurements, K, U, and Th concentrations from ground measurments, and delayed neutron activation analyses (dnaa) for U and Th of soil samples from an area of known pediment mineralization in the Getchell gold trend. [CV, coefficient of variation]

Field Sample Number	Aerial concentrations			Ground concentrations			DNAA			
	K,%	U,ppm	Th,ppm	K,%	U,ppm	Th,ppm	U,ppm	CV	Th,ppm	CV
90JP008	2.6-2.8	2.5-3.0	11-12	2.2	5.0	12.0	3.9	3	13.4	8
90JP009	2.8-3.0	2.0-2.5	12-13	2.3	5.0	13.5	3.9	2	11.6	9
90JP010	2.8-3.0	2.0-2.5	12-13	2.4	5.4	13.1	3.1	3	11.0	10
90JP011	2.6-2.8	2.0-2.5	13-14	2.3	5.5	12.5	4.2	2	11.0	9
90JP012	2.8-3.0	1.5-2.0	12-13	2.3	5.7	13.3	4.7	3	13.6	9
90JP013	2.4-2.6	2.0-2.5	11-12	2.2	4.8	12.5	4.1	2	10.5	9
90JP014	2.6-2.8	2.5-3.0	11-12	2.1	5.6	12.9	3.7	3	10.5	9
90JP015	2.6-2.8	3.0-3.5	11-12	2.2	5.1	12.1	3.9	3	13.8	7
90JP016	2.6-2.8	2.5-3.0	11-12	2.2	5.4	12.7	4.0	3	11.9	11
90JP017	2.6-2.8	3.0-3.5	11-12	2.3	5.1	12.1	4.0	3	13.9	10
90JP018	2.6-2.8	2.5-3.0	11-12	2.5	4.7	13.5	4.1	2	12.4	8
90JP019	2.6-2.8	2.5-3.0	12-13	2.3	5.0	11.4	4.2	2	11.2	9
90JP020	2.6-2.8	2.5-3.0	12-13	2.2	5.7	10.8	4.2	3	10.2	13
90JP021	2.6-2.8	1.5-2.0	11-12	2.2	5.6	11.5	3.7	3	13.8	7

Table 3c. Au, Hg, W, F, and 10-element ICP-AES analyses of soil samples from an area of known pediment gold mineralization in the Getchell gold trend. [F in %, all others in ppm]

Field Sample Number	---- ppm ---			%	----------- 10-element ICP-AES, ppm ------------									
	Au	Hg	W	F	Ag	As	Au	Bi	Cd	Cu	Mo	Pb	Sb	Zn
90JP008	0.004	0.22	3.0	0.04	__	27.0	__	__	0.45	23.0	0.93	13.0	1.7	55.0
90JP009	.003	.10	3.0	.04	0.091	26.0	--	0.61	.39	21.0	1.3	13.0	0.95	45.0
90JP010	.002	.08	2.0	.03	--	27.0	--	--	.48	24.0	1.1	9.8	--	57.0
90JP011	.003	.06	4.0	.04	.085	22.0	--	.72	.32	21.0	1.3	12.0	1.0	41.0
90JP012	.005	.12	5.0	.03	--	31.0	--	--	.35	21.0	1.4	10.0	.83	46.0
90JP013	.012	.14	12.0	.04	.067	30.0	--	--	.47	22.0	1.1	11.0	1.5	47.0
90JP014	.005	.24	5.0	.04	.083	34.0	--	.74	.46	21.0	1.1	13.0	1.9	49.0
90JP015	.004	.20	4.0	.03	--	31.0	--	--	.36	21.0	.86	12.0	1.7	50.0
90JP016	--	.08	3.0	.03	.05	35.0	--	--	.38	25.0	1.2	9.7	.84	53.0
90JP017	.003	.08	4.0	.03	.051	28.0	--	--	.34	24.0	1.2	10.0	.91	50.0
90JP018	.003	.12	4.0	.04	.071	31.0	--	.61	.43	23.0	1.1	11.0	.99	43.0
90JP019	.003	.14	3.0	.04	.069	28.0	--	--	.42	23.0	1.3	11.0	1.1	47.0
90JP020	--	.10	3.0	.03	--	26.0	--	--	.49	22.0	1.2	9.5	.86	54.0
90JP021	.004	.12	4.0	.02	--	21.0	--	--	.34	17.0	.69	11.0	1.3	44.0

Table 3d. 40-element ICP-AES analysis (partial list) of soil samples from an area of known pediment gold mineralization in the Getchell gold trend. [Major elements in %, minor in ppm]

Field Sample Number	%								ppm			
	Al	Ca	Fe	K	Mg	Na	P	Ti	Mn	As	Ba	Be
90JP008	7.7	1.9	2.9	2.3	0.88	1.8	0.09	0.39	690.0	34.0	1000.0	2.0
90JP009	7.9	2.4	2.8	2.3	1.0	1.6	0.11	0.35	670.0	38.0	1400.0	2.0
90JP010	7.4	2.3	2.7	2.2	0.99	1.6	0.10	0.36	680.0	30.0	1200.0	2.0
90JP011	7.5	2.6	2.7	2.3	1.2	1.4	0.14	0.34	590.0	34.0	1700.0	2.0
90JP012	7.2	2.4	2.4	2.2	0.86	1.6	0.12	0.33	590.0	34.0	1500.0	2.0
90JP013	7.1	2.7	2.7	2.2	1.1	1.4	0.15	0.31	640.0	34.0	1600.0	2.0
90JP014	7.5	2.4	2.6	2.3	0.88	1.6	0.12	0.31	630.0	36.0	1200.0	2.0
90JP015	7.7	1.9	2.8	2.3	0.81	1.9	0.08	0.39	640.0	39.0	1000.0	2.0
90JP016	7.3	2.1	2.7	2.3	0.92	1.5	0.11	0.35	600.0	36.0	1300.0	2.0
90JP017	7.5	2.2	2.7	2.3	0.98	1.6	0.12	0.35	630.0	32.0	1300.0	2.0
90JP018	7.1	2.4	2.6	2.3	0.94	1.5	0.19	0.33	600.0	38.0	1600.0	2.0
90JP019	7.5	2.3	2.7	2.3	0.92	1.6	0.16	0.35	660.0	36.0	1500.0	2.0
90JP020	7.4	2.2	2.6	2.2	0.87	1.7	0.11	0.33	690.0	30.0	1200.0	2.0
90JP021	8.0	2.0	2.7	2.3	0.82	2.1	0.07	0.39	680.0	26.0	1000.0	2.0

