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FINGERPRINTING OF GROUND WATER
BY ICP-MS

PROGRESS REPORT
OCTOBER 1, 1992 TO DECEMBER 31, 1992

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DOE Cooperative Agreement
No. DE-FC 08-90NV10872

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Enclosed in this report are the results of the analyses for the trace metals of the third sampling of Ash Meadows and Death Valley springs. The data are complete except for the lanthanum and cerium results for the Ash Meadows springs. There was significant, but as yet an undetermined source of contamination for these two elements. We are presently attempting to determine the source of the contamination. The results of the major cations and anions will be included in the next report.

Yucca Mountain Precipitation Sample Analysis Results

Winter 1992 and Spring 1993

Precipitation samples were collected at four locations on the Nevada Test Site from December 1992 through March 1993. The samples were analyzed for a total of 66 constituents, including: major cations, major anions, and rare earth elements. The location of the sample collections are listed below:

	<u>Location Name</u>	<u>Approx. Location</u>
	60-meter Tower	36' 50.57 N, 116' 25.86 W
	South End Yucca Mtn.	36' 49.95 N, 116' 28.10
W		
	North End Yucca Mtn.	36' 51.26 N, 116' 28.01
W		
	Lathrop Wells	Lathrop Wells Gate, NTS

Samples were collected in specially designed precipitation collectors obtained from M.I.C. Company and Anderson. These samplers have a trigger device which is activated when moisture is present on the surface of the sensor. When the trigger is activated, the cover over the collection bucket moves to the other side of the sampler to allow rain water or snow to be collected. When the sensor dries, the cover moves back over the collection bucket to prevent evaporation and contamination of the sample.

Variations in samples can occur due to sampling and environmental factors. The sensor on the samplers are very sensitive to small amounts of moisture. Therefore, the system may trigger and expose the sample collection bucket at times when measurable precipitation samples are not obtained. If windy conditions exist, dust may be blown into the samplers. In addition, samples cannot always be collected from the samplers immediately after a precipitation event and some evaporation of the sample may occur.

Attached are the results of the analysis listed by location and date. Not all samples were analyzed for all constituents due to limitation of sample size. Also included are the mean, standard deviation, high and low values for each location. A comparison of these values to those of the last two USGS standard reference sample precipitation values for sodium, potassium, magnesium, calcium, chloride, fluoride, phosphate and sulfate

show a similar concentration range. The concentrations for the analytes do not vary significantly at the different locations.

The concentration of the various constituents measured seem to correlate directly with the volume of sample collected. For example, the volume of Lathrop Wells samples collected 1/19/93 and 2/10/93 was approximately 1-liter each and the concentration of the constituents was generally lower than for the samples collected 12/30/92 and 1/6/93 which had volumes of approximately 100 ml each. This could be due to evaporation and/or dissolution of dust blown into the sampler during the precipitation event.

RESULTS OF THE CHEMICAL ANALYSES OF THE THIRD SAMPLING OF
ASH MEADOWS AND DEATH VALLEY SPRINGS

		Dy 163	Ho 165	Er 166	Tm 169	Yb 174	Lu 175	Th 232
BIG SPRINGS	MEAN	9.61E-01	4.33E-01	7.67E-01	3.79E-01	7.76E-01	3.56E-01	9.03E-01
	S D	1.88E-01	7.66E-02	1.51E-01	7.38E-02	1.22E-01	8.03E-02	1.86E-01
BRADFORD	MEAN	8.30E-01	1.86E-01	5.53E-01	8.53E-02	6.01E-01	9.10E-02	5.71E-01
	S D	1.71E-01	3.27E-02	1.27E-01	1.91E-02	1.33E-01	1.75E-02	1.53E-01
COLD SPRINGS	MEAN	7.46E-01	1.72E-01	5.69E-01	8.10E-02	5.33E-01	8.04E-02	2.42E-01
	S D	1.46E-01	3.14E-02	9.22E-02	1.54E-02	1.38E-01	2.04E-02	7.48E-02
CRYSTAL	MEAN	6.22E-01	1.32E-01	4.18E-01	5.59E-02	4.14E-01	6.33E-02	4.18E-01
	S D	1.36E-01	3.38E-02	8.50E-02	1.47E-02	6.80E-02	1.15E-02	1.16E-01
FAIRBANKS	MEAN	9.35E-01	1.94E-01	5.55E-01	8.27E-02	5.17E-01	8.54E-02	5.14E-01
	S D	2.32E-01	4.85E-02	1.51E-01	2.09E-02	1.35E-01	2.06E-02	1.36E-01
FORREST	MEAN	1.12E+00	5.36E-01	1.19E+00	1.06E+00	2.13E+00	1.89E+00	2.14E-01
	S D	2.96E-01	1.34E-01	2.91E-01	2.24E-01	4.74E-01	4.16E-01	9.96E-02
JACKRABBIT	MEAN	8.01E-01	1.92E-01	5.29E-01	8.23E-02	5.28E-01	9.92E-02	2.84E-01
	S D	1.50E-01	2.09E-02	1.43E-01	1.93E-02	9.18E-02	1.63E-02	1.52E-01
KINGSPool	MEAN	1.83E-01	3.95E-02	1.11E-01	2.09E-02	1.18E-01	3.31E-02	8.62E-01
	S D	4.03E-02	6.10E-03	3.93E-02	5.42E-03	1.90E-02	4.96E-03	2.41E-01
LONGSTREET	MEAN	6.08E-01	1.60E-01	4.54E-01	9.90E-02	4.61E-01	1.25E-01	1.59E+00
	S D	9.20E-02	2.38E-02	3.59E-02	1.26E-02	5.62E-02	2.24E-02	3.24E-01
PT O ROCKS 1	MEAN	1.71E-01	3.86E-02	9.13E-02	1.41E-02	9.15E-02	1.82E-02	1.79E-01
	S D	5.22E-02	1.06E-02	2.03E-02	6.89E-03	2.39E-02	5.36E-03	9.74E-02
PT O ROCKS 2	MEAN	2.05E-01	3.79E-02	1.14E-01	1.23E-02	9.42E-02	1.79E-02	1.97E-01
	S D	5.39E-02	8.09E-03	4.85E-02	7.82E-03	2.34E-02	1.36E-02	1.43E-01
ROGERS	MEAN	1.45E+00	3.59E-01	1.28E+00	2.35E-01	1.81E+00	3.59E-01	3.45E-01
	S D	2.81E-01	6.89E-02	2.17E-01	5.34E-02	3.40E-01	8.00E-02	1.00E-01
TUBBS	MEAN	8.24E-01	2.08E-01	6.30E-01	1.87E-01	8.90E-01	3.54E-01	2.50E-01
	S D	2.27E-01	4.93E-02	1.67E-01	5.01E-02	1.77E-01	7.50E-02	1.06E-01
N D = NOT DETECTED								
* VALUES MUCH HIGHER								
THAN PREVIOUS SAMPLES								
CONTAMINATION								
SUSPECTED								

		Li 7	Be 9	V 51	Cr 52	Mn 55	Ni 60	Co 59	Ga 71	As 75
BIG SPRINGS	MEAN	1.34E+02	1.32E-02	1.39E+00	5.22E-01	7.04E-02	2.91E-01	1.65E-02	6.98E-03	7.56E+01
	S D	3.34E+00	2.71E-02	3.46E-02	5.16E-02	4.71E-03	2.38E-02	1.38E-03	8.58E-04	8.66E+00
BRADFORD	MEAN	1.39E+02	N D	2.17E+00	4.77E-01	4.38E-01	5.67E-01	3.28E-02	1.78E-03	2.02E+01
	S D	5.07E+00		5.50E-02	3.98E-02	1.33E-02	5.47E-02	2.24E-03	3.90E-04	4.23E+00
COLD SPRINGS	MEAN	1.67E+02	5.69E-02	1.70E+00	2.76E+00	1.14E-01	1.21E+00	7.28E-02	2.79E-03	2.40E+01
	S D	5.22E+00	2.68E-02	7.52E-02	1.55E-01	5.52E-03	7.66E-02	1.97E-03	1.11E-03	2.38E+00
CRYSTAL	MEAN	1.03E+02	N D	1.62E+00	8.14E-01	1.64E-01	6.47E-01	3.69E-02	1.32E-02	4.90E+01
	SD	4.47E+00		5.06E-02	4.53E-02	6.17E-03	3.58E-02	1.64E-03	6.78E-04	3.35E+00
FAIRBANKS	MEAN	8.72E+01	2.18E-02	8.11E-01	1.57E+00	1.59E-01	5.35E-01	3.07E-02	7.50E-03	1.44E+01
	S D	2.68E+00	2.30E-02	2.69E-02	9.00E-02	7.21E-03	3.65E-02	1.75E-03	2.17E-03	2.18E+00
FORREST	MEAN	1.24E+02	4.13E-02	1.79E+00	2.36E-01	2.97E-01	5.90E-01	3.54E-02	5.17E-03	2.40E+01
	S D	4.62E+00	3.00E-02	3.00E-02	5.65E-02	8.29E-03	4.36E-02	3.05E-03	1.16E-03	2.27E+00
JACK RABBIT	MEAN	1.09E+02	1.89E-02	1.46E+00	7.63E-01	3.72E-02	3.08E-01	1.66E-02	4.23E-03	5.48E+01
	S D	4.23E+00	4.08E-02	3.03E-02	6.73E-02	5.89E-03	5.47E-02	2.78E-03	8.50E-04	6.19E+00
KINGSPPOOL	MEAN	9.99E+01	2.51E-02	1.39E+00	7.89E-01	1.10E-01	3.83E-01	2.03E-02	6.77E-03	2.17E+01
	S D	3.62E+00	2.41E-02	2.73E-02	4.74E-02	5.75E-03	4.64E-02	1.83E-03	1.60E-03	2.65E+00
LONGSTREET	MEAN	8.37E+01	N D	1.04E+00	1.21E+00	4.24E-02	2.65E-01	1.33E-0	4.78E-03	1.93E+01
	S D	1.85E+00		1.24E-02	5.67E-02	3.63E-03	1.94E-02	1.45E-03	7.47E-04	2.06E+00
PT O ROCKS 1	MEAN	9.71E+01	2.38E-02	1.31E+00	4.13E-01	2.59E-02	3.76E-01	1.88E-02	5.35E-03	4.12E+01
	S D	3.69E+00	2.09E-02	2.49E-02	5.46E-02	4.65E-03	2.67E-02	2.01E-03	4.70E-04	5.13E+00
PT O ROCKS 2	MEAN	1.01E+02	2.64E-02	1.65E+00	5.27E-01	8.79E-02	4.49E-01	2.65E-02	7.70E-03	2.02E+01
	S D	1.82E+00	3.28E-02	1.71E-02	5.00E-02	4.79E-03	3.04E-02	1.66E-03	8.93E-04	2.22E+00
ROGERS	MEAN	9.99E+01	3.70E-02	1.20E+00	9.03E-01	6.06E-02	5.83E-01	3.43E-02	8.17E-03	2.45E+01
	S D	3.94E+00	3.19E-02	2.38E-02	5.02E-02	5.29E-03	2.84E-02	1.89E-03	2.30E-03	2.28E+00
TUBBS	MEAN	1.27E+02	N D	2.21E+00	1.83E+00	6.46E-01	7.51E-01	3.97E-02	1.95E-03	3.20E+01
	S D	1.85E+00		3.86E-02	6.10E-02	4.34E-03	2.69E-02	2.96E-03	7.28E-04	2.90E+00
N D = NOT DETECTED										

