APPENDIX 1: Site photos and summary information for Yellowstone gas and water samples.

Deborah Bergfeld, Jacob B. Lowenstern, Andrew G. Hunt, W.C. Pat Shanks III, and William C. Evans, 2011, Gas and Isotope Chemistry of Thermal Features from Yellowstone National Park, U.S. Geological Survey Scientific Investigations Report, 2011-5012.

Sample: Alpha-numeric codes begin with YL and are followed by a two digit year code (03 for 2003, for example), a hyphen, and a sample number for that year.

Location: Informal name for the sampled feature. The name could be a defined thermal feature or could indicate simply that it was sampled in the same general location. When we sampled an actual thermal feature denoted in the Yellowstone Thermal Features database (http://www.rcn.montana.edu/resources/features/features.aspx?nav=11), we list the name of that feature in the "YNP Thermal Features Database" column in Table 2.

Date Sampled: in Month/Day/Year format.

Easting: East-West location in Universal Transverse Mercator (UTM) coordinate system: Zone 12. Datum is NAD83 (nearly identical to WGS84). Units are in meters. Uncertainties are generally ~3m.

Northing: East-West location in Universal Transverse Mercator (UTM) coordinate system: Zone 12. Datum is NAD83 (nearly identical to WGS84). Units are in meters. Uncertainties are generally ~3m

Feature: Split into three Features: 1) fum (fumarole), 2) fry (frying pan) and pool (pools and springs). Some fumaroles may be steaming ground or sub-boiling gas seeps.

Group: One of 18 groups defined for the purpose of explication and plot generation. Except for group 1 (Miscellaneous) and group 11 (Eastern Yellowstone) samples in a group are generally closely located. The groups shown below are also described and categorized in Table 1.

Temperature: Temperature in degrees Celsius. Temperature can be reproducibly measured to within 0.1°C, but accuracy may be limited to ~0.5°C due to temperature variability within the feature, and instrumental variations.

Xg%: Mole percent gas relative to gas plus steam. A sample with no steam would have a value of 100 (e.g., typically pools have higher Xg because the steam condenses as it bubbles through the water). The value for a gas-free sample would approach zero. Our expected accuracy is 10% relative; i.e., an Xg of 10 should be between 9 and 11 mol% gas.

R_C/R_A: $^3He/^4He$ ratio of sample divided by that in air (1.399×10^{-6}) and corrected for any air that may have been mixed into the sample.

Sample	YL03-01A
Location	Lone_Star
Date	9/4/2003
Easting	515429
Northing	4918413
Feature	fry
Group	15: Upper Geyser Basin
Temperature (°C)	94.0
Xg%	0.11%
Rc/Ra	7.37

Rc/Ra

Sample	YL03-02A
Location	Fountain_Paint_Pot
Date	9/5/2003
Easting	515386
Northing	4933083
Feature	fum
Group	3: Lower Geyser Basin
Temperature (°C)	111.1
Xg%	0.48%
Rc/Ra	6.13

Sample	YL03-03A
Location	Black_Sands1
Date	9/5/2003
Easting	511542
Northing	4923256
Feature	fry
Group	15: Upper Geyser Basin
Temperature (°C)	92.2
Xg%	0.50%
Rc/Ra	

Sample	**YL03-04A**
Location	Black_Sands2
Date	9/5/2003
Easting	511628
Northing	4923190
Feature	pool
Group	15: Upper Geyser Basin
Temperature (°C)	76.1
Xg%	82.36%
Rc/Ra	

Sample	YL03-05B
Location	Near_DB
Date	9/6/2003
Easting	523215
Northing	4952111
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	94.7
Xg%	0.05%
Rc/Ra	7.17

Sample	YL03-06B
Location	Green_Dragon
Date	9/6/2003
Easting	523196
Northing	4952111
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	88.6
Xg%	37.69%
Rc/Ra	

Sample	YL03-07A
Location	Son_of_Green_Dragon
Date	9/6/2003
Easting	523208
Northing	4952035
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	94.1
Xg%	0.15%
Rc/Ra	7.04

Sample	YL03-08A
Location	Dishwater
Date	9/6/2003
Easting	523384
Northing	4952086
Feature	pool
Group	8: Norris Geyse
Temperature (°C)	89.4
Xg%	9.37%
Rc/Ra	

