Operational Project Monitoring Plan

For

Everglades Protection Area (EvPA) and Downstream STA1W, STA1E, and STA2 Transects (STAT)

(EVPA_STAT)

05/04/2022

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1.0 Project Organization

The following documents define the procedures used by South Florida Water Management District (SFWMD or District) personnel to meet the Florida Department of Environmental Protection's (FDEP) Quality Assurance (QA) Rule, Florida Administrative Code (F.A.C.) 62-160, and should be referred to for details on key personnel and relevant responsibilities.

- Overall project organization and responsibilities -
  - SFWMD Water Quality Bureau (WQB) and Applied Sciences Bureau (ASB) Quality Management Plan (QMP).
- Field activities and field data validation responsibilities -
  - SFWMD Water Quality Monitoring Section's (WQM) Field SamplingManual (FSM) and applicable Standard Operating Procedures (SOPs).
- Laboratory analysis and data validation responsibilities –
  - SFWMD Analytical Services' (AS) Chemistry Laboratory Quality Manual (CLQM) and applicable SOPs.

2.0 Project Description

2.1 Project Introduction and Background

This document serves as a reference for the surface water quality monitoring project, EVPA_STAT, which supersedes the following monitoring plans:

- SFWMD-FIELD-MP-021 EVPA P Network
- SFWMD-FIELD-MP-022 EVPA for WCA1
- SFWMD-FIELD-MP-023 EVPA for WCA2 and WCA3
- SFWMD-FIELD-MP-078 STAT (Surface Water Only)

The Everglades Protection Area (EvPA) includes Water Conservation Areas (WCA)1, WCA2, and WCA3. Samplng in the EvPA is designed to meet the monitoring requirements of the Settlement Agreement (1991) and the Total Phosphorus (TP) Rule (2007) with additional monitoring requirements outilined in two Consent Orders (2012) associated with the associated Stormwater Treatment Areas (STA).

Sample collection for the EVPA P Network (SFWMD-FIELD-MP-021) began in 2015 as an ambient network (excluding the stations in Everglades National Park) designed by the Florida Department of Environmental Protection (FDEP) based on sediment data collected in 2004, which were used to classify areas as impacted (concentration of phosphorus > 500 mg/kg) and un-impacted.

Sampling in WCA1 began in June 1978 under project CAWQ (WCA Water Quality Investigation) and continued until July 1983 before resuming in December 1993 as the EVPA project (SFWMD-FIELD-MP-022). Sampling in WCA2 and WCA3 began in 1994 (SFWMD-FIELD-MP-023).

The STAT project was initiated in 2012 (SFWMD-FIELD-MP-078-01a) with sampling at stations associated with discharges from the Stormwater Treatment Areas (STAs); specifically discharges from STA-1E, STA-1W and STA-2. STAT also includes sediment and vegetation monitoring.

This project, EVPA_STAT, was developed to consolidate the water quality monitoring of the four Settlement Agreement projects and the 2007, Total Phosphorus (TP) Rule. Sediment and Vegetation monitoring required under Consent Orders OGC No. 12-1148 and 12-1149, are still detailed int the STAT (SFWMD-FIELD-MP-078) monitoring plan. The information and guidance contained herein will assist in maintaining consistency in sampling locations, parameters, and frequencies, as well as providing documentation of the project scope and an ongoing historical perspective.

2.2 Sampling Mandates

Station locations, sampling frequencies, and parameters are dictated by the mandate and/or permits governing this project (Appendix 1). There are no Compliance Monitoring Plans associated with this project.

The monitoring described in this document is required by four distinct mandates

- 1991 Settlement Agreement
- 2007 Total Phosphorus Rule
- 2012 Consent Order OGC No. 12-1148
- 2012 Consent Order OGC No. 12-1149

The monitoring requirements of these mandates overlap significantly and are detailed in tables found in Appendix 1.

The **1991 Settlement Agreement** ended a lawsuit between the State of Florida and several branches of the Federal Government concerning water quality entering Everglades National Park (ENP or Park) and WCA1/Loxahatchee National Wildife Refuge (LNWR or Refuge). It established the Technical Oversight Committee (TOC) comprised of representatives from various state and federal agencies, to oversee compliance with the agreement. The agreement has multiple appendices detailing requirements including research and monitoring of various matrices, structures and marshes. It has two subsections that require marsh monitoring. The first is Appendix B which details the requirements for the WCA1/LNWR compliance calculation based on monthly monitoring of 14 interior marsh stations. The second part of the 1991 Settlement Agreement that requires marsh monitoring is Appendix D which contains multiple requirements for monitoring a variety of locations and matrices and is specified by four statements.

1. "The monitoring program shall include water quality and biological monitoring at interior marsh stations and downstream of all structures discharging into the Refuge, WCAs, and Park..."
2. "The monitoring program shall include water quality sampling every other week at all Park and Refuge delivery points and at representative internal marsh stations including the monthly sampling at the 14 permanent Refuge stations"
3. "The District's current water quality monitoring program shall continue with emphasis of total phosphorus, orthophosphate, ammonia, nitrate/nitrite, total nitrogen, chlorophyll a, alkaline phosphatase, physical parameters, ions, heavy metals (especially mercury), and pesticides/herbicides. A plan for limiting pesticide/herbicide and heavy metals analysis to a range of representative compounds and sampling locations can be considered."
4. "Monitoring shall be implemented to identify variation (temporal and spatial) in biological and water quality parameters along transects in the WCAs, Park, and Refuge."

Originally, the District monitored interior marsh stations for the Settlement Agreement biweekly, but with TOC permission this was reduced to monthly for all WCAs. The list of parameters required for monitoring has also been modified and reduced over time.