ND = NOT DETECTED

		Pb 208	Bi 209	U 238
BIG SPRINGS	MEAN	2.44E-02	2.81E-04	2.42E+00
	S D	3.01E-03	2.98E-04	1.70E-02
BRADFORD	MEAN	8.53E-02	6.63E-04	6.78E+00
	S D	2.06E-03	2.32E-04	1.47E-01
COLD SPRINGS	MEAN	1.72E-03	6.58E-04	6.25E+00
	S D	2.45E-03	3.07E-04	6.95E-02
CRYSTAL	MEAN	5.18E-02	6.19E-04	2.56E+00
	SD	3.79E-03	3.43E-04	4.89E-02
FAIRBANKS	MEAN	7.08E-03	1.58E-04	1.81E+00
	S D	2.71E-03	3.07E-04	4.83E-02
FORREST	MEAN	2.61E-02	2.85E-04	3.60E+00
	S D	2.98E-03	3.77E-04	6.43E-02
JACK RABBIT	MEAN	2.10E-02	3.21E-04	3.61E+00
	S D	3.86E-03	3.52E-04	5.95E-02
KINGSPool	MEAN	1.49E-02	8.47E-04	2.75E+00
	S D	3.38E-03	4.18E-04	6.35E-02
LONGSTREET	MEAN	3.24E-02	4.88E-04	2.46E+00
	S D	1.50E-03	2.04E-04	4.39E-02
PT O ROCKS 1	MEAN	3.03E-03	1.86E-04	2.71E+00
	S D	3.12E-03	2.84E-04	2.36E-02
PT O ROCKS 2	MEAN	9.64E-02	9.36E-04	2.72E+00
	S D	4.84E-03	5.24E-04	3.63E-02
ROGERS	MEAN	6.31E-02	1.90E-04	2.46E+00
	S D	4.81E-03	4.30E-04	2.17E-02
TUBBS	MEAN	1.70E-01	8.15E-04	6.26E+00
	S D	2.68E-03	2.93E-04	4.96E-02
N D = NOT DETECTED				

ASH MEADOWS SAMPLING_3 STANDARDS_3.4 CONCENTRATION PARTS PER BILLION (PPB)

		Ru 99	Pd 105	Sn 117	Sb 121	Te 125	Hf 177	Ir 193	Pt 195	Au 197
BIG SPRINGS	MEAN	4.86E-04	1.57E-01	2.69E-02	2.02E-01	1.99E-02	6.47E-03	1.14E-04	6.07E-03	5.22E-02
	S D	4.99E-04	4.29E-03	3.35E-03	5.43E-03	3.52E-03	1.79E-03	1.97E-04	1.18E-03	7.68E-03
BRADFORD	MEAN	3.89E-04	3.63E-01	2.24E+00	1.63E-01	2.26E-02	2.92E-03	ND	2.42E-03	1.56E-02
	S D	2.95E-04	1.55E-02	3.61E-02	4.01E-03	5.15E-03	7.72E-04		1.27E-03	2.30E-03
COLD SPRINGS	MEAN	1.17E-03	4.04E-01	2.24E-02	2.01E-01	4.69E-02	2.95E-03	ND	7.39E-04	2.02E-02
	S D	2.65E-04	1.33E-02	3.57E-03	3.08E-03	6.02E-03	8.64E-04		9.82E-04	1.86E-03
CRYSTAL	MEAN	3.51E-04	2.66E-01	2.09E-01	2.35E-01	6.88E-03	2.24E-03	ND	4.84E-04	4.48E-02
	S D	3.15E-04	1.23E-02	9.72E-03	5.87E-03	3.54E-03	7.67E-04		1.05E-03	2.16E-03
FAIRBANKS	MEAN	2.30E-04	1.77E-01	7.20E-02	1.17E-01	1.27E-02	2.58E-03	1.75E-04	1.08E-02	1.87E-02
	S D	2.82E-04	5.77E-03	3.17E-03	3.22E-03	3.95E-03	8.52E-04	2.51E-04	1.38E-03	3.35E-03
FORREST	MEAN	7.18E-04	1.83E-01	1.57E-01	1.84E-01	1.25E-02	3.93E-03	N D	2.21E-03	2.20E-02
	S D	4.08E-04	5.82E-03	1.17E-02	6.04E-03	4.80E-03	6.78E-04		1.05E-03	2.32E-03
JACKRABBIT	MEAN	6.96E-04	1.56E-01	3.04E-02	1.63E-01	2.01E-02	1.59E-02	1.71E-04	4.26E-03	7.78E-02
	S D	3.51E-04	7.57E-03	5.80E-03	1.19E-02	6.44E-03	2.66E-03	3.40E-04	1.59E-03	5.87E-03
KINGSSPOOL	MEAN	5.20E-04	1.28E-01	1.17E-01	1.58E-01	1.39E-02	5.33E-03	N D	2.88E-03	3.16E-02
	S D	4.44E-04	3.68E-03	5.24E-03	5.77E-03	4.51E-03	1.20E-03		1.18E-03	6.90E-03
LONGSTREET	MEAN	1.31E-04	2.31E-01	4.81E-02	2.12E-01	7.64E-03	2.19E-03	ND	1.18E-03	1.42E-02
	S D	3.27E-04	1.00E-02	2.22E-03	3.73E-03	3.26E-03	6.62E-04		8.89E-04	2.90E-03
PT O ROCKS 1	MEAN	3.87E-04	1.40E-01	2.65E-02	1.57E-01	1.57E-02	5.62E-03	2.36E-04	5.06E-03	4.30E-02
	S D	2.94E-04	1.18E-02	3.70E-03	6.88E-03	3.16E-03	1.30E-03	2.60E-04	1.36E-03	5.10E-03
PT O ROCKS 2	MEAN	4.03E-04	1.37E-01	3.26E-02	1.98E-01	1.40E-02	4.17E-03	N D	3.81E-03	2.43E-02
	S D	4.73E-04	6.18E-03	4.79E-03	4.90E-03	4.75E-03	9.70E-04		1.17E-03	4.36E-03
ROGERS	MEAN	4.44E-04	2.12E-01	4.01E-02	3.09E-01	1.13E-02	2.70E-03	N D	2.31E-03	1.87E-02
	S D	4.55E-04	1.09E-02	4.26E-03	5.85E-03	5.96E-03	7.14E-04		1.25E-03	3.99E-03
TUBBS	MEAN	4.95E-04	3.75E-01	6.79E-02	2.08E-01	1.90E-02	2.27E-03	4.71E-05	7.66E-04	1.50E-02
	S D	4.18E-04	1.79E-02	5.94E-03	3.11E-03	4.37E-03	5.84E-04	2.48E-04	8.85E-04	1.61E-03

N D = NOT DETECTED

ASH MEADOWS SAMPLING_3 STANDARDS_3.4 CONCENTRATION PARTS PER BILLION (PPB)

		Ti 47	Ge 73	Zr 90	Nb 93	Mo 95	Ta 181	W 182	Re 187
BIG SPRINGS	MEAN	5.77E-01	5.29E-01	8.32E-02	1.40E-02	7.25E+00	1.45E-02	3.92E-01	6.28E-03
	S D	2.19E-02	1.88E-02	2.01E-03	1.36E-03	1.87E-01	1.45E-03	3.68E-03	2.54E-04
BRADFORD	MEAN	8.89E-01	3.29E-01	5.13E-02	9.70E-03	2.81E+00	6.63E-03	5.85E-02	1.28E-02
	S D	6.22E-02	8.88E-03	1.69E-03	4.67E-04	9.89E-02	1.00E-03	8.07E-03	6.03E-04
COLD SPRINGS	MEAN	8.50E-01	3.69E-01	5.25E-02	6.78E-03	2.36E+01	7.96E-03	2.52E-01	2.30E-02
	S D	2.70E-02	9.04E-03	3.00E-03	6.36E-04	6.43E-01	1.09E-03	8.98E-03	1.79E-03
CRYSTAL	MEAN	6.05E-01	3.85E-01	3.78E-02	6.87E-03	7.55E+00	6.62E-03	2.05E-01	7.76E-03
	S D	2.44E-02	2.42E-02	2.27E-03	4.87E-04	3.35E-01	6.19E-04	6.66E-03	7.45E-04
FAIRBANKS	MEAN	7.98E-01	3.47E-01	6.23E-02	7.82E-03	7.49E+00	7.96E-03	3.05E-01	6.25E-03
	S D	3.99E-02	1.41E-02	1.92E-03	4.05E-04	2.54E-01	9.09E-04	1.26E-02	2.38E-04
FORREST	MEAN	8.47E-01	3.12E-01	9.93E-02	9.06E-03	9.88E+00	9.44E-03	3.99E-01	7.93E-03
	S D	3.30E-02	1.06E-02	7.43E-03	1.06E-03	4.61E-01	1.22E-03	1.05E-02	2.91E-04
JACKRABBIT	MEAN	4.76E-01	3.68E-01	1.18E-01	1.84E-02	1.13E+01	2.01E-02	4.44E-01	1.07E-02
	S D	1.34E-02	3.14E-02	5.43E-03	6.84E-04	1.27E+00	9.94E-04	3.46E-02	1.15E-03
KINGSSPOOL	MEAN	6.27E-01	3.46E-01	1.20E-01	9.75E-03	6.22E+00	1.16E-02	3.43E-01	6.94E-03
	S D	6.07E-02	1.82E-02	1.98E-03	1.41E-03	4.28E-01	1.71E-03	7.84E-03	8.82E-04
LONGSTREET	MEAN	6.04E-01	3.55E-01	3.71E-02	5.04E-03	6.49E+00	6.22E-03	2.74E-01	7.60E-03
	S D	5.19E-02	1.57E-02	1.42E-03	1.99E-04	3.88E-01	8.16E-04	1.00E-02	1.93E-04
PT O ROCKS 1	MEAN	5.81E-01	3.42E-01	8.64E-02	1.30E-02	6.48E+00	1.36E-02	3.61E-01	6.77E-03
	S D	5.65E-02	1.72E-02	3.53E-03	1.46E-03	1.56E-01	1.16E-03	1.19E-02	9.20E-04
PT O ROCKS 2	MEAN	6.11E-01	3.28E-01	9.52E-02	8.31E-03	6.35E+00	9.80E-03	3.37E-01	7.11E-03
	S D	5.25E-02	1.52E-02	2.36E-03	7.68E-04	1.90E-01	8.18E-04	7.04E-03	3.92E-04
ROGERS	MEAN	7.64E-01	3.91E-01	4.06E-02	7.20E-03	7.14E+00	7.77E-03	2.45E-01	7.23E-03
	S D	4.79E-02	9.25E-03	7.65E-04	9.34E-04	2.61E-01	6.91E-04	5.31E-03	4.84E-04
TUBBS	MEAN	9.15E-01	3.41E-01	5.65E-02	6.06E-03	1.47E+01	6.00E-03	3.35E-01	1.27E-02
	S D	6.66E-02	1.92E-02	3.56E-03	4.98E-04	5.76E-01	1.01E-03	1.30E-02	1.44E-03

