



# DownHole SAT Rx

## FORMATION WATER DEPOSITION POTENTIAL INDICATORS

Production Management

Coe *Trust 21-18 A*

Wellhead

Pro-Stim Chemicals

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Prepared by SGB Solutions

Report Date: 11-22-2017

Sample #: 2573

Sampled: 11-10-2017

at 0823

### SATURATION LEVEL

Calcite (CaCO <sub>3</sub> )	0.550
Aragonite (CaCO <sub>3</sub> )	0.488
Witherite (BaCO <sub>3</sub> )	0.00
Strontianite (SrCO <sub>3</sub> )	0.00
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	0.00
Magnesite (MgCO <sub>3</sub> )	0.281
Anhydrite (CaSO <sub>4</sub> )	0.442
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	0.664
Barite (BaSO <sub>4</sub> )	0.00
Celestite (SrSO <sub>4</sub> )	0.00
Fluorite (CaF <sub>2</sub> )	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO <sub>2</sub> )	0.00
Brucite (Mg(OH) <sub>2</sub> )	< 0.001
Magnesium silicate	0.00
Iron hydroxide (Fe(OH) <sub>3</sub> )	6.67
Strengite (FePO <sub>4</sub> *2H <sub>2</sub> O)	0.00
Siderite (FeCO <sub>3</sub> )	8.72
Halite (NaCl)	0.0775
Thenardite (Na <sub>2</sub> SO <sub>4</sub> )	< 0.001
Iron sulfide (FeS)	0.00

### FREE ION MOMENTARY EXCESS (ppm)

Calcite (CaCO <sub>3</sub> )	-0.0417
Aragonite (CaCO <sub>3</sub> )	-0.0536
Witherite (BaCO <sub>3</sub> )	-68.05
Strontianite (SrCO <sub>3</sub> )	-22.94
Calcium oxalate (CaC <sub>2</sub> O <sub>4</sub> )	-0.0371
Magnesite (MgCO <sub>3</sub> )	-0.110
Anhydrite (CaSO <sub>4</sub> )	-784.62
Gypsum (CaSO <sub>4</sub> *2H <sub>2</sub> O)	-368.12
Barite (BaSO <sub>4</sub> )	-0.208
Celestite (SrSO <sub>4</sub> )	-402.91
Fluorite (CaF <sub>2</sub> )	-10.18
Calcium phosphate	>-0.001
Hydroxyapatite	-808.64
Silica (SiO <sub>2</sub> )	-67.93
Brucite (Mg(OH) <sub>2</sub> )	0.00109
Magnesium silicate	-246.36
Iron hydroxide (Fe(OH) <sub>3</sub> )	< 0.001
Strengite (FePO <sub>4</sub> *2H <sub>2</sub> O)	>-0.001
Siderite (FeCO <sub>3</sub> )	0.0523
Halite (NaCl)	-333244
Thenardite (Na <sub>2</sub> SO <sub>4</sub> )	-235264
Iron sulfide (FeS)	-0.114

### SIMPLE INDICES

Langelier	0.203
Ryznar	6.12
Puckorius	5.03
Larson-Skold Index	911.13
Stiff Davis Index	-0.307
Oddo-Tomson	-0.951

### BOUND IONS

Calcium	4160
Barium	0.00
Carbonate	1.58
Phosphate	0.00
Sulfate	1350

### TOTAL

### FREE

4006
0.00
0.0306
0.00
485.73

### OPERATING CONDITIONS

Temperature (°F)	54.00
Time(mins)	3.00