A-KIT

PAGE 1 OF ____

Data Qualified? Yes / No

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2017

STORET Station Name: Lake McKethan **Date:** 6-13-17 (mm/dd/yyyy)

STORET Station ID: TPMCTHNOIL **WBID:** 1371A **Latitude:** 28° SM 52' 38' 47.959" N (Decimal Degrees)

County: Hernando **RQ -** 2017-06-12-25 **ORG ID:** 21FLTPA **Longitude:** 82° 20' 14.33" W (Decimal Degrees)

Receiving Body of Water: _____ **Field ID:** TPMCTHNOIL

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Laurie Bachler		X			X
Sarah Meyer	X		X	X	

Sampling Equipment

☒ Sample Container ☐ Van Dorn ☐ Pole
☐ Carboy ☐ Syringe
☐ Dipper ☐ Other _____
Equipment ID _____

Collection Method

☐ Wading
☐ From Shore
☐ Other (note below)

Via Boat
☒ Canoe/Kayak
☒ Electric Motor
☐ Gasoline Motor

Water Level: Dry / Pooled / (Low) / Normal / High / Flooded

Matrix: (Fresh) / Marine / DI

Meter ID# Weeze **Photos:** (Yes) / No

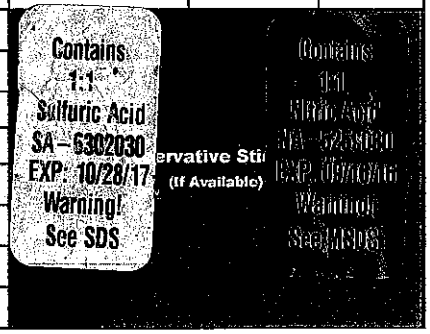
Tide Falling: Yes / No / (NA)

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
(EST)	11 15	0.3	0.8	7.3	95	6.4	0.01	0.85	29	28.4
CEN										

Biological Samples Collected: None HA SCI RPS Algae ID LVS (LVI) Other _____

SBIO ID Numbers: SBIO-ID: 77707 RPS-ID: Macrophyte-ID: 10533 LIMS#: 1906043

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H_2SO_4			☒ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☒ HNO_3			☒ <2
Filtered Nutrients	☒ W-PO4-F ☐ Field Filtered 0.45 µm Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Periphyton	☐ ALGAE-ID	☐ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ PCR-FILTER	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			
Flow	"J" Qualify Flow				



Notes: Event: 06-14-01

RQ-2017-06-12-25
Date: 06-13-2017
Time:
McKethan

TPMCTHNOIL
Field ID
STORET
TPMCTHNOIL

Signature: Sarah Meyer **Date:** 06/13/2017

Field Parameters Entered into LIMS: LB 6-19-17 (Initials/Date) Field Parameters QC in LIMS: SM 06/26/2017 (Initials/Date)

Date Migrated to STORET: _____ (Initials/Date) Field Sheets Scanned/Saved: _____ (Initials/Date)

Request Number: RQ-2017-06-12-25

Mckethan

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Customer: SW-DIST

Project ID: LAKESREF

Requester: Judy Ashton

Collected By: L Bachler & S Meyer

Field Report Prepared By: S Meyer

Sampling Agency: FDEP SW RCC

RQ-2017-06-12-25 Date: 06-13-2017 Time: McKethan	**TPMCTHNOIL** Field ID ↕ STORET TPMCTHNOIL	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 06/13/2017 Time 11 15 Eastern (circled) Central	Composite end Date Time	Bottle Group(s) (See pg 2) A
		Matrix (type, e.g., Salt, Fresh (circled), etc)	Diss. Oxygen 7.3 ☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) —	
		Temp (C) 28.4	pH 6.4	Sample Depth 0.3 ☐ ft ☒ m	Sp. Conductance (umho/cm) 29
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt) 0.01	Comments		

Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #		Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		

Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #		Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		

Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time Eastern Central	Composite end Date Time	Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #		Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments		

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Sarah Meyer	06/13/2017 16 30	FedEx	1		

Form FD9000-27 **Lake Vegetation Index Data Sheet** (06-21-11)

Waterbody: Lake McKethan	County:	Date: 06/13/2017
Analyst: S Meyer & L Bachler	Signature:	STORET:

Except where noted as "sp." species level identification required. *Genera that may require lab verification*
Plants in bold= FLEPPC invasive exotic.