In response to the 1991 Settlement Agreement, the Florida Legislature enacted the Everglades Forever Act (EFA) and laid the legal groundwork for the 2007 **TP Rule** which outlined the methodology for applying the state water quality standard for TP in the Everglades. The methodology requires monitoring of TP at stations in both impacted and unimpacted areas. These stations were selected by agency consensus and are located in WCA1, WCA2A, WCA3A, and WCA3B. This mandate requires monitoring of TP only.

Consent Orders 2012 OGC No. 12-1148 and 12-1149 were issued in concert with the 2012 Stormwater Treatment Areas (STAs) Operating Permits and pair with the state EFA permit and the Federal National Pollutant Discharge Elimination System (NPDES) Permit. The language in each is almost identical and require monitoring of transects downstream of the STAs discharging into WCA1 and WCA2A. Since there are no STAs discharging directly into WCA2B, WCA3A, or WCA3B this mandate does not apply to these areas. The purpose of the monitoring is to assure that the conservation areas receiving discharges from the STAs are responding as expected to changes in water quality.

WCA1 has a total of 37 unique stations (Table 1A). Fourteen of these stations are monitored for the Settlement Agreement. Twenty-four stations are monitored for the TP Rule. Seventeen are monitored for the Consent Orders. There is significant overlap between these stations with all fourteen Settlement Agreement stations being monitored for the TP Rule as well, and four other TP Rule stations being leveraged by the Consent Orders.

WCA2A has a total of 30 unique stations (Table 1B). Seven of these stations are monitored for the Settlement Agreement. Sixteen stations are monitored for the TP Rule. Fourteen are monitored for the Consent Orders. There is significant overlap between these stations with the two stations being monitored for both the Consent Orders and the TP Rule, three stations being monitored for both the Settlement Agreement and the TP Rule, and one station being monitored for all three mandates.

WCA3 has a total of twenty unique stations (Table 1C). Eleven of these stations are monitored for the Settlement Agreement. Eighteen of these stations are monitored for the TP Rule. There is no monitoring for the Consent Orders in WCA3. There is significant overlap between these stations with nine stations being monitored for both mandates.

2.3 Project Objectives

There are multiple objectives of this monitoring, based primarily on the associated mandates.

1. Monitoring of the 14 stations in WCA1 supplies data for the compliance calculation detailed in Appendix B of the Settlement Agreement. It also supplies data to evaluate other applicable state and federal water quality standards.
2. Monitoring of the other stations associated with Appendix D of the Settlement Agreement provides data to evaluate water quality standards as well as spatial and temporal variations along transects.
3. Monitoring of TP Rule stations provides data to evaluate the Total Phosphorus Criterion.
4. Monitoring stations associated with the Consent Decrees provides data on water quality trends and ecosystem responses in the WCAs receiving STA discharges.

2.3.1 Modification or Termination Conditions

None of the subject mandates have a designated expiration date. Modifications to stations, parameters and frequencies are allowed through concurrence by the TOC and/or FDEP (Florida Department of Environmental Protection).

3.0 Geographic Location

3.1 Regional Area

Figure 1 identifies the sampling stations located in the WCAs which are in the western portions of Palm Beach, Broward and Miami-Dade Counties.

3.2 Station Location and Access

For convenience, the monitoring locations are divided by WCA.

Surface water sampling of the WCAs for this project is done using a float helicopter. Helicopter transportation is provided by the District either by using the District helicopter

or through contractual services. The logistics of each helicopter trip (e.g. meeting location, weight restrictions, etc.) must be agreed upon prior to any flight.

Routine access to the airspace over any of the WCAs does not require prior approval of any other agency. However, access to the WCAs during emergency conditions (e.g. flood, drought, and fire) may be limited by state or federal officials.

Table 1A: WCA1 Surface Water Monitoring Stations and GPS Coordinates

Station	Latitude (ddmmss.sss)	Longitude (ddmmss.sss)	Description
LOX3	263537.600	802113.900	Center - North Sector of WCA1
LOX4	263601.723	801741.479	East - North Sector of WCA1
LOX5	263326.184	802128.567	North - Center Sector of WCA1
LOX6	263021.379	801348.011	Easternmost - Center Sector of WCA1
LOX7	263105.259	801635.708	East - Center Sector of WCA1
LOX8	263126.341	802016.478	Center - Center Sector of WCA1
LOX9	263135.711	802313.159	West - Center Sector of WCA 1
LOX10	263134.590	802515.163	Westernmost - Center Sector of WCA 1
LOX11	262743.659	801729.666	Center South Sector of WCA 1
LOX12	262550.050	802248.049	West - South Sector of WCA 1
LOX13	262527.911	801801.353	Center - South Sector of WCA 1
LOX14	262411.789	801443.434	East - South Sector of WCA 1
LOX15	262302.220	802107.316	West - South Sector of WCA 1
LOX16	262224.826	801822.471	South Center - South Sector of WCA 1
LOXA101	264002.613	802158.913	WCA 1, 1.5 miles south of S5A pump station
LOXA104	263552.727	802624.152	L-7 Canal, 0.12 km northeast of G251
LOXA104.5	263538.810	802620.674	Marsh station in WCA1, 0.5 km southeast of G251
LOXA105	263530.837	802609.939	Marsh station in WCA1, 0.9 km southeast of G251
LOXA106	263531.942	802552.611	Marsh station in WCA1, 1.23 km southeast of G251
LOXA107	263514.606	802517.201	Marsh station in WCA1, 2.35 km southeast of G251
LOXA107U	263452.337	802442.562	Marsh station in WCA1, 3.5 km southeast of G251
LOXA108	263440.656	802421.072	Marsh station in WCA1, 4.27 km southeast of G251
LOXA124	262719.274	801419.516	WCA 1, 1 mile northwest of G94A structure
LOXA130	263455.628	801612.199	WCA 1, 2.7 miles northwest of G94C structure
LOXA135	263724.079	801858.042	L-40 canal at the junction with the STA1E discharge canal
LOXA136	263707.655	801907.201	Marsh station in WCA1, 0.77 km south of S362
LOXA137	263654.372	801918.132	Marsh station in WCA1, 1.23 km south-southwest of S362
LOXA138	263624.541	801935.995	Marsh station in WCA1, 2.30 km south-southwest of S362
LOXA139	263535.971	802013.754	Marsh station in WCA1, 4.09 km south-southwest of S362
LOXA140	263815.372	802056.740	WCA 1, 4 miles south southeast of S5A pump station
LOXAZ0	262801.085	802631.819	CANAL STATION IN THE L-39, 0.43 KM DOWNSTREAM OF G338
LOXAZ1	262804.281	802621.796	WCA 1, MARSH STATION, 0.65 KM EAST OF G338
LOXAZ2	262755.304	802541.206	WCA 1, MARSH STATION, 1.82 KM EAST OF G338

