Report on the Construction and Testing of Class V Exploratory Well EW-1
at the Florida Power & Light Company
Turkey Point Units 6 & 7

Prepared for the Florida Power & Light Company

McNabb Hydrogeologic Consulting, Inc.

Volume 1

September 2012

ASR US, LLC

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September 24, 2012 MHCDEP-12-0331

Mr. Joe May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7
Report on the Construction and Testing of Class V Exploratory Well EW-1 at Florida Power & Light Company Turkey Point Units 6 & 7; FDEP Permit No. 0293962-001-UC

Dear Mr. May:

As required by specific condition 4.J.1) of the above referenced permit, the Report on the Construction and Testing of Class V Exploratory Well EW-1 at the Florida Power & Light Company Turkey Point Units 6 & 7 is hereby submitted on behalf of Florida Power & Light Company. This submittal includes the signed and sealed original and one copy of the report. An electronic copy of the report is provided inside the front cover of each report.

The following Certification is provided for the Report on the Construction and Testing of Class V Exploratory Well EW-1 at the Florida Power & Light Company Turkey Point Units 6 & 7.

> "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 on 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."

Should you have any questions regarding the report, please contact me at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

9/24/12

David McNabb, P.G.

Holtz Consulting Engineers, Inc.

David Holtz 9-21-12 PE #42595

David F. Holtz, P.E.

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

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Report on the Construction and Testing of Class V Exploratory Well EW-1 at the Florida Power & Light Company Turkey Point Units 6 & 7

INTRODUCTION

This report summarizes the construction and testing of a Class V Exploratory Well (EW-1) at the Florida Power & Light Company (FPL) Turkey Point power plant located on the shore of Biscayne Bay in Miami-Dade County, Florida. EW-1 was constructed in association with construction of the Dual-Zone Monitor Well (DZMW-1) authorized by Florida Department of Environmental Protection (FDEP) permit number 0293962-001-UC. Construction and testing was performed in accordance with Rule 62-528, Florida Administrative Code (F.A.C.), the recommendations of FDEP Technical Advisory Committee (TAC) and provisions of the FDEP Class V exploratory well construction permit. The FDEP TAC includes representatives of local, state, and federal agencies, including FDEP's state and local representatives, the South Florida Water Management District (SFWMD), the U.S. Environmental Protection Agency (EPA), and the United States Geological Survey (USGS). The Class V exploratory well construction permit allows construction and testing of an exploratory well and associated dual-zone monitor well without injection of fluids. FDEP issued the permit and FPL constructed the exploratory well to allow evaluation of the site hydrogeology for appropriate confining intervals and confirm the presence of a zone below the confining interval that is suitable to accept injected fluids.

Background

FPL is proposing to construct two new nuclear units (Units 6 & 7) at its Turkey Point Plant. The Turkey Point facility is located on the shore of Biscayne Bay in Miami-Dade County, Florida, approximately 25 miles south of Miami. The nearest city limits are Florida City, 8 miles west, and Homestead, 9 miles northwest. A Project Location Map is provided in Figure 1. A Site Plan showing the location of the exploratory well and associated dual-zone monitor well is provided in Figure 2.

Five electric generating units (two natural gas/oil conventional units, two nuclear and one combined cycle natural gas) currently exist at the site. The two additional nuclear units will be constructed to generate a nominal 1,100 megawatts each. Reclaimed water from the Miami-Dade Water and Sewer Department will be the primary cooling water source for the main cooling towers for the proposed nuclear units, with saline water serving as the back-up source. A Class I Industrial deep injection well system is proposed for disposal of non-hazardous operational industrial wastewater from Units 6 & 7. The wastewater disposal requirements for the two units are anticipated to be a combined total of approximately 18.6 million gallons per day (mgd) when using only reclaimed water for a cooling water source and approximately 84.8 mgd when using only back-up saline water as a cooling water source. Disposal volumes are estimated to be between approximately 18.6 mgd and 84.8 mgd when using a combination of reclaimed and saline water for cooling. Based on the upper bounds set for this Project, the deep injection well system is anticipated to consist of up to 13 deep injection wells, associated dual-zone monitor wells, piping and instrumentation.

FPL constructed EW-1 to confirm the geology and hydrogeology of the site and the feasibility of disposal of non-hazardous fluids via deep well injection. EW-1 was constructed to Class I Industrial deep injection well standards, in full compliance with the requirements of Chapter 403, Florida Statutes, and all applicable rules of the FDEP. FPL may convert EW-1 to a Class I Industrial deep injection well following submittal of a permit application and issuance of a Class I deep injection well construction permit. Construction of a dual-zone monitor well (DZMW-1) was completed on July 25, 2012. DZMW-1 is located approximately 75 feet south of EW-1. The dual-zone monitor well is a required component of the injection system monitoring program of a Class I Industrial deep injection well system. A separate report detailing the construction and testing of DZMW-1 will be submitted to FDEP.

Prior to beginning construction of EW-1, McNabb Hydrogeologic Consulting, Inc. assisted FPL with the design and permitting of EW-1 and DZMW-1. FDEP issued Class V exploratory well construction permit no. 0293962-001-UC to construct EW-1 and DZMW-1 on May 5, 2010. A copy of the FDEP permit to construct a Class V exploratory well is

provided in Appendix A. Construction of EW-1 began on May 11, 2011, and was completed on July 31, 2012, with the completion of the EW-1 wellhead.

Project Description

This project included the construction of one Class V exploratory well that was constructed to Class I Industrial deep injection well standards and one associated dual-zone monitor well. A report summarizing the construction and testing of the dual-zone monitor well has been submitted concurrently with this report to the FDEP. The exploratory well was constructed to a total depth of 3,230 feet below pad level (bpl) with a final 24-inch-diameter steel casing installed to a depth of 2,985 feet bpl. A nominal 18-inch-diameter fiberglass reinforced pipe (FRP) liner was installed inside the final casing of EW-1 to a depth of 2,975 feet bpl. The well was designed by McNabb Hydrogeologic Consulting, Inc. (MHC). The well was constructed by Layne Christensen Company. Resident observation during well construction was provided by a consulting team consisting of MHC, ASRus, LLC, and GEOSCI, Inc. David Holtz, P.E., of Holtz Consulting Engineers, Inc. served as the Engineer of Record for construction of EW-1.

Construction activities at the project site included installation of a temporary drilling pad and shallow pad monitor wells, construction and testing of exploratory well EW-1 and construction and testing of dual-zone monitor well DZMW-1.

A tabulated summary of well construction activities for EW-1 and weekly construction summary cover letters are presented in Appendices B and C, respectively.

CONSTRUCTION PHASE

The following describes the construction and data collection associated with the construction of exploratory well EW-1 and the associated pad monitoring wells.

Pad Monitor Wells

The construction permit required the installation of pad monitor wells at the northeast, southeast, southwest and northwest corners of the EW-1 construction pad to monitor for groundwater impacts related to leakage from the temporary drilling pad or spillage of construction fluids. The wells were constructed to a depth of 30 feet below land surface with 20 feet of 2-inch-diameter schedule 40 PVC casing and a 10-foot long, 2-inch-diameter 20-slot PVC screen. Each pad monitor well was labeled with its name upon completion. The elevation of the top of casing of each of the pad monitor wells was measured relative to the North American Vertical Datum of 1988 (NAVD 88) to allow measurement of the elevation of the water table. The wells were completed with a steel enclosure to protect the wells from damage. Table 1 provides the pad monitor well top of casing elevations.

Table 1. Pad Monitor Well Top of Casing Elevations

Well Name	Elevation (feet above NAVD 88)
SE-EW PMW	8.59
NE-EW PMW	8.88
NW-EW PMW	8.84
SW-EW PMW	8.88

Water table elevation data and groundwater samples were collected from each pad monitor well and analyzed for specific conductance, chlorides, total dissolved solids (TDS), and temperature to establish background water quality data prior to beginning construction of EW-1. The pad monitor wells were then sampled weekly throughout the EW- 1 well construction period. The samples were analyzed for specific conductance, chlorides, TDS, and temperature. Water level measurements were also taken just prior to each sample collection. Figure 3 provides a diagram of a typical pad monitor well.

Exploratory Well EW-1

FDEP approval to begin drilling operations was received on May 2, 2011. A copy of the e-mail providing approval to begin drilling is provided in Appendix D. Construction of exploratory well EW-1 began on May 11, 2011. Prior to beginning drilling operations, an elevation survey identified the pad elevation at the top of the 64-inch-diameter pit pipe at 7.18 feet NAVD 88. All measurements during construction and testing of EW-1 were taken relative to the pad elevation at the top of the 64-inch-diameter pit pipe. Mud rotary drilling was used to drill the interval from land surface to 1,095 feet bpl. A closed circulation, reverse-air system was used to drill the interval from 1,095 to 3,265 feet bpl to allow collection of pilot hole water samples. A stripping head was installed prior to penetrating the Floridan Aquifer and was utilized for blowout-prevention. A mixture of barite and bentonite was used to control the artesian head while drilling in artesian zones. Salt was also used for control of artesian head after casing had been installed to a depth below the base of the Underground Source of Drinking Water (USDW). The USDW is defined as a non-exempt aquifer or its portion which either a) supplies drinking water for human consumption b) is classified as F-I, G-I, or G-II groundwater, or c) contains less than 10,000 mg/L of TDS. A summary of the type of material used to control artesian head, the dates the material was used and the approximate amount of material used is provided in the Daily Kill Material Log provided in Appendix E.

Deviation surveys were performed on pilot and reamed holes to monitor the boreholes for deviation from vertical. The deviation surveys were performed at not greater than 90-foot intervals from land surface to a depth of 1,604 feet bpl, at which depth the testing intervals were decreased to not greater than 60 feet in accordance with the construction permit. A copy of the deviation survey summary sheet is provided in Appendix F. Deviation survey data indicate the boreholes were no greater than 0.6 degrees from vertical throughout the project.

Formation samples (drill cuttings) were collected and described at 10-foot intervals from land surface to a depth of 2,800 feet bpl and at 5-foot intervals below a depth of 2,800 feet bpl during the drilling of the pilot hole. Additional data collected during pilot hole drilling included water samples collected at 90-foot intervals during reverse-air drilling, packer

testing hydraulic data and water samples, geophysical logs and rock cores. These data were interpreted to provide geologic and hydrogeologic information for the site and to assist in selection of the casing setting depths. Geophysical logging was performed in conformance with the geophysical logging program provided in the EW-1 construction permit application supporting information and the requirements of the EW-1 construction permit. Following completion of pilot hole data collection, the pilot hole was reamed to the appropriate diameter for casing installation. Reamed holes were conditioned by making several wiper passes to enable unobstructed installation of casings and conditions for optimum bonding of cement to casing and cement to formation and to prevent channeling during cementing operations. MHC, Inc. prepared and submitted casing setting depth recommendations for FDEP approval prior to installation of the intermediate and final casings of EW-1.

Exploratory well EW-1 was constructed with new and unused 54-, 44-, 34-, and 24-inch outside diameter steel casings designed to last for the life expectancy of the well. The final 24-inch-diameter casing has a 0.5-inch wall thickness, is seamless, and conforms to American Petroleum Institute (API) 5L specifications. The final casing was selected to meet requirements set forth in Rule 62-528.410(4)(b), F.A.C., provide protection against casing failure during cementing operations, protect against failure during operation of the well and subsequent pressure tests, and provide sufficient corrosion protection. A nominal 18-inch-diameter FRP injection tubing was installed inside the 24-inch-diameter casing to protect the 24-inch-diameter casing from corrosion.

Each steel casing was fully cemented with American Society of Testing and Materials (ASTM) Type II cement from the base of the casing to land surface to prevent movement of fluids into or between USDWs, maintain groundwater quality in aquifers above the injection zone, and protect casings from corrosion. All cementing of casing was in accordance with American Water Works Association (AWWA) Standard for Water Wells, A100-06-2006. When appropriate, casings were pressurized during cementing to prevent against casing collapse. Temperature logs were performed following each cement stage that did not result in cement returns at surface. All casings were centralized to ensure the presence of an adequate annulus around the casing. Casing depths and the types and quantities of cement used for the construction of EW-1 are summarized in Appendix G. Casing mill certificates

for each of the casings and the FRP injection tubing used during construction of EW-1 are presented in Appendix H.

Prior to beginning construction of EW-1, the contractor vibrated a 64-inch-diameter steel pit pipe to a depth of 33 feet bpl and constructed a steel construction pad for containment of fluids introduced into and produced from the well during construction. Construction of EW-1 began with drilling a pilot hole to a depth of 255 feet bpl using a 12¼-inch-diameter bit. A caliper and gamma ray log was then performed on the pilot hole before reaming the pilot hole to a depth of 260 feet bpl using a 62½-inch-diameter drill bit. A caliper and gamma ray log was then performed on the reamed hole. The geophysical log and lithologic data were used to select a casing setting depth of 255 feet bpl. The 54-inch-diameter casing was installed to a depth of 255 feet bpl and cemented to land surface.

Below the base of the 54-inch-diameter casing, a pilot hole was drilled using mud rotary drilling techniques to a depth of 1,090 feet bpl using a 12¼-inch-diameter bit. The pilot hole then underwent geophysical logging, which included performance of caliper, gamma ray, spontaneous potential, and dual-induction logs. The pilot hole was then reamed using a 52½-inch-diameter drill bit to a depth of 1,095 feet bpl. A caliper and gamma ray log was then performed on the reamed hole. The 44-inch-diameter casing was installed to a depth of 1,090 feet bpl and cemented to land surface.

A 12¼-inch-diameter drill bit was then used to drill a pilot hole to a depth of 1,655 feet bpl. The open hole interval then underwent pilot hole geophysical logging. Logs performed include caliper, gamma ray, spontaneous potential, dual-induction, borehole compensated sonic, flowmeter, fluid specific conductance, and temperature. Flowmeter, fluid conductivity and temperature logs were performed under both static and dynamic conditions. The remaining logs were performed under static conditions. Geophysical log data were used to select four intervals for straddle packer testing. These intervals include 1,102 to 1,162, 1,225 to 1,285, 1,400 to 1,430, and 1,505 to 1,535 feet bpl. Packer testing was performed to identify the depth of the base of the USDW and to evaluate the fluid-producing characteristics of the test intervals.

Based on interpretation of the results of packer testing, geophysical logging, and formation sample data, a 34-inch-diameter casing setting depth of 1,535 feet bpl was recommended to

and approved by the FDEP. A copy of the FDEP e-mail approving the 34-inch diameter casing seat recommendation is provided in Appendix D. The pilot hole was then backplugged with 12 percent bentonite cement blend from the base of the pilot hole to a depth of 1,094 feet bpl to eliminate the possibility of an open conduit resulting from the reamed hole potentially tracking off of the pilot hole during drilling. A 42½-inch-diameter bit was then used to drill a hole to a depth of 1,542 feet bpl. A caliper and gamma ray log was then performed on the reamed hole in preparation for and to assist with installing the 34-inch-diameter intermediate casing. The 34-inch-diameter casing was then installed to a depth of 1,535 feet bpl and cemented to land surface.

A 12¼-inch-diameter bit was then used to drill a pilot hole from the base of the 34-inch-diameter casing to a depth of 3,265 feet bpl using reverse-air drilling techniques. When necessary, pilot hole drilling was interrupted to collect ten cores over the interval from 1,721.5 to 2,679 feet bpl.

Pilot hole drilling was slowed by the presence of a significant dredge zone that was encountered at a depth of 3,192 feet bpl and extended to the base of the pilot hole at a depth of 3,265 feet bpl. Because of this dredge zone the pilot hole filled in to a depth of 3,232 feet prior to geophysical logging of the pilot hole and it repeatedly filled in with limestone and dolomite gravel and sand, inhibiting advancement of the borehole below a depth of 3,265 feet bpl. Based on regional hydrogeologic data additional permeable strata are anticipated to be present at greater depth.

The open hole interval then underwent pilot hole geophysical logging. Logs conducted included; caliper, gamma ray, spontaneous potential, dual-induction, borehole compensated sonic, video, flowmeter, fluid conductivity, and temperature. All logs were performed under static conditions. In addition, the flowmeter, fluid conductivity and temperature logs were also performed under dynamic conditions. The pilot hole had filled in with formation material from the dredge zone to a depth of 3,232 feet bpl at the time of geophysical logging. The caliper log showed that the pilot hole had a very large diameter which exceeded 22-inches over most of the pilot hole. A borehole televiewer log, which had been specified to be performed on the pilot hole, was not performed on since the diameter of most of the pilot hole exceeded the field of investigation of the tool. Elimination of the borehole televiewer

from the logging program was discussed with FDEP. A copy of the FDEP e-mail approving the elimination of the borehole televiewer log is provided in Appendix D. Geophysical log data were used to select intervals for inflatable packer testing. The geophysical log data revealed that the diameter of much of the pilot hole exceeded the diameter to which the inflatable packers can safely inflate. Therefore, some of the inflatable packer tests were performed with sleeves installed on the inflatable packers to increase the effective diameter at which the inflatable packers can safely be inflated. Some portions of the borehole had to undergo reaming to allow installation of the sleeved inflatable packers. This reaming was performed in stages to allow geophysical logging and packer testing to proceed as portions of the borehole were reamed. The reaming that was performed to allow packer testing was originally specified to be performed after completion of packer testing. A total of six packer tests were successfully performed to evaluate the confining characteristics of the test intervals and to confirm the presence of the "Boulder Zone" at the site. One packer test and a formation test was performed to confirm the presence of the "Boulder Zone" prior to selecting a setting depth for the 24-inch diameter final casing. Performance of the formation test was not included in the well construction specifications but was deemed necessary to demonstrate that the borehole had at least partially penetrated the "Boulder Zone". A copy of the FDEP e-mail approving the performance of the formation test is provided in Appendix D.

Based on interpretation of the results of packer testing, coring, geophysical logging, and formation sample data, a 24-inch-diameter final casing setting depth of 2,980 feet bpl was recommended to and approved by the FDEP and TAC. A copy of the FDEP e-mail approving the final casing seat recommendation is provided in Appendix D. The pilot hole was then reamed to a depth of 2,978 feet bpl using a 32-inch-diameter bit. A 24-inch-diameter bit was then used to ream the interval from 2,978 to 2,980 feet bpl. A 22-inch-diameter bit was then used to ream the interval from 2,980 to 3,230 feet bpl, the total depth of the exploratory well. The well construction specifications indicated that the pilot hole would be backplugged with cement prior to performing the above described reaming, however, the large diameter of the pilot hole eliminated the need to backplug the pilot hole. A copy of the FDEP e-mail approving the elimination of the need to backplug the pilot hole is provided in Appendix D.

A caliper and gamma ray log was then performed on the reamed hole in preparation for installation of the 24-inch-diameter steel final casing. Based on field conditions, the 24-inch-diameter casing was installed to a depth of 2,985 feet bpl and cemented from the base of casing to a depth of 313 feet bpl. A cement bond log was then performed on the 24-inch-diameter casing prior to cementing the interval from 313 feet bpl to land surface. A video survey and successful pressure test was then performed on the 24-inch-diameter casing.

A nominal 18-inch-diameter FRP injection tubing was then installed inside the 24-inch-diameter casing to a depth of 2,975 feet bpl. The FRP transitions to 16.5-inch-diameter duplex steel casing at a depth of 12.5 feet bpl. The annular space between the 24-inch-diameter final steel casing and the nominal 18-inch-diameter FRP injection tubing was filled with a one percent solution of Baracor 100 corrosion inhibitor prior to seating the base of the FRP injection tubing into an annular packer installed on the inside of the 24-inch-diameter casing. The annular space between the final casing and the injection tubing was then successfully pressure tested. The open hole interval of 2,985 to 3,230 feet bpl would serve as a portion of the injection zone if EW-1 is converted to Class I Industrial deep injection well IW-1. A copy of the Material Safety and Data Sheet (MSDS) for Baracor 100 is provided in Appendix I.

The completed well was then developed and background "Boulder Zone" water sampling took place. EW-1 then underwent final video logging. Water level of the well was then allowed to recover and stabilize prior to measuring the static head of the open hole interval at an elevation of 6.20 feet above NAVD 88. Figure 4 provides a completion diagram of EW-1. A diagram of the temporary wellhead installed on EW-1 is provided in Figure 5. A final site survey was performed at the completion of construction to provide precise well location and elevation data. A copy of the Certified as-built survey, a Certification of Class V Well Construction Completion, Certification of Completion of surface equipment, and signed and sealed as-built diagrams of EW-1 are provide in Appendix J.

GEOLOGIC AND HYDROGEOLOGIC DATA COLLECTION AND FRAMEWORK

The geologic and hydrogeologic characteristics of the site were interpreted from physical (drill cutting samples and rock cores), hydraulic (packer tests) and electronic data (geophysical logs). These data help to identify and characterize the geologic formations and hydrogeologic units penetrated by the well bore.

Drill Cutting Samples

Drill cutting samples from EW-1 were collected at 10-foot intervals from land surface to a depth of 2,800 feet bpl, at which point sampling frequency was increased to 5-foot intervals. The samples were described for rock type, color, grain size, consolidation, porosity, and fossils. The lithologic descriptions were useful for determining the geologic formations penetrated by the well bore. A detailed lithologic log of drill cutting samples from EW-1 is provided in Appendix K.

Geophysical Logging

Geophysical logs were performed in the pilot hole of EW-1 to correlate drill cutting samples to geophysical logs, to identify formation and hydrogeologic boundaries, to aid in the selection of straddle packer testing intervals and casing setting depths, to assist in the delineation of the base of the lowermost USDW, and to obtain specific data pertaining to the subsurface formations. A copy of the geophysical log prints performed during construction of the well are provided in Volume 2, Appendix L of this report. A copy of each of the video surveys performed is provided on the digital video discs provided in Appendix L. Table 2 provides a summary of the logs performed during construction of EW-1.

Table 2. Geophysical Logging Schedule

Logging Event	Date Started	Logged Interval (feet bpl)	Logs Performed
1	May 15, 2011	0 to 255	GR and C
2	May 25, 2011	0 to 260	GR and C
3	June 5, 2011	0 to 1,090	GR, C, DI and SP
4	June 20, 2011	0 to 1,095	GR and C
5	June 23, 2011	0 to 1,085	CT
6	July 11, 2011	1,100 to 1,655	C, GR, DI, SP, BCS, FC, T and FM
7	July 31, 2011	1,000 to 1,542	GR and C
8	August 5, 2011	0 to 1,520	CT
9	November 30, 2011	1,500 to 3,230	C, GR, DI, SP, BCS, FC, T and FM
10	January 6, 2012	1,450 to 2,742	GR and C
11	January 15, 2012	1,500 to 2,900	GR and C
12	January 24, 2012	1,475 to 2,900	GR and C
13	February 11, 2012	1,535 to 3,232	V
14	February 21, 2012	1,450 to 3,230	GR and C
15	March 3, 2012	0 to 2,970	CT
16	March 7, 2012	0 to 2,985	CBL
17	March 10, 2012	0 to 2,980	V
18	April 11, 2012	0 to 3,230	V
19	June 15, 2012	0 to 3,230	T

GR = gamma ray; C = caliper; DI = dual-induction; SP = spontaneous potential;
BCS = borehole compensated sonic; FC = fluid conductivity; T = temperature;
CT = cement top temperature; FM = flowmeter; CBL = cement bond log; V = video

Rock Cores

Rock core samples were collected during pilot hole drilling to provide an intact rock sample of the cored intervals. Cores were obtained using a 4-inch-diameter core bit on a 17-foot-long core barrel. A description of each core, including rock type, color, grain size, consolidation and porosity was prepared after measuring each core. A total of 10 cores between the depths of 1,721.5 and 2,679.0 feet bpl were collected during pilot hole drilling of EW-1. Portions of the rock core samples were sent to a geotechnical testing laboratory for analysis. Table 3 provides a summary of the cored intervals and core recovery.

Table 3. Core Summary

Core Number	Cored Interval (feet bpl)	Length Cored (feet)	Length of Core Recovered (feet)	Percentage of Recovery	Date Collected
1	1,721.5 – 1,734.5	13.0	3.3	25.4%	8/14/2011
2	2,026.0 – 2,040.0	14.0	12.0	85.7%	8/18/2011
3	2,110.0 – 2,124.0	14.0	2.0	14.3%	8/20/2011
4	2,288.3 – 2,302.3	14.0	13.0	92.9%	8/21/2011
5	2,396.0 – 2,410.0	14.0	6.1	43.6%	8/25/2011
6	2,576.0 – 2,578.0	2.0	0.9	45.8%	8/27/2011
7	2,580.0 – 2,590.0	10.0	0.8	8.0%	8/28/2011
8	2,638.0 – 2,652.0	14.0	8.5	60.7%	8/31/2011
9	2,652.0 – 2,666.0	14.0	5.2	37.1%	9/1/2011
10	2,666.0 – 2,679.0	13.0	12.4	95.4%	9/3/2011

Core recovery ranged from 8 percent to 95.4 percent. All cores consisted of dolomitic limestone and/or limestone. Each of the cores collected below a depth of 2,026 feet bpl have low porosity and permeability and show visually good confining characteristics. The core collected at a depth of 1,721.5 to 1,734.5 feet bpl have moderate permeability and less confining characteristics than the cores collected at greater depths. A detailed description of the core samples is provided in Appendix M.

Site Geology and Hydrogeology

A stratigraphic profile of the site was derived from the correlation of formation samples with geophysical logs performed during pilot hole drilling. Strata encountered during construction of the exploratory well ranged from Holocene to Eocene Age deposits. The stratigraphic units and their respective ages are as follows: Miami Limestone and Fort Thompson Formation of Pleistocene Age, the Tamiami Formation of Pliocene to Miocene Age, the Hawthorn Group of formations of Miocene to Late Oligocene Ages, the Suwannee Limestone of Early Oligocene Age, and the Avon Park and Oldsmar Formations of the Eocene Age. Figure 6 provides a generalized hydrogeologic column of the lithologic and geophysical data for EW-1. Lithostratigraphic and hydrogeologic descriptions of the strata penetrated by the EW-1 borehole are provided below.

Lithostratigraphic and Hydrogeologic Descriptions

Miami Limestone, Ft. Thompson, and Tamiami Formations

The Miami Limestone, Ft. Thompson, and Tamiami Formations of the Pleistocene to Pliocene Ages make up layers of sand, shells, limestone, sandy limestone, and, in the basal unit of the Tamiami Formation, dark greenish gray, clay-rich silt. The Miami Limestone, Ft. Thompson Formation and upper portion of the Tamiami Formation make up the Biscayne Aquifer at the site. The presence of dark greenish-gray, clay-rich silt at a depth of approximately 140 feet bpl marks the base of the Biscayne Aquifer. The base of the Tamiami Formation is located at a depth of approximately 210 feet bpl and marks the top of the Hawthorn Group.

Hawthorn Group

The Hawthorn group of the Miocene and Late Oligocene Age constitutes the confining interval between the Biscayne Aquifer and the Floridan Aquifer System. It is present at the site from a depth of approximately 210 to approximately 1,010 feet bpl. The Hawthorn Group sediments at the site consist of interbedded green clays, silt, sand, phosphate-rich calcareous limemuds and limestone layers similar to a marl. The Hawthorn Group makes up the Intermediate Confining Unit that separates the Biscayne Aquifer from the Upper Floridan aquifer at the site.

Suwannee Limestone

The Suwannee Limestone of the Oligocene Age occurs from a depth of approximately 1,010 to 1,255 feet bpl and generally consists of fine grained, moderately to well consolidated limestone and dolomitic limestone. It is characterized by relatively low to moderate gamma ray activity (compared to the overlying Hawthorn Group) and moderate resistivity. The Suwannee Limestone is part of the Upper Floridan aquifer, is under artesian pressure and contains brackish water.

Avon Park Formation

The Avon Park Formation of the Eocene Age occurs from a depth of 1,255 to 2,580 feet bpl. The Avon Park Formation consists primarily of interbedded yellowish gray to very pale orange, very fine to fine grained, limestone interbedded with intervals of yellowish brown to dark yellowish brown, very fine grained dolomite. The upper portion of the Avon Park

Formation (1,255 to 1,930 feet bpl) is more permeable than the lower portion, however, there are additional confining intervals present between the base of the USDW at a depth of approximately 1,450 feet bpl and 1,930 feet bpl. Relatively confining intervals within permeable intervals of the Avon Park Formation prevent intra-aquifer mixing of fluids of differing quality. The lower portion (1,930 to 2,580 feet bpl) of the formation serves as part of the primary confinement below the base of the lowermost USDW and prevents fluids of differing quality from migrating between more permeable zones above and below this confining interval. As with the Suwannee Limestone above, the Avon Park Formation is also part of the artesian Upper Floridan Aquifer with brackish water less than 10,000 mg/L total dissolved solids residing in the upper portion and saline water residing in the lower portion.

Oldsmar Formation

The Oldsmar Formation of the Eocene Age occurs from a depth of 2,580 feet bpl to below the total depth of the well. The lithology of the Oldsmar Formation at this site is limestone, dolomitic limestone and dolomite. The upper portion of the Oldsmar Formation serves as the lower portion of the primary confinement below the base of the USDW. The Oldsmar Formation contains highly transmissive, fractured, and cavernous intervals known as the "Boulder Zone". EW-1 was designed to allow injection into the "Boulder Zone" if it is converted to a Class I Industrial deep injection well. The top of the "Boulder Zone" is located below the lowermost USDW at a depth of 3,030 feet bpl at the site and there are no USDWs within the "Boulder Zone" within ¼-mile of the EW-1 site.

HYDROGEOLOGIC TESTING DURING CONSTRUCTION

Hydrogeologic testing during construction of EW-1 included collection of pad monitor well samples, pilot hole water samples during reverse-air drilling, core analyses, and packer testing.

Pad Monitor Well Data

Prior to beginning construction of EW-1, groundwater samples and water level data were collected from the pad monitor wells to establish background conditions within the uppermost surficial aquifer at the site. Weekly sampling took place during construction and testing of EW-1. A final sampling event took place following completion of construction and testing of EW-1. Water level relative to NAVD 88 was recorded for each pad monitor well prior to purging the wells for groundwater sample collection. Samples were analyzed for specific conductance, TDS, chloride, and temperature. Water level measurements, sample collection and laboratory analyses were performed by Florida Spectrum Environmental Services, Inc. throughout the project.

Review of the pad monitor well water level data indicates that, in general, water table levels at the site decreased over time during construction of EW-1. Background water table levels ranged from -1.51 to -1.66 feet NAVD 88. Water table elevations ranged from -0.28 to -1.10 feet NAVD 88 after completion of construction and testing of EW-1. Pad monitor well water levels were generally lowest during November through May, corresponding to the South Florida dry season. Pad monitor well water quality parameters generally remained stable throughout the sampling period. Each of the pad monitor wells were plugged and abandoned in accordance with Rule 40E-3.531, F.A.C. following receipt of FDEP approval and a Miami-Dade Health Department permit to allow plug and abandonment of the wells. Pad monitor well data summary sheets and a copy of the Miami-Dade Health Department plug and abandonment permit are provided in Appendix N.

Pilot Hole Water Quality Data

Pilot hole water samples were collected at approximately 90-foot intervals during reverse-air drilling. Each sample underwent analysis for ammonia, chloride, specific conductance, TDS, and total Kjeldahl nitrogen (TKN). The pilot hole specific conductance, chloride, and

TDS data were evaluated to provide information related to identifying the base of the lowermost USDW.

It should be noted that the drilling process for EW-1 used a closed circulation system in which drilling water was present in the pilot hole at all times. In addition a large volume of fresh water was introduced to the closed circulation system at the beginning of pilot hole reverse-air drilling. Adding fresh water at the beginning of reverse-air drilling is a standard process in the drilling of deep underground injection control wells. This may result in lower chloride, specific conductance and TDS results than expected for native Floridan aquifer groundwater.

Table 4 provides a summary of the EW-1 pilot hole water quality data. A copy of the water quality sample analytical reports and pilot hole water quality summary table is provided in Appendix O. Figure 7 provides a graph of pilot hole water sample chloride, specific conductance and TDS results relative to sample depth. The pilot hole water quality was relatively fresh between the depths of 1,100 and 1,255 feet bpl due to the high percentage of fresh water added to the closed circulation system. With the exception of three peaks, a general trend of increasing chloride, specific conductance and TDS concentrations with depth is apparent. As the pilot hole drilling progressed, the pilot hole water consisted of a greater percentage of native groundwater than it did at shallower depths. Additionally, the concentration of TDS and chloride and specific conductance of the native groundwater increases with depth. Occasional peaks in chloride, specific conductance and TDS concentrations can be attributed to the closed circulation reverse-air drilling method.

Table 4. Pilot Hole Water Quality Summary

Sample Date	Sample Depth (feet bpl)	Specific conductance (umhos/cm)	TDS (mg/L)	Chloride (mg/L)	Ammonia (mg/L)	TKN (mg/L)
6/30/2011	1,100	1,228	610	61.3	0.04	0.55
7/1/2011	1,190	1,177	768	85.5	0.06	0.59
7/1/2011	1,255	1,167	776	97.3	0.03	0.56
7/1/2011	1,345	2,420	1,428	551	0.06	0.42
7/1/2011	1,435	2,900	1,736	640	0.08	0.44
7/2/2011	1,525	6,760	4,168	2,045	0.09	0.35
7/3/2011	1,615	5,660	3,548	1,670	0.08	0.45
8/13/2011	1,704	9,500	5,688	3,120	U	0.56
8/15/2011	1,794	14,670	9,260	5,010	U	0.57
8/16/2011	1,884	20,400	13,520	7,180	U	0.38
8/17/2011	1,974	25,190	16,910	9,160	U	0.22
8/19/2011	2,064	37,000	24,280	14,400	U	0.71
8/21/2011	2,154	30,000	18,525	11,000	U	0.32
8/21/2011	2,244	32,100	16,967	11,500	U	0.17
8/23/2011	2,334	60,100	40,400	26,000	U	0.44
8/25/2011	2,424	38,200	23,200	14,200	U	0.17
8/26/2011	2,514	39,130	26,867	14,200	U	0.18
8/29/2011	2,604	48,400	32,767	17,400	U	0.13
9/4/2011	2,694	63,800	41,500	27,200	U	0.12
9/4/2011	2,784	59,600	40,400	25,800	U	0.12
9/5/2011	2,874	52,200	34,000	25,600	U	0.25
9/5/2011	2,964	47,240	31,200	17,900	U	0.28
9/6/2011	3,054	50,000	32,000	19,500	U	0.25
9/6/2011	3,144	49,900	33,100	19,500	U	0.47
10/23/2011	3,234	52,700	40,250	21,100	U	0.54

U = undetected

Figure 8 provides a graph of ammonia and TKN concentrations relative to depth. Review of the data indicates the pilot hole water samples have low concentrations of ammonia and TKN, which is typical of the Floridan aquifer water quality.

Rock Core Analytical Data

As previously mentioned, a total of ten cores were collected between the depths of 1,721.5 and 2,679 feet bpl during pilot hole drilling of EW-1. Portions of each rock core sample were sent to a geotechnical testing laboratory (Ardaman & Associates, Inc.) for laboratory analysis. A total of 16 samples were analyzed for vertical and horizontal hydraulic conductivity, specific gravity, porosity, unconfined compressive strength, and Young's Modulus. Some of the core samples did not contain enough intact pieces to perform each of

the laboratory analyses. A copy of the detailed core samples laboratory report is provided in Appendix P. Table 5 presents a summary of the core analytical data.

Table 5. Core Analytical Data Summary

Sample Depth (ft. bpl)	Vertical Hydraulic Conductivity (cm/sec)	Horizontal Hydraulic Conductivity (cm/sec)	Specific Gravity	Total Porosity (%)	Compressive Strength (lb/in^2)	Young's Modulus (lb/in^2)
2026.4-2027.0	3.3×10^{-6}	3.2×10^{-6}	2.71	27.4	1,588	8.2×10^{5}
2027.0-2027.5	3.7×10^{-4}	7.8×10^{-4}	2.70	35.0	NA	NA
2029.4-2030.4	1.0×10^{-5}	2.8×10^{-5}	2.71	33.6	1,440	5.5×10^{5}
2030.4-2031.3	3.0×10^{-5}	1.3×10^{-4}	2.71	36.6	1,551	9.8×10^{5}
2036.2-2036.7	7.6×10^{-5}	1.1×10^{-4}	2.72	35.5	NA	NA
2036.7-2037.9	NA	NA	NA	NA	1,193	5.3×10^{5}
2295.2-2296.0	1.9×10^{-4}	1.0×10^{-4}	2.74	39.5	738	1.6×10^{5}
2296.0-2296.75	8.4×10^{-5}	5.9×10^{-4}	2.72	37.9	1,187	4.6×10^{5}
2296.75-2297.5	1.0×10^{-4}	1.0×10^{-4}	2.72	38.5	608	7.2×10^{4}
2399.9-2400.9	5.4×10^{-4}	5.4×10^{-4}	2.70	38.7	1,087	6.1×10^{5}
2576.0-2577.0	1.9×10^{-4}	2.5×10^{-4}	2.71	41.4	699	3.9×10^{5}
2639.3-2639.7	1.6×10^{-6}	8.4×10^{-5}	2.69	33.7	NA	NA
2639.7-2640.2	NA	NA	NA	NA	1,629	6.9×10^{5}
2645.1-2645.5	1.4×10^{-5}	6.2×10^{-6}	2.70	36.9	NA	NA
2645.5-2646.5	NA	NA	NA	NA	1,581	6.0×10^{5}
2652.0-2652.8	2.8×10^{-6}	4.6×10^{-6}	2.71	34.5	554	8.2×10^{4}
2652.8-2653.5	2.3×10^{-6}	2.5×10^{-5}	2.71	33.2	752	1.6×10^{5}
2675.1-2675.6	2.7×10^{-4}	2.9×10^{-4}	2.71	39.5	NA	NA
2675.6-2676.1	NA	NA	NA	NA	1,057	5.8×10^{5}
2676.1-2677.0	1.1×10^{-6}	5.3×10^{-4}	2.72	43.4	567	3.0×10^{5}

NA = Not available

Review of the core laboratory data indicates the vertical hydraulic conductivity ranged from 1.1×10^{-6} cm/second to 5.4×10^{-4} cm/second, indicating the cored intervals are confining in nature.

Packer Tests

A total of ten intervals were successfully packer tested during construction of EW-1. Packer testing was attempted on additional intervals, but were terminated when either the packers failed to isolate the test interval or the test interval was productive and not suitable for packer testing. It should be noted that after several terminated straddle packer tests, the straddle packers were inflated inside the 34-inch-diameter casing and water was pumped from between the packers. This resulted in a water level decrease inside the 34-inch-diameter casing above the packers. The only way for the water level above the upper

packer to have decreased when pumping from between the straddle packers is if the upper packer did not seal against the casing wall, allowing water to flow past the upper packer, proving that the straddle packers were indeed not isolating the test interval in at least some of the straddle packer tests that were terminated. Nine of the ten packer tests were performed using straddle packers to isolate a test interval between the packers. The purpose of straddle packer testing was to delineate the base of the lowermost USDW and to evaluate the confining nature of strata above the injection zone and below the base of the lowermost USDW. One of the ten packer tests was performed using a single, open-ended packer to assist in the evaluation of the "Boulder Zone".

Packer testing took place by first inflating the packers at the test interval, developing the test interval until it was free of solids, allowing the water level to recover, pumping the test interval until water level had stabilized, then shutting off the pump and allowing water level in the test interval to recover. Water level data were collected and recorded during each test using a submerged pressure transducer and a Hermit 3000 data logger. Water samples were also collected at the end of pumping after establishing that the quality of water produced from the test interval had stabilized. Samples were field tested for specific conductance, temperature, and pH and sent to a state certified lab (Florida Spectrum Environmental Services, Inc.) for TDS, chloride, ammonia, TKN, and sulfate analyses. A copy of the lab report for each of the packer tests along with a table summarizing the packer test laboratory analytical results are provided in Appendix Q. Based on the packer tests water sample analytical data, the base of the lowermost USDW at the EW-1 site is located between a depth of 1,430 and 1,505 feet bpl. This is consistent with the log-derived TDS curve, which showed the base of the lowermost USDW at a depth of approximately 1,450 feet bpl. Water samples from all packer tests performed below a depth of 1,505 feet bpl had a TDS concentration of greater than 10,000 mg/L, further supporting this conclusion.

Table 6 provides a summary of pumping rate, water level drawdown, and the calculated specific capacity data of tested intervals. The specific capacity is calculated by dividing the pumping rate (in gpm) by the resulting drawdown (in feet) and is expressed in terms of gallons per minute per foot of drawdown (gpm/foot). Intervals where packer testing was terminated prior to performance of a test are also included in Table 6. Figures 9 through 18 provide an interpreted graph of water level drawdown data for each of the packer tests that

were performed. The specific capacity of the test intervals ranged from 0.003 gpm/foot to 49 gpm/foot. It should be noted that packer tests performed in low permeability zones typically provide a very conservative measurement of the confining characteristics of a confining interval due to fluids leaking past the inflatable packers used to isolate the test interval. Therefore, the true specific capacity of each of these tested intervals is probably less than is indicated by the packer test performance data.