It is important to note dominant or co-dominant taxa (by areal extent) for each unit. Use "D" to denote dominant taxon, or "C" for the 2 co-dominant taxa.

Lake units sampled (circle one group):
1, 4, 7, 10 2, 5, 8, 11
(3, 6, 9, 12)

SPECIES	3	6	9	12	Collected? (√)
Acer rubrum					
Alternanthera philoxeroides			X		
Andropogon sp.					
Azolla filiculoides (A. caroliniana)					
Baccharis sp.					
Bacopa caroliniana					
Bacopa monnieri					
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica					
Brasenia schreberi					
Cabomba caroliniana					
Casuarina equisitifolia					
Centella asiatica					
Cephalanthus occidentalis					
Ceratophyllum demersum					
Chara sp.					
Cladium jamaicense					
Cliftonia monophylla					
Colocasia esculenta					
*Commelina					
Crinum americanum					
***Cyperus alternifolius** (C. involucratus)					
Cyperus articulatus					
Cyperus haspan					
*Cyperus lecontei					
*Cyperus polystachyos					
*Cyperus odoratus	X	X	X	X	
*Cyperus surinamensis					
Cyrilla racemiflora					
Decodon verticillatus					
Diodia virginiana					
*Echinochloa crus-galli					
*Echinochloa muricatum					
Echinochloa walteri					
Eclipta prostrata (E. alba)					
Egeria densa					
Eichhornia crassipes					
*Eleocharis baldwinii	D	X	X	X	
*Eleocharis viviparo	D	D	D	D	
Eleocharis cellulosa					
Eleocharis equisetoides					
Eleocharis interstincta					
*Eriocaulon compressum					
*Eriocaulon decangulare					
Eupatorium capillifolium	X	X	X	X	
*Fuirena					
Fuirena scirpoidea					
Gordonia lasianthus					