Sample	YL03-09B
Location	Beryl_Spring
Date	9/7/2003
Easting	520088
Northing	4947298
Feature	fum
Group	18: Gibbon River Basins
Temperature (°C)	99.6
Xg%	1.10%
Rc/Ra	12.40

Sample	YL03-10B
Location	Black_Growler
Date	9/7/2003
Easting	523502
Northing	4952278
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	93.6
Xg%	0.30%
Rc/Ra	7.35

Sample	YL03-11B
Location	Black_Pit
Date	9/7/2003
Easting	523588
Northing	4952139
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	82.3
Xg%	80.48%
Rc/Ra	

Sample	YL03-12A
Location	Porcelain_Terrace1
Date	9/7/2003
Easting	523746
Northing	4953112
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	93.9
Xg%	1.01%
Rc/Ra	

Sample	YL03-13A
Location	Nymph_Lake_new_feature
Date	9/4/2004
Easting	521471
Northing	4955495
Feature	fum
Group	17: North of Norris Geyser Basin
Temperature (°C)	93.6
Xg%	0.93%
Rc/Ra	4.94

Sample	YL03-14B
Location	Terrace_Springs
Date	9/8/2003
Easting	512184
Northing	4944102
Feature	pool
Group	7: Terrace Springs
Temperature (°C)	63.3
Xg%	86.56%
Rc/Ra	7.93

1: Miscellaneous

Sample	**YL03-15A**
Location	W_Nymph_Lake_Thermal_Area1
Date	9/9/2003
Easting	520335
Northing	44954609
Feature	pool
Group	17: North of Norris Geyser Basin
Temperature (°C)	82.0
Xg%	43.63%
Rc/Ra	6.32

Sample	YL03-016A
Location	W_Nymph_Lake_Thermal_Area2
Date	9/9/2003
Easting	520244
Northing	4954683
Feature	fry
Group	17: North of Norris Geyser Basin
Temperature (°C)	92.0
Xg%	2.82%
Rc/Ra	6.26

Sample	YL03-017A
Location	Conoco
Date	9/10/2003
Easting	513205
Northing	4922954
Feature	fum
Group	15: Upper Geyser Basin
Temperature (°C)	94.5
Xg%	0.20%
Rc/Ra	7.82

Sample	YL03-18A
Location	Smokejumper1
Date	9/12/2003
Easting	503793
Northing	4917530
Feature	pool
Group	12: Smokejumper Hot Springs
Temperature (°C)	85.0
Xg%	75.46%
Rc/Ra	

Sample	YL03-19A
Location	Smokejumper2
Date	9/12/2003
Easting	503260
Northing	4918509
Feature	fum
Group	12: Smokejumper Hot Springs
Temperature (°C)	92.1
Xg%	0.47%
Rc/Ra	5.50

Sample	YL03-20
Location	Smokejumper3
Date	9/12/2003
Easting	503273
Northing	4918792
Feature	fum
Group	12: Smokejumper Hot Springs
Temperature (°C)	92.1
Xg%	0.36%
Rc/Ra	

Sample	YL03-21A
Location	Smokejumper4
Date	9/12/2003
Easting	503559
Northing	4918096
Feature	fry
Group	12: Smokejumper Hot Springs
Temperature (°C)	92.1
Xg%	0.29%
Rc/Ra	5.64

Sample	YL04-01
Location	Black_Pit
Date	9/13/2004
Easting	523588
Northing	4952139
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.6
Xg%	0.68%
Rc/Ra	

Sample	YL04-02
Location	nr_Gibbon_R1
Date	9/13/2004
Easting	523658
Northing	4954007
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	84
Xg%	4.69%
Rc/Ra	

Sample	YL04-03
Location	nr_Gibbon_R2
Date	9/13/2004
Easting	523680
Northing	4954101
Feature	fry
Group	8: Norris Geyser Basin
Temperature (°C)	72.8
Xg%	93.32%
Rc/Ra	

Sample	YL04-04
Location	Nymph_Lake_new_feature
Date	9/13/2004
Easting	521444
Northing	4955530
Feature	fry
Group	17: North of Norris Geyser Basin
Temperature (°C)	93
Xg%	1.20%
Rc/Ra	4.75

Sample	YL04-05
Location	Conoco
Date	9/14/2004
Easting	513182
Northing	4922973
Feature	fum
Group	15: Upper Geyser Basin
Temperature (°C)	94.3
Xg%	0.20%
Rc/Ra	7.45

