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CHEMICAL ANALYSES OF WATERS FROM GEYSERS, HOT SPRINGS AND POOLS  
IN YELLOWSTONE NATIONAL PARK, WYOMING FROM 1974 to 1978

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## INTRODUCTION

Waters from geysers, hot springs, and pools of Yellowstone National Park have been analyzed by numerous investigators extending back nearly ten decades. Large compilations of complete major ion analyses of the thermal waters have been reported by Gooch and Whitfield (1888) 38 analyses; Allen and Day (1935) 94 complete and 127 partial major ion analyses, Rowe and others (1973) 166 analyses including many previous chemical analyses of the same feature; and Thompson and others (1975) 242 complete and 299 partial major ion analyses. Smaller compilations of the thermal water chemistry have been reported by Douglass (1939) 12 analyses; White and others (1963) 6 analyses; and Scott (1964) 10 analyses. Partial chemical analyses have been reported by White and others (1956) and by Morey and others (1961) for dissolved silica; Noguichi and Nix (1963) for dissolved silica and major anions; Araki and Noguichi (1969) for dissolved silica, molybdenum, vanadium, and major anions. Here we report 422 complete major ion analyses from 330 different locations of geysers, hot springs, and pools, collected from 1974 to 1978. Many of the analyses from Upper, Midway, Lower, and Norris Geyser Basin are recollections of features previously reported.

## SAMPLE COLLECTION

Water samples of hot springs and pools were collected as close to the main orifice as feasible. Geysers with relatively short eruption intervals (such as Echinus, Solitary, and Biscuit Basin Island Geysers) generally were sampled during the overflow immediately prior to eruption. Geysers that do not erupt daily or weekly (such as Oblong, Giantess, and Lion Geysers) were sampled during periods of relatively quiescent overflow between eruption.

Samples were filtered through 0.45  $\mu\text{m}$  membrane filters in the field using the method of Thompson (1975) or of Thompson and others (1975). The primary difference between the two procedures is the method of filtering. Usually four samples were collected at each site: (a) a filtered acidified sample (F.A.) for cation analysis; (b) a filtered unacidified sample (F.U.) for anion analysis; (c) 10 mL of untreated sample diluted into 50 mL of deionized distilled water for silica analysis; and (d) an untreated sample for hydrogen and oxygen isotope analyses. The first three samples are collected in plastic bottles, the last in glass. The F.A. sample bottle was soaked 4 days in 10%  $\text{HNO}_3$  followed by 4 days in deionized water before being used in the field.

## FIELD DETERMINATIONS

Temperature measurements of hot springs were obtained with a total immersion, maximum reading, mercury in glass thermometer. Springs having temperatures at or near that of ambient air required the use of a conventional mercury in glass thermometer. Field pH determinations (denoted by f-pH in table 1) were usually made with pH paper indicator strips. Where both indicator strips and electrode pH meter were used, the pH indicator strips generally gave pH values within  $\pm 0.1$  pH units of the meter. However, the indicator strips apparently do not yield satisfactory values in the pH interval 6.5-7.0.

## METHODS OF CHEMICAL ANALYSES

Sodium and lithium were initially determined by atomic absorption spectroscopy (A.A.S.) using potassium ( $\sim 1000$  mg/L) as an ionization suppressant in the flame. Samples collected in 1978 were determined by flame emission spectroscopy (F.E.S.).

Potassium was determined by A.A.S. using added sodium ( $\sim 1000$  mg/L) as an ionization suppressant. Samples collected in 1978 were determined by F.E.S.

Cesium and rubidium were determined by F.E.S. with sodium added ( $\sim 1000$  mg/L) to most samples in 1978.

Calcium and magnesium were determined by A.A.S. using 1% (v/v) lanthanum (Brown and others, 1970) to prevent flame interferences.

Iron, manganese, and zinc were determined by A.A.S. using added potassium ( $\sim 1000$  mg/L).

Ammonia was determined either by direct Nesslerization using Rochelles salt on samples with low magnesium concentrations or by specific ion electrode on samples with high ( $>10$  g/L) Mg.

Bicarbonate and carbonate were determined by an automatic pH titration with standardized sulfuric acid ( $\sim 0.05$  N) and a combination pH electrode. The laboratory pH (1-pH) is taken as the starting of the titration.

Chloride was determined by automatic titration using standardized silver nitrate ( $\sim 0.015$ ), a silver/silver chloride indicating electrode, and a double junction reference electrode.

Sulfate was determined by the thorin method (Brown and others, 1970).

Fluoride was initially determined by specific ion electrode using a 'tris' buffer as described in Thompson and others (1975). In 1978 a 'CDTA' buffer as described by the manufacturer (Orion, 1975) was used.

Boron was determined by the carmine method (Brown and others, 1970).

Silica was determined by molybdenum methodology (Shapiro and Brannock, 1956) using 640 nm absorbance.

Arsenic was determined as the arsenate by molybdenum blue methodology (R. E. Stauffer, written communication, 1978).

Hydrogen sulfide was determined by the methylene blue procedure (APHA, 1975).

THE TABLE

The chemical analyses of the various waters are presented in table 1. Temperatures are in ° Celsius and concentrations in mg/L. Samples numbered C7649-50 were collected by J. B. Cowart, Florida State University; samples K76W(1-3) from Yellowstone Canyon by Terry E. C. Keith and sample N7401 by Manuel Natheson both of the U. S. Geological Survey, Menlo Park. The abbreviation "n.d." is for not determined if a chemical species or unknown if something else. (For example, n.d. in the flow column means unknown or not estimated.) Springs with latitude and longitude coded as 0's were not located. Many carbonates have a "n.d." when the "1-pH" is above 8.3; for these the carbonate is expressed as bicarbonate. Many names are unofficial or common names that have not formally been named by the U.S. National Park Service.

Samp # - sample number

Date - in the form yymdd where

A = January	D = April	G = July	J = October
B = February	E = May	H = August	K = November
C = March	F = June	I = September	L = December

thus, 75F09 translates to July 9, 1975.

Description - a very sketchy location description for unnamed springs, sometimes with spring name, see below for abbreviations.

Name - abbreviated to 5 spaces

The type code is S for spring, G for geyser, and P for pool.

Flow - coded as follows (in L/min):

A 0-4	D 13-16	H 49-60
B 5-8	E 17-20	I 61-80
C 9-12	F 21-32	J > 80
	G 33-48	

Collector - coded as follows:

A - R. O. Fournier
B - R. A. Hutchinson
C - L. J. P. Muffler
D - J. M. Thompson
E - A. H. Truesdell
Z - other collectors

DESCRIPTION ABBREVIATIONS

AB(V)	Above	KALD	Kaleidoscope
ACR	Across	LG (LRG)	Large
AFT EARTHQUAKE	After 1 July 75 earthquake	MOU	Mound Geyser
B	Base	N	North
BB	Biscuit Basin	NEZ	Nez Perce
BEF	Before	NOW GEYS	Now geyses
BET(W)	Between	NR	Near
CK (CR)	Creek	OF	Old Faithful
DIA	Diameter	PORC	Porcelain Terrace
DS	Downstream	PP	Paint Pot
E	East	REAL FINGER	Realgar Finger of 100 Spring Plain
FF (FTN FRT)	Fountain Freight	S	South
FM (FRM)	From	SM(L)	Small
FRK	Fork	SP(G)	Spring
GEY(S)	Geyser(s)	TR	Trail
GR(P)	Group	UB	Upper Geyser Basin
HS	Hot Spring	UPSTR	Upstream
IMP	Imperial	X	Crossing

MORE OBSCURE DESCRIPTIONS

J7560 Morning Glory Pool while pumping 1 m below usual water level  
 J7417 Interchange spring; on N.W. side of Highway interchange into  
 Old Faithful Geyser  
 C7652 Base of Madison Plateau behind Emerald Pool  
 J7436 Geyser on east bank across from geyser on west bank  
 75109 Near where "B" White Creek intersects "A" White Creek  
 J7631 Spring flowing into Diadem Pool  
 J7534 Pork Chop during filling 1/2 full  
 J5138 Unnamed spring similar to Green Dragon  
 J7619 Northern most, scalloped sinter rim spring  
 J7708 Follow runoff of J7709 to get to J7708  
 J7481 "3 Bears" field name for Occasional Geyser

SEE OR Thompson and others, 1975 analysis  
 SAME AS



#### ACKNOWLEDGMENT

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SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg	
LONE STAR GEYSER BASIN NEAR PARKING LOT																	
J7540	75F09	100M FROM LONE STAR	44	25.132	110 48.299	UNAME	S	A	D	79	9.1	9.31	233	n.d.	n.d.	1.32	<.01
J7541	75F09	N OF YJ7540	44	25.149	110 48.347	UNAME	S	n.d.	D	92	8.5	9	252	n.d.	n.d.	1.13	<.01
J7542	75F09	B OF GLAC TILL	44	25.141	110 48.347	UNAME	S	C	D	93	8	8.37	255	n.d.	n.d.	1.52	<.01
J7543	75F09	BET GLAC TILL SLOPES	44	25.123	110 48.275	UNAME	S	D	D	92	8	8.08	219	n.d.	n.d.	1.16	0.2
J7544	75F09	SPG BETW GLAC TILLS	44	25.141	110 48.394	UNAME	S	C	D	86	8.5	8.58	210	n.d.	n.d.	1.16	<.01
J7711	77I25	GRP OF 4. DIAMOND FORM	44	25.123	110 48.275	UNAME	S	B	D	92	n.d.	8.14	178	0.02	<.01	2.5	0.057
J7712	77I25	4TH FROM PARKING LOT	44	25.132	110 48.299	UNAME	S	B	D	92	n.d.	9.14	234	<.02	<.01	3.3	0.04
LONE STAR GEYSER BASIN NEAR FOOTBRIDGE																	
J7537	75F09	LG POOL DS OF FTBRIDGE	44	24.98	110 48.716	UNAME	P	C	D	67	7.6	7.88	235	n.d.	n.d.	6.9	0.01
J7538	75F09	50M DS OF YJ7537	44	24.957	110 48.798	UNAME	S	C	D	68	7.5	7.25	222	n.d.	n.d.	3.3	0.043
J7539	75F09	NR RIVER IN MEADOW	44	24.943	110 49.064	UNAME	S	C	D	84	8.2	8.14	285	n.d.	n.d.	0.7	0.01
J7713	77I25	ACROSS FROM YJ7538	44	24.848	110 48.705	UNAME	P	B	D	70	n.d.	8.4	185	0.03	<.01	4.3	0.042
J7714	77I25	LG POOL SAME AS YJ7537	44	24.98	110 48.716	UNAME	P	n.d.	D	63	n.d.	8.24	215	0.02	0.015	9.25	0.037
UPPER GEYSER BASIN MYRIAD GROUP																	
J7401	74I28	N60S OF FENNER DR. HOLE	44	27.533	110 50.092	UNAME	S	n.d.	D	94	9.2	9.66	358	<.02	<.02	0.26	<.01
J7402	74I28	S.W. OF FENNER DR. HOLE	44	27.528	110 50.08	UNAME	S	F	D	92	9.3	9.45	371	<.02	<.02	0.32	<.01
J7403	74I28	NR ROUND GEYSER	44	27.514	110 50.055	ABUSE	S	A	D	87	8.8	9.54	309	<.02	<.02	0.54	<.01
J7404	74I28	MIDDLE SISTER	44	27.618	110 50.168	M_SIS	S	n.d.	D	79	8.95	8.94	329	<.02	<.02	0.5	<.01
J7405	74I28	N10W TO 3 SISTERS	44	27.552	110 50.181	WTRAL	0	A	D	72	7.4	8.63	318	<.02	<.02	0.73	<.01
F7639	77I30	NR. FENNER U.B.	44	27.528	110 50.08	UNAME	S	A	A	92	8.7	9.78	175	n.d.	n.d.	0.8	0.015
UPPER GEYSER BASIN GEYSER HILL GROUP																	
N7401	74G00	SPG MOUND S.W. OF O.F.	44	27.613	110 49.669	UNAME	S	n.d.	F	n.d.	n.d.	n.d.	327	n.d.	n.d.	0.7	0.06
J7411	74I29	NR LION GROUP	44	27.870	110 49.767	EAR	S	n.d.	D	93	8.1	9.01	376	<.02	<.02	0.12	<.01
J7413	74I30	NEAR FIREHOLE	44	27.809	110 49.680	CHINA	S	A	D	94.5	7.4	8.34	332	<.02	<.02	0.74	<.01

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
LONE STAR GEYSER BASIN NEAR PARKING LOT															
J7540	353	16	2.55	0.19	0.57	n.d.	193	n.d.	27	410	15	4.6	1.324	n.d.	n.d.
J7541	361	17	2.6	0.18	0.43	n.d.	201	n.d.	24	414	16	4.4	1.351	n.d.	n.d.
J7542	358	18.5	2.55	0.166	0.505	n.d.	191	n.d.	27	416	16	4.6	1.409	n.d.	n.d.
J7543	345	15	2.6	0.154	0.407	n.d.	166	0	32	408	16	4.4	1.416	n.d.	n.d.
J7544	347	15.5	2.85	0.166	0.466	n.d.	169	n.d.	29	413	15	4.6	1.404	n.d.	n.d.
J7711	347	11.8	1.95	0.118	0.212	n.d.	139	0	57	355	10.2	3.9	n.d.	0.4	0.013
J7712	330	14.8	2.33	0.14	0.299	n.d.	191	n.d.	30	414	14.4	4.6	n.d.	2.2	0.01
LONE STAR GEYSER BASIN NEAR FOOTBRIDGE															
J7537	318	11	1.58	0.119	0.45	n.d.	133	n.d.	21	392	18.5	4.35	1.163	n.d.	n.d.
J7538	280	13	1.3	0.119	0.182	n.d.	96.2	n.d.	22	338	17	3.85	1.024	n.d.	n.d.
J7539	297	17	1.48	0.127	0.151	n.d.	69.6	n.d.	18	382	20	4.2	1.165	n.d.	n.d.
J7713	270	7.4	1.25	0.082	0.167	n.d.	86	n.d.	19	364	14.6	3.8	n.d.	0.8	n.d.
J7714	304	9	1.42	0.095	0.25	n.d.	116	0	22	394	18.6	4.2	n.d.	<.1	0.01
UPPER GEYSER BASIN MYRIAD GROUP															
J7401	375	23	4.9	n.d.	n.d.	n.d.	144	n.d.	23	426	24	4.05	1.44	n.d.	n.d.
J7402	375	24	5	0.25	0.645	n.d.	278	n.d.	23	418	26	4.2	1.46	n.d.	n.d.
J7403	375	19	5	0.208	0.714	n.d.	283	n.d.	24	389	25	4.05	1.42	n.d.	n.d.
J7404	385	18.5	5.1	0.147	0.527	n.d.	115	88	27	399	26	4.05	1.5	n.d.	n.d.
J7405	400	18.5	5.1	0.196	0.55	n.d.	261	55	30	378	26	3.87	1.49	n.d.	n.d.
F7639	363	21.5	5.06	n.d.	n.d.	n.d.	249	n.d.	23	400	25.8	4	n.d.	n.d.	n.d.
UPPER GEYSER BASIN GEYSER HILL GROUP															
N7401	300	17.8	5.1	n.d.	n.d.	<.1	196	n.d.	25	323	18	3.9	n.d.	n.d.	n.d.
J7411	345	17.5	5.1	0.288	0.745	n.d.	179	n.d.	25	414	26	4.2	1.44	n.d.	n.d.
J7413	325	17.5	4.7	n.d.	n.d.	n.d.	149	n.d.	25	376	24	2.95	1.345	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
UPPER GEYSER BASIN GEYSER HILL GROUP (CONTINUED)																
J7419	74J01	OLD MOUNT NR O.F.	44 27.613	110 49.669	UNAME	S	A	D	92	n.d.	8.9	339	n.d.	n.d.	0.7	0.06
J7420	74J01	SMALL, GEY OCCASIONALLY	44 27.633	110 49.660	UNAME	G	A	D	87	7.2	8.47	293	<.02	<.02	0.58	<.01
J7557	75F11	END. BOARD CLOSE TO INN	44 27.615	110 49.700	UNAME	G	n.d.	D	n.d.	n.d.	9.48	391	n.d.	n.d.	0.73	<.01
75103	75J07	CONE NR BRDWALK NR O.F.	44 27.613	110 49.669	UNAME	S	A	A&D	n.d.	8.3	9.01	320	n.d.	n.d.	0.85	0.031
75104	75J07	GEYSER NR GIANTESS	44 27.811	110 49.616	UNAME	G	D	A&D	87	7.3	8.2	375	n.d.	n.d.	0.61	0.046
J7561	75I22	LARGEST VENT	44 27.844	110 49.805	LION	G	A	D	93	9.2	n.d.	362	n.d.	n.d.	0.48	0.03
75102	75J07	N65W 35M TO O.F.	44 27.633	110 49.660	UNAME	G	A	A&D	93	n.d.	9.32	318	n.d.	n.d.	0.8	<.01
75105	75J07	SOLITARY GEYSER	44 28.112	110 49.685	SOLIT	G	G	A&D	91.5	8.6	9.43	367	n.d.	n.d.	0.25	0.051
F7638	77I30	NR LION GROUP	44 27.870	110 49.767	EAR	S	C	A	94.5	8.3	9.21	162	n.d.	n.d.	0.6	0.015
F7640	76I30	NEAR FIREHOLE	44 27.809	110 49.680	CHINA	S	A	A	94.5	7.8	8.42	167	n.d.	n.d.	0.8	0.016
F7704	77I28	NEAR FIREHOLE	44 27.809	110 49.680	CHINA	S	A	A&D	93	7.6	8.04	313	<.1	<.02	4	0.12
UPPER GEYSER BASIN MIDDLE GROUP																
J7406	74I29	TORTOISE SHELL	44 27.825	110 50.143	TORT	S	n.d.	D	95	9.1	9.45	346	<.02	<.02	0.27	<.01
J7409	74I29	OBLONG GEYSER	44 28.163	110 50.361	OBL	G	n.d.	D	93	8.2	8.93	301	<.02	<.02	0.58	<.01
J7410	74I29	WITCHES CAULDRON	44 27.977	110 50.317	WITCH	S	J	D	95	8.4	8.91	329	<.02	<.02	0.2	<.01
J7414	74I30	CHROMATIC POOL	44 28.115	110 50.304	CHROM	P	n.d.	D	77	8.9	9.42	326	<.02	<.02	0.14	<.01
J7415	74I30	INKWELL SPRING	44 28.141	110 50.385	INK	S	G	D	93	8.5	9.08	274	<.02	<.02	0.44	0.051
J7427	74J02	MORNING GLORY POOL	44 28.508	110 50.562	MORIN	P	B	D	72.5	8	8.87	280	<.02	<.02	0.12	<.01
J7560	75I22	MORIN P N3' DOWN PUMPIN	44 28.508	110 50.562	MORIN	P	A	D	86	8.1	8.15	248	n.d.	n.d.	0.65	0.04
F7635	76I30	INKWELL, U.B.	44 28.141	110 50.385	INK	S	I	A	94	8.2	9.62	301	n.d.	n.d.	1.5	0.08
F7637	76I30	TORTOISE SHELL	44 27.825	110 50.143	TORT	S	A	A	94.5	8.2	9.36	155	n.d.	n.d.	0.5	0.018
F7701	77I28	MORNING GLORY POOL	44 28.508	110 50.562	MORIN	P	C	A&D	n.d.	7.6	8.33	261	<.1	<.02	1.3	0.05
F7703	77I28	TORTOISE SHELL	44 27.825	110 50.143	TORT	S	A	A&D	94	8.6	9.61	317	<.1	<.02	0.5	0.026
UPPER GEYSER BASIN SOUTHEASTERN GROUP																
F7612	76F24	SIDE OF MALLARD CRK.	44 27.551	110 48.871	UNAME	S	A	A	86	6.2	7.86	222	n.d.	n.d.	6.9	0.355

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
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UPPER GEYSER BASIN GEYSER HILL GROUP (CONTINUED)

J7419	300	17.8	5.1	n.d.	n.d.	<.1	196	n.d.	25	373	18	3.9	1.33	n.d.	n.d.
J7420	290	16	4.3	0.235	0.595	n.d.	155	n.d.	17	334	20.3	3.6	1.2	n.d.	n.d.
J7557	391	24.5	5.45	n.d.	n.d.	n.d.	213	n.d.	23	480	31	4.85	1.648	n.d.	n.d.
75103	303	20	4.6	0.22	0.03	n.d.	174	n.d.	17	380	25	3.8	n.d.	n.d.	n.d.
75104	337	20	4.82	0.15	0.22	n.d.	194	0	40	399	37	4	n.d.	n.d.	n.d.
J7561	373	20	5.65	0.26	0.61	n.d.	240	n.d.	18	430	27	5.1	n.d.	n.d.	n.d.
75102	305	19	4.5	0.23	0.54	n.d.	162	n.d.	23	384	25	3.8	n.d.	n.d.	n.d.
75105	314	23	4.31	0.15	0.23	n.d.	174	n.d.	19	388	28	3.9	n.d.	n.d.	n.d.
F7638	349	20.8	5.25	n.d.	n.d.	n.d.	44	72	25	410	25.8	3.9	n.d.	n.d.	n.d.
F7640	334	20.3	4.87	n.d.	n.d.	n.d.	165	0	23	421	24.5	3.7	n.d.	n.d.	n.d.
F7704	301	15	6	n.d.	n.d.	n.d.	167	0	24	337	23	3.8	n.d.	n.d.	n.d.