Table 6. Straddle Packer Test Performance Data Summary

Test #	Test Interval (ft. bpl)	Pumping Rate (gpm)	Drawdown (feet)	Specific Capacity (gpm/foot)
1	1,505 – 1,535	76	31.3	2.43
2	1,400 – 1,430	77	40.6	1.90
3	1,225 – 1,285	78	33.2	2.35
4	1,102 – 1,162	16	161	0.10
5	1,930 – 1,952	2	60	0.03
6	2,984 – 3,011	Terminated due to test interval productivity		
7	3,020 - 3,232	78	1.6	49
8	1,970 - 1,992	0.5	145.8	0.003
9	2,058 - 2,080	4.9	98	0.05
10	2,183 - 2,205	Terminated due to packers not isolating test interval		
11	2,552 - 2,574	Terminated due to packers not isolating test interval		
12	2,634 - 2,656	Terminated due to packers not isolating test interval		
13	2,844 - 2,866	Terminated due to packers not isolating test interval		
14	2,480 - 2,502	Terminated due to packers not isolating test interval		
15	2,552 - 2,574	Terminated due to packers not isolating test interval		
16	2,694 - 2,716	Terminated due to packers not isolating test interval		
17	2,220 - 2,242	3.9	71	0.05
18	2,400 - 2,422	Terminated due to packers not isolating test interval		
19	2,478 – 2,500	22	91	0.24

The packer test water level data indicate that the packer tests performed between the depths of 1,930 feet bpl and 2,500 feet bpl were performed on intervals that are confining in nature. The specific capacity of these confining straddle packer tests ranged from 0.003 gpm/foot to 0.24 gpm/foot. The test interval for packer test #7 (3,020 to 3,232 ft bpl) is highly productive and was performed to assist in determining if the test interval is located within the "Boulder

Zone." The results of packer test #7 suggest the test interval is located within the "Boulder Zone." Friction losses within the drill pipe did negatively impact water level drawdown data, resulting in a lower specific capacity for the "Boulder Zone" than would be observed during well operation.

Additional interpretation of testing data is provided in the 34-Inch and 24-Inch Casing Seat Recommendations submitted to the TAC on July 20, 2011 and February 21, 2012, respectively. A copy of the text portion of the recommendation submittals is provided in Appendix R.

Background Injection Zone Sampling

Following completion of construction of EW-1, the exploratory well was fully developed to allow collection of a representative background water sample from the proposed injection zone. Development took place at a rate of approximately 145 gpm for a period of approximately 37 hours. A total volume of 324,000 gallons was developed from the well prior to sample collection. Florida Spectrum Environmental Services, Inc. then collected a groundwater sample of the injection zone to establish background water quality conditions. The sample was analyzed for Primary and Secondary Drinking Water Standards and Municipal Wastewater Minimum Criteria Groundwater Monitoring Parameters. The results of injection zone background water quality analyses are presented in Appendix S. Review of the background data indicates the TDS concentration of the "Boulder Zone" at the EW-1 location is 36,200 mg/L, which exceeds the 10,000 mg/L maximum TDS concentration to be classified as a USDW. The reported ammonia and TKN concentrations of <0.01 mg/L and 0.11 mg/L, respectively, demonstrate that groundwater in the "Boulder Zone" at the EW-1 location has not been impacted by the operation of Class I deep injection well systems in Miami-Dade County.

Formation Testing

A formation test was performed to confirm the penetration of EW-1 into the "Boulder Zone" and evaluate the aquifer below a depth of 3,010 feet bpl at the EW-1 site. The formation test consisted of the installation of a single, open-ended packer installed to a depth of 3,010 feet bpl, collection of background and recovery pressure data, and collection of pumping rate

and pumping pressure data. A volume of approximately 160,000 gallons of formation water pumped from EW-1 was stored in frac tanks at the site and provided the water source for the test. Pumping rates averaged 1,625 gpm and ranged from approximately 1,200 gpm to 1,625 gpm during the pumping portion of the formation test. A transducer was used to collect pressure data at surface and a memory gauge installed to a depth of 3,000 feet bpl was used to collect pressure near the top of the test interval.

Figure 19 presents downhole pressure and pumping rate data for the entire formation test period. Figure 20 presents the surface pressure and pumping data for the entire formation test period. Figures 21 and 22 present downhole and surface pressure data and pumping rate data for the pumping portion of the formation test. An increase of approximately 205 to 220 psi was observed at the surface while pumping at a rate of approximately 1,625 gpm. The large increase in pressure when pumping into the test interval was due to friction related to pumping at this high rate through 3,010 feet of six-inch diameter drill pipe. Review of the formation test data indicates the downhole pressure increased by approximately three to five psi above the static pressure when pumping into the test interval at a rate of approximately 1,625 gpm. The very low downhole pressure increase while pumping at this rate confirms the test interval is located within the "Boulder Zone" and the "Boulder Zone" is capable of accepting injection.

Confinement Data Summary

Testing performed during construction of EW-1 to evaluate whether effective vertical confinement is present below the base of the USDW included analysis of rock cores, geophysical logging and packer testing. Interpretation of the testing data allowed identification of the interval from approximately 1,930 to 2,915 feet bpl as the primary confining interval between the base of the USDW and the "Boulder Zone".

Geophysical log data included caliper, gamma ray, spontaneous potential, dual-induction, borehole compensated sonic, video, flowmeter, fluid conductivity, and temperature. All logs were performed under static conditions. The flowmeter, fluid conductivity and temperature logs were also performed under dynamic conditions. The geophysical log data, coupled with the rock core and packer test data allowed the interval from 1,535 to 3,232 feet bpl to be divided into three intervals with varying confining characteristics.

The interval from 1,535 to 1,930 feet bpl is characterized by a variable diameter borehole that ranges between approximately 34 and 47 inches, low to moderate, but variable gamma ray activity ranging from approximately 3 to 55 American Petroleum Institute (API) units, moderately low and variable resistivity, and a highly variable acoustic travel time. Fluid conductivity and temperature are fairly consistent through this interval. The flowmeter log, in combination with the fluid conductivity and temperature logs suggests that most of the water production is occurring at the base of this interval and below this interval. Interpretation of the geophysical logs indicates the interval from 1,535 to 1,930 feet bpl consist of beds of varying lithology and porosity. The variable diameter borehole suggests the rocks making up this interval vary from soft to well indurated. The moderately low resistivity as indicated by the dual-induction log indicates this interval contains water with greater than 10,000 mg/L TDS. The relatively short acoustic travel time for beds within the interval between approximately 1,770 and 1,870 feet bpl, coupled with no indication of fracturing indicates the presence of good confinement within this interval. One rock core was collected within this interval, however, none of the core pieces were large enough for laboratory analysis. This interval has both confining and productive characteristics, but does not make up the primary confinement at the site due to the number of zones that appear to be permeable in nature.

The interval from 1,930 to 3,030 feet bpl is characterized by borehole diameter that ranges from 12¼ to 46 inches, low gamma ray activity, a moderately low resistivity, and a less variable and short acoustic travel time (when compared to the interval above). A number of zones with high acoustic travel time between 2,915 and 3,010 feet bpl indicates there are porous zones within the interval from 2,915 to 3,010 feet bpl. Review of the flowmeter, fluid conductivity and temperature logs suggests there are no significant water producing zones between 1,930 and 2,915 feet bpl. There is no indication of vertically extensive or significant fracturing within the interval. These data represent that almost all the interval between 1,930 and 2,915 feet bpl consists of relatively soft material that is susceptible to washing out compared to the interval above. The relatively stable and short acoustic travel time suggests the lithology of this interval is less variable than that of the interval above and has a low porosity. It should be noted that the porosity curve provided on the borehole compensated sonic log shows a lower porosity than the measured porosity of rock core samples. This is

most likely due to the large diameter of the borehole when the geophysical logs were performed. A total of 16 rock core samples were collected and analyzed and five straddle packer tests were performed within this interval to provide additional confinement-related information. Rock core vertical hydraulic conductivities ranged from 1.1×10^{-6} cm/second to 5.4×10^{-4} cm/second. Based on geophysical log data, it appears that the cored intervals do not include the most confining strata. Specific capacity of test intervals for packer tests performed within this interval ranged from 0.003 gpm/foot to 0.24 gpm/foot. The low vertical hydraulic conductivity of rock core sample coupled with the low specific capacity of the straddle packer test intervals and geophysical log data indicate the interval from 1,930 to 2,915 feet bpl is confining in nature and makes up the primary confinement at the site. The interval from 2,915 to 3,020 feet bpl contains zones that are porous and the 2,915 feet bpl defines the top of the injection zone.

The interval from 3,030 to 3,232 feet bpl is characterized by a very large hole diameter, low gamma ray activity, a moderately low resistivity that decreases to a very low resistivity with depth, and highly variable and short acoustic travel time. The sonic travel time data below a depth of 3,120 feet bpl is artificially high due to the large hole diameter and does not reflect the true acoustic travel time for the formation. Review of the flowmeter, fluid conductivity and temperature logs suggests there is fluid production from the top of this interval. A packer test performed within this interval demonstrated a high specific capacity. Additionally, formation testing confirmed the permeable nature of this interval. This interval represents the Boulder Zone at the site and is not confining in nature.

In summary, based on interpretation of data presented herein the interval from 1,930 to 2,915 feet bpl is the primary confining unit between the base of the USDW and the injection zone.

MECHANICAL INTEGRITY TESTING

Mechanical integrity testing (MIT) of exploratory well EW-1 was performed. Testing of exploratory well EW-1 included performance of pressure testing, cement bond logging and video inspection of the final casing of EW-1, video inspection of the FRP injection tubing, and pressure testing of the annular space between the final casing the FRP injection tubing. This testing was designed to demonstrate satisfactory internal mechanical integrity (no leaks in the tubing or casing) of the injection well system. Additional testing (radioactive tracer testing) will be performed if EW-1 is converted to Class I deep injection well IW-1 to demonstrate satisfactory external mechanical integrity. External mechanical integrity is defined as a lack of fluid movement within the annulus of an injection well. Results of the testing performed demonstrated satisfactory internal mechanical integrity of EW-1.

Pressure Testing

The 24-inch-diameter casing underwent pressure testing to demonstrate internal mechanical integrity. On March 12, 2012, a casing pressure test was successfully conducted on the 24-inch-diameter casing of EW-1. An inflatable packer was installed to a depth of 2,963 feet bpl in preparation for pressure testing. The casing was pressurized and pre-tested to allow any air introduced during pressurizing of the casing to rise to the surface. Precaution was taken to release a small portion of the pressure to ensure no air was trapped inside the casing before starting the 60-minute pressure test. The casing pressure at the start of the test was 155.0 psi. The pressure was monitored for a 60-minute period with a 200-psi calibrated pressure gauge. Pressure readings were recorded throughout the 60-minute test at 5-minute intervals. At the conclusion of the test, the casing pressure was 156.0 psi. The 1.0 psi gain in pressure is within the allowable 5 percent change in pressure (7.85 psi) specified in Rule 62-528.300(6)(e), F.A.C.. and successfully demonstrated the mechanical integrity of the 24-inch diameter final casing. Deborah Daigle, P.G., (ASRus, LLC) observed the casing pressure test. FDEP was invited to witness the pressure test, but declined to witness the test. A total of approximately 50 gallons of water were drained to the containment pad when the pressure was released from the casing.

The annular space between the 24-inch-diameter casing and the nominal 18-inch-diameter FRP injection tubing underwent pressure testing to demonstrate internal mechanical integrity of the 24-inch-diameter casing, the FRP injection tubing and the positive-seal packer at the base of the injection tubing. On June 21, 2012, an annular pressure test was successfully conducted on the annular space. The annular space was pressurized and pre-tested to allow any air introduced during pressurizing of the annulus to rise to the surface. Precaution was taken to release a small portion of the pressure to ensure no air was trapped inside the casing before starting the 60-minute pressure test. The annular pressure at the start of the test was 160.5 psi. The annular pressure was monitored for a 60-minute period with a 200-psi calibrated pressure gauge. Pressure readings were recorded throughout the 60-minute test at 5-minute intervals. At the conclusion of the test, the annular pressure was 158.5 psi. The 2.0 psi loss in pressure is within the allowable 5 percent pressure change (8.025 psi) specified in Rule 62-528.300(6)(e), F.A.C.. and successfully demonstrated mechanical integrity of the 24-inch diameter final casing, the FRP injection tubing and the positive-seal packer at the base of the injection tubing. Sally Durall (MHC, Inc.) and Len Fishkin (FDEP) observed the casing pressure test. A total of approximately 63 gallons of water were drained to the containment pad when the pressure was released from the annulus.

A copy of the pressure gauge calibration certificates for the pressure gauges used for the final casing pressure test and the annular pressure test, along with pressure test summary sheets are provided in Appendix T.

EW-1 Final Casing and Completed Well Video Surveys

A video survey of the final 24-inch-diameter casing and completed well was conducted to inspect the final casing, the FRP injection tubing and the open hole interval of EW-1. The color camera assembly was equipped with centralizers to keep it centered in the well, and its elevation was "zeroed" at pad level for both video surveys. On March 10, 2012, video logging of the 24-inch-diameter casing took place. The video survey showed the 24-inch-diameter casing to be in good condition.

On April 11, 2012, a video survey of the completed well was performed. The survey was performed from land surface to the total depth of the well and showed the FRP injection

tubing to be in good condition. The connection between the duplex steel transition piece and the FRP injection tubing was observed at a depth of 13 feet bpl. The connection between the FRP injection tubing and the positive-seal packer was observed at a depth of 2,974 feet bpl. The base of the final casing and the base of the borehole were observed at depths of 2,984 and 3,230 feet bpl, respectively. The discrepancy between the observed depth of the base of the casing (2,984 feet bpl) and the actual base of casing (2,985 feet bpl) is within expected instrument tolerance. A copy of each video survey is provided on the DVD in Volume 2, Appendix L of this report. A summary data sheet for each of the videos is provided in Appendix U.

Geophysical Logging

A cement bond log (CBL) was performed on the 24-inch-diameter final casing of EW-1 on March 7, 2012. The CBL was conducted to assess the quality of the cement-to-casing bond of the final casing of EW-1. The CBL was performed prior to cementing the upper 313 feet of casing to land surface to allow the tool to be calibrated to uncemented casing (above 313 feet bpl) and cemented casing (below 313 feet bpl). The low amplitude of the CBL demonstrates a good cement bond around the final 24-inch-diameter casing from 313 feet bpl to the base of the 24-inch-diameter casing. Above a depth of 313 feet bpl, the cement bond log shows that the casing is uncemented. The interval from 313 feet bpl to land surface was cemented after completion of the CBL.

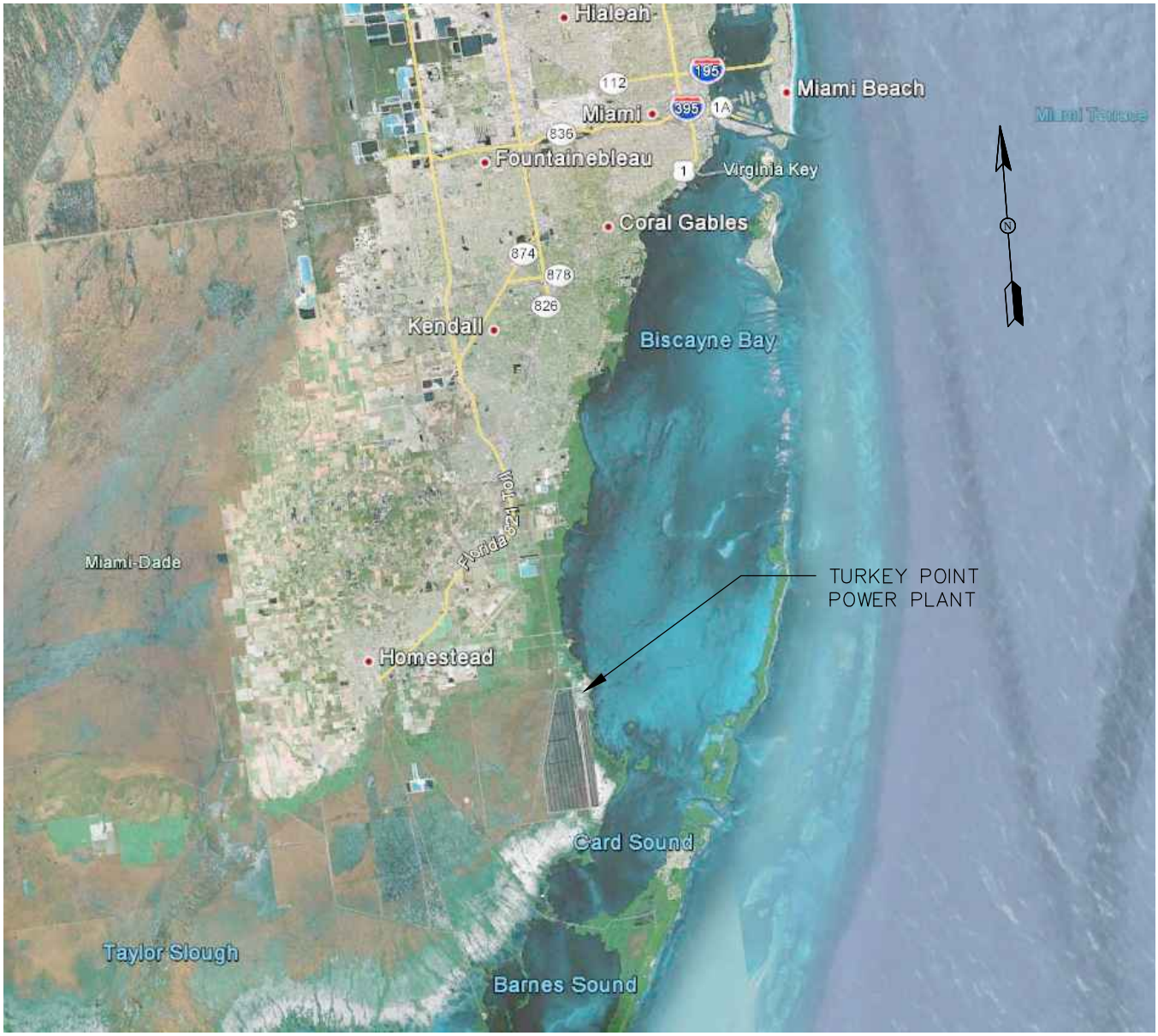
SUMMARY AND CONCLUSIONS

A Class V exploratory well EW-1 was constructed at the FPL Turkey Point power plant located in Miami-Dade County, Florida. The exploratory well was constructed to Class I Industrial deep injection well standards. The exploratory well was constructed to confirm geology and hydrogeology at the location of EW-1. A 24-inch outside diameter steel final casing with a wall thickness of 0.50-inches was installed to a depth of 2,985 feet bpl with a nominal 18-inch-diameter FRP injection tubing installed to a depth of 2,975 feet bpl. Testing performed after construction of the exploratory well demonstrates internal mechanical integrity of EW-1. The well was completed with an open hole interval from 2,985 feet to 3,230 feet bpl, the total depth of the exploratory well.

Testing during construction of EW-1 demonstrated the presence of a highly permeable zone (the "Boulder Zone") below the base of the final casing overlain by a thick confining interval from approximately 1,930 to 2,915 feet bpl. The base of the USDW was identified at a depth of approximately 1,450 feet bpl through interpretation of packer testing water quality data and geophysical logs. Permeable zones below a depth of 2,915 feet bpl identify the top of the injection zone of EW-1. The base of the borehole of EW-1 identifies the base of the injection zone of EW-1, resulting in a 315-foot thick injection zone. These conditions demonstrate that the hydrogeology of the EW-1 site is favorable for disposal of the Units 6 & 7 wastewaters via a Class I deep injection well system.

It is concluded that EW-1 is suitable for conversion to a Class I deep injection well for disposal of non-hazardous industrial wastewater. Prior to placing the well into service, a construction permit must be obtained from the FDEP Southeast District to convert the well to Class I deep injection well IW-1. If converted to a Class I deep injection well, the interval of 2,915 to 3,230 feet bpl would serve as the injection zone of the well. A dual-zone monitor well constructed to meet the requirements of Chapter 62-528, F.A.C., has been constructed approximately 75 feet to the south of EW-1. Construction and testing activities of this well are documented in a separate report.

Figures



MHC McNabb Hydrogeologic Consulting, Inc.
601 HERITAGE DRIVE, SUITE 110
Jupiter, Florida 33458
Phone 561.891.0763 - Fax 561.623.5469

FLORIDA POWER & LIGHT COMPANY
TURKEY POINT UNITS 6 & 7
EXPLORATORY WELL EW-1
PROJECT

PROJECT LOCATION MAP

FIGURE 1

NOT TO SCALE

MHC McNabb Hydrogeologic Consulting, Inc.
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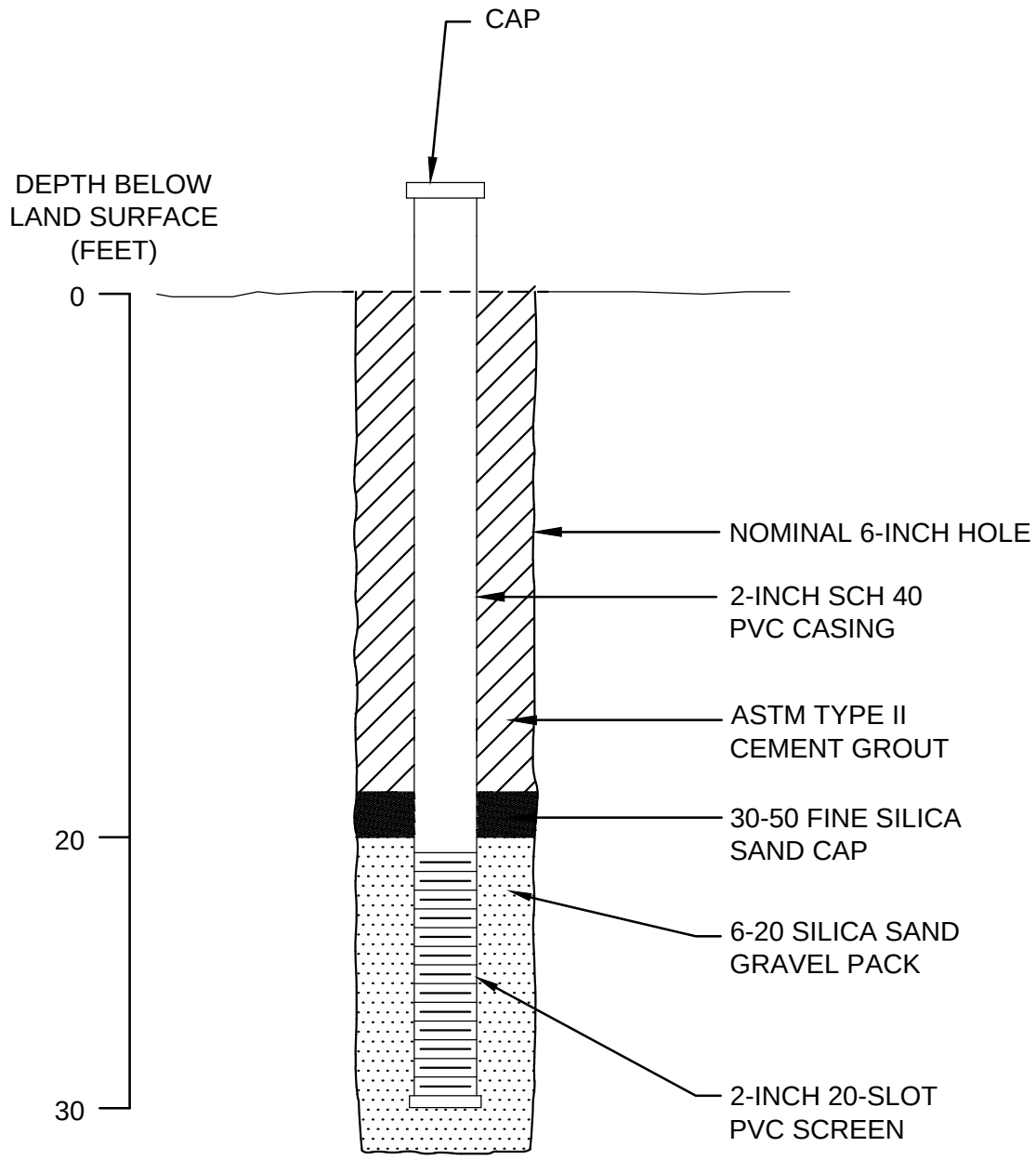
FLORIDA POWER & LIGHT COMPANY
TURKEY POINT UNITS 6 & 7
EXPLORATORY WELL EW-1
PROJECT

SITE PLAN

FIGURE 2



NOT TO SCALE

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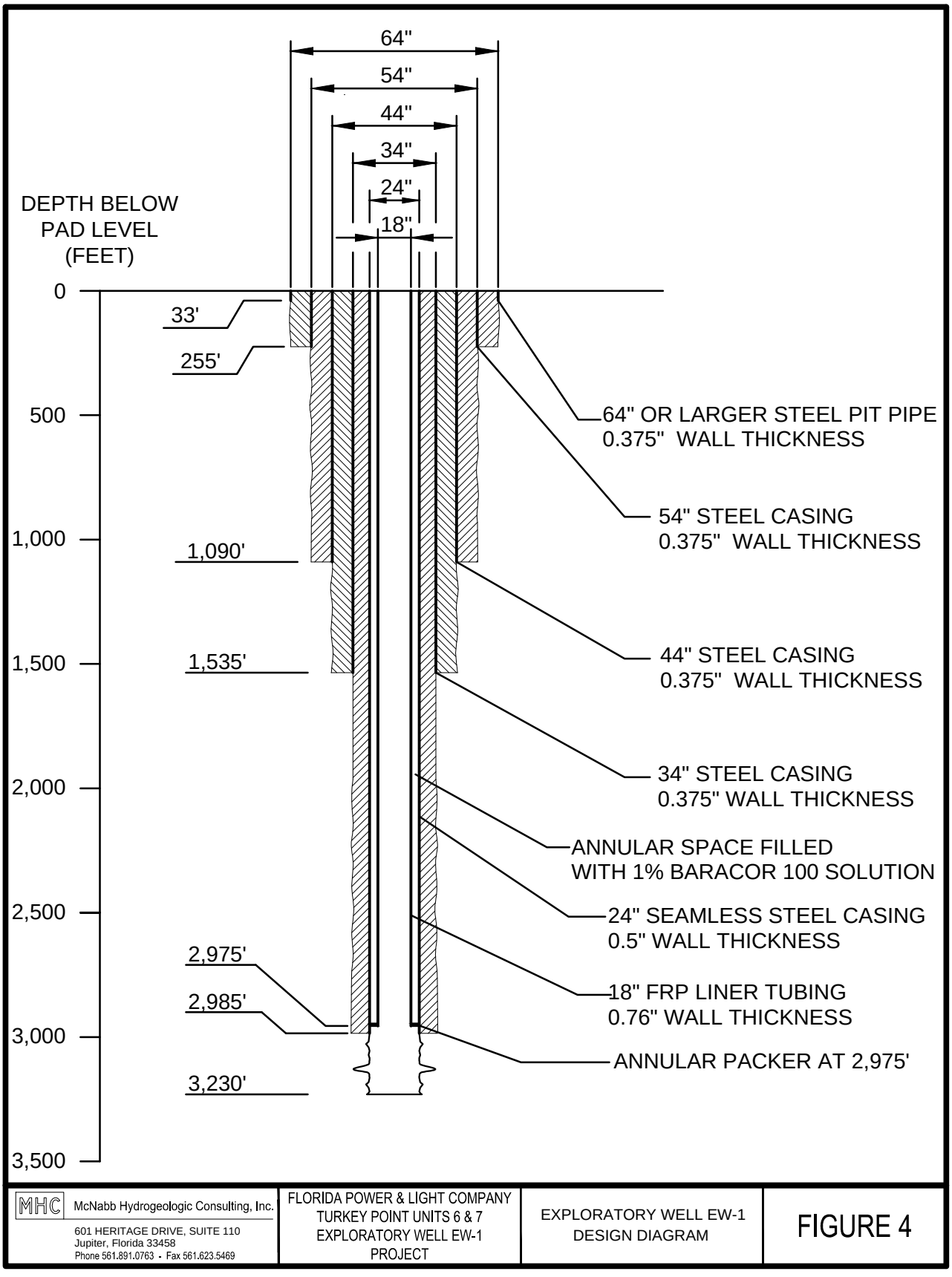
TURKEY POINT UNITS 6 & 7
EXPLORATORY WELL EW-1
PROJECT

PAD MONITOR WELL
DIAGRAM

FIGURE 3



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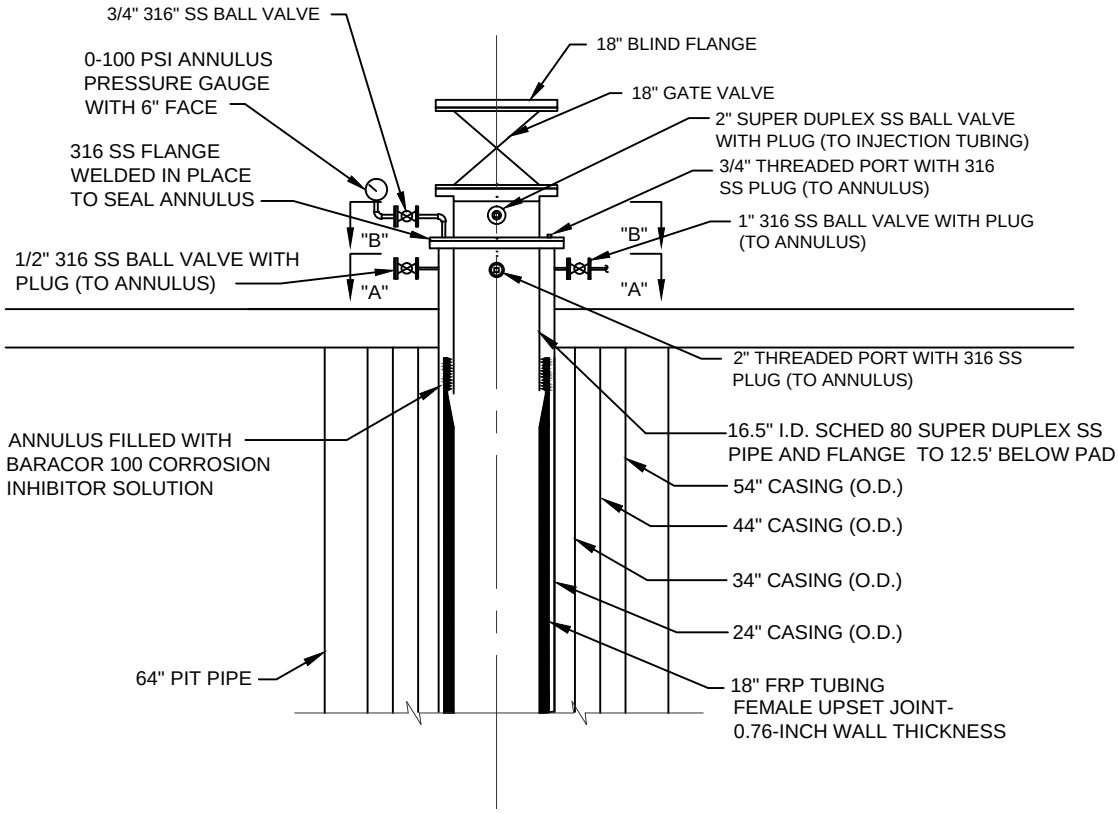
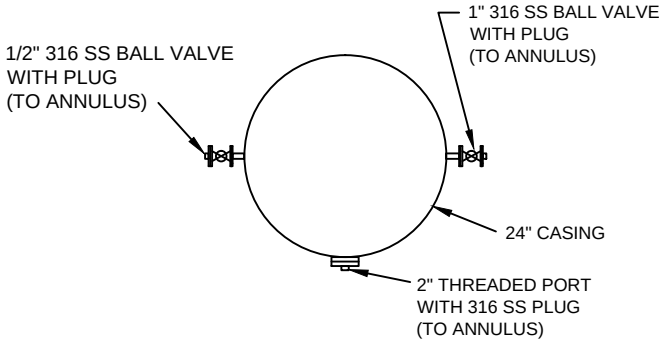
FLORIDA POWER & LIGHT COMPANY
TURKEY POINT UNITS 6 & 7
EXPLORATORY WELL EW-1
PROJECT

EXPLORATORY WELL EW-1
DESIGN DIAGRAM

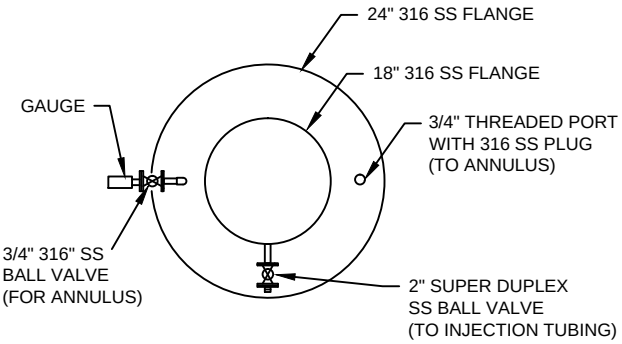
FIGURE 4

Note: Pad level for EW-1 is 7.18 feet NAVD 88.





SECTION "A"



SECTION "B"

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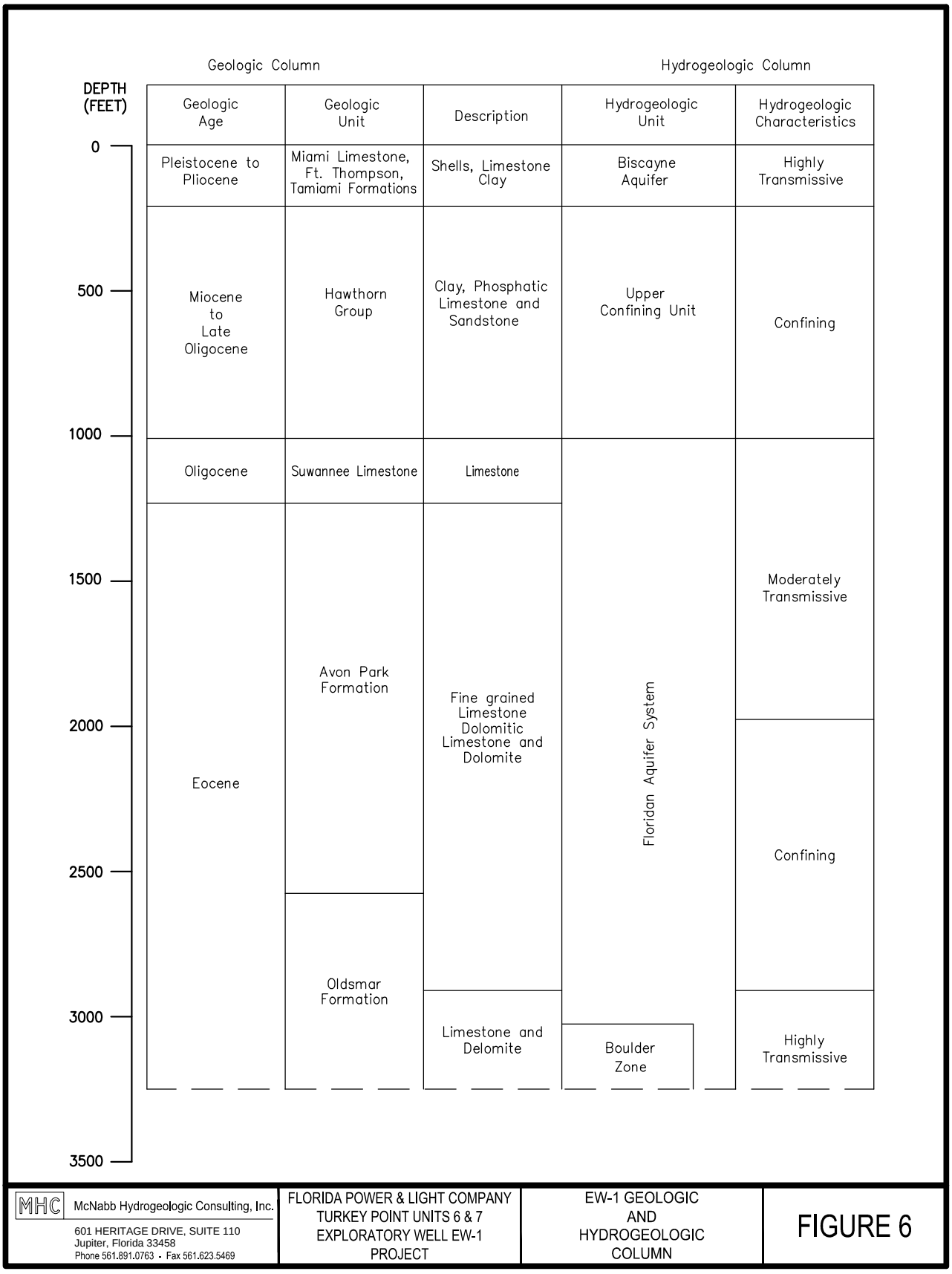
FLORIDA POWER & LIGHT COMPANY
TURKEY POINT UNITS 6 & 7
EXPLORATORY WELL EW-1
PROJECT

EXPLORATORY WELL EW-1
WELLHEAD COMPLETION
DIAGRAM

FIGURE 5



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FLORIDA POWER & LIGHT COMPANY
TURKEY POINT UNITS 6 & 7
EXPLORATORY WELL EW-1
PROJECT

EW-1 GEOLOGIC AND HYDROGEOLOGIC COLUMN

FIGURE 6

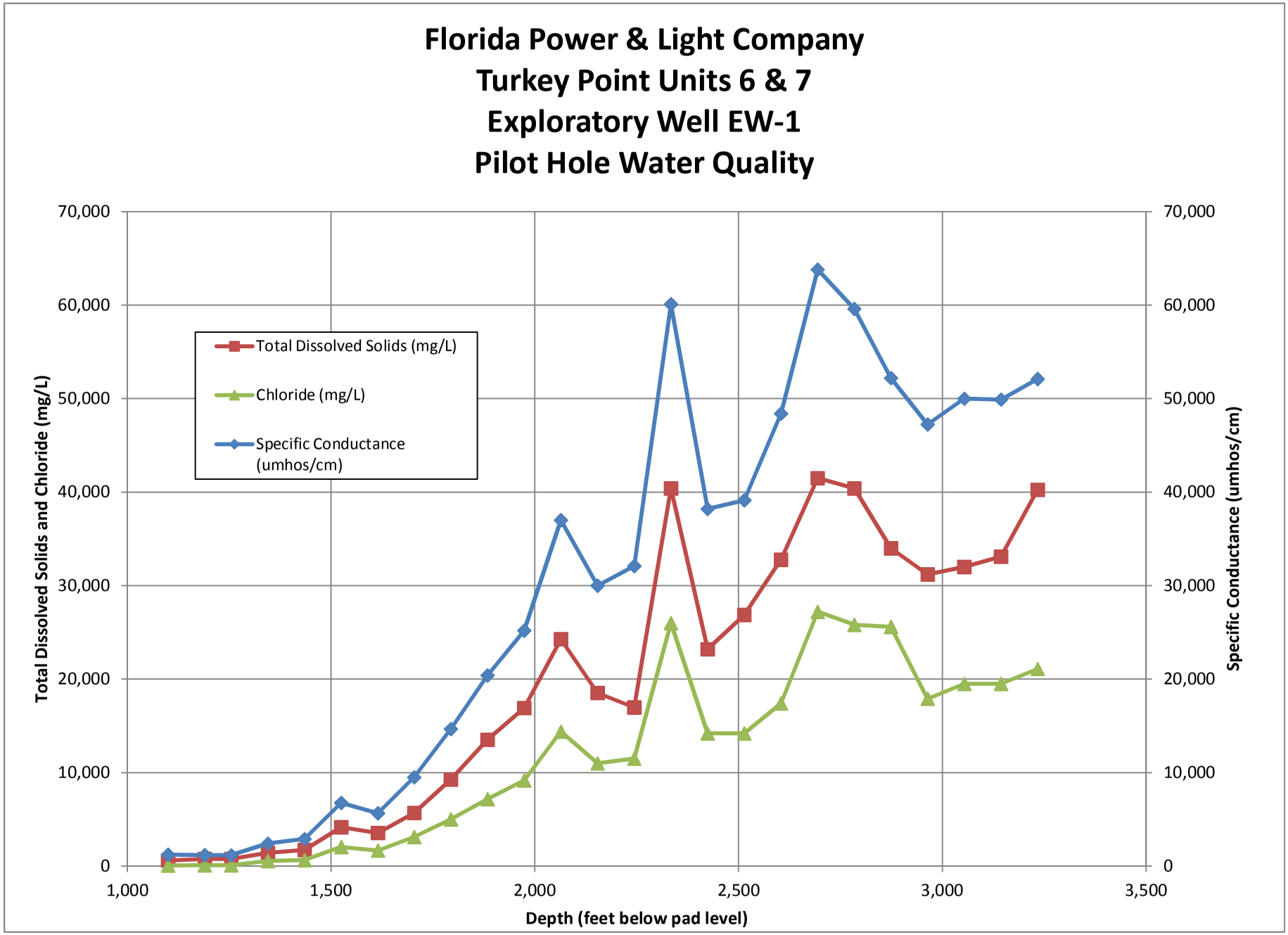

Figure 7. Pilot hole total dissolved solids, chloride and specific conductance data.