Sample	YL04-06
Location	Bison_Kill
Date	9/14/2004
Easting	523471
Northing	4954042
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	8.5
Xg%	61.44%
Rc/Ra	3.28

Sample	YL04-07
Location	Bison_Flat1
Date	9/14/2004
Easting	523527
Northing	4953778
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.9
Xg%	2.90%
Rc/Ra	

Sample	YL04-08
Location	Back_Basin1
Date	9/15/2004
Easting	523182
Northing	4952090
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	
Xg%	0.21%
Rc/Ra	

Sample	YL04-09
Location	Back_Basin2
Date	9/15/2004
Easting	522963
Northing	4952193
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	67.4
Xg%	91.75%
Rc/Ra	7.81

Sample	YL04-10
Location	Green_Dragon
Date	9/15/2004
Easting	523194
Northing	4951894
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	76.8
Xg%	3.06%
Rc/Ra	

Sample	YL04-11
Location	Steamboat_mud_volcano
Date	9/15/2004
Easting	523502
Northing	4952272
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.8
Xg%	0.56%
Rc/Ra	

Sample	YL04-12
Location	Porcelain_Terrace2
Date	9/15/2004
Easting	523732
Northing	4953033
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.6
Xg%	1.05%
Rc/Ra	4.48

Sample	YL04-13
Location	Hundred_Springs_Plain
Date	9/15/2004
Easting	523113
Northing	4953330
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	89.1
Xg%	23.28%
Rc/Ra	6.22

Sample	YL04-14
Location	Beryl_Spring
Date	9/16/2004
Easting	520093
Northing	4947311
Feature	fum
Group	18: Gibbon River Basins
Temperature (°C)	93.1
Xg%	0.76%
Rc/Ra	12.13

Sample	YL04-15
Location	Devils_Den
Date	9/16/2004
Easting	549077
Northing	4971336
Feature	fum
Group	1: Miscellaneous
Temperature (°C)	27.2
Xg%	89.33%
Rc/Ra	0.84

Sample	YL04-17
Location	Sylvan_Springs1
Date	9/17/2004
Easting	517878
Northing	4949941
Feature	pool
Group	18: Gibbon River Basins
Temperature (°C)	22.4
Xg%	87.33%
Rc/Ra	7.32

Sample	YL04-19
Location	Sylvan_Springs2
Date	9/17/2004
Easting	518326
Northing	4949582
Feature	fum
Group	18: Gibbon River Basins
Temperature (°C)	97.8
Xg%	6.53%
Rc/Ra	7.14

Sample	YL04-20
Location	Sylvan_Springs3
Date	9/17/2004
Easting	518326
Northing	4949582
Feature	fry
Group	18: Gibbon River Basins
Temperature (°C)	91.9
Xg%	3.86%
Rc/Ra	

Sample	YL04-21
Location	Gas_Vents_Norris_Canyon_Rd
Date	9/18/2004
Easting	535329
Northing	4951004
Feature	fum
Group	10: Gas Vents, Norris-Canyon Road
Temperature (°C)	92.1
Xg%	1.52%
Rc/Ra	5.08

Sample	YL04-22
Location	Artist_Paintpot
Date	9/18/2004
Easting	520838
Northing	4948760
Feature	fry
Group	18: Gibbon River Basins
Temperature (°C)	91.7
Xg%	0.16%
Rc/Ra	10.40

Sample	YL05-01
Location	Black_Pit
Date	9/13/2005
Easting	523589
Northing	4952144
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	91.9
Xg%	0.92%
Rc/Ra	6.48

Sample	YL05-02
Location	Terrace_Springs
Date	9/13/2005
Easting	512184
Northing	4944102
Feature	pool
Group	7: Terrace Springs
Temperature (°C)	62.3
Xg%	54.98
Rc/Ra	

Sample	YL05-03
Location	Frying_Pan_Spring
Date	9/14/2005
Easting	521979
Northing	4955476
Feature	fry
Group	17: North of Norris Geyser Basin
Temperature (°C)	91.8
Xg%	1.53%
Rc/Ra	

Sample	YL05-04
Location	Gibbon_River_Bridge
Date	9/14/2005
Easting	520295
Northing	4947980
Feature	fum
Group	18: Gibbon River Basins
Temperature (°C)	93.4
Xg%	2.96%
Rc/Ra	12.15

