



Florida Department of Environmental Protection

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard, Jr.
Secretary

BY ELECTRONIC MAIL: dblanchard@cityofcocoabeach.com

In the Matter of an
Application for Permit by:

Darby Blanchard, Director, CCB Utilities
1600 Minutemen Causeway
Cocoa Beach, FL 32931-0000

Brevard County – UIC
FDEP File No. 05-0224301-002-UC
City of Cocoa Beach Reclaimed Water ASR
Program
Class V ASR Injection Well

NOTICE OF PERMIT ISSUANCE

Enclosed is Permit Number 05-0224301-002 to construct one Class V, Group Seven, Aquifer Storage and Recovery (ASR) injection well system, issued pursuant to Section(s) 403.087, Florida Statutes.

The purpose of the ASR well is to store and recover reclaimed water in the Floridan aquifer in order to meet reclaimed water demands, provided that injection testing is successful.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Vivian F. Garfein
Director, Central District

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this PERMIT and all copies were mailed before the close of business on _____, 2011 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section.120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

Date

VFG/CCF/AKD/dw

Enclosures

Copies furnished to:

Technical Advisory Committee



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PERMIT

PERMITTEE:

Darby Blanchard
Director, CCB Utilities
1600 Minutemen Causeway
Cocoa Beach, Florida 32931-0000

Brevard County – UIC
Permit File Number: 05-0224301-002-UC
Date of Issue: DRAFT
Expiration Date: DRAFT
County: Brevard
Latitude: 28° 18' 55.80" N
Longitude: 80° 38' 4.40" W
City of Cocoa Beach Reclaimed Water ASR
Project
Class V ASR Injection Well

This permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.) and Rules 62-4, 62-520, 62-528 and 62-550 of the Florida Administrative Code. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Construct one Class V Group Seven Aquifer Storage and Recovery (ASR) injection well (TPW-1) system with one storage zone monitoring well (SZMW-1) and one shallow aquifer monitoring well (SMW-1). The basic ASR well design will consist of an 18-inch diameter injection well to a proposed total depth of approximately 1,500 feet and cased to approximately 1,200 feet below land surface (bls). The ASR system will have a maximum storage capacity of approximately 960 MG. The overall objective of this ASR well is to store, in the Floridan aquifer, reclaimed water from City of Cocoa Beach reclaimed water distribution system and retrieve the stored reclaimed water for reuse. Initially, the ASR well will be cycle tested by injecting, storing and recovering reclaimed water for a period of up to 5 years if needed.

The Application to Construct V Injection well System, DEP Form 62-528.900(1), was received August 17, 2010, with supporting documents and additional information last received December 23, 2010. The location for this project is the City of Cocoa Beach High School and Middle School, Tom Warriner Boulevard, City of Cocoa Beach, Brevard County, Florida.

Subject to Specific Conditions 1-7 and General Conditions 1-4.

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1. General Criteria:

- a. This permit approval is based upon evaluation of the data contained in the application, plans and specifications submitted in support of the application. Any changes, except as provided elsewhere in this permit, must be approved by the Department before implementation.
- b. No drilling operations shall begin without an approved disposal site for drill cuttings, fluids or waste. It shall be the Water Well Contractor's responsibility to obtain any necessary Department and local agency approval for disposal prior to the start of construction.
- c. No fluid shall be injected without written authorization from the Department. The issuance of this construction permit does not obligate the Department to permit its operation, unless the well, monitoring system and surface appurtenances qualify for an operation permit.
- d. Those conditions imposed by the St. Johns River Water Management District in this project's Water Use Permit(s) regarding the testing of the ASR system remain in effect.
- e. No underground injection is allowed that causes or allows movement of fluid into an underground source of drinking water if such fluid movement may cause a violation of any primary drinking water standard or may otherwise adversely affect the health of persons.
- f. If historical or archaeological artifacts, such as Indian canoes, are discovered at any time within the project site, the permittee shall notify the FDEP Orlando Central District office and the Bureau of Historic Preservation, Division of Archives, History and Records Management, R. A. Gray Building, Tallahassee, Florida 32301, telephone number (850) 487-2073.
- g. Signatories and Certification Requirements
 - (1) All reports and other submittals required to comply with this permit shall be signed by a person authorized under Rules 62-528.340(1) or (2), F.A.C.
 - (2) In accordance with Rule 62-528.340(4), F.A.C., all reports shall contain the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
- h. Plugging/abandonment and Alternate use plans – Permittees who are unable to operate the ASR well to meet its intended purpose shall within 180 days of FDEP notification:
 - (1) Submit a plugging and abandonment permit application in accordance with Rules 62-528.625 and 62-528.645, F.A.C., or
 - (2) Submit an alternate use plan for the well. Alternate use may commence after the plan has been approved by the Department, including any necessary permit or permit modifications as required by the Department or any other agency.
- i. Prior to operational testing under this permit, the permittee shall obtain from the Department, a Water Quality Criteria Exemption (pursuant to Rule 62-520.500, F.A.C.) for sodium or any secondary standards that may be exceeded, where and if applicable.