Table 3e. 40-element ICP-AES analysis (partial list) of soil samples from an area of known pediment gold mineralization in the Getchell gold trend. [All values in ppm]

Field Sample					ppm					
Number	Cd	Ce	Co	Cr	Cu	Ga	La	Li	Mo	Nb
90JP008	__	71.0	11.0	42.0	29.0	19.0	42.0	36.0	--	10.0
90JP009	__	73.0	11.0	46.0	28.0	18.0	42.0	36.0	--	7.0
90JP010	__	62.0	11.0	44.0	26.0	18.0	34.0	36.0	--	12.0
90JP011	__	73.0	10.0	53.0	28.0	18.0	43.0	39.0	--	7.0
90JP012	__	64.0	10.0	41.0	25.0	17.0	37.0	31.0	--	10.0
90JP013	__	69.0	10.0	47.0	29.0	18.0	41.0	32.0	--	6.0
90JP014	__	65.0	10.0	40.0	29.0	18.0	38.0	35.0	--	8.0
90JP015	__	73.0	11.0	40.0	27.0	18.0	45.0	35.0	--	11.0
90JP016	__	64.0	10.0	43.0	28.0	19.0	36.0	37.0	--	10.0
90JP017	__	63.0	10.0	42.0	31.0	17.0	38.0	37.0	--	12.0
90JP018	__	76.0	11.0	46.0	30.0	17.0	44.0	36.0	--	7.0
90JP019	__	71.0	11.0	46.0	31.0	18.0	40.0	34.0	--	7.0
90JP020	__	64.0	10.0	38.0	27.0	18.0	37.0	34.0	--	10.0
90JP021	__	70.0	11.0	39.0	23.0	19.0	43.0	35.0	--	10.0

Table 3f. 40-element ICP-AES analysis (concluding list) of soil samples from an area of known pediment gold mineralization in the Getchell gold trend. [All values in ppm]

Field Sample Number	Nd	Ni	Pb	Sc	Sr	Th	V	Y	Yb	Zn
	ppm									
90JP008	35.0	17.0	23.0	10.0	340.0	13.0	85.0	21.0	2.0	84.0
90JP009	33.0	20.0	16.0	9.0	340.0	12.0	110.0	22.0	2.0	74.0
90JP010	30.0	18.0	17.0	9.0	330.0	11.0	94.0	23.0	3.0	73.0
90JP011	33.0	21.0	15.0	10.0	320.0	12.0	120.0	23.0	2.0	73.0
90JP012	31.0	17.0	18.0	8.0	350.0	10.0	110.0	24.0	2.0	64.0
90JP013	33.0	17.0	13.0	9.0	310.0	11.0	110.0	22.0	2.0	77.0
90JP014	31.0	17.0	17.0	9.0	340.0	9.0	90.0	22.0	2.0	77.0
90JP015	36.0	16.0	24.0	9.0	350.0	13.0	84.0	22.0	3.0	77.0
90JP016	31.0	18.0	18.0	9.0	310.0	12.0	96.0	22.0	2.0	71.0
90JP017	32.0	18.0	17.0	9.0	330.0	9.0	93.0	24.0	2.0	74.0
90JP018	35.0	20.0	14.0	9.0	310.0	10.0	110.0	23.0	2.0	70.0
90JP019	34.0	18.0	15.0	9.0	350.0	12.0	100.0	22.0	2.0	74.0
90JP020	32.0	17.0	16.0	9.0	360.0	12.0	100.0	23.0	2.0	78.0
90JP021	36.0	15.0	20.0	9.0	380.0	14.0	83.0	21.0	2.0	75.0

Table 4a. Sample numbers, locations, and descriptions of soil samples from pediment aerial anomalies in the Getchell gold trend. [Sample locations shown on Plate 1. do, ditto]

Field Sample Number	Lab Sample Number	Location Latitude	Location Longitude	Sample Description	Date Collected
89JP016	D344219	41° 06'41.8"	117° 15'03.0"	soil & occasional rock fragments	31Oct89
89JP017	D344220	41° 06'40.2"	117° 14'54.6"	do	do
89JP018	D344221	41° 06'35.4"	117° 14'42.6"	do	do
89JP019	D344222	41° 06'07.8"	117° 15'21.0"	do	do
89JP020	D344223	41° 06'06.6"	117° 15'18.0"	do	do
89JP021	D344224	41° 06'09.6"	117° 15'18.0"	do	do
89JP022	D344225	41° 06'09.6"	117° 15'44.4"	do	do
89JP023	D344226	41° 06'09.6"	117° 15'39.0"	do	do
89JP024	D344227	41° 06'09.0"	117° 16'20.4"	do	do
89JP025	D344228	41° 05'48.6"	117° 16'00.0"	do	do
89JP026	D344229	41° 05'46.2"	117° 15'54.6"	do	do
90JP044	D373435	41° 06'57.6"	117° 15'24.0"	rock fragments	6Nov90
90JP045	D373436	same location		soil	do
90JP046	D373437	do		6" depth, soil & rock fragments	do
90JP047	D378654	41° 06'50.4"	117° 15'06.6"	soil & rock fragments	do
90JP048	D372008	41° 06'24.6"	117° 15'18.6"	soil	do
90JP049	D372009	same location		8" depth, soil	do
90JP050	D373438	41° 06'21.0"	117° 15'10.2"	soil	do
90JP051	D373439	same location		6" depth, soil	do
90JP052	D378655	41° 04'57.0"	117° 16'36.0"	soil	do
90JP053	D378656	41° 04'51.6"	117° 16'24.6"	soil	do
90JP055	D373440	41° 04'39.6"	117° 15'58.8"	soil	do
90JP056	D373441	same location		6" depth, soil	do
90JP057	D378657	41° 04'34.2"	117° 15'47.4"	soil	do
90JP058	D372010	41° 04'45.0"	117° 15'33.6"	soil	do
90JP059	D372011	same location		6" depth, soil	do
90JP060	D373442	41° 05'30.6"	117° 15'33.0"	soil	do
90JP061	D373443	same location		6" depth, soil	do

