

# **Appendix 3A-1: Summary of Water Year 2009 Water Quality Monitoring Results**

Florida Department of Environmental Protection

**Table 1.** Summary of water quality monitoring results for Water Year 2009 (WY2009) (April 1, 2008–May 30, 2009). Only water quality variables analyzed during the water year for a given region and site class are included.

Parameter	Units	Area	Class	N	Arithmetic Mean	Standard Deviation	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	Min.	Max.	Percent Excursions	Excursion Class
Alkalinity	mg CaCO <sub>3</sub> /L	ENP	Interior	57	151.6	30.0	128.0	150.0	170.0	94.0	231.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	Refuge	Inflow	137	200.0	53.5	159.5	201.0	227.5	102.0	369.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	Refuge	Interior	221	39.9	39.4	16.5	28.0	42.0	7.0	202.0	29.9 ± 5.1	C
Alkalinity	mg CaCO <sub>3</sub> /L	Refuge	Outflow	28	116.3	38.9	87.5	116.0	145.8	55.0	211.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	Refuge	Rim	22	141.8	38.3	106.0	146.5	168.5	82.0	213.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	WCA2	Inflow	96	232.4	98.9	145.3	242.0	332.8	55.0	386.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	WCA2	Interior	212	211.8	66.0	163.8	200.5	245.0	94.0	538.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	WCA2	Outflow	31	202.6	34.4	163.0	212.0	229.0	130.0	262.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	WCA3	Inflow	81	196.0	34.8	163.5	197.0	224.5	113.0	262.0	0.0 ± 0.0	NC
Alkalinity	mg CaCO <sub>3</sub> /L	WCA3	Interior	183	166.7	34.8	145.0	163.0	190.0	94.0	270.0	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	ENP	Inflow	278	4.8	2.0	3.2	4.5	5.8	1.6	14.3	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	ENP	Interior	73	5.3	2.3	3.4	5.1	7.2	0.9	10.9	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	Refuge	Inflow	257	4.5	2.2	2.5	4.6	6.3	0.2	8.8	14.3 ± 21.8	PC
Dissolved Oxygen	mg/L	Refuge	Interior	250	3.5	2.0	1.8	3.3	5.0	0.1	8.3	23.1 ± 13.6	C
Dissolved Oxygen	mg/L	Refuge	Outflow	60	5.2	1.9	3.7	5.3	6.6	1.2	9.7	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	Refuge	Rim	22	5.5	1.4	4.4	5.9	6.5	2.6	7.4	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	WCA2	Inflow	155	4.4	2.1	2.9	4.2	6.2	0.1	9.0	14.3 ± 21.8	PC
Dissolved Oxygen	mg/L	WCA2	Interior	242	3.0	1.9	1.5	2.7	4.2	0.1	9.3	40 ± 18.0	C
Dissolved Oxygen	mg/L	WCA2	Outflow	77	4.7	1.8	3.4	4.8	6.1	1.2	9.2	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	WCA3	Inflow	337	4.5	2.2	2.8	4.2	6.0	0.2	10.4	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	WCA3	Interior	200	4.0	2.1	2.3	3.8	5.2	0.2	10.0	0.0 ± 0.0	NC
Dissolved Oxygen	mg/L	WCA3	Outflow	234	4.3	1.8	3.1	4.1	5.3	1.1	13.8	0.0 ± 0.0	NC
pH	Std Unit	ENP	Inflow	275	7.4	0.3	7.2	7.4	7.5	7.0	8.5	0.0 ± 0.0	NC
pH	Std Unit	ENP	Interior	78	7.7	0.3	7.4	7.7	7.9	7.0	8.4	0.0 ± 0.0	NC
pH	Std Unit	Refuge	Inflow	262	7.6	0.3	7.4	7.6	7.8	5.2	8.4	0.4 ± 0.6	MC
pH	Std Unit	Refuge	Interior	263	6.5	0.4	6.2	6.5	6.8	5.8	7.8	2.7 ± 1.6	MC
pH	Std Unit	Refuge	Outflow	60	7.6	0.4	7.3	7.5	7.8	6.8	8.5	0.0 ± 0.0	NC
pH	Std Unit	Refuge	Rim	22	7.4	0.2	7.3	7.5	7.6	6.8	7.9	0.0 ± 0.0	NC
pH	Std Unit	WCA2	Inflow	152	7.7	0.3	7.5	7.6	7.8	7.1	8.2	0.0 ± 0.0	NC
pH	Std Unit	WCA2	Interior	250	7.3	0.3	7.1	7.3	7.5	6.5	8.1	0.0 ± 0.0	NC
pH	Std Unit	WCA2	Outflow	81	7.6	0.3	7.5	7.6	7.8	7.0	8.2	0.0 ± 0.0	NC
pH	Std Unit	WCA3	Inflow	339	7.5	0.3	7.3	7.5	7.7	6.8	8.3	0.0 ± 0.0	NC

Table 1. Continued.