Station	Latitude (ddmmss.sss)	Longitude (ddmmss.sss)	Description
LOXAZ3	262733.118	802431.178	WCA 1, MARSH STATION, 3.85 KM EAST OF G338
LOXAZ4	262644.170	802317.308	WCA 1, MARSH STATION, 6.24 KM EAST OF G338
X1	262912.158	802632.314	South central west side of WCA1; just east of L-7 and about 1 mile north of Z1
X4	262924.211	802410.983	Central west side of WCA1; about 2.5 miles east of X1

Table 1B: WCA2A Surface Water Monitoring Stations and GPS Coordinates

Station	Latitude ddmmss.sss)	Longitude (ddmmss.sss)	Description
2AC.25	262534.717	802831.242	WCA2A central transect, quarter mile south of L-6
2AC2	262443.562	802817.065	WCA2A central transect, two miles south of L-6
2AC4	262342.913	802803.936	WCA2A central transect, four miles south of L-6
2AC5	262309.398	802800.993	WCA2A middle transect, 4.2km east north-east of G335D
2AFS.25	262044.389	803135.957	WCA2A far south transect, quarter mile east of L-6
2AN.25	262715.619	802723.108	WCA2A far south transect, quarter mile east of L-6
2AN1	262651.994	802721.808	WCA2A north transect, one mile south of L-6
2AN2	262619.971	802714.353	WCA2A north transect, two miles south of L-6
2AN4	262522.653	802705.436	WCA2A north transect, four miles south of L-6
2AN5	262449.364	802652.598	WCA2A north transect, 4.75km south south-east of G336B.
2AN6	262418.145	802644.176	WCA2A north transect, 5.75km south south-east of G336B.
404Z1	262012.938	803145.397	South end of L-6 where it meets L-38; NW corner of WCA2
CA217	261513.330	802719.533	Central west side of WCA2; not far from L-38; about 2 miles southwest of CA222
CA222	261658.299	802659.308	South central west side of WCA2; about 2 miles northeast of CA217
CA223	262001.200	801904.800	Northeast corner of WCA2; about 2 miles south of L-39
CA224	261814.061	802932.224	About 4 miles northwest of CA217; about 1 mile east of L-38
CA26	262144.875	802733.866	Central area of WCA2; about 4 miles southeast of 404C2
CA27	262150.112	803030.888	WCA 2, marsh 2.5 mi NE of S-7
CA28	262008.700	803159.628	WCA 2, marsh 1/4 mi E of S-7
CA29	261931.404	802821.540	Center of WCA 2A
E5	261650.060	802130.040	Central east side of WCA2; about 3 miles east of U3
WCA2F1	262139.204	802209.660	Central portion
F3	261946.670	802318.500	Site along transect in WCA 2A
F5	261834.200	802355.800	Central area in WCA2; about 1 mile west and a little south of WCA2F4
FS1	262038.852	803112.055	WCA2A far south transect, one mile east of L-6
FS3	262015.686	803001.947	WCA2A far south transect, three miles east of L-6
U1	261427.310	802120.380	South central area in WCA2; about 1 mile north of L-35B; about 3 miles south
U3	261715.070	802441.080	Site along transect in WCA 2A
WCA2F4	261901.092	802306.504	WCA 2A, SITE F4

Station	Latitude ddmmss.sss)	Longitude (ddmmss.sss)	Description
WCA2F2	262035.628	802237.416	WCA 2, 1 mi S of L-39 F transect

Table 1C: WCA3 Surface Water Monitoring Stations and GPS Coordinates

Station	Latitude (ddmmss.sss)	Longitude (ddmmss.sss)	Description
3ASMESO	255725.140	804656.880	South central/west side of WCA3A; about 3 miles east of L-28
CA311	260601.317	804203.211	WCA 3A, 2 mi S of Alligator Alley
CA314	255810.385	803334.031	South central area in WCA3-A; about 1 mile north of L67A
CA315	255803.335	804059.212	Interior marsh site in central, slightly southern portion of WCA3 (3-11 Gauge)
CA316	260932.160	802819.380	Interior marsh site; 3 km W of S142 in WCA 3A
CA317	260502.820	802802.280	Interior marsh site; 2 km NE of S9 in WCA 3A
CA318	255952.980	803141.460	Interior marsh site; 2 km WSW of S151 in WCA 3A
CA319	255009.812	804428.211	Southwest side of WCA3-A; about 6 miles north of L-29
CA32	261452.294	803116.191	WCA 3A, 2 mi E of L-38E
CA324	261907.598	803501.824	Northeast side of WCA3-A; about 1 mile south of L-5
CA325	260221.432	804615.675	West central side of WCA3-A; about 6 miles north of 3ASMESO
CA33	261839.287	804242.207	District gauge 3-2, E of Miami Canal, north central WCA 3A
CA34	261001.306	803559.200	WCA 3A, 2.5 mi E of C-123
CA35	261753.290	804701.214	District gauge 3-5, W of Miami Canal in NW crnr of WCA 3A
CA36	261416.297	804158.207	WCA 3A, 1/2 mi E of Buggy Bridge
CA38	261027.307	804422.213	WCA 3A, 5 mi W of C-123
CA39	260616.015	803033.126	East central area in WCA3-A; about 3 miles south of I75 canal
CA3B1	255521.424	803058.577	Central area in WCA3-B; about 2 miles southeast of L-67C
CA3B2	254727.050	803529.584	South central area in WCA3-B; about 2 miles north of L-29
S345B6	255113.541	803256.569	Central area in WCA3-B; about 3.5 miles east of L67C