UPPER GEYSER BASIN MIDDLE GROUP

J7406	425	20	4.8	0.216	0.706	n.d.	88	169	19	378	29	3.8	1.65	n.d.	n.d.
J7409	400	18.5	4.2	0.198	0.328	n.d.	297	88	20	306	29	3	1.465	n.d.	n.d.
J7410	410	18.5	4.7	0.151	0.397	n.d.	267	87	22	349	28	3.1	1.58	n.d.	n.d.
J7414	395	18	4.6	0.152	n.d.	n.d.	90	138	25	359	28	3.5	1.63	n.d.	n.d.
J7415	370	30	3.2	n.d.	n.d.	n.d.	264	103	15	263	23	2.5	1.28	n.d.	n.d.
J7427	405	18.5	4	0.15	0.34	n.d.	350	97	25	291	28	2.9	1.38	n.d.	n.d.
J7560	410	17.4	3.9	0.12	0.32	n.d.	473	0	23	292	27	2.9	n.d.	n.d.	n.d.
F7635	356	32.8	3.3	n.d.	n.d.	n.d.	282	101	2	270	24.5	2.4	n.d.	n.d.	n.d.
F7637	402	23.5	5.03	n.d.	n.d.	n.d.	124	142	19	379	30.5	3.7	n.d.	n.d.	n.d.
F7701	400	16	3.8	n.d.	n.d.	n.d.	543	0	22	286	26	2.75	n.d.	n.d.	n.d.
F7703	420	18	6.2	n.d.	n.d.	n.d.	408	n.d.	21	383	28	3.7	n.d.	n.d.	n.d.

UPPER GEYSER BASIN SOUTHEASTERN GROUP

F7612	188	27	0.33	n.d.	n.d.	n.d.	474	0	3	25	13.7	0.03	n.d.	n.d.	n.d.
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SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
UPPER GEYSER BASIN SOUTHEASTERN GROUP (CONTINUED)																
F7613	76F24	E. OF O.F. AREA	44 27.556	110 48.876	UNAME	S	A	A	84	7.6	9.16	238	n.d.	n.d.	2.63	0.035
F7614	76F24	E.SIDE O.F. AREA	44 27.837	110 48.967	UNAME	P	C	A	78	5.2	6.85	332	n.d.	n.d.	0.6	0.03
F7615	76F24	WESTMOST SPRING	44 27.62	110 49.256	UNAME	S	A	A	88	6.9	8.47	379	n.d.	n.d.	0.4	<.01
F7616	76F24	SPG 20' E. OF YF7615	44 27.62	110 49.251	UNAME	S	A	A	92	7.6	8.54	367	n.d.	n.d.	0.4	<.01
F7617	76F24	HIGH SPG. ABV. FIREHOLE	44 27.304	110 49.047	UNAME	S	A	A	70	1.9	1.75	206	n.d.	n.d.	0.6	0.24
F7618	76F24	BIG POOL NR. FIREHOLE	44 27.346	110 49.152	UNAME	P	E	A	91	7.2	8.42	358	n.d.	n.d.	0.9	0.023
F7619	76F24	UPSTR. OF O.F.	44 27.271	110 49.087	UNAME	S	A	A	91	n.d.	9.67	344	n.d.	n.d.	1.77	0.023
F7620	76F24	E.BANK OF FIREHOLE	44 27.182	110 48.988	UNAME	S	C	A	80	6	7.9	440	n.d.	n.d.	14.6	3.46
F7621	76F24	580' ABV. SM.DAM & CAMP	44 27.016	110 49.79	REBA	S	I	A	35	n.d.	8.44	85	n.d.	n.d.	8.1	0.89
F7641	77I30	ACR. BRID. E. OF O.F.	44 27.271	110 49.087	UNAME	S	B	A	n.d.	7.7	8.78	167	n.d.	n.d.	0.9	0.022
F7642	77I30	S.SIDE MALLARD CR.	44 27.551	110 48.871	UNAME	S	D	A	86.5	6.7	8.55	264	n.d.	n.d.	6	0.165
UPPER GEYSER BASIN CASCADE GROUP																
J7412	74I29	GEM POOL	44 28.772	110 50.905	GEM	P	n.d.	D	89	8.6	9.08	272	<.02	<.02	1.16	0.065
J7428	74J02	SEISMIC SATELLITE	44 28.83	110 51.008	SEISM	G	n.d.	D	95	8.75	9.61	290	0.02	<.02	0.14	<.01
J7429	74J02	SPG N10E OF SEISMIC	44 28.877	110 50.993	UNAME	S	A	D	54	8.2	9.6	316	<.02	<.02	0.17	<.01
J7430	74J02	N35W OF SEISMIC	44 28.864	110 51.038	UNAME	P	A	D	93.5	8.4	9.24	318	<.02	<.02	0.13	<.01
J7431	74J02	CAULIFLOWER POOL	44 28.99	110 50.981	CAULF	P	n.d.	D	74	7.5	8.81	307	<.02	<.02	0.18	<.01
J7432	74J02	MIRROR POOL	44 29.013	110 50.986	MIRR	P	n.d.	D	73	8.3	8.91	295	0.02	<.02	0.82	0.015
J7435	75J02	WARM SPG S10W TO SPRITE	44 28.801	110 50.883	UNAME	S	A	D	48	6.7	7.62	126	<.02	<.02	1.78	0.085
J7841	78J08	N65W TO N END OF BRIDGE	0 0	0 0	UNAME	S	B	D	93.5	7.4	8.23	274	n.d.	n.d.	1.05	0.035
J7842	78J08	GEM POOL	44 28.772	110 50.905	GEM	P	G	D	86	8.6	7.11	252	n.d.	n.d.	0.5	0.01
UPPER GEYSER BASIN DAISY GROUP																
J7407	74I29	BONITA POOL	44 28.216	110 50.589	BONIT	P	H	D	94	n.d.	9.16	307	<.02	<.02	0.12	<.01
J7408	74I29	LRG POOL NR.ROUND SPG.	44 28.132	110 50.528	UNAME	P	F	D	70	8.5	9.21	308	<.02	<.02	0.22	<.01
75116	75J04	BONITA POOL 75-116(2)	44 28.216	110 50.589	BONIT	P	E	D	93.5	8.8	9.14	301	n.d.	n.d.	0.36	<.01
75117	75J10	NORTH CHAIN LAKE	44 28.417	110 50.536	UNAME	S	E	D	79	8.1	8.67	256	n.d.	n.d.	0.41	<.01



SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
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UPPER GEYSER BASIN SOUTHEASTERN GROUP (CONTINUED)

F7613	173	17.1	0.31	n.d.	n.d.	n.d.	308	n.d.	12.5	62	20.5	0.07	n.d.	n.d.	n.d.
F7614	143	22.2	0.6	n.d.	n.d.	n.d.	22	0	221	44	11.3	0.05	n.d.	n.d.	n.d.
F7615	265	36.2	1.81	n.d.	n.d.	n.d.	244	n.d.	22	258	23.8	3.04	n.d.	n.d.	n.d.
F7616	265	36.2	1.76	n.d.	n.d.	n.d.	214	n.d.	27	259	25	2.82	n.d.	n.d.	n.d.
F7617	78	0.75	0.58	n.d.	n.d.	n.d.	0	0	753	46	0.36	0.55	n.d.	n.d.	n.d.
F7618	328	29.1	3	n.d.	n.d.	n.d.	134	n.d.	38.5	359	26.8	4	n.d.	n.d.	n.d.
F7619	335	12	3.18	n.d.	n.d.	n.d.	198	n.d.	18	381	29	3.95	n.d.	n.d.	n.d.
F7620	155	47	0.54	n.d.	n.d.	n.d.	416	0	7.2	49	4.8	0.5	n.d.	n.d.	n.d.
F7621	53	6.5	0.47	n.d.	n.d.	n.d.	122	n.d.	7.6	44	6.2	0.1	n.d.	n.d.	n.d.
F7641	298	44.4	3.22	n.d.	n.d.	n.d.	107	41	20	350	26	3.55	n.d.	n.d.	n.d.
F7642	183	29.2	0.32	n.d.	n.d.	n.d.	403	43	2	27	12.9	0.4	n.d.	n.d.	n.d.

UPPER GEYSER BASIN CASCADE GROUP

J7412	400	15	3.7	0.19	0.601	n.d.	316	106	19	278	26	3.8	1.39	n.d.	n.d.
J7428	380	15	3.5	0.106	0.115	n.d.	110	210	17	277	26	3	1.37	n.d.	n.d.
J7429	420	14.5	3.7	0.124	0.191	n.d.	167	201	20	285	27	3	1.46	n.d.	n.d.
J7430	393	15	3.5	0.066	0.172	n.d.	259	136	17	287	26	2.9	1.14	n.d.	n.d.
J7431	428	15.5	3.1	0.1	0.128	n.d.	379	96	20	287	28	3	1.5	n.d.	n.d.
J7432	405	16.5	3.2	0.087	0.167	n.d.	376	103	19	275	28	2.9	1.465	n.d.	n.d.
J7435	20.8	3.7	0.04	0.014	<.01	n.d.	52	0	27	5.2	9	<.1	0.03	n.d.	n.d.
J7841	383	13.7	3.49	0.09	0.15	0.68	406	66	29	278	30	2.9	n.d.	0.013	<.01
J7842	279	12.5	3.52	0.08	0.2	0.8	254	131	13	263	29	3.5	n.d.	0.02	0.01

UPPER GEYSER BASIN DAISY GROUP

J7407	470	20	4.1	0.148	0.189	n.d.	363	137	18	306	31	2.85	1.425	n.d.	n.d.
J7408	465	21	4.1	0.159	0.152	n.d.	356	137	20	308	31	2.85	1.455	n.d.	n.d.
75116	450	17	3.95	0.14	0.2	n.d.	313	159	20	318	32	3.1	n.d.	n.d.	n.d.
75117	378	17	3.87	0.1	0.25	n.d.	327	87	16	292	29	2.73	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
UPPER GEYSER BASIN DAISY GROUP (CONTINUED)																
75118	75J10	EAST SENTINEL GEYSER	44 28.517	110 50.63	ESENT	G	G	D	95	8.9	9.2	256	n.d.	n.d.	0.51	<.01
75119	75J10	WEST SENTINEL GEYSER	44 28.543	110 50.609	WSENT	G	G	D	95	8.5	8.96	264	n.d.	n.d.	0.51	0.03
75120	75J10	SENTINEL GEYSER GROUP	44 28.551	110 50.663	GRSTR	P	A	D	83	7.7	8.35	276	n.d.	n.d.	0.39	<.01
F7636	76I30	BONITA POOL	44 28.216	110 50.589	BONIT	P	J	A	94.5	8.7	9.05	160	n.d.	n.d.	0.4	0.03
F7702	77I28	BONITA POOL	44 28.216	110 50.589	BONIT	P	H	A&D	93.5	9	9.17	287	<.1	<.02	0.5	0.017
UPPER GEYSER BASIN BLACK SAND BASIN																
J7416	74I30	N10E TO EMERALD	44 27.617	110 50.977	UNAME	S	J	D	14	7.1	7.52	63.8	<.02	<.02	1.64	0.58
J7417	74I30	@ HIWAY INTER TO O.F.	44 27.672	110 50.645	INTER	S	J	D	74	8.6	8.81	275	<.02	<.02	0.27	<.01
J7418	74I30	ONLY HOT SPG IN AREA	44 27.976	110 50.808	UNAME	S	n.d.	D	94	8.5	9.11	348	<.02	<.02	0.13	<.01
J7459	74J05	SM GEY ACR FROM CLIFF G	44 27.733	110 51.171	UNAME	G	n.d.	D	93	n.d.	9.17	323	<.02	<.02	0.7	<.01
F7643	76I30	ACROSS FROM CLIFF G.	44 27.733	110 51.171	BOWTI	G	J	A	93	8.7	9.19	176	n.d.	n.d.	0.9	0.022
C7651	76F22	W END BASE OF PLATEAU	44 27.669	110 51.26	EMERA	P	n.d.	Z	n.d.	n.d.	9.58	167	n.d.	<.04	0.44	<.01
C7652	76F22	RHYOLITE FLW BEH EMERA	44 27.617	110 50.977	UNAME	S	n.d.	Z	n.d.	n.d.	7.25	53	n.d.	n.d.	3.2	0.445
F7705	77I28	SAME AS J7414	44 27.672	110 50.645	INTER	S	J	A&D	76	7.4	8.71	256	0.2	<.02	1.6	0.05
UPPER GEYSER BASIN BISCUIT BASIN																
J7433	74J02	N49W TO SAPPHIRE	44 29.036	110 51.22	ISGEY	G	E	D	93	9.3	9.78	412	0.43	0.03	0.18	<.01
J7434	74J02	N47W TO SAPPHIRE	44 29.048	110 51.221	UNAME	S	n.d.	D	94	9	9.9	415	0.36	0.02	0.14	<.01
75121	75J10	RUSTY GEY 45' ESE OF Y-8	44 29.082	110 51.065	RUSTY	G	n.d.	D	92	8.8	9.4	297	n.d.	n.d.	0.29	<.01
75122	75J10	50' SSE Y-8	44 29.077	110 51.069	UNAME	P	B	D	80	8.6	8.84	291	n.d.	n.d.	0.32	<.01
75123	75J10	THIRD FR BRIDGE SOUTHSD	44 29.072	110 51.081	UNAME	S	A	A&D	85	n.d.	9.79	317	n.d.	n.d.	0.29	<.01
75124	75J10	WEST, NEAREST BRIDGE	44 29.075	110 51.1	UNAME	S	A	A&D	74	8.5	8.91	305	n.d.	n.d.	0.33	<.01
75125	75J10	NE OF 123 GASSY	44 29.09	110 51.09	UNAME	S	A	A&D	59	n.d.	8.9	307	n.d.	n.d.	0.4	0.01
F7622	76Z00	BETW MIDWAY & BISCUIT	44 29.64	110 50.44	UNAME	S	J	A	48	n.d.	7.76	83.9	n.d.	n.d.	7.45	0.22
F7644	77I30	SAPPHIRE GEYSER	44 29.104	110 51.268	SAPPH	G	J	A	94	8.3	9.13	178	n.d.	n.d.	0.4	0.01
F7645	76I30	1.05 MI FROM B.B. UPHIL	44 29.64	110 50.44	UNAME	S	J	A	48.5	6.8	7.3	111	n.d.	n.d.	8.3	0.185

SAMP#	Na	K	Li	Rb	Cs	NH4	HC03	C03	S04	Cl	F	B	As	H2S	Zn
UPPER GEYSER BASIN DAISY GROUP (CONTINUED)															
75118	343	19	3.13	0.11	0.21	n.d.	182	154	13	252	25	2.5	n.d.	n.d.	n.d.
75119	370	21	3.43	0.112	0.24	n.d.	281	116	15	269	28	2.7	n.d.	n.d.	n.d.
75120	387	18	3.6	0.12	0.2	n.d.	432	43	23	289	29	2.8	n.d.	n.d.	n.d.
F7636	452	23.5	4.28	n.d.	n.d.	n.d.	405	122	27	316	31.5	2.9	n.d.	n.d.	n.d.
F7702	445	18	4.2	n.d.	n.d.	n.d.	649	n.d.	19	305	31	2.9	n.d.	n.d.	n.d.

UPPER GEYSER BASIN BLACK SAND BASIN

J7416	6.7	4	0.02	n.d.	n.d.	n.d.	33	0	4.1	3.8	3.5	<.1	<.011	n.d.	n.d.
J7417	290	21	2.9	n.d.	n.d.	n.d.	183	90	18	226	16.5	3.55	0.993	n.d.	n.d.
J7418	435	21	3.9	0.171	0.315	n.d.	268	151	17	309	28	2.5	1.465	n.d.	n.d.
J7459	435	20.4	3.2	n.d.	n.d.	n.d.	313	143	19	294	28	2.9	1.423	n.d.	n.d.
F7643	430	22.5	3.4	n.d.	n.d.	n.d.	371	116	25	291	28	2.9	n.d.	n.d.	n.d.
C7651	448	21.7	3.55	n.d.	n.d.	n.d.	158	241	21	306	28	2.83	n.d.	n.d.	<.01
C7652	6	4	0.02	n.d.	n.d.	n.d.	19	0	2	1.5	3.7	<.1	n.d.	n.d.	n.d.
F7705	285	21	3	n.d.	n.d.	n.d.	324	n.d.	20	260	21	3.2	n.d.	n.d.	n.d.