Table 4b. K, U, and Th concentrations from aerial measurements, K, U, and Th concentrations from ground measurements, and delayed neutron activation analyses (dnaa) for U and Th of soil samples from pediment aerial anomalies in the Getchell gold trend. [CV, coefficient of variation. do, ditto]

Field Sample Number	Aerial concentrations K,%	U,ppm	Th,ppm	Ground concentrations K,%	U,ppm	Th,ppm	DNAA U,ppm	CV	Th,ppm	CV
89JP016	2.8-3.0	2.5-3.0	12-13	2.5	5.0	12.7	3.8	3	14.6	7
89JP017	2.6-2.8	3.0-3.5	12-13	2.5	4.1	13.6	3.7	3	13.9	7
89JP018	2.8-3.0	3.0-3.5	11-12	2.5	4.3	12.1	3.4	3	12.9	7
89JP019	2.8-3.0	3.0-3.5	11-12	2.5	5.5	12.8	3.4	3	14.9	6
89JP020	2.8-3.0	3.0-3.5	12-13	2.0	4.2	10.2	3.5	3	14.0	7
89JP021	2.8-3.0	3.0-3.5	11-12	2.6	4.5	13.8	3.5	3	14.8	7
89JP022	2.4-2.6	3.0-3.5	11-12	2.2	4.2	11.9	4.0	2	14.5	7
89JP023	2.6-2.8	3.0-3.5	11-12	2.1	4.3	13.1	3.6	3	12.6	8
89JP024	2.6-2.8	2.0-2.5	12-13	2.8	2.6	14.3	4.2	3	14.6	8
89JP025	2.6-2.8	1.5-2.0	12-13	2.8	3.4	14.4	4.0	2	15.8	7
89JP026	2.6-2.8	2.0-2.5	11-12	2.5	3.3	12.4	3.9	2	12.5	8
90JP044	3.0-3.2	1.0-1.5	13-14	2.5	3.5	11.6	2.2	3	11.4	7
90JP045	----	do	----	-----	do	------	2.7	3	10.4	8
90JP046	---	none	----	----	none	-----	3.0	3	19.1	5
90JP047	2.8-3.0	2.0-2.5	12-13	2.3	4.1	13.7	3.6	3	13.7	10
90JP048	2.6-2.8	3.5-4.0	12-13	2.6	4.7	13.6	3.6	3	13.9	7
90JP049	---	none	----	----	none	-----	3.6	3	14.9	7
90JP050	3.0-3.2	2.0-2.5	13-14	2.6	4.3	12.9	4.1	2	12.0	8
90JP051	---	none	----	----	none	-----	3.5	3	11.1	8
90JP052	2.6-2.8	1.5-2.0	12-13	2.4	4.2	13.1	3.5	3	13.2	9
90JP053	2.6-2.8	2.0-2.5	13-14	2.5	3.4	15.1	3.5	3	13.6	9
90JP055	3.0-3.2	2.5-3.0	12-13	2.5	3.9	12.4	3.2	3	13.2	6
90JP056	---	none	----	----	none	-----	3.1	3	11.7	7
90JP057	2.8-3.0	2.0-2.5	11-12	2.6	3.9	12.2	3.4	4	11.5	11
90JP058	2.8-3.0	3.0-3.5	11-12	2.6	3.3	12.5	3.5	3	11.4	8
90JP059	---	none	----	----	none	-----	3.3	3	11.2	8
90JP060	2.6-2.8	1.5-2.0	12-13	2.5	3.8	12.0	3.4	3	11.7	8
90JP061	---	none	----	----	none	-----	3.6	3	12.9	8

Table 4c. Au, Hg, W, F, and 10-element ICP-AES analyses of soil samples from pediment aerial anomalies in the Getchell gold trend. [F in %, all others in ppm]

