ZACHRY

July 8, 2009

DEPARTMENT OF
ENVIRONMENTAL PROTECTION
JUL 09 2009
SITING COORDINATION

Mr. Michael Halpin
FDEP
3900 Commonwealth Blvd.
Tallahassee, FL 32399

Re: **Cane Island Power Park Unit #4**
Site Certification PA98-38A2 / Conditions of Certification for New Well Construction

Dear Mr. Halpin:

In compliance with Condition of Certification XXIII B.2.j of Site Certification Order No. PA 98-38A2 issued for the construction and operation of the Cane Island Power Park Unit #4, Zachry Engineering submits, on behalf of KUA/FMPA, one copy of the information for the Rowe Drilling Company – Well Drilling Plan for the construction of new wells to be installed. Zachry Engineering has entered into contract with FMPA as the Engineering, Procurement, and Construction (EPC) Contractor for the Cane Island Unit #4 project.

Your immediate attention to the review and approval of the enclosed documents will be greatly appreciated. If you have any questions about the project or this submittal, please contact Susan Schumann or myself at the following numbers:

Chris Schmidt
(321) 697-1531
schmidtc@zhi.com.

Susan Schumann
(407) 355-7767
Susan.schumann@fmpa.com

Sincerely,

Chris Schmidt, Environmental Manager
Zachry Engineering

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

LETTER OF TRANSMITTAL

FM: Rowe Drilling Company, Inc.
P.O. Drawer 1389
Tallahassee, Florida 32302

DATE: July 7, 2009

Submittal No: 5A
New Submittal: ☐
Resubmittal: ☒
Previous Submittal No.:

TO: Zachry Engineering Corporation
5601 West Interstate 40
Amarillo, TX 79106-4605
Attn: Mr. Dudley Reynolds, P.E.

Project: Cane Island Unit 4

RDC Project No. 09-505

Specification Section
(Cover Only One Section With Each Transmittal)

SUBMITTAL FOR: ☐ SHOP DRAWINGS ☐ MATERIAL DATA ☐ SAMPLES
☐ O&M MANUAL INFORMATION ☐ PROPOSED SUBSTITUTION
☒ Other WELL DRILLING PLAN

THE FOLLOWING ITEMS ARE HEREBY SUBMITTED FOR REVIEW AND ACTION:

	DESCRIPTION OF ITEM SUBMITTED (TYPE, SIZE, MODEL NO., ETC.)	MFG. / CAT. BROCHURE NO.	COPIES	SPEC. / SEC. NO.
1	Well Drilling Plan			

I certify, that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated, and are stamped accordingly.

Rowe Drilling Company, Inc.
Name of Contractor

Michael Taylor
Signature of Contractor

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

OWNER: Florida Municipal Power Agency CONTRACTOR/ENGINEER: ZII/ZEC PROJECT MANAGER: Mr. Dudley Reynolds, P.E.

CONTRACTOR: Rowe Drilling Company, Inc. PROJECT NO.: 09-505 PROJECT MANAGER: Michael Taylor

PROJECT NAME: Cane Island Unit 4

CONTRACTOR INFORMATION

SUBMITTAL DATE: July 7, 2009 SUBMITTAL NUMBER: 5A NO. OF COPIES SENT: 1

☐ ORIGINAL SUBMITTAL ☒ RESUBMITTAL ☐ SUPPLEMENT ☐ INFORMATION ONLY

NOTE: If other than original then include: Date of Original May 12, 2009 Submittal No. of Original 4A

A. SPECIFICATION SECTION AND SUB-SECTION NUMBER: _____

B. DESCRIPTION: WELL DRILLING PLAN

C. MANUFACTURED BY: PREPARED BY ROWE DRILLING COMPANY

D. INSTALLATION BY: Rowe Drilling Company, Inc.

ENGINEER INFORMATION

NO. OF COPIES RECEIVED _____ NO. OF COPIES RETURNED _____

ACTIVITY	DATE	PERSON	COMMENT
RECEIVED			
RETURNED			

STATUS:
☐ NO EXCEPTIONS TAKEN ☐ MAKE CORRECTIONS AS NOTED
☐ AMEND AND RESUBMIT ☐ REJECTED SEE REMARKS

COMMENTS: _____

ZACHRY INDUSTRIAL, INC.