The standard positional goal for station coordinates is detailed in the Establishing & Verifying Water Quality Monitoring Station Registration SOP (SFWMD-FIELD-SOP-031). The coordinates are relative to NAD83 HARN horizontal datum.

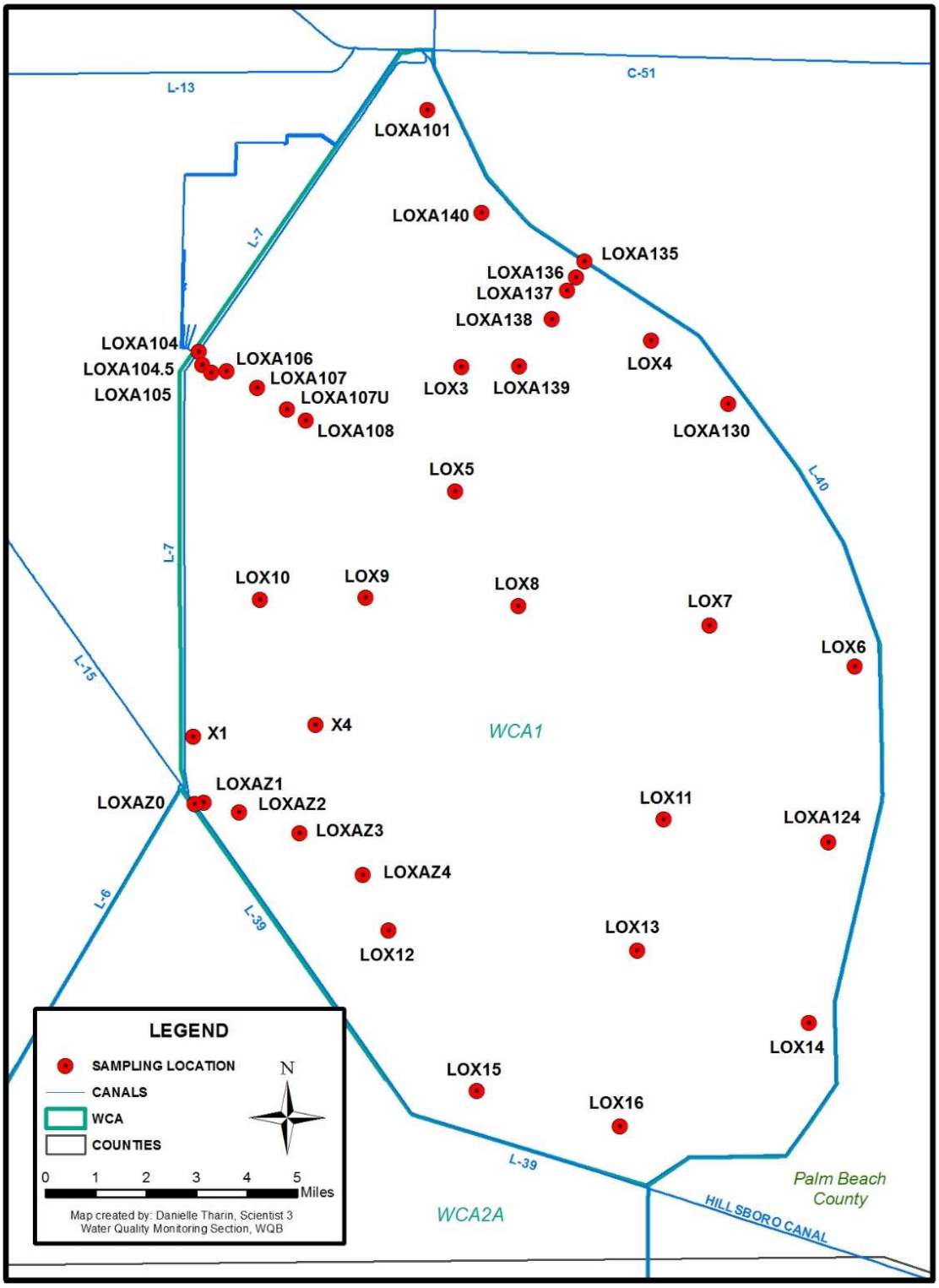

Figure 1A: Station Locations in WCA1

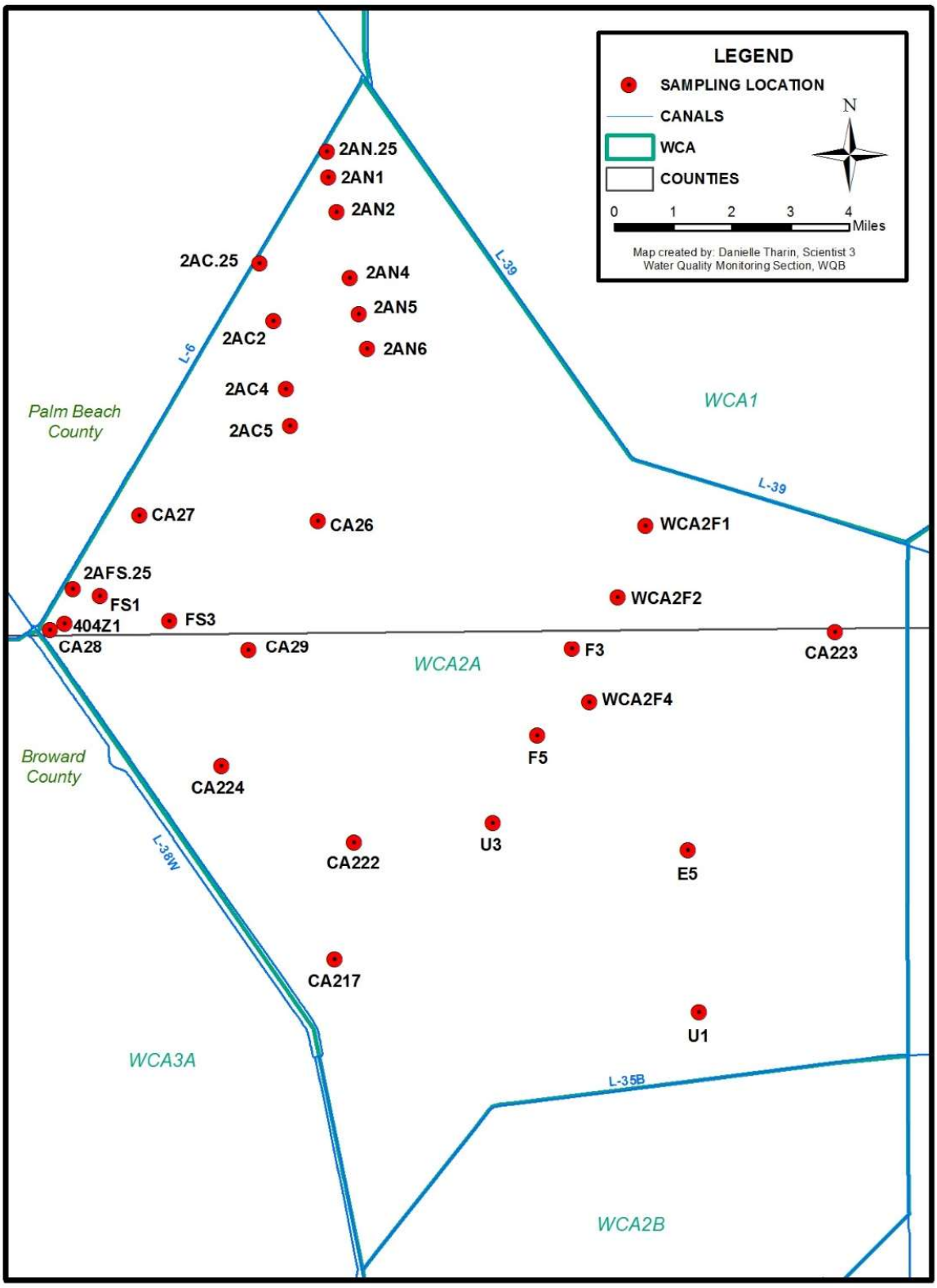

Figure 1B: Station Locations in WCA2A

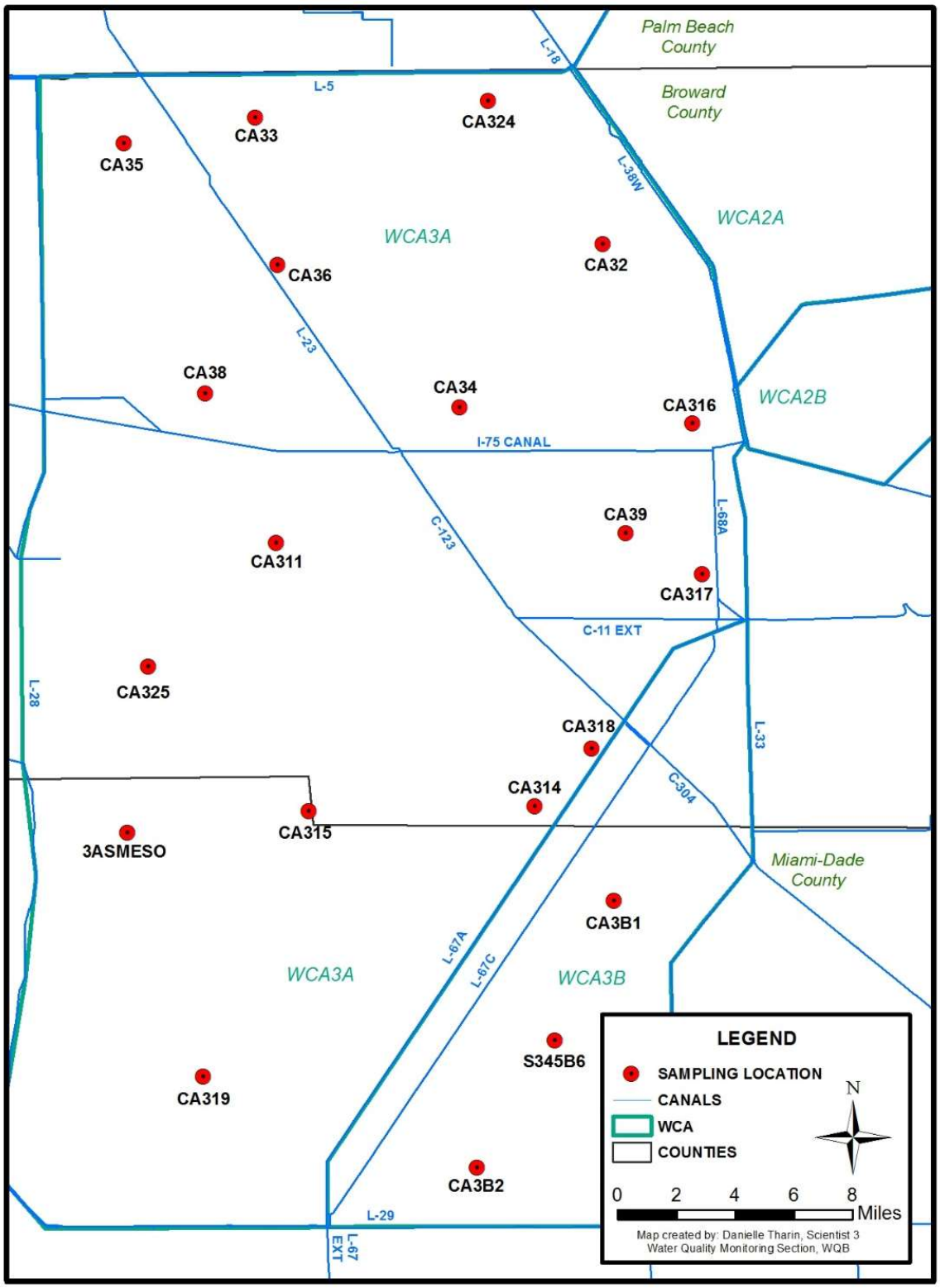

Figure 1C: Station Locations in WCA3

4.0 Field Activities

4.1 Monitoring Frequencies and Parameters Collected

Monitoring stations, frequencies and parameters for Projects EVPA and STAT are presented in Tables 2A, 2B, and 2C.

Table 2A: WCA1 Station Frequency and Parameter TESTS

Project	Station	Method	Frequency	Parameter TESTS
STAT	LOXAZ0 LOXAZ2 LOXAZ3 LOXAZ4 LOXA104 LOXA104.5 LOXA106 LOXA107 LOXA107U LOXA135 LOXA136 LOXA138 LOXA139	Grab	Monthly (M)	Calcium (CA), Chloride (CL), Nitrate-Nitrite (NOX), Sulfate (SO4), Total Nitrogen (TN), Total Phosphorus (TP)
		In-situ Grab	M	Dissolved Oxygen (DO), pH (PH), Specific Conductance (SCOND), Temperature (Temp)