Sample	YL05-05
Location	Conoco
Date	9/14/2005
Easting	513181
Northing	4922972
Feature	fum
Group	15: Upper Geyser Basin
Temperature (°C)	92.5
Xg%	0.18
Rc/Ra	

Sample	YL05-06
Location	Back_Basin3
Date	9/15/2005
Easting	523170
Northing	4952046
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.6
Xg%	0.09
Rc/Ra	7.31

Sample	YL05-07
Location	Back_Basin4
Date	9/15/2005
Easting	523011
Northing	4952171
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	87.4
Xg%	82.18
Rc/Ra	

Sample	YL05-08
Location	Black_Growler
Date	9/15/2005
Easting	523496
Northing	4952728
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	93.6
Xg%	0.53%
Rc/Ra	

Sample	YL05-09
Location	Bison_Flat2
Date	9/16/2005
Easting	523538
Northing	4953830
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	93.9
Xg%	1.68
Rc/Ra	

Sample	YL05-10
Location	Nymph_Lake_new_feature
Date	9/16/2005
Easting	521456
Northing	4955507
Feature	fum
Group	17: North of Norris Geyser Basin
Temperature (°C)	93.5
Xg%	2.65
Rc/Ra	4.71

Sample	YL05-11
Location	Chocolate_Pots
Date	9/16/2005
Easting	520496
Northing	4950780
Feature	pool
Group	18: Gibbon River Basins
Temperature (°C)	52.5
Xg%	93.14
Rc/Ra	

Sample	YL05-12
Location	Sulphur_Caldron1
Date	9/17/2005
Easting	544992
Northing	4941758
Feature	pool
Group	14: Mud Volcano
Temperature (°C)	68.9
Xg%	93.51
Rc/Ra	14.98

Sample	**YL05-13, 13A**
Location	Mud_Geyser
Date	9/17/2005
Easting	545055
Northing	4941205
Feature	fum
Group	14: Mud Volcano
Temperature (°C)	112.9
Xg%	10.65, 14.04
Rc/Ra	15.29

Sample	**YL05-14**
Location	Roaring_Mountain1
Date	9/19/2005
Easting	520861
Northing	4958599
Feature	fum
Group	6: Roaring Mtn/ Amphitheater Springs
Temperature (°C)	92.7
Xg%	2.91
Rc/Ra	1.87

Sample	YL05-15
Location	Narrow_Gauge
Date	9/19/2005
Easting	522880
Northing	4979593
Feature	pool
Group	4: Mammoth Hot Springs
Temperature (°C)	74.8
Xg%	96.12
Rc/Ra	

Sample	YL05-17a,b
Location	Quagmire
Date	9/21/2005
Easting	515413
Northing	4934949
Feature	fry
Group	3: Lower Geyser Basin
Temperature (°C)	93.4
Xg%	0.12%, 0.13%
Rc/Ra	3.48

Sample	YL05-18A,B,C,D
Location	Gibbon_River_Bridge
Date	9/21/2005
Easting	520295
Northing	4947980
Feature	fum
Group	18: Gibbon River Basins
Temperature (°C)	93.2
Xg%	2.59, 2.23, 2.33, 2.28
Rc/Ra	

Sample	YL06-01A
Location	HSB1
Date	8/27/2006
Easting	558800
Northing	4954767
Feature	fum
Group	11: Eastern Yellowstone
Temperature (°C)	91.9
Xg%	1.44%
Rc/Ra	5.52

Sample	YL06-02
Location	HSB2
Date	8/29/2006
Easting	558553
Northing	4953761
Feature	fry
Group	11: Eastern Yellowstone
Temperature (°C)	91.9
Xg%	81.80%
Rc/Ra	6.73

Sample	YL06-03
Location	HSB3
Date	8/29/2006
Easting	558752
Northing	4954838
Feature	fum
Group	11: Eastern Yellowstone
Temperature (°C)	91.4
Xg%	2.43%
Rc/Ra	

Sample	YL06-04
Location	HSB4
Date	8/29/2006
Easting	5588890
Northing	4955349
Feature	fum
Group	11: Eastern Yellowstone
Temperature (°C)	93.4
Xg%	3.69%
Rc/Ra	5.10

Sample	YL06-05
Location	HSB5
Date	8/29/2006
Easting	558925
Northing	4955398
Feature	pool
Group	11: Eastern Yellowstone
Temperature (°C)	76.9
Xg%	88.06%
Rc/Ra	

