



Underground Injection Control Program

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Class V Underground Injection Control Wells



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Meeting Purpose

DEP's UIC program works in concert with local programs to ensure that the water going into UIC wells is of an appropriate quality



UIC History

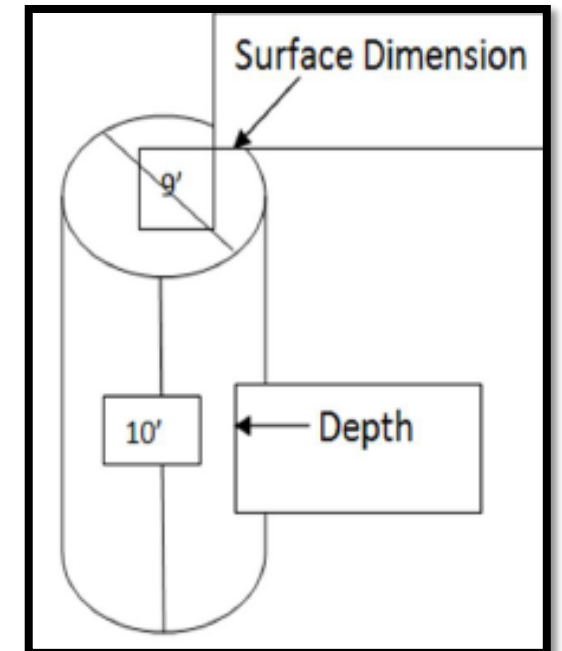
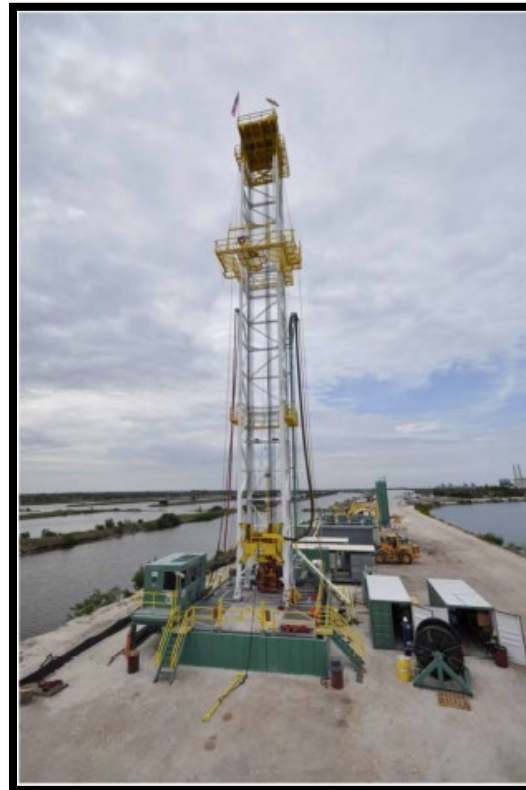
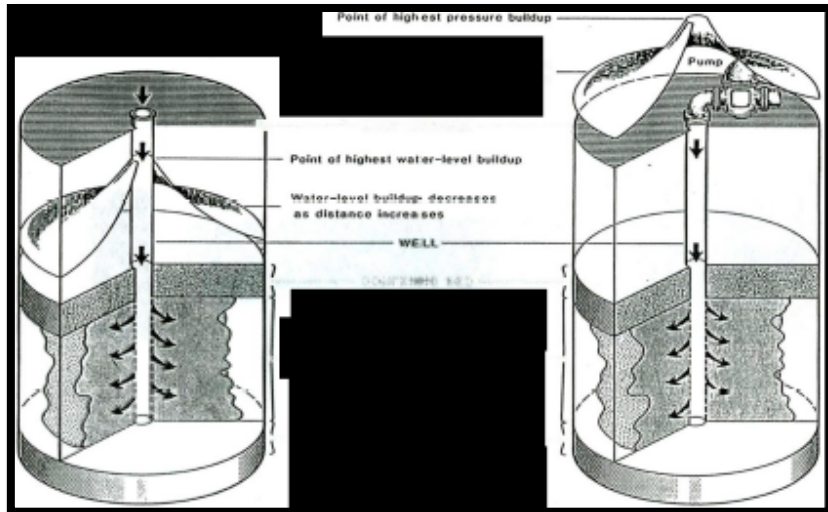
- **UIC is a Federal program started in 1980, and established under the Safe Drinking Water Act, as a means to protect the Underground Source of Drinking Water (USDW).**
- **Implemented by US EPA**
- **The Florida Department of Environmental Protection (FDEP) was granted “primacy” by EPA in 1982 to authorize Class I and Class V well activities.**