UPPER GEYSER BASIN BISCUIT BASIN

J7433	425	26.5	2.2	0.145	<.116	n.d.	81	250	20	308	31.5	3	1.59	n.d.	n.d.
J7434	425	26.5	2.2	0.155	0.122	n.d.	18	280	20	311	31.5	3.1	1.585	n.d.	n.d.
75121	408	19	2.66	0.1	0.15	n.d.	168	202	17	292	29	3	n.d.	n.d.	n.d.
75122	410	21	2.65	0.09	0.16	n.d.	356	102	18	295	29	2.9	n.d.	n.d.	n.d.
75123	402	18	2.43	0.118	0.16	n.d.	3	286	17	292	29	3	n.d.	n.d.	n.d.
75124	410	18	2.37	0.1	0.13	n.d.	327	119	17	293	30	3	n.d.	n.d.	n.d.
75125	405	21	2.43	0.11	0.13	n.d.	324	116	17	299	30	2.9	n.d.	n.d.	n.d.
F7622	10	4.3	0.01	n.d.	n.d.	n.d.	38	0	3.6	3	7.4	<.1	n.d.	n.d.	n.d.
F7644	450	20.5	2.35	n.d.	n.d.	n.d.	382	116	33	287	30	2.95	n.d.	n.d.	n.d.
F7645	24	4.7	0.02	n.d.	n.d.	n.d.	38	0	7	6	8.2	0.1	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-pH	l-pH	SiO2	Fe	Mn	Ca	Mg
UPPER GEYSER BASIN BISCUIT BASIN (CONTINUED)																
C7650	76F22	MIDWAY PICNIC GROUND	44 30.5	110 49.94	UNAME	S	n.d.	Z	n.d.	n.d.	7.18	59.6	n.d.	n.d.	2.3	0.623
J7725	77I28	NR RUSTY GEY JUST ABV.	44 29.09	110 51.09	UNAME	S	A	D	74	n.d.	8.81	276	0.07	<.01	1.05	0.142
C7753	76F22	SAPPHIRE GEY CRATER	44 29.104	110 51.268	SAPPH	G	n.d.	Z	93	n.d.	9.27	179	n.d.	n.d.	0.3	<.01
UPPER GEYSER BASIN HILLSIDE SPRINGS																
J7503	75F05	SPG BASE OF HILLSIDE	44 28.744	110 52.009	UNAME	S	E	D	68	7.3	7.48	229	n.d.	n.d.	6.6	0.13
J7504	75F05	NORTHERN SECTION	44 28.71	110 52.055	UNAME	S	F	D	84.5	7.2	7.58	186	n.d.	n.d.	7.4	0.142
J7505	75F05	SOUTHERN SPG IN N.SECT.	44 28.679	110 52.054	UNAME	S	I	D	85	7.1	7.19	183	n.d.	n.d.	7.45	0.143
J7506	75F05	SOUTHERN SPG IN S.SECT.	44 28.685	110 52.042	UNAME	S	J	D	81	7.7	8.11	186	n.d.	n.d.	7.35	0.209
J7507	75F05	NORTHERN SPG IN S. SECT	44 28.696	110 52.042	UNAME	S	I	D	81	7.3	8.07	186	n.d.	n.d.	7.4	0.21
J7508	75F05	WESTERN SPG IN S.SECT.	44 28.682	110 52.068	ASTA	S	J	D	86	7.3	7.29	182	n.d.	n.d.	7.3	0.21
UPPER GEYSER BASIN MYSTIC FALL SPRINGS																
J7501	75F04	SPG BRINK OF FALLS (E)	44 29.04	110 52.35	UNAME	S	C	D	90	8	7.51	196	n.d.	n.d.	7.85	0.12
J7502	75F04	SPG BRINK OF FALLS (W)	44 29.04	110 52.35	UNAME	S	E	D	92	7.9	7.71	186	n.d.	n.d.	7.87	0.075
YM897	78F03	MYSTIC FALLS	44 29.04	110 52.35	UNAME	S	n.d.	n.d.	n.d.	n.d.	7.54	191	n.d.	n.d.	6.2	0.23
MIDWAY GEYSER BASIN EXCELSIOR GROUP																
T7486	74J00	EXCELSIOR GEYSER CRATER	44 31.577	110 50.08	EXCEL	G	n.d.	E	87	n.d.	8.98	281	n.d.	n.d.	1.83	0.15
J7630	76J01	EXCELSIOR CRATER	44 31.577	110 50.08	EXCEL	G	n.d.	A&D	93	7.4	8.61	275	n.d.	n.d.	1.8	0.02
MIDWAY GEYSER BASIN RABBIT CREEK GROUP																
J7440	74J03	ACROSS FRM FTN FRT ROAD	44 30.801	110 49.818	TILL	G	A	D	78	9	9.33	333	<.02	<.02	0.66	<.01
J7441	74J03	SPRING BY Y5 DRILL HOLE	44 30.845	110 49.668	UNAME	S	E	D	92	8.2	8.77	226	<.02	<.02	0.2	<.01
J7442	74J03	LRG FLOWING WRM SPG	44 30.904	110 49.44	UNAME	S	J	D	72	6.9	8.75	197	<.02	<.02	0.8	0.02
J7443	74J03	WARM SPG	44 31.043	110 48.787	UNAME	S	G	D	42	7	9.19	197	<.02	<.02	0.3	<.01
J7517	75F07	HEADWATERS OF RABBIT CK	44 32.149	110 48.869	UNAME	P	J	D	78	9.7	9.87	283	n.d.	n.d.	0.35	0.022
J7518	75F07	LG POOL S OF 17. DEEP B	44 32.13	110 48.87	UNAME	S	G	D	91.5	9.5	9.72	213	n.d.	n.d.	0.35	0.021

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
UPPER GEYSER BASIN BISCUIT BASIN (CONTINUED)															
C7650	31	3.9	0.06	n.d.	n.d.	n.d.	36	0	5.8	14	0.61	0.15	n.d.	n.d.	n.d.
J7725	450	14.5	2.52	0.105	0.058	n.d.	602	n.d.	17	298	28.4	2.8	n.d.	1.8	n.d.
C7753	485	17.5	2.03	n.d.	n.d.	n.d.	350	115	17	401	29	3.1	n.d.	n.d.	0.01
UPPER GEYSER BASIN HILLSIDE SPRINGS															
J7503	130	10.9	0.5	n.d.	n.d.	n.d.	256	0	13	43.6	10.5	0.75	0.263	n.d.	n.d.
J7504	140	7	0.66	0.054	0.054	n.d.	234.5	0	15	67.6	11.5	0.9	0.326	n.d.	n.d.
J7505	138	7	0.65	n.d.	n.d.	n.d.	256	0	16	65.6	10.8	0.9	0.329	n.d.	n.d.
J7506	140	7.2	0.71	0.054	0.049	n.d.	237	0	16	69.4	11.5	0.95	0.347	n.d.	n.d.
J7507	142	7.2	0.74	0.054	0.051	n.d.	235.8	0	22	69.4	11.7	1.05	0.359	n.d.	n.d.
J7508	141	7.2	0.71	0.055	0.054	n.d.	249	0	15	67.6	11.5	1	0.34	n.d.	n.d.
UPPER GEYSER BASIN MYSTIC FALL SPRINGS															
J7501	130	6.3	0.52	0.044	0.046	n.d.	229	0	13	61.8	11.5	0.9	0.331	n.d.	n.d.
J7502	134	6.3	0.52	0.042	0.048	n.d.	256	0	14	59	11.5	0.9	0.326	n.d.	n.d.
YM897	132	7	0.58	0.045	0.035	n.d.	226	0	16	61	12	0.75	n.d.	n.d.	n.d.
MIDWAY GEYSER BASIN EXCELSIOR GROUP															
T7486	348	15.4	2.45	n.d.	n.d.	n.d.	365	85.5	18	263	23.5	2.8	n.d.	n.d.	n.d.
J7630	410	12	2.65	n.d.	n.d.	n.d.	563	n.d.	19	251	22.5	2.65	n.d.	n.d.	n.d.
MIDWAY GEYSER BASIN RABBIT CREEK GROUP															
J7440	365	11.5	3.4	0.103	0.348	n.d.	197	152	16	260	23	2.9	1.67	n.d.	n.d.
J7441	380	11.5	3.1	0.09	0.4	n.d.	303	82	15	271	23	2.7	1.59	n.d.	n.d.
J7442	275	10.8	3.1	0.087	0.305	n.d.	193	68	13	216	18.8	2.2	1.35	n.d.	n.d.
J7443	330	14.3	4.4	0.129	0.472	n.d.	126	114	18	261	23.8	2.8	1.785	n.d.	n.d.
J7517	378	14	5	0.152	0.548	n.d.	412	n.d.	19	321	27	3.1	1.727	n.d.	n.d.
J7518	340	14	4.51	0.123	0.478	n.d.	383	n.d.	20	291	25	2.75	1.598	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
MIDWAY GEYSER BASIN RABBIT CREEK GROUP (CONTINUED)																
J7519	75F07	E OF 18, NOISES LIKE G	44 32.136	110 48.867	UNAME	S	A	D	90	9.5	9.78	266	n.d.	n.d.	0.37	0.02
J7520	75F07	LRG P.E OF 18, UPSLOPE	44 32.129	110 48.879	UNAME	P	I	D	85.5	9.3	9.47	236	n.d.	n.d.	0.65	0.02
J7521	75F07	LRG POOL, SOUTH SECTION	44 32.095	110 48.875	UNAME	P	H	D	41	8.6	9.15	216	n.d.	n.d.	0.8	0.03
J7522	75F07	SOUTH END, FRACT. ZONE	44 31.899	110 48.877	UNAME	S	B	D	91	8.8	8.98	228	n.d.	n.d.	0.9	0.02
J7523	75F07	50M NW OF J7522	44 31.932	110 48.883	UNAME	S	n.d.	D	83.5	8.7	8.96	212	n.d.	n.d.	0.8	0.02
J7524	75F07	100M NW OF J7523	44 31.965	110 48.888	UNAME	S	D	D	78	8.6	8.93	211	n.d.	n.d.	0.73	0.015
J7525	75F07	50M NW OF J7524	44 31.965	110 48.89	UNAME	S	B	D	76	8.6	8.97	204	n.d.	n.d.	0.8	0.02
J7526	75F07	ROW OF MANY SML VENTS	44 32.004	110 48.897	UNAME	S	A	D	46	8.5	9.03	222	n.d.	n.d.	0.8	0.03
J7629	76J01	SPRING BY Y5 DRILL HOLE	44 30.845	110 49.668	UNAME	S	E	D	93	7.9	8.54	219	n.d.	n.d.	0.5	0.01
F7714	77I30	SPRING BY Y5 DRILL HOLE	44 30.845	110 49.668	UNAME	S	E	A&D	93	7.4	8.51	213	<.1	<.02	0.8	0.011
MIDWAY GEYSER BASIN FLOOD GROUP																
J7436	74J03	GEYS ON E BANK ACR FM G	44 31.235	110 49.706	UNAME	G	n.d.	D	88	8.4	8.95	236	<.02	<.02	0.48	<.01
J7437	74J03	POOL WITH PIPE IN IT	44 31.267	110 49.734	UNAME	P	G	D	76	8.4	9.01	247	<.02	<.02	0.4	<.01
J7438	74J03	SPG IN TILL DEPOSITS, S	44 31.147	110 49.598	UNAME	S	J	D	80	7.5	8.58	212	0.02	<.02	0.4	0.015
J7439	74J03	LRG SUPERHEATED SPG	44 31.145	110 49.665	UNAME	S	J	D	95	8.4	8.43	253	<.02	<.02	0.54	<.01
LOWER GEYSER BASIN FOUNTAIN GROUP																
J7460	74J05	FOUNTAIN GEYSER POOL	44 33.004	110 48.326	FOUNT	P	A	D	58	n.d.	8.84	325	<.02	<.02	0.7	0.01
75144	75J16	FOUNTAIN FLATS N20 KALD	44 33.234	110 48.72	UNAME	S	G	D	93.5	8.2	8.74	136	n.d.	n.d.	1.12	0.01
LOWER GEYSER BASIN WHITE CREEK GROUP																
J7444	74J04	SOURCE OF B WHITE CREEK	44 26.133	110 44.617	UNAME	S	I	D	72.5	5	8.07	137	0.02	0.47	14.2	0.4
J7445	74J04	END OF WHITE CR VALLEY	44 31.694	110 47.29	UNAME	S	J	D	71	5.9	8.31	159	<.02	0.09	11.8	0.42
J7446	74J04	N40E 10M TO FALLS	44 31.777	110 47.523	UNAME	S	E	D	85	n.d.	8.29	183	<.02	0.14	11.2	0.21
J7447	74J04	WHITE CREEK FALLS	44 31.727	110 47.66	UNAME	S	J	D	74	6.5	8.43	169	<.02	0.07	13.4	0.26
J7448	74J04	NR CONFLUENCE OF A & B	44 27.632	110 44.136	UNAME	S	A	D	61	4.8	8.25	158	<.02	0.1	14.5	0.39

SAMP#	Na	K	Li	Rb	Cs	NH4	HC03	CO3	SO4	Cl	F	B	As	H2S	Zn
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MIDWAY GEYSER BASIN RABBIT CREEK GROUP (CONTINUED)

J7519	357	13.5	4.7	0.144	0.532	n.d.	397	n.d.	17	305	26	3	1.669	n.d.	n.d.
J7520	306	12	3.8	0.112	0.532	n.d.	332	n.d.	24	248	22	2.42	1.367	n.d.	n.d.
J7521	355	11.2	4.98	n.d.	n.d.	n.d.	344	n.d.	17	302	27	2.75	1.822	n.d.	n.d.
J7522	318	14.2	3.98	0.104	0.398	n.d.	401	n.d.	14	248	21.5	2.36	1.461	n.d.	n.d.
J7523	310	14	3.95	0.097	0.412	n.d.	385	n.d.	15	248	22	2.53	1.516	n.d.	n.d.
J7524	330	12	4.1	0.107	0.433	n.d.	426	n.d.	15	258	22	2.45	1.524	n.d.	n.d.
J7525	330	12	4.46	0.104	0.463	n.d.	417	n.d.	15	252	21.5	2.75	1.517	n.d.	n.d.
J7526	348	12	4.65	0.107	0.461	n.d.	430	n.d.	16	258	22	2.63	1.55	n.d.	n.d.
J7629	366	8.2	3.2	n.d.	n.d.	n.d.	489	n.d.	15	248	21.5	2.6	n.d.	n.d.	n.d.
F7714	345	9	3	n.d.	n.d.	n.d.	470	n.d.	15	262	21	2.9	n.d.	n.d.	n.d.

MIDWAY GEYSER BASIN FLOOD GROUP

J7436	313	12	3.1	0.15	0.59	n.d.	245	93	18	226	19.5	2.3	1.6	n.d.	n.d.
J7437	340	11	3.2	0.074	0.378	n.d.	266	99	19	240	20.4	2.4	1.8	n.d.	n.d.
J7438	258	11.8	3.2	0.124	0.442	n.d.	219	56	14	206	16.2	2	1.245	n.d.	n.d.
J7439	320	12	3.9	0.102	0.307	n.d.	246	86	15	238	20.4	2.5	1.5	n.d.	n.d.

LOWER GEYSER BASIN FOUNTAIN GROUP

J7460	390	16.6	2.5	n.d.	n.d.	n.d.	224	111	28	320	22	3.6	2.615	n.d.	n.d.
75144	338	18	2.33	n.d.	n.d.	n.d.	397	n.d.	23.5	290	20	3.3	n.d.	n.d.	n.d.

LOWER GEYSER BASIN WHITE CREEK GROUP

J7444	45	14.1	0.26	0.08	0.015	n.d.	117	0	23	18.9	6.8	0.2	<.018	n.d.	n.d.
J7445	65	16.6	0.26	0.092	0.019	n.d.	136	0	23	34.3	8.3	0.4	<.007	n.d.	n.d.
J7446	100	19.6	0.72	0.111	0.043	n.d.	172	0	21	70	10.2	0.8	0.24	n.d.	n.d.
J7447	70	17.6	0.3	0.096	0.016	n.d.	146	0	24	50	8.7	0.5	<.023	n.d.	n.d.
J7448	45	15.1	0.26	0.076	<.01	n.d.	122	0	20	16.1	6.8	0.1	<.018	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
LOWER GEYSER BASIN WHITE CREEK GROUP (CONTINUED)																
J7449	74J04	NR FRK IN CREEK, TREE X 44	28.194	110 44.571	UNAME	S	A	D	93	7.1	8.6	223	<.02	0.07	5.2	0.01
J7450	74J04	LARGEST POOL	44 31.939	110 47.779	5_SIS	S	A	D	85	8.5	9.5	272	<.02	<.02	0.3	<.01
J7451	74J04	2. OUTFLOWING CHANNELS	44 30.528	110 46.517	OCTOP	S	G	D	90	7.5	8.79	270	<.02	<.02	0.2	<.01
J7452	74J04	SML SPG ON UPSTRM SIDE	44 31.887	110 47.615	UNAME	S	A	D	75	7	8.64	298	<.02	<.02	0.1	<.01
J7453	J7404	N52W OF WHITE DOME GEYS	44 32.3	110 47.699	UNAME	G	A	D	80	8.5	9.11	282	<.02	<.02	1.2	<.01
J7454	74J05	SML SPR ON W SIDE MDW W	44 29.96	110 52.811	UNAME	S	A	D	42	n.d.	8	120	<.02	<.02	3.2	0.24
75106	75J09	UP WHITE CR. AFT SNOWST	44 31.694	110 47.29	UNAME	S	F	D	84.5	5.9	7.93	163	n.d.	n.d.	12	0.22
75107	75J09	BRINK OF 1ST WATERFALL	44 31.777	110 47.523	UNAME	S	B	D	79	5.9	7.91	176	n.d.	n.d.	12.1	0.24
75108	75J09	SOUTHERN CR. FORK	44 26.133	110 44.617	UNAME	S	I	D	73	5.5	7.7	136	n.d.	n.d.	14.5	0.395
75109	75J09	B CR CUTS WHITE CREEK	44 27.632	110 44.136	UNAME	S	A	D	60.5	5.3	7.04	n.d.	n.d.	n.d.	14.5	0.542
75110	75J09	N SIDE CR. 1ST BOIL SPG	44 28.194	110 44.571	UNAME	S	D	D	93	7.8	8.67	213	n.d.	n.d.	5.1	0.024
75111	75J09	NR BUFFALO POOL	44 28.863	110 45.784	UNAME	S	B	D	79	8.8	9.36	262	n.d.	n.d.	0.79	0.06
75112	75J09	FIVE SISTERS	44 31.939	110 47.779	5SIS	S	D	D	89	8.4	9.18	260	n.d.	n.d.	0.55	<.01
75113	75J09	OUT OF GASSY VENT	44 30.528	110 46.517	OCTOP	S	F	D	91	8.1	8.78	257	n.d.	n.d.	0.53	0.14
75114	75J09	SURPRISE POOL	44 32.155	110 48.096	SURPR	P	G	D	95	8.8	8.95	280	n.d.	n.d.	0.47	0.14
75142	75J15	SHELF SPRING	44 32.688	110 47.44	SHELF	S	D	D	95.5	8.5	9.1	342	n.d.	n.d.	0.72	<.01
LOWER GEYSER BASIN BLACK WARRIOR GROUP																
T7450	74G11	CONSTANT SPOUTER	44 32.651	110 47.154	STEAD	G	n.d.	D&E	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	16	0.045
J7455	74J05	SPG N SIDE RD, SEE F327	44 32.959	110 47.177	UNAME	S	G	D	93.5	n.d.	8.36	205	<.02	0.07	11	0.01
J7456	74J05	N SIDE RD SAME AS F3297	44 32.946	110 47.275	UNAME	S	C	D	73	n.d.	8.35	243	<.02	0.09	10.7	0.04
J7457	74J05	LARGE PONDLIKE SPRING	44 32.523	110 47.25	ZOMAR	S	J	D	74	n.d.	8.34	190	0.02	0.05	12.8	0.05
J7458	74J05	SPG HIDING UNDER TREE	44 32.503	110 47.36	UNAME	S	J	D	85	n.d.	8.32	172	<.02	<.02	15.2	0.09
J7509	75F05	ACROSS RD FROM STEADY	44 32.802	110 47.15	YHOPE	G	J	D	94.5	8.1	8.44	207	n.d.	n.d.	14.6	0.04
J7510	75F05	EASTERN ACTIVE GEYSER	44 32.816	110 47.147	UNAME	G	J	D	93.5	8	8.35	209	n.d.	n.d.	12.2	0.04
75115	75J10	SAME AS 7509, NOW GEYS	44 32.802	110 47.150	YHOPE	G	J	D	94	7.5	8.48	195	n.d.	n.d.	11.2	0.045
75116	75J10	SAME AS 7510, NOW GEYS	44 32.816	110 47.147	UNAME	G	J	D	93	7.8	8.84	195	n.d.	n.d.	10.2	0.05
F7712	77I30	BLACK WARRIOR GEYSER	44 32.651	110 47.154	STEAD	G	A	A&D	95	8.4	8.05	191	<.01	0.1	9.5	0.043



SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
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LOWER GEYSER BASIN WHITE CREEK GROUP (CONTINUED)

J7449	200	19.2	1.7	0.124	n.d.	n.d.	160	55	18	143	13.7	1.6	0.832	n.d.	n.d.
J7450	325	16	3.4	0.12	0.28	n.d.	53	152	19	265	23	2.7	1.625	n.d.	n.d.
J7451	318	16	3.1	0.121	0.266	n.d.	192	76	18	255	23	2.7	1.535	n.d.	n.d.
J7452	355	16.2	3.6	0.098	0.243	n.d.	226	73	19	304	22	3	2.855	n.d.	n.d.
J7453	295	15	2.4	0.099	0.251	n.d.	103	95	21	263	17.4	2.7	2.42	n.d.	n.d.
J7454	80	9	0.74	n.d.	n.d.	n.d.	143	0	7.4	57.1	5	0.6	0.443	n.d.	n.d.
75106	79.5	16	0.28	0.07	0.02	n.d.	142	0	31	49	10.4	0.4	n.d.	n.d.	n.d.
75107	89	19	0.53	0.09	0.02	n.d.	211	0	23	66	10.4	0.5	n.d.	n.d.	n.d.
75108	42	14	0.25	0.06	<.01	n.d.	145	0	23	23	7.85	<.1	n.d.	n.d.	n.d.
75109	44	15	0.26	0.06	0.01	n.d.	145	0	22	23	7.85	0.3	n.d.	n.d.	n.d.
75110	183	19	1.79	0.1	0.4	n.d.	258	n.d.	17	146	13.7	1.4	n.d.	n.d.	n.d.
75111	306	17	3.48	n.d.	n.d.	n.d.	58	144	18	270	24	2.8	n.d.	n.d.	n.d.
75112	304	16	3.37	0.106	0.27	n.d.	113	113	19	267	24	2.6	n.d.	n.d.	n.d.
75113	295	17	3.2	n.d.	n.d.	n.d.	180	81	19	262	23	2.6	n.d.	n.d.	n.d.
75114	333	15	3.6	0.1	0.68	n.d.	194	81	25	313	24	3.1	n.d.	n.d.	n.d.
75142	332	20.6	2.3	n.d.	n.d.	n.d.	260	n.d.	21.5	346	18.6	3.8	n.d.	n.d.	n.d.

LOWER GEYSER BASIN BLACK WARRIOR GROUP

T7450	110	15.3	0.4	n.d.	n.d.	n.d.	193	0	28	55	8.8	0.5	n.d.	n.d.	n.d.
J7455	85	14.3	0.43	n.d.	n.d.	n.d.	166	n.d.	29	32.3	9.7	0.4	<.014	n.d.	n.d.
J7456	96	22.5	0.43	n.d.	n.d.	n.d.	188	n.d.	44	37.7	9	0.4	<.009	n.d.	n.d.
J7457	98	16.7	0.43	0.11	0.061	n.d.	178	n.d.	24	61.3	10	0.7	<.041	n.d.	n.d.
J7458	90	16.5	0.4	n.d.	n.d.	n.d.	164	n.d.	26	57.9	9.3	0.6	<.016	n.d.	n.d.
J7509	95	16.3	0.58	0.12	0.17	n.d.	163	n.d.	21	50.3	21.7	0.6	0.015	n.d.	n.d.
J7510	96	15.8	0.52	0.089	0.058	n.d.	172	n.d.	25	48.7	10	0.5	0.015	n.d.	n.d.
75115	89	16	0.43	0.09	0.05	n.d.	174	n.d.	18	52	10.4	0.4	n.d.	n.d.	n.d.
75116	92.5	16	0.43	0.14	0.2	n.d.	223	n.d.	25	54	10.6	0.4	n.d.	n.d.	n.d.
F7712	105	14	0.3	n.d.	n.d.	n.d.	171	0	25	61	10	0.5	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
LOWER GEYSER BASIN RIVER GROUP																
T7401	74G05	NORTH OF AZURE	44 33.56	110 49.862	UNAME	S	n.d.	D&E	65	8.4	n.d.	206	n.d.	n.d.	1.05	0.04
T7402	74G05	LARGE POOL	44 33.56	110 49.839	AZURE	P	n.d.	D&E	65	8.95	n.d.	252	n.d.	n.d.	1.1	0.27
T7404	74G05	"DEAD ELK SPG"	44 33.582	110 49.965	CAVRN	S	n.d.	D&E	76	8.35	n.d.	206	n.d.	n.d.	0.95	0.01
T7410	74G05	LOWER RIVER GROUP	44 33.27	110 49.793	ARMOR	S	n.d.	D&E	91	9.2	n.d.	228	n.d.	n.d.	0.6	0.01
T7411	74G05	SEE YF317	44 33.406	110 49.933	UNAME	S	n.d.	D&E	n.d.	n.d.	n.d.	223	n.d.	n.d.	1.32	0.04
T7412	74G05	SAME AS YF319	44 33.369	110 49.923	FORTR	G	n.d.	D&E	94.5	9.2	n.d.	234	n.d.	n.d.	0.55	<.01
T7418	74G06	ACROSS FROM DIADEM	44 33.452	110 49.993	MOUND	G	n.d.	D&E	95	8.5	n.d.	256	n.d.	n.d.	0.95	0.01
T7421	74G06	SAME AS YM 192	44 33.381	110 49.976	UNAME	S	n.d.	D&E	86	8	n.d.	174	n.d.	n.d.	1.45	0.04
T7422	74G06	SAME AS YM 191	44 33.357	110 50.08	UNAME	S	n.d.	D&E	80	n.d.	7	238	n.d.	n.d.	0.8	0.03
T7424	74G06	SAME AS F419 &/OR M181	44 33.319	110 49.897	UNAME	S	n.d.	D&E	80	n.d.	8.9	208	n.d.	n.d.	1.05	0.06
T7425	74G06	SAME AS YM 179	44 33.395	110 49.904	UNAME	S	n.d.	D&E	83.5	8.1	n.d.	199	n.d.	n.d.	0.62	0.01
T7441	74G07	SAME AS YM 614	44 33.703	110 0.963	UNAME	S	n.d.	D&E	n.d.	n.d.	n.d.	183	n.d.	n.d.	1.25	0.09
J7558	75F11	FES2 DEPOSITING SPG	44 33.455	110 49.853	UNAME	S	A	D	81	7.2	6.96	258	n.d.	n.d.	1.2	<.01
J7559	75F11	SPG SW OF AZURE	44 33.369	110 49.923	UNAME	S	A	D	92	7.4	7.93	240	n.d.	n.d.	0.91	0.053
J7560	75F11	NR FTN FRT BRDG	44 33.77	110 50.271	OJO	S	J	D	95.5	7.8	7.74	230	n.d.	n.d.	0.75	<.01
H76_?	76H00	NR FTN FRT BRDG	44 33.770	110 50.270	OJO	S	J	H	94	n.d.	8.56	n.d.	n.d.	n.d.	0.43	0.025
J7604	76I24	NR FTN FRT BRDG	44 33.77	110 50.271	OJO	S	J	D	95	6.8	8.46	221	<.10	<.02	1	0.01
J7631	76I30	SPG FLOWING INTO DIA	44 33.422	110 49.821	UNAME	S	G	A&D	n.d.	6.8	8.38	298	n.d.	n.d.	1.4	0.012
J7632	76I30	LRG POOL ACROSS FRM MOU	44 33.441	110 49.862	DIADM	P	D	A&D	80	7.2	9.11	301	n.d.	n.d.	1.4	0.013
F7711	77I30	NR FTN FRT BRDG	44 33.77	110 50.271	OJO	S	J	A&D	94	7.4	8.12	220	<.10	<.02	1.2	0.027
LOWER GEYSER BASIN IMPERIAL GROUP																
J7545	75F10	TWIN BUTTES AREA	44 31.901	110 52.514	IMPER	G	n.d.	D	89	8.7	9.16	236	n.d.	n.d.	0.96	<.01
J7546	75F10	TWIN BUTTES AREA	44 31.898	110 52.349	SPRAY	G	I	D	89	8.9	9.1	223	n.d.	n.d.	0.99	<.01
J7603	76I24	TWIN BUTTES AREA	44 31.898	110 52.349	SPRAY	G	G	D	78	8.6	9.33	211	<.1	<.02	1.2	0.009

SAMP#	Na	K	Li	Rb	Cs	NH4	HC03	C03	S04	Cl	F	B	As	H2S	Zn
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LOWER GEYSER BASIN RIVER GROUP

T7401	333	9.5	3.38	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	27	3.8	n.d.	n.d.	n.d.
T7402	386	14.5	2.7	n.d.	n.d.	n.d.	239	n.d.	39.2	361	28	3.8	n.d.	n.d.	n.d.
T7404	350	10	3.41	n.d.	n.d.	n.d.	220	0	60.1	337	26	3.5	n.d.	n.d.	n.d.
T7410	360	13	2.2	n.d.	n.d.	n.d.	283	n.d.	30	342	24	3.8	n.d.	n.d.	n.d.
T7411	338	15	2.2	n.d.	n.d.	n.d.	260	n.d.	36	336	21.5	3.6	n.d.	n.d.	n.d.
T7412	362	13	2.17	n.d.	n.d.	n.d.	327	n.d.	24	340	23	3.9	n.d.	n.d.	n.d.
T7418	370	14.5	2.14	n.d.	n.d.	n.d.	243	n.d.	26.4	352	25	3.8	n.d.	n.d.	n.d.
T7421	335	7.5	2.44	n.d.	n.d.	n.d.	309	0	37	296	22.5	3.3	n.d.	n.d.	n.d.
T7422	356	7.3	2.73	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	25	3.5	n.d.	n.d.	n.d.
T7424	393	12	2.09	n.d.	n.d.	n.d.	333	n.d.	32	328	21.5	3.7	n.d.	n.d.	n.d.
T7425	375	17.5	2.02	n.d.	n.d.	n.d.	223	0	37	355	25	3.9	n.d.	n.d.	n.d.
T7441	268	8.2	2.65	n.d.	n.d.	n.d.	99	n.d.	113	259	20.5	3	n.d.	n.d.	n.d.
J7558	317	15	2.49	n.d.	n.d.	n.d.	191	0	46	312	27.5	3.9	1.515	n.d.	n.d.
J7559	302	13	2.44	n.d.	n.d.	n.d.	191	0	42	302	26.5	3.4	1.407	n.d.	n.d.
J7560	330	10	3.55	0.17	0.4	n.d.	241	0	26	318	30	3.8	1.437	n.d.	n.d.
H76_?	300	8	4.04	0.155	0.38	n.d.	214	0	36	324	30	3.53	n.d.	n.d.	n.d.
J7604	320	10	3.8	n.d.	n.d.	n.d.	246	n.d.	26	326	30	3.85	n.d.	n.d.	n.d.
J7631	330	17.7	2.7	n.d.	n.d.	n.d.	156	17	45	329	30	3.65	n.d.	n.d.	n.d.
J7632	334	18	2.71	n.d.	n.d.	n.d.	139	41	47	327	30	3.7	n.d.	n.d.	n.d.
F7711	325	10	4	n.d.	n.d.	n.d.	261	0	21	288	28.5	3.7	n.d.	n.d.	n.d.

LOWER GEYSER BASIN IMPERIAL GROUP

J7545	308	13	2.38	0.15	0.28	n.d.	413	n.d.	23	201	21	2.25	0.835	n.d.	n.d.
J7546	287	10	2.22	0.14	0.194	n.d.	383	n.d.	19	184	19	2.2	0.736	n.d.	n.d.
J7603	280	10	2	n.d.	n.d.	n.d.	391	n.d.	20	198	20.5	2.6	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
LOWER GEYSER BASIN FAIRY GROUP																
J7701	77I20	SPOUTER N. END FAIRY M.	44 33.027	110 51.376	UNAME	G	F	D	92	8.2	8.64	271	0.03	<.01	1.9	0.12
J7702	77I20	20' DIA LARGE POOL	44 33.007	110 51.353	UNAME	P	B	D	52	7.7	8.87	243	<.02	<.01	0.7	0.03
J7715	77I26	NR TRAIL MARKER	44 32.994	110 51.174	UNAME	S	A	D	78	6.9	8.13	219	<.02	<.01	0.8	0.035
J7716	77I26	POOL NR TRAIL MARKER	44 33.063	110 51.055	UNAME	P	B	D	81	n.d.	8.83	261	<.02	<.01	0.55	0.015
J7717	77I26	S OF TRAIL MARKER	44 32.935	110 51.17	UNAME	S	A	D	88.5	8.3	8.97	313	0.02	<.01	0.78	0.015
J7718	77I26	MIDDLE OF MEADOW	44 32.892	110 51.17	UNAME	S	C	D	64	9.4	9.69	363	0.04	<.01	0.4	<.01
J7719	77I26	ALONG TRAIL FROM IMPER	44 32.869	110 50.78	UNAME	S	I	D	94	8.1	8.85	247	7.3	<.01	0.88	0.015
J7720	77I26	SPOUTER NR SW ALONG TR	44 32.336	110 51.367	UNAME	G	E	D	94	9.2	9.45	263	<.02	<.01	0.35	<.01
J7721	77I26	200M FROM TRAIL TO IMP	44 32.451	110 51.551	UNAME	S	E	D	91.5	7.2	8.46	197	<.02	0.013	2.23	0.017
J7722	77I26	W SIDE BASE OF HILL	44 32.612	110 51.638	UNAME	S	J	D	93	7.6	8.64	146	<.02	0.013	2.25	0.018
J7723	77I26	SW SIDE OPENING TO GR	44 32.514	110 51.606	UNAME	S	F	D	84	7.4	8.44	138	<.02	0.017	2.33	0.071
J7724	77I26	SW CENTER TREES	44 32.579	110 51.431	UNAME	S	A	D	67	n.d.	9.09	151	<.02	<.01	0.75	0.36
LOWER GEYSER BASIN SENTINEL GROUP																
J7547	75F10	RED TERRACE	44 33.93	110 51.783	RED	S	n.d.	D	96	9.5	9.61	349	n.d.	n.d.	0.31	<.01
J7548	75F10	STEEP CONE	44 33.964	110 51.771	STEEP	G	F	D	96	8.3	8.52	357	n.d.	n.d.	0.23	<.01
J7549	75F10	FLAT CONE	44 34.063	110 51.789	FLAT	S	E	D	96	8.5	8.83	315	n.d.	n.d.	0.36	<.01
J7550	75F10	QUEENS LAUNDRY	44 33.816	110 52.156	QUEEN	S	J	D	90	8.2	8.44	315	n.d.	n.d.	0.41	<.01
J7601	76I24	STEEP CONE	44 33.964	110 51.771	STEEP	G	B	D	95	7.3	8.67	336	0.2	0.02	0.4	0.02
J7602	76I24	QUEENS LAUNDRY	44 33.816	110 52.156	QUEEN	S	J	D	89	7.5	8.78	278	<.1	<.02	0.6	0.005
LOWER GEYSER BASIN NEZ PERCE GROUP																
J7461	74J05	ABOVE Y-13	44 34.343	110 48.762	UNAME	S	n.d.	D	88	n.d.	8.43	234	<.02	0.02	1	<.01
J7462	74J05	ACR NEZ RD FROM Y-13	44 34.277	110 48.651	UNAME	S	A	D	68	n.d.	9.85	280	<.02	<.02	0.5	<.01
J7463	74J05	@ FIREHOLE R OFF F.F RD	44 33.954	110 48.963	UNAME	S	n.d.	D	93	n.d.	8.69	233	<.02	0.02	1.1	0.02
J7511	75F05	NEZ CREEK AREA	44 34.061	110 48.302	SNORT	S	F	D	95	9.3	9.46	244	n.d.	n.d.	1.5	0.02
J7512	75F05	SPRING BY Y-13	44 34.277	110 48.651	UNAME	S	B	D	91	8.7	8.94	290	n.d.	n.d.	0.8	0.02