Sample	YL06-06
Location	HSB6
Date	8/30/2006
Easting	559263
Northing	4954529
Feature	fry
Group	11: Eastern Yellowstone
Temperature (°C)	90.1
Xg%	0.74%
Rc/Ra	5.67

Sample	YL06-07
Location	HSB7
Date	8/30/2006
Easting	560345
Northing	4954787
Feature	fum
Group	11: Eastern Yellowstone
Temperature (°C)	90.9
Xg%	0.70%
Rc/Ra	4.63

Sample	YL06-08A
Location	HSB8
Date	8/30/2006
Easting	559347
Northing	4954788
Feature	pool
Group	11: Eastern Yellowstone
Temperature (°C)	68.1
Xg%	97.23%
Rc/Ra	

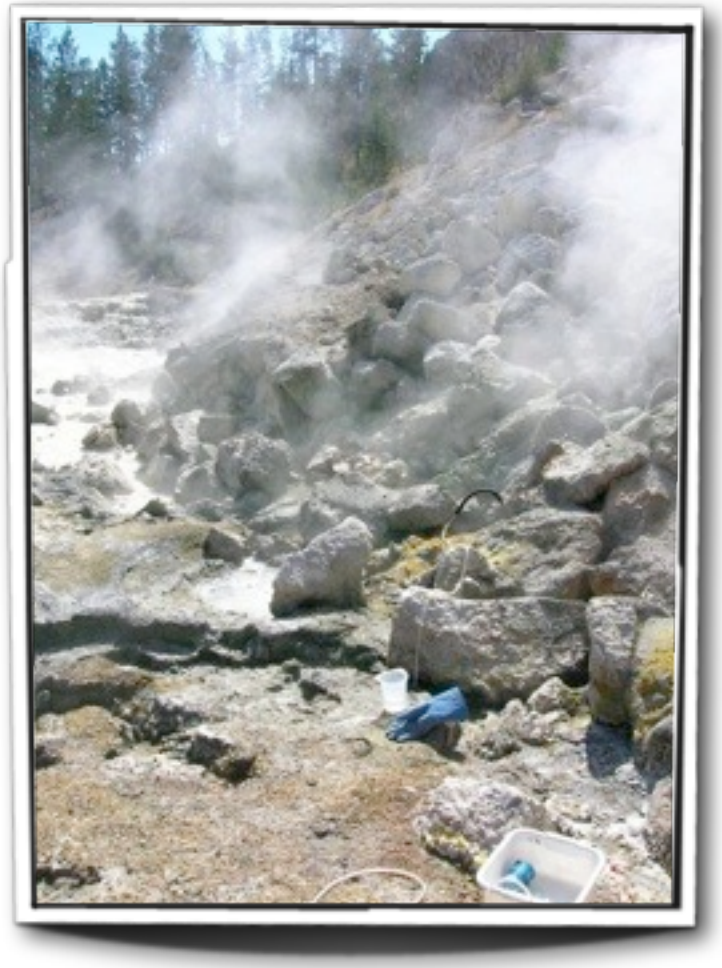
Sample	YL06-09
Location	Black_Pit
Date	9/01/2006
Easting	523589
Northing	4952144
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	94.5
Xg%	0.44%
Rc/Ra	

Sample	YL06-10
Location	Back_Basin5
Date	9/01/2006
Easting	523155
Northing	4952043
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.1
Xg%	0.21%
Rc/Ra	

Sample	YL06-11
Location	Guardian
Date	9/01/2006
Easting	523477
Northing	4952724
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.5
Xg%	0.56%
Rc/Ra	7.43

Sample	YL06-12
Location	Behind_Congress
Date	9/01/2006
Easting	523655
Northing	4952727
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	92.7
Xg%	0.22%
Rc/Ra	

Sample	YL07-01
Location	Gas_Vents_Norris_Canyon_Rd
Date	9/12/2007
Easting	535328
Northing	4951009
Feature	fum
Group	10: Gas Vents, Norris-Canyon Road
Temperature (°C)	91.1
Xg%	1.79%
Rc/Ra	



Sample	YL07-02
Location	Sulphur_Caldron
Date	9/12/2007
Easting	544961
Northing	4941790
Feature	fum
Group	14: Mud Volcano
Temperature (°C)	98.2
Xg%	11.11%
Rc/Ra	15.29