STAT but also supply data for EVPA	LOXAZ1 LOXA105 LOXA108 LOXA137	Grab	M	CA, CL, NOX, SO4,TP, TN
		In-situ Grab	M	DO, PH, SCOND, Temp
EVPA	LOXA124 LOXA130 LOXA101 LOXA140 LOX3 LOX4 X1 X4	Grab	M	TP
	LOX5 LOX6 LOX7 LOX8 LOX9 LOX10 LOX11 LOX12 LOX13 LOX14 LOX15 LOX16	Grab	M	Alkaline Phosphate (APA), Alkalinity (ALKA), Ammonia (NH4), CA, CL, COLOR, Dissolved Organic Carbon (DOC), Magnesium (MG), NOX, Nitrite (NO2), Orthophosphorus (OPO4), Potassium (K), Silica (SIO2), Sodium (NA), SO4, Total Dissolved Nitrogen (TDN), Total Dissolved Phosphorus (TDP), Total Dissolved Solids (TDS), TN, Total Organic Carbon (TOC), TP, Total Suspended Solids (TSS), Turbidity (TURB)
		In-situ Grab	M	DO, SCOND, PH, TEMP
		Grab	Quarterly (Q)	Total Iron (TFE)

Table 2B: WCA2A Station Frequency and Parameter TESTS

Projects	Station	Method	Frequency	Parameter TESTS
STAT	2AC.25 2AC4 2AC5 2AFS.25 2AN.25 2AN2 2AN4 2AN5 2AN6 FS1 FS3	Grab	M	CA, CL, NOX, SO4, TN, TP
		In-situ Grab	M	DO, PH, SCOND, Temp
STAT but also supply data for EVPA	2AC2 2AN1	Grab	M	CA, CL, NOX, SO4, TN, TP
		In-situ Grab	M	DO, PH, SCOND, Temp
