

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID:

R200SS

RQ:

Na

Project:

Stahs LVI

Notes: (1) Always wait for meter to stabilize before recording any readings.

(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).

(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro- meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	J Purnish	6/4/19	728	22.1	757	8.5	8.5	99.6	—	—	P/F	L/F
ICV	J	6/4/19	730	22.2	757	8.5	8.5	99.6	—	—	P/F	L/F
CCV	B. Davis	6/4/19	1220	25.1	757	8.2	8.22	99.7	/	/	P/F	L/F
CCV											P/F	L/F

DO Acceptance criteria from Table ± 0.3 mg/L.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard μ hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.	J Purnish	6/4/19	732	190430A	5/20	1000	1000	P/F	L/F
ICV	J	6/4/19	735	147430	12/19	147	152	P/F	L/F
CCV	B. Davis	6/4/19	1221	190430A	5/20	1000	1002	P/F	L/F
CCV								P/F	L/F

Conductivity Acceptance criteria $\pm 5\%$

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	J Purnish	6/4/19	735	294461	11/20	7.01	23.4	7.01	58	P/F	L/F
Calibr.	J	6/4/19	740	2904800	3/21	4.00	24.5	4.00	123	P/F	L/F
Calibr.	J	6/4/19	743	2901351	7/20	10.01	24.5	10.01	229	P/F	L/F
ICV	J	6/4/19	745	2904800	3/21	4.0	24.5	4.02	120	P/F	L/F
CCV	B. Davis	6/4/19	1225	2811E61	9/20	7.0	24.2	7.14	65	P/F	L/F
CCV										P/F	L/F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 $\pm$ 50;

mV pH 4 Range +180 $\pm$ 50;

mV pH 10 Range -180 $\pm$ 50;

If mV are recorded: slope from 7 to 10 _____, slope from 4 to 7 _____ (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? YES / NO / NA (not surf. water project)

If YES, complete daily Calibr. & ICV below and list date of last quarterly depth verification: _____

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air						P/F	L/F

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or ± 0.05 m, whichever is greater.

COMMENTS:

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ MACROPHYTE ID: _____ LATITUDE: 29 37 00.16
 COUNTY: Pennam STORET #: _____ LONGITUDE: 81 42 21.57
 DATE: 6/4/19 TIME: 1045 SAMPLING AGENCY: _____
 SITE NAME: Mud Lake 23-LL-13015 WBID: _____
 FIELD ID/NAME: _____ LAKE SIZE: _____ RQ: _____

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS) :										LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)											
Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)														
☐	☐	☐	☐	☐	☐	☐	☐														
Local Watershed Erosion (select one) : ☐ None ☒ Slight ☐ Moderate ☐ Heavy						Artificially Impounded				Land Use Source & Year:											
Local Watershed NPS Pollution : ☐ No evidence ☒ Slight ☐ Moderate ☐ Heavy						☐ Yes ☐ No															
STORMWATER INPUTS		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							
<u>12</u>		20	19	18	17	16	15	14	13	<u>12</u>	11	10	9	8	7	6	5	4	3	2	1
LAKESIDE ALTERATIONS		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)							
<u>15</u>		20	19	18	17	16	15	14	<u>13</u>	12	11	10	9	8	7	6	5	4	3	2	1
BUFFER ZONE		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							
<u>14</u>		20	19	18	17	16	15	<u>14</u>	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 Color Sample Taken? ☐ Yes ☒ No Lot # _____ Exp. Date: _____ Alkalinity Sample Taken? ☐ Yes ☒ No Water Level ☐ Low ☐ Normal ☐ High								Water Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Other _____							
Meter Readings: Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat. (%) Cond. (UMHO/CM) Salinity (PPT) Top: <u>0.3</u> <u>29.7</u> <u>6.09</u> <u>4.7</u> <u>61.7</u> <u>137</u> <u>0.06</u> Mid-Depth: _____ Bottom: <u>3.5</u> <u>16.7</u> <u>6.08</u> <u>0.2</u> <u>2.2</u> <u>147</u> <u>0.07</u>								Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____							
Meter ID: _____								Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid							
Sediment Type: (may check more than one) ☐ 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 ☒ ☐ ☐ ☐							
Weather Conditions :								Additional Notes: STATUS LVI mowing in section 6 & 7							
SAMPLING TEAM: <u>Grant B Davis</u>								SIGNATURE: _____							
DATE: <u>6/4/19</u>															