N D = NOT DETECTED

		Sc 45	Y 89	La 139	Ce 140	Pr 141	Nd 146	Sm 147	Eu 153	Gd 158	Tb 159
BRIAR	MEAN	3.73E-01	5.20E+01	5.99E+01	6.87E+01	6.25E+00	2.60E+01	6.19E+00	1.40E+00	6.92E+00	9.31E-01
	S D	1.14E-01	2.99E+00	4.25E+00	4.18E+00	2.84E-01	9.37E-01	4.60E-01	5.00E-02	1.57E-01	7.57E-02
BRIAR PIPE	MEAN	1.09E+00	1.60E+02	1.48E+02	5.98E+01	1.10E+01	5.11E+01	1.30E+01	2.11E+00	1.59E+01	2.34E+00
	S D	2.49E-01	5.03E+00	9.74E+00	1.58E+00	3.25E-01	1.39E+00	4.76E-01	8.31E-02	3.71E-01	7.89E-02
GRAPEVINE	MEAN	0.00E+00	4.72E+00	5.19E+01	6.02E+01	3.54E-01	1.47E+00	2.72E-01	8.00E-02	2.98E-01	1.71E-01
	S D	2.06E-01	1.36E+00	2.02E+00	2.20E+00	1.12E-01	4.57E-01	1.03E-01	2.00E-02	8.12E-02	3.81E-02
McLEAN	MEAN	1.48E+00	2.95E+01	8.88E+01	1.39E+01	1.26E+00	5.34E+00	1.23E+00	2.50E-01	1.64E+00	2.71E-01
	S D	1.85E-01	6.99E-01	2.63E+00	3.91E-01	5.72E-02	2.12E-01	6.09E-02	2.00E-02	8.82E-02	2.34E-02
MESQUITE	MEAN	1.67E-01	6.58E+00	5.40E+00	6.39E+00	1.28E+00	5.25E+00	1.02E+00	1.80E-01	1.02E+00	1.52E-01
	S D	1.88E-01	1.43E+00	5.80E-01	5.30E-01	2.89E-01	1.09E+00	2.18E-01	1.11E-02	2.13E-01	2.65E-02
NAVARRES	MEAN	2.26E+00	6.57E+00	1.06E+01	5.63E+00	1.02E+00	4.09E+00	7.94E-01	1.80E-01	8.30E-01	1.30E-01
	S D	1.48E-01	1.82E-01	1.87E+00	5.20E-01	1.48E-02	1.73E-01	6.60E-02	2.37E-02	6.17E-02	1.10E-02
SARATOGA	MEAN	1.21E+00	2.62E+01	7.05E+00	5.82E+00	1.49E+00	7.14E+00	1.76E+00	5.80E-01	2.62E+00	4.09E-01
	S D	2.66E-01	7.57E-01	4.00E-01	4.00E-01	7.38E-02	2.82E-01	6.03E-02	3.50E-02	6.05E-02	3.36E-02
SCOTTYS	MEAN	1.70E+00	1.07E+01	1.26E+01	4.32E+01	1.88E+00	7.31E+00	1.34E+00	2.80E-01	1.68E+00	2.21E-01
	S D	1.69E-01	3.63E-01	8.20E-01	7.00E+00	1.15E-01	5.05E-01	1.67E-01	2.00E-02	1.40E-01	1.70E-02
SURPRISE	MEAN	8.54E-01	8.93E+00	6.12E+00	1.04E+01	1.16E+00	1.12E+01	9.67E-01	1.50E-01	1.27E+00	2.02E-01
	SD	2.33E-01	6.51E-01	1.70E-01	8.50E-01	8.76E-02	9.04E-01	1.47E-01	6.00E-03	1.95E-01	2.24E-02
TEXAS	MEAN	1.39E+00	5.33E+00	7.55E+00	6.22E+00	9.00E-01	3.58E+00	7.76E-01	1.20E-01	7.24E-01	1.06E-01
	S D	1.57E-01	3.20E-01	4.60E-01	6.20E-01	8.75E-02	4.07E-01	9.01E-02	1.08E-02	8.97E-02	1.35E-02
TRAVERTINE-A	MEAN	1.24E+00	6.50E+00	1.01E+01	4.74E+00	9.43E-01	3.83E+00	8.05E-01	1.70E-01	8.62E-01	1.21E-01
	S D	1.49E-01	2.48E-01	9.90E-02	4.80E-01	3.74E-02	1.56E-01	6.48E-02	2.00E-02	6.83E-02	2.29E-02
TRAVERTINE-B	MEAN	1.42E-01	1.32E+01	7.08E+00	3.39E+00	1.14E+00	4.70E+00	1.03E+00	2.66E-01	1.10E+00	1.99E-01
	S D	2.18E-01	3.13E+00	6.70E-01	2.00E-01	2.61E-01	1.07E+00	2.78E-01	1.44E-02	2.61E-01	3.29E-02
UPPER GRAPEVINE	MEAN	2.39E+00	2.09E+01	7.66E+01	9.68E+00	2.14E+00	9.12E+00	1.76E+00	5.82E+00	2.12E+00	3.28E-01
	S D	3.56E-01	5.84E-01	1.18E+00	1.30E-01	5.62E-02	2.18E-01	1.20E-01	3.56E-01	3.31E-02	1.57E-02
WOODCAMP	MEAN	6.65E-01	5.12E+00	3.11E+01	7.35E+00	5.61E-01	2.30E+00	5.58E+00	2.80E-01	5.43E-01	1.24E-01
	S D	7.49E-02	2.13E-01	1.84E+00	4.70E-01	3.23E-02	7.05E-02	1.24E-01	2.00E-02	1.90E-02	3.40E-03

		Dy 163	Ho 165	Er 166	Tm 169	Yb 174	Lu 175	Th 232
BRIAR	MEAN	5.80E+00	1.43E+00	4.74E+00	6.73E-01	4.63E+00	8.55E-01	3.44E-01
	S D	2.15E-01	2.72E-02	1.11E-01	4.39E-02	2.27E-01	6.20E-02	1.28E-01
BRIAR PIPE	MEAN	1.57E+01	4.06E+00	1.37E+01	2.12E+00	1.43E+01	2.53E+00	5.68E-01
	S D	6.20E-01	9.26E-02	3.88E-01	2.03E-02	2.32E-01	7.95E-02	8.99E-02
GRAPEVINE	MEAN	4.73E-01	4.44E-01	7.58E-01	9.96E-01	1.58E+00	1.73E+00	9.50E-01
	S D	1.34E-01	1.39E-01	1.84E-01	2.37E-01	4.20E-01	4.54E-01	3.38E-01
McLEAN	MEAN	1.93E+00	4.75E-01	1.67E+00	2.70E-01	1.77E+00	3.07E-01	2.24E-01
	S D	8.14E-02	1.81E-02	9.68E-02	9.93E-03	1.61E-01	2.11E-02	7.53E-02
MESQUITE	MEAN	9.06E-01	1.89E-01	5.51E-01	8.99E-02	5.49E-01	9.12E-02	2.79E-01
	S D	2.09E-01	4.02E-02	1.30E-01	2.18E-02	1.15E-01	1.65E-02	1.36E-01
NAVARRES	MEAN	6.66E-01	1.31E-01	3.85E-01	6.00E-02	3.86E-01	6.51E-02	1.45E-01
	S D	6.35E-02	1.08E-02	1.69E-02	8.17E-03	5.14E-02	1.59E-02	6.18E-02
SARATOGA	MEAN	2.60E+00	5.92E-01	1.52E+00	1.99E-01	1.06E+00	1.52E-01	1.53E-01
	S D	7.31E-02	2.73E-02	9.68E-02	1.84E-02	8.23E-02	1.47E-02	4.77E-02
SCOTTYS	MEAN	1.31E+00	2.94E-01	1.07E+00	1.73E-01	1.14E+00	1.88E-01	1.15E-02
	S D	9.38E-02	3.18E-02	7.28E-02	8.59E-03	9.39E-02	2.27E-02	7.30E-02
SURPRISE	MEAN	1.26E+00	2.73E-01	8.27E-01	1.12E-01	6.39E-01	1.06E-01	1.67E-01
	SD	9.42E-02	4.95E-02	1.05E-01	9.22E-03	7.44E-02	1.22E-02	1.12E-01
TEXAS	MEAN	6.68E-01	1.38E-01	4.31E-01	6.13E-02	4.11E-01	7.15E-02	1.93E-01
	S D	9.49E-02	9.28E-03	5.06E-02	9.81E-03	2.68E-02	1.98E-02	6.02E-02
TRAVERTINE-A	MEAN	6.95E-01	1.47E-01	4.22E-01	5.73E-02	4.41E-01	6.35E-02	1.41E-02
	S D	3.40E-02	8.49E-03	3.04E-02	1.11E-02	7.09E-02	1.45E-02	7.40E-02
TRAVERTINE-B	MEAN	1.23E+00	2.56E-01	8.23E-01	1.30E-01	8.98E-01	1.41E-01	2.67E-01
	S D	3.09E-01	6.39E-02	1.63E-01	3.47E-02	2.56E-01	4.81E-02	1.36E-01
UPPER GRAPEVINE	MEAN	2.30E+00	5.26E-01	1.62E+00	2.27E-01	1.56E+00	2.43E-01	9.43E-02
	S D	7.54E-02	1.73E-02	1.40E-01	1.32E-02	6.58E-02	1.92E-02	5.97E-02
WOODCAMP	MEAN	5.55E-01	2.87E-01	7.23E-01	7.92E-01	1.74E+00	1.97E+00	1.14E-01
	S D	3.17E-02	1.85E-02	3.96E-02	1.82E-02	6.00E-02	7.44E-02	3.74E-02

		Li 7	Be 9	V 51	Cr 52	Mn 55	Ni 60	Co 59	Ga 71	As 75	Se 77
BRIAR	MEAN	1.74E+01	1.91E-02	2.64E+00	1.30E+00	3.36E+00	2.38E-01	2.22E-02	N D	1.69E+01	8.60E-01
	S D	2.68E+00	1.82E-02	1.89E-02	6.51E-02	3.08E-02	1.27E-02	1.47E-03		1.71E+00	1.16E-01
BRIAR PIPE	MEAN	T B D	2.99E-02	1.23E+00	8.00E-01	4.76E-02	2.54E-01	1.48E-02	6.19E-05	T B D	7.20E-01
	S D		2.09E-02	8.07E-03	4.66E-02	5.70E-03	1.14E-02	1.35E-03	1.64E-03		1.35E-01
GRAPEVINE	MEAN	2.48E+02	1.15E-01	4.65E+00	4.94E+00	5.41E-02	3.53E-01	2.44E-02	2.03E-03	3.40E+01	4.56E+00
	S D	7.50E+00	3.37E-02	3.29E-01	2.54E-01	4.16E-03	9.92E-03	1.38E-03	1.47E-03	2.57E+00	8.91E-01
McLEAN	MEAN	T B D	N D	1.80E+01	1.93E+00	1.82E+01	2.12E+00	8.24E-01	5.68E-02	T B D	1.36E+02
	S D			1.22E+00	7.74E-02	1.32E-01	1.82E-01	1.01E-01	1.16E-02		5.79E+00
MESQUITE	MEAN	2.20E+02	6.98E-02	1.64E+01	5.10E+00	1.18E-01	1.85E-01	1.64E-02	2.92E-03	5.95E+01	3.25E+00
	S D	2.62E+00	1.68E-02	1.24E-01	1.48E-01	6.41E-03	5.58E-03	1.27E-03	1.10E-03	3.41E+00	1.75E-01
NAVARRES	MEAN	1.61E+02	6.33E-02	1.54E+00	2.53E+00	2.89E+00	2.78E-01	2.06E-02	6.30E-03	1.05E+01	5.73E+00
	S D	5.76E+00	2.15E-02	3.81E-02	6.81E-02	3.16E-02	2.04E-02	1.57E-03	2.08E-03	5.76E+00	1.77E-01
SARATOGA	MEAN	4.21E+02	6.09E-02	1.30E+01	1.68E+01	4.08E-02	2.39E-01	2.86E-02	1.17E-02	2.34E+01	2.26E+01
	S D	1.36E+01	2.30E-02	5.97E-01	3.33E-01	5.91E-03	6.35E-03	2.25E-03	1.66E-03	1.85E+00	2.31E+00
SCOTTYS	MEAN	9.07E+01	5.79E-02	1.04E+01	4.52E+00	8.71E-02	6.70E-02	6.54E-03	7.34E-02	2.97E+01	1.61E+00
	S D	3.12E+00	2.25E-02	2.71E-01	1.83E-01	4.48E-03	7.02E-03	8.59E-04	5.52E-03	9.74E-01	1.97E-01
SURPRISE	MEAN	9.97E+01	4.00E-02	1.35E+01	4.37E+00	4.36E-02	7.41E-02	5.53E-03	1.56E-02	3.61E+01	1.69E+00
	S D	4.20E+00	2.73E-02	1.13E-01	5.33E-02	5.11E-03	1.04E-02	9.14E-04	1.87E-03	1.59E+00	2.25E-01
TEXAS	MEAN	1.97E+02	8.01E-02	3.43E+00	3.12E+00	N D	2.13E-01	1.18E-02	1.15E-02	3.58E+01	9.99E+00
	S D	5.52E+00	4.09E-02	3.27E-01	9.42E-02		2.01E-02	1.25E-03	2.11E-03	1.60E+01	1.05E+00
TRAVERTINE-A	MEAN	4.04E+03	7.32E-02	2.21E+00	2.80E+00	3.71E-01	2.26E-01	1.48E-02	1.18E-02	1.14E+02	4.56E+00
	S D	1.84E+02	2.68E-02	5.80E-02	1.22E-01	1.36E-01	1.08E-02	1.22E-03	1.29E-03	3.63E+00	1.95E-01
TRAVERTINE-B	MEAN	1.63E+02	5.73E-02	1.90E+00	2.94E+00	2.35E-03	2.32E-01	1.45E-02	1.07E-02	3.16E+01	2.71E+00
	S D	7.90E+00	2.24E-02	1.07E-01	8.86E-02	4.83E-03	1.21E-02	1.83E-03	1.82E-03	1.74E+00	3.27E-01
UPPER GRAPEVINE	MEAN	1.95E+02	1.18E-01	3.85E+00	3.23E+00	1.85E-01	8.07E-01	3.34E-02	5.77E-03	2.61E+01	4.05E+00
	S D	5.40E+00	2.54E-02	7.79E-02	1.41E-01	4.66E-03	1.27E-02	9.66E-04	1.34E-03	1.15E+00	2.33E-01
WOODCAMP	MEAN	3.93E+01	3.28E-02	3.90E+00	1.06E+00	8.66E-02	2.13E-01	1.68E-02	N D	2.50E+01	1.94E+00
	S D	4.51E+00	2.11E-02	5.36E-02	6.95E-02	5.63E-03	6.73E-03	1.07E-03		2.23E+00	1.48E-01
N D = NOT DETERMINED											
T B D = TO BE DETERMINED											