Well Drilling Plan

Cane Island Unit 4 Project

ZII Job #8220/0064

ROWE
DRILLING COMPANY

TALLAHASSEE • SAVANNAH • POLK CITY

WWW.ROWEDRILLING.COM

Prepared By:
Rowe Drilling Company
May 12, 2009

WELL DRILLING PLAN
FOR
CANE ISLAND UNIT 4 PROJECT

ZII JOB #8220/0064

TABLE OF CONTENTS

Section 1

Key Personnel

&

Contact Information

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

Key Personnel

Thomas Salter, General Manager P.O. Drawer 1389 Tallahassee, Florida 32302 850-576-1271 Office 850-575-6636 Fax 850-508-1033 Cell tts@rowedrilling.com	**Johnny Wills, District Manager** P.O. Box 1098 Polk City, Florida 33868 863-984-3100 Office 863-984-3110 Fax 813-426-2101 Cell jwills@rowedrilling.com
Jack Rowe, Operations Manager P.O. Drawer 1389 Tallahassee, Florida 32302 850-576-1271 Office 850-575-6636 Fax 850-556-8105 Cell jar@rowedrilling.com	**Mike Taylor, P.G., Assistant District Manager** P.O. Box 1098 Polk City, Florida 33868 863-984-3100 Office 863-984-3110 Fax 863-286-8353 Cell mlt@rowedrilling.com
Dave Blair, Sr. Driller P.O. Box 1098 Polk City, Florida 33868 863-984-3100 Office 863-984-3110 Fax 813-426-7166 Cell	**Prem Ramanand, Sr. Cementer** P.O. Box 1098 Polk City, Florida 33868 863-984-3100 Office 863-984-3110 Fax 813-426-2286 Cell
Matt Garcia, Sr. Driller P.O. Box 1098 Polk City, Florida 33868 863-984-3100 Office 863-984-3110 Fax 813-426-7166 Cell	**Johnny Rich, Sr. Pump Foreman** P.O. Box 1098 Polk City, Florida 33868 863-984-3100 Office 863-984-3110 Fax 813-426-2286 Cell

Michael L. Taylor, P.G.

Rowe Drilling Company
225 Commonwealth Avenue, Polk City, FL 33868
Phone: 863-984-3100 (W) 863-286-8353 (C) E-mail: mlt@rowedrilling.com

SUMMARY

- Experience in Geology/Hydrogeology, municipal well permitting, design and installation, and stormwater drainage design and erosion control
- Ability to manage projects in a cost effective and timely manner
- Well developed organizational skills
- Proficient at performing multiple tasks independently, and as part of a team

EDUCATION

University of Cincinnati - Cincinnati, Ohio
M.S. Environmental Science, College of Engineering, 1993
B.S. Geology, College of Arts and Sciences, 1986

EXPERIENCE

Tetra Tech — Ft. Myers, Florida
Hydrogeologist/Project Manager — August 2003 – February 2009

- Design and oversee installation of municipal raw water supply wells and aquifer storage and recovery wells
- Obtain permits from City, County, and State agencies
- Complete proposals and coordinate marketing efforts
- Conduct numeric modeling of groundwater flow

Earth Tech — Raleigh, North Carolina
Hydrogeologist/Project Manager — June 1993 – August 2003

- Perform drainage design and erosion control for municipal and state DOT highway design projects
- Provide numeric modeling of groundwater flow, determine fate and transport of contaminants and establish remedial design parameters
- Conduct RI/FS projects and design remedial alternatives
- Manage varying projects and tasks

University of Cincinnati — Cincinnati, Ohio
Graduate Research Assistant — February 1991 - March 1993

- Conducted research on accelerated aging and durability of solidified/ stabilized hazardous, radioactive and mixed wastes
- Drafted technical reports, evaluated data, and completed literature reviews

PROFESSIONAL REGISTRATIONS

Florida Licensed Geologist, License #2323
North Carolina Licensed Geologist, License #1434

Section 2

Project Equipment List

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

Project Equipment List

Drill Rigs

- **Speed Star TH-111 Top Head Drill Rig**
  4" – 16" diameter – 1,500-foot depth
- **Gardner-Denver WM-40 Rotary Drill Rig**
  8" – 30" diameter – 1,500-foot depth
- **Driltech Marlin 6 Top Head Drill Rig**
  6" – 24" diameter – 1,000-foot depth

Pump Service Rigs

- **Smeal 10T**
- **Pulstar P12000**
- **Pulstar P38000HD**
- **P&H 30 Ton Crane**
- **National 28 Ton Crane Truck**

Other Equipment

- **Kem-Tron Mud Systems**
- **10,000 PSI Triplex Cement Pump Truck**
- **Halliburton 660 Cement Pod Unit**
- **Mack Conventional Tractor**
- **Freightliner Conventional Tractor**
- **Laval Downhole Video Camera – VHS & DVD**
- **Various: Service Trucks, Trailers, Pumps, Welders, Backhoes, Duplex Cement Pumps, Trash Pumps & Miscellaneous Tools**
- **Various Analytical Test Instruments**

Section 3

Well Drilling Plan

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

Well Drilling Plan

Project Overview

The Cane Island Unit 4 Project will be supplied with water from the Upper Floridan Aquifer (UFA). We anticipate the production interval of the Floridan Aquifer to be approximately 150 to 360 feet deep.

Five (5) new production wells, 7 – 11, will be drilled, installed, and tested. Four (4) wells (Nos. 7 – 10) will supply dedicated emergency makeup water to the Unit 4 cooling tower basin. One (1) well (No. 11) will provide additional backup supply for the existing Cane Island Power Plant (CIPP) service water system.

