

VISCO WATER ANALYSIS WORK SHEET

COMPANY Timka Resources LOCATION Logan County Colorado
 TIME 5-12-18 LEASE Liberty WATER SOURCE Water Tank

TOTAL DISSOLVED SOLIDS:

| ATIONS | Column 1 mg/l as compound | Column 2 mg/l as ions | Column 3 mg/l | |
|--|------------------------------|--|------------------|----|
| A. Sodium | | <u>7389.3206</u> as Na+ = 23.0X | <u>321.27481</u> | A. |
| B. Total hardness, as CaCO ₃ = | <u>800</u> | | | |
| C. Calcium, as CaCO ₃ = | <u>650</u> X 0.400 = | <u>260</u> as Ca++ X 0.050 = | <u>13</u> | C. |
| D. Magnesium, as CaCO ₃ = | <u>150</u> X 0.243 = | <u>36.45</u> as Mg++ X 0.0823 = | <u>2.999835</u> | D. |
| E. Barium, as BaSO ₄ = | <u>0</u> X 0.589 = | <u>0</u> as Ba++ X 0.0148 = | <u>0</u> | E. |
| F. Total Cations = | | Subtotal | <u>15.999835</u> | F. |
| | | <u>7685.7706</u> | <u>337.27461</u> | |
| ANIONS | | | | |
| G. Chloride, as NaCl = | <u>18,100</u> X 0.607 = | <u>10,986.7</u> as Cl- X 0.0282 = | <u>309.92494</u> | G. |
| H. Sulfate, as Na ₂ SO ₄ = | <u>10</u> X 0.678 = | <u>6.78</u> as SO ₄ X 0.0208 = | <u>.140808</u> | H. |
| I. Carbonate, as CaCO ₃ = | <u>65</u> X 0.600 = | <u>39</u> as CO ₃ X 0.0333 = | <u>1.2987</u> | I. |
| J. Bicarbonate, as CaCO ₃ = | <u>1300</u> X 1.220 = | <u>1586</u> as HCO ₃ X 0.0184 = | <u>26.0104</u> | J. |
| K. Total Anions = | | | <u>337.27461</u> | K. |
| L. Total Dissolved Solids | | | | L. |
| M. Total Iron, as Fe | <u>19</u> | <u>12618.46</u> | | |
| N. Acidity to Phen., as CaCO ₃ | <u>290</u> X 0.440 = | <u>126</u> as CO ₂ | | |

OTHER PROPERTIES:

| | | | |
|---------------------------------|------------|--------------------|--------------|
| P. Sulfide, as H ₂ S | <u>0</u> | S. Turbidity | <u>119</u> |
| Q. Oxygen, as O ₂ | <u>179</u> | T. Temperature, °F | <u>61.0</u> |
| R. pH | <u>7.1</u> | V. Spec. Grav. | <u>1.011</u> |

COMMENTS:

INSTRUCTIONS:

Step 1: Complete tests in Column 1, and "Other Properties".

Step 2: Complete the multiplication steps for Columns 2 and 3, except Line A.

Step 3: In Column 3, add C, D, E to get subtotal. In Column 2, add G, H, I and J and enter total in 3K.

Step 4: Subtract subtotal from 3K and enter difference in 3A. In Column 3, add 3A to subtotal and enter in 3F.

Step 5: Multiply 3A by 23.0 and enter in 3A.

Step 6: Add column 2 Cations to get Total in 2F. Add Anions to get Total in 3K. Add 2F to 3K to get 2L.

ANALYST: Steve Mastros / Water