		U 238
BRIAR	MEAN	1.53E+00
	S D	1.45E-02
BRIAR PIPE	MEAN	1.99E+00
	S D	3.62E-02
GRAPEVINE	MEAN	3.64E+00
	S D	2.93E-02
McLEAN	MEAN	4.61E+00
	S D	9.00E-02
MESQUITE	MEAN	5.69E+00
	S D	5.70E-03
NAVARRES	MEAN	1.22E+00
	S D	1.51E-02
SARATOGA	MEAN	1.38E+01
	S D	1.42E-01
SCOTTYS	MEAN	7.75E+00
	S D	8.25E-02
SURPRISE	MEAN	7.77E+00
	S D	6.84E-02
TEXAS	MEAN	2.97E+00
	S D	2.23E-02
TRAVERTINE-A	MEAN	2.98E+00
	S D	2.44E-02
TRAVERTINE-B	MEAN	2.93E+00
	S D	1.40E-02
UPPER GRAPEVINE	MEAN	3.15E+00
	S D	1.93E-02
WOODCAMP	MEAN	1.27E+00
	S D	1.83E-02
N D = NOT DETERMINED		
T B D = TO BE DETERMINED		

DEATH VALLEY SAMPLING_3 STANDARDS_3.4 CONCENTRATION PARTS PER BILLION (PPB)

		Ru 99	Pd 105	Sn 117	Sb 121	Te 125	Hf 177	Ir 193
BRIAR	MEAN	4.98E-04	8.68E-03	4.09E-03	2.21E-01	1.18E-02	1.18E-03	4.77E-05
	S D	3.93E-04	8.82E-04	7.74E-03	3.87E-03	5.04E-03	7.53E-04	1.83E-04
BRIAR PIPE	MEAN	3.24E-04	7.91E-03	3.79E-03	1.57E-01	8.19E-03	1.01E-03	2.38E-04
	S D	4.77E-04	1.03E-03	7.69E-03	4.36E-03	5.09E-03	7.50E-04	2.57E-04
GRAPEVINE	MEAN	1.80E-03	1.90E-01	1.45E-02	1.16E+00	3.05E-02	3.95E-03	6.12E-04
	S D	7.37E-04	1.10E-02	8.59E-03	2.11E-02	9.31E-03	8.17E-04	2.71E-04
McLEAN	MEAN	2.92E+00	7.29E+00	6.58E-01	2.56E-01	7.76E+00	8.45E-03	5.98E-03
	S D	3.84E-01	1.80E-01	1.71E-01	2.58E-02	5.05E-01	1.39E-02	5.01E-03
MESQUITE	MEAN	2.34E-03	9.10E-02	2.63E-02	1.01E+00	2.75E-02	2.03E-03	3.80E-04
	S D	7.34E-04	3.57E-03	8.31E-03	2.05E-02	1.04E-02	6.66E-04	2.61E-04
NAVARRES	MEAN	1.99E-03	2.32E-01	2.15E-02	3.13E-01	3.16E-02	3.10E-03	2.56E-04
	S D	5.03E-04	5.98E-03	7.78E-03	8.44E-03	7.56E-03	1.14E-03	2.02E-04
SARATOGA	MEAN	2.26E+00	7.83E-01	1.43E-01	7.44E-02	1.73E+00	4.89E-03	1.32E-03
	S D	1.90E-01	4.52E-02	3.42E-02	4.41E-03	9.18E-02	1.82E-03	4.53E-04
SCOTTYS	MEAN	1.35E-03	3.31E-03	5.47E-02	8.45E-01	2.01E-02	2.83E-03	3.44E-04
	S D	4.43E-04	7.66E-04	8.53E-03	2.25E-02	1.41E-02	1.10E-03	3.17E-04
SURPRISE	MEAN	1.56E-03	6.04E-03	3.63E-02	7.94E-01	1.63E-02	8.92E-04	2.22E-04
	S D	7.98E-04	1.17E-03	7.60E-03	2.57E-02	6.01E-03	1.03E-03	1.53E-04
TEXAS	MEAN	1.72E-03	2.06E-01	6.28E-02	1.60E-01	2.85E-02	5.84E-03	3.76E-04
	S D	4.28E-04	1.15E-02	8.45E-03	5.29E-03	5.43E-03	1.95E-03	3.09E-04
TRAVERTINE-A	MEAN	1.49E-03	2.41E-01	3.19E-02	1.80E-01	2.60E-02	4.24E-03	3.04E-04
	S D	6.33E-04	5.68E-03	8.18E-03	4.98E-03	8.54E-03	1.70E-03	1.91E-04
TRAVERTINE-B	MEAN	2.09E-03	2.89E-01	1.24E-02	1.67E-01	2.66E-02	3.68E-03	3.22E-04
	S D	3.96E-04	9.82E-03	8.17E-03	5.46E-03	5.56E-03	1.66E-03	2.80E-04
UPPER GRAPEVINE	MEAN	2.12E-03	2.04E-01	1.06E-02	1.12E+00	2.61E-02	2.29E-03	3.99E-04
	S D	4.40E-04	4.27E-03	7.56E-03	1.93E-02	7.36E-03	8.40E-04	2.80E-04
WOODCAMP	MEAN	1.01E-03	6.33E-03	1.02E-02	3.34E-01	1.45E-02	1.86E-04	2.33E-04
	S D	4.39E-04	6.17E-04	7.58E-03	1.27E-02	6.94E-03	8.10E-04	2.25E-04

DEATH VALLEY SAMPLING_3 STANDARDS_3,4 CONCENTRATION PARTS PER BILLION (PPB)

		Pt 195	Au 197	Ti 47	Ge 73	Zr 90	Nb 93	Mo 95
BRIAR	MEAN	4.91E-04	2.13E-03	1.16E+00	2.01E-02	3.55E-02	4.49E-03	6.71E-01
	S D	8.00E-04	1.06E-03	7.52E-02	7.55E-03	2.58E-03	3.94E-04	1.11E-02
BRIAR PIPE	MEAN	1.03E-03	7.68E-04	9.37E-01	2.85E-02	3.06E-02	5.10E-03	7.03E-01
	S D	8.36E-04	8.33E-04	9.12E-02	8.69E-03	2.66E-03	3.44E-04	1.89E-02
GRAPEVINE	MEAN	2.09E-03	3.17E-03	1.22E+00	1.97E+00	1.39E-01	5.05E-03	1.42E+01
	S D	7.42E-04	1.11E-03	9.59E-02	7.24E-02	5.17E-03	3.20E-04	4.65E-01
McLEAN	MEAN	1.38E-02	1.72E-01	7.30E+00	2.00E+00	0.00E+00	2.35E-02	5.53E+01
	S D	1.70E-02	6.82E-02	1.91E+00	2.24E-01	4.88E-02	6.61E-03	1.73E+00
MESQUITE	MEAN	2.57E-03	4.02E-03	1.67E+00	1.05E+00	4.29E-02	5.08E-03	1.81E+01
	S D	9.64E-04	6.61E-04	1.06E-01	2.48E-02	2.93E-03	5.07E-04	6.87E-01
NAVARRES	MEAN	4.26E-03	7.51E-03	5.64E-01	4.58E-01	5.58E-02	5.14E-03	1.90E+01
	S D	1.60E-03	1.71E-03	6.60E-02	2.23E-02	4.14E-03	5.15E-04	5.26E-01
SARATOGA	MEAN	3.63E-03	2.23E-02	1.93E+00	4.24E-02	3.49E-02	3.04E-03	2.31E+01
	S D	2.22E-03	5.88E-03	2.25E-01	5.33E-02	5.65E-03	5.75E-04	1.08E+00
SCOTTYS	MEAN	2.10E-03	3.31E-03	1.40E+00	1.59E+00	1.15E-01	6.74E-03	1.09E+01
	S D	6.84E-04	1.20E-03	1.32E-01	7.20E-02	8.51E-03	8.88E-04	3.47E-01
SURPRISE	MEAN	7.94E-04	3.91E-03	1.11E+00	1.00E+00	2.12E-02	2.97E-03	1.01E+01
	S D	8.87E-04	1.39E-03	8.30E-02	4.56E-02	2.79E-03	4.10E-04	5.21E-01
TEXAS	MEAN	2.25E-03	8.53E-03	6.29E-01	5.29E-01	1.09E-01	6.16E-03	1.72E+01
	S D	7.04E-04	2.04E-03	6.19E-02	1.57E-02	4.09E-03	7.18E-04	7.52E-01
TRAVERTINE-A	MEAN	1.78E-03	5.09E-03	6.43E-01	5.50E-01	1.50E-01	4.68E-03	1.67E+01
	S D	1.08E-03	1.57E-03	5.78E-02	2.02E-02	3.05E-03	6.81E-04	5.48E-01
TRAVERTINE-B	MEAN	1.49E-03	3.83E-03	8.12E-01	5.53E-01	8.99E-02	4.83E-03	1.73E+01
	S D	1.22E-03	1.14E-03	7.70E-02	1.71E-02	3.39E-03	5.87E-04	3.99E-01
UPPER GRAPEVINE	MEAN	3.92E-03	3.64E-03	1.24E+00	2.24E+00	4.87E-02	3.52E-03	1.27E+01
	S D	6.66E-04	1.16E-03	1.03E-01	5.59E-02	2.70E-03	3.08E-04	3.25E-01
WOODCAMP	MEAN	3.14E-03	1.74E-03	1.23E+00	1.02E-01	0.00E+00	1.41E-03	1.33E+00
	S D	1.12E-03	6.32E-04	7.33E-02	1.20E-02	2.71E-03	2.56E-04	2.80E-02

DEATH VALLEY SAMPLING_3 STANDARDS_3.4 CONCENTRATION PARTS PER BILLION (PPB)