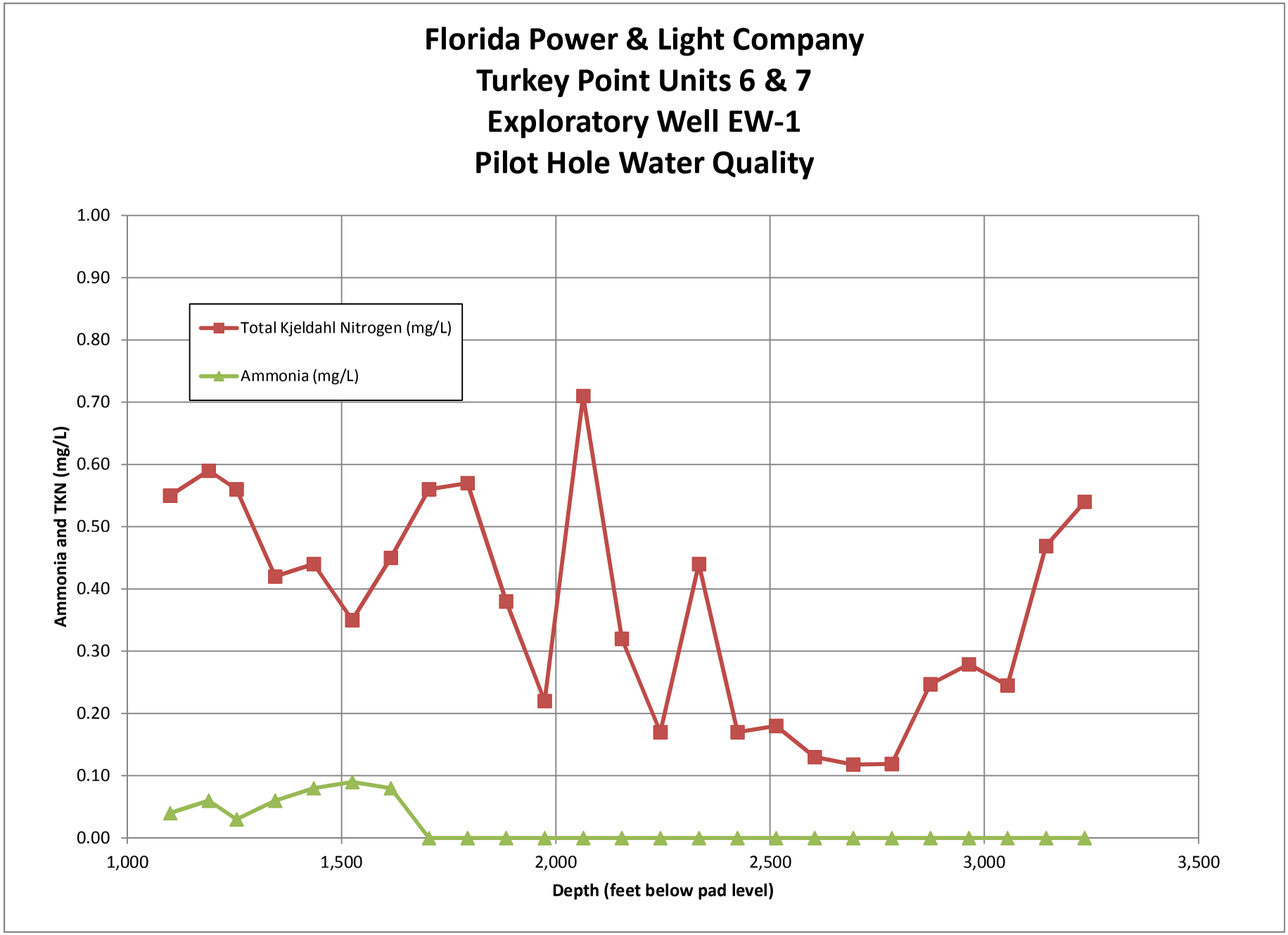

Figure 8. Pilot hole ammonia and TKN data.

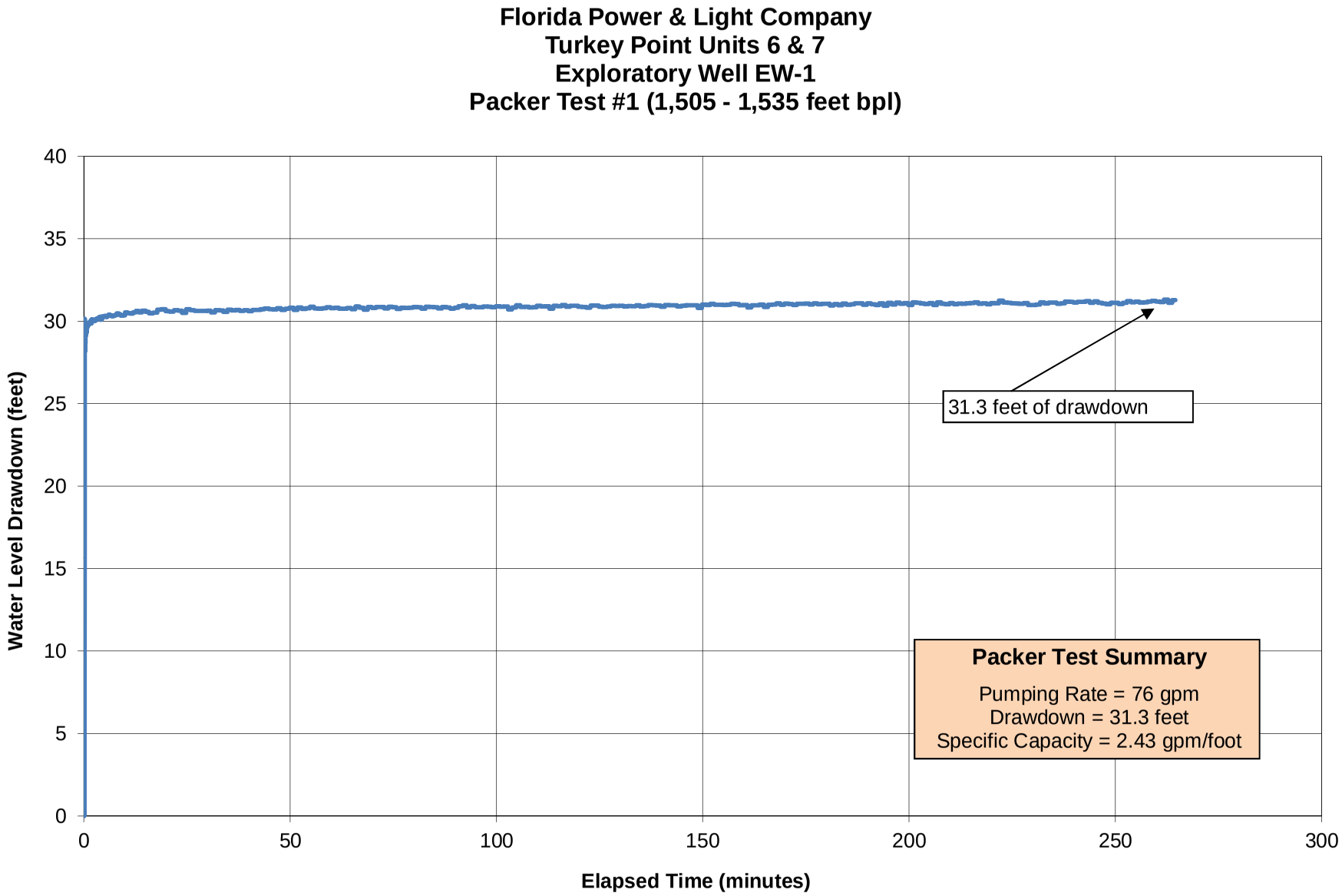

Figure 9. Packer Test #1 Water Level Drawdown Data.