Sample	YL07-03
Location	Mud_Geyser
Date	9/12/2007
Easting	545055
Northing	4941202
Feature	fum
Group	14: Mud Volcano
Temperature (°C)	114.7
Xg%	9.46%
Rc/Ra	16.49

Sample	YL07-04
Location	Behind_Inkpot
Date	9/13/2007
Easting	545106
Northing	4956992
Feature	fum
Group	2: Washburn Hot Springs
Temperature (°C)	92.4
Xg%	2.31%
Rc/Ra	4.91

Sample	YL07-05
Location	Washburn
Date	9/13/2007
Easting	545135
Northing	4957173
Feature	fum
Group	2: Washburn Hot Springs
Temperature (°C)	93.2
Xg%	1.73%
Rc/Ra	4.78

Sample	YL07-06
Location	Pocket_Basin
Date	9/14/2007
Easting	513979
Northing	4934350
Feature	fum
Group	3: Lower Geyser Basin
Temperature (°C)	93.7
Xg%	0.15%
Rc/Ra	2.95

Sample	YL07-09
Location	Guardian
Date	9/15/2007
Easting	523477
Northing	4952724
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.1
Xg%	0.32%
Rc/Ra	

Sample	YL07-10
Location	Steamvalve
Date	9/15/2007
Easting	523494
Northing	4952561
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	68.8
Xg%	87.45%
Rc/Ra	8.79

Sample	YL07-11
Location	Bison_Flat
Date	9/15/2007
Easting	523548
Northing	4953837
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	92.1
Xg%	1.27%
Rc/Ra	

Sample	YL07-12
Location	Roaring_Mountain2
Date	9/16/2007
Easting	520703
Northing	4958588
Feature	fum
Group	6: Roaring Mtn/ Amphitheater Springs
Temperature (°C)	92.4
Xg%	0.46%
Rc/Ra	

Sample	YL07-13
Location	Mud_Geyser
Date	9/16/2007
Easting	545055
Northing	4941202
Feature	fum
Group	14: Mud Volcano
Temperature (°C)	-
Xg%	8.70%
Rc/Ra	

Sample	YL07-14
Location	Fountain_Paint_Pot
Date	9/17/2007
Easting	515376
Northing	4933087
Feature	fum
Group	3: Lower Geyser Basin
Temperature (°C)	92.0
Xg%	0.22%
Rc/Ra	6.07

Sample	YL07-15
Location	Beryl_Spring
Date	9/17/2007
Easting	520077
Northing	4947298
Feature	fum
Group	18: Gibbon River Basins
Temperature (°C)	92.5
Xg%	0.79%
Rc/Ra	12.22

Sample	YL07-17
Location	Crater_Hills
Date	9/18/2007
Easting	541392
Northing	4944637
Feature	fum
Group	1: Miscellaneous
Temperature (°C)	90.9
Xg%	2.98%
Rc/Ra	10.37

Sample	YL07-18.1 and 2
Location	Devils_Den
Date	9/18/2007
Easting	549070
Northing	4971350
Feature	fum
Group	1: Miscellaneous
Temperature (°C)	23.7
Xg%	85.94%, 74.45
Rc/Ra	

Sample	YL08-02
Location	Steamboat_Point
Date	9/17/2008
Easting	555848
Northing	4930907
Feature	fum
Group	11: Eastern Yellowstone
Temperature (°C)	93.4
Xg%	0.21%
Rc/Ra	0.76

Sample	YL08-03
Location	Potts_Basin1
Date	9/17/2008
Easting	533421
Northing	4919761
Feature	pool
Group	13: Potts Basin
Temperature (°C)	68.8
Xg%	81.4%
Rc/Ra	

Sample	YL08-04
Location	Potts_Basin2
Date	9/17/2008
Easting	533505
Northing	4919689
Feature	pool
Group	13: Potts Basin
Temperature (°C)	87.5
Xg%	43.8%
Rc/Ra	4.73

Sample	YL08-04b
Location	Potts_Basin_2A
Date	9/17/2008
Easting	533505
Northing	4919689
Feature	pool
Group	13: Potts Basin
Temperature (°C)	87.5
Xg%	43.8%
Rc/Ra	