One (1) existing well (#4) will be modified. In general the modifications will involve removal of existing well house and pad, removal of existing well pump and piping, extension of casing to new grade elevation, inspection and modification of pump for new elevation, reconditioning of pump if required, reinstallation of pump and modification of piping and valves, installation of new pad and reinstallation of well house.

The locations of these wells are shown on the figure provided in Attachment 1 and on Drawing DS 0017 included in the Technical Specifications. The drilling method to install the wells will be mud rotary or reverse air above the UFA, and reverse air in the UFA. The production wells will be drilled with open holes in the UFA between approximately 150 and 360 feet. Once drilled, an aquifer performance test (APT) will be performed in accordance with the APT plan in the Technical Specifications.

This Well Drilling Plan is prepared in compliance with The Conditions of Certification Section XXIII, Part B.2.j New Well Construction, all rules and regulations of the Florida Department of Environmental Protection (FDEP), South Florida Water Management District (SFWMD) and the Osceola County Health Department (OCHD). Also, this Well Drilling Plan is in full compliance with Chapter 40E-3 F.A.C. which sets forth the environmental mitigation and management procedures to be implemented during well construction and installation activities to minimize and avoid any impacts to terrestrial and aquatic resources, including any wetlands, surface waters, or wildlife in the vicinity of the wells. Technical Specification Section 483005 sets forth the tasks associated with installation of the production wells (7 - 11) and conducting the APT and specific capacity tests.

Site Clearing and Access

There will be no clearing and grading of any drill site required. Each site is scheduled to be cleared of all vegetation prior to our arrival on location.

Each work area will be limited to 100' x 100', or smaller. Erosion barriers will be put in place around each work area prior to beginning any construction activities.

Temporary sediment barriers will be placed around the drill site to prevent soil erosion and minimize sediment transport in storm water runoff.

Well Construction

In general, the four new production wells and the back-up supply well will be constructed using similar methods. Currently the sequence of well installation is anticipated to be #10, #9, #7, #8, #11. The sequence may be varied due to site related construction activities or other factors. It is expected that the wells will be installed as follows;

- Drill Pilot hole to a depth of about 65 feet to determine depth of surface casing
- Ream hole to 22 inches to about 65 feet
- Install and cement 16 inch surface casing to about 65 feet
- Drill pilot hole to about 150 feet to determine depth of well casing
- Ream hole to a nominal 16 inches to about 150 feet
- Install and cement 10 inch well casing to about 150 feet
- Drill nominal 10 inch hole to about 360 feet
- Air develop well for about 1 hour
- Perform well deviation survey
- Develop well by pumping
- Perform 24 hour aquifer performance test
- Collect water quality samples
- Form and pour pump pedestal and wellhouse pad
- Furnish and install prefabricated steel wellhouse
- Install 500 GPM pump (250 GPM for back-up well)
- Provide start-up services

The depths of the casings will be determined based on lithologies encountered. Pilot holes will typically be a nominal 10 inch diameter. The well casing will be set a minimum of ten feet into competent material. The casings will be grouted in place using Type II neat cement. The grout will be allowed to cure for 24 hours prior to further construction of the wells. The wells will be disinfected after construction. Drill cuttings will be collected at 10 foot intervals and at formation changes during well construction and kept on site during the project. During development, the wells will be pumped at about 150% of the projected usage rate of the wells. A Rossum sand filter will be used to determine sufficient development of the wells.

Construction Management Practices and Procedures

During well construction, the drilling area will be maintained in clean condition and best practices implemented to prevent contamination of the water and groundwater. Drilling personnel and equipment present at the well drilling site will be kept to the minimum necessary to safely and effectively perform the work. Periodic inspections of the site drilling vehicles and equipment will be performed to ensure no leaks of any oil or fluids. If a spill or leak does occur,

the Spill Prevention and Response (SPR) Plan will be followed. Additionally, Rowe will follow Zachry's SPCC plan during site operations.

Operation of construction equipment will be limited to the designated work areas. If saturated or standing water is present, low-ground-weight equipment will be used whenever possible, or normal equipment will be operated on timber riprap, prefabricated equipment mats, or geotextile fabric overlain with gravel. Geotextile fabric used for this purpose must be strong enough to allow removal of all gravel and fabric from the saturated area. Rowe is aware that high voltage power lines are present on the property, and care will be used during drilling and while moving equipment to ensure there is proper distance between the equipment and the power lines. Rowe will follow their site specific Health and Safety Plan and Zachry's Health and Safety Plan during work at the facility.

No drilling fluid other than potable water will be used in the open hole section of the production wells. This water will be from the service tanks at the facility. During closed circulation drilling, no discharge of fluids will be allowed at the site. All drilling mud and fluid will be disposed of offsite in compliance with the SFWMD and FDEP regulations. Discharge from the new wells during well installation and development will be routed through a solids separation system prior to discharge. The solids separation system will consist of a number of tanks allowing time for sand and solids to fall out of solution prior to discharge.