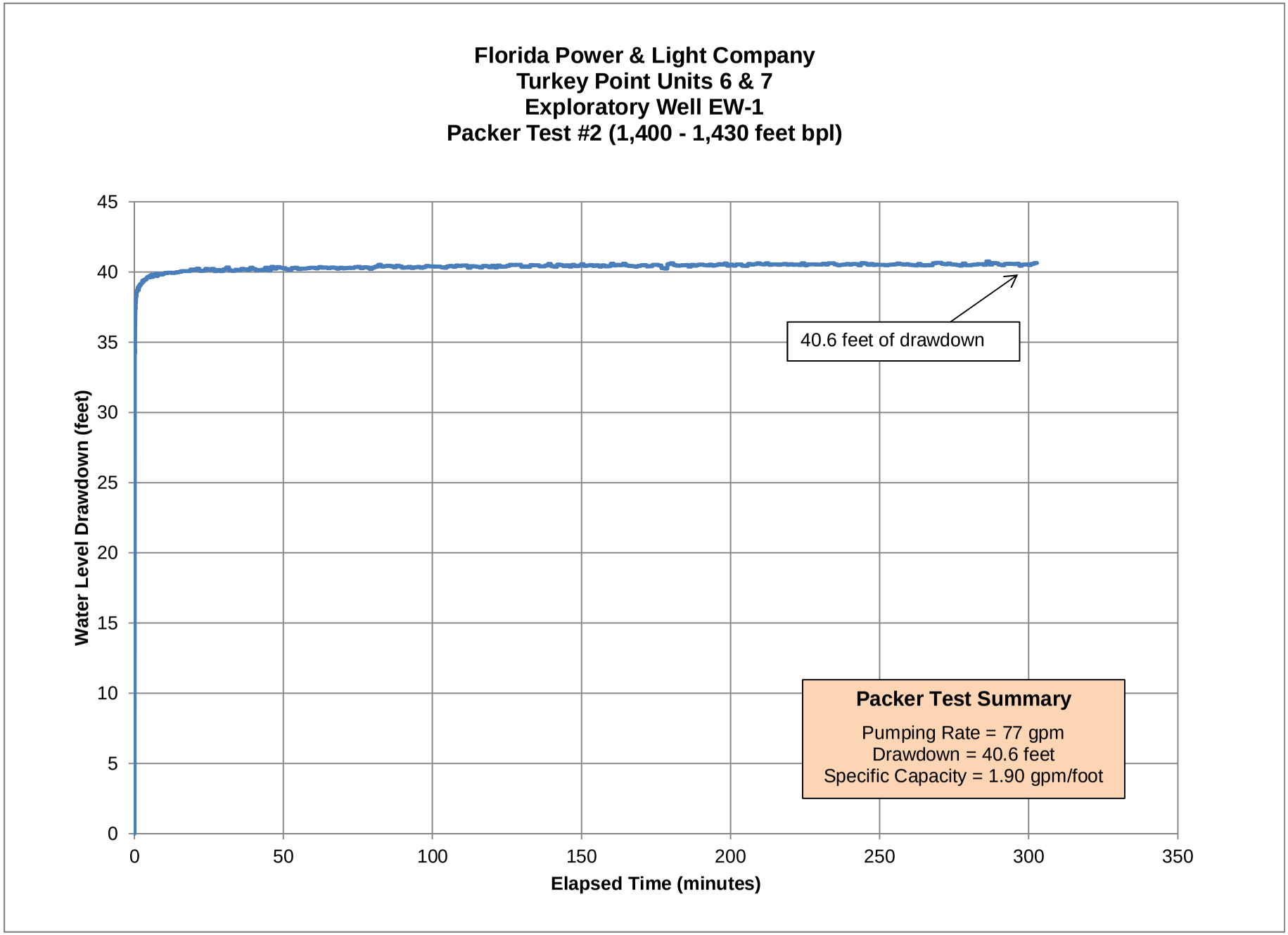

Figure 10. Packer Test #2 Water Level Drawdown Data

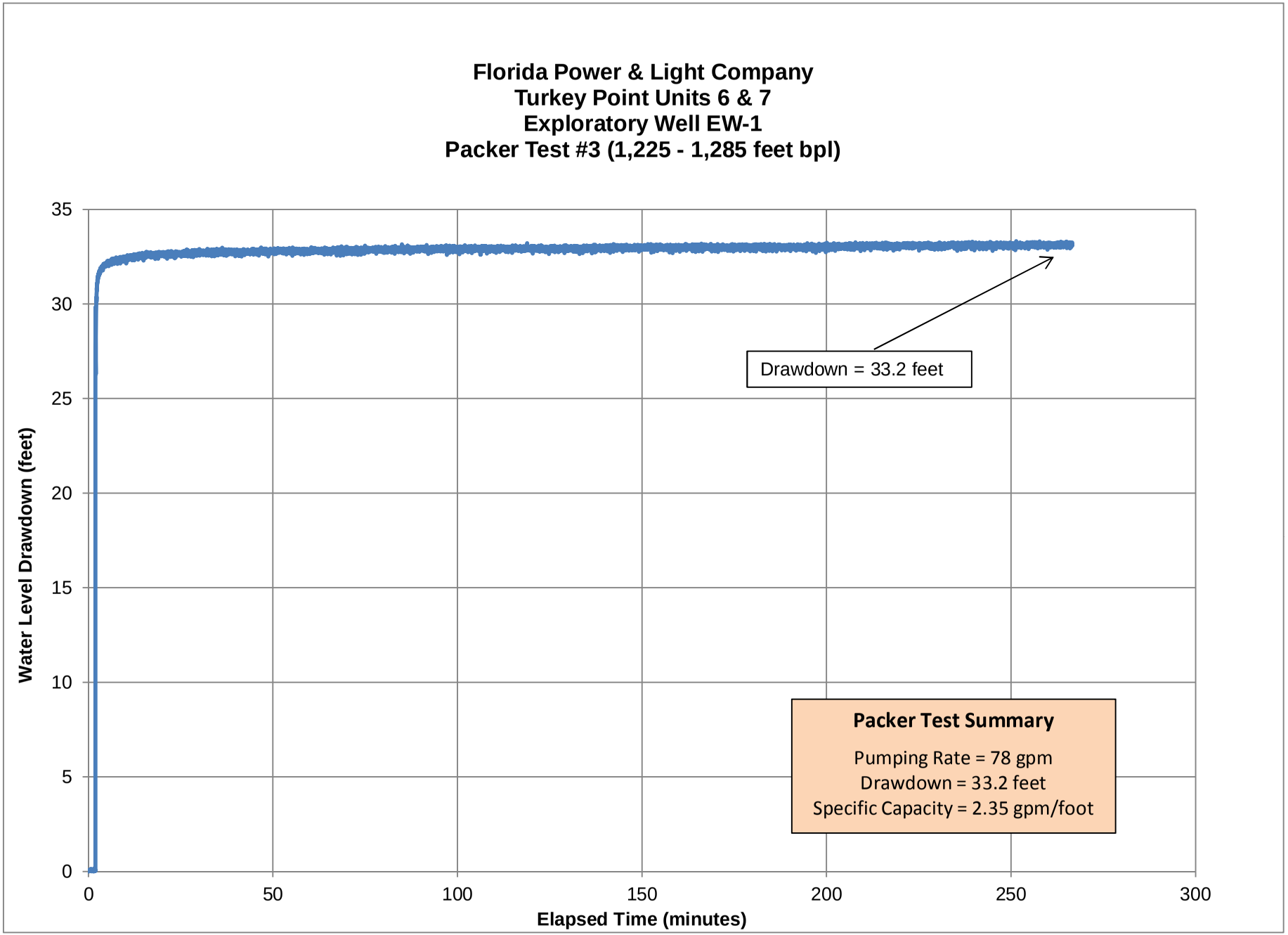

Figure 11. Packer Test #3 Water Level Drawdown Data

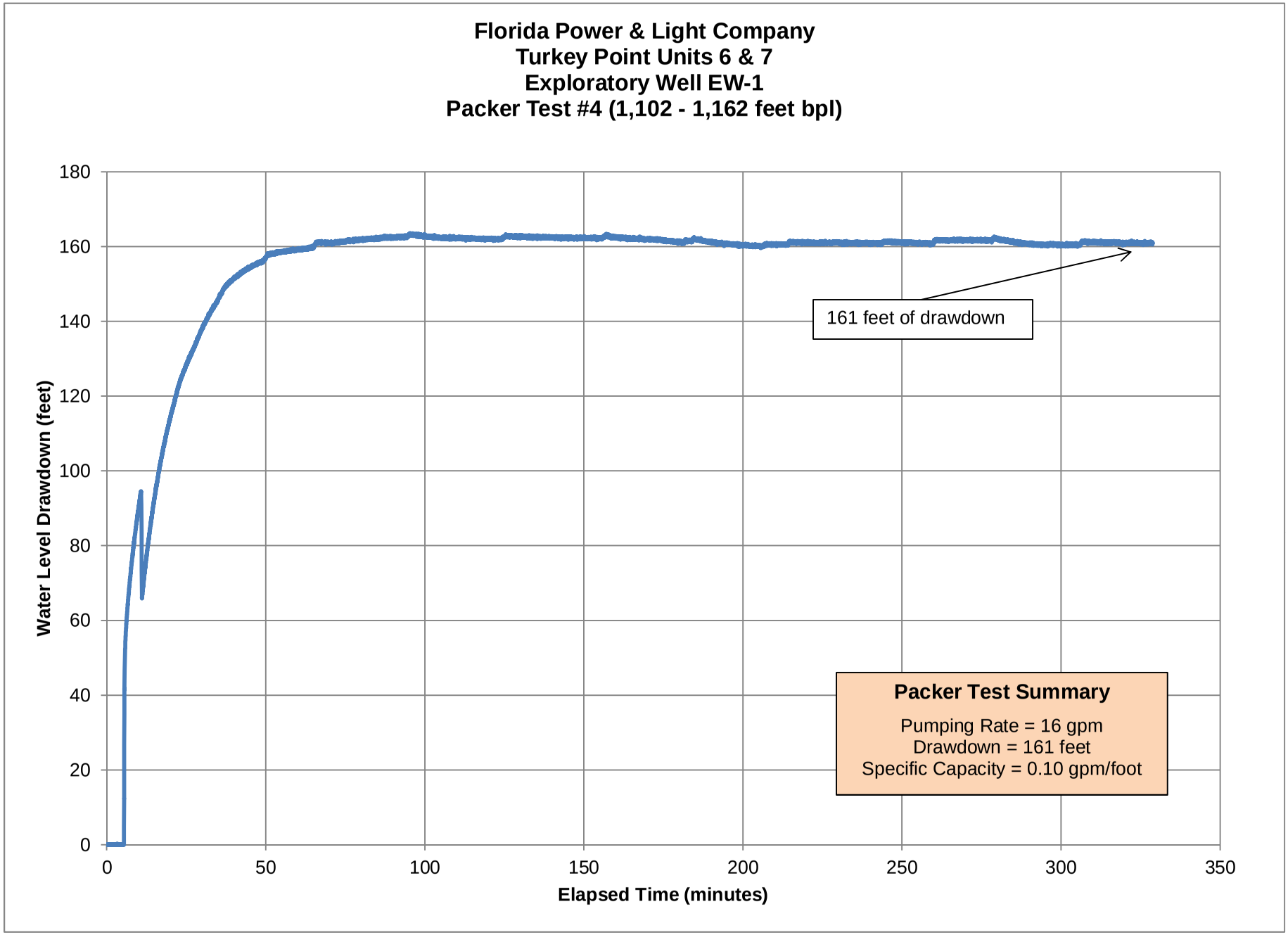

Figure 12. Packer Test #4 Water Level Drawdown Data

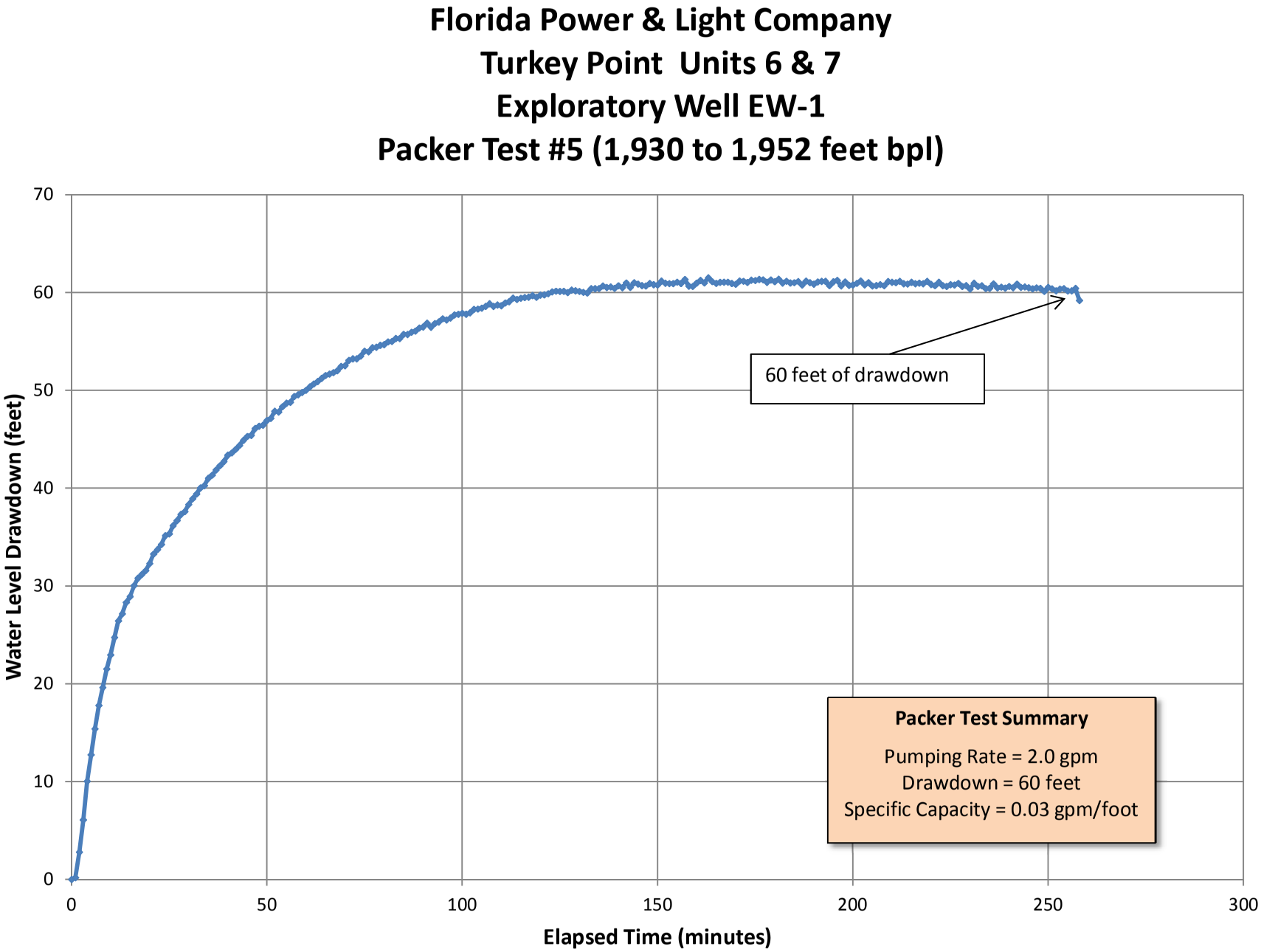

Figure 13. Packer Test #5 Water Level Drawdown Data

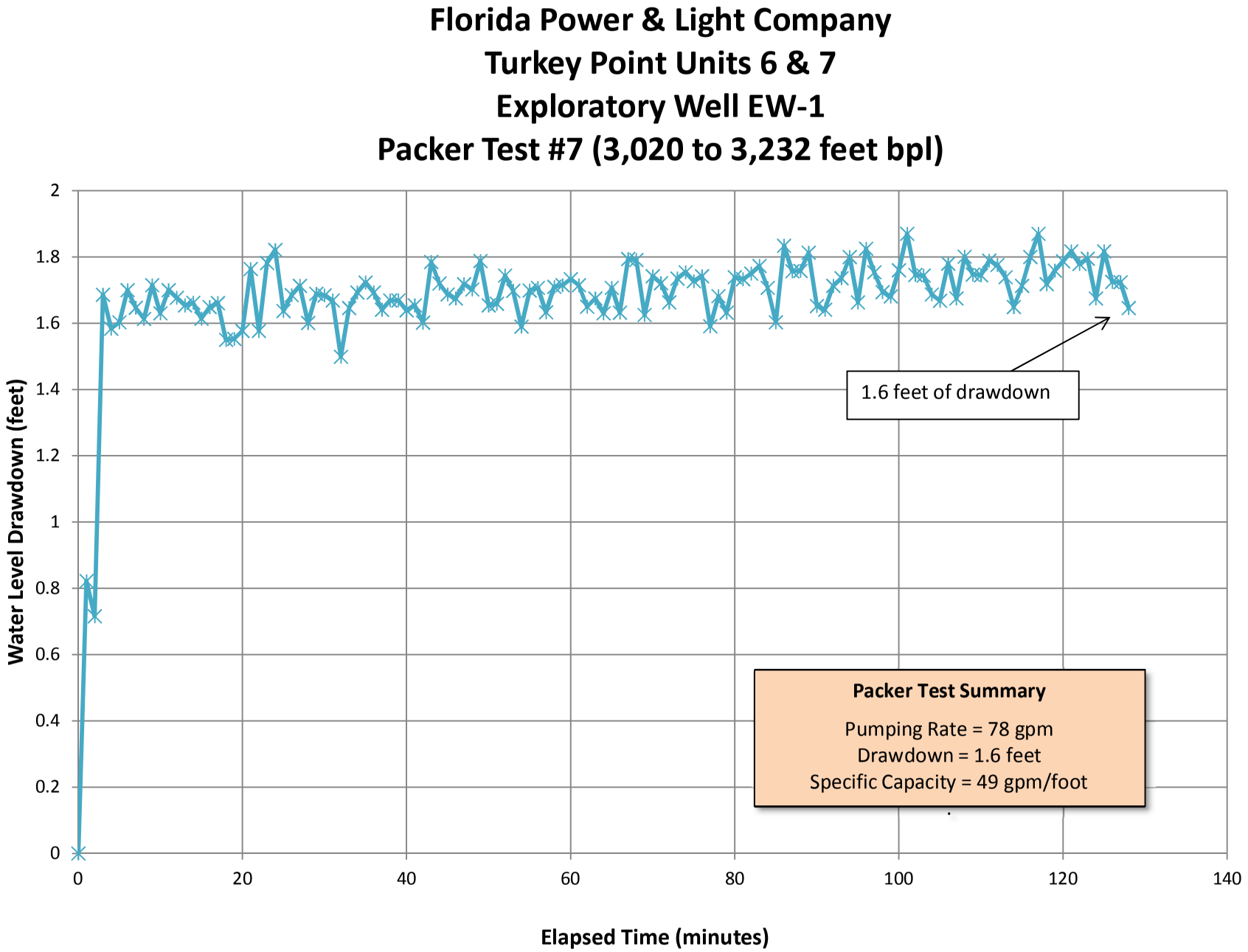

Figure 14. Packer Test #7 Water Level Drawdown Data

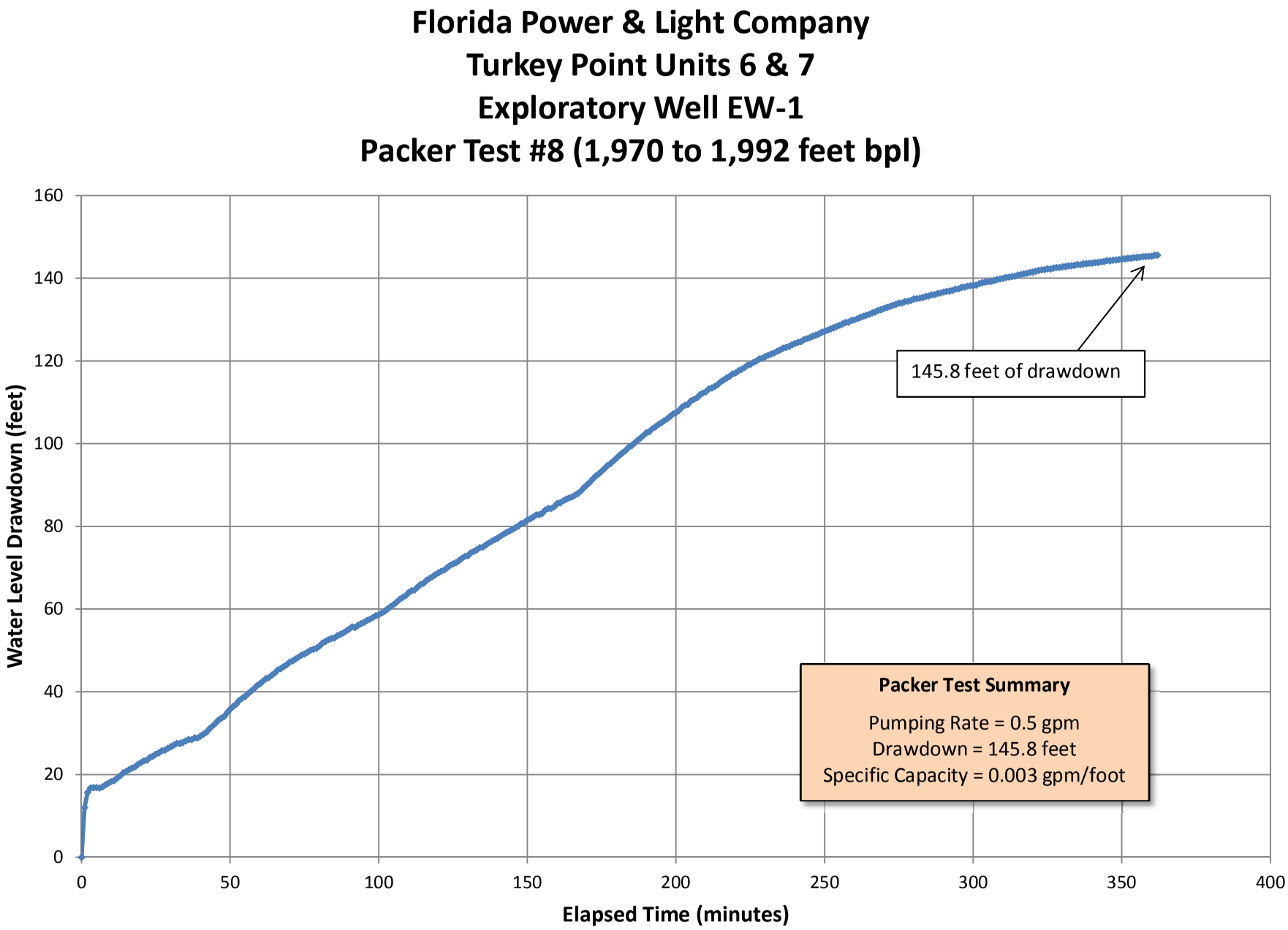

Figure 15. Packer Test #8 Water Level Drawdown Data

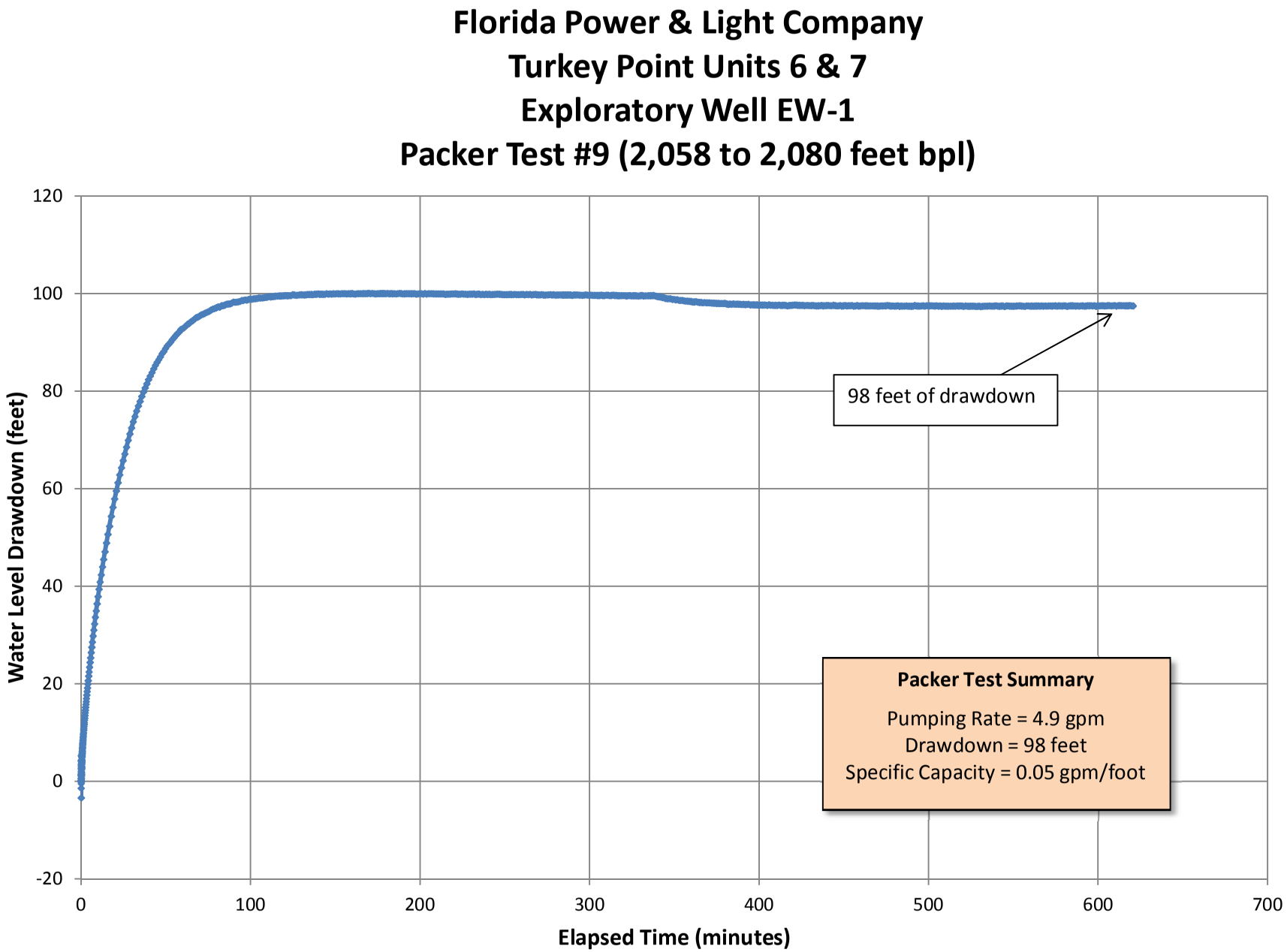

Figure 16. Packer Test #9 Water Level Drawdown Data

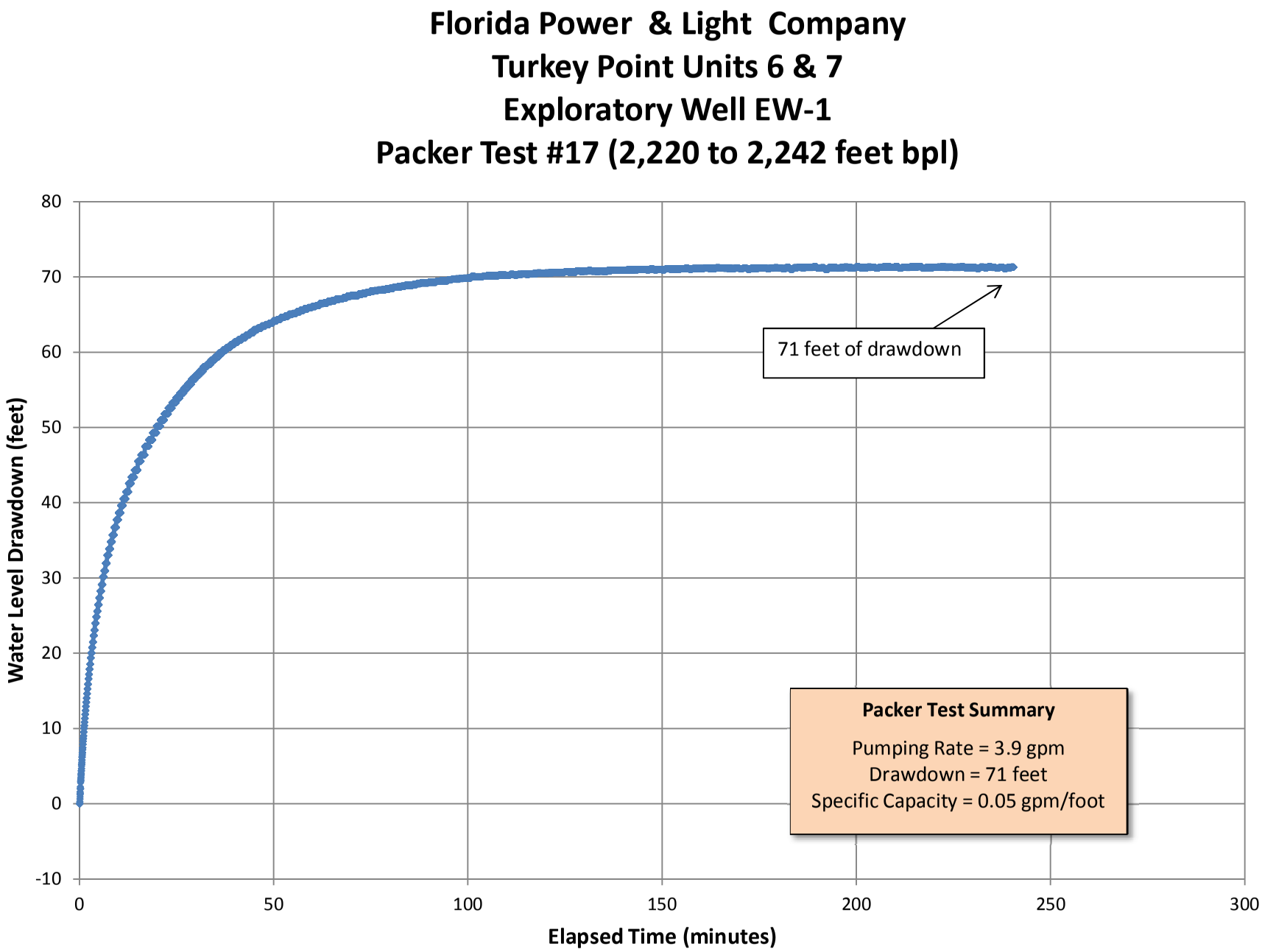

Figure 17. Packer Test #17 Water Level Drawdown Data

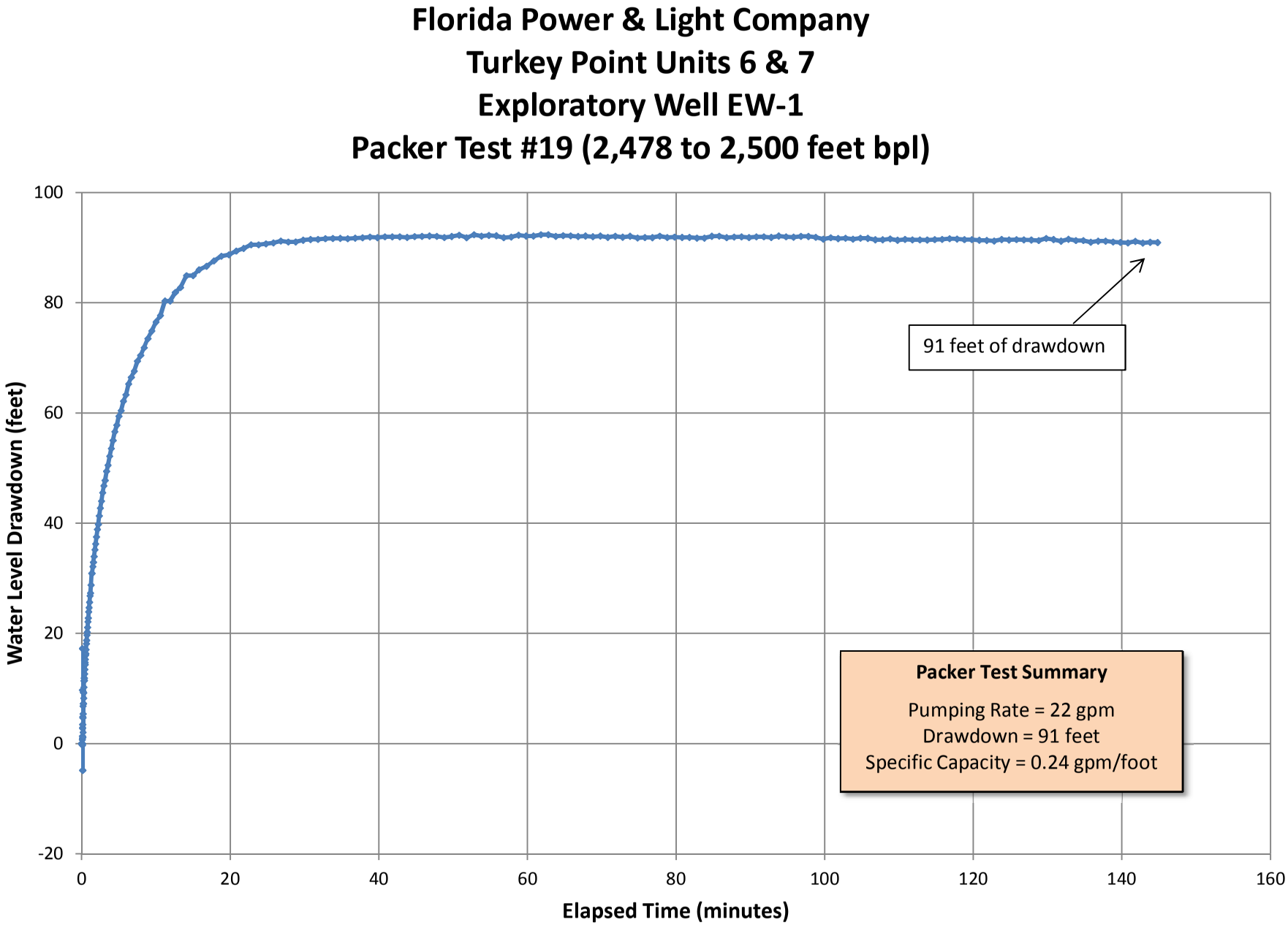

Figure 18. Packer Test #19 Water Level Drawdown Data

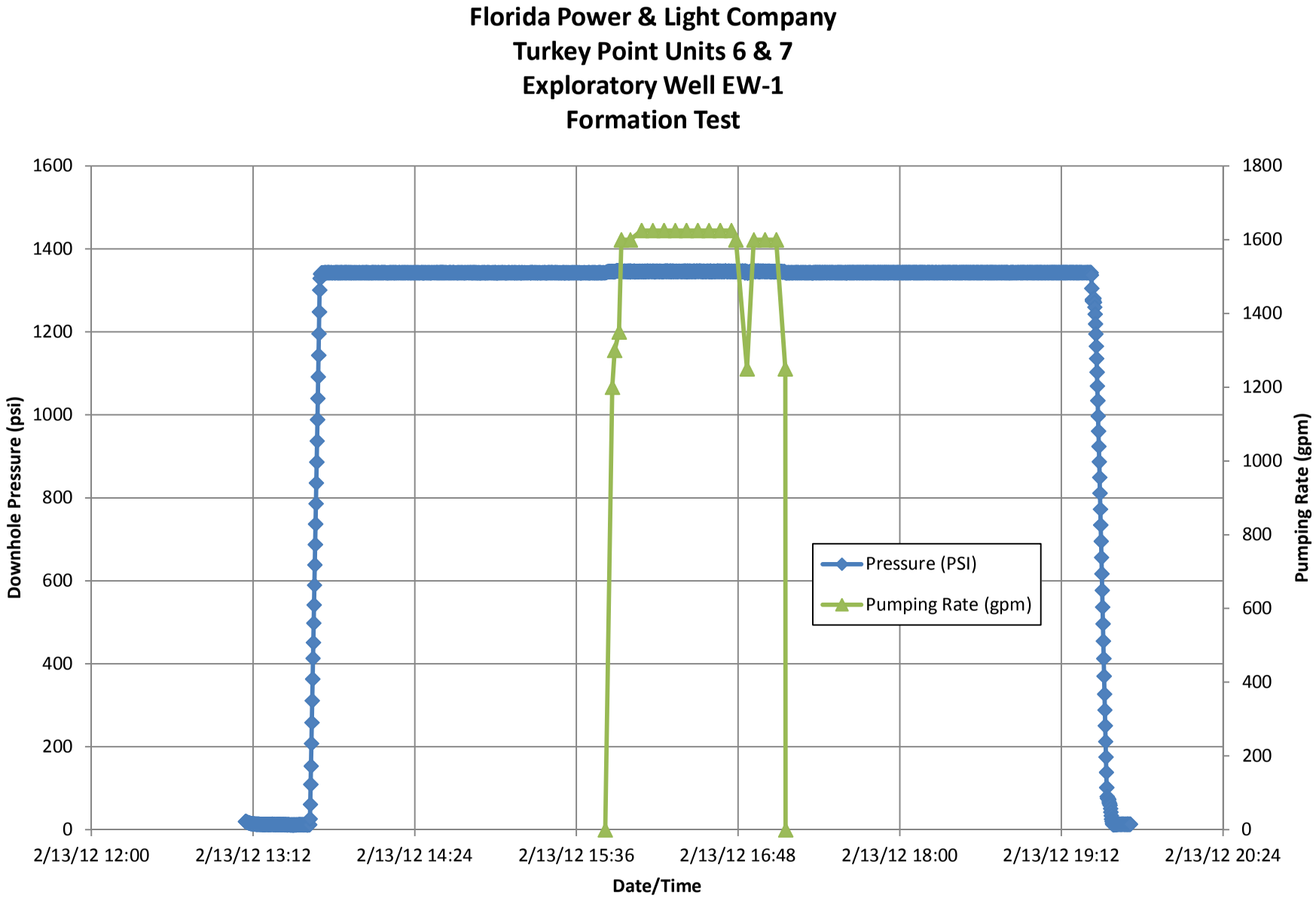

Figure 19. Downhole Pressure and Pumping Rate Data - Entire Test

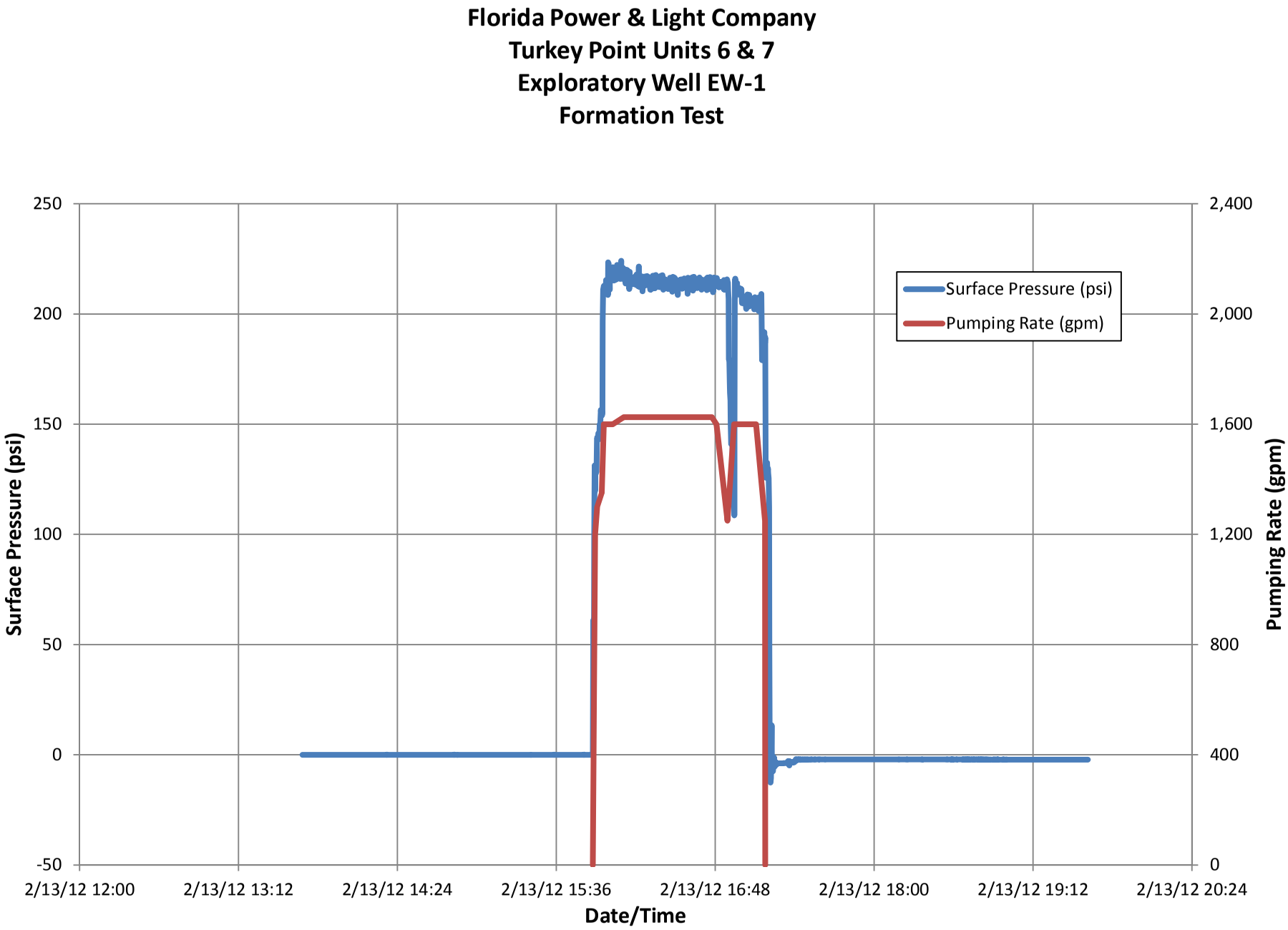

Figure 20. Surface Pressure and Pumping Rate Data - Entire Test

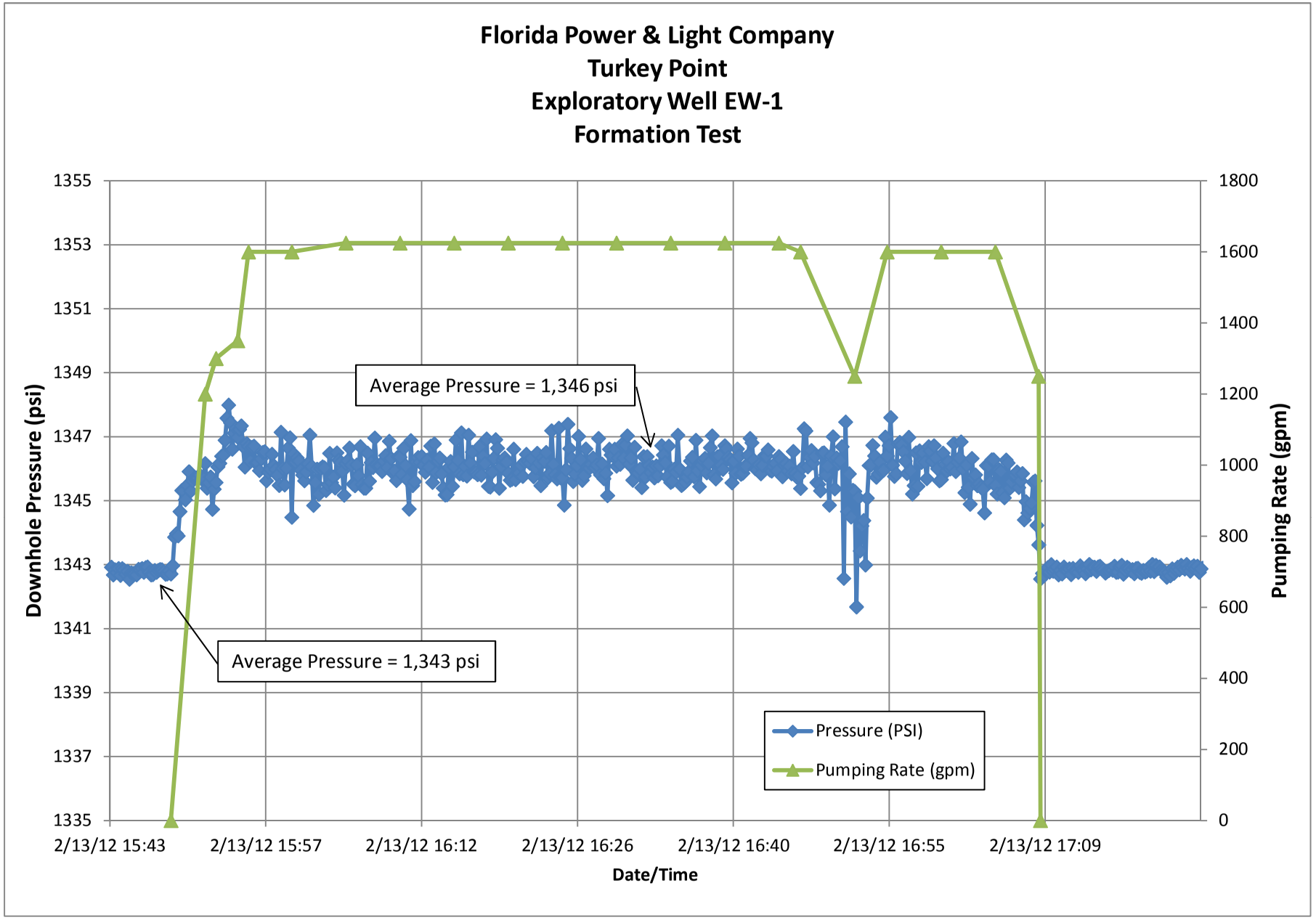

Figure 21. Downhole Pressure and Pumping Rate Data - Pumping Portion

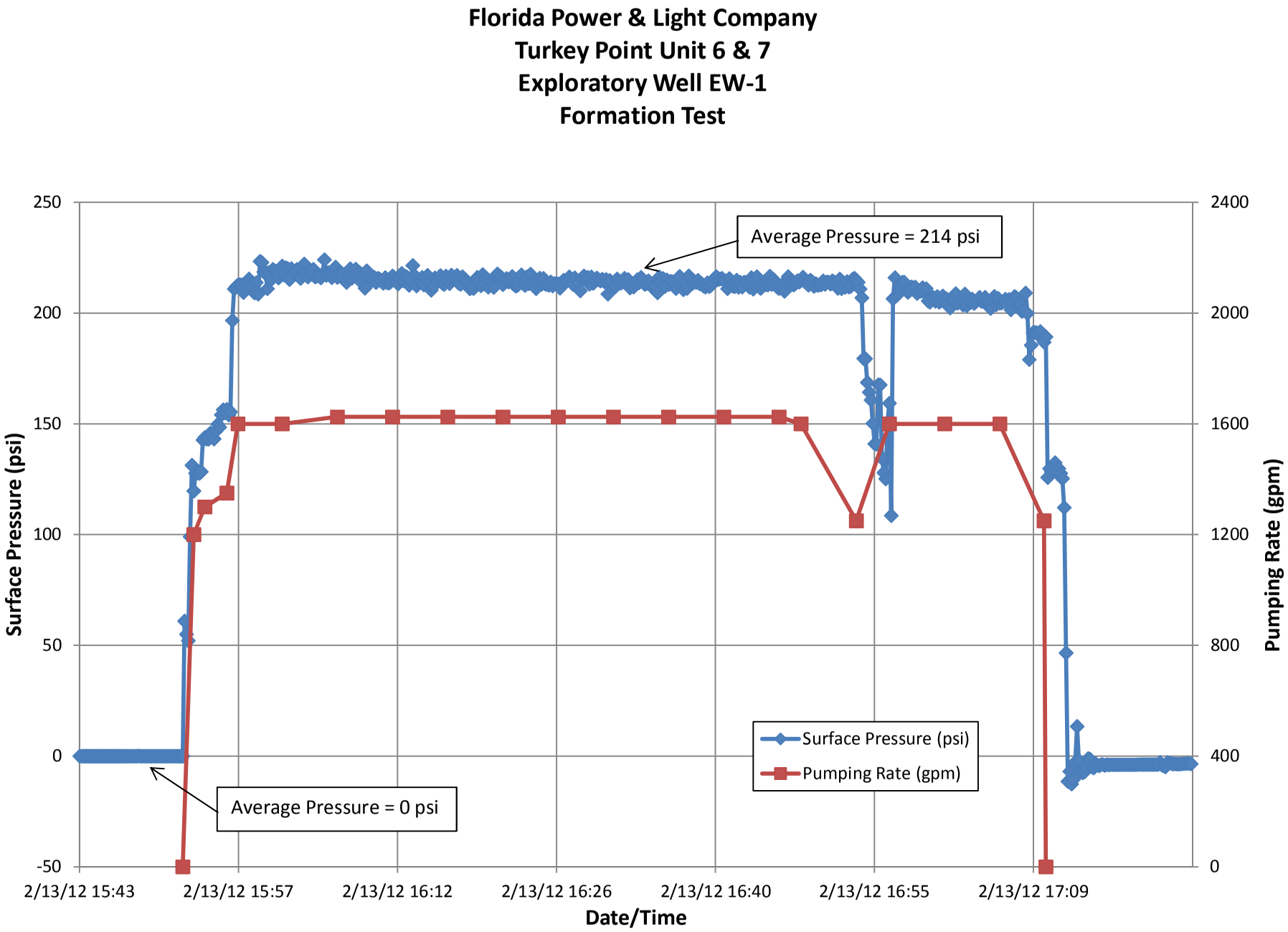

Figure 22. Surface Pressure and Pumping Rate Data - Pumping Portion

Appendix A

FDEP Class V Exploratory Well Construction Permit #0293962-001-UC

Department of

Environmental Protection

Southeast District
400 North Congress Avenue, Suite 200
West Palm Beach, Florida 33401

ELECTRONIC CORRESPONDENCE
May 05, 2010
In the Matter of an
Application for Permit by:

Mr. Randall LaBauve
Vice President
Florida Power & Light Company
700 Universe Blvd.
Juno Beach FL 33408

MIAMI-DADE COUNTY
UIC: FPL Turkey Point Exp Well
FILE: 0293962-001-UC

PROJECT: Class V Group 9 Exploratory Well and Dual Zone Monitoring Well.

FINAL PERMIT

Enclosed is Permit Number 0293962-001-UC, to construct a Class V Exploratory Well and associated Dual Zone Monitoring Well. This permit has been issued pursuant to Section(s) 403.087, Florida Statutes and Florida Administrative Codes 62-4, 62-520, 62-522, 62-528, 62-550, 62-600 and 62-601.
The system will be constructed at the FPL West County Energy Center, located at 20505 State Road 80, Loxahatchee, Florida.

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, Mail Stop 35, 3900 Commonwealth Blvd., 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 the City of West Palm Beach, Florida.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Jack Long 5-4-2010
Jack Long Date
District Director
Southeast District

JL/LAB/jrm
Copies furnished to:

Joe Haberfeld, FDEP/TLH
Steve Anderson, SFWMD/WPB
Luis Otero, M-D DERM
George Heuler, FDEP/TLH
Joe May, UIC
Mike Halpin, FDEP/SCO
Nancy Marsh, USEPA
Dave McNabb, McNabb Hydro

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF DRAFT PERMIT and all copies were mailed before the close of business on 5/05/10 to the listed persons.

FILING AND ACKNOWLEDGMENT, FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Vanessa Osborne 5/05/10
Clerk Date

Department of
Environmental Protection

Southeast District
400 N. Congress Avenue—Suite 200
West Palm Beach, Florida 33401

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

PERMITTEE:
Mr. Randall LaBauve, Vice President
Florida Power & Light Company
700 Universe Blvd.
Juno Beach FL 33408

PERMIT NUMBER: 0293962-001-UC
DATE OF ISSUANCE: May 5, 2010
EXPIRATION DATE: May 4, 2015
COUNTY: Miami-Dade
POSITION: 25º 25' 19" N / 80º 20' 08" W
PROJECT: FPL Units 6 & 7 Class V Group 9 Exploratory Well
I

PROJECT: FPL Turkey Point Units 6 & 7 — Class V Exploratory Well & Dual Zone Monitoring Well
Construction and Testing of a Class V, Group 9 Exploratory Well

This permit is issued under the provisions of Chapter 403.087, Florida Statutes, and Florida Administrative Code (F.A.C.) Rules 62-4, 62-520, 62-522, 62-528, 62-550, and 62-660. 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:

TO CONSTRUCT AND TEST: The Class V, Group 9 Exploratory Well and Dual Zone Monitoring well shall be constructed in four phases. The first phase shall be constructed first to explore to approximately 1650 feet below pad level (bpl). This phase will include the installation of conductor and surface casing, the drilling of a 12-inch diameter pilot hole to approximately 1650 feet bpl, conduct straddle packer testing, perform geophysical logging to determine the depth of the underground source of drinking water (USDW). The second phase shall include the drilling of a 12-inch diameter pilot hole to approximately 3500 feet bpl, conduct coring and straddle packer test, perform geophysical logging to determine confining sequences and injection zones. The third phase shall include reaming and setting of the intermediate casing, the injection casing and the Fiberglass Reinforced Plastic (FRP) tubing.

The conceptual design of the Class V, Group 9 Exploratory Well has a planned depth of approximately 3500 feet bpl with the packer center point at approximately 2890 feet bpl. The injection interval to be investigated shall be within the "Boulder Zone" in the lower Oldsmar Formation, and is preliminarily planned between approximately 2900 feet and the total depth of the well at 3500 feet bpl. Final depth of each casing and range of each interval for the well will be determined during construction and field-testing, subject to approval by the Department. The fourth phase shall be the construction of a dual zone monitoring well (DZMW). For planning purposes, this well proposes an upper monitoring interval of 1400-1420 feet bpl; and proposes a lower monitoring interval of 1850-1870 feet bpl. Final depth of each casing and range of each interval for the well will be determined during construction and field-testing, subject to approval by the Department. There will be no authorization to inject under this permit.

IN ACCORDANCE WITH: Application for a Class V, Group 9 Exploratory Well Construction and Testing Permit, received January 20, 2009; The application was deemed complete as of 1 November 2009; and publication of the Notice of Draft Permit 0293962-001-UC in The Miami-Herald newspaper on 13 November, 2010.

LOCATED AT: FPL Turkey Point Power Plant, 9760 SW 344th St., Florida City, FL 33035 adjacent to Biscayne Bay, approximately 25 miles south of Miami and eight miles east of Florida City.

TO SERVE: Florida Power & Light Co.

SUBJECT TO: General Conditions 1-24 and Specific Conditions 1-8.

GENERAL CONDITIONS:

The following General Conditions are referenced in Florida Administrative Code Rule 62-528.307.

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit are "permit conditions" and are binding and enforceable pursuant to Section 403.141, F.S.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action.

3. As provided in Subsection 403.087(7), F.S., the issuance of this permit does not convey any vested rights or exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land, water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefrom; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, or are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

   a. Have access to and copy any records that must be kept under conditions of this permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time will depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of noncompliance; and
   b. The period of noncompliance, including dates and times; or, if not corrected the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent the recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-528.350, F.A.C. The permittee shall be liable for any non-compliance of the permitted activity until the Department approves the transfer.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records shall be extended automatically unless the Department determines that the records are no longer required.
    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule. Since there is no facility at this site for the purposes of this permit then these records may be kept at the permittee's office in Juno Beach, Florida or the site office.
    c. Records of monitoring information shall include:

        1) the date, exact place, and time of sampling or measurements;
        2) the person responsible for performing the sampling or measurements;
        3) the dates analyses were performed;
        4) the person responsible for performing the analyses;
        5) the analytical techniques or methods used
        6) the results of such analyses

    d. The permittee shall furnish to the Department, within the time requested in writing, any information which the Department requests to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.
    e. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

14. All applications, reports, or information required by the Department shall be certified as being true, accurate, and complete.

15. Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled date.

16. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

17. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

18. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

19. This permit may be modified, revoked and reissued, or terminated for cause, as provided in 40 C.F.R. Sections 144.39(a), 144.40(a), and 144.41 (1998). The filing of a request by the permittee for a permit modification, revocation or reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

20. The permittee shall retain all records of all monitoring information concerning the construction of the well until five years after completion of any plugging and abandonment procedures specified under Rule 62-528.435, F.A.C. The permittee shall deliver the records to the Department office that issued the permit at the conclusion of the retention period unless the permittee elects to continue retention of the records.

21. 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. All reports shall contain the certification required in Rule 62-528.340(4), F.A.C.

22. The permittee shall notify the Department as soon as possible of any planned physical alterations or additions to the permitted facility. In addition, prior approval is required for activities described in Rule 62-528.410(1)(h).

23. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or injection activity that may result in noncompliance with permit requirements.

24. The permittee shall report any noncompliance which may endanger health or the environment including:

    a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water; or
    b. Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

    Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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SPECIFIC CONDITIONS

1. General Requirements

   a. This permit is to construct and test a Class V, Group 9 Exploratory Well and construct and operate an associated Dual -Zone Monitoring Well–

   b. This permit approval is based upon evaluation of the data contained in the application and the 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.

   c. The permittee shall be subject to all requirements and regulations of Miami-Dade County and the South Florida Water Management District regarding the construction and testing of this exploratory well.

   d. Four surficial aquifer monitoring wells, identified as Pad Monitor Wells (PMWs), shall be located near the corners of the pad to be constructed for the exploratory well, and shall be identified by location number and pad location, i.e. NW, NE, SW, and SE. If located in a traffic area the well head(s) must be protected by traffic bearing enclosure(s) and cover(s). Each cover must lock and be specifically marked to identify the well and its purpose. The PMWs shall be sampled as follows:

      1) During the construction and associated testing phases, the PMWs shall be sampled weekly for chlorides (mg/L), specific conductance (μmho/cm or μS/cm), temperature and water level (relative to the North American Vertical Datum of 1988 [NAVD 88]).
      2) Initial PMW water quality analysis results shall be submitted prior to the onset of drilling activities.
      3) The PMWs shall also be sampled weekly for total dissolved solids (mg/L) during the first four weeks of PMW sampling; prior to events as described under Item 4) below; and at all times when specifically requested by the Department.
      4) The PMWs shall be sampled within 48 hours prior to and after any planned maintenance, testing (including mechanical integrity testing) or repairs to the system which represent an increased potential for accidental discharge to the surficial aquifer.

         The results of the PMW analyses shall be submitted to the Department weekly along with the well construction report for the weekly activity. A summary sheet from the FDEP Southeast District is attached for your use when reporting the above information. The PMWs shall be retained in service throughout the construction phase of the project.

   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. Note: exploratory wells do not inject as part of the testing program.

   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 SED office in West Palm Beach 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.

2. Construction and Testing Requirements

a. Prior to the commencement of any work, the name of the Florida-licensed water well contractors supervising the drilling operations and the water well contractors' 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 spudding the exploratory well.

b. Blow-out preventers shall be installed on the exploratory well and dual-zone monitor well prior to penetration of the Floridan Aquifer.

c. The measurement points for drilling and logging operations shall be surveyed and referenced to the NAVD 88 prior to the onset of drilling activities for the exploratory well and dual-zone monitor well.

d. No drilling operations shall begin without an approved disposal site for drilling fluids, cuttings, or waste. It shall be the permittee's responsibility to obtain any necessary Department and local agency approvals for disposal prior to the start of construction. Any formation waters discharged to surface or surficial aquifer waters during an aquifer performance test shall require an Industrial Wastewater permit from the Department, unless otherwise authorized.

e. The Department shall be notified within forty-eight (48) hours after work has commenced.

f. 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 stockpiled additive materials to prevent surface and/or groundwater contamination.

2) Properly secure drilling equipment and rig(s) to prevent damage to well(s) and on-site treatment process equipment.

g. Waters spilled during construction or testing of the exploratory well and dual-zone monitor well shall be contained and properly disposed.

h. Department approval and UIC-TAC review is required prior to the following stages of construction:

1) Spud date for the exploratory well

2) The landing of the 34-inch diameter and 24-inch diameter casings of the exploratory well

3) Injection zone interval

4) The landing of the 16-inch diameter and 6-⅝ inch diameter casings of the dual-zone monitor well

5) Upper and lower monitoring intervals

i. The drilling and geophysical logging program, during the drilling of the exploratory well, shall at a minimum include:

1) Conventional mud-rotary method through setting of the outer casing; reverse-air rotary for the remainder of the drilling; no salt or brine may be used for weight control during any of the drilling operations until after the intermediate casing of the exploratory well has been installed. Drill a 12-inch diameter borehole using the mud rotary method from pad level to approximately 250 feet bpl. Perform the following logging techniques prior to subsequent reaming:

    - X-Y caliper
    - Natural gamma ray

2) Ream the pilot hole to a nominal 64-inch diameter and perform the following logging techniques prior to installing and cementing the 54-inch conductor casing from 0–225 feet bpl::

    - X-Y caliper
    - Natural gamma ray

3) Drill a 12-inch diameter pilot hole using the mud rotary method from the landing of the conductor casing to approximately 950 feet bpl, conducting inclination surveys every 90 feet (1 degree maximum allowed). Perform the following logging techniques prior to subsequent reaming:

    - X-Y caliper
    - Natural gamma ray
    - Dual induction
    - Spontaneous Potential

4) Ream the pilot hole to a nominal 54-inch diameter borehole using the mud rotary method, conducting inclination surveys every 90 feet (1 degree maximum allowed), from bottom of conductor casing to approximately 925 feet bpl. Perform the following logging techniques:

    - X-Y caliper
    - Natural gamma ray

5) Install and cement a 44-inch diameter steel outer casing from pad level to approximately 925 feet bpl, and perform the following logging techniques:

    - Temperature log after each lift of cement

6) Switch to reverse-air drilling. Drill a 12-inch diameter pilot hole from the landing of the outer casing to approximately 1650 feet bpl, conducting inclination surveys every 90 feet (1 degree maximum allowed). Perform the following logging techniques prior to subsequent reaming:

    - X-Y caliper
    - Natural gamma ray
    - Dual induction
    - Spontaneous potential
    - Temperature (static and flowing)
    - Fluid conductivity (static and flowing)
    - Borehole Compensated Sonic with VDL
    - Flowmeter (static and flowing)

A minimum of two and an anticipated maximum of 4 packer-pumping tests shall be performed between the depths of 1250 and 1650 feet bpl to determine the depth of the 10,000 mg/L TDS isopleth based upon field determined conditions. Note: Pumping logs shall be run to adequately stress the confining units to make them clearly identifiable.

7) Ream the pilot hole to a nominal 44-inch diameter borehole using the reverse-air rotary method, conducting inclination surveys every 90 feet (1 degree maximum allowed), from bottom of conductor casing to approximately 1600 feet bpl. Perform the following logging techniques:

- X-Y caliper
- Natural gamma ray

8) Install and cement a 34-inch diameter intermediate steel casing from pad level to approximately 1600 feet bpl, and perform the following logging techniques:

- Temperature log after each lift of cement

9) Drill a 12-inch diameter pilot hole using the reverse air method from the landing of the intermediate casing to approximately 3500 feet bpl, conducting inclination surveys every 60 feet (1 degree maximum allowed). Perform the following logging techniques prior to subsequent reaming:

Static conditions
- X-Y caliper
- Natural gamma ray
- Dual induction
- Spontaneous potential
- Borehole Compensated Sonic — VDL
- Temperature with differential plot
- Fluid Conductivity
- Flowmeter
- Television Survey and Borehole televiewer

Dynamic conditions
- Temperature with differential plot
- Fluid conductivity
- Flowmeter

Collect a minimum of six (6) and up to eight (8) cores. A minimum of four and up to eight packer-pumping tests shall be performed between the depths of 1650 and 2900 feet bpl to evaluate the confining characteristics of strata in this interval. Note: Pumping logs shall be run to adequately stress the confining units to make them clearly identifiable.

10) Ream the pilot hole to a nominal 34-inch diameter borehole using the reverse air method, conducting inclination surveys every 90 feet (1 degree maximum allowed), from bottom of intermediate casing to approximately 2898 feet bpl. Ream the pilot hole to a nominal 24-inch diameter using the reverse air method, conducting inclination surveys every 90 feet (1 degree maximum allowed), to 2900 feet bpl. Ream the pilot hole to a nominal 22-inch diameter using the reverse air method from 2900 to 3500 feet bpl. Perform the following logging techniques:

- X-Y caliper
- Natural gamma ray

11) Install and cement a 24-inch diameter seamless steel injection casing from 0 to approximately 2900 feet bpl, and perform the following logging techniques:

- Temperature log after each lift of cement
- Cement Bond Log with VDL after completion of cementing
- Television Survey

12) Conduct casing pressure test on the 24-inch diameter steel injection casing .

13) Install the 18-inch FRP injection tubing of 0.76-inch thickness with external casing packer from 0 to approximately 2890 feet bpl.

14) Develop well and collect background water samples. The background water samples shall be collected and analyzed, at a minimum, for: Primary and Secondary Drinking Water Standards and Municipal Wastewater Minimum Criteria Groundwater Monitoring Parameters. This may also be accomplished between 10) and 11), above.

15) Conduct Mechanical Integrity Test (annulus pressure test on 18 -inch FRP injection tubing and perform the following logging techniques:

- Television Survey
- Temperature

16) Complete wellhead assembly.

17) Demobilize injection well rig and move to dual zone monitor well site.

j. The drilling and geophysical logging program, during the drilling of the dual-zone monitor well, shall at a minimum include:

1) Conventional mud-rotary method through setting of the outer casing; reverse-air rotary for the remainder of the drilling; no salt or brine may be used for weight control during any of the drilling operations until after the final casing of the dual-zone monitor well has been installed. Drill a 12-inch diameter borehole using the mud rotary method from pad level to approximately 250 feet bpl. Perform the following logging techniques prior to subsequent reaming:

- X-Y caliper
- Natural gamma ray

2) Ream the pilot hole to a nominal 44-inch diameter and perform the following logging techniques prior to installing and cementing the 34-inch conductor casing from 0–225 feet bpl::

- X-Y caliper
- Natural gamma ray

3) Drill a 12-inch diameter pilot hole using the mud rotary method from the landing of the conductor casing to approximately 950 feet bpl, conducting inclination surveys every 90 feet (1 degree maximum allowed). Perform the following logging techniques prior to subsequent reaming:

   - X-Y caliper
   - Natural gamma ray
   - Dual induction
   - Spontaneous Potential

4) Ream the pilot hole to a nominal 34-inch diameter borehole using the mud rotary method, conducting inclination surveys every 90 feet (1 degree maximum allowed), from bottom of conductor casing to approximately 925 feet bpl. Perform the following logging techniques:

   - X-Y caliper
   - Natural gamma ray

5) Install and cement a 24-inch diameter steel outer casing from pad level to approximately 925 feet bpl, and perform the following logging techniques:

   - Temperature log after each lift of cement

6) Switch to reverse-air drilling. Drill a 12-inch diameter pilot hole from the landing of the outer casing to approximately 1,900 feet bpl, conducting inclination surveys every 90 feet (1 degree maximum allowed). Perform the following logging techniques prior to subsequent reaming:

   - X-Y caliper
   - Natural gamma ray
   - Dual induction
   - Spontaneous potential
   - Temperature (static and flowing)
   - Fluid conductivity (static and flowing)
   - Borehole Compensated Sonic with VDL
   - Flowmeter (static and flowing)

   A minimum of two and an anticipated maximum of 4 packer-pumping tests shall be performed between the depths of 1300 and 1900 feet bpl to determine the depth of the 10,000 mg/L TDS isopleth based upon field determined conditions and evaluate hydraulic characteristics of potential monitoring intervals. Note: Pumping logs shall be run to adequately stress the confining units to make them clearly identifiable.

7) Install drillable bridge plug to a depth of 1850 feet bpl and backplug pilot hole from approximately 1850 to 1430 feet bpl with cement. Install limestone gravel over interval from 1430 to 1390 feet bpl. Backplug pilot hole over the interval from approximately 1390 to within 100 feet of the base of the 24-inch diameter outer casing.

8) Ream the backplugged pilot hole to a nominal 24-inch diameter borehole using the reverse-air rotary method, conducting inclination surveys every 90 feet (1 degree maximum allowed), from bottom of outer casing to approximately 1,400 feet bpl. Perform the following logging techniques:

- X-Y caliper
- Natural gamma ray

9) Install and cement a 16-inch diameter intermediate steel casing from pad level to approximately 1400 feet bpl, and perform the following logging techniques:

- Temperature log after each lift of cement

10) Drill a 16-inch diameter hole using the reverse air method from the landing of the intermediate casing to approximately 1845 feet bpl and a 12-inch diameter hole from 1845 to 1870 feet bpl conducting inclination surveys every 60 feet (1 degree maximum allowed). Perform the following logging techniques:

- X-Y caliper
- Natural gamma ray

11) Install and cement a 6-⅝ inch diameter final FRP casing from pad level to approximately 1850 feet bpl, and perform the following logging techniques:

- Temperature log after each lift of cement

12) Develop monitor zones and collect background water samples. The background water samples shall be collected and analyzed, at a minimum, for: Primary and Secondary Drinking Water Standards and Municipal Wastewater Minimum Criteria Groundwater Monitoring Parameters. This may also be accomplished between 12) and 13), below.

13) Conduct Mechanical Integrity Test (casing pressure test on 6-5/8-inch FRP casing and perform the following logging techniques:

- Cement Bond Log with VDL after completion of cementing
- Television Survey

14) Complete wellhead assembly.

15) Demobilize rig.

k. Packer testing shall at a minimum include:

1) At least one packer test from each monitoring zone.

2) At least one packer test to reliably determine the base of the USDW.

3) Water samples shall be collected from each packer test and analyzed, at a minimum, for: total dissolved solids, chlorides, specific conductance, pH, temperature, dissolved ammonia and total Kjeldhal nitrogen and sulfates.

l. The depth of the USDW and the background water quality of the monitoring zones shall be determined during drilling and testing. This determination shall be accomplished, analyzed, and interpreted using, at least, the following information:

1) Water sample analysis results from packer testing.

2) Aquifer performance testing data.

3) Geophysical logging data.

4) Plots of sonic porosity and apparent fluid resistivity (R_{wa}). Interpretation shall also include calculations of the sonic porosity and the R_{wa} and the input parameters provided.

The lower monitoring zone shall be positioned in a suitably transmissive interval at an appropriate point above the injection interval, and the immediately overlying major confining unit, and have a TDS concentration significantly greater than 10,000 mg/L with regard to TDS. The upper monitoring interval shall be located in immediate proximity to the base of the USDW. Final hydrogeological evaluation shall be done once all pertinent data and results have been submitted and incorporated in the proposal.

a. If effluent (e.g., uncharacteristic liquid waste components or odors) is encountered or suspected during drilling or testing, the Department shall be notified immediately by telephone, and subsequently in writing. Immediate precautionary measures shall be taken to prevent any upward fluid movement.

b. Testing:

i. Injection of any wastewater is prohibited as this is an exploratory well.

ii. The Department shall be notified at least seventy-two (72) hours prior to all testing that requires the presence of a FDEP representative.

c. UIC–TAC meetings are scheduled on the 2nd and 4th Tuesday of each month subject to a five working day prior notice and timely receipt of critical data by all UIC-TAC members and the USEPA, Region IV, Atlanta. Emergency meetings may be arranged when justified to avoid undue construction delays.

d. Department approval at a scheduled UIC–TAC meeting shall be based on the permittee's presentation that shows compliance with Department rules and this permit.

e. No fluids shall be injected with the exception of fluids used while drilling operations are under way.

3. Quality Assurance/Quality Control Requirements.

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 a completed application and appropriate processing fee 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 and 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, pursuant to Chapter 492, F.S., shall provide monitoring of the drilling and testing operation. The permittee shall notify the Department immediately of any change of the Engineer of Record or Geologist of Record.

c. In accordance with Chapter 492, Florida Statutes, all documents prepared for the geological/hydrogeological evaluation of the exploratory well shall be signed and sealed by a Florida Licensed Professional Geologist or qualified Florida Licensed Professional Engineer.

d. 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/-1 (Laboratory Procedures).

e. Continuous on-site supervision by qualified personnel (engineer or geologist) is required during all drilling, testing, geophysical logging and cementing operations.

f. The permittee shall calibrate all pressure gauge(s), flow meter(s) and other related measurement equipment associated with the exploratory 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 other related measurement equipment associated with the exploratory well shall be calibrated using standard engineering methods.

g. 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.

4. Reporting Requirements.

a. This project shall be monitored by the Department with the assistance of the EPA - Region 4 and the TAC, which consists of representatives of the following agencies:

- Department of Environmental Protection, West Palm Beach and Tallahassee.
- South Florida Water Management District (SFWMD), West Palm Beach.
- United States Geological Survey (USGS), Miami.

b. The permittee shall provide copies of all correspondence relative to this permit to each member of the TAC (not EPA). 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.

c. Throughout the construction period allowed by this permit, daily progress reports shall be submitted to the Department and the TAC (not EPA) each week. The reporting period shall run Friday through Thursday and reports shall be mailed on Friday of each week. The weekly progress reports, certified by a Florida Licensed Professional Geologist or qualified Florida Licensed Professional Engineer, pursuant to S.C.s 3.b. and 7.a., and shall include at a minimum the following information:

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. Details of cementing operations shall include the number of cementing stages, and the following information for each stage of cementing: cement slurry composition, specific gravity, pumping rate, volume of cement pumped, theoretical fill depth, and actual tag depth. From both the physical tag and the geophysical logs, a percent fill shall be calculated. An explanation of any deviation between actual versus theoretical fill shall be provided;

4) Daily engineers report and driller's log with detailed descriptions of all drilling progress, cementing, testing, logging, and casing installation activities;

5) Lithologic log with cuttings description, formation and depth encountered;

6) Collection of drilling cuttings at least every 10 feet and at every formation change, with 5 foot sampling starting at a depth of 2800 feet bpl and continuing through the injection zone;

7) Well development records;

8) Water quality analyses, including but not limited to the weekly water quality analysis and water levels for the four PMWs;

9) Description of work and type of testing accomplished including geophysical and video logs and pumping tests;

10) Description of any construction problems that developed during the reporting period and current status;

11) Copies of the driller's log;

12) Description of any deviation survey conducted;

13) Details of any packer tests, pump tests and core analyses; and

14) Details of the additions of salt or other materials to suppress well flow, and include the date, depth and amount of material used

d. 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.

e. Abnormal Events.