Sample	YL08-05
Location	Potts_Basin3
Date	9/17/2008
Easting	533504
Northing	4919547
Feature	pool
Group	13: Potts Basin
Temperature (°C)	45.3
Xg%	98.1%
Rc/Ra	

Sample	YL08-07
Location	Snake_River_HS1
Date	9/18/2008
Easting	527133
Northing	4887672
Feature	pool
Group	1: Miscellaneous
Temperature (°C)	81.4
Xg%	87.4%
Rc/Ra	

Sample	YL08-08
Location	Conoco
Date	9/18/2008
Easting	513195
Northing	4922978
Feature	fum
Group	1: Upper Geyser Basin
Temperature (°C)	93.5
Xg%	0.15%
Rc/Ra	

Sample	YL08-09
Location	Forest_Springs1
Date	9/19/2008
Easting	541730
Northing	4950841
Feature	fry
Group	5: Forest Springs
Temperature (°C)	91
Xg%	3.49%
Rc/Ra	11.65

Sample	YL08-10
Location	Forest_Springs2
Date	9/19/2008
Easting	541609
Northing	4951154
Feature	fry
Group	5: Forest Springs
Temperature (°C)	87.6
Xg%	3.80%
Rc/Ra	11.93

Sample	YL08-11
Location	Ochre_Spring
Date	9/19/2008
Easting	547154
Northing	4939408
Feature	fum
Group	1: Miscellaneous
Temperature (°C)	91.7
Xg%	2.48%
Rc/Ra	12.19

Sample	YL08-12
Location	Poison_Spring
Date	9/20/2008
Easting	522543
Northing	4979039
Feature	pool
Group	4: Mammoth Hot Springs
Temperature (°C)	39.3
Xg%	89.7%
Rc/Ra	7.74

Sample	YL08-13
Location	Amphitheater_Springs
Date	9/20/2008
Easting	521782
Northing	4960436
Feature	fry
Group	6: Roaring Mtn/ Amphitheater Springs
Temperature (°C)	88.3
Xg%	1.8%
Rc/Ra	

Sample	YL08-14
Location	Obsidian_Pool_fry
Date	9/21/2008
Easting	544411
Northing	4939629
Feature	fry
Group	14: Mud Volcano
Temperature (°C)	90.2
Xg%	10.9%
Rc/Ra	16.28

Sample	YL08-14b
Location	Obsidian_Pool_fry
Date	9/21/2008
Easting	544411
Northing	4939629
Feature	fry
Group	14: Mud Volcano
Temperature (°C)	90.2
Xg%	10.33%
Rc/Ra	

Sample	YL08-15
Location	Obsidian_Pool
Date	9/21/2008
Easting	544530
Northing	4939794
Feature	pool
Group	14: Mud Volcano
Temperature (°C)	89.2
Xg%	9.24%
Rc/Ra	

Sample	YL08-16
Location	Back_Basin6
Date	9/21/2008
Easting	523119
Northing	4952036
Feature	fum
Group	8: Norris Geyser Basin
Temperature (°C)	93.7
Xg%	0.11%
Rc/Ra	7.30

Sample	YL08-17
Location	Steamvalve
Date	9/21/2008
Easting	523494
Northing	4952561
Feature	pool
Group	8: Norris Geyser Basin
Temperature (°C)	71.4
Xg%	83.8%
Rc/Ra	

Sample	YL08-18
Location	Brimstone1
Date	9/25/2008
Easting	562143
Northing	4915346
Feature	pool
Group	9: Brimstone Basin
Temperature (°C)	6.6
Xg%	75.0%
Rc/Ra	3.03

Sample	YL08-19
Location	Brimstone2
Date	9/25/2008
Easting	562447
Northing	4914975
Feature	pool
Group	9: Brimstone Basin
Temperature (°C)	16.3
Xg%	79.7%
Rc/Ra	2.99

Sample	YL08-20
Location	Brimstone3
Date	9/25/2008
Easting	562447
Northing	4914975
Feature	pool
Group	9: Brimstone Basin
Temperature (°C)	n.d.
Xg%	83.1%
Rc/Ra	

Sample	YL09-01
Location	Conoco
Date	9/08/2009
Easting	513263
Northing	4922738
Feature	fum
Group	15: Upper Geyser Basin
Temperature (°C)	93.3
Xg%	0.08%
Rc/Ra	6.30