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
LOWER GEYSER BASIN FAIRY GROUP															
J7701	390	12.7	2.67	0.153	0.113	n.d.	425	n.d.	31	296	33	3.2	n.d.	n.d.	0.01
J7702	405	10.8	2.05	0.125	0.115	n.d.	439	n.d.	25	305	32.5	3.2	n.d.	n.d.	n.d.
J7715	330	8.2	2.5	0.107	0.048	n.d.	187	0	175	261	28.3	3	n.d.	0.4	n.d.
J7716	365	13.5	2.85	0.148	0.162	n.d.	410	n.d.	38	315	32	3.4	n.d.	n.d.	n.d.
J7717	370	18	3.1	0.16	0.15	n.d.	429	n.d.	30	305	31	3.3	n.d.	1.4	0.01
J7718	382	21	3.4	0.192	0.205	n.d.	446	n.d.	40	316	33.5	3.5	n.d.	0.7	n.d.
J7719	418	10.2	2.42	0.11	0.1	n.d.	465	n.d.	25	294	30.3	3.2	n.d.	<.1	n.d.
J7720	441	10.5	1.42	0.088	0.01	n.d.	625	n.d.	20	264	28.4	2.9	n.d.	0.3	n.d.
J7721	349	5.8	1.16	0.05	n.d.	n.d.	438	0	21	197	28.4	2.4	n.d.	0.6	<.01
J7722	273	3.8	1.23	0.035	<.01	n.d.	315	n.d.	20	173	28.3	2.2	n.d.	<.1	n.d.
J7723	290	3.5	1.32	0.035	<.01	n.d.	341	0	22	182	26.9	2.1	n.d.	1	n.d.
J7724	367	11.2	1.23	0.095	0.08	n.d.	360	n.d.	20	287	28.9	3.1	n.d.	0.4	n.d.
LOWER GEYSER BASIN SENTINEL GROUP															
J7547	310	10	1.56	0.125	0.105	n.d.	314	n.d.	18	256	29	3.1	1.1	n.d.	n.d.
J7548	310	12	1.62	n.d.	n.d.	n.d.	312	n.d.	16	255	29	3.1	1.093	n.d.	n.d.
J7549	285	10	1.66	0.108	0.047	n.d.	303	n.d.	17	208	25.5	2.6	0.875	n.d.	n.d.
J7550	328	13	2.13	0.154	0.129	n.d.	389	0	22	226	26.5	3.75	1.007	n.d.	n.d.
J7601	280	12	1.4	n.d.	n.d.	n.d.	326	n.d.	20	163	26.5	3.05	n.d.	n.d.	n.d.
J7602	310	13	1.8	n.d.	n.d.	n.d.	398	n.d.	21	206	24.5	5.75	n.d.	n.d.	n.d.
LOWER GEYSER BASIN NEZ PERCE GROUP															
J7461	310	9.4	3.7	n.d.	n.d.	n.d.	215	0	26	318	33.5	3.7	1.41	n.d.	n.d.
J7462	365	15.3	4.3	n.d.	n.d.	n.d.	313	n.d.	24	330	33.5	3.9	1.53	n.d.	n.d.
J7463	345	12.1	3	n.d.	n.d.	n.d.	292	n.d.	26	290	35	3.4	1.65	n.d.	n.d.
J7511	311	10	3.58	0.162	0.521	n.d.	186	n.d.	21	331	31	3.8	1.639	n.d.	n.d.
J7512	337	13.5	4.12	n.d.	n.d.	n.d.	296	n.d.	21	311	32	3.58	1.32	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	F-PH	I-PH	SiO2	Fe	Mn	Ca	Mg
LOWER GEYSER BASIN NEZ PERCE GROUP (CONTINUED)																
J7628	76I30	SPRING BY Y-13	44 34.277	110 48.651	UNAME	S	B	D	96	8.4	9.11	317	n.d.	n.d.	1	0.023
F7713	77I30	SPRING BY Y-13	44 34.277	110 48.651	UNAME	S	J	A&D	93	7.2	9.21	257	<.1	<.02	1	0.014
TERRACE HOT SPRINGS																
T7448	74G10	TERRACE SPRING	44 33.930	110 51.783	TERRA	S	n.d.	D&E	65	n.d.	n.d.	n.d.	n.d.	n.d.	24.2	0.867
T7482	74J00	TERRACE SPRING	44 33.930	110 51.783	TERRA	S	n.d.	E	65	n.d.	9.06	142	n.d.	n.d.	n.d.	0.81
J7626	76I30	TERRACE SPRING	44 33.930	110 51.783	TERRA	S	J	D	59	5.9	9.21	193	n.d.	n.d.	23.2	0.92
J7627	76I30	MADISON JUNCTION HOTPOT	0 0	0 0	UNAME	S	I	D	39	n.d.	8.57	156	n.d.	n.d.	26.2	2.85
F7710	77I29	TERRACE SPRING	44 33.930	110 51.783	TERRA	S	J	A&D	59	6.2	7	141	<.1	0.15	19	0.8
GIBBON CANYON BERYL SPRINGS																
75140	75J14	BERYL SPRING	44 41.370	110 44.780	BERYL	S	I	D	92	7.4	n.d.	240	n.d.	n.d.	4.05	0.025
J7625	76I30	GIB MEADOWS ON GIB RIV	44 41.410	110 44.710	UNAME	S	G	D	52	4.7	8.15	179	n.d.	n.d.	15.3	1.32
F7628	76I28	S OF GIB MEADOW	44 41.380	110 44.68	UNAME	S	n.d.	A&D	86	3	7.94	313	12	0.2	3.5	0.6
F7633	76I29	IRON SPG IN GIB CANYON	44 39.620	110 46.080	IRON	S	J	A&D	30	5.5	7.7	139	n.d.	n.d.	15.8	0.92
F7434	76I30	GIB FALLS ALONG GIB R.	0 0	0 0	UNAME	S	A	A	35	4.8	7.85	178	n.d.	n.d.	14.4	1.45
GIBBON CANYON CHOCOLATE POTTS																
J7624	76I30	ONE NEAREST ROAD	44 42.635	110 44.438	UNAME	S	E	D	51	5.3	n.d.	108	n.d.	n.d.	23	1.58
GIBBON GEYSER BASIN SYLVAN SPRINGS																
J7421	74J01	NR OLD TREE @ B OF HILL	44 41.990	110 46.030	UNAME	S	J	D	85.5	6	7.59	588	0.08	<.02	1.68	<.01
J7422	74J01	BLUE COLORED SPG	44 42.090	110 45.990	UNAME	S	H	D	88.5	3.5	3.77	605	0.24	0.03	1.6	0.085
J7423	74J01	RUNOFF OF YJ7422	44 42.020	110 45.940	UNAME	S	A	D	80.5	1.6	1.38	273	3.5	0.02	0.75	0.304
GIBBON GEYSER BASIN ARTIST PAINT POTTS																
J7424	74J01	N END OF TRAIL	44 41.550	110 44.240	UNAME	S	G	D	93	8.5	8.88	188	<.02	<.02	1.56	<.01

SAMP#	Na	K	Li	Rb	Cs	NH4	HC03	CO3	SO4	Cl	F	B	As	H2S	Zn
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LOWER GEYSER BASIN NEZ PERCE GROUP (CONTINUED)

J7628	311	15.7	3.75	n.d.	n.d.	n.d.	151	67	33	314	n.d.	3.6	n.d.	n.d.	n.d.
F7713	325	13	4	n.d.	n.d.	n.d.	290	n.d.	22	313	31	4	n.d.	n.d.	n.d.

TERRACE HOT SPRINGS

T7448	340	33.8	0.63	n.d.	n.d.	n.d.	783	n.d.	14	128	6.3	1	n.d.	n.d.	n.d.
T7482	272	35	0.68	n.d.	n.d.	n.d.	281	200	13	74	7.1	0.9	n.d.	n.d.	n.d.
J7626	319	38.5	0.8	n.d.	n.d.	n.d.	617	84	28	75	7.3	0.7	n.d.	n.d.	n.d.
J7627	316	36.3	0.75	n.d.	n.d.	n.d.	689	46	27	75	7.3	0.9	n.d.	n.d.	n.d.
F7710	282	33	0.6	n.d.	n.d.	n.d.	753	0	12	73	6.8	0.9	n.d.	n.d.	n.d.

GIBBON CANYON BERYL SPRINGS

75140	393	24.3	6.2	n.d.	n.d.	n.d.	133	0	65	528	16.5	7.1	n.d.	n.d.	n.d.
J7625	64	11.3	0.13	n.d.	n.d.	n.d.	174	0	5	17	7.8	<.1	n.d.	n.d.	n.d.
F7628	120	36	0.8	n.d.	n.d.	n.d.	152	0	184	35	4.4	0.65	n.d.	n.d.	n.d.
F7633	38	6	0.04	n.d.	n.d.	n.d.	104	0	4	11	7.9	<.1	n.d.	n.d.	n.d.
F7434	49	5.5	0.09	n.d.	n.d.	n.d.	139	0	2	10	6.8	0.1	n.d.	n.d.	n.d.

GIBBON CANYON CHOCOLATE POTTS

J7624	122	24	0.81	n.d.	n.d.	n.d.	249	29	83	31	4.8	0.4	n.d.	n.d.	n.d.
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GIBBON GEYSER BASIN SYLVAN SPRINGS

J7421	433	53	5.6	0.59	0.5	n.d.	61	0	193	551	18.5	9.4	3.055	n.d.	n.d.
J7422	330	53.5	4.9	0.56	0.4	n.d.	0	0	205	417	14	2.1	2.475	n.d.	n.d.
J7423	33	20	0.3	n.d.	n.d.	n.d.	0	0	795	36	<.1	0.6	0.216	n.d.	n.d.

GIBBON GEYSER BASIN ARTIST PAINT POTTS

J7424	375	19.5	5.1	n.d.	n.d.	n.d.	94	n.d.	157	448	12.3	5.8	2.215	n.d.	n.d.
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SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg		
GIBBON GEYSER BASIN ARTIST PAINT POTTS (CONTINUED)																		
J7425	74J01	50M N. OF YJ7424	44	41.600	110	44.22	UNAME	P	n.d.	D	43	8.3	8.61	178	<.02	<.02	1.95	0.04
J7426	74J01	S. END OF TRAIL	44	41.530	110	44.280	UNAME	P	F	D	88	8.7	9.34	214	<.02	<.02	1.35	<.01
F7509	75G03	N OF P.P. TRAIL	44	41.600	110	44.220	UNAME	S	n.d.	A	n.d.	n.d.	9.1	284	n.d.	n.d.	0.42	0.15
GIBBON GEYSER BASIN GEYSER CREEK GROUP																		
J7587	75J04	W. SPG SOUTH END	44	41.302	110	43.664	UNAME	S	C	A&D	91.5	6	7.95	244	n.d.	n.d.	1.6	0.14
J7588	75J04	W. SPG 4TH LEVEL	44	41.542	110	43.697	UNAME	S	E	A&D	91	8.7	8.79	289	n.d.	n.d.	1.6	0.025
J7589	75J04	N OF ROCKPILE	44	41.393	110	43.68	UNAME	S	A	A&D	88	5.7	6.98	n.d.	n.d.	n.d.	7.8	0.55
J7590	75J04	ROCKPILE GEY NR VENT	44	41.388	110	42.814	ROCKP	G	n.d.	A&D	93	8.3	8.71	238	n.d.	n.d.	5.86	0.09
J7591	75J04	GEY 75M S OF ROCKPILE	44	41.37	110	43.745	UNAME	G	A	A&D	70	7	7.67	255	n.d.	n.d.	7	0.01
J7592	75J04	SPG 75M S OF YJ7591	44	41.465	110	43.781	UNAME	S	A	A&D	90	7.5	8	245	n.d.	n.d.	5.5	<.01
J7593	75J05	W. SLOPES OF GIB HILL	44	41.835	110	43.458	GIBGY	G	A	A&D	93	6.2	7.44	507	n.d.	n.d.	1.78	0.031
J7703	77I21	4TH LEVEL SI02 RIM	44	41.542	110	43.697	UNAME	S	C	D	94	9	9.09	209	0.02	0.13	0.75	0.045
J7704	77I21	N40E FROM YJ7703 20M	44	41.293	110	43.709	UNAME	n.d.	C	D	93	7.4	8.65	270	<.02	<.01	0.65	0.015
J7705	77I21	3RD LEVEL E SIDE B HILL	44	41.302	110	43.661	UNAME	P	B	D	81	<6.5	7.55	207	0.03	0.097	5.45	0.202
J7706	77I21	2ND LEVEL NR ROCKPILE G	44	41.37	110	43.745	UNAME	P	B	D	77	7	7.58	231	<.02	<.01	7.45	0.04
J7707	77I21	1ST LEVEL 1ST MAJOR FEA	44	41.465	110	43.781	UNAME	S	A	D	90	7	7.66	276	0.12	<.01	7.3	0.038
T7511	75J04	FURTHEST SOUTH	0	0	0	0	UNAME	S	A	A&D&E	89.5	n.d.	1.97	237	1.9	n.d.	1.8	0.36
NORRIS GEYSER BASIN																		
T7445	74G10	CISTERN SPG	44	43.998	110	42.16	CIST	S	n.d.	E	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	1.98	0.015
75126	75J11	CISTERN SPG	44	43.998	110	42.16	CIST	S	G	A&D	92.5	6.2	7.23	409	n.d.	n.d.	1.65	0.032
C7600	76A00	CISTERN SPG	44	43.998	110	42.16	CIST	S	n.d.	A	n.d.	n.d.	6.91	391	n.d.	n.d.	1.36	0.056
H7602	76H15	CISTERN SPG	44	43.998	110	42.16	CIST	S	n.d.	B	92	n.d.	7.83	466	n.d.	n.d.	1.16	0.022
F7627	76I28	CISTERN SPG	44	43.998	110	42.16	CIST	S	H	A&D	93	6.1	7.54	403	<.1	<.02	2	0.03
H7603	76K01	CISTERN SPG	44	43.998	110	42.16	CIST	S	n.d.	B	92	n.d.	7.5	469	n.d.	n.d.	1.16	0.021
H7604	76L01	CISTERN SPG	44	43.998	110	42.16	CIST	S	n.d.	B	91	n.d.	7.59	480	n.d.	n.d.	1.04	0.018
H7701	77A16	CISTERN SPG	44	43.998	110	42.16	CIST	S	n.d.	B	91	n.d.	n.d.	n.d.	n.d.	n.d.	1.08	0.02



SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
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GIBBON GEYSER BASIN ARTIST PAINT POTTS (CONTINUED)

J7425	365	22.5	4.9	n.d.	n.d.	n.d.	122	n.d.	176	401	12	5.6	2.09	n.d.	n.d.
J7426	433	20	6.6	0.35	0.7	n.d.	141	n.d.	122	538	16.1	7.4	2.835	n.d.	n.d.
F7509	462	32.2	3.15	n.d.	n.d.	n.d.	577.8	n.d.	97.8	445	20.3	6.1	n.d.	n.d.	n.d.

GIBBON GEYSER BASIN GEYSER CREEK GROUP

J7587	65	29.8	0.05	0.22	0.03	n.d.	118	0	88	5	3.3	<.1	n.d.	n.d.	n.d.
J7588	530	25.8	2.35	n.d.	n.d.	n.d.	473	n.d.	124	454	20	6.5	n.d.	n.d.	n.d.
J7589	40	15.3	0.1	0.1	0.01	n.d.	90	0	31	14	2.1	0.3	n.d.	n.d.	n.d.
J7590	422	33.9	4.9	0.47	0.77	n.d.	141	n.d.	92	530	31	7.4	n.d.	n.d.	n.d.
J7591	480	39	6.75	0.63	0.82	n.d.	122	0	188	646	14.5	8.3	n.d.	n.d.	n.d.
J7592	465	38	6.55	0.62	0.87	n.d.	110	0	215	629	13.7	8	n.d.	n.d.	n.d.
J7593	375	68	4.68	n.d.	n.d.	n.d.	69	0	153	591	14.5	7.6	n.d.	n.d.	n.d.
J7703	595	24.2	2.66	0.368	0.48	n.d.	489	n.d.	115	484	24	5.5	n.d.	4.2	n.d.
J7704	544	21.4	2.55	0.37	0.463	n.d.	471	n.d.	118	441	24	5.5	n.d.	3	n.d.
J7705	404	21	2.6	0.305	0.305	n.d.	178	0	122	384	16	4.6	n.d.	1	n.d.
J7706	445	33.5	6.38	0.552	0.655	n.d.	103	0	103	615	14	7.3	n.d.	1.1	n.d.
J7707	424	37.2	5.9	0.558	0.62	n.d.	110	0	127	560	13	7.8	n.d.	0.6	0.01
T7511	35	18	0.02	0.11	0.02	n.d.	0	0	228	1.4	0.56	0.1	n.d.	n.d.	n.d.

NORRIS GEYSER BASIN

T7445	320	59.5	3.49	n.d.	n.d.	n.d.	82	0	65	462	4.8	6.9	n.d.	n.d.	n.d.
75126	253	53	2.98	n.d.	n.d.	n.d.	75	0	91	361	5.5	6.9	n.d.	n.d.	n.d.
C7600	232	50	2.73	n.d.	n.d.	n.d.	49	0	94	327	3.7	5.52	n.d.	n.d.	n.d.
H7602	300	55.5	3.73	n.d.	n.d.	n.d.	54	0	68	431	4.6	7.1	n.d.	n.d.	n.d.
F7627	250	50	2.8	n.d.	n.d.	n.d.	58	0	75	383	4.8	6.55	n.d.	n.d.	n.d.
H7603	305	56.5	3.73	n.d.	n.d.	n.d.	63	0	68	432	4.8	7.9	n.d.	n.d.	n.d.
H7604	310	57	3.85	n.d.	n.d.	n.d.	54	0	64	449	4.8	7.9	n.d.	n.d.	n.d.
H7701	323	58.5	3.92	n.d.	n.d.	n.d.	n.d.	0	76	n.d.	4.5	7.6	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
NORRIS GEYSER BASIN (CONTINUED)																
H7702	77B00	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.67	521	n.d.	n.d.	2.5	0.07
H7703	77C00	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.63	529	n.d.	n.d.	2.2	0.03
H7704	77D00	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.46	513	n.d.	n.d.	2	0.02
H7705	77E00	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.58	516	n.d.	n.d.	1.9	0.02
H7706	77F00	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.68	539	n.d.	n.d.	2.1	0.06
H7707	77G00	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.62	561	n.d.	n.d.	2.8	0.07
F7707	77I29	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	A&D	93	n.d.	7.56	485	0.1	<.02	7.5	0.26
H7708	77I00	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.51	528	n.d.	n.d.	2.5	0.07
C7801	78A21	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.48	545	n.d.	n.d.	2.15	0.085
C7803	78C14	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	6.92	560	n.d.	n.d.	2.38	0.093
C7804	78D14	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	6.91	505	n.d.	n.d.	1.25	0.08
C7800	78F07	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	C	93	n.d.	7.23	584	n.d.	n.d.	0.48	0.044
T7446	74G10	NORRIS FENNER DR HOLE	44 43.277	110 41.948	FENDR	S	n.d.	D&E	89	n.d.	n.d.	n.d.	n.d.	n.d.	3.55	0.15
T7461	74J00	MEDUSA SPG NORRIS	44 43.136	110 42.67	MEDUS	S	A	E	86	5	6.92	497	n.d.	n.d.	3.75	0.07
F7505	75G02	PORK CHOP	44 43.949	110 42.408	PORK	S	n.d.	A	83.5	5.8	8.06	441	n.d.	n.d.	4.8	0.04
F7506	75G02	FENNER DR HOLE	44 43.277	110 41.948	FENDR	S	A	A	93	5.3	4.95	356	n.d.	n.d.	3.5	0.13
F7508	75G03	BASE OF PORC TERRACE	44 43.344	110 41.958	PORC	S	F	A	92	7	8.64	589	n.d.	n.d.	2.6	<.01
J7527	75F08	FENNER DR HOLE	44 43.277	110 41.948	FENDR	S	A	D	93	6.8	4.68	368	n.d.	n.d.	3.23	0.16
J7528	75F08	BASE OF PORC TERRACE	44 43.344	110 41.958	PORC	S	G	D	93.5	8	8.47	654	n.d.	n.d.	2.12	0.03
J7529	75F08	SPG BEHIND WHIRLIGIGS	44 43.704	110 42.076	UNAME	S	A	D	88.5	4.3	3.84	511	n.d.	n.d.	1.69	0.13
J7530	75F08	1ST SPG UP REALFINGER	44 44.068	110 42.526	REALG	S	B	D	88.5	3.7	3.21	234	n.d.	n.d.	4.8	0.32
J7531	75F08	HORSESHOE SPG	44 43.975	110 42.726	HORSE	S	A	D	86	2.5	2.47	325	n.d.	n.d.	2.5	0.25
J7533	75F08	SP ABV FIRECRACKER	44 43.601	110 42.666	UNAME	n.d.	C	D	93	7.4	8.42	298	n.d.	n.d.	5.85	0.043
J7534	75F08	PORK CHOP INTER FILLING	44 43.949	110 42.408	PORK	S	n.d.	D	70	7.3	8.1	472	n.d.	n.d.	5.32	0.022
J7535	75F08	ECHINUS GEY	44 42.938	110 42.041	ECHIN	G	n.d.	D	85	3.6	3.15	268	n.d.	n.d.	4	0.47
J7536	75F08	EMERALD SPG	44 43.532	110 42.211	EMERA	S	B	D	89	3.5	3.05	459	n.d.	n.d.	2.03	0.23
J7559	75J00	SEEP ABV ECHINUS	44 43.310	110 41.46	UNAME	n.d.	n.d.	D&E	n.d.	n.d.	2.16	273	n.d.	n.d.	3.47	0.5