DEP Form FD 9000-6: Lake Habitat Assessment Field Sheet

STORET STATION NUMBER:	DATE (M/D/Y): <u>6/4/19</u>	LAKE NAME: <u>Mud Lake 23-11-1301</u>	FIELD ID / NAME:
ECO-REGION:	COUNTY: <u>Pulaski</u>	SAMPLING LOCATION/DESCRIPTION:	LAKE SIZE:
PARAMETER	No surface inflow or outflow present, very long water residence time, groundwater seepage dominates ☐	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 ☒
HYDROLOGY			Impounded, hydrology of system artificially controlled ☐
Color	Very clear, uncolored water (benthic sampling appropriate) ☐	Water somewhat tannin stained (benthic sampling appropriate) ☐	Dark, discolored water (water color 20 PCU or higher) ☒
	Optimal	Suboptimal	Marginal
Secchi	Secchi >3 m Or VOB	Secchi(m)	Secchi(m)
<u>9</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6
Vegetation Quality	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa <u>12</u>	Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants <u>12</u>	Large masses (21%-40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth, cattail, etc.) or algal mats <u>12</u>
Stormwater Inputs	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation <u>12</u>	Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place <u>12</u>	Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place <u>12</u>
Bottom Substrate Quality	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present <u>12</u>	Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present <u>12</u>	Moderate layer of CPOM/mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom <u>12</u>
Lakeside Adverse Human Alterations	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%) <u>13</u>	Moderate disturbance visible (structures, roads or other), 10%-49% lakeside affected <u>13</u>	Many structures, roads or other human disturbance visible (50%-70%) lakeside affected <u>13</u>
Upland Buffer Zone	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer <u>14</u>	89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer <u>14</u>	50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer <u>14</u>
Adverse Watershed Land Use	Score the potential effects from adverse watershed 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 <u>13</u>		
TOTAL SCORE	<u>86</u>	COMMENTS:	