Sample	YL09-02
Location	Black_Sands1
Date	9/08/2009
Easting	511600
Northing	4923050
Feature	pool
Group	15: Upper Geyser Basin
Temperature (°C)	90.0
Xg%	0.90%
Rc/Ra	8.10

Sample	YL09-03A,B
Location	Gas_Vents_Norris_Canyon_Rd
Date	9/08/2009
Easting	535384
Northing	4950801
Feature	fum
Group	10: Gas-Vents, Norris-Canyon Road
Temperature (°C)	92.9
Xg%	1.65, 1.71%
Rc/Ra	4.55

Sample	YL09-04
Location	Frying_Pan_Spring
Date	9/09/2009
Easting	521972
Northing	455470
Feature	fry
Group	17: North of Norris Geyser Basin
Temperature (°C)	92.3
Xg%	1.59%
Rc/Ra	5.65

Sample	YL09-05
Location	Heart_Middle
Date	9/11/2009
Easting	538509
Northing	4904911
Feature	pool
Group	16: Heart Lake
Temperature (°C)	89.9
Xg%	3.91%
Rc/Ra	1.21

Sample	YL09-06
Location	Heart_Fissure
Date	9/11/2009
Easting	538237
Northing	4905600
Feature	fum
Group	16: Heart Lake
Temperature (°C)	92.9
Xg%	0.18%
Rc/Ra	1.14

Sample	YL09-07b
Location	Heart_Lower
Date	9/11/2009
Easting	539402
Northing	4904193
Feature	pool
Group	16: Heart Lake
Temperature (°C)	84
Xg%	62.27%
Rc/Ra	

Sample	YL09-08
Location	Heart_Rustic
Date	9/11/2009
Easting	539387
Northing	4903042
Feature	fum
Group	16: Heart Lake
Temperature (°C)	93.0
Xg%	0.06%
Rc/Ra	1.09

Sample	YL09-09
Location	Heart_North
Date	9/12/2009
Easting	537996
Northing	4906463
Feature	fum
Group	16: Heart Lake
Temperature (°C)	92.9
Xg%	0.30%
Rc/Ra	1.81

Sample	YL09-10
Location	Heart_White_Gulch
Date	9/12/2009
Easting	537312
Northing	4906184
Feature	fum
Group	16: Heart Lake
Temperature (°C)	92.7
Xg%	0.38%
Rc/Ra	2.70

Sample	YL09-11
Location	Heart_Upper
Date	9/12/2009
Easting	537625
Northing	4905810
Feature	fry
Group	16: Heart Lake
Temperature (°C)	92.0
Xg%	0.17%
Rc/Ra	2.94

Sample	YL09-12
Location	Heart_Rustic
Date	9/12/2009
Easting	539387
Northing	4903042
Feature	fum
Group	16: Heart Lake
Temperature (°C)	93.4
Xg%	0.06%
Rc/Ra	

Sample	YL09-13
Location	Rabbit_Creek
Date	9/15/2009
Easting	515167
Northing	4929582
Feature	fum
Group	3: Lower Geyser Basin
Temperature (°C)	93.2
Xg%	0.06%
Rc/Ra	8.82

Sample	YL09-14
Location	Quagmire
Date	9/15/2009
Easting	515479
Northing	4934737
Feature	fum
Group	3: Lower Geyser Basin
Temperature (°C)	93.5
Xg%	0.18%
Rc/Ra	

Sample	YL09-15
Location	Terrace_Springs
Date	9/15/2009
Easting	512183
Northing	4944102
Feature	pool
Group	7: Terrace Springs
Temperature (°C)	63.3
Xg%	98.97%
Rc/Ra	

Sample	YL09-16
Location	Turbid_Lake_Upper
Date	9/16/2009
Easting	558972
Northing	4932326
Feature	fum
Group	11: Eastern Yellowstone
Temperature (°C)	91.1
Xg%	5.79%
Rc/Ra	4.02

Sample	YL09-17
Location	Bear_Creek
Date	9/16/2009
Easting	558879
Northing	4932647
Feature	pool
Group	11: Eastern Yellowstone
Temperature (°C)	92.3
Xg%	4.57%
Rc/Ra	4.23

Sample	YL09-18
Location	Pelican_Creek_Trail
Date	9/16/2009
Easting	557089
Northing	4935393
Feature	pool
Group	11: Eastern Yellowstone
Temperature (°C)	6.7
Xg%	83.6%
Rc/Ra	2.41