What qualifies as a UIC well?

Wells that are deeper than the largest surface dimension, and used as a conduit to send fluids underground





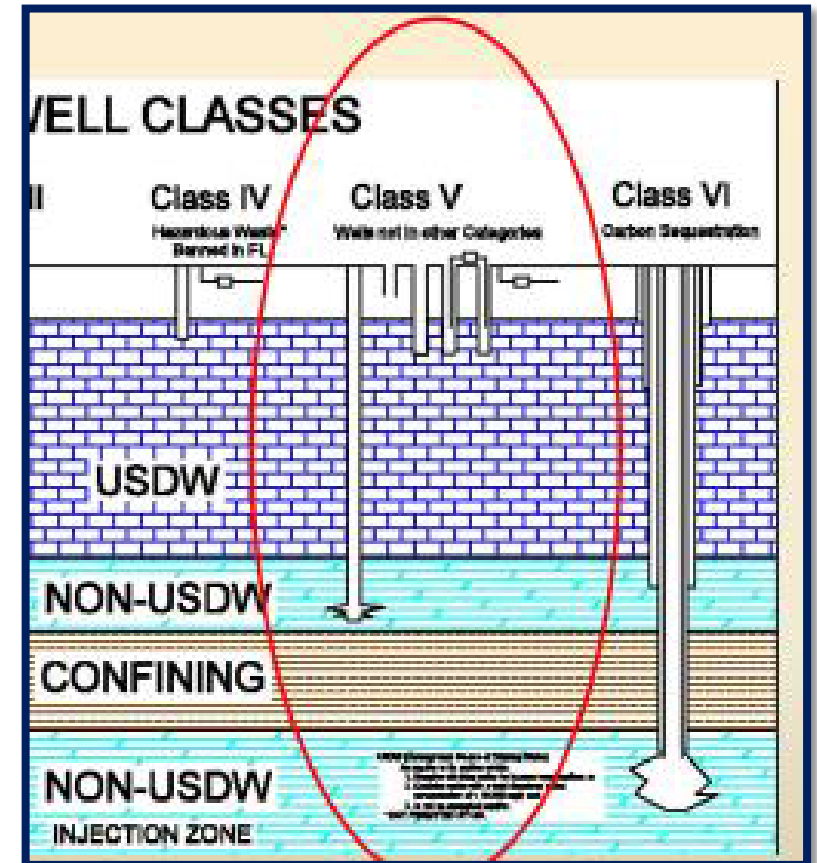
Class V wells

“Catch all” category; not classified otherwise

Inject above, in, or below USDW

Common types:

- A/C condensate return wells
- Stormwater drainage
- Aquifer storage and recovery
- Dewatering disposal
- Swimming pool drainage





Class V Injection Wells

Injection is into Class G-III groundwater, with sufficient impeding rock layers above the open hole injection zone, to prohibit migration to the Class G-II groundwater, or surface waters, and will not disturb or bifurcate a contaminant plume.



Class V Injection Wells

- **Class V wells are used for the storage or disposal of fluids into or below the USDW.**
- **The fluid injected must meet certain criteria as determined by the classification of the receiving aquifer.**
- **Hazardous waste injection is not allowed (e.g. used motor oil)**





DEP Rules – Florida Administrative Code

- Only state rules and applicable 40 CFR sections are applied by DEP.
- 62-528 FAC
- <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-528>
- Class V Group 6 Wells- Stormwater, temporary construction dewatering
- General Permits- AC Closed Loop, Swimming Pool, Drainage





Preparing Submittal Documents

Information should be clear and legible in all forms and reports, and always should include a cover letter referring to Site ID and/or WACS number.