ANALYSIS DATE: <u>6/4/19</u>	ANALYST: <u>Jerry Parish</u>	SIGNATURE: <u>Jerry Parish</u>
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Waterbody: <u>Mud Lake 23-11-13015</u>		County: <u>Putnam Co.</u>		Date: <u>6/4/11</u>							
Analyst: <u>Janey Parnell</u>		Signature: <u>Janey Parnell</u>		STORET:							
Except where noted as "sp." species level identification required. *Genera that may require lab verification"				Lake units sampled (circle one group):							
Plants in bold = FLEPPC invasive exotic.				1, 4, 7, 10 2, 5, 8, 11							
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.				3, 6, 9, 12							
SPECIES	1	4	7	10	Collected? (Y)	SPECIES	1	4	7	10	Collected? (Y)
<i>Acer rubrum</i>	P	P		P		<i>Habenaria repens</i>					
<i>Alternanthera philoxeroides</i>	P	P		P		<i>Hydrilla verticillata</i>					
<i>Andropogon</i> sp.						<i>Hydrocotyle</i> sp.					
<i>Azolla filiculoides</i> (<i>A. caroliniana</i>)						<i>Hygrophila polysperma</i>					
<i>Baccharis</i> sp.						* <i>Hypericum fasciculatum</i>					
<i>Bacopa caroliniana</i>				P		* <i>Hypericum hypericoides</i>					
<i>Bacopa monnieri</i>						* <i>Hypericum myrtifolium</i>					
<i>Bidens laevis</i>						<i>Ilex cassine</i>					
<i>Bidens mitis</i>						<i>Ipomoea aquatica</i>					
<i>Blechnum serrulatum</i>						<i>Ipomoea sagittata</i>					
<i>Boehmeria cylindrica</i>						<i>Itea virginica</i>					
<i>Brasenia schreberi</i>						<i>Juncus effusus</i>					
<i>Cabomba caroliniana</i>						* <i>Juncus marginatus</i>					
<i>Casuarina equisetifolia</i>						* <i>Juncus megacephalus</i>					
<i>Centella asiatica</i>						<i>Juncus repens</i>					
<i>Cephalanthus occidentalis</i>	P	P		P		* <i>Juncus scirpoides</i>					
<i>Ceratophyllum demersum</i>	P	P		P		<i>Lachnanthes caroliniana</i>					
<i>Chara</i> sp.	P					<i>Leersia hexandra</i>					
<i>Cladium jamaicense</i>	P					<i>Landoltia punctata</i> (<i>Spirodela punctata</i>)					
<i>Cliftonia monophylla</i>						<i>Lemna</i> sp.					
<i>Colocasia esculenta</i>						<i>Leucothoe racemosa</i> (<i>Eubotrys racemosa</i>)					
* <i>Commelina</i>						<i>Limnium spongia</i>					
<i>Crinum americanum</i>						<i>Limnophila sessiliflora</i>					
* <i>Cyperus alternifolius</i> (<i>C. involucratus</i>)						<i>Liquidambar styraciflua</i>					
<i>Cyperus articulatus</i>						* <i>Ludwigia arcuata</i>					
<i>Cyperus haspan</i>						* <i>Ludwigia leptocarpa</i>					
* <i>Cyperus lecontei</i>						* <i>Ludwigia linearis</i>					
* <i>Cyperus polystachyos</i>						* <i>Ludwigia octovalvis</i>					
* <i>Cyperus odoratus</i>						* <i>Ludwigia peruviana</i>					
* <i>Cyperus surinamensis</i>						* <i>Ludwigia repens</i>					
<i>Cyrilla racemiflora</i>						* <i>Ludwigia</i>					
<i>Decodon verticillatus</i>						<i>Luziola fluitans</i> (<i>Hydrochloa carolinensis</i>)					
<i>Diodia virginiana</i>						<i>Lyonia lucida</i>					
* <i>Echinochloa crus-galli</i>						<i>Magnolia virginiana</i>					
* <i>Echinochloa muricatum</i>						<i>Mayaca fluviatilis</i>					
<i>Echinochloa walteri</i>						<i>Melaleuca quinquenervia</i>					
<i>Eclipta prostrata</i> (<i>E. alba</i>)						<i>Micranthemum glomeratum</i>					
<i>Egeria densa</i>						<i>Micranthemum umbrosum</i>					
<i>Eichhornia crassipes</i>						<i>Mikania scandens</i>					
* <i>Eleocharis baldwinii</i>						<i>Mimosa pigra</i>					

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site:					Date: 6/4/16				
SPECIES				Collected? (✓)	SPECIES				Collected? (✓)
Myriophyllum aquaticum					Salix caroliniana				
*Myriophyllum heterophyllum					Salvinia minima				
*Myriophyllum laxum					Sambucus canadensis				
*Myriophyllum pinnatum					Sagittaria arifolia				
Myriophyllum spicatum					Saururus cernuus				
*Najas filifolia					Schinus terebinthifolius				
*Najas guadalupensis					*Schoenoplectus californicus				
*Najas minor					*Schoenoplectus pungens				
Nelumbo lutea					*Schoenoplectus tabernaemontani (Scirpus validus)				
Nitella spp.					Scirpus cubensis (Oxycaryon cubense)				
Nuphar sp.					Scirpus cyperinus				
Nymphaea odorata					*Sesbania				
Nymphoides aquatica					Solidago sp.				
Nyssa sylvatica var. biflora					Sparganium americanum				
Orontium aquaticum					Spartina bakeri				
Osmunda cinnamomea					Spirodela polyrrhiza				
Osmunda regalis					Taxodium sp.				
Panicum hemitomon					Thalia geniculata				
Panicum repens					Thelypteris palustris				
Paspalum geminatum					Triadenum virginicum				
*Paspalum repens					Typha sp.				
Paspalum urvillei					Urochloa mutica (Brachiaria mutica)				
Peltandra sp.					*Utricularia gibba (U. biflora)				
Persea sp.					*Utricularia floridana				
Pennisetum purpureum					*Utricularia foliosa				
Phragmites australis					*Utricularia inflata				
Pinus elliotii					*Utricularia purpurea				
Pistia stratioides					*Utricularia cornuta				
Pluchea sp.					*Utricularia radiata				
*Polygonum glabrum (densiflorum)					Vallisneria americana				
*Polygonum hydropiperoides					*Websteria confervoides				
*Polygonum punctatum					Wedelia trilobata (Sphagneticola trilobata)				
*Polygonum					Wolffiella spp.				
Pontederia cordata					Woodwardia virginica				
*Potamogeton diversifolius					Xyris sp.				
*Potamogeton illinoensis					Zizania aquatica				
*Potamogeton pusillus					Zizaniopsis milacea				
*Potamogeton pectinatus (Stuckenia pectinatus)									
Proserpinaca pectinata									
*Rhexia									
*Rhynchospora corniculata									
*Rhynchospora inundata									
Rhynchospora tracyi									
Ricciocarpus natans									
Sabal palmetto									
Sacciolepis striata									
*Sagittaria filiformis									
*Sagittaria graminea									
*Sagittaria isoetifoliosa									
Sagittaria lancifolia									
Sagittaria latifolia									