		Ta 181	W 182	Re 187
BRIAR	MEAN	2.14E-03	1.46E-01	2.09E-03
	S D	5.03E-04	5.70E-03	2.68E-04
BRIAR PIPE	MEAN	1.78E-03	1.01E-01	1.73E-03
	S D	3.38E-04	2.25E-03	2.92E-04
GRAPEVINE	MEAN	7.52E-03	2.37E+00	4.79E-03
	S D	3.32E-04	8.49E-02	8.02E-04
McLEAN	MEAN	3.37E-02	4.93E+00	2.77E-02
	S D	3.50E-03	1.41E-01	8.58E-03
MESQUITE	MEAN	7.25E-03	4.58E+00	6.55E-03
	S D	6.16E-04	1.63E-01	7.21E-04
NAVARRES	MEAN	1.20E-02	3.45E-01	9.25E-04
	S D	8.20E-04	6.80E-03	3.34E-04
SARATOGA	MEAN	6.02E-03	3.06E-01	2.44E-02
	S D	1.58E-03	2.28E-02	1.28E-03
SCOTTYS	MEAN	6.32E-03	4.56E+00	2.97E-03
	S D	6.04E-04	1.73E-01	4.46E-04
SURPRISE	MEAN	5.27E-03	4.57E+00	3.07E-03
	S D	6.31E-04	2.17E-01	4.16E-04
TEXAS	MEAN	1.77E-02	4.54E-01	4.49E-03
	S D	1.13E-03	6.16E-03	7.98E-04
TRAVERTINE-A	MEAN	1.19E-02	5.63E-01	4.01E-03
	S D	1.26E-03	1.65E-02	5.14E-04
TRAVERTINE-B	MEAN	1.16E-02	5.22E-01	3.60E-03
	S D	1.07E-03	2.21E-02	3.74E-04
UPPER GRAPEVINE	MEAN	6.69E-03	2.07E+00	3.64E-03
	S D	7.08E-04	5.55E-02	5.05E-04
WOODCAMP	MEAN	1.97E-03	2.17E-01	2.16E-03
	S D	2.67E-04	7.18E-03	5.11E-04

RESULTS OF THE CHEMICAL ANALYSES OF THE
WINTER 1992 AND SPRING 1993
PRECIPITATION SAMPLES

Yucca Mountain Precipitation Samples: Winter '92/Spring '93
Major Cations

Sample	Magnesium		Calcium		Sodium		Potassium	
	Conc. (ppm)	Std. Dev (ppm)	Conc. (ppm)	Std. Dev (ppm)	Conc. (ppm)	Std. Dev (ppm)	Conc. (ppm)	Std. Dev (ppm)
USGS October 1992 - MPV*	0.045		0.24		0.060		0.170	
USGS October 1993 - MPV*	0.020		0.16		0.168		0.100	
Mean	0.033		0.200		0.114		0.135	
Standard Deviation	0.018		0.057		0.076		0.049	
60-m Tower Bag Blank 12/8/92**	0.022	0.001	0.394	0.000	0.109	0.002	0.063	0.003
60-m Tower Liquid 12/8/92	0.025	0.001	0.356	0.000	0.085	0.002	0.036	0.002
60-m Tower Liquid Duplicate 12/8/92	0.036	0.002	0.381	0.011	0.085	0.002	0.076	0.002
60-m Tower 1/19/93***	0.102	0.002	1.227	0.011	0.181	0.003	0.055	0.002
60-m Tower 2/10/93	0.004	0.000	0.106	0.011	0.067	0.002	0.012	0.002
60-m Tower 3/2/93	0.015	0.000	0.093	0.000	0.160	0.002	0.022	0.002
Mean	0.020		0.266		0.101		0.042	
Standard Deviation	0.012		0.153		0.036		0.027	
Maximum	0.036		0.394		0.160		0.076	
Minimum	0.004		0.093		0.067		0.012	
Lathrop 12/30/93	0.050	0.002	0.795	0.011	0.308	0.003	0.203	0.002
Lathrop 1/6/93	0.055	0.001	0.594	0.011	0.282	0.002	0.145	0.002
Lathrop 1/8/93	0.027	0.000	0.168	0.000	0.126	0.002	0.044	0.002
Lathrop 1/19/93	0.015	0.001	0.181	0.011	0.101	0.002	0.007	0.000
Lathrop 2/10/93	0.008	0.000	0.150	0.000	0.148	0.006	0.052	0.003
Lathrop 3/2/93	0.013	0.001	0.056	0.000	0.127	0.003	<D.L.	
Mean	0.028		0.324		0.182		0.075	
Standard Deviation	0.020		0.297		0.089		0.081	
Maximum	0.055		0.795		0.308		0.203	
Minimum	0.008		0.056		0.101		<D.L.	
Detection Limit:	0.003		0.034		0.005		0.006	

* USGS Standard Reference Precipitation Samples, MVP - Most probable value.
 These values are provided for reference.

** The "Bag Blank" consisted of a rainwater sample from the 60-meter Tower collected in a plastic bag, rather than a precleaned polyethylene bottle. These plastic bags were used to collect snow samples from the two samplers located on the top of Yucca Mountain. No contamination from the bags was observed.

*** This sample appears to be contaminated. Therefore, it was not included in the calculation of the mean, standard deviation, maximum, or minimum values for the 60 - meter Tower location.

**Yucca Mountain Precipitation Samples: Winter '92/Spring '93
Major Cations**

Sample	Magnesium		Calcium		Sodium		Potassium	
	Conc. (ppm)	Std. Dev (ppm)	Conc. (ppm)	Std. Dev (ppm)	Conc. (ppm)	Std. Dev (ppm)	Conc. (ppm)	Std. Dev (ppm)
USGS October 1992 - MPV*	0.045		0.24		0.060		0.170	
USGS October 1993 - MPV*	0.020		0.16		0.168		0.100	
NYM Liquid 12/8/92	0.059	0.002	0.319	0.000	0.209	0.002	0.116	0.002
NYM Sampler Snow 12/8/92	0.017	0.000	0.131	0.011	0.055	0.002	0.026	0.002
NYM Ground Snow 12/8/92	<D.L.	0.001	<D.L.	0.000	0.047	0.000	0.018	0.003
NYM 1/8/93	0.073	0.001	0.206	0.000	0.295	0.004	0.084	0.000
NYM 1/19/93	0.017	0.001	0.093	0.011	0.136	0.002	<D.L.	
NYM Duplicate 1/19/93	0.010	0.001	0.081	0.011	0.109	0.000	0.023	0.004
NYM Dryside 2/10/93	0.013	0.000	0.112	0.011	0.082	0.002	0.022	0.002
Mean	0.027		0.135		0.133		0.041	
Standard Deviation	0.028		0.102		0.090		0.042	
Maximum	0.073		0.319		0.295		0.116	
Minimum	<D.L.		<D.L.		0.047		<D.L.	
SYM Liquid 12/8/92	0.029	0.001	0.225	0.000	0.090	0.003	0.051	0.002
SYM Sampler Snow 12/8/92	0.008	0.000	0.081	0.011	0.052	0.002	0.022	0.004
SYM Ground Snow 12/8/92	0.003	0.001	0.068	0.011	0.039	0.000	0.012	0.004
SYM 1/8/93	0.032	0.007	0.381	0.011	0.117	0.002	0.037	0.004
SYM 1/19/93	0.019	0.001	0.112	0.000	0.143	0.003	0.040	0.002
SYM Dryside 2/10/93	0.013	0.001	0.187	0.011	0.091	0.002	0.018	0.000
Mean	0.015		0.166		0.088		0.026	
Standard Deviation	0.011		0.129		0.044		0.012	
Maximum	0.032		0.381		0.143		0.040	
Minimum	0.003		0.068		0.039		0.012	
Detection Limit:	0.003		0.034		0.005		0.006	

* USGS Standard Reference Precipitation Samples, MVP - Most probable value.
These values are provided for reference.

** The "Bag Blank" consisted of a rainwater sample from the 60-meter Tower collected in a plastic bag, rather than a precleaned polyethylene bottle. These plastic bags were used to collect snow samples from the two samplers located on the top of Yucca Mountain. No contamination from the bags was observed.

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

Anion Analysis

Sample	FLOURIDE		CHLORIDE		NO3-N		NO3		SULFATE	
	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)
USGS October 1992 - MPV*	N/A		1.14		N/A		N/A		0.45	
USGS October 1993 - MPV*	0.100		0.140		0.21		N/A		0.831	
60-m Tower Bag Blank 12/8/92**	0.098	0.002	0.14	0.026	0.177	0.003	0.779	0.013	0.547	0.027
60-m Tower Liquid 12/8/92	0.089	0.007	0.103	0.017	0.221	0.012	0.972	0.053	0.646	0.029
60-m Tower 12/15/92	0.128	0.008	0.647	0.04	0.639	0.018	2.812	0.079	1.068	0.03
60-m Tower 12/18/92	0.049	0.002	0.726	0.041	2.588	0.006	11.387	0.026	1.004	0.041
60-m Tower 1/19/93	<DL		0.253	0.023	0.336	0.006	1.478	0.026	0.915	0.019
60-m Tower 2/10/93	<DL		0.101	0.02	0.151	0.005	0.664	0.022	0.678	0.026
60-m Tower 3/2/93	0.005	0.001	0.094	0.017	0.254	0.004	1.118	0.018	0.424	0.03
Mean	0.053		0.295		0.624		2.744		0.755	
Standard Deviation	0.053		0.274		0.882		3.879		0.244	
Maximum	0.128		0.726		2.588		11.387		1.068	
Minimum	0		0.094		0.151		0.664		0.424	
Lathrop 12/30/92	0.097	0.001	0.333	0.037	0.374	0.004	1.646	0.018	0.7	0.043
Lathrop 1/6/93	0.012	0.001	0.29	0.022	0.48	0.003	2.112	0.013	0.685	0.065
Lathrop 1/12/93	<DL		0.212	0.024	0.311	0.004	1.37	0.018	0.495	0.022
Lathrop 1/19/93	0.101	0.003	0.203	0.012	0.235	0.003	1.034	0.013	0.388	0.029
Lathrop 2/2/93	0.398	0.021	1.645	0.036	1.143	0.008	5.029	0.035	1.943	0.027
Lathrop 2/10/93	0.106	0.009	0.211	0.026	0.141	0.004	0.62	0.018	0.626	0.023
Lathrop 3/2/93	0.007	0.002	0.088	0.028	0.239	0.003	1.052	0.013	0.4	0.08
Mean	0.103		0.426		0.418		1.838		0.748	
Standard Deviation	0.139		0.543		0.338		1.487		0.542	
Maximum	0.398		1.645		1.143		5.029		1.943	
Minimum	0		0.088		0.141		0.62		0.388	
Detection Limit	0.01		0.02		0.02		0.1		0.04	

* USGS Standard Reference Precipitation Samples, MVP - Most probably value. These values are provided for reference.

** The "Bag Blank" consisted of a rainwater sample from the 60-meter Tower, collected in a plastic bag, rather than a precleaned polyethylene bottle. The plastic bags were used to collect snow samples from the two samplers located on the top of Yucca Mountain. No contamination from the bag was observed.

Note: All samples were analyzed for bromide and HPO4-P; however, the concentrations for these components were found to be below the detection limit.
Detection limits: Bromide - 0.02 ppm, HPO4-P - 0.03 ppm.