Preparing Submittal Documents

- **Proper signature from owner or other authorized person, and any other parties as indicated on application forms, are necessary for a complete permit application.**
- **An electronic copy of a hardcopy document that has an original signature can constitute an officially signed document.**



Common Application Deficiencies

- Drawings to scale, with proper design features, and orientation of pipes.
- Latitude - Longitude
- If historic well(s) are present at the site:
 - –current use(s) of the well(s)
 - –current condition of the site
 - –Describe efforts made to locate the well(s)
 - –If no longer in use, submit a Plugging and Abandonment Plan per Chapter 62-528, FAC





Permit Fees

- **Only fees published in Florida Administrative Code (F.A.C.) are applicable by DEP.**
- **62-4.050(4)(m) F.A.C. lists fees for UIC permit applications.**



Permit Submittal Email Address

SED_Permitting@floridadep.gov

Note the underscore!



FTP Address

For email submittals with attachments cumulatively larger than 20 MB, please save files to the agency's FTP site:

<ftp://ftp.dep.state.fl.us/pub/incoming/Southeast-District/UIC/>

<ftp://ftp.dep.state.fl.us/pub/incoming/South District Incoming/>



Department of Environmental Protection

Business Portal

<http://www.fldepportal.com/go/>



Department of Environmental Protection

Southeast District Office

3301 Gun Club Road, MSC 7210-1

West Palm Beach, FL 33406

561-681-6600



Stormwater Drainage and Dewatering Disposal Wells



UIC – Florida Administrative Code

- 62-528
 - <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-528>
- 62-520.410 Classification of Groundwater
 - Class G-II **TDS of $\leq 10,000$ mg/l**
 - Class G-III **TDS of $>10,000$ mg/l**
- 62-550 Groundwater Standards, Monitoring, Reporting





Class V Reasonable Assurance

- For reasonable assurance:
 1. Head \leq 8 feet NGVD
 2. Sufficient casing depth (from RAR)
 3. Use a well box (a pre-treatment method i.e. oil/water/grit separator)





Class V Injection Well Permitting

- Gravity drainage stormwater disposal well (head ≤ 8 feet NGVD).
- If pump, passive bypass (not valves, electrical or electronic devices) to limit pressure to ≤ 8.00 feet NGVD on well(s).
- If > 8.00 feet NGVD, may be pressurized.
- Permitting if pressurized:
 - –Monitoring wells & monitoring program in permit
 - –Permit renewal every 5 years





Class V Injection Well Permitting – Reasonable Assurance Report (RAR)

- **RAR defines depth of 10,000 mg/l TDS interface and demonstrates:**
 - – **sufficient rock thickness between interface and planned casing seat depth**
 - – **sufficient impedance to buoyantly driven upward flow into Class G-II groundwater**





Useful Tools

- Two highly useful DEP systems for preliminary assessment of wells and hydrogeologic conditions:
 - –MapDirect (GIS program)
<https://ca.dep.state.fl.us/mapdirect/?focus=uic>
 - –OCULUS (DEP database)
<https://depedms.dep.state.fl.us/Oculus/servlet/search>





