

FPL Turkey Point Uprate Monitoring Program
September 2015 Semiannual Sampling Event
SDG: Qtr 3 2015 GW

Parameter	Units
Temperature	°C
pH	SU
Dissolved Oxygen	mg/L
Specific Conductance	µS/cm
Turbidity	NTU
Calcium	mg/L
Magnesium	mg/L
Potassium	mg/L
Sodium	mg/L
Boron	mg/L
Strontium	mg/L
Bromide	mg/L
Chloride	mg/L
Fluoride	mg/L
Sulfate	mg/L
Total Ammonia	mg/L as N
Ammonium ion (NH ₄ ⁺)	mg/L
Unionized NH ₃	mg/L
Nitrate/Nitrite	mg/L as N
TKN	mg/L
TN	mg/L
ortho-Phosphate	mg/L
Total Phosphorus (P)	mg/L
Alkalinity	mg/L
Bicarbonate Alkalinity	mg/L as HCO ₃
Sulfide	mg/L
Total Dissolved Solids	mg/L
Salinity	*
Tritium	pCi/L (1σ)

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		TPGW-1S		TPGW-1M		TPGW-1D		090315-DUP1		TPGW-2S		TPGW-2M		TPGW-2D		TPGW-3S		TPGW-3M		TPGW-3D	
Parameter	Units	09/03/2015		09/03/2015		09/03/2015		09/03/2015		09/01/2015		09/01/2015		09/01/2015		09/01/2015		09/01/2015		09/01/2015	
Temperature	°C	27.78		27.30		27.00				27.10		27.24		27.09		28.26		27.95		27.78	
pH	SU	6.74		6.82		6.97				7.07		6.84		6.86		6.70		6.83		6.87	
Dissolved Oxygen	mg/L	0.22		0.16		0.28				0.10		0.20		0.06		0.05		0.03		0.07	
Specific Conductance	µS/cm	58381		71423		72806				71622		78280		78265		61284		69106		68640	
Turbidity	NTU	0.18		0.48		0.00	J			0.14		0.30		0.03		1.01		0.15		0.74	
Calcium	mg/L	529		587		587		577		658		644		629		615		599		596	
Magnesium	mg/L	1230		1540		1570		1520		1540	J	1650	J	1590	J	1290	J	1460	J-	1440	J
Potassium	mg/L	487		662		656		660		604		693		701		522		574		613	
Sodium	mg/L	11800		14500		14800		15000		14100	J	15700	J	15800	J	12000	J	13600	J+	13900	J
Boron	mg/L	4.48		6.21		6.25		6.28		5.81		6.74		6.95		4.94		5.58		5.91	
Strontium	mg/L	10.6		12.3		12.1		12.2		13.3		14.9		14.8		10.7		12.1		12.6	
Bromide	mg/L	70.7	J	91.7	J	91.9	J	92.6		97.4		97.3	J	97.1	J	70.3		2.50	U	2.50	U
Chloride	mg/L	21200		26700		27000		27400		26400		28300		28800		21800		24400		23100	
Fluoride	mg/L	0.239		0.296		0.296		0.302		0.226		0.302		0.254		0.217		0.209	J-	0.213	
Sulfate	mg/L	2950		3680		3690		3740		3500		3840		3860		2990		3270		3470	
Total Ammonia	mg/L as N	1.22		1.52		1.85		1.75		1.94		2.32		2.27							
Ammonium ion (NH ₄ ⁺)	mg/L	1.56		1.95		2.36				2.48		2.97		2.90							
Unionized NH ₃	mg/L	0.00561		0.00812		0.0136				0.0181		0.0129		0.0131							
Nitrate/Nitrite	mg/L as N	0.0250	U	0.0250	U	0.0250	U	0.0250	U	0.0250	U	0.0250	U	0.0250	U						
TKN	mg/L	1.84		2.18		2.10		2.44		2.30		3.00		2.96							
TN	mg/L	1.87		2.21		2.13		2.47		2.33		3.03		2.99							
ortho-Phosphate	mg/L	0.0240	J	0.0270	J	0.0458	J+	0.0458		0.0181		0.0412		0.0397							
Total Phosphorus (P)	mg/L	0.0363		0.0398		0.0435		0.0443		0.0234		0.0421		0.0575							
Alkalinity	mg/L	241		198		190		192		162		222		211		590		272		232	
Bicarbonate Alkalinity	mg/L as HCO ₃	293		241		232		234		197		270		257		720		332		284	
Sulfide	mg/L	0.360	U	0.360	U	0.397	I	0.576	I	0.360	U	1.03		0.360	U	18.5		0.360	U	0.360	U
Total Dissolved Solids	mg/L	37200		39600		48200		47600		47300		51500		51600		37300		46000		44600	
Salinity	*	38.91		48.97		50.08				49.15		54.45		54.44		41.09		47.14		46.77	
Tritium	pCi/L (1σ)																				