SAMP#	Na	K	Li	Rb	Cs	NH4	HC03	C03	S04	Cl	F	B	As	H2S	Zn
NORRIS GEYSER BASIN (CONTINUED)															
H7702	320	64.7	4.45	n.d.	n.d.	n.d.	56	0	80	468	4.6	7.5	n.d.	n.d.	n.d.
H7703	332	62	4.2	n.d.	n.d.	n.d.	54	0	71	481	4.3	7.5	n.d.	n.d.	n.d.
H7704	325	59	4.21	n.d.	n.d.	n.d.	55	0	68	454	4.1	7.25	n.d.	n.d.	n.d.
H7705	325	61.8	4.1	n.d.	n.d.	n.d.	61	0	67	442	4.3	7.25	n.d.	n.d.	n.d.
H7706	327	64	4.2	n.d.	n.d.	n.d.	58	0	69	473	4.6	7.5	n.d.	n.d.	n.d.
H7707	347	68	4.6	n.d.	n.d.	n.d.	58	0	63	515	4.9	7.9	n.d.	n.d.	n.d.
F7707	315	65	4	n.d.	n.d.	n.d.	80	0	64	453	5.2	7.3	n.d.	n.d.	n.d.
H7708	320	62.5	4.1	n.d.	n.d.	n.d.	56	0	74	465	4.7	7.45	n.d.	n.d.	n.d.
C7801	326	51	4.62	0.48	0.33	n.d.	52	0	67	453	5.3	6.2	n.d.	n.d.	0.05
C7803	282	57	4.8	0.49	0.35	n.d.	61	0	87	470	5.3	6.7	n.d.	n.d.	0.05
C7804	236	45	3.32	0.43	0.33	n.d.	58	0	61	447	5	6.3	n.d.	n.d.	n.d.
C7800	295	61	4.31	0.599	0.53	n.d.	44	0	59	481	4.9	7.18	n.d.	n.d.	n.d.
T7446	460	34	5.1	n.d.	n.d.	n.d.	10	0	34	763	6	2.76	n.d.	n.d.	n.d.
T7461	325	60.7	5.05	n.d.	n.d.	n.d.	38	0	33	587	5.6	7.8	n.d.	n.d.	n.d.
F7505	433	58	6.02	n.d.	n.d.	0.1	39.9	0	42.9	69.7	5.75	n.d.	n.d.	n.d.	n.d.
F7506	450	38.5	5.55	n.d.	n.d.	1.25	0	0	34.5	701	6	n.d.	n.d.	n.d.	n.d.
F7508	400	92.5	7.18	n.d.	n.d.	<.1	59.9	n.d.	24.2	675	5.75	n.d.	n.d.	n.d.	n.d.
J7527	418	37.4	5.25	0.354	0.3	n.d.	10.4	0	34	664	6	10.3	2.316	n.d.	n.d.
J7528	404	81	5.8	1.04	1.03	n.d.	47.4	0	31	664	5.8	9.9	2.666	n.d.	n.d.
J7529	312	76	4.87	0.771	0.364	n.d.	0	0	65	532	4.8	7.84	2.197	n.d.	n.d.
J7530	334	56	3.6	n.d.	n.d.	n.d.	0	0	112	492	11.5	7.9	1.509	n.d.	n.d.
J7531	235	56	2.75	0.465	0.364	n.d.	0	0	175	341	5.2	4.75	0.928	n.d.	n.d.
J7533	378	46	4.96	0.471	0.67	n.d.	37	0	71	557	6.3	8.49	2.255	n.d.	n.d.
J7534	444	64	6.2	0.703	0.947	n.d.	38.5	0	26	712	6.3	9.85	2.755	n.d.	n.d.
J7535	160	50.5	0.93	n.d.	n.d.	n.d.	0	0	273	103	10.5	1.6	0.165	n.d.	n.d.
J7536	308	43	3.62	0.415	0.452	n.d.	0	0	110	460	4.4	2.5	1.89	n.d.	n.d.
J7559	86	342	0.46	n.d.	n.d.	n.d.	0	0	360	56	3.05	0.8	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
NORRIS GEYSER BASIN (CONTINUED)																
75127	75J11	GEYSER NR BEND IN RD	44 43.242	110 42.313	UNAME	G	A	A&D	94	5.5	6.74	343	n.d.	n.d.	2.7	0.105
75128	75J11	EMERALD SPG ACT ON SE	44 43.532	110 42.19	EMERA	S	C	A&D	94	3.3	3.27	443	n.d.	n.d.	2.7	0.375
75129	75J11	SPG N17W TO BATHTUB	44 43.205	110 42.171	UNAME	S	A	A&D	86	3.3	3.28	352	n.d.	n.d.	1.24	0.1
75130	75J11	N END PORC TERRACE	44 43.829	110 41.821	UNAME	S	D	D	85	7.2	7.18	472	n.d.	n.d.	2.32	0.09
75131	75J11	OPALESCENT POOL	44 43.9	110 42.13	OPAL	P	B	A&D	74	5.3	6.59	122	n.d.	n.d.	2.83	0.014
75132	75J11	REALGAR FINGER	44 44.134	110 42.419	SULFR	n.d.	D	A&D	48	2.2	2.69	232	n.d.	n.d.	4.4	0.167
75133	75J11	BACK BASIN BLACK POOL	44 43.965	110 42.71	BLACK	P	A	A&D	81	3.2	2.74	336	n.d.	n.d.	2.3	0.21
75134	75J11	N70E OF CINDER POOL	44 43.965	110 42.696	CRACK	S	F	A&D	92.5	3.1	3.08	498	n.d.	n.d.	2.76	0.23
75135	75J11	NR BROCK SPIKES NR VERN	44 43.903	110 42.799	UNAME	n.d.	B	A&D	71	3.3	2.88	255	n.d.	n.d.	3.3	0.143
75136	75J11	NR ELK PARK HIDDEN SPG	44 43.834	110 42.93	HIDEN	S	D	A&D	72	3.4	3.18	256	n.d.	n.d.	2.7	0.171
75137	75J11	GREEN DRAGON	44 42.819	110 42.335	GRDRA	S	n.d.	A&D	93	n.d.	2.72	471	n.d.	n.d.	3.22	0.217
75138	75J11	DUBIOUS DESCENT	44 42.811	110 42.371	DUBIS	n.d.	B	A&D	86	3.3	3.31	413	n.d.	n.d.	2.81	0.07
75139	75J11	N10W TO FENNER	44 43.622	110 42.21	UNAME	S	D	A&D	93.5	6.2	7.21	408	n.d.	n.d.	3.12	0.126
GSGD	75J18	GRANDSON OF GR. DRAGON	44 42.82	110 42.374	GSGD	n.d.	n.d.	E	n.d.	n.d.	5.46	127	n.d.	n.d.	285	0.07
1049	76F22	ECHINUS GEYSER	44 42.938	110 42.041	ECHIN	G	n.d.	Z	93	n.d.	3.01	256	2.2	0.19	1.87	0.488
H7601	76H15	BASE OF PORC TERRACE	44 43.344	110 41.958	PORC	S	n.d.	B	93	n.d.	8.45	597	n.d.	n.d.	1.37	0.015
F7706	77I29	ECHINUS GEYSER	44 42.938	110 42.041	ECHIN	G	A	A&D	93	3.5	5.39	260	2.4	0.22	14	0.8
F7708	77I29	BASE PORC TERRACE	44 43.344	110 41.958	PORC	S	J	A&D	93	7.4	8.94	611	<.1	<.02	6.5	0.18
F7709	77I29	ACID SEEPS ABV ECHINUS	44 43.310	110 41.460	UNAME	n.d.	n.d.	A&D	n.d.	2.5	2.4	269	0.8	0.2	32	1.5
F7504	75G02	CISTERN SPG	44 43.998	110 42.16	CIST	S	J	A	92.2	5.9	7.01	388	n.d.	n.d.	1.3	0.03
F7504	75G02	CISTERN SPG	44 43.998	110 42.16	CIST	S	J	A	92.2	5.9	7.01	388	n.d.	n.d.	1.3	0.03
J7532	75F08	CISTERN SPG	44 43.988	110 42.16	CIST	S	n.d.	D	n.d.	6.5	6.89	442	n.d.	n.d.	1.18	0.01
H0578	78E11	CISTERN SPG	44 43.988	110 42.16	CIST	S	n.d.	B	93	n.d.	7.56	551	n.d.	n.d.	0.92	0.063
H1177	77L31	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.51	550	n.d.	n.d.	1.82	0.092
H1077	77J77	CISTERN SPG	44 43.998	110 42.16	CIST	S	n.d.	B	n.d.	n.d.	7.78	548	n.d.	n.d.	2.41	0.108
J7623	76I76	LARGE POOL IN ELK PARK	44 43.177	110 42.92	UNAME	P	n.d.	D	62	6.5	n.d.	349	n.d.	n.d.	5.8	0.037

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
NORRIS GEYSER BASIN (CONTINUED)															
75127	270	21	2.4	n.d.	n.d.	n.d.	46	0	67	393	5.5	6.6	n.d.	n.d.	n.d.
75128	328	52	4	0.48	0.51	n.d.	0	0	164	520	4.1	9.2	n.d.	n.d.	n.d.
75129	283	31	3.25	0.29	0.33	n.d.	0	0	72	448	4.4	7.2	n.d.	n.d.	n.d.
75130	385	98	5.6	n.d.	n.d.	n.d.	43	0	48	647	5.7	10	n.d.	n.d.	n.d.
75131	380	74	5.7	n.d.	n.d.	n.d.	60	0	42	645	5.8	10	n.d.	n.d.	n.d.
75132	260	61	3.27	n.d.	n.d.	n.d.	0	0	183	395	3.2	6.2	n.d.	n.d.	n.d.
75133	258	65	3.4	n.d.	n.d.	n.d.	0	0	159	405	3.3	6.5	n.d.	n.d.	n.d.
75134	275	63	3.53	n.d.	n.d.	n.d.	0	0	115	439	4.1	6.8	n.d.	n.d.	n.d.
75135	247	45.2	2.68	n.d.	n.d.	n.d.	0	0	127	372	2.5	5.8	n.d.	n.d.	n.d.
75136	235	31.7	2.23	n.d.	n.d.	n.d.	0	0	97	342	4.6	5.4	n.d.	n.d.	n.d.
75137	278	70	4.98	n.d.	n.d.	n.d.	0	0	168	430	4.9	7	n.d.	n.d.	n.d.
75138	349	63	5.6	n.d.	n.d.	n.d.	0	0	66	577	5.2	9.2	n.d.	n.d.	n.d.
75139	485	96.5	7.3	n.d.	n.d.	n.d.	29	0	61	714	6	12.3	n.d.	n.d.	n.d.
GSGB	403	77.5	6.11	n.d.	n.d.	n.d.	12	0	48	640	5.6	10	n.d.	n.d.	n.d.
1049	160	50.2	0.8	n.d.	n.d.	n.d.	0	0	289	114	5.1	2.15	n.d.	n.d.	0.03
H7601	397	105	6.7	n.d.	n.d.	n.d.	50	0	25	667	4.8	9.2	n.d.	n.d.	n.d.
F7706	155	51	0.6	n.d.	n.d.	n.d.	14	0	280	109	5.6	1.8	n.d.	n.d.	n.d.
F7708	385	105	11	n.d.	n.d.	n.d.	109	n.d.	25	635	6	9.1	n.d.	n.d.	n.d.
F7709	100	37	0.5	n.d.	n.d.	n.d.	0	0	400	54	3.7	1	n.d.	n.d.	n.d.
F7504	250	48	3.6	n.d.	n.d.	0.54	62.3	0	104.7	297	4	5.13	n.d.	n.d.	n.d.
F7504	250	48	3.6	n.d.	n.d.	0.54	62.3	0	104.7	297	4	5.13	n.d.	n.d.	n.d.
J7532	225	48	2.7	0.26	0.34	n.d.	69.6	0	79	293	4	4.85	0.977	n.d.	n.d.
H0578	289	6.5	3.93	0.505	0.49	n.d.	58	0	68	432	4.9	6.65	n.d.	n.d.	n.d.
H1177	315	51	5	0.61	0.37	n.d.	51	0	52	506	5.7	7.2	n.d.	n.d.	0.05
H1077	322	56.5	5.4	0.53	0.38	n.d.	46	0	58	508	5.7	7.1	n.d.	n.d.	n.d.
J7623	455	26.5	3.33	n.d.	n.d.	n.d.	64	20	86	597	13	7.95	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg	
SPRINGS ALONG MAMMOTH CORRIDOR NYMPH LAKE HOT SPRINGS																	
J7312	73I25	NR FRYING PAN	44	45.260	110	43.410	UNAME S	B	D	61.5	n.d.	2.12	254	n.d.	n.d.	6.8	2.4
J7576	75J02	WHERE CR ENTERS GIB RIV	44	44.295	110	42.729	UNAME C	J	D	25.5	3.2	3.52	148	n.d.	n.d.	7.52	1.48
J7577	75J02	OUTLET OF NYMPH LAKE	44	44.604	110	43.685	UNAME C	J	D	14	6.8	6.8	98	n.d.	n.d.	10.5	1.75
J7622	76I30	SPG BY NYMPH LAKE	44	45.112	110	43.207	UNAME S	n.d.	D	70	6.5	8.3	292	n.d.	n.d.	2	0.075
SPRINGS ALONG MAMMOTH CORRIDOR BIJAH SPRING																	
75145	75J17	BIJAH SPRING	44	45.662	110	43.817	BIJAH S	F	D	91.5	8	8.45	270	n.d.	n.d.	4.2	0.07
SPRINGS ALONG MAMMOTH CORRIDOR SEMI CENTENNIAL GROUP																	
J7619	76I30	N-MST, SCLLPD RIM, 5' MOND	44	47.193	110	44.343	UNAME S	A	D	92	6.2	7.78	265	n.d.	n.d.	12.9	0.125
J7620	76I30	GEYSER GROUP	44	47.167	110	44.378	UNAME G	C	D	94	6.2	7.82	341	n.d.	n.d.	25.9	0.082
J7621	76I30	CENTER POOL	44	47.185	110	44.343	UNAME P	F	D	82	5.8	6.94	344	n.d.	n.d.	12	0.142
SPRINGS ALONG MAMMOTH CORRIDOR APOLLINARIS SPRING																	
75146	75J17	APOLLINARIS SPG	44	50.548	110	43.948	APOLL S	A	D	n.d.	4.4	8.23	66.6	n.d.	n.d.	22.7	5.15
SPRINGS ALONG MAMMOTH CORRIDOR MAMMOTH HOT SPRINGS																	
J7632	76G29	7MILE HOLE AREA	44	45.146	110	25.219	UNAME S	C	A&D	87	6.8	8.09	500	n.d.	n.d.	0.4	0.02
SEVEN MILE HOLE SPRINGS																	
H7501	75G29	CANYON AREA	0	0	0	0	TOMTB G	A	B	194	n.d.	8.28	152	n.d.	n.d.	21.7	4.7
K76W1	76I26	E.END OF CLEAR LAKE	44	42.85	110	28.667	UNAME S	n.d.	Z	88	1.75	2.16	42	0.31	0.04	0.2	0.08
K76W2	76I26	CANYON VILLAGE QUAD	44	42.8	110	28.383	UNAME n.d.	A	Z	75	2	2.53	43	1.91	0.04	0.3	0.152
K76W3	76I26	WARM SPG	44	42.483	110	28.3	UNAME S	F	Z	n.d.	2.1	2.49	196	5.02	0.02	4	3.08
J7614	76I29	7 MILE HOLE	44	45.211	110	24.167	UNAME n.d.	B	A&D	68	6.2	7.6	174	n.d.	n.d.	43	6.85
J7615	76I29	7 MI HOLE 1/3 UP CANYON	44	45.129	110	24.932	UNAME S	B	A&D	91	8	8.61	534	n.d.	n.d.	0.5	0.016
J7708	77I23	RUNOFF FROM YJ7709	44	45.138	110	24.203	UNAME S	B	D	93	8.2	7.27	199	0.4	0.03	8.5	0.273