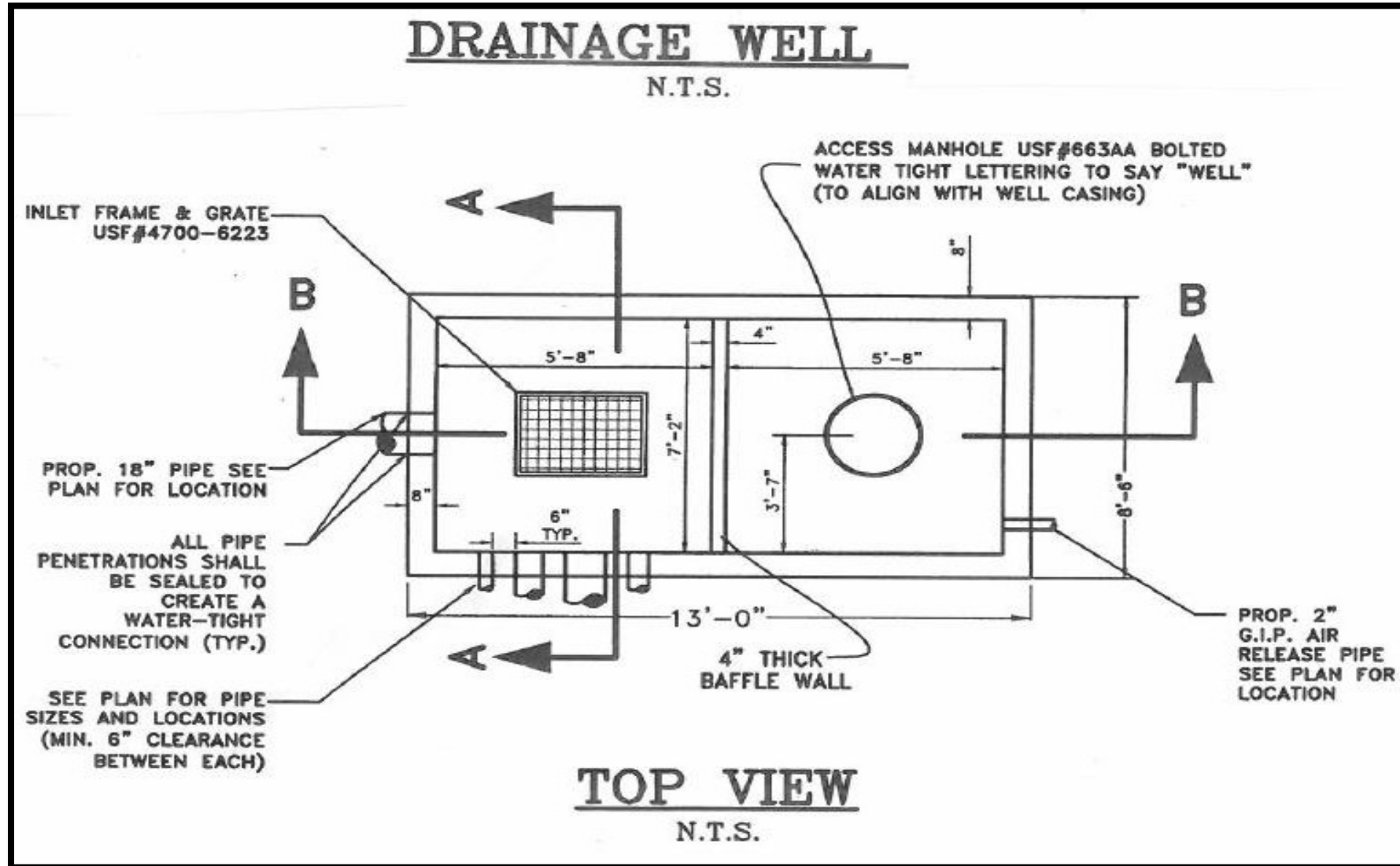
Common Problems with RAR

- TDS delineation/profile with depth - samples collected at discrete depths. TDS sampled from a completed open hole is of less value for the RAR, as it may be influenced by more than one horizon.
- Base of casing \geq 20 ft below base of USDW, with indurated strata between base of USDW & base of casing
- If extrapolating TDS data from nearby site(s), use site(s) not closer to saline water body





Well Box





Common Problems - Engineering Plans

- Watertight manhole cover on well side of box
- Connecting pipes - consistency between views
- All pipes labeled on all sheets
- Clarity
- Well screen (mesh grate) covering well with openings that are ≤ 1.5 -in OC
- If rain water leaders (RWLs), passive design feature(s) limiting head to 8 feet NGVD or terrain elevation