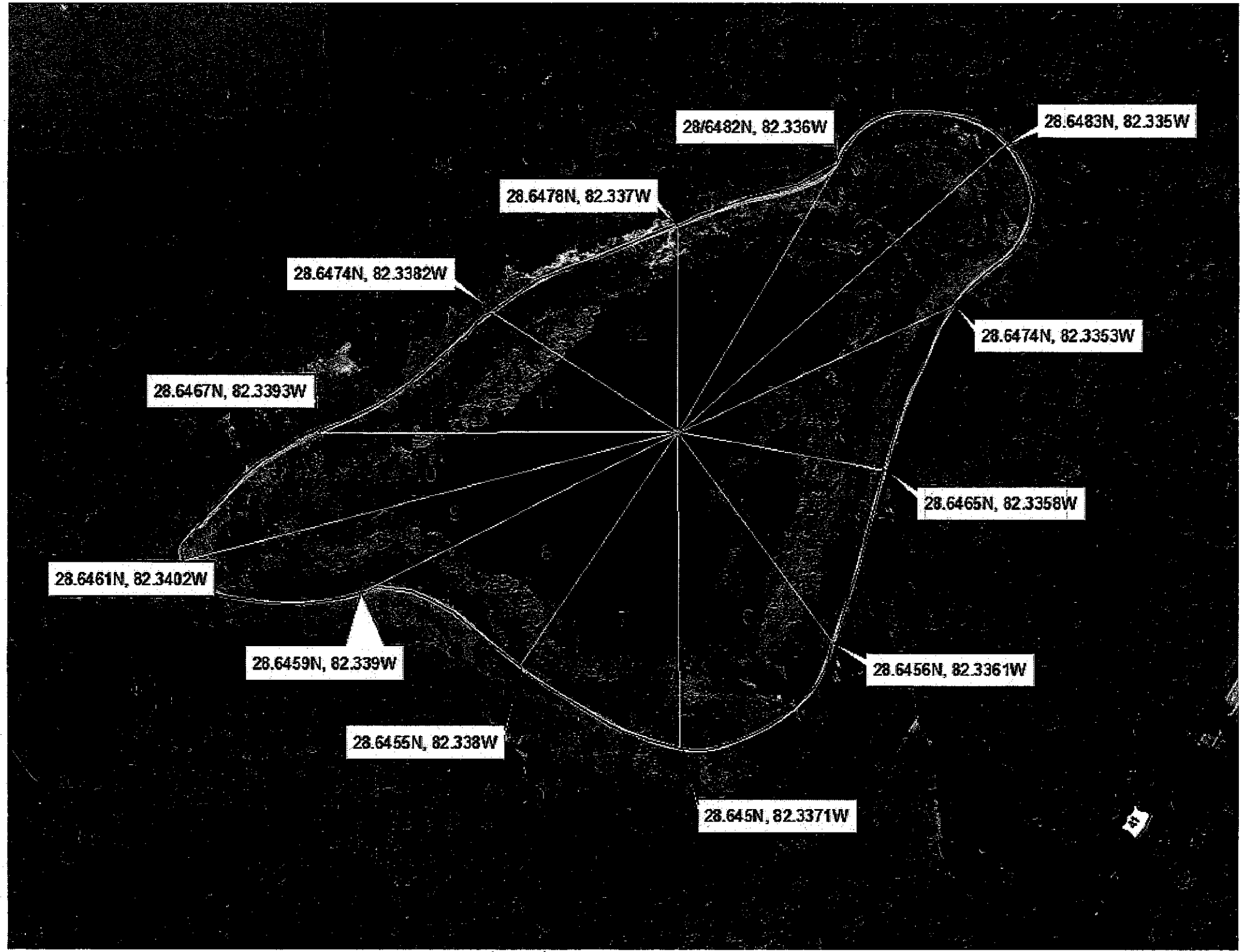
SPECIES	3	6	9	12	Collected? (√)
Habenaria repens					
Hydrilla verticillata					
Hydrocotyle sp.	X	X	X	X	
Hygrophila polysperma					
*Hypericum fasciculatum					
*Hypericum hypericoides					
*Hypericum myrtifolium					
Ilex cassine					
Ipomoea aquatica					
Ipomoea sagittata					
Itea virginica					
Juncus effusus					
*Juncus marginatus					
*Juncus megacephalus					
Juncus repens					
*Juncus scirpoides					
Lachnanthes caroliniana					
Leersia hexandra					
Landoltia punctata (Spirodela punctata)					
Lemna sp.	X	X	X		
Leucothoe racemosa (Eubotrys racemosa)					
Limnobium spongia					
Limnophila sessiliflora					
Liquidamber styraciflua					
*Ludwigia arcuata	X	X	X		
*Ludwigia leptocarpa					
*Ludwigia linearis					
*Ludwigia octovalvis					
***Ludwigia peruviana**					
*Ludwigia repens					
*Ludwigia					
Luziola fluitans (Hydrochloa carolinensis)	X		X		✓
Lyonia lucida					
Magnolia virginiana					
Mayaca fluviatilis					
Melaleuca quinquenervia					
Micranthemum glomeratum					
Micranthemum umbrosum					
Mikania scandens					
Mimosa pigra					
Myrica cerifera					
Single Sub. Leaf Sag. filiformis	X				✓
"Fern" P. urinaria	X	X	X	X	✓
Cyperus esculentus			X		✓

Site: Lake McKethan

Date: 06/13/2017

SPECIES	3	6	9	12	Collected? (√)
Myriophyllum aquaticum					
*Myriophyllum heterophyllum					
*Myriophyllum laxum					
*Myriophyllum pinnatum					
Myriophyllum spicatum					
*Najas filifolia					
*Najas guadalupensis					
*Najas minor					
Nelumbo lutea	X	X	X		
Nitella spp.					
Nuphar sp.					
Nymphaea odorata					
Nymphoides aquatica					
Nyssa sylvatica var. biflora					
Orontium aquaticum					
Osmunda cinnamomea					
Osmunda regalis					
Panicum hemitomon		X	X	X	
Panicum repens					
Paspalidium geminatum					
*Paspalum repens					
Paspalum urvillei					
Peltandra sp.					
Persea sp.					
Pennisetum purpureum					
Phragmites australis					
Pinus elliottii					
Pistia stratioides					
Pluchea sp.					
*Polygonum glabrum (densiflorum)					
*Polygonum hydropiperoides					
*Polygonum punctatum					
*Polygonum					
Pontederia cordata					
*Potamogeton diversifolius					
*Potamogeton illinoensis					
*Potamogeton pusillus					
*Potamogeton pectinatus (Stuckenia pectinatus)					
Proserpinaca pectinata					
*Rhexia					
*Rhynchospora corniculata					
*Rhynchospora inundata					
Rhynochospora tracyi					
Ricciocarpus natans					
Sabal palmetto					
Sacciolepis striata					
*Sagittaria filiformis	X	X	X	X	
*Sagittaria graminea	X	X		X	Nc
*Sagittaria isoetiformis					
Sagittaria lancifolia					
Sagittaria latifolia					