NOTES:
Laboratory results are reported with 3 digits although only the first 2 are significant figures.
* PSS-78 salinity is unitless.
Sample 090315-Dup is a duplicate of TPGW-1D.

KEY:
°C = Degrees Celsius.
µS/cm = MicroSiemen(s) per centimeter.
σ = sigma (Standard Deviation).
CaCO₃ = Calcium carbonate.
DUP = Duplicate.
FB = Field Blank.
I = Value between the MDL and PQL.

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		N-7M	TPGW-7D		TPGW-8S		TPGW-8M		TPGW-8D		TPGW-9S		TPGW-9M		TPGW-9D		TPGW-10S		TPGW-10M		TPGW-10D
Parameter	Units	09/03/2015	09/04/2015		09/04/2015		09/04/2015		09/04/2015		09/04/2015		09/04/2015		09/04/2015		09/09/2015		09/09/2015		09/09/2015
Temperature	°C		24.98		25.82		25.66		26.01		26.06		25.83		25.32		29.03		29.03		28.82
pH	SU		6.75		10.00		7.04		6.86		6.93		6.93		6.61		7.23		7.06		6.99
Dissolved Oxygen	mg/L		0.30		0.37		0.20		0.25		0.37		0.40		0.24		0.18		0.18		0.2
Specific Conductance	µS/cm		6840		444		643		705		618		632		654		55835		54705		71049
Turbidity	NTU		0.67		5.50		0.86		0.40		0.57		0.36		0.16		0.18		0.01	J	0.01
Calcium	mg/L		420		74.2	J	104		103		114		112		110		427		423		537
Magnesium	mg/L		28.2		2.92	J	4.03		5.95		2.85		2.96		3.52		1160	J	1090	J-	1430
Potassium	mg/L		10.8		10.0	J	11.2		9.83		5.36		6.04		4.13		472		435		578
Sodium	mg/L		876		17.1	J	17.6		25.2		12.4		13.4		14.8		10600		10500		13900
Boron	mg/L	I	0.062		0.070		0.066		0.068		0.047	I	0.058		0.047	I	4.90		4.52		5.65
Strontium	mg/L		4.81		0.798		1.09		1.10		0.939		0.939		1.14		8.22		7.88		10.2
Bromide	mg/L	UJ	6.92		2.50	UJ	2.50	UJ	2.50	UJ	2.50	U	2.50	U	2.50	UJ-	66.7		68.5		92.0
Chloride	mg/L		2130		31.8	J	31.8		43.0		21.6		23.8		25.4		20200		20200		26700
Fluoride	mg/L		0.0870	I	0.0640	IJ	0.106		0.102		0.104		0.104		0.104		0.830		0.646		0.269
Sulfate	mg/L		21.5		65.5	J	58.2		58.2		5.64		11.7		23.9		2730		2680		3540
Total Ammonia	mg/L as N																0.405		0.438		1.24
Ammonium ion (NH ₄ ⁺)	mg/L																0.515		0.559		1.58
Unionized NH ₃	mg/L																0.0058		0.004		0.0112
Nitrate/Nitrite	mg/L as N																0.0250	U	0.0250	U	0.0250
TKN	mg/L																0.400		0.528		1.62
TN	mg/L																0.43		0.55		1.65
ortho-Phosphate	mg/L																0.0189		0.0222		0.0412
Total Phosphorus (P)	mg/L																0.0338		0.0259		0.0441
Alkalinity	mg/L		177		72.4	J	228		231		293		289		273		149		163		181
Bicarbonate Alkalinity	mg/L as HCO ₃		216		81.5	J	279		282		358		353		333		182		199		221
Sulfide	mg/L	U	0.360	U	0.360	U	0.360	U	0.360	U	0.552	I	0.360	U	0.360	U	5.15		3.23	J	4.67
Total Dissolved Solids	mg/L		5100		216		360		382		344		352				33900		33900		47400
Salinity	*	J	3.75		0.21	J	0.31	J	0.34	J	0.30	J	0.30	J	0.32	J	36.95		36.1		48.64
Tritium	pCi/L (1σ)																				