Field Sample Number	--- ppm ---			%	------------ 10-element ICP-AES, ppm ------------									
	Au	Hg	W	F	Ag	As	Au	Bi	Cd	Cu	Mo	Pb	Sb	Zn
89JP016	0.004	___	3.0	0.03	0.078	14.0	___	0.61	0.4	16.0	0.91	13.0	1.3	46.0
89JP017	.004	___	3.0	.04	.089	13.0	___	___	.45	18.0	.78	14.0	1.1	49.0
89JP018	___	___	3.5	.04	.058	11.0	___	___	.33	18.0	.74	13.0	1.3	42.0
89JP019	.002	.06	3.0	.04	.062	11.0	___	___	.42	12.0	.77	15.0	.98	45.0
89JP020	.002	.04	3.0	.04	.067	10.0	___	___	.44	14.0	.73	16.0	1.1	44.0
89JP021	.002	___	2.0	.03	.054	9.0	___	___	.38	11.0	.65	15.0	.87	44.0
89JP022	.002	.04	3.0	.03	.055	9.4	___	___	.31	11.0	.76	15.0	.99	38.0
89JP023	.006	___	3.5	.04	.06	8.4	___	___	.36	13.0	.63	14.0	.88	44.0
89JP024	___	___	2.5	.04	.05	11.0	___	___	.41	14.0	.61	13.0	1.1	42.0
89JP025	.014	___	3.0	.04	.051	9.0	___	___	.29	12.0	.66	14.0	1.3	43.0
89JP026	.002	.04	2.5	.03	.076	9.8	___	___	.37	13.0	.86	15.0	1.2	45.0
90JP044	___	.02	1.0	.02	___	3.7	___	___	.13	22.0	.47	5.1	___	44.0
90JP045	.003	.06	3.0	.03	___	21.0	___	.65	.36	24.0	.92	9.1	1.3	53.0
90JP046	___	.02	4.0	.04	.066	13.0	___	.7	.22	34.0	.73	10.0	1.5	54.0
90JP047	___	.04	7.0	.03	.059	14.0	___	___	.35	23.0	1.4	8.4	1.0	56.0
90JP048	___	.02	3.0	.03	___	7.4	___	___	.48	16.0	.71	11.0	1.4	58.0
90JP049	___	___	3.0	.03	___	4.9	___	___	.23	29.0	.81	13.0	1.9	66.0
90JP050	.003	.08	6.0	.04	.064	28.0	___	___	.56	22.0	2.2	11.0	1.8	53.0
90JP051	___	.02	4.0	.04	.069	13.0	___	.7	.32	28.0	1.6	14.0	1.9	58.0
90JP052	___	.04	3.0	.03	___	6.4	___	___	.42	12.0	.68	9.7	.86	52.0
90JP053	___	.04	3.0	.03	___	10.0	___	___	.44	15.0	.84	11.0	1.1	54.0
90JP055	.002	.06	3.0	.03	___	8.8	___	___	.45	13.0	.67	12.0	1.1	50.0
90JP056	___	___	2.0	.04	.049	9.3	___	___	.38	18.0	.71	14.0	1.3	56.0
90JP057	___	.06	2.0	.03	.091	11.0	___	___	.52	18.0	1.0	11.0	1.2	60.0
90JP058	___	.04	2.0	.03	___	10.0	___	___	.55	16.0	.87	12.0	1.5	54.0
90JP059	___	___	2.0	.03	___	13.0	___	___	.46	22.0	1.1	16.0	1.9	64.0
90JP060	___	.04	3.0	.04	___	18.0	___	___	.4	20.0	1.2	13.0	1.7	57.0
90JP061	___	.02	3.0	.04	.049	15.0	___	___	.34	29.0	2.1	14.0	2.6	69.0

Table 4d. 40-element ICP-AES analysis (partial list) of soil samples from pediment aerial anomalies in the Getchell gold trend. [Major elements in %, minor in ppm]

Field Sample Number	%								ppm			
	Al	Ca	Fe	K	Mg	Na	P	Ti	Mn	As	Ba	Be
89JP016	7.2	2.0	2.8	2.5	1.06	1.68	0.11	0.35	650.0	20.0	1080.0	2.0
89JP017	7.4	1.9	2.8	2.5	1.12	1.63	.12	.35	683.0	20.0	1040.0	2.0
89JP018	7.3	1.9	2.7	2.6	1.09	1.67	.1	.35	624.0	20.0	1010.0	2.0
89JP019	7.2	1.9	2.5	2.4	.84	1.78	.1	.34	703.0	20.0	1120.0	2.0
89JP020	7.3	1.9	2.7	2.5	.97	1.75	.1	.35	716.0	20.0	1580.0	2.0
89JP021	7.2	1.9	2.5	2.4	.86	1.83	.09	.33	719.0	20.0	1070.0	2.0
89JP022	7.0	1.9	2.4	2.4	.78	1.8	.07	.31	665.0	20.0	1050.0	2.0
89JP023	7.3	1.9	2.6	2.5	.94	1.76	.1	.32	684.0	20.0	1010.0	2.0
89JP024	7.3	1.8	2.5	2.5	.79	1.77	.1	.34	660.0	20.0	1000.0	2.0
89JP025	7.2	2.0	2.6	2.5	.93	1.69	.09	.36	620.0	10.0	1050.0	2.0
89JP026	7.2	2.0	2.5	2.5	.97	1.73	.1	.33	746.0	20.0	1080.0	2.0
90JP044	7.4	7.9	3.4	2.6	2.5	.64	.08	.3	400.0	__	610.0	2.0
90JP045	6.9	1.9	2.9	2.4	1.6	1.1	.1	.31	620.0	26.0	820.0	2.0
90JP046	8.0	1.7	3.5	2.7	1.8	1.2	.06	.36	580.0	20.0	820.0	2.0
90JP047	6.9	2.9	2.7	2.6	1.5	1.3	.1	.35	500.0	20.0	1300.0	2.0
90JP048	7.8	2.0	2.8	2.5	.97	1.9	.1	.39	760.0	10.0	1000.0	2.0
90JP049	8.1	1.6	3.3	2.5	1.1	1.5	.06	.41	510.0	10.0	970.0	2.0
90JP050	7.3	2.3	2.7	2.5	.87	1.3	.15	.34	700.0	34.0	1300.0	2.0
90JP051	7.4	1.5	3.2	2.4	.98	1.2	.07	.35	570.0	20.0	1000.0	2.0
90JP052	7.2	1.7	2.4	2.5	.85	1.8	.08	.32	720.0	10.0	1000.0	2.0
90JP053	7.1	1.7	2.4	2.4	.76	1.7	.09	.31	710.0	10.0	1000.0	2.0
90JP055	7.2	1.8	2.4	2.4	.84	1.7	.1	.31	710.0	10.0	1500.0	2.0
90JP056	7.4	1.8	2.8	2.6	.97	1.6	.09	.33	640.0	10.0	980.0	2.0
90JP057	7.4	1.8	2.6	2.4	.96	1.8	.1	.33	720.0	10.0	1100.0	2.0
90JP058	7.7	1.8	2.6	2.6	.92	2.0	.08	.35	860.0	20.0	1300.0	2.0
90JP059	7.9	1.6	3.0	2.7	1.0	1.9	.08	.37	630.0	20.0	1000.0	2.0
90JP060	7.0	1.7	2.8	2.5	.99	1.2	.13	.32	590.0	24.0	1200.0	2.0
90JP061	7.3	1.7	3.2	2.5	1.2	.99	.1	.32	520.0	22.0	1300.0	2.0