SAMP#	Na	K	Li	Rb	Cs	NH4	HC03	C03	S04	Cl	F	B	As	H2S	Zn
SPRINGS ALONG MAMMOTH CORRIDOR NYMPH LAKE HOT SPRINGS															
J7312	71	29	0.2	n.d.	n.d.	2	0	0	335	39	0.96	0.8	n.d.	1.2	n.d.
J7576	147	28.4	1.07	n.d.	n.d.	n.d.	0	0	240	6	2.8	2.1	n.d.	n.d.	n.d.
J7577	115	18.8	0.55	n.d.	n.d.	n.d.	100	0	186	34.7	3.9	1.5	n.d.	n.d.	n.d.
J7622	338	17.8	1.6	n.d.	n.d.	n.d.	124	20	12	379	17.7	5.6	n.d.	n.d.	n.d.
SPRINGS ALONG MAMMOTH CORRIDOR BIJAH SPRING															
75145	252	34.5	1.28	n.d.	n.d.	n.d.	324	n.d.	146	139	7.3	2.1	n.d.	n.d.	n.d.
SPRINGS ALONG MAMMOTH CORRIDOR SEMI CENTENNIAL GROUP															
J7619	214	64.3	2.73	n.d.	n.d.	n.d.	55	n.d.	114	310	2.23	5	n.d.	n.d.	n.d.
J7620	266	64.3	3.5	n.d.	n.d.	n.d.	52	n.d.	104	425	3.1	6.15	n.d.	n.d.	n.d.
J7621	286	66.8	3.9	n.d.	n.d.	n.d.	122	n.d.	100	436	3.2	6.4	n.d.	n.d.	n.d.
SPRINGS ALONG MAMMOTH CORRIDOR APOLLINARIS SPRING															
75146	10	4	0.02	n.d.	n.d.	n.d.	93	0	7.6	1.6	5.4	<.1	n.d.	n.d.	n.d.
SPRINGS ALONG MAMMOTH CORRIDOR MAMMOTH HOT SPRINGS															
J7632	286	47.8	2.8	n.d.	n.d.	n.d.	206	0	80	320	9.8	13	n.d.	n.d.	n.d.
SEVEN MILE HOLE SPRINGS															
H7501	240	29.5	0.8	n.d.	n.d.	n.d.	532	0	51	68	6.5	1.4	3.7	n.d.	n.d.
K76W1	3	0.5	<.01	n.d.	n.d.	n.d.	0	0	1090	2.7	<.1	0.1	n.d.	n.d.	n.d.
K76W2	2	0.4	<.01	n.d.	n.d.	n.d.	0	0	496	1.4	<.1	<.1	n.d.	n.d.	n.d.
K76W3	8.7	16.7	0.32	n.d.	n.d.	n.d.	0	0	922	1.3	0.85	<.1	n.d.	n.d.	n.d.
J7614	332	28.5	3.4	n.d.	n.d.	n.d.	104	0	82	526	4.3	39	n.d.	n.d.	n.d.
J7615	366	58.4	3.45	n.d.	n.d.	n.d.	223	n.d.	85	427	12.8	16	n.d.	n.d.	n.d.
J7708	432	34.5	4.6	0.412	0.422	n.d.	84	0	183	536	11.6	16.2	n.d.	1.5	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	F-PH	I-PH	SiO2	Fe	Mn	Ca	Mg
SEVEN MILE HOLE SPRINGS (CONTINUED)																
J7709	77123	2ND THERMAL AREA	44 45.129	110 24.932	UNAME	S	C	D	n.d.	8.1	8.65	477	<.02	<.01	0.88	0.03
J7710	77123	1ST SPG TRAIL TO 7MI HL	44 45.146	110 25.219	UNAME	S	A	D	83	7.1	9.94	438	<.02	<.01	0.4	0.02
MIRROR PLATEAU SPRINGS																
H7618	76H08	BOG CR HOT SPG SPG#2	44 41.840	110 22.520	UNAME	S	B	B	85	n.d.	8.67	209	n.d.	n.d.	11.4	0.226
H7620	76H09	BOG CR HOT SPG SPG#26	44 41.390	110 22.980	UNAME	S	C	B	92.5	n.d.	8.79	205	n.d.	n.d.	16	0.17
H7605	76K10	EBRO SPG #4	44 35.280	110 20.320	UNAME	S	n.d.	B	57.5	n.d.	2.88	142	5.87	<.04	2.42	0.97
H7611	76K14	MOSS CR HOT SPG	44 43.390	110 21.390	UNAME	S	n.d.	B	45.5	n.d.	2.58	164	1.32	<.04	1.37	0.495
H7401	74I13	JOESPH COATS SPG	44 44.330	110 19.440	UNAME	S	n.d.	B	200	7.16	6	128	n.d.	n.d.	15.2	0.66
H7610	76K14	JOSEPH COATS SPG	44 23.000	110 19.440	WHIST	G	n.d.	B	92.5	n.d.	7.78	171	1.32	0.82	42.5	1.03
H7609	76K14	JOSEPH COATS SPG #2	44 39.320	110 28.860	UNAME	S	n.d.	B	91.5	n.d.	6.91	225	<.02	0.3	12.6	0.561
H7608	76K13	COFFEE POT SPG	44 45.330	110 18.430	COFFE	S	n.d.	B	91	n.d.	7.06	82	0.38	0.3	4.51	1.95
H7607	76K10	VERMILION SPG #4	44 34.910	110 18.880	UNAME	S	n.d.	B	60	n.d.	3.03	159	4.43	<.02	2.32	1
H7606	76K10	VERMILION SPG #2	44 34.980	110 18.760	UNAME	S	n.d.	B	50	n.d.	2.87	153	b	<.04	2.32	0.95
H7713	77I22	RAINBOW SPG #4	44 46.040	110 15.940	UNAME	S	C	B	78.6	n.d.	7.95	300	0.35	0.09	31	17
H7712	77H01	H.S. BASIN SPG #22	0 0	0 0	UNAME	S	n.d.	B	66.5	n.d.	2.23	195	4.3	0.085	5.65	2.65
H7709	77G04	BUTTE H.S. SPG#4	44 31.270	110 16.490	UNAME	S	n.d.	B	86	n.d.	8.08	173	0.03	<.01	7.75	0.062
M7719	77K14	SOUR CR EAST 3RD LOW SP	44 40.840	110 19.480	UNAME	S	n.d.	C	90	n.d.	2.12	307	6.38	0.12	2	0.65
WOLF LAKE SPRINGS																
F7624	76I28	WOLF LAKE SPRINGS	44 44.536	110 34.721	UNAME	S	J	A&D	33	5.3	7.64	94	<.1	<.02	8	0.44
F7625	76I28	WOLF LAKE SPRINGS	44 44.235	110 34.733	UNAME	S	E	A&D	23	5.3	7.26	n.d.	<.1	<.02	6.5	0.4
F7626	77I28	WOLF LAKE SPRINGS	44 44.235	110 35.151	UNAME	S	G	A&D	15.5	5.3	7.21	n.d.	<.1	<.02	5	0.5
F7501	75G02	NR WOLF LAKE	44 44.501	110 34.793	UNAME	S	A	A	25.5	5.3	6.66	n.d.	n.d.	n.d.	9.9	0.83
F7502	75G02	FROM ALLUVIAL BANK	44 44.544	110 34.733	UNAME	S	J	A	32	5.5	6.62	n.d.	n.d.	n.d.	10.2	1.15
F7503	75G02	COLOR AFT EARTHQUAKE	44 44.235	110 35.151	UNAME	S	J	A	15	5.3	6.59	n.d.	n.d.	n.d.	6.6	0.68



SAMP#	Na	K	Li	Rb	Cs	NH4	HC03	CO3	SO4	Cl	F	B	As	H2S	Zn
SEVEN MILE HOLE SPRINGS (CONTINUED)															
J7709	410	50.2	2.97	0.41	0.248	n.d.	226	n.d.	113	416	12.5	15.8	n.d.	3.2	n.d.
J7710	330	43.8	2.5	0.352	0.21	n.d.	206	n.d.	98	332	9.6	12.7	n.d.	4.8	n.d.
MIRROR PLATEAU SPRINGS															
H7618	143	32.8	0.23	n.d.	n.d.	n.d.	429	n.d.	25	12	4.1	1.26	n.d.	n.d.	n.d.
H7620	173	30.2	1.26	n.d.	n.d.	n.d.	198	n.d.	204	71	5	3.35	n.d.	n.d.	n.d.
H7605	18	14.2	0.14	n.d.	n.d.	n.d.	0	0	112	13	0.85	0.85	n.d.	n.d.	n.d.
H7611	15	21.3	0.16	n.d.	n.d.	n.d.	0	0	586	6.5	0.63	0.25	n.d.	n.d.	n.d.
H7401	260	83	3.15	n.d.	n.d.	52	49	0	363	335	4.9	11	n.d.	n.d.	n.d.
H7610	87	51.5	0.23	n.d.	n.d.	n.d.	38	0	227	6.8	3.8	0.77	n.d.	n.d.	n.d.
H7609	253	75.4	2.9	n.d.	n.d.	n.d.	32	0	306	347	5.7	48.8	n.d.	n.d.	n.d.
H7608	25	14.7	0.045	n.d.	n.d.	n.d.	47	0	124	12	0.85	0.4	n.d.	n.d.	n.d.
H7607	22	13.2	0.3	n.d.	n.d.	n.d.	0	0	172	16	0.7	1.4	n.d.	n.d.	n.d.
H7606	15	13.5	0.25	n.d.	n.d.	n.d.	0	0	261	17	0.9	1.5	n.d.	n.d.	n.d.
H7713	357	51.5	0.47	0.265	<.01	n.d.	512	0	106	215	3.3	21.5	n.d.	n.d.	0.01
H7712	12	12.7	<.01	0.5	<.01	n.d.	0	0	681	3	0.34	0.22	n.d.	n.d.	0.01
H7709	450	21.8	5.51	0.357	0.73	n.d.	106	0	155	561	13.7	8.6	n.d.	n.d.	n.d.
H7719	153	18	0.07	0.101	0.01	n.d.	0	0	600	11	1.6	0.78	n.d.	n.d.	n.d.
WOLF LAKE SPRINGS															
F7624	20	10	0.05	n.d.	n.d.	n.d.	65	0	32	3	4.1	0.1	n.d.	n.d.	n.d.
F7625	16	8	0.02	n.d.	n.d.	n.d.	43	0	22	5	3.4	0.05	n.d.	n.d.	n.d.
F7626	10	5	0	n.d.	n.d.	n.d.	43	0	3	4	3.3	0.05	n.d.	n.d.	n.d.
F7501	15.5	11.2	0.07	n.d.	n.d.	<.1	36.2	0	34.8	<.5	6.8	n.d.	n.d.	n.d.	n.d.
F7502	16.1	12	0.07	n.d.	n.d.	<.1	36.2	0	37.9	<.5	7.8	n.d.	n.d.	n.d.	n.d.
F7503	4	4	0.01	n.d.	n.d.	<.1	29.9	0	4.3	<.5	0.4	n.d.	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg	
WEST THUMB GEYSER BASIN MAIN EXTENSION																	
J7464	74J07	NR PARKIN LOT HIGH SPG	44	24.591	110 34.826	UNAME	S	n.d.	D	75.5	7.3	8.42	286	<.02	<.02	0.62	0.03
J7465	74J07	SOUTH POOL TWIN GEYSER	44	24.634	110 34.841	TWIN	G	n.d.	D	94.5	8.2	8.74	287	<.02	<.02	0.48	0.01
J7466	74J07	ABV ABYSS NR ROAD	44	24.669	110 34.841	ROADS	G	n.d.	D	92	8.3	8.95	272	<.02	<.02	0.44	0.01
J7467	74J07	BIG CONE	44	24.653	110 34.692	UNAME	S	n.d.	D	82	6.4	8.04	252	<.02	<.02	0.84	0.1
J7468	74J07	LAKESIDE NR BOARDWALK	44	24.574	110 34.651	UNAME	S	G	D	85	8.4	8.86	341	<.02	<.02	0.52	0.02
J7469	74J07	SOUTH END OFF BOARDWK	44	24.539	110 34.717	BLUEB	S	D	D	79	7.2	8.2	132	<.02	<.02	0.64	0.02
J7470	74J07	NW SIDE NR BOARDWK CURV	44	24.602	110 34.766	EPHED	S	C	D	83	7.3	8.28	291	<.02	<.02	0.48	0.01
J7475	74J07	KING GEYSER	44	24.729	110 34.782	KING	G	G	D	88	7.9	8.3	255	<.02	<.02	0.8	0.03
J7476	74J07	SW OF BLACK POOL 30 YD	44	24.656	110 34.77	UNAME	S	D	D	77	8.3	8.83	307	<.02	<.02	0.44	<.01
J7477	74J08	SPG IN MARSH	44	24.601	110 34.805	UNAME	S	n.d.	D	n.d.	7.1	8.06	318	<.02	<.02	0.6	0.02
J7478	74J08	SPG N20W OF EPHEDRA	44	24.623	110 34.775	UNAME	S	D	D	79	7	8.05	300	<.02	<.02	0.48	<.01
J7479	74J08	N10E TO EPHEDRA 25 YDS	44	24.625	110 34.761	UNAME	S	B	D	86	7.2	7.98	273	<.02	<.02	0.78	0.05
J7480	74J09	N10W TO 3 BEARS 20YDS	44	24.955	110 34.911	LONEP	G	A	D	94.5	8.9	9.32	475	<.02	<.02	0.64	<.01
J7484	74J09	LAKESHORE GEYSER	44	24.602	110 34.651	LAKES	G	A	D	90	6.8	7.76	226	<.02	<.02	2	0.61
J7485	74J09	CONE BETW W FISHING &WK	44	24.641	110 34.701	UNAME	S	A	D	64	6.9	7.52	215	<.02	<.02	0.84	0.14
J7486	74J09	SPG BY BLACK POOL	44	24.686	110 34.783	UNAME	S	n.d.	D	76	7.2	8.22	339	<.02	<.02	0.46	0.01
J7578	75J03	PERCHOLATING SPG	0	0	0 0	PERCH	S	E	D	91	7.8	8.37	295	n.d.	n.d.	0.53	0.015
J7579	75J03	EPHEDRA	44	24.602	110 34.766	EPHED	S	F	D	88	8.3	8.66	265	n.d.	n.d.	0.81	0.012
T7492	74J00	FISHING CONE	0	0	0 0	FISHI	S	A	E	92	7.1	8.98	273	n.d.	n.d.	1.51	0.355
J7594	75J06	BEACH GEYSER	44	24.525	110 34.611	BEACH	G	A	A&D	90	6.3	8	n.d.	n.d.	n.d.	4.5	0.94

WEST THUMB GEYSER BASIN NORTH TRENDING EXTENSION

J7471	74J07	N END OF STRIP TO POTTS	44	24.969	110 34.891	OVERH	G	A	D	71	8.5	8.8	279	<.02	<.02	0.28	0.03
J7472	74J07	OCCASIONAL GEYSER	44	24.936	110 34.899	OCCAS	G	F	D	91	6.9	8.2	218	<.02	<.02	1.12	0.02
J7473	74J07	GASSY CONE	44	24.907	110 34.877	GASSY	S	A	D	73	7.5	8.31	303	<.02	<.02	0.54	0.02
J7474	74J07	4x4 SPG WITH 2 OUTLETS	44	24.82	110 34.83	UNAME	S	G	D	91	6.8	8.11	212	<.02	<.02	0.46	0.03
J7481	74J09	S10E 33YD TO 3 BEARS	44	24.925	110 34.915	UNAME	G	A	D	89	8.9	8.69	365	<.02	<.02	0.46	<.01

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
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WEST THUMB GEYSER BASIN MAIN EXTENSION

J7464	430	22.4	1.65	0.25	0.48	<.1	444	67	55	290	22.5	3.2	2.055	n.d.	n.d.
J7465	445	23	3.78	0.25	0.47	<.1	438	91	44	287	22	3.1	2.025	n.d.	n.d.
J7466	442	20.3	3.48	0.25	0.46	<.1	367	132	46	292	20	3.2	2.02	n.d.	n.d.
J7467	340	14.3	2.35	0.12	0.1	0.85	337	0	51	237	15	2.65	1.56	n.d.	n.d.
J7468	430	20	3.27	0.23	0.37	<.1	343	102	46	301	20	3.3	2.07	n.d.	n.d.
J7469	435	20.2	3.23	0.23	0.43	<.1	549	0	61	304	21	3.3	2.07	n.d.	n.d.
J7470	435	22.5	3.8	0.24	0.41	0.17	608	0	49	301	16.5	3.3	2.07	n.d.	n.d.
J7475	373	19.5	2.75	0.18	0.19	<.1	531	0	42	261	12	2.65	1.62	n.d.	n.d.
J7476	420	18.4	3.3	0.2	0.31	0.22	374	106	44	291	15.5	3.3	2.015	n.d.	n.d.
J7477	408	22.5	3.6	0.27	0.52	<.1	544	0	55	308	16	3.15	2.085	n.d.	n.d.
J7478	420	22.4	3.7	0.22	0.41	<.1	572	0	69	285	15	3.2	2.005	n.d.	n.d.
J7479	408	21.2	3.4	0.25	0.43	<.1	511	0	78	287	15	3.1	1.935	n.d.	n.d.
J7480	363	18.4	2.83	0.11	0.13	0.42	218	147	45	270	13.5	3	1.74	n.d.	n.d.
J7484	408	20	3.24	0.2	0.27	0.49	531	0	55	296	14.5	3.3	1.94	n.d.	n.d.
J7485	367	130	2.62	0.12	0.09	<.1	465	0	89	251	11.5	2.75	1.605	n.d.	n.d.
J7486	422	22.6	3.25	0.2	0.25	<.1	564	0	53	303	14.5	3.3	1.965	n.d.	n.d.
J7578	475	17.5	3.5	0.22	0.41	n.d.	626	0	51	295	29	3.5	n.d.	n.d.	n.d.
J7579	473	17.7	3.55	0.25	0.43	n.d.	647	n.d.	51	294	29	3.4	n.d.	n.d.	n.d.
T7492	293	14.8	2.08	n.d.	n.d.	n.d.	194	93.9	45	251	15.8	2.8	n.d.	n.d.	n.d.
J7594	115	10.4	0.6	n.d.	n.d.	n.d.	142	0	88	65	5.7	0.2	n.d.	n.d.	n.d.

WEST THUMB GEYSER BASIN NORTH TRENDING EXTENSION

J7471	305	12.5	2.2	0.12	0.09	<.1	268	88	36	181	10.5	2.15	1.205	n.d.	n.d.
J7472	315	15.5	2.25	0.14	0.19	0.12	385	0	36	201	10	2.25	1.315	n.d.	n.d.
J7473	410	13.8	2.6	0.14	0.16	<.1	502	0	52	291	16	3.85	2.015	n.d.	n.d.
J7474	275	13.8	1.85	0.11	0.1	<.1	435	0	30	155	7.8	1.85	1.09	n.d.	n.d.
J7481	440	13	3.15	0.17	0.27	0.58	450	81	49	318	14.5	3.85	1.965	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg	
WEST THUMB GEYSER BASIN NORTH TRENDING EXTENSION (CONTINUED)																	
J7482	74J09	SPG S27E OF GASSY CONE	44	24.853	110 34.855	JUG	S	A	D	77	7	8.24	354	<.02	<.02	0.32	<.01
J7483	74J09	MANTRAP 5 BY 6 BY 4	44	24.807	110 34.78	UNAME	S	A	D	67	8.8	9.01	403	<.02	<.02	0.4	0.02
J7580	75J03	PANHANDLE	44	24.955	110 34.911	UNAME	S	A	D	74	8.4	9.22	283	n.d.	n.d.	0.48	0.012
J7581	75J03	N25W TO OCCASIONAL GEY	44	24.925	110 34.915	LONEP	S	A	D	70	8.9	9.25	270	n.d.	n.d.	0.61	0.012
POTTS HOT SPRINGS AT SHORELINE																	
J7515	75F06	S. END BOTTLE SHAPED	44	25.483	110 35.275	UNAME	P	J	D	80	8	8.25	244	n.d.	n.d.	1.1	0.05
J7516	75F06	NORTHERN SPG	44	25.542	110 35.276	UNAME	S	A	D	82	8.3	8.19	263	n.d.	n.d.	0.86	0.04
J7582	75J03	N OF LARG DRAINAGE CR	44	25.596	110 35.283	ROADB	G	A	D	94	8.8	9.3	280	n.d.	n.d.	0.7	0.025
J7586	75J03	S OF FIG 8 SHAPED SPG	44	25.456	110 35.264	UNAME	P	n.d.	D	81	8.3	8.82	246	n.d.	n.d.	1	0.1
J7599	75J06	50 YD W OF OLD ROAD BED	44	25.575	110 35.305	UNAME	S	C	A&D	86	8.7	9.22	303	n.d.	n.d.	0.68	0.018
75100	75F06	N OF CR DRAINAGE	44	25.579	110 35.313	UNAME	P	B	A&D	85.5	7.8	8.57	288	n.d.	n.d.	0.6	0.043
75101	75F06	100 YD FROM OLD RD	44	25.564	110 35.315	UNAME	G	A	A&D	94	8.6	8.96	301	n.d.	n.d.	0.51	<.01
POTTS HOT SPRINGS MAIN TERRACE																	
J7551	75F11	SM GEY N50YD FR LAKE	44	25.557	110 35.328	UNAME	G	A	D	93	8.3	8.68	263	n.d.	n.d.	0.7	0.015
J7552	75F11	LARGE BLUE POOL	44	25.55	110 35.36	UNAME	P	n.d.	D	74.5	8.7	8.91	309	n.d.	n.d.	0.28	0.005
J7553	75F11	E. END OF SM FRACTURE	44	25.557	110 35.362	UNAME	G	A	D	94.5	8.8	8.91	315	n.d.	n.d.	0.27	0.011
J7554	75F11	S.W. END OF SM FRACTURE	44	25.548	110 35.38	UNAME	S	A	D	91	8.8	8.87	287	n.d.	n.d.	0.28	0.011
J7555	75F11	LITTLE SiO2 MOUND	44	25.515	110 35.403	UNAME	S	A	D	66	8.5	8.64	290	n.d.	n.d.	0.29	<.01
J7556	75F11	B HILL TRAIL FR ROAD	44	25.519	110 35.41	UNAME	P	n.d.	D	68	n.d.	5.91	133	n.d.	n.d.	0.7	0.2
POTTS HOT SPRINGS SOUTHERN TERRACE																	
J7513	75F06	S.W. SPG	44	25.319	110 35.191	UNAME	S	A	D	74	7.3	7.32	273	n.d.	n.d.	0.5	0.025
J7514	75F06	N.E. SPG REALLY SM. GEY	44	25.396	110 35.221	UNAME	S	A	D	80	7.8	7.9	313	n.d.	n.d.	0.3	0.01
J7583	75J03	POOL ON WEST SLOPE	44	25.428	110 35.273	UNAME	P	C	D	74	8.2	8.48	270	n.d.	n.d.	0.48	0.015
J7584	75J03	LARGE POOL OVER LAKE	44	25.412	110 35.193	UNAME	P	F	D	83	7.7	8.38	268	n.d.	n.d.	0.46	0.03

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
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WEST THUMB GEYSER BASIN NORTH TRENDING EXTENSION (CONTINUED)

J7482	418	22.5	2.95	0.16	0.14	<.1	535	0	52	286	15	3.85	1.97	n.d.	n.d.
J7483	387	13.7	2.2	0.19	0.15	<.1	225	102	54	301	15.5	3.95	2.01	n.d.	n.d.
J7580	415	25.7	2.2	0.17	0.18	n.d.	498	n.d.	47	294	28	3.4	n.d.	n.d.	n.d.
J7581	444	15.3	2.52	0.17	0.15	n.d.	560	n.d.	52	294	29	3.4	n.d.	n.d.	n.d.