Mud Lake ZB-LL-13015

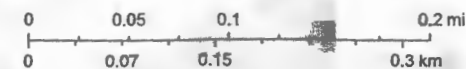


June 3, 2019

STORET Stations

- | | | | |
|------------|----------------|-----------|-----------|
| ● Lake | ● Spring | ● Other | □ Group 3 |
| ● Canal | ● Ocean | ● Well | □ Group 4 |
| ● Estuary | ● River/Stream | ● Wetland | □ Group 5 |
| ● Facility | | | |
- Waterbody IDs (WBIDs)
- Group 1
- Group 2

1:4,514



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**DEP TIER 1
STATUS NETWORK SITE CHARACTERIZATION**

Stream/Water Body Name: **Mud Lake**

Site ID	Latitude	Longitude	Type of Recon	Date of Recon
Z3-LL-13015			Site Visit	2/25/2019

Return Recon #1 _____

Return Recon #2 _____

Return Recon #3 _____

Resource Type	Secondary Resource Type
Large Lake	No 2nd Type
Desk Recon: 12/13/2018 By: Nate Gargas	Letter Sent:
Recon Team: Ken Riddick, Nate Gargas	

Site Location Address & Contact Information	Property Owner's Address
_____	_____
_____	_____
_____	_____
_____	_____
Data Requested:	County: Putnam

Tidal Info: _____

Access and Permission
YES-VERBAL PERMISSION

Reason for Exclusion

Recon Result
For Site:
Z3-LL-13015

INCLUDE

ADDITIONAL NOTES

Additional Items: Jon Boat w/Trolling Motor

canoe w/ trolling

DIRECTIONS:

From the District Take 100 E go ~0.2 miles, turn right onto N Moody Rd go ~1.7 miles, turn right onto FL-19 S go ~2.5 miles, turn left onto Karen Ln go ~300 ft, turn right onto Karen Ct go ~0.3 miles. Home of launch point is 144 Karen Ct Palatka FL 32177. Owner does not want us to drive across the grass so park at house either in drive or in road. Let home owner know your there carry jon boat to lake launch and navigate to site.

FILES GENERATED:
(i.e. digital photos, GPS, etc.)

PHOTOS

GWIS Generalized Water Information System Database Utilities

Recon Tracking

Existing Station

New SW Station

New GW Station

PK RANDOM SAMPLE LOCATION = Z3-LL-13015

County	PUTNAM	Quarter Quad	
WMD	ST. JOHNS RIVER WMD	HUC	LOWER ST. JOHNS
Random Latitude	29° 37m 00.16686s	Random Longitude	81° 42m 21.5762s

Is Z3-LL-13015 sampleable?

☐ Yes ☐ No ☒ N/A

Exclusion Category:

Exclusion Criteria:(definitions):

Was Z3-LL-13015 sampled?

☐ Yes

Month Day Year

Comments:

Save

Reset

☒ Aerial Photo ☐ Quad Map ☐ No Image

Show Map



Google Earth

feet
meters

1000
300





Google Earth

feet
km

3000

1