Turbidity of the discharge water will be reduced to acceptable levels using best management practices.

All water discharges from well test pumping will be conducted away from the test well and in all possible cases routed to the cooling tower basin that discharges to the Toho Water Authority reclaimed water line. If the cooling tower basin can not be accessed due to site activity or other circumstances the discharge water will be released to an earthen berm percolation area at the north end of the site and/or the sediment pond. Under no circumstances will any discharge be released offsite, to a waterway and/or a wetland. The discharged water will be tested for solids content and clarity. During APT, discharge water will be tested as described in the Technical Specifications. Water samples from well #11 will also be collected and tested at a fixed laboratory licensed by the state of Florida for parameters listed in Section 483005 of the Technical Specification.

Well casing and liner pipes will be free of leaks, corrosion, and dents and will be in new condition. Production wells will be constructed with new black steel casings that will be continuous from the top of the Upper Floridan Aquifer to ground surface.

Grouting and sealing of the wells will protect the groundwater from contamination originating from the surface or migrating between groundwater sources. The surface casing installed to protect the surficial aquifers, and production well casing installed to the top of the Upper Floridan Aquifer, will be grouted from bottom to top using the "Halliburton" method of grouting. This method of grouting forces the grout from the bottom of the casing to ground surface and ensures all cracks, crevices and cavities are filled with grout. This method is the acceptable methodology for grouting wells by the FDEP and all Water Management Districts in the state of Florida.

If and when construction work on a well is interrupted, the well will be sealed in compliance with all FDEP and SFWMD rules and regulations.

A qualified Hydrogeologist will provide supervision during key activities of the well installation. The scope of the hydrogeologist's services shall include, but not be limited to:

Provide hydrogeologic observation services, field hydrogeologic direction, and well construction expertise during drilling and development of the wells.

Coordination and planning of pre-construction activities, field well installation, and testing.

Review materials and workmanship and document observations and activities.

Coordinate communication among the Owner, Contractor, well driller, and other appropriate parties at decision points in the drilling process.

Be present on site during critical phases of construction including pilot hole drilling, geophysical logging, casing welding, coating, installation, well alignment and deviation survey, checking of casing installation and cement grouting, completion interval drilling, and flow and water testing.

Observe and direct well development and geophysical logging and testing.

If required, observe and direct well acid treatment.

Provide recommendations for construction depths of bore holes, casings, and open intervals.

Collection of water samples at appropriate stages of drilling and development.

Regular communication with Owner and Owner's Engineer during all phases of well installation and testing, including providing Owner and Owner's Engineer with lithologic logs, well construction daily field logs, water quality field data summaries, and copies of well contractor's geophysical logs. Documentation shall be provided to Owner and Owner's Engineer for review at the same time it is provided to the contractor.

Participate in planning, coordination, and supervision of well flow testing, including providing written reports.

Prepare well completion report.

Geophysical logging will be performed as specified in the Technical Specifications by a qualified geophysical surveyor. A log of well construction activities will be kept up to date at all times and will be available for inspection at the site while work is in progress. A well completion report will be submitted to the Osceola Health Department within 30 days of completion of drilling. The well installation report will be prepared by the Hydrogeologist.

Spill Prevention and Response

All chemicals, fuels, and lubricating oils shall be placed/stored in an upland area, at least 100 feet from the nearest wetland boundary. Rowe will follow Zachry's SPCC plan during site operations.

Spill containment equipment, including earth-moving equipment, portable pumps, hand tools, sand, straw bales, and silt fencing, will be readily available at the drill site.

If a release of drilling fluids, chemicals, or fuels occurs, the following procedure will be used:

- The ZII Site Manager will be notified immediately of the nature and extent of release.
- Drilling operations will be reduced or suspended to assess the extent of the release and to implement other possible corrective actions.
- The drilling crew will take immediate corrective action to contain the release and to avoid migration offsite and into the borehole.
- The ZII Site Manager will conduct an onsite inspection of the release to determine what corrective actions will be necessary and appropriate.
- ZII will notify the KUA/FMPA site representative immediately according to standard procedures.

Site Restoration

After drilling work is completed, the area surrounding each well will be restored to the same or better ecological condition than when drilling was started.