Table 4e. 40-element ICP-AES analysis (partial list) of soil samples from pediment aerial anomalies in the Getchell gold trend. [All values in ppm]

Field Sample Number	Cd	Ce	Co	Cr	Cu	Ga	La	Li	Mo	Nb
		ppm								
89JP016	__	77.0	12.0	44.0	24.0	17.0	45.0	33.0	__	15.0
89JP017	__	68.0	12.0	47.0	28.0	17.0	40.0	38.0	__	14.0
89JP018	__	63.0	12.0	44.0	28.0	16.0	38.0	36.0	__	12.0
89JP019	__	59.0	10.0	40.0	20.0	16.0	35.0	32.0	__	13.0
89JP020	__	60.0	12.0	43.0	23.0	16.0	35.0	37.0	__	13.0
89JP021	__	62.0	10.0	40.0	19.0	16.0	37.0	33.0	__	15.0
89JP022	__	64.0	10.0	37.0	18.0	16.0	37.0	28.0	__	14.0
89JP023	__	64.0	10.0	40.0	20.0	17.0	37.0	34.0	__	12.0
89JP024	__	67.0	11.0	42.0	21.0	16.0	40.0	32.0	__	14.0
89JP025	__	74.0	11.0	47.0	18.0	16.0	43.0	31.0	__	15.0
89JP026	__	65.0	10.0	41.0	20.0	16.0	37.0	34.0	__	12.0
90JP044	__	60.0	13.0	79.0	28.0	19.0	39.0	41.0	__	8.0
90JP045	__	65.0	11.0	55.0	31.0	16.0	40.0	36.0	__	7.0
90JP046	__	73.0	15.0	58.0	42.0	20.0	44.0	47.0	__	12.0
90JP047	__	61.0	10.0	53.0	27.0	17.0	37.0	34.0	__	9.0
90JP048	__	71.0	10.0	45.0	20.0	18.0	44.0	37.0	__	9.0
90JP049	__	69.0	12.0	51.0	35.0	19.0	43.0	46.0	__	10.0
90JP050	__	77.0	10.0	53.0	29.0	18.0	45.0	36.0	__	7.0
90JP051	__	71.0	13.0	49.0	36.0	19.0	39.0	41.0	__	9.0
90JP052	__	60.0	10.0	40.0	17.0	18.0	34.0	32.0	__	9.0
90JP053	__	59.0	10.0	38.0	18.0	17.0	34.0	31.0	__	10.0
90JP055	__	67.0	10.0	37.0	19.0	18.0	40.0	32.0	__	7.0
90JP056	__	65.0	12.0	44.0	23.0	18.0	38.0	37.0	__	9.0
90JP057	__	55.0	9.0	40.0	23.0	18.0	32.0	37.0	__	10.0
90JP058	__	65.0	10.0	40.0	21.0	18.0	39.0	35.0	__	8.0
90JP059	__	65.0	12.0	43.0	27.0	19.0	39.0	43.0	__	10.0
90JP060	__	71.0	11.0	51.0	25.0	16.0	42.0	33.0	__	7.0
90JP061	__	76.0	12.0	56.0	36.0	19.0	45.0	39.0	2.0	9.0

Table 4f. 40-element ICP-AES analysis (concluding list) of soil samples from pediment aerial anomalies in the Getchell gold trend. [All values in ppm]

Field Sample Number	Nd	Ni	Pb	Sc	Sr	Th	V	Y	Yb	Zn
	ppm									
89JP016	38.0	19.0	20.0	9.0	332.0	14.0	92.0	22.0	2.0	77.0
89JP017	32.0	19.0	18.0	9.0	326.0	11.0	86.0	21.0	2.0	81.0
89JP018	30.0	20.0	20.0	9.0	326.0	9.0	80.0	20.0	2.0	72.0
89JP019	29.0	15.0	20.0	8.0	352.0	11.0	77.0	19.0	2.0	78.0
89JP020	29.0	18.0	20.0	9.0	351.0	12.0	81.0	19.0	2.0	85.0
89JP021	29.0	16.0	23.0	8.0	358.0	11.0	75.0	19.0	2.0	77.0
89JP022	32.0	15.0	23.0	8.0	349.0	11.0	75.0	19.0	2.0	68.0
89JP023	30.0	16.0	19.0	9.0	347.0	13.0	75.0	20.0	2.0	76.0
89JP024	31.0	17.0	20.0	8.0	338.0	12.0	75.0	19.0	2.0	75.0
89JP025	35.0	18.0	19.0	9.0	332.0	13.0	83.0	21.0	2.0	74.0
89JP026	30.0	17.0	20.0	8.0	338.0	13.0	81.0	20.0	2.0	79.0
90JP044	29.0	32.0	7.0	11.0	200.0	11.0	99.0	16.0	1.0	61.0
90JP045	30.0	22.0	10.0	10.0	220.0	11.0	85.0	19.0	2.0	74.0
90JP046	34.0	28.0	11.0	12.0	230.0	12.0	88.0	21.0	2.0	79.0
90JP047	30.0	19.0	14.0	10.0	330.0	11.0	98.0	23.0	2.0	74.0
90JP048	34.0	16.0	23.0	9.0	360.0	14.0	85.0	21.0	2.0	86.0
90JP049	33.0	23.0	23.0	11.0	300.0	14.0	93.0	21.0	2.0	97.9
90JP050	35.0	22.0	14.0	10.0	290.0	12.0	140.0	25.0	2.0	82.0
90JP051	32.0	26.0	15.0	11.0	250.0	12.0	110.0	21.0	2.0	93.0
90JP052	28.0	15.0	19.0	8.0	320.0	11.0	71.0	21.0	2.0	74.0
90JP053	28.0	26.0	20.0	8.0	320.0	11.0	72.0	21.0	2.0	70.0
90JP055	31.0	16.0	17.0	8.0	330.0	13.0	72.0	20.0	2.0	78.0
90JP056	30.0	20.0	16.0	9.0	300.0	11.0	80.0	21.0	2.0	86.0
90JP057	27.0	17.0	21.0	9.0	320.0	11.0	78.0	22.0	2.0	85.0
90JP058	30.0	16.0	22.0	9.0	350.0	12.0	78.0	21.0	2.0	84.0
90JP059	32.0	21.0	25.0	10.0	310.0	12.0	88.0	21.0	2.0	97.0
90JP060	33.0	21.0	14.0	9.0	250.0	12.0	98.0	21.0	2.0	83.0
90JP061	35.0	29.0	15.0	11.0	220.0	14.0	140.0	23.0	2.0	100.0