POTTS HOT SPRINGS AT SHORELINE

J7515	362	14.2	3.58	n.d.	n.d.	n.d.	511	0	34	232	23	2.3	1.687	n.d.	n.d.
J7516	380	16	4.18	n.d.	n.d.	n.d.	508	0	38	254	26	2.58	1.912	n.d.	n.d.
J7582	414	18.9	4	0.21	0.4	n.d.	578	n.d.	32	275	28	2.9	n.d.	n.d.	n.d.
J7586	380	14.3	2.96	0.22	0.3	n.d.	539	n.d.	36	254	27	2.9	n.d.	n.d.	n.d.
J7599	392	22	4.23	n.d.	n.d.	n.d.	180	191	37	284	30	3	n.d.	n.d.	n.d.
75100	400	22	4.33	n.d.	n.d.	n.d.	400	81	42	280	29	3	n.d.	n.d.	n.d.
75101	410	22	4.6	n.d.	n.d.	n.d.	293	122	40	289	31	3	n.d.	n.d.	n.d.

POTTS HOT SPRINGS MAIN TERRACE

J7551	360	16	3.85	0.15	0.04	n.d.	486	n.d.	33	244	26.5	2.45	1.762	n.d.	n.d.
J7552	405	22	5.13	0.24	0.4	n.d.	481	n.d.	36	271	31	2.85	2.11	n.d.	n.d.
J7553	390	21.5	4.96	0.22	0.4	n.d.	503	n.d.	38	273	31	2.7	2.045	n.d.	n.d.
J7554	454	24	5.5	n.d.	n.d.	n.d.	579	n.d.	38	315	35	3.05	2.329	n.d.	n.d.
J7555	455	21.5	5.5	n.d.	n.d.	n.d.	573	n.d.	42	312	35	3.5	2.343	n.d.	n.d.
J7556	70	7.5	0.78	n.d.	n.d.	n.d.	44.4	0	576	47.6	5.5	0.48	0.33	n.d.	n.d.

POTTS HOT SPRINGS SOUTHERN TERRACE

J7513	346	17	3.22	n.d.	n.d.	n.d.	409	0	68	239	24	2.73	1.658	n.d.	n.d.
J7514	369	16	3.67	n.d.	n.d.	n.d.	466	0	71	243	22	2.58	1.639	n.d.	n.d.
J7583	403	14.6	3.46	0.14	0.28	n.d.	527	n.d.	43	265	29	3	n.d.	n.d.	n.d.
J7584	400	15.7	3.6	0.14	0.23	n.d.	542	n.d.	39	265	26	3	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-PH	l-PH	SiO2	Fe	Mn	Ca	Mg
POTTS HOT SPRINGS SOUTHERN TERRACE (CONTINUED)																
J7585	75J03	SPG IN MID OF MAIN AREA	44 25.334	110 35.185	UNAME	S	B	D	70	7.7	8.63	289	n.d.	n.d.	0.43	0.01
J7595	75J06	SPG ON SHORE	44 25.421	110 35.201	UNAME	S	A	A&D	54.5	6	7.95	191	n.d.	n.d.	1.08	0.175
J7596	75J06	SM CONE NW END SECTION	44 25.376	110 35.251	UNAME	S	A	A&D	87	5.7	8.76	356	n.d.	n.d.	0.84	0.016
J7597	75J06	SW END SIO2 RIM N30'DIA	44 25.334	110 35.214	UNAME	P	B	A&D	n.d.	7.2	8.35	289	n.d.	n.d.	0.57	0.02
J7598	75J06	SPG FROM FRACTURE	44 25.348	110 35.156	UNAME	S	A	A&D	93	7.3	8.53	264	n.d.	n.d.	0.68	0.03
HEART LAKE GEYSER BASIN RUSTIC GROUP																
J7553	75I21	SPG 15M FR RUSTIC	44 16.935	110 30.347	UNAME	S	B	D	93	8.4	8.55	258	n.d.	n.d.	0.96	0.02
J7554	75I21	SPG DUE S OF RUSTIC 20M	44 16.901	110 30.335	UNAME	S	C	D	88	7.8	8.36	271	n.d.	n.d.	3.31	0.07
HEART LAKE GEYSER BASIN MIDDLE GROUP																
J7557	75I21	50 YD OFF TRAIL TO FACT	44 17.937	110 31.135	UNAME	S	C	D	79	8.3	8.68	181	n.d.	n.d.	5.94	0.09
J7558	75I21	BEF TRAIL TURN TO NORTH	44 17.95	110 31.076	UNAME	S	B	D	64.5	7.6	8.57	214	n.d.	n.d.	1.28	0.02
HEART LAKE GEYSER BASIN LOWER EASTERN GROUP																
J7555	75I21	LARGE POOL WITH ALGAE	44 18.335	110 30.227	UNAME	P	A	D	86	8.8	9.07	254	n.d.	n.d.	0.72	<.01
J7556	75I21	SM SPG CONICAL 2BY1 M	44 17.425	110 30.287	UNAME	S	B	D	93.5	7.4	7.97	203	n.d.	n.d.	1.55	0.04
BECHLER CANYON AT THREE RIVERS																
H7501	75I25	@THREE RIVERS	0 0	0 0	UNAME	n.d.	n.d.	B	n.d.	n.d.	8.62	210	n.d.	n.d.	5.05	0.05
H7502	75I25	@THREE RIVERS	0 0	0 0	UNAME	n.d.	n.d.	B	90	n.d.	7.92	168	n.d.	n.d.	5.45	0.05
H7503	75I25	@THREE RIVERS	0 0	0 0	UNAME	n.d.	n.d.	B	90	n.d.	8.42	194	n.d.	n.d.	4.22	0.02
H7504	75I25	@THREE RIVERS	0 0	0 0	UNAME	S	B	B&D	COLD	n.d.	6.72	n.d.	n.d.	n.d.	3.5	0.56
J7563	75I24	S10E TO CAMPGROUND	44 17.107	110 54.084	UNAME	n.d.	D	D	75	6.8	7.53	180	n.d.	n.d.	4.5	0.14
J7564	75I24	BELOW CURRENT TRAIL	44 17.142	110 54.012	UNAME	n.d.	J	D	81	6.9	7.65	223	n.d.	n.d.	4.44	0.15
J7565	75I24	IN MEADOW N OF 64	44 17.176	110 53.952	UNAME	S	C	D	77.5	7.2	7.73	193	n.d.	n.d.	3.78	0.06
J7566	75I25	ACR RIVER FROM 65	44 17.107	110 44.131	UNAME	n.d.	A	D	52	6.6	7.39	174	n.d.	n.d.	4.3	0.08
J7567	75I25	N OF YJ7566 W FORK	44 17.176	110 54.024	UNAME	S	D	D	68	6.2	7.36	209	n.d.	n.d.	4.55	0.25

SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
POTTS: HOT SPRINGS SOUTHERN TERRACE (CONTINUED)															
J7585	385	15.6	3.05	0.18	0.18	n.d.	494	n.d.	42	265	27	3	n.d.	n.d.	n.d.
J7595	372	20	3.73	0.23	0.29	n.d.	501	0	41	268	26	2.9	n.d.	n.d.	n.d.
J7596	332	23	3.12	0.13	0.09	n.d.	292	81	39	2.39	25	2.6	n.d.	n.d.	n.d.
J7597	380	17	3.87	0.21	0.2	n.d.	408	49	55	267	27	3	n.d.	n.d.	n.d.
J7598	333	18	3.75	0.22	0.27	n.d.	405	43	37	261	25	2.8	n.d.	n.d.	n.d.
HEART LAKE GEYSER BASIN RUSTIC GROUP															
J7553	400	12.8	4.6	0.14	0.25	n.d.	300	n.d.	143	295	22	0.5	n.d.	n.d.	n.d.
J7554	405	14.5	4.7	0.21	0.43	n.d.	338	n.d.	157	301	24	3.6	n.d.	n.d.	n.d.
HEART LAKE GEYSER BASIN MIDDLE GROUP															
J7557	309	9.8	2.8	0.12	0.28	n.d.	270	n.d.	116	236	16	2.9	n.d.	n.d.	n.d.
J7558	322	9.7	3.23	0.12	0.3	n.d.	258	n.d.	115	248	19	3.2	n.d.	n.d.	n.d.
HEART LAKE GEYSER BASIN LOWER EASTERN GROUP															
J7555	420	12	4.51	0.14	0.22	n.d.	345	n.d.	154	290	25	3.6	n.d.	n.d.	n.d.
J7556	390	12	3.9	0.14	0.26	n.d.	318	0	157	295	25	3.5	n.d.	n.d.	n.d.
BECHLER CANYON AT THREE RIVERS															
H7501	275	11.3	0.95	n.d.	n.d.	n.d.	623	n.d.	21	71	15	0.73	n.d.	n.d.	n.d.
H7502	272	11.3	1.03	n.d.	n.d.	n.d.	599	0	21	70	15	0.9	n.d.	n.d.	n.d.
H7503	221	16.7	1	n.d.	n.d.	n.d.	464	n.d.	23	84	12	0.78	n.d.	n.d.	n.d.
H7504	3.3	2	<.01	n.d.	n.d.	n.d.	39	0	0.6	3	2.5	<.1	n.d.	n.d.	n.d.
J7563	340	17.7	1.2	0.13	0.08	n.d.	734	0	28	90	15	1	n.d.	n.d.	n.d.
J7564	340	14.8	1.2	0.12	0.08	n.d.	725	0	27	87	16	1.1	n.d.	n.d.	n.d.
J7565	345	15.8	1.3	0.1	0.08	n.d.	737	0	27	92	16	1.2	n.d.	n.d.	n.d.
J7566	314	15.8	1.14	0.12	0.08	n.d.	695	0	23	82	15	0.9	n.d.	n.d.	n.d.
J7567	243	12.4	0.92	0.08	0.05	n.d.	527	0	18	68	19	1	n.d.	n.d.	n.d.

SAMP#	DATE	DESCRIPTION	LATITUDE	LONGITUDE	NAME	TYPE	FLOW	COLL	TEMP	f-pH	l-pH	SiO2	Fe	Mn	Ca	Mg
BECHLER CANYON AT THREE RIVERS (CONTINUED)																
J7568	75I25	N END OF ACT 20' ABV R	44 17.21	110 53.952	UNAME	S	B	D	77	n.d.	7.76	222	n.d.	n.d.	4.28	0.07
J7569	75I25	W OF 68 N75M FROM RIVER	44 17.236	110 54	UNAME	S	B	D	76	7	7.86	207	n.d.	n.d.	4.7	0.19
BOUNDARY CREEK SPRINGS																
H7612	76L04	HAYDEN VALLEY	0 0	0 0	CRATE	G	n.d.	B	90	n.d.	3.69	664	0.09	0.08	4.5	0.294
H7710	77G26	DUNANDA FALLS	0 0	0 0	UNAME	S	F	B	46	n.d.	7.18	96	<.02	<.01	5	0.58
H7711	77G26	DUNANDA #7	0 0	0 0	UNAME	S	I	B	53	n.d.	7.94	110	<.02	<.01	5	0.55
H7720	77K18	MIDDLE BOUNDARY CREEK	44 46.680	111 01.830	16	S	n.d.	B	83	n.d.	8.65	207	n.d.	n.d.	2	0.4
SUMMIT LAKE HOT SPRINGS																
J7570	75J01	SOUTHERN TR SECT E. SPG	44 24.074	110 56.116	UNAME	S	A	B&D	84	1.9	2.31	367	n.d.	n.d.	2.1	0.2
J7571	75J01	SOUTERN TR SECT W. SPG	44 24.065	110 56.175	UNAME	S	A	B&D	87	1.6	1.82	231	n.d.	n.d.	0.8	0.24
J7572	75J01	SOUTHWEST SECT N. SPG	44 24.659	110 57.132	UNAME	S	B	B&D	72	4.4	5.94	184	n.d.	n.d.	1.1	0.25
J7573	75J01	SOUTHWESTERN SECT S SPG	44 24.573	110 57.215	UNAME	S	n.d.	B&D	n.d.	2.2	2.92	286	n.d.	n.d.	2	0.2
J7574	75J01	NORTHERN SECT SANDY SPG	44 24.977	110 57.311	UNAME	S	F	B&D	90	6.5	7.69	203	n.d.	n.d.	0.47	0.03
J7575	75J01	AROUND SMOKE JUMPER	44 24.96	110 57.239	UNAME	S	n.d.	B&D	94	2.2	2.84	454	n.d.	n.d.	1.42	0.17
SNAKE RIVER SPRINGS																
H7505	75J16	NE OF S ENTRANCE	44 39.43	110 39.26	UNAME	S	J	B	68.5	n.d.	7.86	61.6	n.d.	n.d.	77.5	14.6
H7506	75J16	NEAR BENCH MARK 6954	44 39.33	110 34.86	UNAME	S	D	B	58	n.d.	7.8	60.8	n.d.	n.d.	150	29
H7613	76G20	CRAWFISH CR	44 40.61	110 43.4	UNAME	n.d.	n.d.	B	59	n.d.	8.27	133	n.d.	n.d.	6.75	0.322
H7614	76G20	CRAWFISH CR LOWER SPG	44 40.62	110 43.15	UNAME	S	n.d.	B	57.5	n.d.	8.07	130	n.d.	n.d.	5.9	0.288
H7615	76G21	CAWFISH CR LOWER SPG	44 38.3	110 41.95	UNAME	S	n.d.	B	68	n.d.	8.5	125	n.d.	n.d.	7.75	0.327
H7707	77G16	2ND HOT SPG AREA	44 39.42	110 34.87	UNAME	S	G	B	68.5	n.d.	7.63	60.8	n.d.	n.d.	185	35
H7708	77J17	3RD H S AREA OF SNAKE R	0 0	0 0	UNAME	S	G	B	74.5	n.d.	8.14	88	n.d.	n.d.	2.18	1.25



SAMP#	Na	K	Li	Rb	Cs	NH4	HCO3	CO3	SO4	Cl	F	B	As	H2S	Zn
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BECHLER CANYON AT THREE RIVERS (CONTINUED)

J7568	333	11.5	1.27	0.1	0.09	n.d.	719	0	27	98	16	1.3	n.d.	n.d.	n.d.
J7569	280	10.9	1.07	0.1	0.08	n.d.	614	0	21	86	15	1.1	n.d.	n.d.	n.d.

BOUNDARY CREEK SPRINGS

H7612	650	154	7	n.d.	n.d.	n.d.	0	0	545	812	33	21.2	n.d.	n.d.	n.d.
H7710	75	3.1	0.31	0.031	<.01	n.d.	137	0	3	30	7.2	0.62	n.d.	n.d.	0.035
H7711	95	3.6	0.42	0.035	<.01	n.d.	165	0	3	38	9.4	0.85	n.d.	n.d.	n.d.
H7720	162	5.5	1.21	0.048	0.05	n.d.	235	n.d.	21	94	18	1.75	n.d.	n.d.	n.d.

SUMMIT LAKE HOT SPRINGS

J7570	23	44.8	0.01	0.37	0.01	n.d.	0	0	357	4	1	0.8	n.d.	n.d.	n.d.
J7571	8	10.5	<.01	0.06	<.01	n.d.	0	0	860	2.3	0.43	2.8	n.d.	n.d.	n.d.
J7572	14.5	10.8	<.01	n.d.	n.d.	n.d.	35	0	29	5	1.2	<.1	n.d.	n.d.	n.d.
J7573	19	24.8	0.02	0.15	<.01	n.d.	0	0	179	2.1	1.9	<.1	n.d.	n.d.	n.d.
J7574	47	12.3	0.05	0.07	<.01	n.d.	66	0	149	10	4.2	<.1	n.d.	n.d.	n.d.
J7575	30.5	28.3	0.02	0.16	<.01	n.d.	0	0	197	3.3	1.9	0.14	n.d.	n.d.	n.d.

SNAKE RIVER SPRINGS

H7505	143	24	0.95	n.d.	n.d.	n.d.	298	0	49.5	139	4.6	1.7	n.d.	n.d.	n.d.
H7506	290	52.5	1.45	n.d.	n.d.	n.d.	539	0	493	145	3	3	n.d.	n.d.	n.d.
H7613	74	13	0.31	n.d.	n.d.	n.d.	151	0	14	41	4.6	1.05	n.d.	n.d.	n.d.
H7614	70	13	0.34	n.d.	n.d.	n.d.	121	0	13	45	4.6	1.13	n.d.	n.d.	n.d.
H7615	142	8	0.5	n.d.	n.d.	n.d.	245	n.d.	13	81	8.3	1.5	n.d.	n.d.	n.d.
H7707	380	68	1.95	n.d.	n.d.	n.d.	536	0	702	201	3.5	4	n.d.	n.d.	n.d.
H7708	258	19.5	3.22	n.d.	n.d.	n.d.	258	0	141	194	8.8	2.6	n.d.	n.d.	n.d.