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- j. The permittee shall be aware of and operate under General Conditions F.A.C. Rule 62-528.307(1)(a) through (x) and Rule 62-528.307(2). General Conditions are binding upon the permittee and enforceable pursuant to Chapter 403 of the Florida Statutes (see attachment I).
- k. The permittee shall refer to Rule 62-610.466, F.A.C., in its entirety, to ensure compliance with all requirements for ASR wells.

2. Quality Assurance/Quality Control

- a. The permittee shall ensure that the construction of this facility shall be as described in the application and supporting documents. Any proposed modifications to this permit shall be submitted in writing to the Underground Injection Control program manager for review and clearance prior to implementation. Changes of negligible impact to the environment and staff time will be reviewed by the program manager, cleared when appropriate, and incorporated into this permit. Changes or modifications other than those described above will require submission of completed application and appropriate processing fees as per Rule 62-4.050, F.A.C.
- b. A Florida registered professional engineer, pursuant to Chapter 471, Florida Statutes (F.S.), shall be retained throughout the construction period and operational testing to be responsible for the construction operation and to certify the application, specifications and completion report and other related documents, pursuant to Rule 62-528.440(5), F.A.C. A professional engineer or professional geologist shall provide monitoring of the drilling and testing operation. The Department shall be notified immediately of any change of the Engineer of Record.
- c. All water quality samples required in this permit shall be collected and analyzed in accordance with Department Standard Operating Procedures (SOP), pursuant to the FDEP Quality Assurance, Chapter 62-160, F.A.C. The various components of the collection of the FDEP SOPs are found in DEP-SOP-001/01 (Field Procedures) and DEP-SOP-002/01 (Laboratory Procedures).
- d. The permittee shall calibrate all pressure gauge(s), flow meter(s), chart recorder(s), and other related equipment associated with the injection well system on a semi-annual basis. The permittee shall maintain all monitoring equipment and shall ensure that the monitoring equipment is calibrated and in proper operating condition at all times. Laboratory equipment, methods, and quality control will follow EPA guidelines as expressed in Standard Methods for the Examination of Water and Wastewater. The pressure gauge(s), flow meter(s), and chart recorder(s) shall be calibrated using standard engineering methods.
- e. Continuous on-site supervision by qualified personnel (engineer and/or geologist, as appropriate) is required during all testing and geophysical logging operations.
- f. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.
- g. Hurricane Preparedness - Upon the issuance of a "Hurricane Watch" by the National Weather Service, the preparations to be made include, but are not necessarily limited to, the following:
 - (1) Secure all on-site salt and other stockpiled additive materials to prevent surface and/or ground water contamination.
 - (2) Properly secure drilling equipment and rig(s) to prevent damage to well(s) and on-site treatment process equipment.