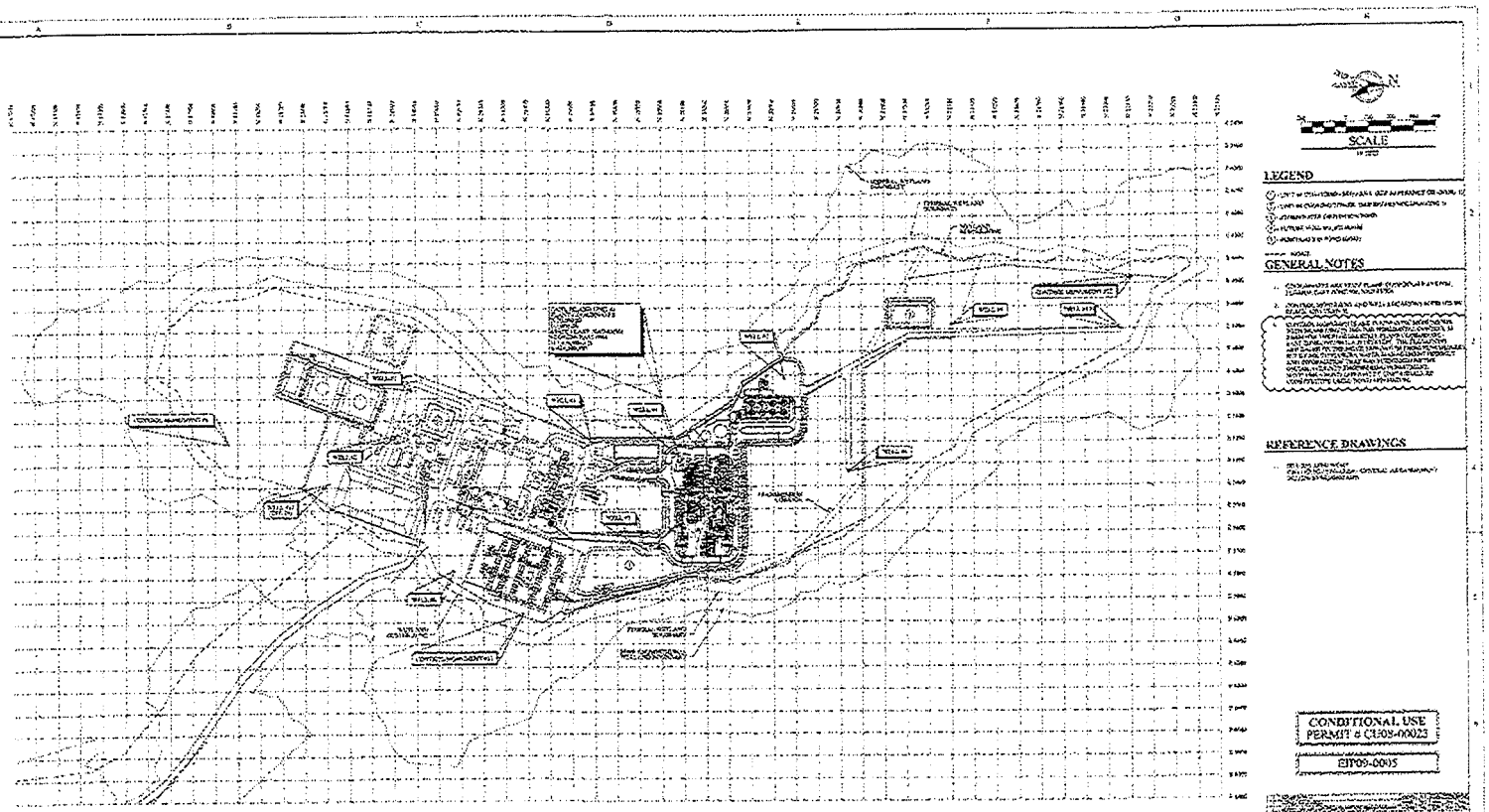
All construction equipment, solids separation system, materials, and debris will be removed from the drilling site and access roads upon completion of construction. All temporary timber riprap, prefabricated equipment mats, and geotextile fabric with overlying gravel will also be wholly removed from the well drilling site upon completion of construction.

Project Coordination and Reporting

During work operations at the site, the project related Owner and Owners Engineer representative(s) will be informed verbally prior to significant events or decision points such as installing casing, grouting casing in place, significant changes in lithology or water quality, or geophysical logging. Owner and Owners Engineer personnel will also be notified verbally if an unexpected occurrence happens, such as equipment failure or unexpected subsurface conditions. The verbal notifications will be in person or by phone. Involved personnel, in addition to Rowe personnel, will be provided verbal updates of activities on a day to day type basis by phone. The site will be kept open to access by Zachry, Owner and Owner's Engineer personnel during all working hours.

Once each week during the work, Rowe will submit to Owner and Owners Engineer an activity report summarizing the work completed in the previous week, and the work expected to be completed in the upcoming three weeks. The report will include intervals drilled, drilling method(s), and lengths and quantities of any materials installed. The report will also include any unexpected happenings over the previous week, or any accidents that took place. The report will also include applicable forms completed by Rowe with regard to the work and well testing. These forms will include, but not be limited to, drillers daily reports, casing tally sheets, water quality results, well development records, and the results of testing of the wells. Examples of these forms are on the following pages.