SPECIES	3	6	9	12	Collected? (√)
Salix caroliniana					
Salvinia minima					
Sambucus canadensis					
Sapium sebiferum					
Saururus cernuus					
Schinus terebinthifolius					
*Schoenoplectus californicus					
*Schoenoplectus pungens					
*Schoenoplectus tabernaemontani (Scirpus validus)					
Scirpus cubensis (Oxycaryon cubense)	X	X	X		
Scirpus cyperinus					
*Sesbania					
Solidago sp.					
Sparganium americanum					
Spartina bakeri					
Spirodela polyrhiza					
Taxodium sp.					
Thalia geniculata					
Thelypteris palustris					
Triadenum virginicum					
Typha sp.					
Urochloa mutica (Brachiaria mutica)	X	X	X		
*Utricularia gibba (U. biflora)					
*Utricularia floridana					
*Utricularia foliosa					
*Utricularia inflata					
*Utricularia purpurea					
*Utricularia cornuta					
*Utricularia radiata					
Vallisneria americana					
*Websteria confervoides					
Wedelia trilobata (Sphagneticola trilobata)					
Wolffiella spp.					
Woodwardia virginica					
Xyris sp.					
Zizania aquatica					
Zizaniopsis milacea					
Paspalum distichum	X	X			
Cyperus haspan?		X	X	X	✓
Cyperus (furina type) retrorsus		X	X		✓
Phyllanthus urinaria	X	X	X	X	✓


28/6482N, 82.336W
28.6483N, 82.335W
28.6478N, 82.337W
28.6474N, 82.3382W
28.6474N, 82.3353W
28.6467N, 82.3393W
28.6465N, 82.3358W
28.6461N, 82.3402W
28.6459N, 82.339W
28.6456N, 82.3361W
28.6455N, 82.338W
28.645N, 82.3371W

MCMEEKIAN

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: TPMCTHNOIL MACROPHYTE ID: N/A LATITUDE:
COUNTY: Hernando STORET #: TPMCTHNOIL LONGITUDE:
DATE: 6-13-17 TIME: 1115 SAMPLING AGENCY: FDEP
SITE NAME: Lake McKethan WBID: 1371A
FIELD ID/NAME: TPMCTHNOIL LAKE SIZE: Small RQ: 2017-06-12-25

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS): picnic area

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
98							2

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)
LDI:
Land Use Source & Year:

Local Watershed Erosion (select one) : ☒ None ☐ Slight ☐ Moderate ☐ Heavy
Local Watershed NPS Pollution : ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy
Artificially Impounded ☐ Yes ☒ No

STORMWATER INPUTS 19	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation	Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place	Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place	Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place
	20 (19) 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
LAKESIDE ALTERATIONS 19	Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected)	Moderate disturbance visible - structures, roads or other (10%-49% lakeside affected)	Many structures, roads or other human disturbance visible (50%-70% lakeside affected)	Highly developed or disturbed (>70% of lakeside affected)
	20 (19) 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
BUFFER ZONE 20	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer	89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer	50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer	< 29% of shoreline with >18m buffer
	(20) 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1

WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

Water:
Nutrient Sample Taken? ☒ Yes ☐ No Preserved? ☒ Yes ☒ pH<2 ☐ No (H_2SO_4)
Color Sample Taken? ☒ Yes ☐ No Lot # 16302030 Exp. Date: 10/17
Alkalinity Sample Taken? ☒ Yes ☐ No 5259030 09/16 (HNO3)
Water Level ☒ Low ☐ Normal ☐ High

Water Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Other
Water Surface Oils: ☐ None ☒ Sheen/Slick ☐ Glob ☐ Other

Meter Readings:	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat. (%)	Cond. (UMHO/CM)	Salinity (PPT)
Top:	0.3	28.4	6.4	7.3	95	29	0.01
Mid-Depth:							
Bottom :							

Meter ID: Weeze

Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid
Color: ☒ Clear ☐ Tannic ☐ Green
SECCHI (M) 0.8
VOB ☒
Total Station Depth (M) 0.8