Parameter	Units	Area	Class	N	Arithmetic Mean	Standard Deviation	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	Min.	Max.	Percent Excursions	Excursion Class
pH	Std Unit	WCA3	Interior	202	7.3	0.3	7.1	7.3	7.4	6.4	8.2	0.0 ± 0.0	NC
pH	Std Unit	WCA3	Outflow	230	7.3	0.2	7.2	7.3	7.4	6.9	8.5	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	ENP	Inflow	279	479.3	137.8	357.0	516.0	573.0	215.0	776.0	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	ENP	Interior	76	459.9	129.5	371.3	438.5	535.0	247.0	755.0	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	Refuge	Inflow	262	878.9	228.6	731.8	899.8	1006.0	338.8	1488.0	6.1 ± 2.4	MC
Specific Conductance	µmhos/cm	Refuge	Interior	269	189.1	168.0	100.1	130.9	184.1	57.3	924.6	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	Refuge	Outflow	60	486.8	212.4	291.5	472.0	610.5	189.0	1103.0	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	Refuge	Rim	22	573.0	231.2	411.5	621.5	766.1	107.9	937.6	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	WCA2	Inflow	155	905.2	318.6	680.0	862.0	1160.0	212.0	1535.0	16.1 ± 4.9	C
Specific Conductance	µmhos/cm	WCA2	Interior	241	828.0	307.7	640.2	787.5	985.2	138.7	2693.0	5.4 ± 2.4	MC
Specific Conductance	µmhos/cm	WCA2	Outflow	81	692.6	158.3	581.0	701.0	834.0	375.0	973.0	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	WCA3	Inflow	339	664.9	150.1	554.0	666.0	800.0	252.3	1004.0	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	WCA3	Interior	200	541.0	185.0	387.1	498.0	700.0	24.0	1031.0	0.0 ± 0.0	NC
Specific Conductance	µmhos/cm	WCA3	Outflow	234	480.5	168.7	335.0	457.0	601.3	178.0	1472.0	0.4 ± 0.7	MC
Sulfate	mg/L	ENP	Inflow	24	3.7	5.7	0.1	0.6	4.4	0.1	19.6	0.0 ± 0.0	NC
Sulfate	mg/L	ENP	Interior	57	3.1	3.8	0.3	1.3	5.3	0.1	16.9	0.0 ± 0.0	NC
Sulfate	mg/L	Refuge	Inflow	83	41.6	15.3	31.0	40.5	49.1	3.3	86.9	0.0 ± 0.0	NC
Sulfate	mg/L	Refuge	Interior	245	3.2	9.3	0.1	0.3	1.4	0.1	63.0	0.0 ± 0.0	NC
Sulfate	mg/L	Refuge	Outflow	20	20.1	16.8	5.0	16.2	28.4	2.8	63.0	0.0 ± 0.0	NC
Sulfate	mg/L	Refuge	Rim	22	32.1	20.8	14.0	34.3	49.9	3.2	67.2	0.0 ± 0.0	NC
Sulfate	mg/L	WCA2	Inflow	66	33.4	17.3	21.4	33.8	44.3	3.2	75.8	0.0 ± 0.0	NC
Sulfate	mg/L	WCA2	Interior	216	28.3	17.6	13.2	27.1	40.5	4.5	73.4	0.0 ± 0.0	NC
Sulfate	mg/L	WCA2	Outflow	20	28.5	12.7	16.1	30.5	37.7	6.1	51.4	0.0 ± 0.0	NC
Sulfate	mg/L	WCA3	Inflow	62	17.9	14.8	5.6	13.7	33.5	0.9	51.4	0.0 ± 0.0	NC
Sulfate	mg/L	WCA3	Interior	183	12.5	15.4	0.3	2.2	25.0	0.1	51.0	0.0 ± 0.0	NC
Sulfate	mg/L	WCA3	Outflow	28	5.7	9.2	0.1	1.9	8.7	0.1	41.0	0.0 ± 0.0	NC
Total Cadmium	µg/L	WCA2	Inflow	1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.0 ± 0.0	NC
Total Copper	µg/L	WCA2	Inflow	1	3.2	0.0	0.0	3.2	0.0	3.2	3.2	0.0 ± 0.0	NC
Total Iron	µg/L	Refuge	Interior	139	22.2	25.1	8.0	12.0	28.0	4.0	160.0	0.0 ± 0.0	NC
Total Iron	µg/L	Refuge	Outflow	12	25.6	31.8	7.8	12.5	24.8	4.0	94.0	0.0 ± 0.0	NC
Total Iron	µg/L	Refuge	Rim	22	10.1	5.0	6.0	10.0	12.3	5.0	24.0	0.0 ± 0.0	NC
Total Iron	µg/L	WCA2	Inflow	40	23.0	18.5	13.0	18.5	26.0	4.0	94.0	0.0 ± 0.0	NC
Total Iron	µg/L	WCA2	Interior	126	11.6	12.2	5.0	8.0	12.0	1.5	67.0	0.0 ± 0.0	NC

Table 1. Continued.