ATTACHMENT 1



SCALE

LEGEND

GENERAL NOTES

REFERENCE DRAWINGS

CONDITIONAL USE PERMIT # CU09-00023

EIP09-0005

AREA DELINEATION

CONTROL MONUMENTS

WELLS

3-9-09

ZACHRY

CANE ISLAND UNIT 4
SITE RELATED WORK
OVERALL SITE
GENERAL ARRANGEMENT

D013384-STWLD0001 01 4

Section 4

Project Forms

ROWE DRILLING COMPANY, INC.

TALLAHASSEE – SAVANNAH – POLK CITY

DAILY REPORT

Date: _____ Weather Conditions: _____

Job Name: _____ Job No.: _____

Location: _____

City: _____ County: _____ State: _____

Well No.: _____ Rig Used: _____

RDC Equipment Used: _____

Rental Equipment Used:

Employee	Hrs

Description of Work

Drilling Detail

Depth Start: _____

Depth End: _____

Hole Size:

Casing Run Detail

Size: _____

From: _____

To:

Lithology Description

From	-	To	Description
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		
	-		

Materials Used Today

Fuel: _____ Oil: _____

Mud: _____ Cement: _____

Water: _____ Welding Rods: _____

Acid: _____ Chlorine: _____

Other: _____ Other: _____

Other: Other:

Lost Time: ***(Reason & What was Done to Overcome Delay)***

Comments

_____

Signature

ROWE DRILLING COMPANY, INC.

TALLAHASSEE – SAVANNAH – POLK CITY

CREW TASK WORKORDER

Owner:		Job No.	**Date:**
Address:		**Well No.:**	
City:		**Well Size:**	
Contact:		**Casing Depth:**	
Phone:		**O.H. Depth:**	

Special Instructions

PROCEDURE

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS

TALLAHASSEE – SAVANNAH – POLK CITY

JOB NAME		JOB No:		WELL No:		DATE:	
LOCATION:		CASING OD:		BOREHOLE ID:		RIG:	
OWNER REP:		WMD REP:		RDC SUPV:			
CEMENTER:		HELPERS:	1.		3.		
DRILLER:			2.		4.		

CEMENT STAGE DETAILS

STAGE	LIFT (FT)	CMT	WATER		ADDITIVES/STAGE			SLURRY DETAILS			OTHER DETAILS
		SACKS	GAL	CF/SK	HYDM	LBS	WATER/GALS	LBS/GAL	CF/SK	TOTAL CF	

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

OWNER: ______________________ **PROJECT No:** __________

WELL No: ______________________ **COMPLETION DATE:** __________

CUP/WUP #: ________________ **WMD PERMIT No:** ________________

DRILLER: __________________ **RIG USED:** ________________

LITHOLOGY LOG

Depth			Sample Description		
From	To	Thickness	Color	Grain Size	Type of Material

PROVIDING QUALITY WATER SERVICE SINCE 1946
Tallahassee – Savannah – Polk City
WWW.RoweDrilling.COM

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

Owner: _____ **RDC Project No.:** _____

Well No.: _____ **Well Size:** _____

Depth To Water: **Video Analyst:**

VIDEO SURVEY LOG

DEPTH		OBSERVATIONS
FROM	TO	

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

Owner: ______________________ **RDC Project No.:** ______________
Well No.: ______________________ **Date of Test:** ______________
County/State: ______________________ **Well Size:** ______________
Flow Device: **Witness:**

AQUIFER PERFORMANCE TEST

TIME	ELASPED TIME	GPM	W.L.	D.D.	COMMENTS

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

ROWE DRILLING COMPANY

ACCIDENT AND ILLNESS INVESTIGATION REPORT

To: _____
Subsidiary Health and Safety Representative

Cc: _____
Workers Compensation Administrator

Project name: _____

Project number. _____

Prepared by: _____

Position: _____

Office: _____

Telephone number: _____

Fax number: _____

Information Regarding Injured or Ill Employee

Name: _____

Home address: _____

_____

Home telephone number: _____

Occupation (regular job title): _____

Department: _____

Office: _____

Gender: M ☐ F ☐ No. of dependents: _____

Marital status: _____

Date of birth: _____

Social Security Number: _____

Date of Accident: _____

Time Employee Began Work: _____

Time of Accident: _____ a.m. ☐ p.m. ☐

☐ Check if time cannot be determined

Location of Accident

Street address: _____

City, state, and zip code: _____

County: _____

Was place of accident or exposure on employer's premises? Yes ☐ No ☐

Information About the Case

What was the employee doing just before the incident occurred?: Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."

What Happened?: Describe how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

ROWE DRILLING COMPANY, Inc.

ACCIDENT AND ILLNESS INVESTIGATION REPORT

Information About the Case (Continued)

What was the injury or illness? Describe the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or "sore." Examples "strained back"; "chemical burn, right hand"; "carpal tunnel syndrome, left wrist."

Describe the Object or Substance which Directly Harmed the Employee: Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, enter a NA.