FPL Turkey Point Uprate Monitoring P1
September 2015 Semiannual Sampling E
SDG: Qtr 3 2015 GW

		V-10D	TPGW-11S		TPGW-11M		TPGW-11D	
Parameter	Units	/2015	09/09/2015		09/09/2015		09/09/2015	
Temperature	°C		28.36		28.21		28.08	
pH	SU		6.92		6.74		6.71	
Dissolved Oxygen	mg/L		0.29		0.17		0.24	
Specific Conductance	µS/cm		56658		59736		64024	
Turbidity	NTU	J	0.07		1.29		0.00	J
Calcium	mg/L		502		535		543	
Magnesium	mg/L	J	1240	J	1240	J	1310	J
Potassium	mg/L		515		506		532	
Sodium	mg/L		10900		11100		13100	
Boron	mg/L		5.41		5.16		5.11	
Strontium	mg/L		8.97		9.47		9.90	
Bromide	mg/L		70.3		74.8		85.7	
Chloride	mg/L		20600		21800		25000	
Fluoride	mg/L		0.900		0.610		0.710	
Sulfate	mg/L		2840		2850		3260	
Total Ammonia	mg/L as N							
Ammonium ion (NH ₄ ⁺)	mg/L							
Unionized NH ₃	mg/L							
Nitrate/Nitrite	mg/L as N	U						
TKN	mg/L							
TN	mg/L							
ortho-Phosphate	mg/L							
Total Phosphorus (P)	mg/L							
Alkalinity	mg/L		312		352		279	
Bicarbonate Alkalinity	mg/L as HCO ₃		380		429		340	
Sulfide	mg/L		7.19		4.90		4.41	J
Total Dissolved Solids	mg/L		35900		37000		40700	
Salinity	*		39.59		39.91		43.2	
Tritium	pCi/L (1σ)							