Yucca Mountain Precipitation Samples: Winter '92/Spring '93
Anion Analysis

Sample	FLOURIDE		CHLORIDE		NO3-N		NO3		SULFATE	
	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)	Conc. (ppm)	Std. Dev. (ppm)
USGS October 1992 - MPV*	N/A		1.14		N/A		N/A		0.45	
USGS October 1993 - MPV*	0.100		0.140		0.21		N/A		0.831	
NYM Liquid 12/8/92	0.084	0.002	0.076	0.017	0.172	0.005	0.757	0.022	0.496	0.026
NYM Sampler Snow 12/8/92	0.080	0.008	0.05	0.019	0.128	0.012	0.563	0.053	0.342	0.016
NYM Ground Snow 12/8/92	0.061	0.004	0.061	0.011	0.074	0.004	0.326	0.018	0.122	0.016
NYM 1/8/93	0.058	0.008	0.162	0.022	0.107	0.006	0.471	0.026	0.457	0.038
NYM 1/19/93	0.105	0.009	0.218	0.026	0.203	0.003	0.893	0.013	0.43	0.01
NYM 2/10/93	<DL		0.274	0.008	0.207	0.004	0.911	0.018	0.81	0.008
Mean	0.065		0.140		0.149		0.654		0.443	
Standard Deviation	0.036		0.093		0.054		0.238		0.224	
Maximum	0.105		0.274		0.207		0.911		0.81	
Minimum	0		0.05		0.074		0.326		0.122	
SYM Liquid 12/8/92	0.086	0.005	0.134	0.018	0.123	0.006	0.541	0.026	0.313	0.014
SYM Sampler Snow 12/8/92	0.086	0.008	0.14	0.02	0.116	0.002	0.51	0.009	0.313	0.025
SYM Ground Snow 12/8/92	0.063	0.009	0.042	0.018	0.097	0.006	0.427	0.026	0.134	0.027
SYM Sampler Snow 12/18/92	0.114	0.011	0.313	0.014	5.369	0.03	23.624	0.132	2.333	0.025
SYM 1/8/93	0.049	0.01	0.096	0.021	0.108	0.009	0.475	0.04	0.329	0.016
SYM 1/12/93	0.012	0.001	0.258	0.015	0.265	0.012	1.166	0.053	0.575	0.022
SYM 1/19/93	0.113	0.007	0.274	0.02	0.223	0.004	0.981	0.018	0.551	0.013
SYM 2/10/93	<DL		0.089	0.019	0.200	0.009	0.88	0.04	0.829	0.028
Mean	0.065		0.168		0.813		3.576		0.672	
Standard Deviation	0.043		0.100		1.842		8.105		0.704	
Maximum	0.114		0.313		5.369		23.624		2.333	
Minimum	0		0.042		0.097		0.427		0.134	
Detection Limit	0.01		0.02		0.02		0.1		0.04	

* USGS Standard Reference Precipitation Samples, MVP - Most probably value. These values are provided for reference.

** The "Bag Blank" consisted of a rainwater sample from the 60-meter Tower, collected in a plastic bag, rather than a precleaned polyethylene bottle. The plastic bags were used to collect snow samples from the two samplers located on the top of Yucca Mountain. No contamination from the bag was observed.

Note: All samples were analyzed for bromide and HPO4-P; however, the concentrations for these components were found to be below the detection limit.
Detection limits: Bromide - 0.02 ppm, HPO4-P - 0.03 ppm.

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 1

		60-meter Tower									
		2/10/93		3/2/93							
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element
Sc	45	0.0217	0.0020	0.0215	0.0021	0.0216	0.0001	0.0217	0.0215	0.0070	Sc
Y	89	0.00449	0.00059	0.00287	0.00110	0.00368	0.00115	0.00449	0.00287	0.00070	Y
La	139	0.00888	0.00113	0.02250	0.00101	0.01569	0.00963	0.02250	0.00888	0.00045	La
Ce	140	0.01110	0.00135	0.00945	0.00102	0.01027	0.00117	0.01110	0.00945	0.00054	Ce
Pr	141	0.00143	0.00022	0.00123	0.00027	0.00133	0.00014	0.00143	0.00123	0.00030	Pr
Nd	146	0.0063	0.0002	0.0047	0.0012	0.0055	0.0011	0.0063	0.0047	0.0023	Nd
Sm	147	0.00165	0.00051	0.00079	0.00111	0.00122	0.00061	0.00165	0.00079	0.00069	Sm
Gd	157	0.0015	0.0008	<DL		0.0008	0.0011	0.0015	<DL	0.0014	Gd
Tb	159	0.00027	0.00012	<DL		0.00013	0.00019	0.00027	<DL	0.00022	Tb
Dy	161	0.00120	0.00056	0.00120	0.00056	0.00120	0.00000	0.00120	0.00120	0.00083	Dy
Ho	165	<DL		<DL		<DL		<DL	<DL	0.00024	Ho
Er	166	0.00072	0.00039	0.00061	0.00026	0.00066	0.00007	0.00072	0.00061	0.00025	Er
Tm	169	<DL		0.00012	0.00008	0.00006	0.00009	0.00012	<DL	0.00010	Tm
Yb	172	<DL		<DL		<DL		<DL	<DL	0.0011	Yb
Lu	175	<DL		<DL		<DL		<DL	<DL	0.00022	Lu
Th	232	0.00096	0.00034	0.00077	0.00017	0.00087	0.00013	0.00096	0.00077	0.00042	Th

Yucca Mountain Precipitation Samples: Winter '92/Spring '93
 ICP-MS Analysis - Standard 1

		Lathrop									
		1/6/93		1/8/93		1/19/93		2/10/93		3/2/93	
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)
Sc	45	0.0235	0.0024	0.0262	0.0021	0.0213	0.0007	0.0222	0.0019	0.0239	0.0025
Y	89	0.0320	0.01012	0.02040	0.00194	0.00155	0.00033	0.00495	0.00057	0.00409	0.00045
La	139	0.06130	0.00279	0.08040	0.00388	0.01590	0.00089	0.01380	0.00030	0.01120	0.00053
Ce	140	0.10450	0.00360	0.06150	0.00198	0.00523	0.00046	0.01460	0.00142	0.01420	0.00141
Pr	141	0.01340	0.00184	0.00828	0.00062	0.00059	0.00013	0.00203	0.00025	0.00153	0.00028
Nd	146	0.0534	0.0041	0.0316	0.0033	<DL		0.0085	0.0016	0.0067	0.0019
Sm	147	0.01060	0.00200	0.00536	0.00149	0.00079	0.00062	0.00158	0.00028	0.00158	0.00145
Gd	157	0.0089	0.0006	0.0051	0.0018	<DL		0.0022	0.0003	0.0015	0.0009
Tb	159	0.00127	0.00033	0.00082	0.00027	<DL		0.00030	0.00013	0.00029	0.00015
Dy	161	0.00717	0.00107	0.00385	0.00039	<DL		0.00151	0.00030	0.00096	0.00065
Ho	165	0.00132	0.00024	0.00073	0.00015	<DL		<DL		<DL	
Er	166	0.00361	0.00062	0.00181	0.00019	0.00051	0.00038	0.00075	0.00019	0.00072	0.00039
Tm	169	0.00056	0.00011	0.00045	0.00023	0.00016	0.00005	0.00021	0.00017	0.00013	0.00011
Yb	172	0.0037	0.0012	0.0017	0.0001	<DL		<DL		<DL	
Lu	175	0.00047	0.00009	0.00036	0.00015	0.00024	0.00013	<DL		<DL	
Th	232	0.00808	0.00061	0.00295	0.00036	0.00070	0.00028	0.00070	0.00019	0.00094	0.00012

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 1

Element	Mass	Lathrop	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element
		Average (ppb)					
Sc	45	0.0234	0.0019	0.0262	0.0213	0.0070	Sc
Y	89	0.01284	0.01358	0.03320	0.00155	0.00070	Y
La	139	0.03652	0.03210	0.08040	0.01120	0.00045	La
Ce	140	0.04001	0.04226	0.10450	0.00523	0.00054	Ce
Pr	141	0.00517	0.00551	0.01340	0.00059	0.00030	Pr
Nd	146	0.0200	0.0221	0.0534	<DL	0.0023	Nd
Sm	147	0.00398	0.00411	0.01060	0.00079	0.00069	Sm
Gd	157	0.0036	0.0035	0.0089	<DL	0.0014	Gd
Tb	159	0.00054	0.00050	0.00127	<DL	0.00022	Tb
Dy	161	0.00270	0.00287	0.00717	<DL	0.00083	Dy
Ho	165	0.00041	0.00060	0.00132	<DL	0.00024	Ho
Er	166	0.00148	0.00129	0.00361	0.00051	0.00025	Er
Tm	169	0.00030	0.00019	0.00056	0.00013	0.00010	Tm
Yb	172	0.0011	0.0017	0.0037	<DL	0.0011	Yb
Lu	175	0.00021	0.00021	0.00047	<DL	0.00022	Lu
Th	232	0.00267	0.00317	0.00808	0.00070	0.00042	Th

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 1

		NYM											
		1/8/93		1/19/93		2/10/93							
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element
Sc	45	0.0244	0.0015	0.0226	0.0018	0.2030	0.0017	0.0833	0.1036	0.2030	0.0226	0.0070	Sc
Y	89	0.00195	0.00073	0.00129	0.00037	0.00497	0.00066	0.00274	0.00196	0.00497	0.00129	0.00070	Y
La	139	0.00533	0.00039	0.00846	0.00080	0.01190	0.00109	0.00856	0.00328	0.01190	0.00533	0.00045	La
Ce	140	0.00690	0.00047	0.00597	0.00116	0.01520	0.00133	0.00935	0.00508	0.01520	0.00597	0.00054	Ce
Pr	141	0.00090	0.00048	0.00052	0.00023	0.00171	0.00018	0.00104	0.00061	0.00171	0.00052	0.00030	Pr
Nd	146	0.0039	0.0012	<DL		0.0078	0.0019	0.0039	0.0039	0.0078	<DL	0.0023	Nd
Sm	147	0.00173	0.00086	0.00079	0.00062	0.00165	0.00094	0.00139	0.00052	0.00173	0.00079	0.00069	Sm
Gd	157	<DL		<DL		0.0020	0.0002	0.0007	0.0011	0.0020	<DL	0.0014	Gd
Tb	159	0.00025	0.00016	<DL		0.00034	0.00018	0.00019	0.00017	0.00034	<DL	0.00022	Tb
Dy	161	<DL		0.00084	0.00025	0.00090	0.00030	0.00058	0.00050	0.00090	<DL	0.00083	Dy
Ho	165	<DL		<DL		0.00030	0.00022	0.00010	0.00018	0.00030	<DL	0.00024	Ho
Er	166	0.00051	0.00036	0.00031	0.00033	0.00089	0.00022	0.00057	0.00029	0.00089	0.00031	0.00025	Er
Tm	169	0.00012	0.00005	<DL		0.00019	0.00006	0.00010	0.00010	0.00019	<DL	0.00010	Tm
Yb	172	<DL		<DL		<DL		<DL	<DL	<DL	<DL	0.0011	Yb
Lu	175	<DL		<DL		<DL		<DL	<DL	<DL	<DL	0.00022	Lu
Th	232	0.0008838	0.00042	0.000626	0.000238	0.001455	0.000287	0.00099	0.00042	0.00146	0.00063	0.00042	Th

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 1

		SYM										
		1/8/93		1/19/93		2/10/93						
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb) Element
Sc	45	0.0240	0.0023	0.0229	0.0007	0.0198	0.0015	0.0222	0.0022	0.0240	0.0198	0.0070 Sc
Y	89	0.01330	0.00126	0.00240	0.00075	0.00863	0.00139	0.00811	0.00547	0.01330	0.00240	0.00070 Y
La	139	0.02360	0.00116	0.01180	0.00159	0.02100	0.00081	0.01880	0.00620	0.02360	0.01180	0.00045 La
Ce	140	0.03670	0.00134	0.01230	0.00114	0.02640	0.00285	0.02513	0.01225	0.03670	0.01230	0.00054 Ce
Pr	141	0.00551	0.00038	0.00136	0.00028	0.00323	0.00037	0.00336	0.00208	0.00551	0.00136	0.00030 Pr
Nd	146	0.0173	0.0037	0.0063	0.0014	0.0113	0.0027	0.0116	0.0055	0.0173	0.0063	0.0023 Nd
Sm	147	0.00433	0.00134	0.00071	0.00051	0.00268	0.00013	0.00257	0.00181	0.00433	0.00071	0.00069 Sm
Gd	157	0.0026	0.0009	<DL		0.0026	0.0010	0.0017	0.0015	0.0026	<DL	0.0014 Gd
Tb	159	0.00065	0.00018	<DL		0.00039	0.00014	0.00035	0.00033	0.00065	<DL	0.00022 Tb
Dy	161	0.00289	0.00144	0.00096	0.00039	0.00259	0.00148	0.00215	0.00104	0.00289	0.00096	0.00083 Dy
Ho	165	0.00055	0.00027	<DL		0.00034	0.00013	0.00030	0.00028	0.00055	<DL	0.00024 Ho
Er	166	<DL		0.00061	0.00056	0.00089	0.00030	0.00050	0.00045	0.00089	<DL	0.00025 Er
Tm	169	0.00038	0.00017	<DL		0.00011	0.00004	0.00016	0.00019	0.00038	<DL	0.00010 Tm
Yb	172	<DL		<DL		<DL		<DL	<DL	<DL	<DL	0.0011 Yb
Lu	175	0.00025	0.00013	<DL		0.00023	0.00007	0.00016	0.00014	0.00025	<DL	0.00022 Lu
Th	232	0.00632	0.00061	0.00210	0.00047	0.00140	0.00031	0.00327	0.00266	0.00632	0.00140	0.00042 Th

