

## Appendix 5-3: STA Cells Achieving Low Outflow Total Phosphorus Concentrations

Kathleen Pietro

The results presented in **Table 1** summarize annual flow-weighted mean (FWM) total phosphorus (TP) concentrations in surface water for the specific Stormwater Treatment Area (STA) cell and water year. Data was examined to better understand some of the factors that maybe influential in generating low outflow TP concentrations in the STAs. This report is a summary of data used to determine the relationship between inflow TP concentration and hydraulic loading rates versus outflow concentrations of 20 parts per billion (ppb) or less (Chapter 5 of this volume). Further analysis of the period of record data and influence of various environmental factors is under way and is expected to be included in future South Florida Environmental Reports.

**Table 1.** Period of record summary of cells that achieved an annual flow-weighted mean (FWM) of 20 parts per billion (ppb) or less in the STAs.

STA	Cell	Water Year	Inflow FWM TP in Surface Water	Outflow FWM TP in Surface Water	Annual Mean Hydraulic Residence Time	Dominant Vegetation Type**
			(ppb)	(ppb)	(days)	
STA-1E	Cell 4S	WY2008	33	19	5	SAV
STA-1E	Cell 4S	WY2009	37	15	7	SAV
STA-1E	Cell 4S	WY2012	23	18	8	SAV
ENR*	Cell 3	WY1997	28	19	NC	EAV
ENR	Cell 3	WY1999	21	19	NC	EAV
ENR	Cell 4	WY1998	36	15	NC	SAV
ENR	Cell 4	WY1999	40	14	NC	SAV
STA-1W	Cell 1B+3	WY2012	36	18	NC	SAV
STA-1W	Northern FW	WY2012	152	19	31	SAV
STA-2	Cell 1	WY2003	57	14	17	EAV
STA-2	Cell 1	WY2004	77	14	21	EAV
STA-2	Cell 1	WY2005	99	10	20	EAV
STA-2	Cell 1	WY2006	90	8	20	EAV
STA-2	Cell 1	WY2007	151	9	20	EAV

STA	Cell	Water Year	Inflow FWM TP in Surface Water	Outflow FWM TP in Surface Water	Annual Mean Hydraulic Residence Time	Dominant Vegetation Type**
			(ppb)	(ppb)	(days)	
STA-2	Cell 1	WY2008	87	12	15	EAV
STA-2	Cell 1	WY2009	118	10	17	EAV
STA-2	Cell 1	WY2011	88	12	29	EAV
STA-2	Cell 1	WY2012	79	9	15	EAV
STA-2	Cell 2	WY2002	80	16	10	EAV
STA-2	Cell 2	WY2003	68	20	10	EAV
STA-2	Cell 2	WY2004	95	16	14	EAV
STA-2	Cell 2	WY2009	124	20	7	EAV
STA-2	Cell 2	WY2011	101	19	16	EAV
STA-2	Cell 2	WY2012	99	15	NC	EAV
STA-2	Cell 3	WY2002	27	16	12	SAV
STA-2	Cell 3	WY2003	54	16	11	SAV
STA-2	Cell 3	WY2004	82	13	11	SAV
STA-2	Cell 3	WY2005	109	16	7	SAV
STA-2	Cell 3	WY2006	95	18	7	SAV
STA-2	Cell 3	WY2008	113	17	10	SAV
STA-2	Cell 3	WY2010	110	17	9	SAV
STA-2	Cell 3	WY2011	82	15	13	SAV
STA-2	Cell 3	WY2012	82	14	15	SAV
STA-2	Cell 4	WY2009	152	20	22	SAV
STA-3/4	Cell 1A	WY2009	74	17	12	EAV
STA-3/4	Cell 1B	WY2008	40	19	11	SAV
STA-3/4	Cell 1B	WY2009	17	13	9	SAV
STA-3/4	Cell 1B	WY2010	41	13	6	SAV
STA-3/4	Cell 1B	WY2011	30	16	14	SAV
STA-3/4	Cell 1B	WY2012	446	20	25	SAV
STA-3/4	Cell 2A	WY2009	73	16	15	EAV
STA-3/4	Cell 2A	WY2011	52	19	27	EAV
STA-3/4	Cell 2A	WY2012	49	13	55	EAV
STA-3/4	Cell 2B	WY2009	16	14	13	SAV
STA-3/4	Cell 2B	WY2010	25	16	9	SAV
STA-3/4	Cell 3	WY2008	56	18	18	EAV
STA-3/4	Cell 3A	WY2009	84	20	7	EAV
STA-3/4	Cell 3B	WY2009	20	12	9	SAV
STA-3/4	Cell 3B	WY2010	35	15	5	SAV
STA-3/4	Cell 3B	WY2011	21	14	5	SAV
STA-3/4	Cell 3B	WY2012	21	15	5	SAV

STA	Cell	Water Year	Inflow FWM TP in Surface Water	Outflow FWM TP in Surface Water	Annual Mean Hydraulic Residence Time	Dominant Vegetation Type**
			(ppb)	(ppb)	(days)	
STA-3/4	PSTA	WY2008	27	12	NC	PSTA
STA-3/4	PSTA	WY2009	14	8	NC	PSTA
STA-3/4	PSTA	WY2010	20	10	NC	PSTA
STA-3/4	PSTA	WY2011	18	11	NC	PSTA
STA-3/4	PSTA	WY2012	17	12	NC	PSTA
STA-3/4	Lower SAV	WY2009	32	13	NC	SAV
STA-3/4	Lower SAV	WY2010	22	14	NC	SAV
STA-6	Cell 3	WY2004	33	12	12	EAV
STA-6	Cell 3	WY2005	81	18	13	EAV
STA-6	Cell 3	WY2011	93	17	8	EAV
STA-6	Cell 5	WY2004	37	11	16	EAV
STA-6	Cell 5	WY2005	72	19	18	EAV
STA-6	Cell 5	WY2006	84	19	19	EAV
STA-6	Cell 5	WY2011	97	17	8	EAV

NC indicates that the parameter was not calculated.

Water Year (WY) is from May 1–April 30.

\* Everglades Nutrient Removal Project (ENR) consisted of STA-1W Cells 1-4, prior to Northern Flow-way construction.

\*\* Vegetation type is divided into three categories, based on dominance of emergent aquatic vegetation (EAV), submerged aquatic vegetation (SAV), or periphyton (PSTA).