Parameter	Units	Area	Class	N	Arithmetic Mean	Standard Deviation	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	Min.	Max.	Percent Excursions	Excursion Class
Total Iron	µg/L	WCA2	Outflow	8	14.4	8.2	8.0	10.0	21.5	8.0	29.0	0.0 ± 0.0	NC
Total Iron	µg/L	WCA3	Inflow	30	51.4	54.5	16.3	30.5	56.8	8.0	231.0	0.0 ± 0.0	NC
Total Iron	µg/L	WCA3	Interior	36	124.5	183.2	18.3	56.0	185.5	1.5	957.0	0.0 ± 0.0	NC
Total Zinc	µg/L	WCA2	Inflow	1	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0 ± 0.0	NC
Turbidity	NTU	ENP	Inflow	24	1.9	2.6	0.6	1.1	2.2	0.4	10.2	0.0 ± 0.0	NC
Turbidity	NTU	ENP	Interior	57	1.2	1.0	0.7	1.0	1.4	0.4	5.6	0.0 ± 0.0	NC
Turbidity	NTU	Refuge	Inflow	2	3.4	0.7	0.0	3.4	0.0	2.9	3.9	0.0 ± 0.0	NC
Turbidity	NTU	Refuge	Interior	120	0.8	0.4	0.6	0.7	0.9	0.4	2.8	0.0 ± 0.0	NC
Turbidity	NTU	Refuge	Outflow	60	3.4	7.5	1.0	1.3	2.4	0.7	51.0	1.7 ± 2.7	MC
Turbidity	NTU	WCA2	Inflow	46	3.6	8.1	1.1	1.3	2.3	0.7	51.0	2.2 ± 3.5	MC
Turbidity	NTU	WCA2	Interior	98	0.9	0.5	0.6	0.7	1.0	0.3	3.3	0.0 ± 0.0	NC
Turbidity	NTU	WCA2	Outflow	82	1.6	1.6	0.9	1.2	1.6	0.5	14.1	0.0 ± 0.0	NC
Turbidity	NTU	WCA3	Inflow	199	2.0	1.4	1.1	1.6	2.5	0.5	14.1	0.0 ± 0.0	NC
Turbidity	NTU	WCA3	Interior	168	0.8	0.4	0.5	0.7	0.8	0.2	2.8	0.0 ± 0.0	NC
Turbidity	NTU	WCA3	Outflow	38	1.7	1.7	0.9	1.1	2.1	0.5	9.8	0.0 ± 0.0	NC
Un-ionized Ammonia	µg/L	ENP	Interior	53	1.23	2.31	0.29	0.51	0.85	0.12	13.64	0.0 ± 0.0	NC
Un-ionized Ammonia	µg/L	Refuge	Inflow	123	4.01	3.29	1.80	3.16	5.26	0.02	21.86	0.8 ± 1.3	MC
Un-ionized Ammonia	µg/L	Refuge	Interior	195	0.07	0.25	0.01	0.02	0.06	0.00	3.19	0.0 ± 0.0	NC
Un-ionized Ammonia	µg/L	Refuge	Outflow	28	0.75	0.72	0.31	0.52	0.87	0.20	3.46	0.0 ± 0.0	NC
Un-ionized Ammonia	µg/L	Refuge	Rim	20	0.65	0.56	0.22	0.48	0.75	0.03	1.98	0.0 ± 0.0	NC
Un-ionized Ammonia	µg/L	WCA2	Inflow	94	8.81	15.77	0.60	1.44	6.69	0.20	68.39	16.0 ± 6.2	C
Un-ionized Ammonia	µg/L	WCA2	Interior	198	1.26	5.18	0.18	0.34	0.77	0.04	68.71	0.5 ± 0.8	MC
Un-ionized Ammonia	µg/L	WCA2	Outflow	31	0.75	0.56	0.43	0.54	1.12	0.09	2.91	0.0 ± 0.0	NC
Un-ionized Ammonia	µg/L	WCA3	Inflow	80	1.27	1.20	0.50	1.00	1.57	0.09	8.32	0.0 ± 0.0	NC
Un-ionized Ammonia	µg/L	WCA3	Interior	178	0.24	0.22	0.09	0.17	0.34	0.02	1.68	0.0 ± 0.0	NC