



Central Area Laboratory
801 N. Morgan,
Oklahoma City, Oklahoma 73127

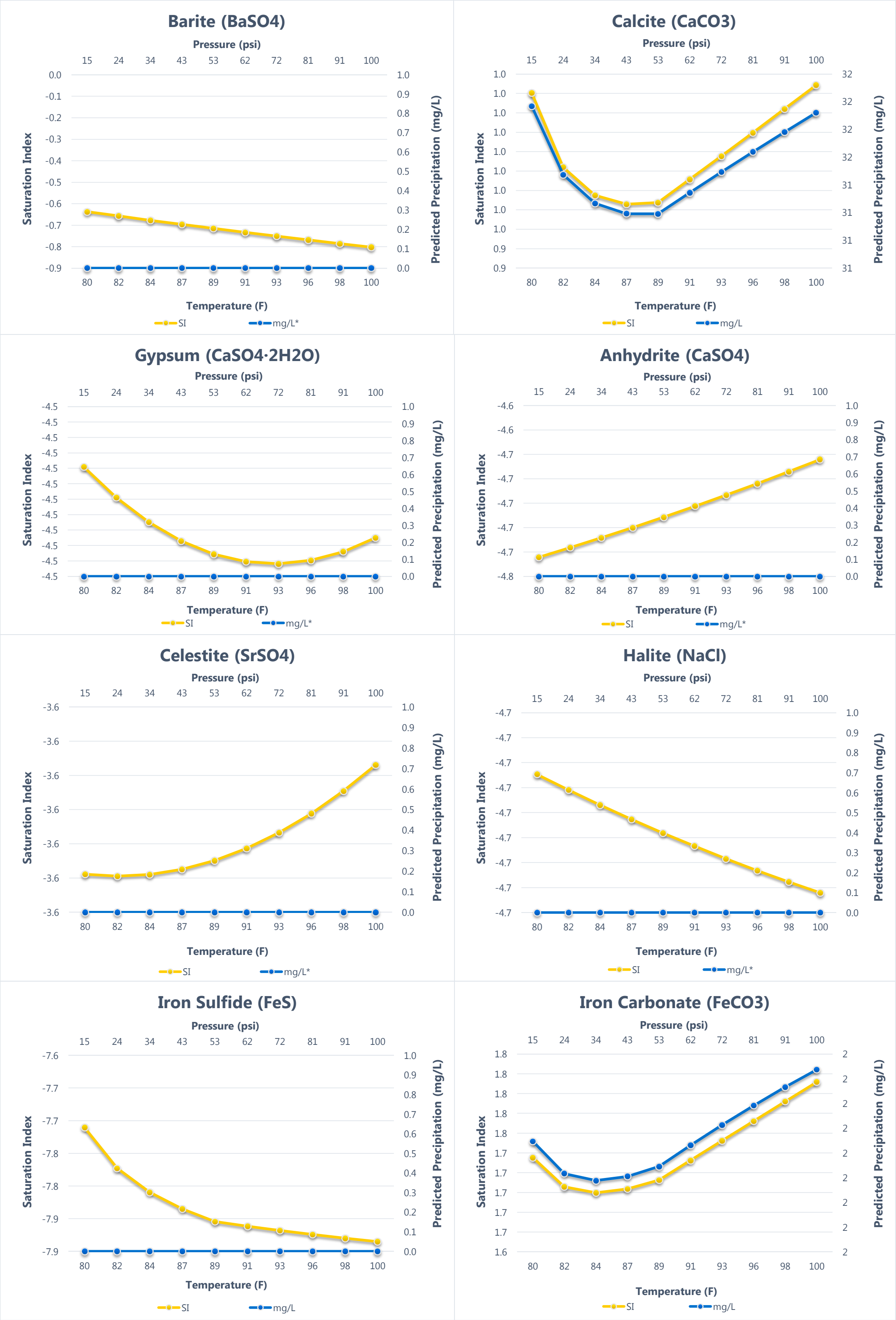
REPORT DATE: 5/31/2016

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	ATLAS RESOURCE PARTNERS, LP	ACCOUNT REP:	TY L. CLINESMITH
DISTRICT:	OKLAHOMA	SAMPLE ID:	201410003563
AREA/LEASE:	VERMEJO PARK RANCH	SAMPLE DATE:	8/6/2014
SAMPLE POINT NAME	VPR C 80	ANALYSIS DATE:	8/12/2014
SITE TYPE:	WELL SITES	ANALYST:	BS
SAMPLE POINT DESCRIPTION:	WELL HEAD		

ATLAS RESOURCE PARTNERS, LP, VERMEJO PARK RANCH, VPR C 80

FIELD DATA			ANALYSIS OF SAMPLE									
			ANIONS:		mg/L	meq/L	CATIONS:		mg/L	meq/L		
Initial Temperature (°F):	100		Chloride (Cl ⁻):		829.2		23.4	Sodium (Na ⁺):	1103.7	48.0		
Final Temperature (°F):	80		Sulfate (SO ₄ ²⁻):		1.0		0.0	Potassium (K ⁺):	5.0	0.1		
Initial Pressure (psi):	100		Borate (H ₃ BO ₃):		4.0		0.1	Magnesium (Mg ²⁺):	2.6	0.2		
Final Pressure (psi):	15		Fluoride (F ⁻):		ND			Calcium (Ca ²⁺):	14.6	0.7		
			Bromide (Br ⁻):		ND			Strontium (Sr ²⁺):	2.7	0.1		
pH:			Nitrite (NO ₂ ⁻):		ND			Barium (Ba ²⁺):	2.0	0.0		
pH at time of sampling:	8.3		Nitrate (NO ₃ ⁻):		ND			Iron (Fe ²⁺):	0.9	0.0		
			Phosphate (PO ₄ ³⁻):		0.0	0.0	Manganese (Mn ²⁺):	0.0	0.0			
			Silica (SiO ₂):		ND		Lead (Pb ²⁺):	ND				
								Zinc (Zn ²⁺):	0.1	0.0		
ALKALINITY BY TITRATION:		mg/L	meq/L									
Bicarbonate (HCO ₃ ⁻):	1525.0	25.0						Aluminum (Al ³⁺):	ND			
Carbonate (CO ₃ ²⁻):	ND							Chromium (Cr ³⁺):	ND			
Hydroxide (OH ⁻):	ND							Cobalt (Co ²⁺):	ND			
			ORGANIC ACIDS:		mg/L	meq/L	Copper (Cu ²⁺):		ND			
aqueous CO ₂ (ppm):	0.0		Formic Acid:		ND		Molybdenum (Mo ²⁺):		ND			
aqueous H ₂ S (ppm):	0.0		Acetic Acid:		ND		Nickel (Ni ²⁺):		ND			
aqueous O2 (ppb):	ND		Propionic Acid:		ND		Tin (Sn ²⁺):		ND			
			Butyric Acid:		ND	Titanium (Ti ²⁺):		ND				
Calculated TDS (mg/L):	3491		Valeric Acid:		ND		Vanadium (V ²⁺):		ND			
Density/Specific Gravity (g/cm ³):	0.9996							Zirconium (Zr ²⁺):	ND			
Measured Specific Gravity	ND											
Conductivity (mmhos):	ND									Total Hardness:	52	N/A
Resistivity:	ND											
MCF/D:	No Data											
BOPD:	No Data											
BWPD:	No Data		Anion/Cation Ratio:		0.98		ND = Not Determined					



SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.