Yucca Mountain Precipitation Samples: Winter '92/Spring '93
ICP-MS Analysis - Standard 2

		60-meter Tower										
		2/10/93		3/2/93								
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element	
Li	7	<DL		<DL		<DL		<DL	<DL	0.28	Li	
Be	9	<DL		<DL		<DL		<DL	<DL	0.19	Be	
V	51	0.142	0.006	0.116	0.010	0.129	0.019	0.142	0.116	0.026	V	
Cr	52	0.157	0.006	0.151	0.009	0.154	0.004	0.157	0.151	0.034	Cr	
Mn	55	0.627	0.019	0.560	0.033	0.594	0.047	0.627	0.560	0.022	Mn	
Co	59	<DL		<DL		<DL		<DL	<DL	0.014	Co	
Ni	60	0.153	0.019	0.174	0.010	0.163	0.015	0.174	0.153	0.038	Ni	
Ga	69	<DL		<DL		<DL		<DL	<DL	0.036	Ga	
As	75	0.424	0.016	<DL		0.212	0.300	0.424	<DL	0.057	As	
Se	77	<DL		<DL		<DL		<DL	<DL	0.48	Se	
Rb	85	<DL		<DL		<DL		<DL	<DL	0.28	Rb	
Sr	88	0.512	0.025	0.509	0.034	0.510	0.002	0.512	0.509	0.024	Sr	
Ag	109	<DL		<DL		<DL		<DL	<DL	0.031	Ag	
Cd	111	0.122	0.015	0.060	0.024	0.091	0.044	0.122	0.060	0.047	Cd	
In	115	<DL		<DL		<DL		<DL	<DL	0.028	In	
Cs	133	<DL		<DL		<DL		<DL	<DL	0.013	Cs	
Ba	137	0.967	0.060	0.723	0.031	0.845	0.172	0.967	0.723	0.037	Ba	
Tl	203	0.059	0.005	0.053	0.003	0.056	0.004	0.059	0.053	0.029	Tl	
Pb	208	1.180	0.094	0.665	0.032	0.923	0.364	1.180	0.665	0.063	Pb	
Bi	209	<DL		<DL		<DL		<DL	<DL	0.037	Bi	
U	238	<DL		<DL		<DL		<DL	<DL	0.012	U	

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 2

		Lathrop											
		12/30/92		1/6/93		1/8/93		1/19/93		2/10/93		3/2/93	
Element	Mass	Concentration (ppb)	Std. Dev (ppb)	Concentration (ppb)	Std. Dev (ppb)	Concentration (ppb)	Std. Dev (ppb)	Concentration (ppb)	Std. Dev (ppb)	Concentration (ppb)	Std. Dev (ppb)	Concentration (ppb)	Std. Dev (ppb)
Li	7	0.60	0.02	0.45	0.03	<DL		0.30	0.05	<DL		<DL	
Be	9	<DL		<DL		<DL		<DL		<DL		<DL	
V	51	0.191	0.002	0.174	0.006	0.085	0.004	0.135	0.008	0.129	0.011	0.100	0.007
Cr	52	1.146	0.112	0.769	0.078	0.341	0.041	0.174	0.017	0.170	0.007	0.136	0.011
Mn	55	8.384	0.176	6.290	0.108	1.101	0.014	0.326	0.021	0.626	0.022	0.423	0.012
Co	59	0.075	0.003	0.069	0.003	0.023	0.002	<DL		<DL		<DL	
Ni	60	0.863	0.041	0.948	0.062	0.367	0.011	0.133	0.017	0.437	0.029	0.077	0.012
Ga	69	0.064	0.002	0.078	0.002	<DL		<DL		<DL		<DL	
As	75	0.444	0.018	0.886	0.037	0.136	0.012	<DL		0.325	0.027	<DL	
Se	77	<DL		<DL		<DL		<DL		<DL		<DL	
Rb	85	0.43	0.01	0.37	0.01	<DL		<DL		<DL		<DL	
Sr	88	6.986	0.025	4.664	0.205	0.957	0.013	0.626	0.040	0.883	0.031	0.423	0.031
Ag	109	<DL		<DL		<DL		<DL		<DL		<DL	
Cd	111	2.119	0.057	2.221	0.104	2.378	0.076	0.068	0.010	0.090	0.022	<DL	
In	115	<DL		<DL		<DL		<DL		<DL		<DL	
Cs	133	0.050	0.003	0.067	0.004	<DL		<DL		<DL		<DL	
Ba	137	4.376	0.082	5.326	0.242	1.628	0.047	2.369	0.190	1.692	0.108	0.633	0.040
Tl	203	0.092	0.005	0.083	0.003	0.064	0.004	0.053	0.007	0.057	0.003	0.051	0.007
Pb	208	0.983	0.029	2.056	0.049	1.676	0.083	0.627	0.026	1.674	0.039	0.806	0.047
Bi	209	0.033	0.004	<DL		<DL		<DL		<DL		<DL	
U	238	0.013	0.001	0.017	0.001	<DL		<DL		<DL		<DL	

Yucca Mountain Precipitation Samples: Winter '92/Spring '93
ICP-MS Analysis - Standard 2

Element	Mass	Lathrop					Element
		Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	
Li	7	0.22	0.26	0.60	<DL	0.28	Li
Be	9	<DL	<DL	<DL	<DL	0.19	Be
V	51	0.136	0.041	0.191	0.085	0.026	V
Cr	52	0.456	0.413	1.146	0.136	0.034	Cr
Mn	55	2.858	3.542	8.384	0.326	0.022	Mn
Co	59	0.028	0.035	0.075	<DL	0.014	Co
Ni	60	0.471	0.364	0.948	0.077	0.038	Ni
Ga	69	0.024	0.037	0.078	<DL	0.036	Ga
As	75	0.299	0.338	0.886	<DL	0.057	As
Se	77	<DL	<DL	<DL	<DL	0.48	Se
Rb	85	0.13	0.21	0.43	<DL	0.28	Rb
Sr	88	2.423	2.742	6.986	0.423	0.024	Sr
Ag	109	0.000	0.000	<DL	<DL	0.031	Ag
Cd	111	1.146	1.201	2.378	<DL	0.047	Cd
In	115	<DL	<DL	<DL	<DL	0.028	In
Cs	133	0.020	0.031	0.067	<DL	0.013	Cs
Ba	137	2.671	1.803	5.326	0.633	0.037	Ba
Tl	203	0.067	0.017	0.092	0.051	0.029	Tl
Pb	208	1.304	0.575	2.056	0.627	0.063	Pb
Bi	209	0.006	0.014	0.033	<DL	0.037	Bi
U	238	0.005	0.008	0.017	<DL	0.012	U

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 2

		NYM											
		1/8/93		1/19/93		2/10/93							
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element
Li	7	0.59	0.03	<DL		<DL		0.20	0.34	0.59	<DL	0.28	Li
Be	9	<DL		<DL		<DL		<DL		<DL	<DL	0.19	Be
V	51	0.111	0.005	0.122	0.003	0.178	0.010	0.137	0.036	0.178	0.111	0.026	V
Cr	52	0.497	0.087	0.161	0.019	0.312	0.011	0.323	0.168	0.497	0.161	0.034	Cr
Mn	55	0.776	0.019	0.288	0.012	1.053	0.045	0.706	0.387	1.053	0.288	0.022	Mn
Co	59	0.017	0.002	<DL		<DL		0.006	0.010	0.017	<DL	0.014	Co
Ni	60	0.499	0.031	0.136	0.013	0.218	0.027	0.284	0.190	0.499	0.136	0.038	Ni
Ga	69	<DL		0.046	0.008	<DL		0.015	0.026	0.046	<DL	0.036	Ga
As	75	0.449	0.028	<DL		0.644	0.017	0.364	0.330	0.644	<DL	0.057	As
Se	77	<DL		<DL		<DL		<DL		<DL	<DL	0.48	Se
Rb	85	<DL		<DL		<DL		<DL		<DL	<DL	0.28	Rb
Sr	88	4.420	0.078	0.448	0.030	0.683	0.013	1.850	2.229	4.420	0.448	0.024	Sr
Ag	109	<DL		<DL		<DL		<DL		<DL	<DL	0.031	Ag
Cd	111	0.226	0.022	0.114	0.018	0.113	0.022	0.151	0.065	0.226	0.113	0.047	Cd
In	115	<DL		<DL		<DL		<DL		<DL	<DL	0.028	In
Cs	133	0.072	0.003	<DL		<DL		0.024	0.041	0.072	0.000	0.013	Cs
Ba	137	1.811	0.046	3.030	0.310	1.149	0.080	1.997	0.954	3.030	1.149	0.037	Ba
Tl	203	0.074	0.006	0.057	0.008	0.063	0.006	0.065	0.008	0.074	0.057	0.029	Tl
Pb	208	0.539	0.006	0.259	0.009	1.587	0.090	0.795	0.700	1.587	0.259	0.063	Pb
Bi	209	<DL		<DL		<DL		<DL		<DL	<DL	0.037	Bi
U	238	0.015	0.001	0.013	0.002	<DL		0.009	0.008	0.015	<DL	0.012	U

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 2

		SYM											
		1/8/93		1/19/93		2/10/93							
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maxim (ppb)	Minimu (ppb)	Detection Limit (ppb)	Element
Li	7	<DL		<DL		<DL		0.00	0.00	0.00	<DL	0.28	Li
Be	9	<DL		<DL		<DL		<DL		<DL	<DL	0.19	Be
V	51	0.111	0.005	0.166	0.004	0.180	0.008	0.152	0.036	0.180	0.111	0.026	V
Cr	52	0.684	0.096	0.268	0.022	0.207	0.011	0.386	0.260	0.684	0.207	0.034	Cr
Mn	55	2.542	0.082	0.420	0.033	0.984	0.053	1.315	1.099	2.542	0.420	0.022	Mn
Co	59	0.027	0.002	<DL		0.016	0.002	0.014	0.013	0.027	<DL	0.014	Co
Ni	60	0.204	0.032	0.274	0.038	0.191	0.009	0.223	0.044	0.274	0.191	0.038	Ni
Ga	69	0.062	0.004	<DL		0.045	0.010	0.036	0.032	0.062	<DL	0.036	Ga
As	75	0.404	0.019	0.062	0.011	0.620	0.033	0.362	0.281	0.620	<DL	0.057	As
Se	77	<DL		<DL		<DL		<DL		<DL	<DL	0.48	Se
Rb	85	<DL		<DL		<DL		<DL		<DL	<DL	0.28	Rb
Sr	88	2.738	0.053	0.580	0.029	0.976	0.058	1.431	1.149	2.738	0.580	0.024	Sr
Ag	109	<DL		0.085	0.009	<DL		<DL		<DL	<DL	0.031	Ag
Cd	111	0.377	0.007	0.531	0.033	0.095	0.016	0.334	0.221	0.531	0.095	0.047	Cd
In	115	<DL		<DL		<DL		<DL		<DL	<DL	0.028	In
Cs	133	0.039	0.002	<DL		<DL		0.013	0.022	0.039	0.000	0.013	Cs
Ba	137	4.140	0.169	1.842	0.083	3.080	0.034	3.021	1.150	4.140	1.842	0.037	Ba
Tl	203	0.071	0.002	0.055	0.003	0.059	0.007	0.061	0.008	0.071	0.055	0.029	Tl
Pb	208	0.281	0.002	0.576	0.029	1.390	0.127	0.749	0.574	1.390	0.281	0.063	Pb
Bi	209	<DL		<DL		<DL		<DL		<DL	<DL	0.037	Bi
U	238	<DL		0.013	0.001	<DL		0.004	0.007	0.013	<DL	0.012	U