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3. Source Water Fluid Analysis

- a. Reclaimed Water – a single event to occur within the 60 days prior to beginning cycle testing
 - (1) Prior to injection, the reclaimed water analyses shall include:
 - (a) Primary and Secondary drinking water standards established in Chapter 62-550, Part III, F.A.C., (excluding asbestos, acrylamide, epichlorohydrin, and dioxin);
 - (b) Giardia lamblia and Cryptosporidium (count and viability testing where applicable) dissolved oxygen, E. coli and enterococci (a single event test for characterizing the background water quality);
 - (c) Fecal and total coliform.

4. Construction, Testing and Reporting

- a. Prior to the commencement of any work, the name of the Florida-registered driller(s) supervising the drilling operations and the driller's registration number shall be submitted to the Department. The permittee or the engineer of record shall provide the Department with copies of all required federal, state or local permits prior to the commencement of drilling the wells.
- b. If any problem develops that may seriously hinder compliance with this permit, construction progress or good construction practice, the Department shall be notified immediately. The Department may require a detailed written report describing what problems have occurred, the remedial measures applied to assure compliance and the measures taken to prevent recurrence of the problem.
- c. During the construction period allowed by this permit, daily progress reports shall be submitted to the Department and the Technical Advisory Committee each week. The reporting period shall run for seven (7) days and reports shall be mailed or e-mailed within 48 hours of the last day of the reporting period. The report shall include, but is not limited to, the following:
 - (1) A cover letter summarizing each week's activities and a projection of activities for the next reporting period;
 - (2) Description of daily footage drilled by diameter of bit or size of hole opener or reamer being used;
 - (3) Description of work during installation and cementing of casing, including amounts of casing and cement used;
 - (4) Lithologic log with cuttings description, formation, and depth encountered;
 - (5) Collection of drilling cuttings at least every 5 feet and at every formation change;
 - (6) Water quality analyses;
 - (7) Description of work and type of testing accomplished including geophysical logging, video logs, and pumping tests;
 - (8) Description of any construction problems that developed during the reporting period and current status;
 - (9) Copies of the driller's log are to be submitted with the weekly summary;
 - (10) Description of any deviation survey conducted;

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- (11) Details of any packer tests, pump tests and core analyses; and
 - (12) Details of the additions of salt or other materials to suppress well flow (if applicable), and include the date, depth and amount of material used.
- d. Upon completion of construction of the injection well and all monitor wells, detailed in this permit, a complete set of as-built engineering drawings (Florida registered P.E. signed and sealed) shall be submitted to the Department's Orlando District Office and Tallahassee UIC Program.
 - e. Background ground-water quality samples shall be obtained from the ASR test well and all monitor wells for the specific water quality criteria listed for potable water in specific condition 3. "Background" means the condition of waters in the absence of the activity or discharge under consideration, based on the best scientific information available to the Department (Rule 62-520.200(3), F.A.C.). The samples shall be taken after final completion and clearance of drilling fluids from each well and prior to the initiation of any pump tests.
 - f. Within 30 days of well completion of the ASR test well and monitor wells, the permittee or the authorized representative shall submit to the Department for each well the following information:
 - (1) Certification of Class V Well Construction Completion, DEP Form 62-528.900(4);
 - (2) A copy of the St. Johns River Water Management District permit to construct a well;
 - (3) A copy of the Water Management District's Well Completion Report; and
 - (4) A copy of the Water Management District's Consumptive Use /Water Use Permit.
 - g. This project shall be monitored by the Department with the assistance of the U.S. Environmental Protection Agency (EPA) - Region 4 and the Technical Advisory Committee (TAC), which consists of representatives of the following agencies:

Department of Environmental Protection – Orlando
Department of Environmental Protection – Tallahassee
Department of Environmental Protection/Florida Geologic Survey - Tallahassee
St. Johns River Water Management District – Palm Bay
US Environmental Protection Agency, Region 4 – Atlanta (please note that EPA is not a TAC member, however, does provide oversight)
 - h. Permittee shall provide copies of all correspondence relative to this permit to each member of the TAC. Such correspondence includes but is not limited to reports, schedules, analyses and geophysical logs required by the Department under the terms of this permit. The permittee is not required to provide specific correspondence to any TAC member who submits to the permittee a written request to be omitted as a recipient of specific correspondence.
 - i. After completion of construction and testing, a final engineering report shall be submitted to the Department, the EPA and the TAC. The report shall include, but not be limited to, all information and data collected under Rules 62-528.605, 62-528.615, and 62-528.635, F.A.C., with appropriate interpretations. Mill certificates for the casings shall be included in the report. To the extent possible, the transmissivity and storativity of the injection zone and the maximum capacity within safe pressure limits shall be estimated. This report shall also be signed and sealed by a Florida licensed professional engineer and professional geologist.
 - j. After completion of construction and testing, the following items shall be submitted to the State Geologist at the Florida Geological Survey, 903 West Tennessee Street, Tallahassee, Florida 32304-7707:

