



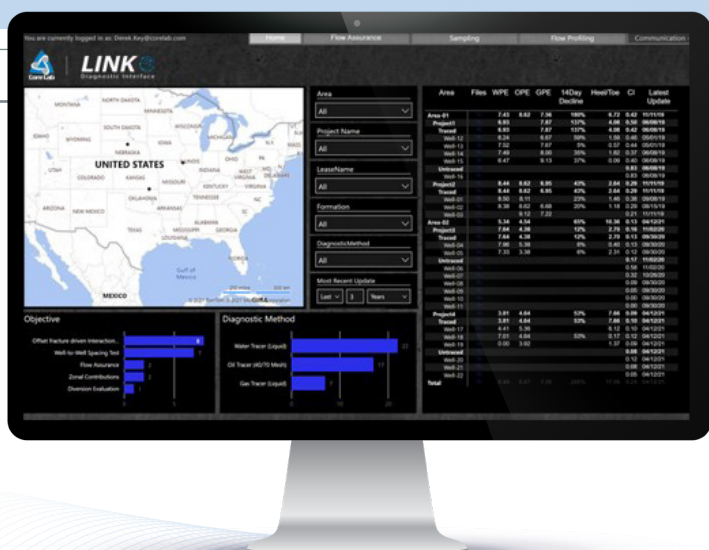
SPECTRACHEM® water tracers are designed to evaluate frac fluid profiles and hydraulic communication through the reservoir in multi-stage hydraulic fracturing treatments.

This service involves injecting water tracers at low concentrations into different frac stages or segments of laterals. Subsequent flowback samples from treatment and offset wells are analyzed providing precise flowback profiles and offset communication to understand:

- ▶ Flow Assurance Across Horizontal Laterals
- ▶ Hydraulic Communication
- ▶ Frac Fluid Cleanup Efficiency
- ▶ Completion Optimization Strategy

SPECTRACHEM® tracer data identifying a wellbore obstruction between stages 8 and 11. This confirmed the decision to perform a cleanout run and return flow from the full length of the lateral.

Traced Segment	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	Total ppb
Sample Date	CFT 2400	CFT 1700	CFT 4000	CFT 3900	CFT 1600	CFT 2200	CFT 10275	CFT 2100	CFT 10175	CFT 10400	CFT 1600	CFT 2300	CFT 1400	CFT 10850	CFT 2900	CFT 10925	
30	15.7	24.7	27.7	28.5	20.2	71.1											167.9
	27.0	44.9	36.2	37.8	24.1	32.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	202.8
	28.4	37.1	31.0	36.0	21.7	25.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	180.1
	24.6	27.4	28.1	31.9	22.7	63.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	188.3
	25.3	29.2	19.1	24.9	17.6	16.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	132.6
	5.6	8.2	1.2	1.5	3.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.4
	0.7	0.5	0.7	0.7	0.1	0.1	20.6	17.8	23.1	14.9	13.6	8.5	19.5	3.0	6.5	3.9	134.3
	0.8	1.0	1.2	1.0	0.1	0.2	14.5	14.1	22.8	13.2	14.7	7.6	19.1	3.4	3.3	3.6	120.7
	1.1	1.4	1.3	1.3	0.2	0.3	11.2	14.3	21.9	12.4	12.5	7.5	19.3	3.9	3.3	3.5	116.0
	1.4	2.2	2.4	1.9	0.3	0.4	23.6	12.4	18.9	12.7	14.9	7.5	16.4	4.1	11.4	7.5	135.2
	1.9	2.5	3.2	2.8	0.7	0.6	24.3	13.0	21.2	14.5	16.9	8.9	19.3	5.0	12.1	6.9	153.1
	2.0	3.1	3.6	3.1	0.4	0.6	23.5	12.2	18.5	14.5	12.8	8.8	18.5	5.3	11.3	7.4	145.6
	2.1	3.2	3.5	3.4	0.7	0.8	26.9	10.4	18.0	13.9	17.0	8.8	19.1	4.8	11.3	6.4	150.3
	1.9	2.9	3.3	3.2	0.7	0.7	19.7	9.6	16.3	12.7	14.3	7.8	16.2	4.9	11.1	7.4	132.7
	2.2	3.4	3.9	3.8	0.8	0.9	27.6	10.5	17.4	14.2	14.9	9.2	19.0	5.4	11.4	10.2	154.9
Time Weighted Avg	4.4	5.9	3.3	3.6	2.8	2.8	12.3	9.8	13.3	8.7	8.2	5.0	11.4	2.0	4.2	2.6	100.2



Sample analysis begins at first flowback through 6 months+ and includes:

- ▶ Dedicated Sample Coordinator
- ▶ Highest QC standards through adoption of EPA quality control management practices
- ▶ Parts Per Trillion (PPT) reporting limit
- ▶ Formation ion analysis (Na, Ca, K, Mg, Cl)
- ▶ Standard analysis completed in < 5 days
- ▶ Express analysis results within 24 hrs



Cloud based data delivery and interactive dashboard to benchmark against basin metrics such as Known Lateral Contribution and Communication Intensity.

SPECTRACHEM® tracers are compatible with commonly used stimulation fluids and are non-radioactive, HSE friendly, and non-naturally occurring.