1) 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, SED office in West Palm Beach.

2) A written report of any noncompliance referenced in Specific Condition (S.C.) 4.e above shall be submitted to the SED 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.

f. An interpretation of all test results must be submitted with all submittals.

g. Within 30 days of well completion of the Exploratory Well, the permittee or the authorized representative shall submit to the Department the following information:

h. Certification of Class I Well Construction Completion, DEP Form 62-528.900(4);

i. Upon completion of construction of the well, a complete set of as-built engineering drawings (Florida registered P.E. signed and sealed) shall be submitted to the Department's SED office in West Palm Beach and Tallahassee UIC Program.

j. After completion of construction and testing of the well, the following requirements shall apply:

1) A final engineering report shall be submitted to the Department, the TAC (not EPA). 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. This report shall also be signed and sealed by a Florida licensed professional engineer and professional geologist.

a) Surface equipment completion certification or certification of interim completion for the purposes of testing;

b) Signed and sealed record (as-built) engineering drawings of all well construction, subsurface and surface equipment, and appurtenances. The drawings shall include but not be limited to the wellhead and subsurface well components.

c) All other applicable permits;

5. Surface Equipment

a. The well surface equipment and piping shall be kept free of corrosion at all times.

b. Spillage onto the well pad during construction activities, and any waters spilled during testing, other maintenance, testing or repairs to the system shall be contained by an impermeable containment pad and disposed of via approved and permitted methods.

c. The four surficial aquifer monitor wells installed at the corners of the well pad shall be secured, maintained, and retained in service throughout the construction phase of the project. The permittee may submit a request to the Department for cessation of sampling followed by capping, or plugging and abandonment of these wells.

6. Plugging and Abandonment and Alternate Use Plans.

a. Permittees who are unable to operate the 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, or

3) Implement the plugging and abandonment plan.

7. Signatories

a. 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.

b. In accordance with Rule 62-528.340(4), F.A.C., all reports and submittals shall contain the following certification signed by a person authorized under Rules 62-528.340(1) or (2), F.A.C. or be included under such certification as may have been previously provided (i.e., responses to a Request for Information (RFI) which are simple clarifications are thereby certified):

"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 on 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."

8. Permit Extension(s) and Renewal(s).

a. Pursuant to Rule 62-4.080(3), a permittee may request that a permit be extended as a modification of an existing permit. A request for an extension is the responsibility of the permittee and shall be submitted to the Department before the expiration of the permit. In accordance with Rule 62-4.070(4), F.A.C., a permit cannot be extended beyond the maximum 5-year statutory limit.

Issued this 05 day of May, 2010

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Jack Long
District Director
Southeast District

JL/LAB/jkm

Appendix B
EW-1 Construction Summary

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Construction Summary

Date		Milestone
5/11/2011		Begin drilling a 12¼-inch diameter pilot hole from land surface via mud rotary drilling method.
5/14/2011		Complete drilling the pilot hole to 255 feet bpl.
5/15/2011		Perform caliper and gamma ray logging.
5/17/2011		Begin reaming from surface using a 62½-inch diameter bit via mud rotary drilling method.
5/25/2011		Complete reaming the 62½-inch diameter hole to a depth of 259.8 feet bpl. Perform caliper and gamma ray logging on the reamed hole.
5/26/2011		Install 54-inch diameter casing to a depth of 255 feet bpl and cement casing to land surface.
5/27/2011		Drill out cement plug at the base of the 54-inch diameter casing using a 52½-inch diameter bit.
5/28/2011		Begin pilot hole drilling with a 12¼-inch diameter bit via mud rotary drilling method from the base of the 54-inch casing.
6/1/2011		Complete pilot hole drilling to a depth of 1,090 feet bpl.
6/5/2011		Perform caliper, gamma ray, spontaneous potential, and dual-induction logging on the pilot hole.
6/6/2011		Begin reaming the pilot hole using a 52½-inch diameter reaming bit.
6/20/2011		Complete reaming the pilot hole to a depth of 1,095 feet bpl. Begin caliper and gamma ray logging of the reamed hole.
6/21/2011		Complete caliper and gamma ray logging of the reamed hole. Begin installation of the 44-inch diameter casing.
6/22/2011		Complete installation of the 44-inch diameter casing to a depth of 1,090 feet bpl and begin cementing the casing in place.
6/24/2011		Complete cementing the 44-inch diameter casing in place.
6/28/2011		Begin to drill out cement plug at the base of the 44-inch diameter casing using a 42½-inch diameter bit.
6/29/2011		Complete drilling out cement plug at the base of the 44-inch diameter casing using a 42½-inch diameter bit.
6/30/2011		Begin pilot hole drilling with a 12¼-inch diameter bit from the base of the 44-inch casing via reverse air drilling method.
7/3/2011		Complete pilot hole drilling to a depth of 1,655 feet bpl.
7/11/2011		Begin performing caliper, gamma ray, dual induction, spontaneous potential, sonic, fluid conductivity, temperature, and flowmeter logs on the open hole interval.
7/12/2011		Complete performing caliper, gamma ray, dual induction, spontaneous potential, sonic, fluid conductivity, temperature, and flowmeter logs on the open hole interval.
7/14/2011		Perform packer testing on the interval from 1,505 to 1,535 feet bpl.
7/15/2011		Perform packer testing on the interval from 1,400 to 1,430 feet bpl.
7/17/2011		Perform packer testing on the interval from 1,225 to 1,285 feet bpl.
7/18/2011		Perform packer testing on the interval from 1,102 to 1,162 feet bpl.
7/22/2011		Begin backplugging the pilot hole with cement.
7/23/2011		Complete backplugging the pilot hole with cement (tag the top of cement at 1,094 feet bpl). Begin reaming from the base of the 44-inch diameter casing using a 42½-inch drill bit.
7/30/2011		Complete reaming using a 42½-inch diameter bit to a depth of 1,542 feet bpl.
7/31/2011		Perform caliper and gamma ray logs on the reamed hole.
8/1/2011		Begin installation of the 34-inch diameter casing.
8/2/2011		Complete installation of the 34-inch diameter casing to a depth of 1,535 feet bpl.
8/5/2011		Begin cementing the 34-inch diameter casing in place.
8/8/2011		Complete cementing the 30-inch diameter casing to land surface.
8/9/2011		Drill out cement plug at the base of the 34-inch diameter casing using a 32½-inch diameter bit.
8/12/2011		Begin pilot hole drilling with a 12.25-inch diameter bit from the base of the 34-inch casing via reverse air drilling method.
8/14/2011		Core the interval from 1,721.5 to 1,734.5 feet bpl.
8/18/2011		Core the interval from 2,026 to 2,040 feet bpl.
8/20/2011		Core the interval from 2,110 to 2,124 feet bpl.
8/21/2011		Core the interval from 2,288 to 2,302 feet bpl.
8/24/2011		Core the interval from 2,396 to 2,410 feet bpl.
8/27/2011		Core the interval from 2,576 to 2,578 feet bpl.
8/28/2011		Core the interval from 2,580 to 2,590 feet bpl.
8/31/2011		Core the interval from 2,638 to 2,652 feet bpl.

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Construction Summary

Date		Milestone
9/1/2011		Core the interval from 2,652 to 2,666 feet bpl.
9/3/2011		Core the interval from 2,666 to 2,679 feet bpl.
9/6/2011		Completed pilot hole to a depth of 3,192 feet bpl and began dredging below this depth.
11/28/2011		Complete pilot hole drilling to a depth of 3,234 feet bpl.
11/30/2011		Perform caliper, gamma ray, dual induction, spontaneous potential, sonic, fluid conductivity, temperature, flowmeter, and video logs on the open hole interval.
12/3/2011		Perform packer testing on the interval from 1,930 to 1,952 feet bpl.
12/5/2011		Perform packer testing on the interval from 3,020 to 3,232 feet bpl.
12/6/2011		Begin reaming from the base of the 34-inch diameter casing to allow packer testing with sleeved inflatable packers.
12/27/2011		Perform packer testing on the interval from 1,970 to 1,972 feet bpl.
1/6/2012		Perform caliper and gamma ray logs on the reamed hole.
1/8/2012		Perform packer testing on the interval from 2,058 to 2,080 feet bpl.
1/15/2012		Performed caliper and gamma ray logs.
1/24/2012		Perform caliper and gamma ray logs on the reamed hole.
1/28/2012		Perform packer testing on the interval from 2,220 to 2,242 feet bpl.
1/30/2012		Perform packer testing on the interval from 2,478 to 2,500 feet bpl.
2/6/2012		Completed reaming the pilot hole to a depth of 2,978 feet bpl with a 32-inch diameter bit.
2/11/2012		Perform caliper and gamma ray logs on the reamed hole.
2/13/2012		Perform formation test over the interval from 3,010 to 3,230 feet bpl.
2/14/2012		Begin reaming the pilot hole from 2,978 feet bpl with a 24-inch diameter bit.
2/15/2012		Complete reaming with a 24-inch diameter bit to a depth of 2,980 feet bpl.
2/16/2012		Begin reaming the pilot hole from 2,980 feet bpl with a 22-inch diameter bit.
2/17/2012		Completed reaming the pilot hole to a depth of 3,230 feet bpl with a 22-inch diameter bit.
2/21/2012		Perform caliper and gamma ray logs on the reamed hole.
2/23/2012		Begin installation of the 24-inch diameter casing.
3/1/2012		Complete installation of the 24-inch diameter casing to a depth of 2,985 feet bpl. Begin cementing casing in place.
3/7/2012		Perform cement bond log on the 24-inch diameter casing and complete cementing the casing to land surface.
3/10/2012		Perform video survey of the 24-inch diameter casing.
3/12/2012		Perform a successful pressure test on the 24-inch diameter casing.
3/14/2012		Begin installation of the 18-inch diameter FRP injection tubing.
3/17/2012		Complete FRP injection tubing installation to a depth of 2,975 feet bpl and install Baracor corrosion inhibitor in the annulus.
3/18/2012		Re-seat the FRP injection tubing and begin demobilizing the rig and equipment the dual-zone monitor well location.
3/26/2012		Complete demobilizing the rig and equipment to the dual-zone monitor well location.
4/11/2012		Collected background water samples from the Boulder Zone and performed final video survey.
6/15/2012		Performed temperature logging of the well.
6/21/2012		Performed a successful annular pressure test in the presence of an FDEP witness.
7/31/2012		Completed wellhead installation.

bpl = below pad level

Appendix C

Weekly Construction Summary Cover Letters

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

May 13, 2011 MHCDEP-11-0169

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #1

Dear Mr. May:

This is the first weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 6:15 PM (when drilling operations at EW-1 began), Wednesday, May 11, 2011 and ended at 7:00 AM, Thursday, May 12, 2011. For this project, the reporting period for all future weekly construction summaries will begin at 7:00 AM on Thursday and end at 7:00 AM on the following Thursday. Consultant and drilling contractor daily reports were prepared for this reporting period commencing with the initiation of drilling activities. Copies of the consultant and drilling contractor daily construction logs are attached.

During this reporting period, the drilling contractor (Layne Christensen Company) began drilling exploratory well EW-1 using a 12.25-inch diameter drill bit. The interval 33 to 55 feet below pad level (bpl) was drilled during the reporting period. Deviation surveys will be performed on the hole at 90 foot intervals. There were no geophysical logging, coring, packer testing, well development, casing installation or cementing activities. Salt or other material was not used to suppress well flow and there were no construction problems during the reporting period.

During construction of the containment pad on April 14, 2011, when the 64 inch diameter pit pipe was installed to a depth of 30 feet bpl, formation samples were collected from land surface to a depth of 30 feet bpl. Once drilling commenced, formation samples were collected at 10 foot intervals. A lithologic log of formation samples collected during the pit pipe installation (land surface to 30 feet bpl) and formation samples collected during drilling during this reporting period (30 feet bpl to 50 feet bpl) is attached.

During the next reporting period, it is anticipated the Contractor will complete pilot hole drilling to a depth of approximately 250 feet bpl, perform geophysical logging on the pilot

hole, ream the pilot hole, perform geophysical logging on the reamed hole and install and cement the 54-inch diameter casing in place.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on May 5, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. A copy of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact me at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/13/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Contractor's Daily Construction Log
Lithologic Log
Pam Monitor Well Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

May 20, 2011 MHCDEP-11-0180

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #2

Dear Mr. May:

This is the second weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 12, 2011 and ended at 7:00 AM, Thursday, May 19, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor (Layne Christensen Company) began drilling a pilot hole via the mud rotary drilling method using a 12 ¼-inch diameter drill bit. The pilot hole was drilled from a depth of 33 feet to 55 feet below pad level (bpl).

During this reporting period, the drilling contractor continued drilling the pilot hole from a depth of 55 feet to 255 feet bpl. Lost circulation was encountered while drilling the interval from approximately 33 feet bpl to 177 feet bpl. Based on review of the drill cutting sample, we expect that the lost circulation is present between 33 feet bpl and 120 feet bpl. Upon completion of drilling the pilot hole to 255 feet bpl, the geophysical logging sub-contractor performed gamma-ray and caliper logging. The geophysical log is attached. Based on the results of the geophysical logging and the lithology, a 54-inch diameter casing setting depth of between 240 feet bpl and 250 feet bpl will be selected depending on field conditions. The drilling contractor then began to ream the pilot hole using a 62 ½-inch diameter drill bit. The interval from 33 feet to 61 feet bpl was reamed during this reporting period. Deviation surveys were performed on the pilot hole at 90 foot intervals. A deviation survey summary sheet is attached. Formation samples were collected at 10 foot intervals. A lithologic log of formation samples is attached.

There were no coring, packer testing, well development, casing installation or cementing activities. Salt or other materials were not used to suppress well flow and there were no construction related issues during the reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete reaming of the pilot hole to a depth of approximately 255 feet bpl, perform geophysical logging on the reamed borehole, install and cement the 54-inch diameter casing in place, and begin the next phase of pilot hole drilling.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The most recent set of pad monitoring well sample results available is for samples collected on May 11, 2011.. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact me at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/20/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Contractor's Daily Construction Log
Lithologic Log
Pad Monitor Well Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

May 27, 2011 MHCDEP-11-0187

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #3

Dear Mr. May:

This is the third weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 19, 2011 and ended at 7:00 AM, Thursday, May 26, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor (Layne Christensen Company) completed drilling a pilot hole via the mud rotary drilling method using a 12 ¼-inch diameter drill bit to a depth of 255 feet below pad level (bpl), performed geophysical logging on the pilot hole, and began reaming the pilot hole using a 62 ½-inch diameter drill bit. The pilot hole was reamed to a depth of 61.8 feet bpl by the end of the previous reporting period.

During this reporting period, the drilling contractor continued to ream the pilot hole from a depth of 61.8 feet to 259.8 feet bpl. Upon completion of reaming the pilot hole to 259.8 feet bpl, the geophysical logging sub-contractor performed gamma-ray and caliper logging. A copy of the geophysical log is attached. The drilling contractor was preparing to install the 54-inch diameter steel casing at the end of this reporting period. Deviation surveys were performed on the pilot hole at 90 foot intervals. A deviation survey summary sheet is attached.

There were no coring, packer testing, exploratory well development, casing installation or cementing activities. Salt or other materials were not used to suppress well flow and there were no construction related issues during the reporting period.

During the next reporting period, it is anticipated that the drilling contractor will install and cement the 54-inch diameter casing in place, and begin the next phase of pilot hole drilling.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on May 26, 2011. The most recent set of pad monitoring well sample results available is for samples collected on May 19, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact me at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/27/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Deviation Survey Summary Sheet
Geophysical Log

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 3, 2011 MHCDEP-11-0231

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #4

Dear Mr. May:

This is the fourth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 26, 2011 and ended at 7:00 AM, Thursday, June 2, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor (Layne Christensen Company) completed reaming the pilot hole using a 62 ½-inch diameter drill bit via the mud rotary drilling method to a depth of 259.8 feet below pad level (bpl). Caliper and gamma ray geophysical logs were performed on the reamed borehole by the end of the previous reporting period.

During this reporting period, the drilling contractor installed the 54-inch diameter steel casing to a depth of 255 feet bpl and cemented the casing in place in one cement stage. A total of 206 barrels of cement, 102 barrels of 12% bentonite blend cement and 104 barrels of neat cement, were used to cement the casing in place. A cementing stage sheet and cementing summary sheet of the cementing event is attached. The cement was allowed to cure for approximately 24 hours prior to drilling out the cement plug at the base of the 54-inch diameter casing using a 52 ½-inch diameter bit from a depth of 250 feet to 259 feet bpl. The drilling contractor then drilled the next phase of pilot hole using a 12 ¼-inch diameter drill bit via the mud rotary method from a depth of 259 feet to 1,090 feet bpl. The drilling contractor was conditioning the borehole in preparation for geophysical logging by the end of this reporting period. Deviation surveys were performed on the pilot hole at 90 foot intervals. A deviation survey summary sheet is attached.

There were no coring, packer testing, or exploratory well development activities. Salt or other materials were not used to suppress well flow and there were no construction related issues during the reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform geophysical logging on the pilot hole and begin to ream the pilot hole from the base of the 54-inch diameter casing using a 52 ½-inch diameter bit.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on June 2, 2011. The most recent set of pad monitoring well sample results available is for samples collected on May 26, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact me at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/3/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Lithologic Log
Deviation Survey Summary Sheet
Cementing Stage Sheet
Cementing Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 10, 2011 MHCDEP-11-0238

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #5

Dear Mr. May:

This is the fifth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 2, 2011 and ended at 7:00 AM, Thursday, June 9, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor installed the 54-inch diameter steel casing to a depth of 255 feet below pad level (bpl) and cemented the casing in place in one cement stage. The drilling contractor drilled out the cement plug and drilled the next phase of pilot hole using a 12 ¼-inch diameter drill bit via the mud rotary method from the base of the 54-inch diameter casing to a depth of 1,090 feet bpl. The drilling contractor was conditioning the borehole in preparation for geophysical logging at the end of the previous reporting period.

During this reporting period, the drilling contractor continued conditioning the borehole in preparation for geophysical logging. Upon completion of conditioning the pilot hole, the geophysical logging subcontractor performed caliper, gamma-ray, dual-induction, and spontaneous-potential geophysical logs on the pilot hole. Copies of the geophysical logs are attached. Based on the geophysical log and the lithologic data, a 44-inch diameter casing setting depth of 1,090 feet bpl was selected. The drilling contractor then began to ream the pilot hole using a 52 ½-inch diameter drill reaming bit. The interval from the base of the 54-inch diameter casing at 255 feet bpl to 437 feet bpl was reamed during this reporting period. Deviation surveys were performed on the reamed hole at 90 foot intervals. A deviation survey summary sheet is attached.

There were no coring, packer testing, exploratory well development, casing installations or cementing activities. Salt or other materials were not used to suppress well flow and there were no construction related issues during the reporting period.

During the next reporting period, it is anticipated that the drilling contractor will continue reaming the pilot hole.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on June 9, 2011. The most recent set of pad monitoring well sample results available is for samples collected on June 2, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact me at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/10/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Deviation Survey Summary Sheet
Geophysical logs

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 17, 2011 MHCDEP-11-0256

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #6

Dear Mr. May:

This is the sixth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 9, 2011 and ended at 7:00 AM, Thursday, June 16, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor continued conditioning the borehole in preparation for geophysical logging. Upon completion of conditioning the pilot hole, the geophysical logging subcontractor performed caliper, gamma-ray, dual-induction, and spontaneous-potential geophysical logs on the pilot hole. Based on the geophysical log and the lithologic data, a 44-inch diameter casing setting depth of 1,090 feet bpl was selected. The drilling contractor then began to ream the pilot hole using a 52 ½-inch diameter drill reaming bit. The interval from the base of the 54-inch diameter casing to 437 feet bpl was reamed during the previous reporting period.

During this reporting period, the drilling contractor continued reaming the pilot hole using a 52 ½-inch diameter drill reaming bit. The interval from 437 feet bpl to 902 feet bpl was reamed during this reporting period. Deviation surveys were performed on the reamed hole at 90 foot intervals. A deviation survey summary sheet is attached.

There were no coring, packer testing, exploratory well development, casing installations or cementing activities. Salt or other materials were not used to suppress well flow and there were no construction related issues during the reporting period.

During the next reporting period, it is anticipated that the drilling contractor will continue reaming the pilot hole and perform geophysical logging. Setting of the 44-inch diameter casing will follow the geophysical logging.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on June 16, 2011. The most recent set of pad monitoring well sample results available is for samples collected on June 9, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/17/11

Deborah Daigle, P.G.
ASRus, LLC

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Deviation Survey Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 24, 2011 MHCDEP-11-0263

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #7

Dear Mr. May:

This is the seventh weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 16, 2011 and ended at 7:00 AM, Thursday, June 23, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor continued reaming the pilot in preparation for installing the 44-inch diameter casing to a depth of 1,090 feet below pad level (bpl). The interval from 437 feet bpl to 902 feet bpl was reamed during the previous reporting period.

During this reporting period, the drilling contractor continued reaming the pilot hole using a 52 ½-inch diameter drill reaming bit. The interval from 902 feet bpl to 1,095 feet bpl was reamed in preparation for installing the 44-inch diameter casing. Caliper and gamma ray logs were performed on the reamed hole prior to installing the 44-inch diameter casing to depth of 1,090 feet bpl. A copy of the caliper and gamma ray log is attached. Cementing the 44-inch diameter casing in place then began. Cement stage #1 was completed by the end of the reporting period. Cement stage #1 consisted of pumping 91 barrels of neat cement and 154 barrels of 4% bentonite blend cement. The drilling contractor was preparing to perform a temperature log and tag the top of cement stage #1 at the end of this reporting period. Deviation surveys were performed on the reamed hole at 90 foot intervals. A deviation survey summary sheet is attached along with a cementing stage sheet and cementing summary sheet is attached.

There were no coring, packer testing or exploratory well development during this reporting period. Salt or other materials were not used to suppress well flow and there were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform temperature logs to assist in the identification of the top of cement and will continue cementing the 44-inch diameter casing in place. Following completion of cementing, the drilling contractor will begin pilot hole drilling below the base of the 44-iinch diameter casing.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on June 23, 2011. The most recent set of pad monitoring well sample results available is for samples collected on June 16, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/24/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Deviation Survey Summary Sheet
Cementing Stage Sheet
Cementing Summary Sheet
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 1, 2011 MHCDEP-11-0279

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #8

Dear Mr. May:

This is the eighth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 23, 2011 and ended at 7:00 AM, Thursday, June 30, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor completed reaming the pilot to a depth of 1,095 feet below pad level (bpl). Geophysical logging was performed on the reamed borehole and the 44-inch diameter casing was installed to a depth of 1,090 feet bpl. The drilling contractor had begun cementing the casing in place and had completed cement stage #1, consisting of 91 barrels of neat cement and 154 barrels of 4% bentonite blend cement, during the previous reporting period.

During this reporting period, the drilling contractor completed cementing the 44-inch diameter casing in place. Cement stages 2 through 4 were used to cement the casing in place. A total of 598 barrels of cement (91 barrels of neat cement and 507 barrels of 4% bentonite blend cement) were used to cement the 44-inch diameter casing in place in the 4 cementing stages that occured during this and the previous reporting period. Temperature logging was performed to assist in the identification of the top of cement after each cementing stage that did not reach surface. A copy of the cement top temperature log is attached. Cementing stage sheets and a cementing summary sheet are attached. The drilling contractor then rigged up for the reverse-air drilling method, and reamed out the cement plug at the base of the 44-inch diameter casing using a 42 ½-inch diameter bit from a depth of 1,078 feet to 1,095 feet bpl. The drilling contractor was preparing to drill the next phase of pilot hole using a 12 ¼-inch diameter drill bit via the reverse-air drilling method by the end of this reporting period.

There was no coring, packer testing or exploratory well development during this reporting period. Salt or other materials were not used to suppress well flow and there were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 1,650 feet bpl, perform a full suite of geophysical logging and begin packer testing of the pilot hole.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on June 30, 2011. The most recent set of pad monitoring well sample results available is for samples collected on June 23, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/1/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Cementing Stage Sheets
Cementing Summary Sheet
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 8, 2011 MHCDEP-11-0288

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #9

Dear Mr. May:

This is the ninth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 30, 2011 and ended at 7:00 AM, Thursday, July 7, 2011. There were no construction activities at the site between 3:30 PM on July 3, 2011 through 7:00 AM on July 5, 2011 in observance of the July 4th holiday. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period, the drilling contractor completed cementing the 44-inch diameter casing to land surface, had reamed out the cement plug at the base of the 44-inch diameter casing and was preparing to begin pilot hole drilling below the base of the 44-inch diameter casing.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 1,095 feet below pad level (bpl) to a depth of 1,655 feet bpl using a 12 ¼-inch diameter drill bit and the reverse-air drilling method. Pilot hole water samples were collected at intervals no greater than 90-feet during reverse-air drilling. Pilot hole water samples were sent to a testing laboratory for conductivity, chloride, total dissolved solids, total Kjeldahl nitrogen, and ammonia analysis. The pilot hole water sample laboratory results for samples collected during this reporting period are not yet available and will be provided in the next weekly construction summary. Deviation surveys were performed at 90-foot intervals and formation samples were collected at 10-foot intervals during pilot hole drilling. A copy of the deviation survey summary sheet and a lithologic log of the formation samples collected during this reporting period are attached. The drilling contractor conditioned the pilot hole for geophysical logging after pilot hole drilling had reached a depth of 1,655 feet bpl. Pilot hole geophysical logging was about to begin at the end of this reporting period.

There was no coring, geophysical logging, casing installation, cementing, packer testing or exploratory well development during this reporting period. Salt or other materials were not used to suppress well flow and there were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the pilot hole will undergo geophysical logging and packer testing. After completing packer testing, the pilot hole will be backplugged with cement.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on July 7, 2011. The most recent set of pad monitoring well sample results available is for samples collected on June 30, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/8/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Lithologic Log
Deviation Survey Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 15, 2011 MHCDEP-11-299

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #10

Dear Mr. May:

This is the tenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, July 7, 2011 and ended at 7:00 AM, Thursday, July 14, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor completed pilot hole drilling to a depth of 1,655 feet below pad level (bpl) and was conditioning the pilot hole for geophysical logging.

The drilling contractor spent this reporting period conditioning the pilot hole for geophysical logging and performing geophysical logs. Logs performed include caliper, gamma ray, dual-induction, spontaneous potential, borehole complensated sonic, fluid conductivity, temperature, and flowmeter. The fluid conductivity, temperature, and flowmeter logs were performed under static and pumping conditions. All other logs were performed under static conditions. Copies of the geophysical logs are attached. The pilot hole was killed with a mixture of barite and bentonite during the reporting period. A daily kill material log providing a summary of daily kill material and kill volume is attached. The drilling contractor was preparing to perform a packer test on the interval from 1,505 to 1,535 feet bpl at the end of the reporting period. A pilot hole water quality summary sheet providing laboratory results for pilot hole water samples collected during the previous reporting period is also attached.

There was no coring, casing installation, cementing, packer testing or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform packer testing on selected intervals. After completing packer testing, the pilot hole will be backplugged with cement.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on July 13, 2011. The most recent set of pad monitoring well sample results available is for samples collected on July 8, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/15/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Pilot Hole Water Quality Summary Sheet
Daily Kill Material Log
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 22, 2011 MHCDEP-11-310

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #11

Dear Mr. May:

This is the eleventh weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, July 14, 2011 and ended at 7:00 AM, Thursday, July 21, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor completed geophysical logging of the pilot hole drilling to a depth of 1,655 feet below pad level (bpl) and was preparing to perform the first of four packer test on selected interval of the pilot hole.

The drilling contractor spent this reporting period performing packer testing on the intervals from 1,505 to 1,535 feet bpl, 1,400 to 1,430 feet bpl, 1,225 to 1,285 feet bpl, and 1,102 to 1,162 feet bpl. Water samples were collected at the end of each packer test and analyzed in the field for specific conductance. Samples for chlorides, total dissolved solids (TDS), ammonia, and total kjeldahl nitrogen (TKN) were sent to Florida Spectrum Environmental Services, Inc. for analysis. A packer test summary sheet, providing water level, pumping rate data and analyses required by the construction permit for each of the packer tests is attached. The pilot hole was killed with a mixture of barite and bentonite during the reporting period. A daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no coring, casing installation, cementing, geophysical logging or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will backplug the pilot hole with cement (following receipt of Florida Department of Environmental Protection approval of the 34-inch diameter casing seat recommendation of 1,535 feet bpl) and begin reaming the backplugged hole using a 42 ½-inch diameter reaming bit.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on July 21, 2011. The most recent set of pad monitoring well sample results available is for samples collected on July 14, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Please note, the chloride concentration of 55.1 mg/L reported in last week's construction summary for the pilot hole water sample collected at a depth of 1,345 feet bpl has been rechecked by the laboratory and found to be a typographical error. The actual chloride concentration for the pilot hole water sample from the depth of 1,345 feet bpl is 551 mg/L. A revised pilot hole water summary sheet is attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/22/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Packer Test Summary Sheet
Daily Kill Material Log
Pilot Hole Water Quality Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 29, 2011 MHCDEP-11-0327

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #12

Dear Mr. May:

This is the twelfth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, July 21, 2011 and ended at 7:00 AM, Thursday, July 28, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor performed packer testing on the intervals from 1,505 to 1,535 feet below pad level (bpl), 1,400 to 1,430 feet bpl, 1,225 to 1,285 feet bpl, and 1,102 to 1,162 feet bpl.

The drilling contractor spent this reporting period backplugging the pilot hole over the interval from 1,655 feet bpl to 1,094 feet bpl with 107 barrels of 12% bentonite blend cement. After allowing the cement to set, the drilling contractor began reaming the backplugged pilot hole using a 42 ½-inch diameter reaming bit. The interval from the base of the 44-inch diameter casing to 1,394 feet bpl had been reamed by the end of the reporting period. Florida Department of Environmental Protection (FDEP) approval of the recommended 34-inch diameter intermediate casing setting depth of 1,535 feet bpl was received on July 22, 2011. Deviation surveys were performed at 90-foot intervals. A copy of the deviation survey summary sheet along with a pilot hole backplug cement summary sheet is attached.

There was no coring, casing installation, packer testing, geophysical logging or exploratory well development during this reporting period. Salt or other materials were not used to suppress well flow and there were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor complete reaming the hole using a 42 ½-inch diameter reaming bit to a depth of 1,540 feet bpl and install the 34-inch diameter intermediate casing to a depth of 1,535 feet bpl. The 34-inch diameter intermediate casing will then be cemented from the base of casing to land surface.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on July 28, 2011. The most recent set of pad monitoring well sample results available is for samples collected on July 21, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/29/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Deviation Survey Summary Sheet
Pilot Hole Backplug Cement Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

August 5, 2011 MHCDEP-11-0340

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #13

Dear Mr. May:

This is the thirteenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, July 28, 2011 and ended at 7:00 AM, Thursday, August 4, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor backplugged the pilot hole over the interval from 1,655 feet below pad level (bpl) to 1,094 feet bpl and then reamed the backplugged pilot hole using a 42 ½-inch diameter reaming bit. The interval from the base of the 44-inch diameter casing to a depth of 1,394 feet bpl had been reamed by the end of the reporting period.

During this reporting period, the drilling contractor continued to ream the pilot hole from a depth of 1,394 feet bpl to a depth of 1,542 feet bpl. Deviation surveys were performed at 90-foot intervals during reaming. A copy of the deviation survey summary sheet is attached. Upon completion of reaming to a depth of 1,542 feet bpl, the borehole was conditioned and caliper and gamma ray geophysical logs were performed. A copy of the geophysical logs print is attached. The drilling contractor then installed the 34-inch diameter steel intermediate casing to a total depth of 1,535 feet bpl. A casing run summary sheet is attached. The drilling contractor then prepared to begin cementing the 34-inch casing in place by installing a 2-inch diameter tubing inside of the casing to a total depth of 1,532 feet bpl and sealing the well at the surface. The drilling contractor was waiting on the cementer to arrive on site at the end of the reporting period. The reamed hole was killed with a mixture of barite and bentonite during the reporting period. A daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no coring, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will cement the 34-inch diameter intermediate casing from the base of the casing to land surface. The drilling contractor will then begin drilling a pilot hole from the base of the 34-inch casing to a total depth of approximately 3,500 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on August 4, 2011. The most recent set of pad monitoring well sample results available is for samples collected on July 28, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

8/5/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Deviation Survey Summary Sheet
34-Inch Diameter Casing Run Summary Sheet
Daily Kill Material Log
Geophysical Log

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

August 12, 2011 MHCDEP-11-0345

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #14

Dear Mr. May:

This is the fourteenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, August 4, 2011 and ended at 7:00 AM, Thursday, August 11, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor reamed the pilot hole from a depth of 1,394 feet below pad level (bpl) to a depth of 1,542 feet bpl, installed the 34-inch diameter intermediate casing to a depth of 1,535 feet bpl, performed caliper logging of the reamed hole and prepared to begin cementing the casing in place.

During this reporting period, the drilling contractor cemented the 34-inch diameter casing in place from the base of casing to land surface. The 34-inch diameter casing was cemented to land surface in seven stages using 661 barrels of neat cement, 228 barrels of four percent bentonite blend cement, and 669 barrels of twelve percent bentonite blend cement. Most of the cement stages yielded greater than 100% of the theoretical fillup, suggesting the reamed hole caliper log performed during the previous reporting period over-estimated borehole volume. This is not uncommon in quantifying the volume of a large diameter borehole based on a caliper log that shows variation in the X and Y dimension of the borehole. The second stage of cementing showed the greatest deviation from theoretical (169% fill) and the borehole caliper log similarly showed the greatest deviation in the X and Y hole diameters. Cement top temperature logs were performed after each cement stage that did not reach surface and temperature logs closely matched the physical top-of-cement tags as expected. A copy of the cement top temperature log print is attached. After completing cementing operations, a 32 ½-inch

diameter reaming bit was used to drill out the cement plug at the base of the 34-inch diameter casing. The top of the cement plug inside the casing was encountered at a depth of 1,528 feet bpl. The cement plug was reamed to a depth of 1,543 feet bpl. A deviation survey was performed at a depth of 1,530 feet bpl after reaming to a depth of 1,542 feet bpl. A copy of the deviation survey summary sheet is attached. The drilling contractor was preparing to begin pilot hole drilling below a depth of 1,543 feet bpl at the end of the reporting period. The well was killed during the reporting period. A daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no coring, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will begin drilling a pilot hole from the base of the 34-inch casing to a total depth of approximately 3,500 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on August 11, 2011. The most recent set of pad monitoring well sample results available is for samples collected on August 4, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor wells data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

8/12/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Logs
Drilling Contractor Daily Construction Logs
Pad Monitor Well Summary Sheets
Cementing Summary Sheet
Deviation Survey Summary Sheet
Daily Kill Material Log
Geophysical Log

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

August 19, 2011 MHCDEP-11-0365

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #15

Dear Mr. May:

This is the fifteenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, August 11, 2011 and ended at 7:00 AM, Thursday, August 18, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor cemented the 34-inch diameter intermediate casing in place, reamed the cement plug at the base of the 34-inch diameter casing to a depth of 1,543 feet below pad level (bpl) and was preparing to begin pilot hole drilling.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 1,543 feet bpl to 2,026 feet bpl. Pilot hole drilling was interrupted to allow coring of the interval from 1,721.5 feet bpl to 1,734.5 feet bpl. A total of 39 inches of core was collected within the cored interval, resulting in 25% core recovery. A lithologic description of the core is attached. Pilot hole drilling resumed after core collection and advanced to a depth of 2,026 feet bpl. The drilling contractor was preparing to collect another core at a starting depth of 2,026 feet bpl at the end of the reporting period. Pilot hole water samples were collected at 90-foot intervals during pilot hole drilling. The laboratory reports for the pilot hole water samples collected during this reporting period were not available by the end of this reporting period. The data for the pilot hole water samples collected during this reporting period will be included in the next weekly construction summary. Deviation surveys were collected at 60-foot intervals during pilot hole drilling. A deviation survey summary sheet is attached. Lithologic samples were collected at 10-foot intervals during pilot hole drilling. A description of the lithologic samples collected during this reporting period is attached. A

daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no casing installation, cementing, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will continue pilot hole drilling and collecting cores.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on August 18, 2011. The most recent set of pad monitoring well sample results available is for samples collected on August 11, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Core No.1 Lithologic Description
Deviation Survey Summary Sheet
Lithologic Log
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

August 26, 2011 MHCDEP-11-0383

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #16

Dear Mr. May:

This is the sixteenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, August 18, 2011 and ended at 7:00 AM, Thursday, August 25, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 1,543 to 2,026 feet below pad level (bpl) and cored the interval from 1,721.5 feet bpl to 1,734.5 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 2,026 feet bpl to 2,396 feet bpl. Pilot hole drilling was interrupted to allow coring of the intervals from 2,026 feet bpl to 2,040 feet bpl, 2,110 feet bpl to 2,124 feet bpl, and 2,288.3 to 2,302.3 feet bpl. A core summary table providing the length of core recovered for each of the cored intervals is attached. A lithologic description of each of the cores is attached. The drilling contractor was preparing to collect another core at a starting depth of 2,396 feet bpl at the end of the reporting period. Pilot hole water samples were collected at 90-foot intervals during pilot hole drilling. The laboratory reports for the pilot hole water samples collected during this reporting period were not available by the end of this reporting period. The data for the pilot hole water samples collected during this reporting period will be included in the next weekly construction summary. The data for the pilot hole water sampled collected during the previous reporting period are included in the attached pilot hole water quality table. Deviation surveys were collected at 60-foot intervals during pilot hole drilling. A deviation survey summary sheet is attached. Lithologic samples were collected at 10-foot intervals during pilot hole drilling. A description of the lithologic

samples collected during this reporting period is attached. A daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no casing installation, cementing, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will continue pilot hole drilling and collecting cores.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on August 25, 2011. The most recent set of pad monitoring well sample results available is for samples collected on August 18, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

8/26/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Core Summary Table
Core No.2-4 Lithologic Descriptions
Deviation Survey Summary Sheet
Lithologic Log
Pilot Hole Water Quality Summary
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

September 2, 2011 MHCDEP-11-0394

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #17

Dear Mr. May:

This is the seventeenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, August 25, 2011 and ended at 7:00 AM, Thursday, September 1, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 2,026 feet below pad level (bpl) to 2,396 feet and cored the intervals from 2,026 feet bpl to 2,040 feet bpl, 2,110 feet bpl to 2,124 feet bpl, and 2,288.3 to 2,302.3 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 2,396 feet bpl to 2,652 feet bpl. Pilot hole drilling was interrupted to allow coring of the intervals from 2,396 feet bpl to 2,410 feet bpl, 2,576 feet bpl to 2,578 feet bpl, 2,580 feet bpl to 2,590 feet bpl, and 2,638 to 2,652 feet bpl. A core summary table providing the length of core recovered for each of the cored intervals is attached. A lithologic description of each of the cores is attached. The drilling contractor was preparing to collect another core at a starting depth of 2,652 feet bpl at the end of the reporting period. Pilot hole water samples were collected at 90-foot intervals during pilot hole drilling. The laboratory reports for the pilot hole water samples collected during this reporting period were not available by the end of this reporting period. The data for the pilot hole water samples collected during this reporting period will be included in the next weekly construction summary. The data for the pilot hole water sampled collected during the previous reporting period are included in the attached pilot hole water quality table. Deviation surveys were collected at 60-foot intervals during pilot hole drilling. A deviation survey summary sheet is attached. Lithologic samples were collected at 10-foot intervals during pilot hole drilling. A description of the lithologic samples collected during this reporting period is attached. A

daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no casing installation, cementing, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will continue pilot hole drilling and collecting cores.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on September 1, 2011. The most recent set of pad monitoring well sample results available is for samples collected on August 25, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

9/2/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Core Summary
Rock Core Lithologic Descriptions (Core # 5-8)
Deviation Survey Summary
Lithologic Description
Pilot Hole Water Quality
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

September 9, 2011 MHCDEP-11-0408

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #18

Dear Mr. May:

This is the eighteenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, September 1, 2011 and ended at 7:00 AM, Thursday, September 8, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 2,396 feet below pad level (bpl) to 2,652 feet and cored the intervals from 2,396 feet bpl to 2,410 feet bpl, 2,576 feet bpl to 2,578 feet bpl, 2,580 feet bpl to 2,590 feet bpl, and 2,638 to 2,652 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 2,652 feet bpl to 3,205 feet bpl. Pilot hole drilling was interrupted to allow coring of the intervals from 2,652 feet bpl to 2,666 feet bpl and 2,666 feet bpl to 2,679 feet bpl. A core summary table providing the length of core recovered for each of the cored intervals is attached. A lithologic description of each of the cores is attached. Pilot hole water samples were collected at 90-foot intervals during pilot hole drilling. The laboratory reports for the pilot hole water samples collected during this reporting period were not available by the end of this reporting period. The data for the pilot hole water samples collected during this reporting period will be included in the next weekly construction summary. The data for the pilot hole water sampled collected during the previous reporting period are included in the attached pilot hole water quality table. Deviation surveys were collected at 60-foot intervals during pilot hole drilling. A deviation survey summary sheet is attached. Lithologic samples were collected at 10-foot intervals during pilot hole drilling until a depth of 2,800 feet bpl was reached, at which point lithologic sample collection began at 5-foot intervals. A description of the lithologic samples collected during this reporting period is

attached. A daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no casing installation, cementing, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on September 8, 2011. The most recent set of pad monitoring well sample results available is for samples collected on September 1, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

9/9/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Core Summary
Rock Core Lithologic Descriptions (Core # 9-10)
Deviation Survey Summary
Lithologic Description
Pilot Hole Water Quality
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

September 16, 2011 MHCDEP-11-0420

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #19

Dear Mr. May:

This is the nineteenth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, September 8, 2011 and ended at 7:00 AM, Thursday, September 15, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 2,652 feet below pad level (bpl) to 3,205 feet and cored the intervals from 2,652 feet bpl to 2,666 feet bpl and 2,666 feet bpl to 2,679 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 3,205 feet bpl to 3,219 feet bpl. Most of the reporting period was spent dredging over the interval from 3,205 to 3,211 feet bpl. The dredge material consists primarily of limestone gravel with some dolomite gravel. The dredge zone appears to begin at a depth of approximately 3,202 feet bpl, however, most of the material appears to be coming from a depth of 3,205 feet bpl.

