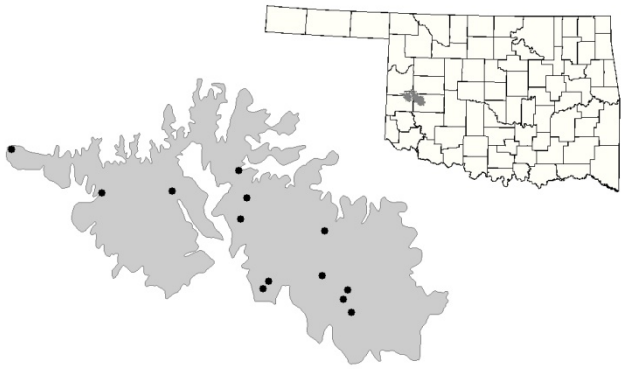
Elk City Aquifer

Baseline Sample Period	Sampling Sites	Water Level Sites
July-August 2013	13	25



General

Location	Western Oklahoma
Area (km^2)	782
Storage (acre-feet)	2,200,000
Primary Uses	Municipal & Domestic Supply; Irrigation
Category	Bedrock - Sandstone

Parameters – General Field

Parameter	Mean	SEM	Minimum	25%	Median	75%	Maximum	Comments
Well Depth (ft)	119	6.05	42	99	122	141	175	N=27
Depth to Water (ft)	28.98	4.85	10.95	15.20	22.80	27.44	107.80	Below ground surface
Temperature (°C)	21.50	0.565	18.36	19.86	21.25	23.56	24.27	
Specific Conductance (µS/cm)	624	27.0	475	576	599	672	822	
Dissolved Oxygen (mg/L)	5.98	0.639	0.65	5.06	6.39	7.92	8.53	
pH (units)	7.29	0.036	7.14	7.21	7.26	7.41	7.53	
Alkalinity (mg/L)	276	16.3	215	238	276	288	437	
Hardness (mg/L)	272	7.73	232	253	272	289	329	
Calculated Bicarbonate (mg/L)	340	20.0	265	293	340	354	537	
Total Dissolved Solids (mg/L)	360	15.7	254	335	349	399	436	SMCL: 500; 0 over

Parameters – Nutrient Constituents

Parameter	Mean	SEM	Minimum	25%	Median	75%	Maximum	Comments
Nitrate & Nitrite (mg/L)	5.44	0.808	0.09	3.92	6.37	7.52	8.58	MCL: 10; 0 over
Total Dissolved Phosphorus (mg/L)	All Values <0.005, except 3 (0.006,0.1,0.011)							

Parameters – Mineral Constituents

Parameter	Mean	SEM	Minimum	25%	Median	75%	Maximum	Comments
Bromide (µg/L)	375	59.7	232	281	298	336	1090	
dissolved Calcium (mg/L)	65.4	2.90	45.4	59.3	67.2	70.7	81.8	
Chloride (mg/L)	13.1	3.84	<10	<10	10.6	13.6	58.4	SMCL: 250; 0 over
Fluoride (mg/L)	0.345	0.021	0.20	0.30	0.33	0.40	0.48	MCL: 4; 0 over
dissolved Magnesium (mg/L)	25.2	1.19	18.6	21.9	25.8	27.3	32.3	
dissolved Potassium (mg/L)	1.49	0.276	0.5	0.9	1.3	1.6	4.5	
dissolved Silica (mg/L)	25.1	0.372	22.8	24.4	25.1	26.0	27.2	
dissolved Sodium (mg/L)	35.1	4.16	13.3	24.1	36.5	44.3	68.2	
Sulfate (mg/L)	15.0	2.44	<10	<10	16.5	19.4	30.1	SMCL: 250; 0 over

Parameters	Parameter	Mean	SEM	Minimum	25%	Median	75%	Maximum	Comments
Metal & Trace Element Constituents	dissolved Barium (µg/L)	409	50.8	85.9	304	447	550	629	MCL: 2000; 0 over
	dissolved Boron (µg/L)	48.3	8.17	<50	<50	<50	68.4	118	HA: 6000; 0 over
	dissolved Copper (µg/L)	5.12	1.1	<5	<5	<5	6.3	16.2	MCL: 1300; 0 over
	dissolved Iron (µg/L)	All Values <50, except 1 (188)							SMCL: 300; 0 over
	dissolved Uranium (µg/L)	2.05	0.94	<1	<1	1.4	2.0	10.6	MCL: 30; 0 over
	dissolved Vanadium (µg/L)	18.8	1.53	<10	16.5	19.7	22.8	26.0	
	dissolved Zinc (µg/L)	30.0	7.77	<10	<10	19.3	52.0	83.9	SMCL: 5000; 0 over. HA: 2000; 0 over

Parameters	Parameters Below Detectable Limits			
	Aluminum Ammonia Antimony Arsenic	Beryllium Cadmium Chromium Cobalt	Lead Manganese Mercury Molybdenum	Nickel Selenium Silver Thallium

SEM = Standard Error of the Mean
MCL = EPA's Maximum Contaminant Level – enforced for public drinking water systems
SMCL = EPA's Secondary MCL – guidelines not enforced
HA = EPA's Health Advisory

Note: Groundwater samples collected for GMAP were filtered in the field, resulting in dissolved concentrations of constituents. The total concentration for any given constituent might be higher for an unfiltered sample from the same source.

Sampling and assessment by the **Oklahoma Water Resources Board**
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