EVPA but also supply data for STAT	CA29	Grab	M	APA, ALKA, NH4, CA, CL, COLOR, DOC, MG, NOX, NO2, OPO4, K, NA, SIO2, SO4, TDN, TDP, TDS, TN, TOC, TP, TSS, TURB
		In-situ Grab	M	DO, PH, SCOND, Temp
		Grab	Q	TFE
EVPA	404Z1 E5 F3 F5 U1 CA26 CA217 CA222 CA223 CA224	Grab	M	TP
	CA27 CA28 WCA2F1 WCA2F2 WCA2F4 U3	Grab	M	APA, ALKA, NH4, CA, CL, COLOR, DOC, MG, NOX, NO2, OPO4, K, NA, SIO2, SO4, TDN, TDP, TDS, TN, TOC, TP, TSS, TURB
		In-situ Grab	M	DO, PH, SCOND, Temp
		Grab	Q	TFE

Table 2C: WCA3 Station Frequency and Parameter TESTS

Projecs	Station	Method	Frequency	Parameter TESTS
EVPA	3ASMESO CA39 CA314 CA319 CA324 CA325 CA3B1 CA3B2 S345B6	Grab	M	TP
	CA32 CA33 CA34 CA35 CA36 CA38 CA311 CA315 CA316 CA317 CA318	Grab	M	APA, ALKA, NH4, CA, CL, COLOR, DOC, MG, NOX, NO2, OPO4, K, NA, SIO2, SO4, TDN, TDP, TDS, TN, TOC, TP, TSS, TURB
		In-situ Grab	M	DO, PH, SCOND, Temp
		Grab	Q	TFE

4.2 Project Specific Guidelines

If water depths in WCA1 drop to less than 20 centimeters but not less than than 10 centimeters, sampling staff should collect a reduced set of parameters that consists of TP, Cl and SO4, or just TP if other parameters are not normally required.