The laboratory data for the pilot hole water samples collected during the previous reporting period are included in the attached pilot hole water quality table. Lithologic samples were collected at 5-foot intervals during pilot hole drilling. A description of the lithologic samples collected during this reporting period is attached. A daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no casing installation, cementing, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on September 15, 2011. The most recent set of pad monitoring well sample results available is for samples collected on September 8, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

9/16/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Lithologic Description
Pilot Hole Water Quality
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

September 23, 2011 MHCDEP-11-0434

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #20

Dear Mr. May:

This is the twentieth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, September 15, 2011 and ended at 7:00 AM, Thursday, September 22, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 3,205 feet to 3,219 feet below pad level (bpl) and dredged the pilot hole over the interval from 3,205 to 3,211 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 3,219 feet bpl to 3,227 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,205 to 3,220 feet bpl. The dredge material consists primarily of limestone gravel with some dolomite gravel. The dredge zone appears to begin at a depth of approximately 3,205 feet bpl.

Lithologic samples were collected at 5-foot intervals during pilot hole drilling. A description of the lithologic samples collected during this reporting period is attached. A daily kill material log providing a summary of daily kill material and kill volume is also attached.

There was no casing installation, pilot hole water sample collection, cementing, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on September 22, 2011. The most recent set of pad monitoring well sample results available is for samples collected on September 16, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

9/23/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Lithologic Description
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

September 30, 2011 MHCDEP-11-0448

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #21

Dear Mr. May:

This is the twenty-first weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, September 22, 2011 and ended at 7:00 AM, Thursday, September 29, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 3,219 feet to 3,227 feet below pad level (bpl) and dredged the pilot hole over the interval from 3,205 to 3,220 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 3,227 feet bpl to 3,228 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,211 to 3,222 feet bpl. The dredge material consists primarily of limestone gravel with some dolomite gravel.

There were no lithologic or pilot hole water samples collected during this reporting period since the pilot hole advanced only one foot. Salt was used to kill the well once during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is also attached.

There was no casing installation, cementing, packer testing, or exploratory well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on September 29, 2011. The most recent set of pad monitoring well sample results available are for samples collected on September 23, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

9/30/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

October 7, 2011 MHCDEP-11-0459

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #22

Dear Mr. May:

This is the twenty-second weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, September 29, 2011 and ended at 7:00 AM, Thursday, October 6, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 3,227 feet bpl to 3,228 feet below pad level (bpl) and dredged the pilot hole over the interval from 3,211 to 3,222 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 3,228 feet bpl to 3,233 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,217 to 3,230 feet bpl. The dredge material consists primarily of limestone gravel with some dolomite gravel.

Lithologic samples were collected at 5-foot intervals during pilot hole drilling. A description of the lithologic samples collected during this reporting period is attached. There was no casing installation, cementing, packer testing, or exploratory well development and no well kill material was used during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on September 29, 2011. The most recent set of pad monitoring well sample results available are for samples collected on September 23, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

10/7/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Lithologic Description

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

October 14, 2011 MHCDEP-11-0469

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #23

Dear Mr. May:

This is the twenty-third weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, October 6, 2011 and ended at 7:00 AM, Thursday, October 13, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 3,228 feet bpl to 3,233 feet below pad level (bpl) and dredged the pilot hole over the interval from 3,217 to 3,230 feet bpl.

During this reporting period, the drilling contractor dredged the interval from 3,217 feet bpl to 3,230 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,225 to 3,230 feet bpl. The dredge material consists primarily of limestone gravel with some dolomite gravel and sand. Salt was used to kill the well three times during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is also attached.

There was no casing installation, cementing, packer testing, or exploratory well development and no lithologic samples were collected during this reporting period since the pilot hole was not advanced. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on October 13, 2011. The most recent set of pad monitoring well sample results available are for samples collected on October 6, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

10/14/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

October 21, 2011 MHCDEP-11-0476

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #24

Dear Mr. May:

This is the twenty-fourth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, October 13, 2011 and ended at 7:00 AM, Thursday, October 20, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor dredged the interval from 3,217 feet bpl to 3,230 feet below pad level (bpl). Most of the dredging took place over the interval from approximately 3,225 to 3,230 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 3,233 feet bpl to 3,234 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,222 to 3,232 feet bpl. The dredge material consists primarily of limestone gravel with some dolomite gravel and sand.

There was no casing installation, cementing, packer testing, or exploratory well development and no lithologic samples were collected during this reporting period since the pilot hole was advanced only one foot. There were no construction related issues and no kill material was used to kill the well during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on October 20, 2011. The most recent set of pad monitoring well sample results available are for samples collected on October 13, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

10/21/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

October 28, 2011 MHCDEP-11-0493

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #25

Dear Mr. May:

This is the twenty-fifth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, October 20, 2011 and ended at 7:00 AM, Thursday, October 27, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 3,233 feet below pad level (bpl) to 3,234 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,222 to 3,232 feet bpl.

During this reporting period, the drilling contractor drilled a pilot hole over the interval from 3,234 feet bpl to 3,265 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,233 to 3,241 feet bpl. The dredge material consists primarily of lime sand with some dolomite and limestone gravel. Lithologic samples were collected at 5-foot intervals during pilot hole drilling. A description of the lithologic samples collected during this reporting period is attached. A daily kill material log providing a summary of daily kill material and kill volume is attached.

There was no casing installation, cementing, packer testing, exploratory well development, or construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on October 27, 2011. The most recent set of pad monitoring well sample results available are for samples collected on October 20, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

10/28/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Lithologic Description
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

November 4, 2011 MHCDEP-11-0497

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #26

Dear Mr. May:

This is the twenty-sixth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, October 27, 2011 and ended at 7:00 AM, Thursday, November 3, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled a pilot hole over the interval from 3,234 feet below pad level (bpl) to 3,265 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,233 to 3,241 feet bpl.

The drilling contractor spent the first half of the reporting period dredging the interval from 3,244 feet bpl to 3,262 feet bpl. The lower portion of the borehole subsequently filled in to a depth of 3,211 feet bpl, after which the drilling contractor dredged the interval from 3,211 feet bpl to 3,228 feet bpl. The dredge material consists primarily of limestone sand. Salt was used to kill the well one time during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is also attached.

There was no casing installation, cementing, packer testing or exploratory well development and no lithologic samples were collected during this reporting period since the pilot hole was not advanced. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on November 3, 2011. The most recent set of pad monitoring well sample results available are for samples collected on October 27, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

11/4/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

November 11, 2011 MHCDEP-11-0511

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #27

Dear Mr. May:

This is the twenty-seventh weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, November 3, 2011 and ended at 7:00 AM, Thursday, November 10, 2011. There was no construction activity at the site between 5:00 PM, Monday, November 7, 2011 and 7:00 AM Wednesday, November 9, 2011 to allow the drilling contractor to conduct safety training. No drilling contractor daily reports were prepared for the period when no construction activity was taking place. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor dredged the interval from 3,211 feet below pad level (bpl) to 3,262 feet bpl. The interval from 3,211 feet bpl to 3,228 feet bpl was being dredged at the end of the reporting period.

During this reporting period, the drilling contractor dredged the interval from 3,218 feet bpl to 3,234 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,220 to 3,227 feet bpl. The dredge material consists primarily of limestone sand. Salt was used to kill the well once during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is also attached. Laboratory results for a pilot hole water sample collected on October 23, 2011 were received during this reporting period. A table providing a summary of the pilot hole water quality laboratory data is attached.

There was no casing installation, cementing, packer testing or exploratory well development and no lithologic samples were collected during this reporting period since the pilot hole was not advanced. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on November 10, 2011. The most recent set of pad monitoring well sample results available are for samples collected on November 3, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

11/11/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log
Pilot Hole Water Quality Summary

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

November 18, 2011 MHCDEP-11-0517

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #28

Dear Mr. May:

This is the twenty-eighth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, November 10, 2011 and ended at 7:00 AM, Thursday, November 17, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor dredged the interval from 3,218 feet below pad level (bpl) to 3,234 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,220 to 3,227 feet bpl.

During this reporting period, the drilling contractor dredged the interval from 3,216 feet bpl to 3,237 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,222 to 3,234 feet bpl. The dredge material consists primarily of limestone sand.

There was no casing installation, cementing, packer testing or exploratory well development and no lithologic samples were collected during this reporting period since the pilot hole was not advanced. There were no construction related issues and no kill material was used to kill the well during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on November 17, 2011. The most recent set of pad monitoring well sample results

available are for samples collected on November 10, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

11/18/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

November 28, 2011 MHCDEP-11-0540

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #29

Dear Mr. May:

This is the twenty-ninth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, November 17, 2011 and ended at 7:00 AM, Thursday, November 24, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor dredged the interval from 3,216 feet below pad level (bpl) to 3,237 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,222 to 3,234 feet bpl.

During this reporting period, the drilling contractor dredged the interval from 3,214 feet bpl to 3,242 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,228 to 3,234 feet bpl. The dredge material consists primarily of limestone sand. Salt was used to kill the well one time during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is also attached.

There was no casing installation, cementing, packer testing or exploratory well development and no lithologic samples were collected during this reporting period since the pilot hole was not advanced. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 3,500 feet bpl, perform geophysical logging of the pilot hole and begin packer testing of the pilot hole unless dredging of the pilot hole continues.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on November 25, 2011. The most recent set of pad monitoring well sample results available are for samples collected on November 17, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

11/28/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

December 2, 2011 MHCDEP-11-0544

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #30

Dear Mr. May:

This is the thirtieth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, November 24, 2011 and ended at 7:00 AM, Thursday, December 1, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor dredged the interval from 3,214 feet below pad level (bpl) to 3,242 feet bpl. Most of the reporting period was spent dredging over the interval primarily from approximately 3,228 to 3,234 feet bpl.

During the first half of this reporting period, the drilling contractor dredged the interval from 3,226 feet bpl to 3,234 feet bpl. The second half of the reporting period was spent preparing for and performing geophysical logging of the pilot hole. Geophysical logs performed include caliper, gamma ray, spontaneous potential, dual-induction, borehole compensated sonic, fluid conductivity, temperature, flowmeter, and video. Copies of the geophysical logs, with the exception of the video log, are attached to the electronic copy of this weekly construction summary. Prints of the geophysical logs and a DVD of the video log are not yet available and will be included with the next weekly construction summary. Salt was used to kill the well one time during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is also attached.

There was no casing installation, cementing, packer testing or exploratory well development and no lithologic samples were collected during this reporting period since the pilot hole was not advanced. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will begin packer testing of the pilot hole.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on November 25, 2011. The most recent set of pad monitoring well sample results available are for samples collected on November 25, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

12/2/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

December 9, 2011 MHCDEP-11-0547

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #31

Dear Mr. May:

This is the thirty-first weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, December 1, 2011 and ended at 7:00 AM, Thursday, December 8, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor dredged the interval from 3,226 feet below pad level (bpl) to 3,234 feet bpl and performed geophysical logging of the pilot hole. Prints of the geophysical logs and a DVD of the video survey are attached.

During this reporting period, the drilling contractor performed a straddle packer test over the interval from 1,930 to 1,952 feet bpl and an off-bottom single packer test over the interval from 3,020 feet bpl to the base of the pilot hole at 3,232 feet bpl. Straddle packer tests over the intervals from 2,989 to 3,011 feet bpl and 2,984 to 3,006 feet bpl were terminated due to test interval productivity during conditioning of the test zone. The attached table provides a summary of the packer testing data. Water samples were collected at the end of the pumping portion of packer tests from 1,930 feet to 1,952 feet and from the single packer test performed below 3,020 feet bpl. The packer test water sample laboratory analytical reports are not yet available and will be included in the next weekly construction report. Salt was used to kill the well one time during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is also attached. At the end of the reporting period, the drilling contractor was reaming the upper portion of the pilot hole in preparation for performing additional packer tests using large diameter packers. The large diameter packers are needed to perform packer testing in larger diameter portions of

the pilot hole that could not be packer tested with the smaller straddle packers used for the first test. A deviation survey was performed at a depth of 1,590 feet bpl while reaming the pilot hole A deviation survey summary is attached.

There was no casing installation, cementing, geophysical logging or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete reaming in preparation for packer testing.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on December 8, 2011. The most recent set of pad monitoring well sample results available are for samples collected on December 1, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

12/9/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Packer Test Summary Table
Deviation Survey Summary Sheet
Daily Kill Material Log
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

December 16, 2011 MHCDEP-11-0556

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #32

Dear Mr. May:

This is the thirty-second weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, December 8, 2011 and ended at 7:00 AM, Thursday, December 15, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor performed a straddle packer test over the interval from 1,930 to 1,952 feet below pad level (bpl) and an open-ended bottom single packer test over the interval from 3,020 feet bpl to the base of the pilot hole at 3,232 feet bpl. The drilling contractor then began reaming the upper portion of the pilot hole in preparation for performing additional packer tests using large diameter packers. Reaming had reached of depth of 1,636 feet bpl by the end of the previous reporting period.

During this reporting period, the drilling contractor reamed the interval from 1,636 to 1,960 feet bpl using a 32-inch diameter bit. The reaming was performed in preparation for performing additional packer tests using large diameter packers. The large diameter packers are needed to perform packer testing in larger diameter portions of the pilot hole that could not be packer tested with the smaller straddle packers used for the previous tests. Deviation surveys were performed at 60-foot intervals during reaming. A deviation survey summary is attached. Packer test water sample laboratory reports for packer tests performed during the previous reporting period have been received from the laboratory and are attached. A daily kill material log providing a summary of daily kill material and kill quantity is also attached. At the end of the reporting period, the drilling contractor was cleaning out the borehole with a 12 ¼-inch diameter drill bit to a depth of 2,000 feet bpl in preparation for performing a packer test over the interval from 1,970 to 1,992 feet bpl.

There was no casing installation, cementing, geophysical logging or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete reaming in preparation for additional packer testing.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on December 15, 2011. The most recent set of pad monitoring well sample results available are for samples collected on December 8, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

12/16/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Deviation Survey Summary Sheet
Daily Kill Material Log
Packer Test Water Sample Laboratory Reports

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

December 22, 2011 MHCDEP-11-0576

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #33

Dear Mr. May:

This is the thirty-third weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, December 15, 2011 and ended at 7:00 AM, Wednesday, December 21, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor reamed the interval from 1,636 to 1,960 feet below pad level (bpl) using a 32-inch diameter bit and had begun to clean out the interval from 1,960 to 2,000 feet bpl with a 12 ¼-inch diameter drill bit in preparation for performing a packer test over the interval from 1,970 to 1,992 feet bpl.

During this reporting period, the drilling contractor set inflatable straddle packers in preparation for performing a packer test over the interval from 1,970 to 1,992 feet bpl. The test interval was conditioned until one drill-string volume of water was removed from the testing interval. Conditioning of the test interval was then stopped to allow the water level in the test interval recover in preparation for performing the pumping portion of the packer test. Flow was approximately one gallon per minute at the completion of test interval conditioning. During the test interval recovery period, one of the straddle packers lost pressure. The test was terminated and the packers were removed from the well. While bringing the packers to surface, a ruptured hose was identified as the source of the pressure loss. The hose was repaired and the packers were re-installed to test the packer test interval of 1,970 to 1,992 feet bpl. Conditioning of the test interval had started at the end of the reporting period. The well was killed with salt once during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is attached.

There was no casing installation, cementing, geophysical logging or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform a packer test over the interval from 1,970 to 1,992 feet bpl and then ream the hole with a 28-inch diameter drill bit to a depth of approximately 2,270 feet bpl. Packer testing will then be performed on selected intervals between 1,900 and 2,270 feet bpl. Reaming of the hole with a 28-inch diameter drill bit will then continue to a depth of approximately 2,900 feet bpl. Packer testing will then be performed on selected intervals between 1,900 and 2,900 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled today, December 22, 2011. The most recent set of pad monitoring well sample results available are for samples collected on December 15, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

12/22/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

December 30, 2011 MHCDEP-11-0577

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #34

Dear Mr. May:

This is the thirty-fourth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Wednesday, December 21, 2011 and ended at 7:00 AM, Thursday, December 29, 2011. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor had installed straddle packers to allow packer testing of the interval from 1,970 to 1,992 feet below pad level (bpl). While the water level in the test interval was recovering after conditioning, one of the packers lost pressure and the test was terminated. The source of the pressure loss was repaired and the packers were reinstalled over the interval from 1,970 to 1,992 feet bpl. The test interval was undergoing conditioning at the end of the reporting period.

During this reporting period, the drilling contractor completed conditioning the 1,970 to 1,992 feet bpl packer testing interval, allowed the water level in the test interval to recover over the holiday break. Following the holiday break, the interval from 1,970 to 1,992 feet bpl underwent packer testing. The attached table provides a summary of the packer testing data. A water sample was collected at the end of the pumping portion of packer test. The packer test water sample laboratory analytical reports are not yet available and will be included in the next weekly construction report.

There was no casing installation, cementing, geophysical logging or exploratory well development and no lithologic samples were collected during this reporting period. The well was not killed and there were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will ream the hole with a 28-inch diameter drill bit to a depth of approximately 2,270 feet bpl. Packer testing will then be performed on selected intervals between 1,900 and 2,270 feet bpl. Reaming of the hole with a 28-inch diameter drill bit will then continue to a depth of approximately 2,900 feet bpl. Packer testing will then be performed on selected intervals between 1,900 and 2,900 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled today, December 29, 2011. The most recent set of pad monitoring well sample results available are for samples collected on December 22, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

12/30/11

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Packer Test Summary Table

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

January 6, 2012 MHCDEP-12-0001

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #35

Dear Mr. May:

This is the thirty-fifth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, December 29, 2011 and ended at 7:00 AM, Thursday, January 5, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor had performed a straddle packer test over the interval from 1,970 to 1,992 feet below pad level (bpl). After completing the straddle packer test, the drilling contractor began to ream the pilot hole using a 28-inch diameter reaming bit. The interval from 1,960 to 1,982 feet bpl had been reamed by the end of the previous reporting period.

During this reporting period, the drilling contractor reamed the interval from 1,982 to 2,255 feet bpl using a 28-inch diameter drill bit in preparation for straddle packer testing intervals between 1,900 and 2,270 feet bpl. Deviation surveys were conducted at 60-foot intervals during reaming. A copy of the deviation survey summary sheet is attached. The water sample laboratory analytical results for the straddle packer test performed on the interval from 1,970 to 1,992 feet bpl during the previous reporting period are summarized in the attached Stradle Packer Test Summary Table. The chloride result for the straddle packer test is based on sample re-analysis. Laboratory reports for the original results and results of the reanalysis are included.

There was no casing installation, cementing, geophysical logging or exploratory well development and no lithologic samples were collected during this reporting period. The well was not killed and there were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete reaming the hole with a 28-inch diameter drill bit to a depth of approximately 2,270 feet bpl. Straddle packer testing will then be performed on selected intervals between 1,900 and 2,270 feet bpl. Reaming of the hole with a 28-inch diameter drill bit will then continue to a depth of approximately 2,900 feet bpl. Straddle packer testing will then be performed on selected intervals between 1,900 and 2,900 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on January 5, 2012. The most recent set of pad monitoring well sample results available are for samples collected on December 29, 2011. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Deviation Survey Summary Table
Straddle Packer Test Summary Table
Straddle Packer Test Water Sample Laboratory Report

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

January 13, 2012 MHCDEP-12-0009

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #36

Dear Mr. May:

This is the thirty-sixth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, January 5, 2012 and ended at 7:00 AM, Thursday, January 12, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor reamed the interval from 1,982 to 2,255 feet below pad level (bpl) using a 28-inch diameter drill bit in preparation for straddle packer testing intervals between 1,900 and 2,270 feet bpl.

During this reporting period, the drilling contractor reamed the interval from 2,255 to 2,270 feet bpl using a 28-inch diameter drill bit. The borehole then underwent caliper and gamma ray logging. The interval from 2,058 to 2,080 feet bpl then underwent straddle packer testing. A water sample was collected at the end of the pumping portion of straddle packer test. The straddle packer test water sample laboratory analytical reports are not yet available and will be included in the next weekly construction report. The attached table provides a summary of the packer testing data. Following completion of the straddle packer test over the interval from 2,058 to 2,080 feet bpl, the straddle packers were moved to allow straddle packer testing of the interval from 2,183 to 2,205 feet bpl. The straddle packer test was terminated due to test interval productivity during conditioning of the test zone. The straddle packers were then removed from the well and the drilling contractor resumed reaming the hole using a 28-inch diameter drill bit. The interval from 2,270 to 2,519 feet bpl had been reamed by the end of the reporting period. Deviation surveys were conducted at 60-foot intervals during reaming. A copy of the deviation survey summary sheet is attached. The well was killed with salt during the reporting period. A daily kill material

with salt during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is attached An electronic copy of the geophysical logs performed during this reporting period is attached. Hard copies of the log prints are not yet available and will be included with next week's construction summary.

There was no casing installation, cementing, or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete reaming the hole with a 28-inch diameter drill bit to a depth of approximately 2,900 feet bpl. Straddle packer testing will then be performed on selected intervals between 1,900 and 2,900 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on January 12, 2012. The most recent set of pad monitoring well sample results available are for samples collected on January 5, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/13/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Packer Test Summary Table
Deviation Survey Summary Table
Daily Kill Material Log
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

January 20, 2012 MHCDEP-12-0028

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #37

Dear Mr. May:

This is the thirty-seventh weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, January 12, 2012 and ended at 7:00 AM, Thursday, January 19, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor reamed the interval from 2,255 to 2,270 feet below pad level (bpl) using a 28-inch diameter drill bit, performed caliper and gamma ray logging of the reamed interval. A straddle packer test was then performed on the interval from 2,058 to 2,080 feet bpl. The straddle packers were then moved to test the interval from 2,183 to 2,205 feet bpl, however, the interval was not tested due to test interval productivity during conditioning of the test interval. The straddle packers were then removed from the well and the interval from 2,270 to 2,519 feet bpl was reamed using a 28-inch diameter drill bit.

During this reporting period, the drilling contractor reamed the interval from 2,519 to 2,900 feet bpl using a 28-inch diameter drill bit. The borehole then underwent caliper and gamma ray logging. Straddle packers were installed to test the intervals from 2,552 to 2,574 feet bpl, 2,634 to 2,656 feet bpl, 2,844 to 2,866 feet bpl, and 2,480 to 2,502 feet bpl. In each case, the packers failed to isolate the test interval with the exception of the 2,844 to 2,866 feet bpl test interval, which was productive during test interval conditioning, therefore, the test on this interval was terminated.

The interval from 2,058 to 2,080 feet bpl underwent straddle packer testing during the last reporting period. The water sample laboratory analytical report for the water sample collected from this test interval is attached. The attached table provides a summary of the all packer testing data collected to date. Deviation surveys were conducted at 60-foot intervals during reaming. A copy of the deviation survey summary sheet is attached. The well was killed with salt during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is attached An electronic copy of the geophysical logs performed during this reporting period is attached. Hard copies of the log prints are not yet available and will be included with next week's construction summary. Hard copies of the log prints from the previous reporting period are attached.

There was no casing installation, cementing, or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform straddle packer testing on selected intervals between 1,900 and 2,900 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on January 12, 2012. The most recent set of pad monitoring well sample results available are for samples collected on January 5, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

1/20/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Deviation Survey Summary Table
Packer Test Laboratory Report
Packer Test Summary Table
Daily Kill Material Log
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

January 27, 2012 MHCDEP-12-0044

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #38

Dear Mr. May:

This is the thirty-eighth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, January 19, 2012 and ended at 7:00 AM, Thursday, January 26, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor reamed the interval from 2,519 to 2,900 feet below pad level (bpl) using a 28-inch diameter drill bit. The borehole then underwent caliper and gamma ray logging. Straddle packers were installed to test the intervals from 2,552 to 2,574 feet bpl, 2,634 to 2,656 feet bpl, 2,844 to 2,866 feet bpl, and 2,480 to 2,502 feet bpl. In each case, the packers failed to isolate the test interval. In each case, the packers failed to isolate the test interval with the exception of the 2,844 to 2,866 feet bpl test interval, which was productive during test interval conditioning, therefore, the test on this interval was terminated.

During this reporting period, the drilling contractor tested the sleeved straddle packers inside the 34-inch diameter casing to determine if the sleeved packers were performing properly. The test demonstrated that the upper packer was not expanding properly and was not isolating the test interval. The sleeved straddle packers were then removed from the well and shipped to the manufacturer to be enlarged from a 24-inch diameter to a 27-inch diameter. The additional packer sleeve diameter is anticipated to allow isolation of straddle packer test intervals. The drilling contractor reamed the interval from 1,960 to 2,100 feet bpl using a 32-inch diameter bit while waiting for the modified packer sleeves to arrive on site. A wiper pass was made to a depth of 2,900 feet bpl with a 28-inch diameter bit prior to conducting caliper and gamma ray logging of the interval from the base of the

34-inch diameter casing to 2,900 feet bpl. The packer sleeves had arrived on site and were successfully tested at surface to demonstrate they properly inflate. The drilling contractor was preparing for straddle packer testing at the end of the reporting period.

Deviation surveys were conducted at 60-foot intervals during reaming. A copy of the deviation survey summary sheet is attached. The well was killed with salt during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is attached An electronic copy of the geophysical logs performed during this reporting period is attached. Hard copies of the log prints are not yet available and will be included with next week's construction summary.

There was no casing installation, cementing, or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform straddle packer testing on selected intervals between 1,900 and 2,900 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on January 19, 2012. The most recent set of pad monitoring well sample results available are for samples collected on January 12, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

1/27/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Deviation Survey Summary Table
Daily Kill Material Log
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

February 3, 2012 MHCDEP-12-0057

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #39

Dear Mr. May:

This is the thirty-ninth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, January 26, 2012 and ended at 7:00 AM, Thursday, February 2, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period it was demonstrated that the straddle packers were not isolating the test interval during straddle packer testing. The packer sleeves were shipped to the manufacturer to be enlarged from a 24-inch diameter to a 27-inch diameter to increase the ability of the packers to isolate the test interval. The drilling contractor reamed the interval from 1,960 to 2,100 feet below pad level (bpl) using a 32-inch diameter bit while waiting for the modified packer sleeves to arrive on site. A wiper pass was made to a depth of 2,900 feet bpl with a 28-inch diameter bit prior to conducting caliper and gamma ray logging of the interval from the base of the 34-inch diameter casing to 2,900 feet bpl. The packer sleeves arrived on site and were successfully tested inside 34-inch diameter casing at surface to demonstrate they properly inflate. The drilling contractor was preparing for straddle packer testing at the end of the reporting period.

During this reporting period, straddle packers were set to test the intervals from 2,220 to 2,242 feet bpl, 2,400 to 2,422 feet bpl, 2,478 to 2,500 feet bpl, 2,552 to 2,574 feet bpl, and 2,693 to 2,715 feet bpl. Straddle packers testing was successfully completed on the intervals from 2,220 to 2,242 feet bpl and 2,478 to 2,500 feet bpl. It appears that the packers failed to isolate the other test intervals. Water samples were collected at the completion of the two packer tests. A packer testing summary table is attached. After completing packer testing, the

drilling contractor began reaming the hole from 2,100 feet bpl using a 32-inch diameter bit. Reaming had reached a depth of 2,678 feet bpl by the end of the reporting period.

Deviation surveys were conducted at 60-foot intervals during reaming. A copy of the deviation survey summary sheet is attached. The well was killed with salt during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is attached Hard copies of the log prints from last week's geophysical logging are attached.

There was no casing installation, cementing, or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor complete reaming the hole with the 32-inch diameter bit to a depth of 2,978 feet bpl. A 12¼-inch diameter bit will then be used to clean out the borehole to a depth of 3,230 feet bpl in preparation for conducting a formation test over the interval from approximately 3,010 to 3,230 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on February 2, 2012. The most recent set of pad monitoring well sample results available are for samples collected on January 26, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Packer Testing Summary Table
Deviation Survey Summary Table
Daily Kill Material Log
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

February 10, 2012 MHCDEP-12-0059

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #40

Dear Mr. May:

This is the fortieth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, February 2, 2012 and ended at 7:00 AM, Thursday, February 9, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period straddle packers were set to test the intervals from 2,220 to 2,242 feet bpl, 2,400 to 2,422 feet bpl, 2,478 to 2,500 feet bpl, 2,552 to 2,574 feet bpl, and 2,693 to 2,715 feet bpl. Straddle packers testing was successfully completed on the intervals from 2,220 to 2,242 feet bpl and 2,478 to 2,500 feet bpl. Straddle packer testing of the other intervals did not occur due to the straddle packers not isolating the test interval of the test interval being too productive. After completing straddle packer testing, the drilling contractor began reaming the hole from 2,100 feet bpl using a 32-inch diameter bit. Reaming had reached a depth of 2,678 feet bpl by the end of the reporting period.

During this reporting period, the drilling contractor reamed the interval from 2,678 to 2,978 feet bpl with a 32-inch diameter drill bit. The drilling contractor then cleaned out the borehole from 2,978 to 3,230 feet bpl with a 12¼-inch diameter bit.

Deviation surveys were conducted at 60-foot intervals during reaming. A copy of the deviation survey summary sheet is attached. The well was killed with salt during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is attached A laboratory report for water samples collected at the end of packer tests performed during the previous reporting period is attached. A packer test summary table is also attached. It should be noted that the laboratory report inaccurately

indicates the packer tests water samples that were analyzed were from packer tests #16 and #18. The straddle packer tests for which water samples were collected and analyzed were packer tests #17 and #19.

There was no casing installation, cementing, or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform caliper and video logging of the open hole interval and perform a formation test on the interval from approximately 3,010 and 3,230 feet bpl.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on February 9, 2012. The most recent set of pad monitoring well sample results available are for samples collected on February 2, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

2/10/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Deviation Survey Summary Table
Daily Kill Material Log
Packer Test Laboratory Report
Packer Testing Summary Table

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

February 17, 2012 MHCDEP-12-0064

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #41

Dear Mr. May:

This is the forty-first weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, February 9, 2012 and ended at 7:00 AM, Thursday, February 16, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor reamed the interval from 2,678 to 2,978 feet below pad level (bpl) with a 32-inch diameter drill bit. The drilling contractor then cleaned out the borehole from 2,978 to 3,230 feet bpl with a 12¼-inch diameter bit in preparation for performing a formation test over the interval from 3,010 to 3,230 feet bpl.

During this reporting period, the drilling contractor performed caliper, gamma ray and video logging of the open hole interval, set up for and performed a formation test over the interval from 3,010 to 3,230 feet bpl. Attached Figure 1 through Figure 4 provides graphs of the formation test pressure and pumping data. The drilling contractor reamed the interval from 2,978 to 2,980 feet bpl with a 24-inch diameter drill bit and was in the process of tripping into the well with a 22-inch diameter reaming bit at the end of the reporting period. Copies of the caliper and gamma ray logs and video logs are attached to the hard copy of this weekly construction summary. Copies of the caliper and gamma ray logs are attached to the electronic copy of this weekly construction summary. The well was killed with salt during the reporting period. A daily kill material log providing a summary of daily kill material and kill quantity is attached.

There was no casing installation, cementing, or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will ream the interval from 2,980 to 3,230 feet bpl with a 22-inch diameter reaming bit and install the 24-inch diameter final casing upon approval of the final casing seat recommendation. The 24-inch diameter final casing will then be cemented in place after installation.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on February 16, 2012. The most recent set of pad monitoring well sample results available are for samples collected on February 10, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

2/17/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Daily Kill Material Log
Formation Test Figures 1 through 4
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

February 24, 2012 MHCDEP-12-0073

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #42

Dear Mr. May:

This is the forty-second weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, February 16, 2012 and ended at 7:00 AM, Thursday, February 23, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor performed caliper, gamma ray and video logging of the open hole interval, set up for and performed a formation test over the interval from 3,010 to 3,230 feet bpl. The drilling contractor then reamed the interval from 2,978 to 2,980 feet bpl with a 24-inch diameter drill bit and was in the process of tripping into the well with a 22-inch diameter reaming bit at the end of the reporting period.

During this reporting period, the drilling contractor reamed the interval from 2,980 to 3,230 feet bpl with a 22-inch diameter reaming bit. The drilling contractor then shut down while the final casing setting depth recommendation was prepared and submitted to the Florida Department of Environmental Protection Technical Advisory Committee. A caliper/gamma ray log was performed on the reamed borehole while awaiting approval of the casing setting depth recommendation. A copy of the caliper/gamma ray log is attached. Approval of the final casing setting depth recommendation was received from the Florida Department of Environmental Protection at the end of the reporting period.

There was no casing installation, cementing, or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will install the 24-inch diameter final casing. The 24-inch diameter final casing will then be cemented in place after installation.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on February 23, 2012. The most recent set of pad monitoring well sample results available are for samples collected on February 16, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

2/24/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Deviation Survey Summary
Geophysical Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

March 2, 2012 MHCDEP-12-0079

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #43

Dear Mr. May:

This is the forty-third weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, February 23, 2012 and ended at 7:00 AM, Thursday, March 1, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor reamed the interval from 2,980 to 3,230 feet bpl with a 22-inch diameter reaming bit. The drilling contractor then shut down while the final casing setting depth recommendation was prepared and submitted to the Florida Department of Environmental Protection Technical Advisory Committee. A caliper/gamma ray log was performed on the reamed borehole and discussed with the Florida Department of Environmental Protection while awaiting approval of the casing setting depth recommendation. This caliper/gamma ray log was subsequently submitted to the Florida Department of Environmental Protection Technical Advisory Committee with the Weekly Construction Summary #42. Approval of the final casing setting depth recommendation was received from the Florida Department of Environmental Protection at the end of the reporting period.

During this reporting period, the drilling contractor began installation of the 24-inch diameter final casing. A total of 78 casing joints had been installed by the end of the reporting period. Casing installation is taking place on day shifts only due to availability of certified welders. A table summarizing the 24-inch diameter casing installation to date is attached. The well was killed with salt during the reporting period. Addition of salt to kill the well during the night shift is recorded in the next day's consultant daily construction log. A daily kill material log providing a summary of daily kill material and kill quantity is attached.

There was no cementing, geophysical logging, packer testing or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete installation and cementing of the 24-inch diameter final casing.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on March 1, 2012. The most recent set of pad monitoring well sample results available are for samples collected on February 23, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

3/2/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Final Casing Installation Summary Sheet
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

March 9, 2012 MHCDEP-12-0085

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC4

Dear Mr. May:

This is the forty-forth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, March 1, 2012 and ended at 7:00 AM, Thursday, March 8, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor began installation of the 24-inch diameter final casing. A total of 78 casing joints had been installed by the end of the reporting period.

During this reporting period the drilling contractor completed installation of the 24-inch diameter final casing. The final casing was installed to a depth of 2,985 feet below pad level (bpl). The final casing was then cemented in place in ten cement stages after establishing a bridge plug at the base of casing using three cement spots. A total of 2,132 barrels of cement were used to cement the final casing to surface. A temperature log was performed after each cement stage and a cement bond log was performed on the final casing. A copy of the final casing installation summary table and the geophysical logs are attached.

There was no packer testing or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform a video survey and pressure test on the final casing and install the fiberglass reinforced pipe (FRP) injection tubing.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently

sampled on March 8, 2012. The most recent set of pad monitoring well sample results available are for samples collected on March 1, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

3/9/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Final Casing Installation Summary Sheet
Final Casing Cementing Summary Sheet
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

March 16, 2012 MHCDEP-12-0092

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #45

Dear Mr. May:

This is the forty-fifth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, March 8, 2012 and ended at 7:00 AM, Thursday, March 15, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor completed installation of the 24-inch diameter final casing to a depth of 2,985 feet below pad level (bpl). The final casing was then cemented in place using a total of 2,132 barrels of cement.

During this reporting period the drilling contractor performed a color video survey of the final casing and conducted a successful pressure test on the final casing. The pressure test was performed with a starting pressure of 155.0 psi. The pressure at the end of the completion of the 60 minute test period was 156.0 psi. This is an acceptable result because it is within the 5% acceptability range. A copy of the final casing pressure test summary sheet is attached. During the color video of the final casing, material was observed to have settled onto the injection liner packer receptacle. The drilling contractor lowered a tremie line to near the location of the packer receptacle and jetted the material from the packer receptacle prior to beginning installation of the fiberglass reinforced pipe (FRP) injection liner. A total of 14 joints of 102 joints of injection liner had been installed by the end of the reporting period. The well was killed with salt during the reporting period. A copy of the FRP installation summary sheet and daily kill material log sheet are attached. A copy of the color video survey of the final casing is not yet available and will be provided with the next weekly construction summary.

There was no cementing, packer testing or exploratory well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete installation of the FRP tubing, perform a video survey and temperature log and collect a background water sample from the open hole interval of EW-1. The contractor will also begin moving the drill rig to the dual-zone monitor well (DZMW-1) location in preparation for constructing DZMW-1.

In addition, sampling of the pad monitor wells began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The pad monitor wells were most recently sampled on March 15, 2012. The most recent set of pad monitoring well sample results available are for samples collected on March 8, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. Copies of the pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

3/16/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
Pad Monitor Well Water Quality Data Summary Sheets
Final Casing Pressure Test Summary Sheet
FRP Installation Summary Sheet
Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

March 23, 2012 MHCDEP-12-0108

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #46

Dear Mr. May:

This is the forty-sixth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, March 15, 2012 and ended at 7:00 AM, Thursday, March 22, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached. The drilling contractor spent part of the reporting period demobilizing from the EW-1 location and mobilizing to the dual-zone monitor well (DZMW-1) location. Consultant and drilling contractor daily construction logs were not prepared during the relocation.

During the previous reporting period the drilling contractor performed a color video survey of the final casing and conducted a successful pressure test on the final casing. During the color video of the final casing, material was observed to have settled onto the injection liner packer receptacle. The drilling contractor lowered a tremie line to near the location of the packer receptacle and jetted the material from the packer receptacle prior to beginning installation of the fiberglass reinforced pipe (FRP) injection liner. A total of 14 joints of 102 joints of injection liner had been installed by the end of the reporting period.

During this reporting period the drilling contractor completed installation of the FRP injection liner to a depth of 2,975 feet below pad level (bpl). A copy of the FRP liner installation summary sheet is attached. A volume of approximately 25,000 gallons of 1% Baracor 100 solution was pumped into the annulus between the FRP liner and the final casing just prior to seating the FRP liner into the packer near the base of the final casing. The drilling contractor then sealed the wellhead and performed preliminary annular pressure test. This annular pressure test did not meet the specification. Therefore the drilling contractor unsealed the wellhead, picked up the FRP liner and then re-seated the

liner into the packer. The wellhead was sealed and a second preliminary annular pressure test was conducted. The results of this annular pressure test met the specification. The drilling contractor then began installation of the EW-1 wellhead. The pad monitor wells at the dual-zone monitor well location were installed, developed and sampled. The DZMW-1 pad monitor wells sampling results will be provided to the Department prior to beginning drilling operations at DZMW-1. The drilling contractor began to demobilize from the EW-1 location and mobilize to the DZMW-1 location by the end of the reporting period.