Yucca Mountain Precipitation Samples: Winter '92/Spring '93
ICP-MS Analysis - Standard 3 & 4

		60-meter Tower										
		2/10/93		3/2/93								
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element	
Ti	47	0.21	0.04	0.18	0.04	0.20	0.02	0.21	0.18	0.16	Ti	
Ge	73	0.096	0.03	0.10	0.03	0.10	0.00	0.10	0.10	0.073	Ge	
Zr	90	0.011	0.002	0.016	0.004	0.014	0.004	0.016	0.011	0.0027	Zr	
Nb	93	< DL		0.0012	0.0006	0.0006	0.0008	0.0012	< DL	0.0011	Nb	
Mo	95	0.054	0.007	0.031	0.006	0.043	0.016	0.054	0.031	0.012	Mo	
Ru	99	< DL		< DL		< DL		< DL	< DL	0.0022	Ru	
Rh	103	0.005	0.001	0.004	0.002	0.0045	0.0007	0.0050	0.0040	0.0024	Rh	
Pd	105	< DL		< DL		< DL		< DL	< DL	0.011	Pd	
Sn	118	0.22	0.02	0.199	0.007	0.21	0.01	0.22	0.20	0.031	Sn	
Sb	121	0.78	0.006	0.05	0.005	0.42	0.52	0.78	0.05	0.0055	Sb	
Te	125	< DL		< DL		< DL		< DL	< DL	0.077	Te	
Hf	177	0.003	0.002	< DL		0.0015	0.0021	0.0030	< DL	0.0018	Hf	
Ta	181	< DL		< DL		< DL		< DL	< DL	0.0010	Ta	
W	182	0.022	0.007	0.022	0.005	0.022	0.000	0.022	0.022	0.014	W	
Re	187	0.004	0.002	< DL		0.0020	0.0028	0.0040	< DL	0.0016	Re	
Ir	193	< DL		< DL		< DL		< DL	< DL	0.0010	Ir	
Pt	194	< DL		0.003	0.002	0.0015	0.0021	0.0030	< DL	0.0021	Pt	
Au	197	< DL		< DL		< DL		< DL	< DL	0.0043	Au	

ICP-MS Analysis - Standard 3 & 4

Lathrop		12/30/92			1/6/93			1/8/93			1/19/93			2/10/93			3/2/93		
		Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)		
Element	Mass	47	1.0	0.1	1.54	0.07	0.51	0.08	0.20	0.06	0.21	0.07	0.20	0.02	0.02	0.20	0.02		
Ti	47																		
Ge	73		0.17	0.04	0.15	0.05	0.15	0.03	0.12	0.03	0.11	0.02	0.11	0.02	0.11	0.11	0.02		
Zr	90		0.160	0.008	0.097	0.006	0.87	0.005	0.021	0.003	0.012	0.004	0.008	0.002	0.008	0.008	0.002		
Nb	93		0.092	0.003	0.014	0.003	0.0031	0.0004	0.002	0.001	< DL	0.01	< DL	0.01	< DL	< DL	0.01		
Mo	95		0.15	0.03	0.08	0.001	0.039	0.008	0.10	0.01	0.07	0.01	0.02	0.01	0.02	0.02	0.01		
Ru	99		0.002	0.002	0.002	0.001	< DL	0.002	0.003	0.001	< DL	0.0009	0.004	0.001	< DL	< DL	0.001		
Rh	103		0.0114	0.0008	0.008	0.002	0.005	0.002	0.008	0.002	0.0044	0.0009	0.004	0.001	0.004	0.004	0.001		
Pd	105		0.012	0.005	< DL	0.02	< DL	0.01	< DL	0.006	0.185	0.006	0.17	0.02	0.17	0.17	0.02		
Sn	118		0.48	0.03	0.41	0.02	0.30	0.01	0.308	0.006	0.060	0.004	0.037	0.007	0.037	0.037	0.007		
Sb	121		0.19	0.02	0.14	0.02	0.14	0.01	0.073	0.003	< DL	0.001	< DL	0.001	< DL	< DL	0.001		
Te	125		0.09	0.02	< DL	0.003	< DL	0.001	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001		
Hf	177		0.015	0.003	0.007	0.003	0.003	0.001	0.001	0.001	< DL	0.01	< DL	0.01	< DL	< DL	0.008		
Ta	181		0.006	0.002	0.0030	0.0007	< DL	0.005	0.036	0.003	0.04	0.01	0.002	0.002	0.028	0.028	0.008		
W	182		0.17	0.02	0.069	0.008	< DL	0.002	< DL	0.002	0.004	0.002	0.002	0.002	< DL	< DL	0.002		
Re	187		0.004	0.002	0.0036	0.0009	< DL	0.001	< DL	0.001	< DL	0.001	0.001	0.001	< DL	< DL	0.002		
Ir	193		0.0014	0.0004	0.0010	0.0004	< DL	0.001	0.003	0.002	< DL	0.002	0.002	0.002	0.002	0.002	0.002		
Pt	194		0.0024	0.0009	0.004	0.002	0.002	0.001	0.003	0.002	< DL	0.002	0.002	0.002	0.002	0.002	0.002		
Au	197		0.011	0.002	0.004	0.002	< DL	0.001	< DL	0.002	< DL	0.002	< DL	0.002	< DL	< DL	0.002		

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 3 & 4

		Lathrop					
Element	Mass	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element
Ti	47	0.61	0.55	1.54	0.20	0.16	Ti
Ge	73	0.14	0.03	0.17	0.11	0.073	Ge
Zr	90	0.19	0.34	0.87	0.01	0.0027	Zr
Nb	93	0.019	0.036	0.092	<DL	0.0011	Nb
Mo	95	0.077	0.046	0.150	0.020	0.012	Mo
Ru	99	0.0012	0.0013	0.0030	<DL	0.0022	Ru
Rh	103	0.0068	0.0029	0.0114	0.0040	0.0024	Rh
Pd	105	0.0020	0.0049	0.0120	<DL	0.011	Pd
Sn	118	0.31	0.12	0.48	0.17	0.031	Sn
Sb	121	0.11	0.06	0.19	0.04	0.0055	Sb
Te	125	0.015	0.037	0.090	<DL	0.077	Te
Hf	177	0.0052	0.0052	0.0150	0.0010	0.0018	Hf
Ta	181	0.0017	0.0024	0.0060	<DL	0.0010	Ta
W	182	0.063	0.054	0.170	0.028	0.014	W
Re	187	0.0019	0.0021	0.0040	<DL	0.0016	Re
Ir	193	0.00040	0.00063	0.00140	<DL	0.0010	Ir
Pt	194	0.0022	0.0013	0.0040	<DL	0.0021	Pt
Au	197	0.0025	0.0045	0.0110	<DL	0.0043	Au

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 3 & 4

		NYM											
		1/8/93		1/19/93		2/10/93							
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Average (ppb)	Std. Dev. (ppb)	Maximum (ppb)	Minimum (ppb)	Detection Limit (ppb)	Element
Ti	47	0.25	0.06	0.16	0.06	0.22	0.02	0.21	0.05	0.25	0.16	0.16	Ti
Ge	73	0.13	0.03	0.10	0.03	0.11	0.03	0.11	0.02	0.13	0.10	0.073	Ge
Zr	90	0.029	0.003	0.036	0.005	0.019	0.003	0.028	0.009	0.036	0.019	0.0027	Zr
Nb	93	0.0032	0.0005	0.0018	0.0009	0.002	0.001	0.0023	0.0008	0.0032	0.0018	0.0011	Nb
Mo	95	0.083	0.006	0.05	0.02	0.09	0.02	0.074	0.021	0.090	0.050	0.012	Mo
Ru	99	0.003	0.001	0.0021	0.0008	< DL		0.0017	0.0015	0.0030	<DL	0.0022	Ru
Rh	103	0.010	0.001	0.007	0.002	0.0046	0.0008	0.0072	0.0027	0.0100	0.0046	0.0024	Rh
Pd	105	< DL		< DL		< DL		<DL		<DL	<DL	0.011	Pd
Sn	118	0.237	0.009	0.23	0.01	0.176	0.009	0.21	0.03	0.24	0.18	0.031	Sn
Sb	121	0.105	0.004	0.051	0.002	0.16	0.01	0.11	0.05	0.16	0.05	0.0055	Sb
Te	125	< DL		< DL		0.07	0.03	0.023	0.040	0.070	<DL	0.077	Te
Hf	177	0.004	0.002	0.002	0.001	0.003		0.0030	0.0010	0.0040	0.0020	0.0018	Hf
Ta	181	0.0020	0.0005	0.0013	0.0004	0.0013	0.0005	0.0015	0.0004	0.0020	0.0013	0.0010	Ta
W	182	0.070	0.007	0.03	0.01	0.049	0.006	0.050	0.020	0.070	0.030	0.014	W
Re	187	0.002	0.001	< DL		0.005	0.001	0.0023	0.0025	0.0050	<DL	0.0016	Re
Ir	193	0.0013	0.0009	< DL		< DL		0.00043	0.00075	0.00130	<DL	0.0010	Ir
Pt	194	0.002	0.002	< DL		< DL		0.0007	0.0012	0.0020	<DL	0.0021	Pt
Au	197	< DL		< DL		< DL		<DL		<DL	<DL	0.0043	Au

Yucca Mountain Precipitation Samples: Winter '92/Spring '93

ICP-MS Analysis - Standard 3 & 4

		SYM											
		1/8/93		1/19/93		2/10/93		Average	Std. Dev.	Maximum	Minimum	Detection Limit	
Element	Mass	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)	Concentration (ppb)	Std. Dev. (ppb)					(ppb)	Element
Ti	47	0.57	0.07	0.19	0.02	0.24	0.02	0.33	0.21	0.57	0.19	0.16	Ti
Ge	73	0.18	0.04	0.13	0.03	0.10	0.02	0.14	0.04	0.18	0.10	0.073	Ge
Zr	90	0.039	0.006	0.104	0.007	0.009	0.001	0.051	0.049	0.104	0.009	0.0027	Zr
Nb	93	0.004	0.001	0.0012	0.0007	0.002	0.001	0.0024	0.0014	0.0040	0.0012	0.0011	Nb
Mo	95	0.035	0.008	0.06	0.01	0.09	0.02	0.062	0.028	0.090	0.035	0.012	Mo
Ru	99	0.003	0.003	0.003	0.002	0.003	0.002	0.0030		0.0030	0.0030	0.0022	Ru
Rh	103	0.0072	0.0005	0.007	0.002	0.004	0.001	0.0061	0.0018	0.0072	0.0040	0.0024	Rh
Pd	105	< DL		< DL		< DL		< DL		< DL	< DL	0.011	Pd
Sn	118	0.185	0.006	0.288	0.008	0.19	0.02	0.22	0.06	0.29	0.19	0.031	Sn
Sb	121	0.08	0.01	0.11	0.01	0.105	0.009	0.10	0.02	0.11	0.08	0.0055	Sb
Te	125	< DL		< DL		< DL		< DL		< DL	< DL	0.077	Te
Hf	177	< DL		0.006	0.002	< DL		0.0020	0.0035	0.0060	< DL	0.0018	Hf
Ta	181	0.0014	0.0004	0.0014	0.0008	< DL		0.00093	0.00081	0.00140	< DL	0.0010	Ta
W	182	0.081	0.009	0.04	0.01	0.034	0.007	0.052	0.026	0.081	0.034	0.014	W
Re	187	0.003	0.001	< DL		0.004	0.001	0.0023	0.0021	0.0040	< DL	0.0016	Re
Ir	193	< DL		< DL		< DL		< DL		< DL	< DL	0.0010	Ir
Pt	194	0.002	0.002	< DL		< DL		0.00067	0.00115	0.00200	< DL	0.0021	Pt
Au	197	< DL		< DL		< DL		< DL		< DL	< DL	0.0043	Au

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