Chaffee Co

142† | Chaffee | Mt. Princeton | Hortense Hot Spring | About 250 yds. up side of mountain above Mt. Princeton Sta.

NUMBER 142

HORTENSE SPRING

Location—Mt. Princeton.
Rate of Flow—22 to 33 gal. per min. Temperature—183° F.
Class of Water—Sodic, sulphated, alkaline-saline, (siliceous).

Constituents	Formula	Milligrams per liter Approximately parts per million	Reacting value percentage
Silica	SiO_2	76.1	.....
Sulphate	SO_4	103.3	24.72
Bicarbonate	HCO_3	104.2	19.65
Carbonate	CO_3	Trace	.....
Phosphate	PO_4	Trace	.....
Chloride	Cl	17.68	5.63
Iron	Fe	.....	.....
Aluminum	Al	.....	.....
Iron oxide	Fe_2O_3	None	.....
Aluminum oxide	Al_2O_3		
Manganese	Mn	None	.....
Calcium	Ca	4.37	2.53
Magnesium	Mg	Trace	.....
Potassium	K	1.5	.46
Sodium	Na	94.2	47.01
Lithium	Li	Trace	.....
	Total.....	401.35	100.00

Concentration value	8.70	Excess carbon dioxide	37.58
Hydrogen sulphide, H_2S	None	Iron precipitated	None
Arsenic, As	....	Evaporation solids	357
Strontium, Sr	....	Oxygen consuming capacity	1.85

Hypothetical Combinations

Milligrams per liter, approximately parts per million

Lith. chlor., LiCl	Trace	Calc. bicarb., $Ca(HCO_3)_2$	17.67
Pot. chlor., KCl	3.25	Iron and aluminum oxides, Fe_2O_3, Al_2O_3	.....
Sod. chlor., NaCl	26.61	Calc. silicate, $CaSiO_3$	.....
Sod. sulph., Na_2SO_4	152.8	Silica, SiO_2	76.1
Mag. sulph., $MgSO_4$	.....	Mang. oxide, Mn_3O_4	.....
Calc. sulph., $CaSO_4$	.....	Mag. bicarb., $Mg(HCO_3)_2$	Trace
Calc. carb., $CaCO_3$	Trace	Sod. bicarb., $NaHCO_3$	125.2
Ferrous bicarb., $Fe(HCO_3)_2$	.....		
Total			401.62

Properties of Reaction in Percent

Primary salinity	60.70	Primary alkalinity	34.24
Secondary salinity	....	Secondary alkalinity	5.06
Tertiary salinity	....	Tertiary alkalinity	....

Radioactivity

Temperature, °C, 83.8. Temperature, °F, 183.0.
Curies Ra Emanation per liter x 10^{-10}, Gas, 656.0.
Mache Units per liter, Gas, 177.15.
Permanent Activity, Grams Ra per liter, x 10^{-10}, None.

16. Hortense Hot Springs (Part of the Mount Princeton Hot Springs group of other investigators), Chaffee County. This spring, which is the hottest in the State of Colorado, is located approximately one mile west of the Mount Princeton Hot Springs. Its geologic conditions are similar to the Mount Princeton Hot Springs. The discharge of the spring is estimated to be between 22-33 gpm and its temperature ranges from $74^{o}C$-$84^{o}C$. The water is used for swimming pools and space heating at two youth camps.