There was no cementing, packer testing or EW-1 and DZMW-1 well development and no lithologic samples were collected during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete moving the drill rig to the DZMW-1 location and begin drilling DZMW-1.

In addition, sampling of the pad monitor wells around EW-1 began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The EW-1 pad monitor wells were most recently sampled on March 22, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on March 16, 2012. Sampling of the pad monitor wells around EW-1 will continue until drilling and testing of EW-1 has been completed. The pad monitor wells around DZMW-1 were sampled on March 20, 2012 to obtain background results prior to beginning drilling operations at DZMW-1. The results of the DZMW-1 pad monitor wells sampling will be provided to the Department prior to beginning drilling operations at DZMW-1. Copies of the EW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

3/23/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
FRP Installation Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

March 30, 2012 MHCDEP-12-0124

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #47

Dear Mr. May:

This is the forty-seventh weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, March 22, 2012 and ended at 7:00 AM, Thursday, March 29, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached. In addition to construction activities for Exploratory Well EW-1, this report also includes construction activities for dual zone monitoring well (DZMW-1)

During the previous reporting period the drilling contractor completed installation of the EW-1 FRP injection liner to a depth of 2,975 feet below pad level (bpl). A volume of approximately 25,000 gallons of 1% Baracor 100 solution was pumped into the annulus between the FRP liner and the final casing just prior to seating the FRP liner into the packer near the base of the final casing. The drilling contractor then sealed the wellhead and performed a preliminary annular pressure test. This annular pressure test did not meet the specification. The drilling contractor unsealed the wellhead, lifted the FRP liner and then re-seated the liner into the packer. The wellhead was sealed and a second preliminary annular pressure test was conducted. The results of this preliminary annular pressure test met the specification. The drilling contractor then began installation of the EW-1 wellhead. The pad monitor wells at the dual-zone monitor well location were installed, developed and sampled. The drilling contractor began to demobilize from the EW-1 location and mobilize to the DZMW-1 location by the end of the reporting period.

During this reporting period the drilling contractor completed demobilizing from EW-1 and mobilizing to and setting up at the dual-zone monitor well DZMW-1 location. The drilling contractor then began pilot hole drilling. Pilot hole drilling had reached a depth of 67 feet

below pad level (bpl) by the end of the reporting period. A preliminary annular pressure test was performed on EW-1 on March 28, 2012, however, the results of the preliminary annular pressure test did not meet the specification. Subsequent preliminary and final annual pressure tests will be delayed

There was no casing installation, cementing, packer testing or EW-1 and DZMW-1 well development during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of 250 feet bpl, perform geophysical logs, ream the pilot hole to a depth of approximately 225 feet bpl and install the 34-inch diameter casing.

In addition, sampling of the pad monitor wells around EW-1 began on April 21, 2011 and has been taking place on a weekly basis since the initial sampling. The EW-1 pad monitor wells were most recently sampled on March 29, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on March 22, 2012. Sampling of the pad monitor wells around EW-1 will continue until testing of EW-1 has been completed. Sampling of the pad monitoring wells around DZMW-1 began on March 20, 2012. The DZMW-1 pad monitor wells were most recently sampled on March 29, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on March 20, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

David McNabb
3/30/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

April 6, 2012 MHCDEP-12-0132

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #48

Dear Mr. May:

This is the forty-eighth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, March 29, 2012 and ended at 7:00 AM, Thursday, April 5, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached. In addition to construction activities for dual-zone monitoring well DZMW-1, this report also includes construction activities for exploratory well EW-1.

During the previous reporting period the drilling contractor completed mobilizing and setting up at DZMW-1 location and began pilot hole drilling. Pilot hole drilling had reached a depth of 67 feet below pad level (bpl) by the end of the reporting period. A preliminary annular pressure test was performed on EW-1 on March 28, 2012, however, the results of the preliminary annular pressure test did not meet the specification.

During this reporting period the drilling contractor completed pilot hole drilling on DZMW-1 to a depth of 250 feet bpl. Caliper and gamma ray logging were then performed on the pilot hole before reaming the pilot hole with a 42-inch diameter bit to a depth of 258 feet bpl. The reamed hole then underwent caliper and gamma ray logging. The 34-inch diameter casing was then installed to a depth of 255 feet bpl and cemented to land surface in one cement stage using 158 barrels of neat cement. A copy of each of the geophysical logs performed during the reporting period is attached. A copy of the 34-inch diameter casing installation summary and cementing summary sheets are attached.

The annulus of EW-1 was pressurized and monitored several times during the week. While pressure monitoring results have improved, the results do not meet the specification.

There was no packer testing for EW-1 and DZMW-1 well development during this reporting period. Drill cutting samples were collected at 10-foot intervals during pilot hole drilling at DZMW-1. A copy of the DZMW-1 lithologic log is attached. Deviation surveys were performed at 90-foot intervals during pilot hole and reaming activities. A copy of the deviation survey summary sheet is attached. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will drill a pilot hole from the base of the 34-inch diameter casing to a depth of approximately 1,110 feet bpl for DZMW-1. The pilot hole will then undergo geophysical logging.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 and DZMW-1 pad monitor wells were most recently sampled on April 5, 2012. The most recent set of EW-1 and DZMW-1 pad monitoring well sample results available are for samples collected on March 29, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

4/6/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Lithologic Log
Deviation Survey Summary Sheet
DZMW 34-Inch Casing Installation Summary Sheet
DZMW 34-Inch Casing Cementing Summary sheet
Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

April 13, 2012 MHCDEP-12-0144

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #49

Dear Mr. May:

This is the forty-ninth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, April 5, 2012 and ended at 7:00 AM, Thursday, April 12, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached. In addition to construction activities for dual-zone monitoring well DZMW-1, this report also includes construction activities for exploratory well EW-1.

During the previous reporting period the drilling contractor completed pilot hole drilling on DZMW-1 to a depth of 250 feet below pad level (bpl). Caliper and gamma ray logging were then performed on the pilot hole before reaming the pilot hole with a 42-inch diameter bit to a depth of 258 feet bpl. The reamed hole then underwent caliper and gamma ray logging. The 34-inch diameter casing was then installed to a depth of 255 feet bpl and cemented to land surface in one cement stage using 158 barrels of neat cement. The annulus of EW-1 was pressurized and monitored several times during the week.

During this reporting period the drilling contractor drilled out the cement plug at the base of the DZMW-1 34-inch diameter casing and then began pilot hole drilling using a 12.25-inch diameter drill bit. Pilot hole drilling reached a depth of 920 feet bpl by the end of the reporting period. The kelly hose developed a hole and had to be replaced. This prevented the drilling contractor from pilot hole drilling for approximately three days while the kelly hose was being replaced.

Purging of EW-1 in preparation for sampling the Boulder Zone took place. Water samples were collected at approximately one-hour intervals and field analyzed for turbidity, specific conductance, temperature and pH. A background water sample was collected after purging

a volume of approximately 324,000 gallons. A copy of the EW-1 background water sampling purge sheet is attached. A final video survey of the well was also performed. A copy of the video survey is not yet available and will be included with the next weekly construction summary. The annulus of EW-1 was pressurized and monitored several times during the week, however, the results do not meet the specification.

There was no packer testing for EW-1 and DZMW-1 during this reporting period. Drill cutting samples were collected at 10-foot intervals during pilot hole drilling at DZMW-1. A copy of the DZMW-1 lithologic log is attached. Deviation surveys were performed at 90-foot intervals during pilot hole and reaming activities. A copy of the deviation survey summary sheet is attached. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete pilot hole drilling to a depth of approximately 1,110 feet bpl for DZMW-1. The pilot hole will then undergo geophysical logging before the drilling contractor begins reaming the pilot hole with a 32.5-inch diameter bit.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 and DZMW-1 pad monitor wells were most recently sampled on April 12, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on April 5, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on April 6, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

4/13/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Lithologic Log
DZMW-1 Deviation Survey Summary Sheet
EW-1 Background Water Sampling Purge Sheet

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

April 20, 2012 MHCDEP-12-0151

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #50

Dear Mr. May:

This is the fiftieth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, April 12, 2012 and ended at 7:00 AM, Thursday, April 19, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached. In addition to construction activities for dual-zone monitoring well DZMW-1, this report also includes construction activities for exploratory well EW-1.

During the previous reporting period the drilling contractor drilled out the cement plug at the base of the DZMW-1 34-inch diameter casing and then began pilot hole drilling using a 12.25- inch diameter drill bit. Pilot hole drilling reached a depth of 920 feet below pad level (bpl) by the end of the reporting period. Annular pressure monitoring of EW-1 also took place.

During this reporting period the drilling contractor completed DZMW-1 pilot hole drilling to a depth of 1,110 feet bpl, performed caliper, gamma ray, spontaneous potential, and dual-induction geophysical logs, and began reaming the pilot hole. Reaming of the pilot hole had reached a depth of 625 feet bpl by the end of the reporting period. Deviation surveys were conducted at 90-foot intervals during pilot hole drilling and reaming. A copy of the DZMW-1 deviation survey summary sheet is attached.

The annulus of EW-1 was pressurized and monitored several times during the week, however, the results do not meet the specification. The FRP injection tubing was placed under compression in an effort to improve the seal at the packer at the base of the injection tubing.

A copy of the video survey performed on EW-1 during the previous reporting period is attached.

There was no packer testing, casing installation or cementing at EW-1 and DZMW-1 during this reporting period. Drill cutting samples were collected at 10-foot intervals during pilot hole drilling at DZMW-1. A copy of the DZMW-1 lithologic log is attached. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete reaming the pilot hole to a depth of approximately 1,105 feet bpl for DZMW-1. The reamed hole will then undergo geophysical logging prior to installation of the 24-inch diameter casing to a depth of 1,100 feet bpl. The casing will then be cemented in place. It is also anticipated that additional pressure monitoring will take place at EW-1.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on April 19, 2012. The DZMW-1 pad monitor wells were most recently sampled on April 20, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on April 12, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on April 13, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

4/20/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Lithologic Log
DZMW-1 Deviation Survey Summary Sheet
DZMW-1 Geophysical Logs
EW-1 Video Survey

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

April 27, 2012 MHCDEP-12-0162

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #51

Dear Mr. May:

This is the fifty-first weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, April 19, 2012 and ended at 7:00 AM, Thursday, April 26, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor completed DZMW-1 pilot hole drilling to a depth of 1,110 feet below pad level (bpl), performed caliper, gamma ray, spontaneous potential, and dual-induction geophysical logs, and began reaming the pilot hole. Reaming of the pilot hole had reached a depth of 625 feet bpl by the end of the reporting period. Annular pressure monitoring of EW-1 also took place.

During this reporting period the drilling contractor completed DZMW-1 reaming the pilot hole with a 32 ½-inch diameter bit to a depth of 1,105 feet bpl. They then began conditioning the borehole in preparation for performing deviation surveys over the interval from 630 feet bpl to 1,060 feet bpl and performing caliper and gamma ray logging in preparation for installation of the 24-inch diameter casing to a depth of approximately 1,100 feet bpl.

There was no work on exploratory well EW-1 during this reporting period. There was no packer testing, casing installation or cementing at EW-1 and DZMW-1 during this reporting period. There were no construction related issues during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete conditioning the ream hole of DZMW-1. The drilling contractor will then run deviations survey on the reamed hole over the interval from 630 feet bpl to 1,080 feet bpl, perform caliper and gamma ray logging and install the 24-inch diameter casing to a depth of

approximately 1,100 feet bpl. The casing will then be cemented in place. It is also anticipated that work to eliminate the source of the annular pressure loss will take place at EW-1.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on April 26, 2012. The DZMW-1 pad monitor wells were most recently sampled on April 27, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on April 19, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on April 20, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

4/27/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

May 4, 2012 MHCDEP-12-0167

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #52

Dear Mr. May:

This is the fifty-second weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, April 26, 2012 and ended at 7:00 AM, Thursday, May 3, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor completed DZMW-1 reaming the pilot hole with a 32½-inch diameter bit to a depth of 1,105 feet blow pad level (bpl). They then began conditioning the borehole in preparation for performing deviation surveys over the interval from 630 feet bpl to 1,060 feet bpl and performing caliper and gamma ray logging in preparation for installation of the 24-inch diameter casing to a depth of approximately 1,100 feet bpl. There was no work on exploratory well EW-1 during the previous reporting period.

During this reporting period the drilling contractor conditioned the DZMW-1 reamed hole using a 32½-inch diameter bit, performed deviation surveys on the reamed hole over the interval from 630 feet bpl to 1,060 feet bpl, performed caliper and gamma ray logging and attempted to install of the 24-inch casing. While attempting to install the 24-inch diameter casing, an obstruction in the reamed hole was encountered at a depth of 325 feet bpl. The portion of the 24-inch diameter casing that had been installed was then removed from the hole and the drilling contractor began conditioning the reamed hole using a 32½-inch diameter bit. A copy of the DZMW-1 deviation survey summary sheet and the geophysical logs are attached.

The compression of the EW-1 Fiberglass Reinforced Pipe (FRP) injection tubing was reduced from 22-inches to 12-inches during this reporting period. The annulus of EW-1 was then pressurized and monitored, however, the results do not meet the specification.

There was no packer testing or cementing at EW-1 and DZMW-1 during this reporting period. There were no construction related issues during this reporting period with the exception of the unsuccessful 24-inch diameter casing installation at DZMW-1. This is being addressed by further conditioning of the reamed borehole prior to installing the 24-inch diameter casing.

During the next reporting period, it is anticipated that the drilling contractor will complete conditioning the ream hole of DZMW-1. The drilling contractor will then perform caliper and gamma ray logging and install the 24-inch diameter casing to a depth of approximately 1,102 feet bpl. The casing will then be cemented in place. It is also anticipated that work to eliminate the source of the annular pressure loss will take place at EW-1.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on May 3, 2012. The DZMW-1 pad monitor wells were most recently sampled on May 4, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on April 26, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on April 27, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/4/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Deviation Survey Summary Sheet
DZMW-1 Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

May 11, 2012 MHCDEP-12-0185

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #53

Dear Mr. May:

This is the fifty-third weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 3, 2012 and ended at 7:00 AM, Thursday, May 10, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached. In addition to construction activities for dual-zone monitoring well DZMW-1, this report also includes construction activities for exploratory well EW-1.

During the previous reporting period the drilling contractor conditioned the DZMW-1 reamed hole using a 32½-inch diameter bit, performed deviation surveys on the reamed hole over the interval from 630 feet bpl to 1,060 feet bpl, performed caliper and gamma ray logging and attempted to install the 24-inch casing. While attempting to install the 24-inch diameter casing, an obstruction in the reamed hole was encountered at a depth of 325 feet bpl. The portion of the 24-inch diameter casing that had been installed was then removed from the hole and the drilling contractor began conditioning the reamed hole using a 32½-inch diameter bit. Additionally, the compression of the EW-1 Fiberglass Reinforced Pipe (FRP) injection tubing was reduced from 22-inches to 12-inches during this reporting period. The annulus of EW-1 was then pressurized and monitored, however, the results did not meet the specification.

During this reporting period the drilling contractor re-conditioned the DZMW-1 reamed hole using a 32½-inch diameter bit, performed caliper and gamma ray logging and installed the 24-inch casing to a depth of 1,102 feet bpl. The 24-inch diameter casing was cemented to land surface in two cementing stages. A temperature log was performed following the first cement stage. A copy of the geophysical logs, the 24-inch diameter casing installation

summary sheet, and the 24-inch diameter casing cementing summary sheet are attached. After completing cementing of the casing, the drilling contractor switched from the mud rotary drilling method to the reverse-air drilling method, displaced the drilling mud in the 24-inch diameter casing, drilled through the cement plug at the base of the 24-inch diameter casing and began pilot hole drilling using a 12¼-inch diameter bit. Pilot hole drilling had reached a depth of 1,176 feet bpl by the end of the reporting period. A description of drill cuttings for the interval drilled during this reporting period is attached. DZMW-1 was killed with barite during the reporting period. A daily kill material log sheet is attached.

A crane was used to unseat the EW-1 Fiberglass Reinforced Pipe (FRP) injection tubing from the packer, rotate the injection tubing and then re-seat the injection tubing back into the packer. This was done several times, with annular pressure monitoring after each time the injection tubing was re-seated. Annular pressure monitoring showed that the results do not meet the specification.

There was no packer testing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete the pilot hole of DZMW-1 to a depth of 1,900 feet bpl. The drilling contractor will then perform geophysical logging of the pilot hole and begin straddle packer testing. It is also anticipated that work to eliminate the source of the annular pressure loss may take place at EW-1 during this reporting period.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on May 10, 2012. The DZMW-1 pad monitor wells were most recently sampled on May 11, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on May 3, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on May 4, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/11/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Lithologic Log
DZMW-1 24-Inch Diameter Casing Installation Summary Sheet
DZMW-1 24-Inch Diameter Casing Cement Summary
DZMW-1 Daily Kill Material Log
DZMW-1 Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

May 18, 2012 MHCDEP-12-0192

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #54

Dear Mr. May:

This is the fifty-fourth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 10, 2012 and ended at 7:00 AM, Thursday, May 17, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor re-conditioned the DZMW-1 reamed hole using a 32½-inch diameter bit, performed caliper and gamma ray logging and installed and cemented the 24-inch casing to a depth of 1,102 feet bpl. The drilling contractor then set up for reverse-air drilling and began drilling pilot hole below the base of the 24-inch diameter casing. Pilot hole drilling had reached a depth of 1,176 feet bpl by the end of the reporting period.

Work performed on EW-1 during the previous reporting period included re-seating the Fiberglass Reinforced Pipe (FRP) injection tubing into the packer in an effort to improve the seal at the packer. Annular pressure monitoring showed that the results do not meet the specification.

During this reporting period the drilling contractor completed pilot hole drilling to a depth of 1,905 feet bpl and conditioned the pilot hole in preparation for geophysical logging. Drill cutting samples were collected at 10-foot intervals during pilot hole drilling. Deviation surveys were performed at 90-foot intervals above a depth of 1,700 feet bpl and at 60-foot intervals below a depth of 1,900 feet bpl. Pilot hole water samples were collected at a 90-foot intervals or less during pilot hole drilling. A description of drill cuttings for the interval drilled during this reporting period is attached. A copy of the deviation survey summary sheet is attached. DZMW-1 was killed with barite during the reporting period. A daily kill

material log sheet is attached. Laboratory results for the pilot hole water samples are not available yet and will be included in the next weekly construction summary. There were no activities at EW-1 during this reporting period.

There was no packer testing, casing installation, cementing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will perform geophysical logging of the DZMW-1 pilot hole and perform straddle packer testing on selected intervals. It is anticipated that the drilling contractor will remove the Fiberglass Reinforced Pipe (FRP) injection liner from EW-1 during the next reporting period.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on May 17, 2012. The DZMW-1 pad monitor wells were most recently sampled on May 18, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on May 10, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on May 11, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/18/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Lithologic Log
DZMW-1 Deviation Survey Summary Sheet
DZMW-1 Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

May 25, 2012 MHCDEP-12-0212

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #55

Dear Mr. May:

This is the fifty-fifth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 17, 2012 and ended at 7:00 AM, Thursday, May 24, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor drilled the DZMW-1 pilot hole over the interval from 1,176 feet below pad level (bpl) to 1,905 feet bpl and conditioned the pilot hole in preparation for geophysical logging. There were no activities at EW-1 during the previous reporting period.

During this reporting period the drilling contractor completed conditioning the pilot hole, performed geophysical logging, performed an off-bottom single packer test over the interval from 1,860 to 1,905 feet bpl, and performed a straddle packer test over the interval from 1,288 to 1,317 feet bpl. Logs conducted include caliper, gamma ray, spontaneous potential, dual induction, borehole compensated sonic, flowmeter, fluid conductivity, and temperature. All logs were performed under static conditions. The flowmeter, fluid conductivity and temperature logs were also performed under dynamic conditions. Copies of the geophysical logs are attached. A water sample was collected at the end of the pumping portion of each packer test. The laboratory reports for the packer test water samples are attached. DZMW-1 was killed with barite during the reporting period. A daily kill material log sheet is attached. Laboratory results for the pilot hole water samples collected during the previous reporting period are attached. There were no activities at EW-1 during this reporting period.

There was no casing installation, cementing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will backplug the DZMW-1 pilot hole with gravel (through proposed monitor zones) and cement. They will then begin reaming the backplugged hole. It is anticipated that the drilling contractor will refine their plan for establishing a tight seal at the packer in the base of EW-1 during the next reporting period.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on May 24, 2012. The DZMW-1 pad monitor wells were most recently sampled on May 25, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on May 17, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on May 18, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

5/25/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Packer Test Sample Laboratory Reports
DZMW-1 Pilot Hole Water Sample Laboratory Reports
DZMW-1 Daily Kill Material Log
DZMW-1 Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 1, 2012 MHCDEP-12-0225

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #56

Dear Mr. May:

This is the fifty-sixth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 24, 2012 and ended at 7:00 AM, Thursday, May 31, 2012. There were no construction activities at the site this reporting period, therefore, the drilling contractor did not prepare daily reports for this reporting period. Consultant daily reports were prepared for this reporting period. Copies of the consultant daily construction logs are attached.

During the previous reporting period the drilling contractor performed geophysical logging, performed an off-bottom single packer test over the interval from 1,860 to 1,905 feet below pad level (bpl), and performed a straddle packer test over the interval from 1,288 to 1,317 feet bpl. There were no activities at EW-1 during the previous reporting period.

There were no drilling activities during this reporting period. The drilling contractor awaited selection of recommended monitoring zones for DZMW-1. There were no activities at EW-1 during this reporting period.

There was no casing installation, cementing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will backplug the DZMW-1 pilot hole with gravel (through proposed monitor zones) and cement between the proposed monitor zones and above the upper monitor zone. They will then begin reaming the backplugged hole. In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on May 31, 2012. The DZMW-1 pad monitor wells were most

recently sampled on June 1, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on May 24, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on May 25, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/1/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 8, 2012 MHCDEP-12-0229

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #57

Dear Mr. May:

This is the fifty-seventh weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, May 31, 2012 and ended at 7:00 AM, Thursday, June 7, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

There were no construction activities at DZMW-1 or EW-1 during the previous reporting period.

During this reporting period the drilling contractor used the 12¼-inch diameter drill bit to remove barite kill material that had settled to the bottom of the hole. The drilling contractor then backfilled the pilot hole over the interval from 1,854 to 1,905 feet below pad level (bpl) using 66 five-gallon buckets of gravel. They then backplugged the interval from 1,504 to 1,854 feet bpl in three cement stages using a total of 146 barrels of 12% bentonite blend cement. The drilling contractor then backfilled the interval from 1,443 to 1,504 feet bpl using 208 five-gallon buckets of gravel. The drilling contractor then resumed backplugging the pilot hole with cement and was waiting on the fourth cement stage of 140 barrels of 12% bentonite blend cement to set at the end of the reporting period. The well was killed with barite during the reporting period. A pilot hole backplug summary sheet and daily kill material log is attached. There were no activities at EW-1 during the previous reporting period.

There was no casing installation, cementing, packer testing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete backplugging the DZMW-1 pilot hole with cement and then begin reaming the backplugged

hole. It is also anticipated that the drilling contractor will pump a mixture of bentonite and lost circulation material into the base of the annulus of EW-1 in accordance with the previously submitted plan to seal the EW-1 packer.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on June 7, 2012. The DZMW-1 pad monitor wells were most recently sampled on June 8, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on May 31, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on June 1, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/8/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pilot Hole Backplug Summary Sheet
DZMW-1 Daily Kill Material Log

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 15, 2012 MHCDEP-12-0235

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #58

Dear Mr. May:

This is the fifty-eighth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 7, 2012 and ended at 7:00 AM, Thursday, June 14, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor backfilled the pilot hole over the interval from 1,854 to 1,905 feet below pad level (bpl) with gravel, backplugged the interval from 1,504 to 1,854 feet bpl with 12% bentonite blend cement, backfilled the interval from 1,443 to 1,504 feet bpl with gravel and then pumped a cement stage from a depth of 1,443 feet bpl. They were waiting on the cement to set in preparation for tagging the top of cement at the end of the reporting period. There were no activities at EW-1 during the previous reporting period.

During this reporting period the drilling contractor completed backplugging the DZMW-1 pilot hole to a depth of 1,153 feet bpl. The drilling contractor then used a 22-inch diameter drill bit to ream the interval from 1,105 to 1,453 feet bpl. They then attempted to perform caliper and gamma ray logging of the reamed hole, but found that kill material had fallen to the base of the hole. The drilling contractor then cleaned out the borehole, performed caliper and gamma ray logging and began installing the 16-inch diameter casing to a depth of approximately 1,450 feet bpl. Installation of the 16-inch diameter casing was not completed prior to the end of the reporting period. A copy of the 16-inch diameter casing installation summary sheet for the portion of casing installed during this reporting period is attached. Deviation surveys were performed on the reamed hole at 60-foot intervals. A copy of the deviation survey summary sheet, pilot hole backplug summary sheet and the geophysical logs performed during this reporting period is attached.

At EW-1, the compression of the Fiberglass Reinforced Pipe (RFP) injection tubing was released. Subsequent pressure monitoring of the EW-1 annulus indicated that the source of the pressure loss in the annulus has been eliminated.

There was no packer testing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete installing and cementing the 16-inch diameter casing to a depth of approximately 1,450 feet bpl and begin drilling a hole below the base of the 16-inch diameter casing in preparation for installing the final casing of DZMW-1. At EW-1 it is anticipated that the annulus will undergo preliminary and final pressure testing.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on June 14, 2012. The DZMW-1 pad monitor wells were most recently sampled on June 15, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on June 8, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on June 8, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/25/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pilot Hole Backplug Summary Sheet
DZMW-1 Deviation Survey Summary Sheet
DZMW-1 16-Inch Diameter Casing Installation Summary Sheet
DZMW-1 Daily Kill Material Log
DZMW-1 Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 22, 2012 MHCDEP-12-0243

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #59

Dear Mr. May:

This is the fifty-ninth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 14, 2012 and ended at 7:00 AM, Thursday, June 21, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor completed backplugging the DZMW-1 pilot hole to a depth of 1,153 feet below pad level (bpl). The drilling contractor then used a 22-inch diameter drill bit to ream the interval from 1,105 to 1,453 feet bpl. They then performed caliper and gamma ray logs on the reamed hole and began installing the 16-inch diameter casing to a depth of approximately 1,450 feet bpl. Installation of the 16-inch diameter casing was not completed prior to the end of the previous reporting period.

During this reporting period the drilling contractor completed installing the 16-inch diameter casing to a depth of 1,450 feet bpl and cemented the casing in place in three stages using a total of 443 barrels of cement. Temperature logs were performed after each cement stage as required. The drilling contractor then reamed the interval from 1,450 to 1,850 feet bpl using a 14¾-inch diameter bit before changing to a 12¼-inch diameter bit and drilling the interval from 1,850 to 1,905 feet. Deviation surveys were performed at 60-foot intervals. The borehole then underwent caliper and gamma ray logging. The well was killed with barite during the reporting period. Copies of the 16-inch casing installation summary and cementing summary sheets, deviation survey summary sheet, daily kill material log and geophysical logs are attached.

Preliminary annular pressure monitoring took place at EW-1. Pressure monitoring results indicate the annulus now meets pressure testing specifications. A preliminary annular pressure test was underway at the end of the reporting period.

There was no packer testing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will install and cement the 6⅝-inch diameter final casing of DZMW-1 to a depth of approximately 1,860 feet bpl. The final casing will then undergo pressure testing. At EW-1 it is anticipated that the preliminary annular pressure test will be completed and final pressure testing will take place in the presence of a Florida Department of Environmental Protection witness.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on June 21, 2012. The DZMW-1 pad monitor wells were most recently sampled on June 22, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on June 14, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on June 15, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/22/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 16-Inch Diameter Casing Installation Summary Sheet
DZMW-1 16-Inch Diameter Casing Cementing Summary Sheet
DZMW-1 Deviation Survey Summary Sheet
DZMW-1 Daily Kill Material Log
DZMW-1 Geophysical Logs

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

June 29, 2012 MHCDEP-12-0256

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #60

Dear Mr. May:

This is the sixtieth weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 21, 2012 and ended at 7:00 AM, Thursday, June 28, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor completed installing the 16-inch diameter casing to a depth of 1,450 feet below pad level (bpl) and cemented the casing in place in three stages using a total of 443 barrels of cement. The drilling contractor then reamed the interval from 1,450 to 1,850 feet bpl using a 14¾-inch diameter bit before changing to a 12¼-inch diameter bit and drilling the interval from 1,850 to 1,905 feet.

During this reporting period the drilling contractor installed the 6⅝-inch diameter casing of DZMW-1 to a depth of 1,860 feet bpl and cemented the casing over the interval from 1,860 to 1,490 feet bpl in three stages using a total of 114.5 barrels of neat cement. Temperature logs were performed after each cement stage as required. The 6⅝-inch diameter casing then underwent cement bond logging and was then successfully pressure tested. Copies of the 6⅝-inch diameter casing installation summary sheet, casing cementing summary sheet, and pressure test summary sheet are attached. Copies of the composite cement top temperature log and cement bond log are attached. The well was killed with barite during the reporting period. A copy of the daily kill material log is attached.

Successful preliminary and final annular pressure monitoring took place at EW-1. The final annular pressure test was performed in the presence of a Florida Department of Environmental Protection (FDEP) witness. A copy of the EW-1 annular pressure test

summary sheet is attached. The drilling contractor began moving equipment off site during the reporting period in preparation for demobilization from the site.

There was no packer testing, well development or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will continue moving equipment off site, develop both monitoring zones of DZMW-1 and collect monitoring zones background water samples for laboratory analysis.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The EW-1 pad monitor wells were most recently sampled on June 28, 2012. The DZMW-1 pad monitor wells were most recently sampled on June 29, 2012. The most recent set of EW-1 pad monitoring well sample results available are for samples collected on June 21, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on June 22, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

6/29/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 6⅝-Inch Diameter Casing Installation Summary Sheet
DZMW-1 6⅝-Inch Diameter Casing Cementing Summary Sheet
DZMW-1 6⅝-Inch Diameter Casing Pressure Test Summary Sheet
DZMW-1 Daily Kill Material Log
DZMW-1 Geophysical Logs
EW-1 Annular Pressure Test Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 6, 2012 MHCDEP-12-0267

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #61

Dear Mr. May:

This is the sixty-first weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, June 28, 2012 and ended at 7:00 AM, Thursday, July 5, 2012. Consultant and drilling contractor daily reports were prepared for this reporting period. Copies of the consultant and drilling contractor daily construction logs are attached.

During the previous reporting period the drilling contractor installed the 6⅝-inch diameter casing of DZMW-1 to a depth of 1,860 feet below pad level (bpl) and cemented the casing over the interval from 1,860 to 1,490 feet bpl in three stages using a total of 114.5 barrels of neat cement. The 6⅝-inch diameter casing then underwent cement bond logging and was then successfully pressure tested. Successful preliminary and final annular pressure testing took place at EW-1. The final annular pressure test was performed in the presence of a Florida Department of Environmental Protection (FDEP) witness.

During this reporting period the drilling contractor installed the DZMW-1 wellhead, performed development of the upper and lower monitor zones and continued demobilizing from the site. Water samples were collected for laboratory analysis from the upper monitor zone after the zone was fully developed. Development of the lower monitor zone was not yet completed by the end of the reporting period.

There was no packer testing, casing installation, cementing or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will continue development of the lower monitor zone, collected background water samples for laboratory analysis from the lower monitor zone, perform a video log of the completed well and continue demobilization from the site.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The most recent sampling of the EW-1 pad monitor wells was on July 5, 2012. The DZMW-1 pad monitor wells were most recently sampled on July 6, 2012. The most recent set of EW-1 pad monitoring well sample results are for samples collected on June 28, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on June 29, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/6/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
Layne Christensen Company-Drilling Shift Report
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

WEEKLY CONSTRUCTION SUMMARY

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 13, 2012 MHCDEP-12-0276

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Weekly Construction Summary #62

Dear Mr. May:

This is the sixty-second weekly construction summary for the above referenced project. The reporting period for this weekly construction summary began at 7:00 AM, Thursday, July 5, 2012 and ended at 7:00 AM, Thursday, July 12, 2012. Drilling contractor daily reports were not prepared this week since there was no construction or testing activities at the site. Consultant daily reports were prepared for this reporting period. Copies of the consultant daily construction logs are attached.

During the previous reporting period the drilling contractor installed the DZMW-1 wellhead, performed development of the upper and lower monitor zones and continued demobilizing from the site. Background water samples were collected for laboratory analysis from the upper monitor zone after the zone was fully developed. Development of the lower monitor zone was not yet completed by the end of the reporting period.

During this reporting period the drilling contractor continued to demobilize from the site and performed development of the lower monitor zone of DZMW-1 in preparation for background water sampling. Re-development of the upper monitor zone of DZMW-1 also began in preparation for re-sampling the upper monitor zone. Re-sampling of the upper zone for all parameters will take place to confirm a positive result for total coliform in the original upper monitor zone background sample. Tables providing a summary of the lower monitor zone development and the upper monitor zone re-development are attached.

There was no packer testing, casing installation, cementing or construction related issues at EW-1 and DZMW-1 during this reporting period.

During the next reporting period, it is anticipated that the drilling contractor will complete development of the lower monitor zone, complete re-development of the upper monitor

zone, collect background water samples for laboratory analysis from the upper and lower monitor zones, perform a video log of the completed well and complete demobilization from the site.

In addition, sampling of the pad monitor wells around EW-1 and DZMW-1 began on April 21, 2011 and March 20, 2012, respectively, and has been taking place on a weekly basis since the initial samplings. The final sampling of the EW-1 pad monitor wells was on July 5, 2012. The DZMW-1 pad monitor wells were most recently sampled on July 13, 2012. The most recent set of DZMW-1 pad monitoring well sample results available are for samples collected on July 6, 2012. Copies of the EW-1 and DZMW-1 pad monitor well water quality data summary sheets are attached.

Should you have any questions regarding the above weekly construction summary, please contact David McNabb at (561) 891-0763.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/13/12

David McNabb, P.G.

Attachments: Consultant Daily Construction Log
EW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Pad Monitor Well Water Quality Data Summary Sheets
DZMW-1 Lower Monitor Zone Development Summary Sheet
DZMW-1 Upper Monitor Zone Re-Development Summary Sheet

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

Appendix D
FDEP Approvals

Subject: RE: FPL Turkey Point Units 6 & 7 exploratory well pre-construction submittals

From: May, Joseph (Joseph.May@dep.state.fl.us)

To: david@mcnabbhydroconsult.com;

Cc: Joe.Haberfeld@dep.state.fl.us; sanderso@sfwmd.gov; rsreese@usgs.gov; Matthew.Raffenberg@fpl.com;

Date: Monday, May 2, 2011 9:19 AM

Dave,

Thanks and good luck with the drilling operations, proceed at will.

Joe

<><><><><>

Joseph May, PG

UIC Program Manager

SED / FDEP

From: David McNabb [mailto:david@mcnabbhydroconsult.com]
Sent: Wednesday, April 27, 2011 10:56 AM
To: May, Joseph
Cc: Haberfeld, Joe; Steve Anderson; Ron Reese; Matthew Raffenberg
Subject: FPL Turkey Point Units 6 & 7 exploratory well pre-construction submittals

Joe,

Please see the attached pre-construction submittals for the FPL Turkey Point Units 6 & 7 exploratory well construction project. Each of the items that are required to be submitted prior to beginning drilling operations at the exploratory well are provided. We plan to begin drilling the exploratory well on May 4, 2011 provided we have received the required approval from the Department to begin drilling.

Thanks,

David McNabb, P.G.
McNabb Hydrogeologic Consulting, Inc.

601 Heritage Drive, Suite 110

Jupiter, Florida 33458
561-891-0763

Subject: RE: Turkey Point EW-1 intermediate casing seat recommendation

From: May, Joseph (Joseph.May@dep.state.fl.us)

To: david@mcnabbhydroconsult.com;

Cc: Joe.Haberfeld@dep.state.fl.us; George.Heuler@dep.state.fl.us; sanderso@sfwmd.gov; rsreese@usgs.gov; Matthew.Raffenberg@fpl.com; David.Paul@dep.state.fl.us; david.holtz@holtzconsulting.com;

Date: Friday, July 22, 2011 10:42 AM

Hello,

The Department accepts FPL's recommendation for the intermediate casing to be landed at 1535 feet below pad level.

As always, good luck with the well construction operations,

Joe May

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Joseph R. May, PG

Program Manager / UIC

561-681-6691

561-682-6745 (Vanessa Osborne)

From: David McNabb [mailto:david@mcnabbhydroconsult.com]
Sent: Wednesday, July 20, 2011 5:35 PM
To: May, Joseph
Cc: Haberfeld, Joe; Heuler, George; Steve Anderson; Ron Reese; Matthew Raffenberg; Paul, David; David Holtz
Subject: Turkey Point EW-1 intermediate casing seat recommendation

Joe,

Please see the attached intermediate casing seat recommendation for FPL Turkey Point EW-1. I will give you a call tomorrow morning to see when it would be good to drop off the recommendation and see if you have a few minutes to go through it.

Thanks,

David McNabb, P.G.
McNabb Hydrogeologic Consulting, Inc.

601 Heritage Drive, Suite 110

Jupiter, Florida 33458
561-891-0763

Subject: RE: FPL Turkey Point EW-1 formation testing and borehole televiewer

From: May, Joseph (Joseph.May@dep.state.fl.us)

To: david@mcnabbhydroconsult.com;

Cc: Matthew.Raffenberg@fpl.com;

Date: Sunday, February 5, 2012 3:18 PM

Dave,

What you'd stated is acceptable to the Department.

Let's hope the water in the well has sufficient clarity for the video to render the use of the borehole televiewer moot.

Thanks and good luck,

Joe

Please take a few minutes to share your comments on the service you received from the department by clicking on this link DEP Customer Survey.

From: David McNabb [mailto:david@mcnabbhydroconsult.com]
Sent: Friday, February 03, 2012 1:14 PM
To: May, Joseph
Cc: Matthew Raffenberg
Subject: FPL Turkey Point EW-1 formation testing and borehole televiewer

Joe,

Marister Ruiz and I had previously discussed with you via phone a proposed plan for performing a formation test to determine if the EW-1 borehole has penetrated the Bolder Zone. We propose performing the formation test using water produced from open hole interval of EW-1. The proposed testing procedure is below. We anticipate being ready to perform the formation test on or about February 9, 2012. Please let us know if this acceptable with the Department and contact us with any questions or comments you may have regarding the performance of the formation test.

1. A total of 160,000 gallons of formation water will be used for the test.

2. A single, open-ended packer will be installed to a depth of approximately 3,010 feet bpl.

3. The formation test will be conducted at a rate of 1,200 to 1,600 gpm.

4. At least two hours of pressure recovery data will be collected after shutting off the pump.

The results of the formation test will be included in a weekly construction summary and the final report for the construction and testing of EW-1.

A borehole televiewer log was specified to be conducted on the pilot hole for this borehole. The caliper log showed that most of the hole has a larger diameter than the capabilities of the borehole televiewer (22-inch for the field of investigation). We propose to perform a video of the borehole instead of the televiewer in order to obtain information about the borehole. The borehole video will be performed prior to running the formation test. If the video submitted to the Department is found acceptable we will not perform the borehole televiewer.

Thanks,

David McNabb, P.G.
McNabb Hydrogeologic Consulting, Inc.

601 Heritage Drive, Suite 110

Jupiter, Florida 33458
561-891-0763

Subject: RE: Turkey Point EW-1

From: May, Joseph (Joseph.May@dep.state.fl.us)

To: david@mcnabbhydroconsult.com;

Cc: Marister.Ruiz@fpl.com;

Date: Tuesday, December 27, 2011 9:26 AM

Understood and your understanding is correct.

Good luck.

Please take a few minutes to share your comments on the service you received from the department by clicking on this link. DEP Customer Survey.

From: David McNabb [mailto:david@mcnabbhydroconsult.com]
Sent: Thursday, December 22, 2011 10:58 AM
To: May, Joseph
Cc: Marister Ruiz
Subject: Turkey Point EW-1

Joe,

This email is a follow up to our phone conversation on 12/12/11 on the Turkey Point exploratory well (EW-1). The caliper log that was performed on pilot hole below the 34-inch diameter intermediate casing shows that a portion of the borehole below the 34-inch diameter casing (base of casing located at 1,535 feet) is washed out to a larger diameter than the pilot hole drill bit. An electronic copy of the caliper log was provided to the Department as an attachment to Weekly Construction Summary #30. As discussed in Weekly Construction Summary #31, reaming of the upper portion of the pilot hole is required to allow installation of large diameter packers in preparation for conducting packer tests in large diameter portions of the borehole. The well construction and testing specifications submitted to the FDEP in support of the EW-1 construction permit

application indicated that the pilot hole below the 34-inch diameter intermediate casing would be backplugged with cement prior to being reamed in preparation for installation of the final casing. However, as indicated above, a portion of the borehole below the 34-inch diameter casing is washed out and has a larger diameter. The large diameter hole provides assurance that the drill bit will follow the pilot hole during the reaming process with minimum probability of deviation making the need to backplug the pilot hole with cement unnecessary. In order to confirm that the reaming bit did follow the pilot hole, a video survey of the reamed hole will be performed prior to installing the final casing of EW-1. Our understanding from the phone conversation is that this is an acceptable approach, please let us know if this is not correct.