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- (1) Cuttings obtained during well construction;
 - (2) Any cores obtained during well construction when no longer needed by the permittee;
 - (3) Any geophysical logs run during well construction; and
 - (4) A copy of the final report described in Condition 4.i. above.
- k. A written, detailed evaluation of the ASR system performance shall be included with the permit renewal or operation permit application.
- l. The specifications for a temporary containment structure around the borehole during the drilling of the ASR well shall be submitted to and approved by the Department prior to the ASR well construction.
5. Cycle Testing Requirements Using Reclaimed Water
- a. After authorization by the Department, the permittee shall conduct cycle testing of the ASR well system using reclaimed water to demonstrate that the ASR well(s) can maintain water quality standards (remain non-hazardous) and assimilate the design daily flows prior to receiving approval for full operation using reclaimed water. Cycle testing using reclaimed water shall not commence until issuance of authorization from the Department. Prior to Department authorization of operational cycle testing:
- (1) The permittee shall submit at a minimum the following information to each member of the Technical Advisory Committee for review:
 - (a) Draft operation and maintenance manual;
 - (b) Lithologic and geophysical logs with interpretations;
 - (c) Results of pressure tests on the final casing for the ASR well and the storage zone monitor well;
 - (d) Surface equipment completion certification or certification of interim completion for the purposes of testing;
 - (e) Signed and sealed as-built engineering drawings of all wellheads and subsurface well components;
 - (f) A consumptive use permit and all other applicable permits; and
 - (g) Submittal of a plugging and abandonment plan.
 - (h) Completion report for the storage zone monitoring well (SZMW-1) located in the vicinity of well TPW-1.
 - (2) Before authorizing operational testing, the Department shall conduct an inspection of the facility to determine if the conditions of this permit have been met.
 - (3) The permittee shall provide an updated well inventory and physically verify all wells that are within a 2.0-mile radius of the ASR test well. Operational status, existing use, depth of final casing, and total depth of the wells shall be determined and submitted with the above-mentioned information.
 - (4) Prior to approval to inject into Class G-IV ground water, the permittee shall meet the applicable criteria in Rule 62-610.466, F.A.C. Compliance with public and utility notifications in Rule 62-610.574(4), F.A.C., is also required.

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- b. A cycle testing schedule is attached to this permit (see Table 1). In the event arsenic concentrations are observed that exceed 10 µg/L in any monitoring well or in the ASR well during recovery, the permittee shall contact the Department within 24 hours of this finding.
 - c. The Florida Geological Survey (FGS) is currently investigating the effects of ASR systems on storage zones. The Department requests that the permittee contact the Hydrogeology Program at the FGS (850-488-9380) at least 30 days prior to operational testing to allow the Survey to coordinate a sampling schedule during the operational testing phase of this project.
 - d. A set back distance for the ASR well, in accordance with Chapter 62-521.200(7), F.A.C., has been established to be at least 500 feet from potable water supply wells.
6. Post Cycle Testing Operational Conditions Using Potable Water
- a. A qualified representative of the Engineer of Record must be present for the start-up operations and the Department must be notified in writing of the date operational testing began for the subject well.
 - b. Proposed Class V ASR Test Well:

Well Name	Casing Diameter [OD] / Depth*	Injection Interval	Aquifer
ASR TPW-1	18" FRP / 1,200'	1,200 – 1,500'	Floridan

* below land surface; approximate depths.