Did the employee die? Yes ☐ No ☐ Date of death: _____

Was employee performing regular job duties? Yes ☐ No ☐

Was safety equipment provided? Yes ☐ No ☐ Was safety equipment used? Yes ☐ No ☐

Note: Attach any police reports or related diagrams to this accident report.

Witness(es):

Name: _____

Company: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Name: _____

Company: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Medical Treatment Required? ☐ Yes ☐ No ☐ First Aid only

Name of physician or health care professional: _____

If treatment was provided away from the work-site, where was it given?

Facility name: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Was the employee treated in an emergency room? ☐ Yes ☐ No

Was the employee hospitalized overnight as an in-patient? ☐ Yes ☐ No

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

ROWE DRILLING COMPANY, Inc.

ACCIDENT AND ILLNESS INVESTIGATION REPORT

Corrective Action(s) Taken by Unit Reporting the Accident:

Corrective Action Still to be Taken (by whom and when):

Name of RDC employee the injury or illness was first reported to: _____

Date of Report: _____ **Time of Report:** _____

I have reviewed this investigation report and agree, to the best of my recollection, with its contents.

_____ _____

Printed Name of Injured Employee Telephone Number

_____ _____

Signature of Injured Employee Datee

The signatures provided below indicate that appropriate personnel have been notified of the incident.

Title	Printed Name	Signature	Telephone Number	Date
Project or Office Manager				
Site Safety Coordinator				

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ROWE DRILLING COMPANY, INC.

TALLAHASSEE – SAVANNAH – POLK CITY

CREW TASK WORKORDER

Owner:		Job No.	**Date:**
Address:		**Well No.:**	
City:		**Well Size:**	
Contact:		**Casing Depth:**	
Phone:		**O.H. Depth:**	

Special Instructions

PROCEDURE

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS

TALLAHASSEE – SAVANNAH – POLK CITY

JOB NAME		JOB No:		WELL No:		DATE:	
LOCATION:		CASING OD:		BOREHOLE ID:		RIG:	
OWNER REP:		WMD REP:		RDC SUPV:			
CEMENTER:		HELPERS:	1.		3.		
DRILLER:			2.		4.		

CEMENT STAGE DETAILS

STAGE	LIFT (FT)	CMT	WATER		ADDITIVES/STAGE			SLURRY DETAILS			OTHER DETAILS
		SACKS	GAL	CF/SK	HYDM	LBS	WATER/GALS	LBS/GAL	CF/SK	TOTAL CF	

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

OWNER: ______________________ **PROJECT No:** ____________

WELL No: ______________________ **COMPLETION DATE:** ____________

CUP/WUP #: ________________ **WMD PERMIT No:** ________________

DRILLER: ____________________ **RIG USED:** ________________

LITHOLOGY LOG

Depth			Sample Description		
From	To	Thickness	Color	Grain Size	Type of Material

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
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Owner: _____ **RDC Project No.:** _____

Well No.: _____ **Well Size:** _____

Depth To Water: **Video Analyst:**

VIDEO SURVEY LOG

DEPTH		OBSERVATIONS
FROM	TO	

ROWE DRILLING COMPANY, INC.

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WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

Owner: ______________________ **RDC Project No.:** ______________
Well No.: ______________________ **Date of Test:** ______________
County/State: ______________________ **Well Size:** ______________
Flow Device: **Witness:**

AQUIFER PERFORMANCE TEST

TIME	ELASPED TIME	GPM	W.L.	D.D.	COMMENTS

ROWE DRILLING COMPANY, INC.

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ROWE DRILLING COMPANY

ACCIDENT AND ILLNESS INVESTIGATION REPORT

To: _____
Subsidiary Health and Safety Representative

Cc: _____
Workers Compensation Administrator

Project name: _____

Project number. _____

Prepared by: _____

Position: _____

Office: _____

Telephone number: _____

Fax number: _____

Information Regarding Injured or Ill Employee

Name: _____

Home address: _____

_____

Home telephone number: _____

Occupation (regular job title): _____

Department: _____

Office: _____

Gender: M ☐ F ☐ No. of dependents: _____

Marital status: _____

Date of birth: _____

Social Security Number: _____

Date of Accident: _____

Time Employee Began Work: _____

Time of Accident: _____ a.m. ☐ p.m. ☐

☐ Check if time cannot be determined

Location of Accident

Street address: _____

City, state, and zip code: _____

County: _____

Was place of accident or exposure on employer's premises? Yes ☐ No ☐

Information About the Case

What was the employee doing just before the incident occurred?: Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."

What Happened?: Describe how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

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ROWE DRILLING COMPANY, Inc.

ACCIDENT AND ILLNESS INVESTIGATION REPORT

Information About the Case (Continued)

What was the injury or illness? Describe the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or "sore." Examples "strained back"; "chemical burn, right hand"; "carpal tunnel syndrome, left wrist."

Describe the Object or Substance which Directly Harmed the Employee: Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, enter a NA.