Table 5a. Sample numbers, locations, and descriptions of rock or drill cuttings samples from the Preble, Hansen Creek, and Summer Camp mines in the Getchell gold trend. [Sample locations shown on Plate 1. do, ditto]

Field Sample Number	Lab Sample Number	Location Latitude	Longitude	Sample Description	Date Collected
89JP011	D344214	40° 59'45.0"	117° 23'26.5"	Preble mine, drill cuttings, carbonaceous shale	22 Oct 89
89JP012	D344215	do	do	do	do
89JP013	D344216	do	do	do	do
89JP014	D344217	do	do	do	do
89JP015	D344218	do	do	do	do
90JP036	D373421	41° 11'47.4"	117° 15'04.2"	Hansen Creek mine, rock fragments	5 Nov 90
90JP037	D373422	do	do	do	do
90JP038	D378640	do	do	do	do
90JP039	D378641	do	do	do	do
90JP040	D373423	do	do	do	do
90JP041	D371999	do	do	do	do
90JP042	D372000	do	do	do	do
90JP043	D378642	do	do	do	do
90JP062	D373424	41° 10'45.0"	117° 15'01.2"	Summer Camp mine, drill cuttings, at site 13651-2-3, Au present from operator analysis	7 Nov 90
90JP063	D372001	do	do	do, do, at site 12568-9-70, Au present, do	do
90JP064	D373425	do	do	do, do, at site 12598-99-600, Au present, do	do
90JP065	D378643	do	do	do, do, at site 12610-1-2, Au not present, do	do
90JP066	D372002	do	do	do, do, at site 12577-8-9, Au present,do	do
90JP067	D378644	do	do	do, do, at site 13301-2-3, Au not present, do	do

Table 5b. K, U, and Th concentrations from aerial measurements, K, U, and Th concentrations from ground measurements, and delayed neutron activation analyses (dnaa) for U and Th of rock or drill cuttings samples from the Preble, Hansen Creek, and Summer Camp mines in the Getchell gold trend. [CV = coefficient of variation]

Field Sample Number	Aerial concentrations K,%	U,ppm	Th,ppm	Ground concentrations K,%	U,ppm	Th,ppm	DNAA U,ppm	CV	Th,ppm	CV
89JP011	none			3.8	10.4	14.9	6.3	2	11.3	12
89JP012	none			2.2	8.2	8.3	5.2	3	5.3	23
89JP013	none			2.1	10.3	9.6	5.5	2	3.9	31
89JP014	none			3.5	7.5	12.6	5.6	2	6.3	19
89JP015	none			5.2	7.1	18.2	7.6	2	9.0	16
90JP036	none			2.4	8.5	12.2	5.8	2	2.9	40
90JP037	none			1.9	9.3	9.5	6.6	2	14.0	9
90JP038	none			2.3	8.1	10.0	7.5	2	5.9	28
90JP039	none			2.5	7.9	10.0	5.5	3	10.4	14
90JP040	none			2.8	7.2	11.6	8.2	2	9.2	16
90JP041	none			3.0	9.3	12.2	11.1	2	5.7	28
90JP042	none			3.3	7.9	9.1	7.4	2	5.7	23
90JP043	none			1.6	5.7	6.9	5.8	3	5.0	29
90JP062	none			2.0	4.4	6.5	6.1	2	9.0	14
90JP063	none			0.7	3.6	3.4	1.8	4	2.5	24
90JP064	none			2.6	5.5	10.2	12.0	2	12.7	14
90JP065	none			2.8	6.1	9.8	5.7	3	12.7	13
90JP066	none			3.0	5.5	8.7	5.8	2	10.9	11
90JP067	none			1.9	4.8	7.6	5.5	3	11.0	13

Table 5c. Au, Hg, W, F, and 10-element ICP-AES analyses of rock or drill cuttings samples from the Preble, Hansen Creek, and Summer Camp mines in the Getchell gold trend. [F in %, all others in ppm.]