Sediment Type: (may check more than one) Sample Taken? ☐ Yes ☐ No
☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☐ Vegetated
☐ Sand/Silt ☒ Organic smooth (muck) ☐ Other (Specify):

Sediment Odors: ☒ Normal ☐ Other (Specify): ☐ Anaerobic

Biological Communities:
LVI Conducted? ☒ Yes ☐ No
Phytoplankton Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☒ No
Lot #: Exp Date:
Algal Bloom/Algal ID Sample Taken? Yes (No)
Active Vegetation Mgmt? ☐ Yes ☒ No ☐ Don't Know

Abundance:

	Absent	Rare	Common	Abundant
Periphyton	☒	☐	☐	☐
Nuisance Plants	☐	☒	☐	☐
Submersed Plants	☐	☐	☐	☒
Exotic Apple Snails	☒	☐	☐	☐

Additional Notes:
Green algae on west side of lake. ~~ON~~ (b) Sheen also contained on west side. Water clear, difficult to filter.

Weather Conditions :
Overcast, 90's

SAMPLING TEAM: S. Meyer, L. Bachler **SIGNATURE:** Sarah Meyer Laurie Bachler **DATE:** 6-13-17

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

Lake Habitat Assessment Field Sheet

STORET STATION NUMBER: TPMCTHNOIL	DATE (M/D/Y): 6-13-17	LAKE NAME: Lake McKethan	FIELD ID / NAME: TPMCTHNOIL
ECO-REGION:	COUNTY: Hernando	SAMPLING LOCATION/DESCRIPTION: Center of lake	LAKE SIZE: Small

PARAMETER	Optimal	Suboptimal	Marginal	Poor
Hydrology	No surface inflow or outflow present, very long water residence time, groundwater seepage dominates [X]	Surface water inflow present, but flow is rare, moderate to long water residence time [ ]	Surface water inflow and outflow present (or outflow only), sometimes with visible flow, short water residence time [ ]	Impounded, hydrology of system artificially controlled [ ]
Color	Very clear, uncolored water (benthic sampling appropriate) [X]	Water somewhat tannin stained (benthic sampling appropriate) [ ]	Dark, discolored water (water color 20 PCU or higher) [ ]	Visibility extremely reduced due to high color [ ]
Secchi 20	Secchi >3 m / Or VOB: **(20)** 19 18 17 16	Secchi(m): 3 2.6 2.2 1.8 1.4 / 15 14 13 12 11	1.0 0.9 0.8 0.7 0.6 / 10 9 8 7 6	0.5 0.4 0.3 0.2 0.1 / 5 4 3 2 1
Vegetation Quality 18	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa	Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants	Large masses (21%- 40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth, cattail, etc.) or algal mats	Lake choked (>40%) with nuisance macrophytes (duck-weed, hyacinth, etc.) or algal mats, or few plants present at all (e.g., plants removed)
	20 19 **(18)** 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Stormwater Inputs 19 ~~20~~ 16	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation	Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place	Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place	Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place
	~~20~~ 16 **(19)** 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bottom Substrate Quality 14	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present	Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present	Moderate layer of CPOM/ mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom	Thick deposits of CPOM, or fine detritus and anaerobic muck/mud/silt, or algal growth or nuisance plants (Hydrilla) cover bottom
	20 19 18 17 16	15 **(14)** 13 12 11	10 9 8 7 6	5 4 3 2 1
Lakeside Adverse Human Alternations 19	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%)	Moderate disturbance visible (structures, roads or other), 10%-49% lakeside affected	Many structures, roads or other human disturbance visible (50%-70%) lakeside affected)	Highly developed or disturbed (>70% of lakeside affected)
	20 **(19)** 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Upland Buffer Zone 20	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer	89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer	50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer	< 29% of shoreline with >18m buffer
	(20) 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Adverse Watershed Land Use 19	Score the potential effects from adverse human land uses, based on a continuum of amount and type, with least to most adverse as follows: Native vegetation, Silviculture, Pasture or Citrus, Low Density Residential, Row Crops, Commercial, High Density Residential, Urban, Industrial			
	20 **(19)** 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1

TOTAL SCORE: 129	COMMENTS:

ANALYSIS DATE: 6-13-17	ANALYST: L. Bachlen S. Meyer	SIGNATURE: Laura Bachlen Sarah Meyer