



FLORIDA STATE UNIVERSITY
Utilities and Engineering Services

WELL MANAGEMENT PROGRAM

Last revision: October 2020

I. Contents

I.	Contents.....	2
II.	Acronyms	3
III.	Purpose	3
IV.	Scope.....	3
V.	Key Personnel and Responsibilities.....	3
A.	Utilities and Engineering Services (UES)	3
B.	Maintenance Technicians (Central Utilities Maintenance team, Pipe Shop staff or contracted vendors)	3
VI.	Water Use Regulatory Permitting.....	4
VII.	Ground Water Conservation.....	4
A.	System Design	4
B.	Maintenance	4
C.	Rain-sensing equipment	4
VIII.	Maintenance	5
A.	Main Campus Wells	5
B.	National High Magnetic Lab.....	5
C.	FSU Golf Course	5
IX.	Data Management	5
A.	Mapping	5
X.	Appendixes.....	6
A.	File Paths	6
B.	Quarterly Preventative Maintenance Checkpoints in AIM	7
C.	Definition used in AIM well profiles.....	8

II. ACRONYMS

NWFWMD Northwest Florida Water Management District

AIM Asset Works; Integrated workplace management system for FSU Facilities and Maintenance.

WO Work Order, placed through AIM system against an asset

GIS geographic information system

COT City of Tallahassee

BCA Building Code Administration, FSU

UES Utilities and Engineering Services, FSU

III. PURPOSE

The purpose of FSU's Well Management Program is to promote ground water conservation and ensure satisfactory operation of groundwater wells while meeting regulatory compliance requirements. This is achieved through preventative maintenance of well systems, meeting related water use permit requirements, implementing water conservation strategies, and active management of well information in AIM.

IV. SCOPE

This program includes existing wells supplying ground water to the University's cooling system and for research purposes on the main campus, wells supplying ground water to the MagLab's cooling system and wells supplying groundwater for irrigation purposes to the FSU Golf Course. Included is maintenance and recordkeeping for the wells and permitting management (for new well construction and abandonment, and permit compliance for related water-use permits).

This program does not include Florida Department of Environmental Protection ground water monitoring wells.

V. KEY PERSONNEL AND RESPONSIBILITIES

A. Utilities and Engineering Services (UES)

Utilities Maintenance Manager: Maintain schedule and generate work orders for preventative maintenance. Maintain well data information including asset information in AIM.

Utilities Design Engineer: Maintain Well layer on AutoCAD map.

Water Resources Manager: Manages permitting requirements for new well construction and abandoning wells. Manages permitting requirements for related water use permits.

B. Maintenance Technicians (Central Utilities Maintenance team, Pipe Shop staff or contracted vendors)

Perform maintenance and repair work of well systems.

VI. WATER USE REGULATORY PERMITTING

Wells in this program withdraw and return ground water under *Individual Water Use Permits* granted through the Northwest Florida Water Management District.

Permit #	Permit issued to:	Well Locations	Uses
2B-073-117-6 (19840040 legacy number)	Florida State University	Main campus	Heating and Cooling, Research uses
19930026	Seminole Golf Course and FSU Aquatic Center / Florida State University	FSU Golf Course	Golf Course Irrigation and Heat Pump Supply and Return
19930011	National High Magnetic Field Laboratory / Florida State University	MagLab	Heat Pump Supply

VII. GROUND WATER CONSERVATION

In a closed loop system, ground water conservation is improved by focusing on the following areas:

A. System Design

Florida State University main campus systems using ground water are designed to return the ground water safely and efficiently to the aquifer. There is no loss of ground water planned in the design.

B. Maintenance

Well maintained systems perform as designed. By ensuring that piping is in good working order, leaks are virtually eliminated, which reduces ground water needs and prevents losses.

C. Rain-sensing equipment

At the FSU Golf Course rain-sensing equipment and timers are used for the irrigation system to minimize reliance on ground water for irrigation needs.

VIII. MAINTENANCE

The University owns several different well pump systems; therefore, maintenance practices may vary. Service technicians should apply maintenance practices consistent with the make and model of the pump in accordance with manufacturer's recommendations.

A. Main Campus Wells

Inspections and preventative maintenance shall be completed quarterly during the months of January, April, July, October. Each of these months all well PM inspection will be generated and assigned to the Central Utilities maintenance team.