Did the employee die? Yes ☐ No ☐ Date of death: _____

Was employee performing regular job duties? Yes ☐ No ☐

Was safety equipment provided? Yes ☐ No ☐ Was safety equipment used? Yes ☐ No ☐

Note: Attach any police reports or related diagrams to this accident report.

Witness(es):

Name: _____

Company: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Name: _____

Company: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Medical Treatment Required? ☐ Yes ☐ No ☐ First Aid only

Name of physician or health care professional: _____

If treatment was provided away from the work-site, where was it given?

Facility name: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Was the employee treated in an emergency room? ☐ Yes ☐ No

Was the employee hospitalized overnight as an in-patient? ☐ Yes ☐ No

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ROWE DRILLING COMPANY, Inc.

ACCIDENT AND ILLNESS INVESTIGATION REPORT

To be completed by the Subsidiary Safety and Health Representative:

Classification of Incident:

☐ Injury ☐ Illness

Result of Incident:

☐ First Aid Only

☐ Days Away From Work

☐ Remained at Work but Incident Resulted in Job Transfer or Work Restriction

☐ Incident Involved Days Away and Job Transfer or Work Restriction

☐ Medical Treatment Only

No. of Days Away From Work _____

Date Employee Left Work _____

Date Employee Returned to Work _____

No. of Days Placed on Restriction or Job Transfer: _____

OSHA Recordable Case Number _____

To be completed by Human Resources:

SSN: _____

Date of hire: _____ Hire date in current job: _____

Wage information: $ _____ per ☐ Hour ☐ Day ☐ Week ☐ Month

Position at time of hire: _____

Current position: _____ Shift hours: _____

State in which employee was hired: _____

Status: ☐ Full-time ☐ Part-time Hours per week: _____ Days per week: _____

Temporary job end date: _____

To be completed during report to workers' compensation carrier:

Date reported: _____ Reported by: _____

Confirmation number: _____

Name of contact: _____

Field office of claims adjuster: _____

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ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

FACSIMILE TRANSMITTAL

TO: _____ FROM: _____

CO: _____ E-MAIL: _____

FAX: _____ DATE: _____

RE: _____

We are sending you _____ pages, including this cover sheet. These pages are being transmitted as indicated below:

- ☐ As requested
- ☐ For your use
- ☐ For your information
- ☐ For your approval

HARD COPY:

- ☐ Will be sent via regular mail
- ☐ Will be sent via overnight mail
- ☐ Will be sent by facsimile only

MESSAGE:

ROWE DRILLING COMPANY, INC.

WATER WELL CONTRACTORS
WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

OWNER/CLIENT: _____ PROJECT NO.: _____ PROJECT MANAGER: _____

CONTRACTOR: _____ PROJECT NO.: _____ PROJECT MANAGER: _____

PROJECT NAME: _____

CONTRACTOR INFORMATION

SUBMITTAL DATE: _____ SUBMITTAL NUMBER: _____ NO. OF COPIES SENT: _____

☐ ORIGINAL SUBMITTAL ☐ RESUBMITTAL ☐ SUPPLEMENT ☐ INFORMATION ONLY

NOTE: If other than original then include: Date of Original _____ Submittal No. of Original _____

A. SPECIFICATION SECTION AND SUB-SECTION NUMBER: _____

B. DESCRIPTION: _____

C. MANUFACTURED BY: _____

D. INSTALLATION BY: _____

ENGINEER INFORMATION

NO. OF COPIES RECEIVED _____ NO. OF COPIES RETURNED _____

ACTIVITY	DATE	PERSON	COMMENT
RECEIVED			
RETURNED			

STATUS: ☐ NO EXCEPTIONS TAKEN ☐ MAKE CORRECTIONS AS NOTED
☐ AMEND AND RESUBMIT ☐ REJECTED SEE REMARKS

COMMENTS: _____

ROWE DRILLING COMPANY, INC.

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WATER WELLS & PUMPS, SALES AND REPAIR SERVICES
P. O. DRAWER 1389 TALLAHASSEE, FLORIDA 32302 850-576-1271 FAX 850-575-6636

Owner: ______________________ **RDC Project No.:** ______________________
Well No.: ______________________ **Date of Test:** ______________________
County/State: ______________________ **Well Size:** ______________________
Flow Device: **Witness:**

WELL DEVELOPMENT SUMMARY

TIME	ELASPED TIME	GPM	DTW (ft)	D.D. (ft)	SAND (mg/l)	TURBIDITY (NTU)	COMMENTS

ROWE DRILLING COMPANY, INC.

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OWNER: ______________________ **PROJECT No:** ______________

WELL No: ______________________ **COMPLETION DATE:** ______________

CUP/WUP #: ________________ **WMD PERMIT No:** ________________

DRILLER: __________________ **RIG USED:** ________________

FIELD WATER QUALITY LOG

Sample Result						
Depth (ft)/Time	pH	Temperature (°C)	Conductivity (µM)	TDS (mg/l)	Chlorides (mg/l)	Turbidity (NTU)