

ROCKY MOUNTAIN AREA LABORATORY  
350 COLE CREEK ROAD,  
EVANSVILLE, WY 82636

REPORT DATE: 8/12/2020

## PARTIAL WATER ANALYSIS REPORT

CUSTOMER: HILCORP ENERGY CO  
DISTRICT: FOUR CORNERS  
LEASE/AREA: PIERCE  
SAMPLE POINT NAME: PIERCE SRC # 2  
SITE TYPE: WELL SITES  
SAMPLE POINT DESCRIPTION: WELL HEAD

ACCOUNT REP: JASON HARE  
SAMPLE ID: 202012015662  
SAMPLE DATE: 7/29/2020  
ANALYSIS DATE: 8/11/2020  
ANALYST: KS

## HILCORP ENERGY CO, PIERCE, PIERCE SRC # 2

FIELD DATA			ANALYSIS OF SAMPLE					
			ANIONS:	mg/L	meq/L	CATIONS:	mg/L	meq/L
Initial Temperature (°F):	250		Chloride (Cl <sup>-</sup> ):	537.0	15.1	Sodium (Na <sup>+</sup> ):	5068.0	221.3
Final Temperature (°F):	80		Sulfate (SO <sub>4</sub> <sup>2-</sup> ):	4266.0	88.8	Potassium (K <sup>+</sup> ):	14.0	0.4
Initial Pressure (psi):	100		Borate (H <sub>3</sub> BO <sub>3</sub> ):	6.7	0.1	Magnesium (Mg <sup>2+</sup> ):	5.7	0.5
Final Pressure (psi):	15		Fluoride (F <sup>-</sup> ):	ND		Calcium (Ca <sup>2+</sup> ):	307.4	15.3
			Bromide (Br <sup>-</sup> ):	ND		Strontium (Sr <sup>2+</sup> ):	7.6	0.2
pH:			Nitrite (NO <sub>2</sub> <sup>-</sup> ):	ND		Barium (Ba <sup>2+</sup> ):	0.0	0.0
pH at time of sampling:	7.3		Nitrate (NO <sub>3</sub> <sup>-</sup> ):	ND		Iron (Fe <sup>2+</sup> ):	0.3	0.0
			Phosphate (PO <sub>4</sub> <sup>3-</sup> ):	0.3	0.0	Manganese (Mn <sup>2+</sup> ):	0.0	0.0
Scale Residual:	ChemUsed	Resid. PPM	Silica (SiO <sub>2</sub> ):	2.2	0.0	Lead (Pb <sup>2+</sup> ):	ND	
	Total PO4	0.25				Zinc (Zn <sup>2+</sup> ):	0.0	0.0
Alkalinity by Titration:	mg/L	meq/L						
Bicarbonate (HCO <sub>3</sub> <sup>-</sup> ):	50.0	0.8				Aluminum (Al <sup>3+</sup> ):	ND	
Carbonate (CO <sub>3</sub> <sup>2-</sup> ):	ND					Chromium (Cr <sup>3+</sup> ):	ND	
Hydroxide (OH <sup>-</sup> ):	ND					Cobalt (Co <sup>2+</sup> ):	ND	
			Organic Acids:	mg/L	meq/L	Copper (Cu <sup>2+</sup> ):	ND	
aqueous CO <sub>2</sub> (ppm):	ND		Formic Acid:	ND		Molybdenum (Mo <sup>2+</sup> ):	ND	
aqueous H <sub>2</sub> S (ppm):	ND		Acetic Acid:	ND		Nickel (Ni <sup>2+</sup> ):	ND	
aqueous O <sub>2</sub> (ppb):	ND		Propionic Acid:	ND		Tin (Sn <sup>2+</sup> ):	ND	
			Butyric Acid:	ND		Titanium (Ti <sup>2+</sup> ):	ND	
			Valeric Acid:	ND		Vanadium (V <sup>2+</sup> ):	ND	
Calculated TDS (mg/L):	10263					Zirconium (Zr <sup>2+</sup> ):	ND	
Measured Density/Specific Gravity	ND					Total Hardness:	801	
Conductivity (mmhos):	ND							
			Anion/Cation Ratio:		0.44			
								ND = NOT DETERMINED

Comments: Ba&lt;0.0625 ppm