Monitor Well System

Well Name	Casing Diameter / Depth*	Monitored Interval	Aquifer
SZMW-1	5.84" FRP / 1,200'	1,200 – 1,500'	Floridan
SMW-1	6.625" PVC / 200'	200 – 350'	Upper Floridan

* below land surface; approximate depths.

(SZMW – Storage Zone Monitoring Well) (SMW – Shallow Aquifer Monitoring Well)

- c. Prior to operational use of the ASR, the authorization referenced in Specific 5.a. above shall have been obtained and a monitoring plan shall have been approved using the newly installed monitoring wells (both SZMW-1 and SMW-1). Results of the water quality analyses of the reclaimed water (as requested in Specific Condition 3) and background water quality pursuant to Specific Conditions 3. and 4.e. of this permit shall have been submitted. Aquifer test data, analysis and evaluation shall have been submitted and a monitoring program plan that includes construction diagrams, well specifications, well locations, construction specifications and drilling and testing plans shall have been submitted, approved by the Department and the new wells shall have been installed.

The ASR test well shall be monitored in accordance with the approved monitoring plan referenced above. The Department anticipates that the standard monitoring parameters and frequency listed below will apply during each recharge and recovery period. The monitor wells shall be sampled and analyzed in accordance with the schedule listed below based on the approved monitoring plan. Once the monitoring plan and parameters are approved, the permittee will be submitting a summary of the monthly monitoring data developed from the injection well instrumentation. The report shall include the following data:

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Parameter	Units	Recording Frequency	Frequency of Analysis
			ASR
Flow Rate, max.	Mgd	continuous	D/M
Flow Rate, min.	Mgd	continuous	D/M
Flow Rate, avg.	Mgd	continuous	D/M
Total Volume Recharged	Mg	daily	D/M
Total Volume Recovered	Mg	daily	D/M
Net Storage Volume	Mg	daily	M*
Injection Pressure, max.	Psi	continuous	D/M
Injection Pressure, min.	Psi	continuous	D/M
Injection Pressure, avg.	Psi	continuous	D/M

* - Monthly net storage volume per ASR well and total ASR wellfield.

D/M - daily and monthly; M - monthly.

Note: During extended storage periods (greater than 30 days), the physical parameters listed above may be monitored monthly.

- e. The permittee shall submit monthly results of all injection well and monitoring well data required by this permit, and monthly progress reports which include both the current status of operational testing and a summary of all monthly activities, no later than the 28th day of the month immediately following the month of record. The results and progress reports shall be sent to the Department of Environmental Protection, UIC Program, 3319 Maguire Boulevard, Suite 232, Orlando, FL 32803-3767. A copy of the results and reports shall also be sent to the Department of Environmental Protection, Underground Injection Control Program, Mail Station 3530, 2600 Blair Stone Road, Tallahassee, FL 32399-2400.
- f. A final engineering report shall be submitted to the Department, the FGS and each TAC member and include the following information:
 - (1) A detailed analysis of all cycle testing;
 - (2) An operation and maintenance section;
 - (3) Record drawings sealed by the Engineer of Record;
 - (4) Summary of all water quality and water level data collected, conclusions and recommendations; and
 - (5) Estimated ASR well capacity.

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7. Abnormal Events

- a. In the event the permittee is temporarily unable to comply with any conditions of this permit due to breakdown of equipment, power outages, destruction by hazard of fire, wind or by other cause, the permittee shall notify the Department. Notification shall be made in person, by telephone or by electronic mail within 24 hours of breakdown or malfunction to the UIC program staff, Orlando Central District, (407) 893-3308.
- b. A written report of any noncompliance referenced in Condition 7.a. above shall be submitted to the Orlando Central District office within five days after discovery of the occurrence. The report shall describe the nature and cause of the breakdown or malfunction, the steps being taken or planned to be taken to correct the problem and prevent its reoccurrence, emergency procedures in use pending correction of the problem, and the time when the facility will again be operating in accordance with permit conditions.

Issued this ____th day of ____, 2011

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Vivian F. Garfein
Director, Central District

VFG/CCF/AKD/dw