B. National High Magnetic Lab

Inspections and preventative maintenance shall be managed and completed by Mag Lab staff.

C. FSU Golf Course

Inspections and preventative maintenance shall be managed and completed by FSU Golf Course staff.

IX. DATA MANAGEMENT

Wells are to be maintained in the AIM system as ASSETS. The following data is to be collected and kept for all wells: NFWFMD ID number, Well Type, Enclosure Type, Operational Status, Design Gallons per Minute, Original Driller, Related Water Use Permit, Motor Manufacturer, Motor Model Number, Motor Serial Number, Pump Manufacturer, Pump Model Number, Pump Serial Number, Motor Upper Bearing Lubricant, Motor Lower Bearing Lubricant, Pump Lubricant

Each well will have an AIM QR code sticker adhered to the enclosure. Abandoned wells do not require an AIM QR sticker.

A. Mapping

An AutoCAD map of the well systems shall be maintained to facilitate location of the wells. AutoCAD maps will include Main Campus. UES Design Engineer shall maintain the AutoCAD maps and update as needed.

X. APPENDIXES

A. File Paths

AutoCAD map

\\fac-

nas.facilities.fsu.edu\Information_Center\Utility_Mapping\FSU_Map\Utilities\Working\MECHANICAL_UTILITIES

Program document

\\fac-

nas.facilities.fsu.edu\Shared\Utilities_Engineering_Services\Resource_Management\1WATER\4WELLS

Related Water Use Permits

\\fac-nas.facilities.fsu.edu\Shared\Finance\Utilities_Accounting\Permits\STATE & WATER DISTRICT PERMITS

AiM database: ASSET GROUP = WELL

B. Quarterly Preventative Maintenance Checkpoints in AIM



**Florida State University
Facilities Maintenance Department
Preventative Maintenance Inspection Checklist**

Well Pump Quarterly Inspection

Building/Unit:	Date:	
Manufacturer:	Model:	Serial #:



Check box for completion	Pass	Fail	N/A
Check Pump Packing			
Grease Pump Packing (2 shots)			
Check & Clean Pit or Grass Area (As needed)			
Check Oil Level and Oil Condition			
Check Conditions of Rubber Expansion Joint(s)			
Check Sump Pump Operation			
Check for Any Abnormal Noise or Vibrations			
Check for Any Damage to Wiring, Controls, Breaker, or Connections			
Check GFCI outlets for proper operation			
Check Pump Pre-Lube			
"Booster Wells" Change Filter when pressure access filter exceeds 5 PSI			
"Booster Wells" Enter Current Inlet Pressure			
"Booster Wells" Enter Current Discharge Pressure			
Corrective Maintenance Needed on Unit. "Create a CR Note with Described Issue(s)"			
Comments:			

The above maintenance checklist items have been verified complete:

Technician Representative	Signature	Date

Maintenance Checklist
Well Pump Unit

C. Definition used in AIM well profiles

- AC Well: A Well that is part of the AC cooling system.
- Northwest Florida Water Management District Number (NFWWMDN): number used by the state of Florida to identify the wells
- Permit: Document giving permission by the state for FSU to drill the well*
- Individual Water use permit: permit, granted through FL DEP, giving permission for the stated wells to use a limited amount of water per year*
- FSU Number: number used by the university to identify the well. *most wells have an FSU number and NFWWMDN*
- Active: wells that are, through permit, to be currently used to supply and circulate water through the AC system.
- Standby: wells that are permitted to be in use but are not currently used. The water can be rerouted to include these wells in the events that there needs to be maintenance on other wells or there is a higher demand for well water.
- Abandoned through Permitting Process: wells that are no longer in use, not even being able to be rerouted to be included into the system like standby wells. These wells have been abandoned through a permitting process and have abandonment completion reports.
- Heating & Cooling Supply Well: Well used in the Air Conditioning (AC) system. These wells take in water from aquifer.
- Heating & Cooling Return Well: Well used in the Air Conditioning (AC) system. These wells return water to aquifer. NOTE: return wells do NOT require any PM.
- Irrigation: Well used to supply water for irrigation. These wells are all found on the FSU Golf Course
- Research: wells that take up water for the research buildings
- Wet Well: This well does not have access to the aquifer but instead takes the water from other wells and distributes them to other wells and buildings (the stadium). Also known as Booster Wells.