Field	------ ppm ------			%	---------- 10 element ICP-AES, ppm ----------									
Sample Number	Au	Hg	W	F	Ag	As	Au	Bi	Cd	Cu	Mo	Pb	Sb	Zn
89JP011	0.044	1.4	8.0	0.13	0.41	94	__	__	2.7	79	7.3	22.0	13.0	100
89JP012	1.45	>34.0	4.5	.1	.66	140	.57	__	4.0	85	6.1	18.0	12.0	49
89JP013	1.4	34.0	.5	.02	.54	82	.43	__	.47	45	8.0	24.0	13.0	15
89JP014	1.9	>34.0	5.5	.1	.6	100	.71	__	2.0	70	7.4	22.0	11.0	26
89JP015	.8	19.0	8.0	.02	.31	160	.37	__	1.4	46	5.1	19.0	9.0	38
90JP036	2.6	16.2	51.0	.05	.21	490	2.0	__	1.8	31	8.6	12.0	5.9	270
90JP037	1.8	>34.0	46.0	.04	.27	580	2.1	__	1.3	33	12.0	13.0	7.8	160
90JP038	1.4	21.0	42.0	.05	.33	620	1.7	__	1.7	37	12.0	8.9	7.1	290
90JP039	.63	16.0	37.0	.05	.23	780	1.1	__	1.3	32	12.0	7.9	7.4	290
90JP040	2.7	24.0	53.0	.06	.17	570	1.1	__	1.8	45	17.0	11.0	8.5	340
90JP041	.4	2.9	36.0	.07	__	520	.3	__	1.8	52	5.9	12.0	7.3	550
90JP042	.05	.8	6.0	.06	__	80	__	__	.53	45	1.6	4.3	2.5	170
90JP043	.32	2.1	18.0	.04	.087	160	.89	__	.95	22	3.9	4.9	2.1	150
90JP062	2.6	10.8	23.0	.02	.46	220	__	__	.94	38	9.3	17.0	7.1	50
90JP063	.3	1.2	20.0	.02	__	37	.25	__	.48	17	.47	13.0	1.9	53
90JP064	3.9	>34.0	180.0	.08	.39	440	2.4	1.6	2.0	95	7.1	14.0	38.0	68
90JP065	.025	11.0	3.0	.03	.65	22	__	__	.81	44	.43	14.0	2.5	300
90JP066	.1	1.5	11.0	.03	.19	110	__	__	1.5	110	8.2	44.0	7.5	530
90JP067	.046	.02	6.0	.03	.1	44	__	11.0	2.0	56	3.7	7.8	3.9	130

Table 5d. 40-element ICP-AES analysis (partial list) of rock or drill cuttings samples from the Preble, Hansen Creek, and Summer Camp mines in the Getchell gold trend. [Major elements in %, minor elements in ppm]

Field Sample Number	%								ppm			
	Al	Ca	Fe	K	Mg	Na	P	Ti	Mn	As	Ba	Be
89JP011	4.8	2.1	2.7	2.4	0.89	0.02	0.58	0.07	125.0	120.0	65.0	2.0
89JP012	2.0	0.9	1.8	1.1	.26	.02	.45	.06	18.0	200.0	149.0	1.0
89JP013	2.3	.4	1.8	1.1	.19	.03	.23	.05	11.0	160.0	119.0	1.0
89JP014	3.6	.6	2.9	1.8	.38	.02	.3	.08	20.0	210.0	53.0	2.0
89JP015	6.9	.3	2.7	3.5	.67	.02	.14	.12	16.0	280.0	87.0	3.0
90JP036	3.3	2.2	2.4	1.2	.5	.06	.11	.16	510.0	510.0	1600.0	1.0
90JP037	3.4	1.5	2.1	1.4	.26	.07	.09	.12	140.0	630.0	850.0	1.0
90JP038	4.6	3.7	2.9	1.9	.43	.14	.12	.13	290.0	730.0	1200.0	2.0
90JP039	5.0	7.1	2.5	2.3	.44	.06	.1	.12	270.0	700.0	870.0	2.0
90JP040	5.4	5.7	4.6	2.2	.68	.08	.15	.15	280.0	1000.0	970.0	2.0
90JP041	3.9	15.0	5.2	1.5	1.2	.14	.21	.15	810.0	490.0	1000.0	2.0
90JP042	3.5	17.0	5.3	1.2	1.5	.1	.12	.15	900.0	76.0	1100.0	1.0
90JP043	3.9	17.0	2.1	1.9	1.2	.15	.09	.17	270.0	130.0	1100.0	1.0
90JP062	4.7	.3	2.1	2.9	.28	.06	.04	.17	21.0	230.0	2600.0	1.0
90JP063	.8	.3	.4	.5	.04	.03	.07	.04	18.0	40.0	7100.0	__
90JP064	7.3	1.0	4.4	3.4	.41	.13	.1	.38	30.0	2800.0	5500.0	__
90JP065	5.8	1.1	1.8	3.4	.92	.11	.06	.14	95.0	22.0	1600.0	2.0
90JP066	5.8	1.5	4.2	2.7	.75	.09	.12	.13	200.0	100.0	1600.0	2.0
90JP067	5.8	11.0	3.1	3.0	1.1	.24	.08	.26	820.0	42.0	7400.0	2.0

Table 5e. 40-element ICP-AES analysis (partial list) of rock or drill cuttings samples from the Preble, Hansen Creek, and Summer Camp mines in the Getchell gold trend. [All values in ppm]

Field Sample Number	Cd	Ce	Co	Cr	Cu	Ga	La	Li	Mo	Nb
	ppm									
89JP011	3.0	28.0	15.0	49.0	104.0	12.0	15.0	18.0	6.0	__
89JP012	4.0	19.0	8.0	30.0	106.0	5.0	9.0	19.0	5.0	__
89JP013	--	29.0	4.0	37.0	65.0	6.0	15.0	17.0	7.0	__
89JP014	2.0	20.0	13.0	46.0	90.0	9.0	9.0	18.0	7.0	__
89JP015	__	33.0	18.0	74.0	61.0	16.0	18.0	28.0	5.0	5.0
90JP036	2.0	36.0	17.0	64.0	36.0	9.0	24.0	31.0	11.0	__
90JP037	__	36.0	10.0	65.0	39.0	9.0	24.0	26.0	15.0	__
90JP038	__	36.0	20.0	70.0	47.0	11.0	22.0	32.0	16.0	__
90JP039	__	34.0	16.0	70.0	33.0	12.0	23.0	35.0	13.0	__
90JP040	2.0	51.0	19.0	79.0	53.0	12.0	33.0	34.0	22.0	__
90JP041	2.0	41.0	30.0	41.0	63.0	9.0	29.0	26.0	10.0	__
90JP042	__	45.0	17.0	34.0	57.0	9.0	31.0	23.0	__	__
90JP043	__	34.0	9.0	44.0	25.0	10.0	22.0	19.0	4.0	6.0
90JP062	__	41.0	4.0	120.0	44.0	12.0	29.0	19.0	11.0	4.0
90JP063	__	10.0	7.0	13.0	21.0	__	9.0	13.0	__	__
90JP064	3.0	63.0	8.0	88.0	110.0	17.0	41.0	36.0	8.0	9.0
90JP065	__	40.0	10.0	92.0	50.0	14.0	26.0	28.0	4.0	4.0
90JP066	__	75.0	17.0	100.0	130.0	14.0	48.0	39.0	13.0	__
90JP067	2.0	53.0	15.0	89.0	64.0	15.0	34.0	20.0	4.0	7.0