Common Problems - Engineering Plans

- Influent pipes including RWLs entering well box on non-well side
- Distance between bottom of baffle and floor of box ≤ 24 inches
- Include Inspection Report on Class V well(s) and stamped plans from Miami-Dade or Broward
- For dewatering, include 'draft' of dewatering permit (# CLV...) from Miami-Dade





General Permits

**Authorizations to Use and Plugging &
Abandonment Deliverables**



UIC Forms

<https://floridadep.gov/water/aquifer-protection/content/uic-permitting-forms>

- **62-528.900(2) Certification of Plugging Completion Class I, III, or V Well (1)**
- **62-528.900(3) Construction/Clearance Permit Application for Class V Well (4)**
- **62-528.900(4) Certification of Class V Well Construction Completion (1)**
- **62-528.900(6) Application for Class V Well Plugging and Abandonment Permit (2)**
- **62-528.900(7) General Permit Form for Closed-Loop Air Conditioning Return Flow Class V Injection Well (1)**
- **62-528.900(8) Notification to the DEP of Class V Well Ownership (3)**



Non-Major Class V

- **Examples including General Permits:**
 - **Closed-loop heat air conditioning / thermal exchange return flow wells, with no provision for additives (Group 1 – General Permit 62-528.707, F.A.C.)**
 - **Swimming pool drainage wells (Group 9 - General Permit 62- 528.710, F.A.C.)**





Common Deficiencies

Non-Major Class V

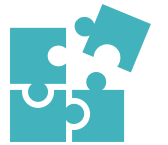
- **Certification of Class V Well Construction Completion / Authorization to Use Letter (AU Letter)**
 - Include well ID (Line 6 Well Location)
 - Indicate Latitude / Longitude are from permit or from survey / revised (Line 8 & Line 9)
 - Drilling Cuttings (no duplicates)
 - Must have approval of local agency to issue AU Letter (i.e., Miami-Dade RER draft CLV)
- **Application for Class V Well Plugging and Abandonment (P&A) Permit**
 - Include Description of Proposed Plugging Plan (i.e., estimated cubic ft. of cement, portion of bottom open with crusted limestone, etc.)
 - Reason for abandonment
 - Owner or Authorized Preventative's signature
 - Include site map with well locations (preferably using MapDirect)



Common Deficiencies

Non-Major Class V

- **Certification of Plugging Completion**
 - **Include Well Completion Report (signed)**
 - **Complete Abandonment (Line 17) and indicate problems during P&A (Explain), i.e. obstruction in the hole**
 - **Indicate No. of Bags of seal material**
 - **Must provide sealed copy surveyor's plot (recorded in the county courthouse property records)**
 - **Include site map with well locations (preferably MapDirect)**





Well Completion Report

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

Southwest
 Northwest
 St. Johns River
 South Florida
 Suwannee River
 DEP
 Delegated Authority (If Applicable)

PLEASE FILL OUT ALL APPLICABLE FIELDS (*Denotes Required Fields Where Applicable)
The water well contractor is responsible for completing this form and forwarding the permit application to the appropriate delegated authority where applicable.

Permit No. _____
 Florida Unique ID _____
 Permit Stipulations Required (See Attached) _____
 62-524 Quad No. _____ Delineation No. _____
 CUP/WUP Application No. _____

ABOVE THIS LINE FOR OFFICIAL USE ONLY

1. *Owner, Legal Name if Corporation _____ *Address _____ *City _____ *State _____ *ZIP _____ Telephone Number _____

2. *Well Location - Address, Road Name or Number, City _____

3. *Parcel ID No. (PIN) or Alternate Key _____ Lot _____ Block _____ Unit _____

4. *Section or Land Grant _____ *Township _____ *Range _____ *County _____ Subdivision _____ Check # 62-524: Yes No

5. *Water Well Contractor _____ *License Number _____ *Telephone Number _____ E-mail Address _____

6. *Water Well Contractor's Address _____ City _____ State _____ ZIP _____

7. *Type of Work: Construction Repair Modification Abandonment _____ *Reason for Repair, Modification, or Abandonment _____