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SW

		TPGW-12S		TPGW-12M		TPGW-12D		TPGW-13S		TPGW-13M		TPGW-13D		TPGW-14S		TPGW-14M		TPGW-14D		090115-EB	
Parameter	Units	09/02/2015		09/02/2015		09/02/2015		09/02/2015		09/02/2015		09/02/2015		09/10/2015		09/10/2015		09/10/2015		09/01/2015	
Temperature	°C	28.74		29.49		28.42		31.20		31.17		30.85		29.04		29.10		29.32			
pH	SU	6.53		6.78		6.81		6.67		6.94		6.53		6.96		6.73		6.81			
Dissolved Oxygen	mg/L	0.28		0.41		0.11		0.19		0.21		0.07		0.18		0.22		0.18			
Specific Conductance	µS/cm	47659		62472		65603		92122		82575		84400		58678		61571		75677			
Turbidity	NTU	0.00	J	0.00	J	0.03		0.00	J	0.44		0.27		0.04		1.32		0.00	J		
Calcium	mg/L	448		525		589		717		633		667		481		541	J	612	J	0.100	U
Magnesium	mg/L	981		1300		1440		2020		1730		1850		1260		1330	J	1620	J	0.0200	U
Potassium	mg/L	405		558		570		932		785		835		476		504	J	639	J	0.190	U
Sodium	mg/L	9480		12800		14100		20000		17300		18200		11000		11900	J	14500	J	0.310	U
Boron	mg/L	3.90		5.19		5.21		9.20		7.51		8.09		4.96		5.23		6.64		0.010	U
Strontium	mg/L	7.89		10.5		10.8		16.8		14.7		15.5		8.78		9.75		12.3		0.001	U
Bromide	mg/L	54.0	J	73.4	J	81.6	J	116	J	104	J	110	J	146		77.3	J	49.4	J	0.0250	U
Chloride	mg/L	16300		23000		23700		36400		31700		32900		20800		23400	J	29000	J	0.200	U
Fluoride	mg/L	0.473	J	0.308	J	0.285	J	0.464		0.217		0.259		0.600	J	0.460	J-	0.420	J	0.0320	U
Sulfate	mg/L	2150		3020		3270		4810		4100		4340		2890		3050	J	3820	J	0.400	U Q
Total Ammonia	mg/L as N							3.85		2.17		2.73		0.412		0.715		1.79		0.100	U
Ammonium ion (NH ₄ ⁺)	mg/L							4.93		2.77		3.50		0.526		0.916		2.29			
Unionized NH ₃	mg/L							0.0190		0.0199		0.00956		0.00342		0.00352		0.0107			
Nitrate/Nitrite	mg/L as N							0.0250	U	0.0599		0.0250	U	0.0250	U	0.0250	U	0.0250	U	0.00500	U
TKN	mg/L							5.16		2.90		3.66		0.808		1.06		2.86		0.100	U
TN	mg/L							5.19		2.96		3.69		0.83		1.09		2.89		0.11	U
ortho-Phosphate	mg/L							0.0604		0.0461		0.0656		0.0346		0.0560		0.0515		0.00210	U
Total Phosphorus (P)	mg/L							0.0591		0.0541		0.0632		0.0439		0.0513		0.0506		0.00300	U
Alkalinity	mg/L	578		285		203		345		223		258		231		295	J	246	J	1.00	U
Bicarbonate Alkalinity	mg/L as HCO ₃	705		348		248		420		272		315		282		360	J	300	J	1.00	U
Sulfide	mg/L	12.6		3.59		0.779	I	34.8		0.946	I	6.86		3.56		4.34		3.56		0.360	U
Total Dissolved Solids	mg/L	29200		41200		41500		61600		53900		57500		38700		40500		49700		5.00	U
Salinity	*	30.93		41.99		44.40		65.67		57.76		59.28		39.09		41.29		52.28			
Tritium	pCi/L (1σ)																				

SW

SW

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Notes

Laboratory results are reported with 3 digits although only the first 2 are significant figures.

* PSS-78 salinity is unitless.

** Schemel, L.E., 2001. Simplified conversions between specific conductance and salinity unit for use with data from monitoring stations. Interagency Ecological Program for the San Francisco Estuary Newsletter. 14(1):17-18.

*** Calculated cation and anion conductivities not reported in ADaPT so all cations/anions are qualified.

Text in blue are revised

Sample 090315-Dup is a duplicate of TPGW-1D.

Key

°C = Degrees Celsius.

µg/L = Microgram(s) per liter.

µmho/cm = Micromho(s) per centimeter.

µS/cm = MicroSiemen(s) per centimeter.

ABS = Absolute value.

mg/L = Milligram(s) per liter.

N.A. = Not applicable.

NH₃ = Ammonia.

NH₄⁺ = Ammonium ion.

NTU = Nephelometric Turbidity Units(s).

pCi/L = PicoCuries per liter.

ppt = Parts per thousand.

PQL = Practical Quantitation Limit.

PSS-78 = Practical Salinity Scale of 1978.

RPD = Relative Percent Difference.

SC = Specific conductance.

SDG = Sample Delivery Group.

SU = Standard Unit(s).

TDS = Total Dissolved Solids.

TKN = Total Kjeldahl nitrogen.

TN = Total nitrogen.

TPGW = Turkey Point Ground Water

Qualifiers

I = Value between the MDL and PQL.

J = Estimated (+/- indicate bias).

Q = Holding time exceeded.

U = Analyzed for but not detected at the reported value.