If water depths in WCA2A drop to less than 20 centimeters but not less than than 10 centimeters, sampling staff should collect a reduced set of parameters that consists of TP, Cl and SO4, at the fourteen stations associated with Project STAT. For other stations in WCA2A and WCA3 when waters drop below 20 centimeters but not less than 10 cm just TP is required.

The District has developed water depth relationships between monitoring stations and nearby stage gauges. If such a relationship has been developed for the stations in this plan, to the satisfaction of regulatory interests, a procedure to temporarily suspend sampling at a station based on remotely transmitted stage data may be implemented.

The spatial distribution of the monitoring stations coupled with the logistics of sampling within the marsh's interior by helicopter necessitate a two-day sampling effort in WCA1, typically performed over consecutive days. The sampling sequence outlined in Table 3 was developed to most efficiently utilize helicopter time and to conserve fuel. Deviations from the sampling sequence are permitted if the reason for the deviation is documented as necessary.

Although these sampling trips usually occur on two separate days they are considered one event for quarterly equipment blank (EB) and replicate sample (RS) requirements.

Table 3: Sampling Order of WCA1 Stations by Day

Order	Day 1	Day 2
1	LOX3	LOX6
2	LOX5	LOX11
3	LOX10	LOX13
4	LOX9	LOX14
5	LOX8	LOX16
6	LOX7	LOX15
7	LOX4	LOX12

4.3 Grab Sampling Procedures

Sample collection for this project shall follow the procedures and requirements found in the *Grab Sampling Protocol* section of the WQM FSM and the Surface Water Quality Sampling in Marshes SOP (SFWMD-FIELD-SOP-004). Project-specific deviations are detailed in Section 4.2.

4.4 Field Parameters

The collection of field parameters follows the procedures and requirements outlined in the *Instrument Calibration and Field Measurements* section of the WQM FSM. Project-specific deviations are detailed in Section 4.2.

4.5 Field Quality Control Requirements

Field quality control requirements shall follow the procedures found in the *Field Quality Control Measurements and Requirements* section of the WQM FSM and the Surface Water Quality Sampling in Marshes SOP (SFWMD-FIELD-SOP-004). Project-specific deviations are detailed in Section 4.2.

4.6 Autosampler Collection

There is no requirement for the use of autosamplers for this project.

4.7 Sample Submission

If the District laboratory is to be used, samples are transported to the laboratory and submitted for analyses in accordance with the requirements specified in the WQM FSM. Samples are submitted to the laboratory on the same day as collection or via courier the following day. Sample acceptance criteria are detailed in Section 6 of the CLQM. If samples are submitted to another laboratory it must meet the contract laboratory requirements as specified in Section 5.2 below.

5.0 Data Quality Objectives (DQOs)

5.1 Data Usage

The data from this project are compiled and are summarized in an annual report in accordance with the conditions outlined in the mandate named in Appendix 1.

5.2 Data Quality

All monitoring described herein shall meet the requirements conveyed in the FDEP's QA Rule, 62-160 F.A.C. The District has adopted a uniform set of DQOs following criteria detailed within the *Analytical Methods and Default QA/QC Targets* table of the CLQM.

Field parameter DQOs are described in the *Field Instrument Minimum Accuracy Requirements* table found in the *Instrument Calibration and Field Measurements* section of the FSM. The most recent version of the FSM details the specific field testing DQOs at the time of sample collection.

Samples are analyzed according to the provisions within the FDEP QA Rule, 62-160 F.A.C. and the CLQM. The most recent version of the CLQM details DQOs at the time of sample collection for each specific laboratory analysis. Data are qualified in accordance with the FSM, CLQM and applicable data validation SOPs.

No contract laboratory is being used.

5.3 Completeness Target

The completeness target (i.e., the number of samples successfully collected and analyzed, as a percentage of those that were planned) has been set at 95% annually for this project. Sampling attempts shall be included in the completeness target. At times samples will not be able to be collected due to no flow or low water conditions, unsafe station conditions, equipment malfunction, site maintenance, tropical storms/hurricanes or other unforeseen problems that might affect sample collection and/or quality. If samples cannot be collected on an attempt, collectors shall document the sample as a "NOB" to indicate an attempt was made and/or the sample could not be collected for the documented reasons.

6.0 Data and Records Management

The District evaluates data in accordance with the data quality objectives stated in the District's FSM and CLQM. All data submittals shall conform to existing District guidelines.

6.1 Contract Deliverables

There are no contract deliverables for this project.

6.2 Data and Record Storage

After the data validation process, all data and records are maintained so that end users can retrieve and review information relative to a sampling event. Field records are

maintained in accordance with the *Archive Records Storage and Retention* SOP (SFWMD-FIELD-SOP-022). All analytical data and specified metadata are sent to the DBHYDRO database for long-term storage and retrieval.

The District shall maintain master copies of field and laboratory generated records. It is the responsibility of the District to maintain both records of current and historical methodologies and operating procedures so that at any given time the conditions that were applied to a sampling event can be evaluated.

Field records storage protocols are outlined in the *Archive Records Storage and Retention* (SFWMD-FIELD-SOP-022). Corrections of field data or records must follow the applicable WQM *Correction of Field Records* SOP (SFWMD-FIELD-SOP-032) and the FSM. Corrections to data in DBHYDRO must follow *Data Investigations and Corrections* (SFWMD-DVS-SOP-010).

7.0 References

FDEP (Florida Department of Environmental Protection). Quality Assurance Rule, 62-160 Florida Administrative Code (F.A.C.)