8. *Number of Proposed Wells _____

9. *Specify Intended Use(s) of Well(s):
 Domestic Landscape Irrigation Agricultural Irrigation Site Investigations
 Bottled Water Supply Recreation Area Irrigation Livestock Monitoring
 Public Water Supply (Limited Use/DOH) Nursery Irrigation Test
 Public Water Supply (Community or Non-Community/DEP) Commercial/Industrial Earth-Coupled Geothermal
 Class I Injection Golf Course Irrigation HVAC Supply
 HVAC Return
 Class V Injection: Recharge Commercial/Industrial Disposal Aquifer Storage and Recovery Drainage
 Remediation: Recovery Air Sparge Other (Describe) _____
 Other (Describe) _____

10. *Distance from Septic System if ≤ 200 ft. _____ 11. Facility Description _____ 12. Estimated Start Date _____

13. *Estimated Well Depth _____ ft. *Estimated Casing Depth _____ ft. Primary Casing Diameter _____ in. Open Hole: From _____ To _____ ft.

14. Estimated Screen Interval: From _____ To _____ ft.

15. *Primary Casing Material: Black Steel Galvanized PVC Stainless Steel
 Not Cased Other _____

16. Secondary Casing: Telescope Casing Liner Surface Casing Diameter _____ in.

17. Secondary Casing Material: Black Steel Galvanized PVC Stainless Steel Other _____

18. *Method of Construction, Repair, or Abandonment: Auger Cable Tool Jetted Rotary Sonic
 Combination (Two or More Methods) Hand Driven (Well Point, Sand Point) Hydraulic Point (Direct Push)
 Horizontal Drilling Plugged by Approved Method Other (Describe) _____

19. Proposed Grouting Interval for the Primary, Secondary, and Additional Casing:
 From _____ To _____ Seal Material (Bentonite Neat Cement Other _____)
 From _____ To _____ Seal Material (Bentonite Neat Cement Other _____)
 From _____ To _____ Seal Material (Bentonite Neat Cement Other _____)
 From _____ To _____ Seal Material (Bentonite Neat Cement Other _____)

20. Indicate total number of existing wells on site _____ List number of existing unused wells on site _____

21. *Is this well or any existing well or water withdrawal on the owner's contiguous property covered under a Consumptive Water Use Permit (CUP/WUP) or CUP/WUP Application? Yes No If yes, complete the following: CUP/WUP No. _____ District Well ID No. _____

22. Latitude _____ Longitude _____

23. Data Obtained From: GPS Map Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or certified recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided in this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after completion of the construction, repair, modification, or abandonment authorized by this permit, or the permit expiration, whichever occurs first.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of their responsibilities as stated above. Owner consents to allowing personnel of the WMD or Delegated Authority access to the well site during the construction, repair, modification, or abandonment authorized by this permit.

*Signature of Contractor _____ *License No. _____ *Signature of Owner or Agent _____ *Date _____

BELOW THIS LINE FOR OFFICIAL USE ONLY

Approval Granted By _____ Issue Date _____ Expiration Date _____ Hydrologist Approval _____

Fee Received \$ _____ Receipt No. _____ Check No. _____

THIS PERMIT IS NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD OR DELEGATED AUTHORITY. THE PERMIT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL CONSTRUCTION, REPAIR, MODIFICATION, OR ABANDONMENT ACTIVITIES.

DEP Form: 62-532.900(1) Incorporated in 62-532.400(1), F.A.C. Effective Date: October 7, 2010 Page 1 of 2



Compliance Assurance Program



DEP Compliance Process



Obtain UIC Class V Permit Prior to Constructing Well(s)



Obtain Formal Written Authorization to Use Class V Well Prior to Placing In Service



Obtain Plugging and Abandonment (P&A) Permit Prior to Abandonment of the Well(s)



Compliance Submittal Email Address

SED_Compliance@floridadep.gov

SD_CAP_WPR@floridadep.gov

Note the underscore!



Questions?