Table 5f. 40-element ICP-AES analysis (concluding list) of rock or drill cuttings samples from the Preble, Hansen Creek, and Summer Camp mines in the Getchell gold trend. [All values in ppm]

Field Sample Number	Nd	Ni	Pb	Sc	Sr	Th	V	Y	Yb	Zn
	ppm									
89JP011	19.0	50.0	17.0	7.0	127.0	4.0	188.0	22.0	2.0	128.0
89JP012	12.0	28.0	14.0	2.0	84.0	—	137.0	15.0	1.0	63.0
89JP013	19.0	24.0	18.0	2.0	595.0	—	208.0	15.0	1.0	21.0
89JP014	13.0	46.0	14.0	4.0	47.0	—	191.0	15.0	1.0	38.0
89JP015	18.0	57.0	11.0	8.0	151.0	6.0	180.0	22.0	2.0	60.0
90JP036	20.0	130.0	12.0	5.0	130.0	5.0	550.0	17.0	2.0	390.0
90JP037	17.0	65.0	13.0	5.0	140.0	6.0	500.0	10.0	—	230.0
90JP038	17.0	110.0	13.0	7.0	200.0	8.0	360.0	14.0	1.0	470.0
90JP039	17.0	72.0	9.0	8.0	180.0	7.0	340.0	13.0	1.0	300.0
90JP040	24.0	110.0	13.0	9.0	250.0	7.0	360.0	15.0	1.0	470.0
90JP041	25.0	170.0	16.0	7.0	260.0	8.0	160.0	20.0	2.0	720.0
90JP042	27.0	59.0	8.0	8.0	240.0	9.0	40.0	17.0	2.0	210.0
90JP043	21.0	42.0	4.0	6.0	330.0	6.0	120.0	13.0	1.0	190.0
90JP062	17.0	13.0	16.0	7.0	130.0	9.0	660.0	10.0	1.0	75.0
90JP063	5.0	14.0	7.0	—	78.0	—	79.0	7.0	—	71.0
90JP064	27.0	17.0	15.0	7.0	420.0	14.0	220.0	16.0	2.0	110.0
90JP065	19.0	55.0	16.0	9.0	110.0	10.0	300.0	15.0	1.0	300.0
90JP066	35.0	130.0	39.0	9.0	100.0	11.0	570.0	17.0	2.0	700.0
90JP067	28.0	50.0	8.0	8.0	350.0	10.0	320.0	21.0	2.0	160.0

Table 6. Analytical methods, detection limits, and descriptive references for the geochemical analyses described in this report. [do, ditto]

elements	analytical method	lower detection limit	reference
U	delayed neutron activation analysis	0.1 ppm	McKown and McKnight (1990)
Th	do	1.0 ppm	do
Au	graphite furnace atomic absorption spectrophotometry	0.002 ppm	O'Leary and Meier (1990)
Hg	continuous flow-cold vapor absorption spectrophotometry	0.02 ppm*	O'Leary, Crock, and Kennedy (1990)
W	visible absorption spectrophotometry	0.5 ppm	O'Leary and Welsch (1990)
F	ion-selective electrode potentiometry	0.01 %	O'Leary and Hopkins (1990)
Ag	inductively coupled plasma-atomic emission spectrometry, 10 element, total dissolution	0.045 ppm	Motooka (1990)
As	do	0.600 ppm	do
Au	do	0.150 ppm	do
Bi	do	0.600 ppm	do
Cd	do	0.050 ppm	do
Cu	do	0.050 ppm	do
Mo	do	0.090 ppm	do
Pb	do	0.600 ppm	do
Sb	do	0.600 ppm	do
Zn	do	0.050 ppm	do

* upper detection limit 34.0 ppm; samples exceeding the working range require dilution for further analysis; see table 5c.

Table 6. (continued)

elements	analytical method	lower detection limit	reference
Al	inductively coupled plasma-atomic emission spectrometry, 40 element, partial dissolution	0.005 %	Briggs (1990)
Ca	do	0.005 %	do
Fe	do	0.005 %	do
K	do	0.05 %	do
Mg	do	0.005 %	do
Na	do	0.005 %	do
P	do	0.005 %	do
Ti	do	0.005 %	do
Ag	do	2 ppm	do
As	do	10 ppm	do
Au	do	8 ppm	do
Ba	do	1 ppm	do
Be	do	1 ppm	do
Bi	do	10 ppm	do
Cd	do	2 ppm	do
Ce	do	4 ppm	do
Co	do	1 ppm	do
Cr	do	1 ppm	do
Cu	do	1 ppm	do
Eu	do	2 ppm	do
Ga	do	4 ppm	do
Ho	do	4 ppm	do
La	do	2 ppm	do
Li	do	2 ppm	do
Mn	do	4 ppm	do
Mo	do	2 ppm	do
Nb	do	4 ppm	do
Nd	do	4 ppm	do
Ni	do	2 ppm	do
Pb	do	4 ppm	do
Sn	do	10 ppm	do
Sc	do	2 ppm	do
Sr	do	2 ppm	do
Ta	do	40 ppm	do
Th	do	4 ppm	do
U	do	100 ppm	do
V	do	2 ppm	do
Y	do	2 ppm	do
Yb	do	1 ppm	do
Zn	do	2 ppm	do