SFWMD (South Florida Water Management District). *Archive Records Storage and Retention*, SFWMD-FIELD-SOP-022, Water Quality Monitoring Section

SFWMD (South Florida Water Management District). *Chemistry Laboratory Quality Manual (CLQM)*, SFWMD-LAB-QM-2022-001 or most current effective version. Analytical Services Section.

SFWMD (South Florida Water Management District). *Correction of Field Records*, SFWMD-FIELD-SOP-032, Water Quality Monitoring Section

SFWMD (South Florida Water Management District). *Field Sampling Manual (FSM)*, SFWMD-FIELD-FSM-001, Water Quality Monitoring Section.

SFWMD (South Florida Water Management District). *Field Quality Manual (QM)*, SFWMD-FIELD-QM-001, Water Quality Monitoring Section.

SFWMD (South Florida Water Management District). *Data Investigations and Corrections*, SFWMD-DVS-SOP-010, Data Validation Services Unit.

SFWMD (South Florida Water Management District). *Sampling Flow-Related Stations*, SFWMD-FIELD-SOP-027, Water Quality Monitoring Section.

SFWMD (South Florida Water Management District). *Station Registration*, SFWMD-FIELD-SOP-031, Water Quality Monitoring Section

SFWMD (South Florida Water Management District). *Water Quality and Applied Sciences Bureaus Quality Management Plan (QMP)*, SFWMD-QS-QM-001. Applied Sciences and Water Quality Bureaus.

8.0 Revisions and Modifications

Version	Date	Section	Change/Reason
01	02/15/19	All	Combined monitoring plans (MP-021, MP-022, MP-023, MP-078)
02	5/04/22	All	Updated to newest format based on current MP template (Template Version Date April 28, 2021). Clarified project codes.

Appendix 1: Station Requirements by Mandate

Table 1A: WCA1 Monitoring					
Mandate	**Station**	**Method**	**Frequency**	**Parameter TESTS**	**Project**
Consent Orders OGC No. 12-1148 and 12-1149	LOXAZ0, LOXAZ1, LOXAZ2, LOXAZ3, LOXAZ4, LOXA104, LOXA104.5, LOXA105, LOXA106, LOXA107, LOXA107U, LOXA108, LOXA135, LOXA136, LOXA137, LOXA138, LOXA139	Grab	Monthly (M)	Calcium (CA), Chloride (CL), Nitrite-Nitrate (NOX), Sulphate (SO4), Total Nitrogen (TN), Total Phosphorus (TP)	STAT
		In-situ Grab	M	Dissolved Oxygen (DO), pH (PH), Specific conductance (SCOND), Temperature (Temp)	
TP Rule	LOX3, LOX4, LOX5, LOX6, LOX7, LOX8, LOX9, LOX10, LOX11, LOX12, LOX13, LOX14, LOX15, LOX16, LOXAZ1, LOXA105, LOXA108, LOXA137, LOXA101, LOXA124, LOXA130, LOXA140, X1, X4	Grab	M	TP	EVPA
Settlement Agreement	LOX3, LOX4, LOX5, LOX6, LOX7, LOX8, LOX9, LOX10, LOX11, LOX12, LOX13, LOX14, LOX15, LOX16	Grab	M	TP	
				APA, ALKA, NH4, CA, CL, COLOR, DOC, MG, NOX, NO2, OPO4, K, SIO2, NA, SO4, TDN, TDP, TDS, TN, TOC, TSS, TURB	
			Quarterly (Q)	TFE	
		In-situ Grab	M	DO, SCOND, PH, TEMP	

Table 1B: WCA2A Monitoring					
Mandate	**Station**	**Method**	**Frequency**	**Parameter TESTS**	**Project**
Consent Orders OGC No. 12-1148 and 12-1149	2AC.25, 2AC2, 2AC4, 2AC5, 2AFS.25, 2AN.25, 2AN1, 2AN2, 2AN4, 2AN5, 2AN6, CA29, FS1, FS3	Grab	Monthly (M)	Calcium (CA), Chloride (CL), Nitrite-Nitrate (NOX), Sulphate (SO4), Total Nitrogen (TN), Total Phosphorus (TP)	STAT
		In-situ Grab	M	Dissolved Oxygen (DO), pH (PH), Specific conductance (SCOND), Temperature (Temp)	
TP Rule	2AC2, 2AN1, 404Z1, CA26, CA27, CA28, CA29, CA217, CA222, CA223, CA224, E5, F3, F5, U1, U3	Grab	M	TP	EVPA
Settlement Agreement	CA27, CA28, CA29, U3, WCA2F1, WCA2F2, WCA2F4	Grab	M	TP	
				APA, ALKA, NH4, CA, CL, COLOR, DOC, MG, NOX, NO2, OPO4, K, SIO2, NA, SO4, TDN, TDP, TDS, TN, TOC, TSS, TURB	
			Quarterly (Q)	TFE	
		In-situ Grab	M	DO, SCOND, PH, TEMP	

Table 1C: WCA3 Monitoring					
Mandate	**Station**	**Method**	**Frequency**	**Parameter TESTS**	**Project**
TP Rule	3ASMESO, CA32, CA33, CA34, CA35, CA36, CA38, CA39, CA311, CA314, CA315, CA316, CA319, CA324, CA325, CA3B1, CA3B2, S345B6	Grab	M	TP	EVPA
Settlement Agreement	CA32, CA33, CA34, CA35, CA36, CA38, CA311, CA315, CA316, CA317, CA318	Grab	M	TP	
				APA, ALKA, NH4, CA, CL, COLOR, DOC, MG, NOX, NO2, OPO4, K, SIO2, NA, SO4, TDN, TDP, TDS, TN, TOC, TSS, TURB	
			Quarterly (Q)	TFE	
		In-situ Grab	M	DO, SCOND, PH, TEMP	