Thanks,

David McNabb, P.G.
McNabb Hydrogeologic Consulting, Inc.

601 Heritage Drive, Suite 110

Jupiter, Florida 33458
561-891-0763

Subject: RE: Turkey Point EW-1 Final Casing Seat Recommendation

From: May, Joseph (Joseph.May@dep.state.fl.us)

To: david@mcnabbhydroconsult.com; George.Heuler@dep.state.fl.us;

Cc: Joe.Haberfeld@dep.state.fl.us; rsreese@usgs.gov; David.Paul@dep.state.fl.us; Matthew.Raffenberg@fpl.com; david.holtz@holtzconsulting.com; ehopkins@sfwmd.gov;

Date: Wednesday, February 22, 2012 3:43 PM

Dave,

DEP accepts the final casing being landed at 2985 feet below pad level.

I'll have a formal later drafted saying the same and referring to this email as the informal, though official, approval.

Good luck,

Joe

Please take a few minutes to share your comments on the service you received from the department by clicking on this link. DEP Customer Survey.

From: David McNabb [mailto:david@mcnabbhydroconsult.com]
Sent: Wednesday, February 22, 2012 3:08 PM
To: May, Joseph; Heuler, George
Cc: Haberfeld, Joe; Ron Reese; Paul, David; Matthew Raffenberg; David Holtz; ehopkins@sfwmd.gov
Subject: Turkey Point EW-1 Final Casing Seat Recommendation

Joe and George,

A caliper/gamma ray log of the reamed hole at FPL Turkey Point EW-1 was performed on 2/21/12, see attached. We would like to set the 24-inch diameter final casing to a depth of 2,985 feet below pad level (bpl) rather than the 2,980 feet bpl that was indicated in the final casing seat recommendation submitted on 2/21/12 based on the most recent caliper log.

Please let us know if the revised depth is acceptable.

Thanks,

David McNabb, P.G.
McNabb Hydrogeologic Consulting, Inc.

601 Heritage Drive, Suite 110

Jupiter, Florida 33458
561-891-0763

Appendix E

Daily Kill Material Log

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Daily Kill Material Log

Date	Depth (feet bpl)	Kill Used	Approximate Volume (gallons)	Approximate Quantity (pounds)
7/7/2011	1655	Bentonite /Barite	569	
7/8/2011	1655	Bentonite /Barite	6,064	
7/9/2011	1655	Bentonite /Barite	2,085	
7/10/2011	1655	Bentonite /Barite	1,137	
7/11/2011	1655	Bentonite /Barite	9,475	
7/12/2011	1655	Bentonite /Barite	759	
7/13/2011	1655	Bentonite /Barite	4,548	
7/15/2011	1655	Bentonite /Barite	1,925	
7/16/2011	1655	Bentonite /Barite	2,200	
7/17/2011	1655	Bentonite /Barite	284	
7/18/2011	1655	Bentonite /Barite	275	
7/19/2011	1655	Bentonite /Barite	275	
7/31/2011	1542	Bentonite /Barite	18,950	
8/1/2011	1542	Bentonite /Barite	4,548	
8/2/2011	1542	Bentonite /Barite	284	
8/5/2011	1542	Bentonite /Barite	4,548	
8/6/2011	1542	Bentonite /Barite	2,274	
8/10/2011	1542	Bentonite /Barite	6,443	
8/10/2011	1542	Salt		2,000
8/13/2011	1722	Bentonite /Barite	6,250	
8/14/2011	1722	Bentonite /Barite	379	
8/17/2011	2026	Salt		2,000
8/18/2011	2026	Bentonite /Barite	379	2,000
8/19/2011	2110	Bentonite/Barite and Salt	570	2,000
8/20/2011	2110	Bentonite /Barite and Salt	189	4,000
8/21/2011	2288	Salt		6,000
8/22/2011	2288	Salt		4,000
8/24/2011	2396	Bentonite /Barite and Salt	379	2,000
8/25/2011	2396	Salt		4,000
8/26/2011	2576	Bentonite /Barite and Salt	379	2,000
8/28/2011	2580	Bentonite /Barite and Salt	379	6,000
8/30/2011	2638	Salt		4,000
8/31/2011	2638	Bentonite /Barite/Salt	569	2,000
9/1/2011	2652	Bentonite /Barite	379	
9/2/2011	2666	Salt		2,000
9/3/2011	2666	Bentonite /Barite	569	
9/10/2011	3214	Salt		6,000
9/11/2011	3210	Salt		4,000
9/19/2011	3227	Salt		4,000
9/22/2011	3228	Salt		4,000

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Daily Kill Material Log

Date	Depth (feet bpl)	Kill Used	Approximate Volume (gallons)	Approximate Quantity (pounds)
10/9/2011	3220	Salt		6,000
10/10/2011	3220	Salt		6,000
10/12/2011	3227	Salt		4,000
10/23/2011	3234	Salt		6,000
10/29/2011	3211	Salt		6,000
11/7/2011	3223	Salt		6,000
11/19/2011	3232	Salt		4,000
11/28/2011	3232	Salt		4,000
12/6/2011	3232	Salt		6,000
12/14/2011	1960	Salt		8,000
12/15/2011	1960	Salt		8,000
1/5/2012	2270	Salt		8,000
1/9/2012	2270	Salt		2,000
1/15/2012	2900	Salt		6,000
1/16/2012	2900	Salt		4,000
1/22/2012	2900	Salt		8,000
1/24/2012	2900	Salt		6,000
1/26/2012	2900	Salt		4,000
2/6/2012	2978	Salt		4,000
2/7/2012	2978	Salt		2,000
2/10/2012	3230	Salt		4,000
2/11/2012	3230	Salt		4,000
2/15/2012	3230	Salt		4,000
2/23/2012	3230	Salt		4,000
2/24/2012	3230	Salt		250
2/25/2012	3230	Salt		2,050
2/26/2012	3230	Salt		2,000
3/9/2012	3230	Salt		100
3/12/2012	3230	Salt		1,500
3/13/2012	3230	Salt		2000

feet bpl = feet below pad level

Appendix F

Deviation Survey Summary Sheet

MHC

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Deviation Survey Summary

Pilot Hole			42-Inch Reamed Hole			32-Inch Reamed Hole		
Date	Depth (feet bpl)	Inclination (degrees)	Date	Depth (feet bpl)	Inclination (degrees)	Date	Depth (feet bpl)	Inclination (degrees)
5/13/2011	90	0.2	5/20/2011	90	0.5	1/21/2012	1,950	0.2
5/14/2011	180	0.4	5/24/2011	180	0.4	1/22/2012	2,010	0.5
6/3/2011	270	0.5	6/6/2011	270	0.0	1/22/2012	2,070	0.3
5/29/2011	345	0.3	6/8/2011	360	0.1	1/31/2012	2,130	0.5
5/29/2011	435	0.4	6/9/2011	450	0.2	1/31/2012	2,190	0.5
5/30/2011	524	0.4	6/10/2011	540	0.3	1/31/2012	2,250	0.3
5/30/2011	614	0.0	6/12/2011	630	0.5	2/1/2012	2,310	0.3
5/31/2011	704	0.2	6/14/2011	720	0.4	2/1/2012	2,370	0.2
5/31/2011	794	0.3	6/15/2011	810	0.4	2/1/2012	2,430	0.4
5/31/2011	884	0.3	6/16/2011	900	0.3	2/1/2012	2,490	0.4
6/1/2011	974	0.5	6/18/2011	990	0.4	2/1/2012	2,550	0.1
6/1/2011	1,064	0.5	7/23/2011	1,080	0.1	2/1/2012	2,610	0.4
7/1/2011	1,154	0.6	7/25/2011	1,170	0.4	2/2/2012	2,670	0.2
7/1/2011	1,244	0.3	7/26/2011	1,260	0.5	2/2/2012	2,730	0.0
7/1/2011	1,334	0.4	7/27/2011	1,350	0.2	2/2/2012	2,790	0.0
7/2/2011	1,424	0.4	7/29/2011	1,440	0.3	2/4/2012	2,850	0.3
7/2/2011	1,514	0.5	8/10/2011	1,530	0.5	2/6/2012	2,910	0.1
7/3/2011	1,604	0.5	28-Inch Reamed Hole			2/7/2012	2,970	0.3
8/13/2011	1,664	0.1				2/17/2012	3,030	0.3
8/15/2011	1,724	0.0	12/7/2011	1,590	0.5	2/17/2012	3,090	0.4
8/15/2011	1,784	0.1	12/8/2011	1,650	0.5	2/17/2012	3,150	0.5
8/16/2011	1,844	0.4	12/9/2011	1,710	0.5	2/17/2012	3,210	0.5
8/16/2011	1,904	0.4	12/10/2011	1,770	0.5			
8/17/2011	1,964	0.1	12/11/2011	1,830	0.5			
8/19/2011	2,024	0.3	12/13/2011	1,890	0.3			
8/19/2011	2,084	0.5	12/29/2011	1,950	0.5			
8/20/2011	2,144	0.2	1/2/2012	2,010	0.4			
8/20/2011	2,204	0.0	1/2/2012	2,070	0.3			
8/22/2011	2,264	0.0	1/3/2012	2,130	0.5			
8/25/2011	2,324	0.1	1/4/2012	2,190	0.4			
8/25/2011	2,384	0.1	1/5/2012	2,250	0.3			
8/26/2011	2,444	0.2	1/10/2012	2,310	0.0			
8/26/2011	2,504	0.0	1/11/2012	2,370	0.3			
8/29/2011	2,564	0.4	1/11/2012	2,430	0.1			
8/31/2011	2,624	0.3	1/12/2012	2,490	0.3			
9/4/2011	2,684	0.4	1/12/2012	2,550	0.4			
9/4/2011	2,744	0.4	1/13/2012	2,610	0.4			
9/4/2011	2,804	0.3	1/13/2012	2,670	0.3			
9/5/2011	2,864	0.4	1/13/2012	2,730	0.3			
9/5/2011	2,924	0.3	1/14/2012	2,790	0.4			
9/5/2011	2,984	0.4	1/14/2012	2,850	0.3			
9/6/2011	3,044	0.1						
9/6/2011	3,104	0.5						
9/7/2011	3,164	0.4						

bpl = below pad level

Appendix G

Cementing and Casing Summary Sheet

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Summary of Casing Setting Depths and Cement Quantities

Casing	Casing Material	Outside Diameter (inches)	Inside Diameter (inches)	Casing Thickness (inches)	Casing Depth (feet bpl)	Date	Cement Stage	Type of Cement	Quantity of Cement (bbl)	Base of the Cemented Interval (feet bpl)	Theoretical Fill (feet)	Actual Fill (feet)	Percent Fill	Remarks
Pit Pipe	Steel	64.00	63.25	0.375	33	4/15/2011	#1	neat	66	33	33	33	100%	Tremie grout from 31 feet.
Conductor Casing	Steel	54.00	53.25	0.375	255	5/26/2011	#1	neat/12%	104/102	260	260	260	100%	Pressure grout from bottom of casing
Surface Casing	Steel	44.00	43.25	0.375	1,090	6/22/2011	#1	neat/4%	91/154	1,095	305	428	140%	Pressure grout from bottom of casing
						6/23/2011	#2	4%	134	667	167	402	241%	Tremied from 665 feet bpl
						6/24/2011	#3	4%	195	265	227	243	107%	Tremied from 260 feet bpl
						6/24/2011	#4	4%	24	22	27	22	81%	Tremied from 18 feet bpl
Pilot Hole (1,655) Backplug		12.25				7/22/2011	#1	12%	107	1,655	565	561	99%	Tremied from the base of the pilot hole
Intermediate Casing	Steel	34.00	33.25	0.375	1,535	8/5/2011	#1	neat	326	1,542	90	75	83%	Pressure grout from bottom of casing
						8/6/2011	#2	neat	335	1,467	127	210	165%	Tremied from 1,465 feet bpl
						8/6/2011	#3	4%	228	1,257	200	241	121%	Tremied from 1,252 feet bpl
						8/7/2011	#4	12%	174	1,016	250	255	102%	Tremied from 1,013 feet bpl
						8/7/2011	#5	12%	174	761	250	272	109%	Tremied from 756 feet bpl
						8/8/2011	#6	12%	86	489	120	137	114%	Tremied from 485 feet bpl
						8/8/2011	#7	12%	235	352	339	352	104%	Tremied from 350 feet bpl
Final Casing	Steel	24.00	23.00	0.500	2,985	3/2/2012	spot #1	neat	2	2,982	1	1	100%	Tremied from top of the cement basket at 2,982 feet bpl.
						3/2/2012	spot #2	neat	5	2,981	9	8	89%	Tremied from 2,981 feet bpl
						3/2/2012	spot #3	neat	8	2,973	13	14	108%	Tremied from 2,973 feet bpl
						3/2/2012	#1	neat	184	2,959	200	183	92%	Tremied from 2,959 feet bpl
						3/3/2012	#2	4%	115	2,776	200	161	81%	Tremied from 2,776 feet bpl
						3/3/2012	#3	4%	191	2,615	331	265	80%	Tremied from 2,615 feet bpl
						3/4/2012	#4	4%	195	2,350	350	241	69%	Tremied from 2,350 feet bpl
						3/4/2012	#5	4%	200	2,109	350	255	73%	Tremied from 2,109 feet bpl
						3/4/2012	#6	4%	250	1,854	400	269	67%	Tremied from 1,854 feet bpl
						3/5/2012	#7	4%	191	1,585	350	164	47%	Tremied from 1,585 feet bpl
						3/5/2012	#8	12%	309	1,421	600	550	92%	Tremied from 1,421 feet bpl
						3/6/2012	#9	12%	319	871	621	558	90%	Tremied from 871 feet bpl
						3/7/2012	#10	12%	163	313	313	313	100%	Tremied from 313 feet bpl
								Total Neat	**1,121**					
								Total 4%	**1,877**					
								Total 12%	**1,669**					
								Total	**4,667**					

bpl = below pad level
bbl = barrel
1 barrel = 42 gallons/5.61 cubic feet

Appendix H
Casing Mill Certificates and FRP Cut Sheet

沧州市螺旋钢管有限责任公司
Cang zhou Spiral Steel Pipe Co., Ltd
钢 管 质 量 证 明 书
MILL TEST CERTIFICATE

特种设备制造许可证（压力管道）编号:TS2710387-2014

客 户 Customer: Layne Christensen Company　　合同编号 Contract No.: 88567　　证书编号 Certificate No.: [illegible]

品 名 Product name: Spiral steel pipe　　钢 级 Steel Grade: Gr.B PSLI　　到 站 Destination: [illegible]

Pipes No.	炉号 Heat Numbers	规格(Size)			数量Quantity			化学成分 Chemical Composition （%）					焊接接头物理性能 physical properties of welding joints			管体物理性能 physical properties of pipes				无损检验 NDT		水压试验 Hydrostatic (10s) Mpa	尺寸及外观 size & appearance
		直径 O.D. in	厚度 W.T. in	长度 lenth ft	支数 Pieces (Pcs)	总长度 lenth (ft)	总重量 Weight (MT)	C	Mn	Si	P	S	σb Mpa	正弯 face-bend 180°	反弯 back-bend 180°	σs Mpa	σb Mpa	δ(%)	冷弯 cold- 180°	UT	RT		
1	11P02636	24	0.375	39	24	936	40.224	0.15	0.60	0.21	0.026	0.019	440	pass	pass	275	440	32	pass	pass	pass	4.6	pass
2	11P02636	24	0.375	39	47	1833	112.142	0.15	0.60	0.21	0.026	0.019	440	pass	pass	275	440	32	pass	pass	pass	3.2	pass
3	11P02636	24	0.375	39	24	936	74.304	0.15	0.60	0.21	0.026	0.019	440	pass	pass	275	440	32	pass	pass	pass	2.5	pass
4	11P02636	24	0.375	39	6	234	22.830	0.15	0.60	0.21	0.026	0.019	440	pass	pass	275	440	32	pass	pass	pass	2.0	pass
								以下空白															
6																							
7																							
8																							
9																							
10																							
Total					101	3939	249.500																

兹证明本表所列产品,均依材料规格制造及试验,并符合规格之要求。

The Spiral steel pipes are tested according to API 5L Gr.B and ASTM A139 Gr.B. This is to certify that in accordance with the relevant specifications and contracts.

The Spiral steel pipes manufactured were tested and qualified by our Quality Control Department.

检验员: 尹桂花
INSPECTOR:

许可证号:
LICENCE: 5L-0640

日 期 Date: Apr-7-2011

STANDARD CERTIFIED TEST REPORT

SKYLINE STEEL PIPE, LLC

IUKA, MS

Customer Name	SKYLINE STEEL LLC (MO)	Date	5/2/2011
Address	514 EARTH CITY EXPRESSWAY SUITE 355	Customer Order #	BM462
City, State Zip	EARTH CITY, MO 63045	Skyline Sale Order #	IUK 2448

Specification ASTM 139 Grade B DSAW Spiralweld Steel Pipe "Melted & Manufactured in U.S.A."

HEAT NO.	SIZE/OD	WALL THICKNESS	MIN. HYDRO TEST PRES. PSI	MECHANICAL PROPERTIES			CHEMICAL ANALYSIS (%)			
				Yield Strength KSI Point	Tensile Strength KSI	Elong. In 2" (%)	C	Mn	P	S
S03827	54"	0.375	N/A	52.0	66.0	39.3	0.05	0.98	0.011	0.005
S10931	54"	0.375	N/A	59.9	81.8	31.6	0.22	0.77	0.013	0.002

The undersigned hereby certifies that the above materials have been manufactured, inspected and tested in accordance with the methods prescribed in the applicable specifications and results of such test shown above. In determining properties or characteristics for which no methods of inspection and testing are prescribed by said specifications, the standard mill inspection and testing practices of this Corporation have been applied, unless specified otherwise in the results of such inspection and tests shown above. The undersigned believes that said materials conform to said specifications. *** Manufactured in the U.S.A.***

Subscribed and sworn to before me
This 2nd day of May
Karen Strickland
Notary Public

STATE OF MISSISSIPPI NOTARY PUBLIC ID 20071883 KAREN S. STRICKLAND Commission Expires Jan. 9, 2014 ALCORN COUNTY

Marty Hall
Marty Hall
Skyline Steel Pipe, LLC - MS

10May11 14:47 T E S T C E R T I F I C A T E No: IUK 6200

Sold By:
SKYLINE STEEL PIPE, LLC
5 CR 486
IUKA, MS 38852
Tel: 662-423-2101 Fax: 662-423-2130

P/O No BM497
Rel 92P
S/O No IUK 2458-001
B/L No IUK 10337-001 Shp 09May11
Inv No Inv

Sold To: (1360)
SKYLINE STEEL LLC (MO) PIPE
514 EARTH CITY EXPRESSWAY
SUITE 355
EARTH CITY, MO 63045

Ship To: (000)
ALPHA PIPE
WILL CAL
IUKA MS
**REPLACEMNT FROM IUK2448 /BM492

Tel: 314-266-4649 Fax: 314-739-5616

CERTIFICATE of ANALYSIS and TESTS Cert. No: IUK 6200
10May11

Part No
54" OD SPIRALWELD PIPE 139 GRADE B Byard
.375 WALL X 40' WAIVE HYDRO

	Pcs	Wgt
	1	8,591

Heat Number	Tag No	Pcs	Wgt
S03827	10177AX	1	8,591

Heat Number *** Chemical Analysis ***
S03827 C=<.05> Mn=<.98> P=<.011> S=<.005> Si=<.210> TEN=<66,000>
YLD=<52,000> ELONG=<39.8>

The undersigned hereby certifies that the above materials have been inspected and tested in accordance with the methods prescribed in the applicable specifications and results of such test shown above. In determining properties of characteristics for which no methods of inspection and testing are prescribed by said specifications the standard mill inspection and testing practices of this company have been applied. Unless specified otherwise in the results of such inspection and tests shown above, the undersigned believes that said materials conform to said specifications.
Melted and Manufactured in the U.S.A.

Marty Hall
Name & Title

Subscribed and sworn to before me
This 9th day of May 2011

Karen S Strickland
Notary Public

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 31883 KAREN S. STRICKLAND Commission Expires Jan. 9, 2014 ALCORN COUNTY

10May11 14:47 T E S T C E R T I F I C A T E No: IUK 6201

Sold By:
SKYLINE STEEL PIPE, LLC
5 CR 486
IUKA, MS 38852
Tel: 662-423-2101 Fax: 662-423-2130

P/O No BM497
Rel 92P
S/O No IUK 2458-002
B/L No IUK 10337-002 Shp 09May11
Inv No Inv

Sold To: (1360)
SKYLINE STEEL LLC (MO) PIPE
514 EARTH CITY EXPRESSWAY
SUITE 355
EARTH CITY, MO 63045

Ship To: (000)
ALPHA PIPE
WILL CAL
IUKA MS
**REPLACEMNT FROM IUK2448 /BM492

Tel: 314-266-4649 Fax: 314-739-5616

CERTIFICATE of ANALYSIS and TESTS Cert. No: IUK 6201
10May11

Part No		Pcs	Wgt
54" OD SPIRALWELD PIPE 139 GRADE B Byard .375 WALL X 20' WAIVE HYDRO		1	4,295
Heat Number	**Tag No**	**Pcs**	**Wgt**
303827	10177AY	1	4,295

Heat Number 303827 *** Chemical Analysis ***
C=<.05> Mn=<.98> P=<.011> S=<.005> Si=<.210> TEN=<66,000>
YLD=<52,000> ELONG=<39.3>

The undersigned hereby certifies that the above materials have been inspected and tested in accordance with the methods prescribed in the applicable specifications and results of such test shown above. In determining properties of characteristics for which no methods of inspection and testing are prescribed by said specifications the standard mill inspection and testing practices of this company have been applied. Unless specified otherwise in the results of such inspection and tests shown above, the undersigned believes that said materials conform to said specifications.
Melted and Manufactured in the U.S.A.

Mark Hall
Name & Title

Subscribed and sworn to before me
this 9th day of May 2011

Karen Strickland
Notary Public

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 31883 KAREN S. STRICKLAND Commission Expires Jan. 9, 2014 ALCORN COUNTY

ArcelorMittal | skylinesteel

Skyline Steel, LLC
5 County Road 486 - Iuka, MS 38852
Tel (662) 423-2101 Fax (662) 423-2130

Premium Spiral-Weld Pipe

No: IUK 10337
Ship Date 09May11 at 12:29 From MFG
Probill
Via AC WRIGHT
FOB SHIPPING PT
Frt COLLECT
Route 0- 0 Manifest
Vhcle Trailer
Slp STOCK
Sold To: (1360)
SKYLINE STEEL LLC (MO) PIPE
514 EARTH CITY EXPRESSWAY
SUITE 355
EARTH CITY, MO 63045

Consigned To: (000)
ALPHA PIPE
WILL CAL
IUKA MS
**REPLACEMNT FROM IUK2448 /BM492
Tel: 314-266-4649 Fax: 314-739-5616

==========

B I L L O F L A D I N G - REPRINT

.) Our Order IUK- 2458- 1 Your PO # BM497
'art # Rel # 92P
4" OD SPIRALWELD PIPE 139 GRADE B Byard
375 WALL X 40' WAIVE HYDRO

Heat Number	Tag No	PCS	Wt LBS
S03827	10177AX	1	8591

.) Our Order IUK- 2458- 2 Your PO # BM497
'art # Rel # 92P
4" OD SPIRALWELD PIPE 139 GRADE B Byard
375 WALL X 20' WAIVE HYDRO

Heat Number	Tag No	PCS	Wt LBS
S03827	10177AY	1	4295

	Tags	Pcs	Wt LBS
TOTAL:	2	2	12886

.t Number *** Chemical Analysis ***
827 C=<.05> Mn=<.98> P=<.011> S=<.005> Si=<.210> TEN=<66,000>
YLD=<52,000> ELONG=<39.3>

UAL 7403

IGHT ARGES ☐ PREPAID ☑ COLLECT

- Where the rate is dependent on value, shippers are required to state specifically in writing the agreed lared value of the property.
agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(SIGNATURE OF CONSIGNOR)

C.O.D. AMOUNT: $
C.O.D. FEE: $ ☐ PPD ☐ COLL
TOTAL CHARGES: $

EIVED, subject to the lawfully filed classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, ed, and destined as indicated above, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under this contract) agrees to carry to its usual place of delivery at said ion, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or aid property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
er hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

PER

CARRIER
PER

DATE

ith "X" to designate Hazardous Material as defined in Title 49 of the Code of Federal Regulations.

OFFICE

Skyline Steel
9550 E. State Hwy. 33
Newton, IL 62448
Ph. 618-783-8323 Fax 618-783-3118

Standard Certified Test Report

Customer	Skyline Steel (MO)
Name	Brad Mehrhoff
Address	514 Earth City Expressway
City, State	Earth City, MO
Zip	63045

Date	11-May-11
Customer Order No. - BM494	
Job/Customer Name - Alpha Pipe	
Skyline Work Order - 5661	

All Steel Melted & Manufactured in the U.S.A.

Specification - A139 Grade B, Using A36

IDENTIFICATION		DIMENSIONS		MECHANICAL PROPERTIES			CHEMICAL ANALYSIS (%)				
PIECE NUMBER	STEEL ID NUMBER	SIZE/ OD	WALL THICKNESS	Yield Strength PSI	Tensile Strength PSI	Elong. in 2" (%)	C	MN	P	S	SI
135175	C4738	54"	0.375	50,000	67,200	32.70	0.20	0.850	0.011	0.01	0.04
135176	C4738	54"	0.375	50,000	67,200	32.70	0.20	0.850	0.011	0.01	0.04

The undersigned hereby certifies that the above materials have been manufactured, inspected and tested in accordance with the methods prescribed in the applicable specifications and the results of such inspections and tests are shown above. In determining properties or characteristics for which no methods of inspecting or testing are prescribed by said specifications, the standard mill inspection and testing practices of Skyline Steel have been applied. Unless it appears otherwise in the results of such inspection and tests shown above, the undersigned believes that said materials conform to said specifications.

*Elong. In 8"

Eric W Pitts
CWI 04111401
QC1 EXP. 11/1/2013

Eric Pitts - Quality Control Mgr.

Skyline Steel
9550 E. State Hwy. 33
Newton, IL 62448
Ph. 618-783-8323 Fax 618-783-3118

Standard Certified Test Report

Customer	Skyline Steel (MO)
Name	Brad Mehrhoff
Address	514 Earth City Expressway
City, State	Earth City, MO
Zip	63045

Date	11-May-11
Customer Order No. - BM494	
Job/Customer Name - Alpha Pipe	
Skyline Work Order - 5651	

All Steel Melted & Manufactured in the U.S.A.

Specification - A139 Grade B, Using A36

IDENTIFICATION		DIMENSIONS		MECHANICAL PROPERTIES			CHEMICAL ANALYSIS (%)				
PIECE NUMBER	STEEL ID NUMBER	SIZE/ OD	WALL THICKNESS	Yield Strength PSI	Tensile Strength PSI	Elong. in 2" (%)	C	MN	P	S	SI
135157	C4707	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135158	C4707	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135159	C4707	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
	C4714			51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135160	C4714	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135161	C4711	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135162	C4711	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135163	C4711	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135164	C4714	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135165	C4714	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135166	C4709	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
	C4715			51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04
135167	C4715	44"	0.375	51,500	72,300	30.70	0.19	0.440	0.015	0.004	0.04

The undersigned hereby certifies that the above materials have been manufactured, inspected and tested in accordance with the methods prescribed in the applicable specifications and the results of such inspections and tests are shown above. In determining properties or characteristics for which no methods of inspecting or testing are prescribed by said specifications, the standard mill inspection and testing practices of Skyline Steel have been applied. Unless it appears otherwise in the results of such inspection and tests shown above, the undersigned believes that said materials conform to said specifications.

*Elong. In 8"

Eric W Pitts
CWI 04111401
QC1 EXP. 11/1/2013
Eric Pitts - Quality Control Mgr.

沧州乾成钢管股份有限公司

地址 Add: Industrial Zone Yanshan Hebei, China

CangZhou Qiancheng Steel-Pipe Co., Ltd 电话 TEL：86-317-6320096 May 16，2011

买方 Buyer:

质 检 证

Mill Test Report

订单号/合同号 PO/CONTRACT NO.:SFT11-263

交货状态:Deliver status: Hot expanding

标准:Standard: ASTM A53 (2002)/ASTM A106 (2007), ASME SA53 (2002)/ASME SA 106 (2004), Gr. B, NACE MR01-75 section 3.1 - 3.2.2.1 (2002), API 5L(2007) PSL1 B

货物描述 Description of goods: Newly produced prime quality seamless steel pipes

序号 NO	批号 LOTS NO	炉号 Heat NO	规格 specification			制造方法 Making method	熔炼号 Smelting NO	支数 (PCS)	重量 （MT）	拉伸试验 Tensile test			
			规格 SIZE (inch)	壁厚 W.T (inch)	长度 Length (FT)					外径 O．D. (mm)	标距长度 gauge length (mm)	屈服强度 Y.S. PSI	延伸率 E.L%
1	2144	803534	24”	0.500”	21FT	Solid	803534	17	20.342	609.6	50	36975	35
2	2001	800246	24”	0.375”	Min33FT	Solid	800246	41	60.477	609.6	50	37700	35
TOTAL								58	80.819				

以下空白

合格

序号 NO	抗拉强度 T.S PSI	冲击实验 Impact Test		硬度试验 Hardness Test	化学成份 chemical composition										
		横向冲击 Transverse	纵向冲击 longitudinal	硬度值 hardness value	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	AL	V
1	70325	Good	Good	Max22	0.200	0.240	0.520	0.015	0.012	0.030	0.040	0.010	0.060	0.007	0.001
2	71775	Good	Good	Max22	0.220	0.260	0.510	0.009	0.008	0.050	0.090	0.010	0.120	0.003	0.001

以下空白

压扁 Flattening	冷弯 Cold Bending	扩口 Expansion	超声检测 U.T.	涡流检验 E.T.	表面&尺寸 Visual& Dimensions	水压 Hydro Test Pressure			
Good	/	Good	Good	Good	Good		1	935	PSI minimum 10 seconds
							2	735	PSI minimum 10 seconds

备注：Remark: We here certify that the elongation tests were taken on around 50mm test strip longitudinally. We herewith confirm that the products covered by this mill test report are free from mercury and lead. We confirm that pipes covered by this report are manufactured，tested and inspected in accordance with the applications and specifications

负责人/Manager: 张世芳

检验员/Inspector: 杨红

Qiancheng
乾成钢管

CangZhou Qiancheng Steel-Pipe Co., Ltd

Add Industrial Areas Yanshan County HeBei Province, China

License Number:5L-0666

质 量 证 明 书
MILL CERTIFICATES

买方 Buyer: Layne Christensen Company

订单号/ PO No: 88567

货物描述 Description of goods: Seamless Steel Pipe

商检编号:1306CQ103038

标准:Standard: API 5LGR.B

序号 NO	批号 Batch NO.	炉号 Heat NO	规格 specification 外径 Diameter (inch)	壁厚 Thickness (inch)	长度 Length (ft)	制造方法 Making method	钢级 Steel grade	支数 Quantity (pcs)	米数 Quantity (ft)	重量 Weight (mt)	拉伸试验 Tensile test 抗拉强度 T.S. Mpa	屈服强度 Y.S. MPa	延伸率 E.L%
1	3521	890802	16	0.5	39.2	Hot rolling	B	36	1411.2	52	500	310	33
2	3526	896076	24	0.5	34.55	Hot rolling	B	84	2902.2	165	485	325	34
TOTAL								120	4313.4	217			

序号 NO.	冲击实验 横向冲击 AK Traksyerse	纵向冲击 AKlongitudinal	化学成份 chemical composition C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	Ti	B	Nb
1	/	/	0.19	0.23	0.65	0.018	0.015	0.018	0.010	0.004	0.002	0.006	0.007	/	/
2	/	/	0.21	0.22	0.66	0.017	0.014	0.019	0.010	0.004	0.001	0.005	0.008	/	/

冷弯 Cold bending	压扁 Flattening	超声检测 U.T.	涡流检验 Eddy Current	表面 尺寸 Dimensional	水压 Hydro test (MPa)			
						1	Passed	15.3MPa minimum 10seconds
						1	Passed	11.3MPa minimum 10seconds
/	QUALIFIED	QUALIFIED	/	QUALIFIED	GOOD			
/	QUALIFIED	QUALIFIED	/	QUALIFIED	GOOD			

主管/ Governor: 负责人/Official: 检验员/Testers: 陈佳 发货员/Consignor Reporter: 付淑华 日期/Date:2011-3-11

FUTURE PIPE INDUSTRIES
Complete Pipe System Solutions

RED BOX 1250

FIBERGLASS TUBING, CASING, AND LINERS
AROMATIC AMINE CURED EPOXY RESIN

DIMENSIONAL SPECIFICATIONS

June, 2010

Nominal Size (inches)	Nominal I.D. (inches)	Minimum Drift Dia (inches)	Nominal O.D. (inches)	Nominal Wall (inches)	Pin Upset O.D. (inches)	Max Box OD* (inches)	Nominal Weight (lbs/ft)	Nominal Weight (lbs/jt)	Connection Type API 5B, Table 14*, 7**, 6*** Fourteenth Edition August 96
2-3/8	2.00	1.91	2.21	0.10	2.69	3.43	0.7	21	2-3/8" 8Rd EUE Long*IJ
2-7/8	2.47	2.37	2.73	0.13	3.19	3.93	1.0	31	2-7/8" 8Rd EUE Long*IJ
3-1/2	3.00	2.90	3.30	0.15	3.85	4.82	1.5	45	3-1/2" 8Rd EUE Long*IJ
4	3.33	3.24	3.68	0.17	4.35	4.94	2.0	61	4" 8Rd EUE Long* TC
4-1/2	3.98	3.89	4.40	0.21	4.85	5.75	2.6	77	4-1/2" 8Rd EUE Long*IJ
5-1/2	4.42	4.33	4.87	0.23	5.60	7.20	3.4	102	5-1/2" 8Rd Csg Long**IJ
6-5/8	5.43	5.33	5.97	0.27	6.73	8.51	5.1	152	6-5/8" 8Rd Csg Long**IJ
7	6.21	6.11	6.83	0.31	7.10	8.61	6.0	181	7" 8Rd Csg Long**IJ
7-5/8	6.21	6.11	6.83	0.31	7.73	10.03	6.8	205	7-5/8" 8Rd Csg Long**IJ
9-5/8	7.84	7.75	8.63	0.40	9.73	12.66	11.1	332	9-5/8" 8Rd Csg*** IJ
10-3/4	8.85	8.76	9.76	0.45	10.85	13.98	14.1	422	10-3/4" 8Rd Csg***IJ
11-3/4	10.72	10.62	11.70	0.49	11.93	14.00	16.9	507	11-3/4" 8/6Rd Csg***TC
13-3/8	11.97	11.87	13.06	0.55	13.65	15.15	21.8	653	13-3/8" 8/6Rd Csg***TC
16	14.48	14.39	15.80	0.66	16.33	18.52	31.7	950	16" 6Rd Csg TC
18	16.60	16.50	18.11	0.76	18.84	22.00	45.1	1,352	18" 6Rd Csg TC
20	17.98	17.89	19.62	0.82	20.20	23.50	51.1	1,532	20" 6Rd Csg TC
24	23.78	23.69	25.96	1.09	26.69	33.20	98.0	2,939	24" 4Rd Csg L TC
30	29.53	29.43	32.23	1.35	33.00	43.00	162.3	4,869	30" 4Rd Csg L TC

*Depending on the application, smaller maximum box diameters are available.

Thread lengths may exceed API L4
30 ft Standard Joint Length

PERFORMANCE AND RATINGS (-60 deg F to +210 deg F **)

Nominal Size	Internal Pressure Rating (psi)	Mill Test Pressure (psi)	Collapse Rating (psi)	Axial Tension Rating (lbs)	Stretch vs Tension-Over-Pipe-Wt Stretch (ft) = Coeff. x P x L
2-3/8	1,250	1,570	640	10,500	0.467
2-7/8	1,250	1,570	670	16,000	0.295
3-1/2	1,250	1,570	600	22,500	0.221
4	1,250	1,570	640	29,000	0.169
4-1/2	1,250	1,570	640	41,000	0.118
5-1/2	1,250	1,570	600	49,500	0.101
6-5/8	1,250	1,570	590	72,500	0.069
7	1,250	1,570	590	76,500	0.052
7-5/8	1,250	1,570	590	86,500	0.052
9-5/8	1,250	1,570	580	140,500	0.033
10-3/4	1,250	1,570	600	161,500	0.025
11-3/4	1,250	1,570	450	147,000	0.029
13-3/8	1,250	1,570	450	189,500	0.023
16	1,250	1,570	450	217,500	0.016
18	1,250	1,570	450	336,500	0.012
20	1,250	1,570	450	362,000	0.010
24	1,250	1,570	450	683,000	0.006
30	1,250	1,570	450	1,019,500	0.004

Where: P = Tensile Load (1,000 lbs)
L = String Length (1,000 ft)

MECHANICAL & PHYSICAL PROPERTIES

TUBING/CASING BODY PROPERTIES	UNIT	VALUE 2-3/8 - 10-3/4	VALUE 11-3/4 - 20	TEST METHOD
Tensile Strength, Hoop	psi	31,300	31,300	ASTM D1599
Tensile Strength, Axial	psi	30,000	20,000	ASTM D2105
Modulus of Elasticity, Axial	10E+06 psi	3.0	2.0	ASTM D2105
Specific Gravity	---	1.9	1.9	ASTM D792
Density	lbs/in^3	0.07	0.07	ASTM D792
Thermal Conductivity	$Btu/hr/ft^2/in/degF$	2.4	2.4	ASTM C177
Thermal Expansion Coefficient (Linear)	10E-05in/in/degF	1.1	1.2	ASTM D696
Flow Factor	---	150	150	Hazen Williams

ISO 9001 CERTIFIED FIRM

11811 Proctor Road, Houston, Texas 77038 • Tel: 281-847-2987 • Fax: 281-847-4216
Email: sales-houston@futurepipe.com • website: www.futurepipe.com/usa

Appendix I

Baracor 100 Material Safety Data Sheet

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **BARACOR™ 100**

Revision Date: 02-Jan-2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: BARACOR™ 100
Synonyms: None
Chemical Family: Blend
Application: Corrosion Inhibitor

Manufacturer/Supplier
Baroid Drilling Fluids
a Product Service Line of Halliburton Energy Services, Inc.
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By
Chemical Compliance
Telephone: 1-580-251-4335

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Nitrilotriacetic acid, trisodium salt monohydrate	5064-31-3	1 - 5%	Not applicable	Not applicable
Methanol	67-56-1	10 - 30%	200 ppm	200 ppm (S)

3. HAZARDS IDENTIFICATION

Hazard Overview
May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be fatal if swallowed. May cause blindness. May be absorbed through the skin. Repeated overexposure may cause liver and kidney effects. Flammable.

4. FIRST AID MEASURES

Inhalation
If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin
In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes
In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion	If swallowed, induce vomiting immediately by giving two glasses of water and sticking fingers down throat; never give anything to an unconscious person. Get medical attention.
Notes to Physician	Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	92
Flash Point/Range (C):	33
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	6
Flammability Limits in Air - Upper (%):	36

Fire Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.
Special Exposure Hazards	May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases. Runoff to sewer may cause fire or explosion hazard.
Special Protective Equipment for Fire-Fighters	Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.
NFPA Ratings:	Health 2, Flammability 3, Reactivity 0
HMIS Ratings:	Flammability 3, Reactivity 0, Health 2

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures	Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.
Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning / Absorption	Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.
Storage Information	Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.
Respiratory Protection	Positive pressure self-contained breathing apparatus if methanol is released.
Hand Protection	Impervious rubber gloves.
Skin Protection	Rubber apron.

Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Brown
Odor:	Alcohol
pH:	9-11
Specific Gravity @ 20 C (Water=1):	1.01
Density @ 20 C (lbs./gallon):	8.4
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	212
Boiling Point/Range (C):	100
Freezing Point/Range (F):	-9
Freezing Point/Range (C):	-23
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	> 1
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	1.6
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	35
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	-0.84 (OECD117)
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.
Eye Contact	Causes severe eye irritation May cause eye burns.

Ingestion	May be fatal or cause blindness if swallowed. May produce nervous system effects such as feeling of weakness, unsteady walk, and dilation of blood vessels.
Aggravated Medical Conditions	Skin disorders. Eye ailments.
Chronic Effects/Carcinogenicity	Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage.
Other Information	None known.

Toxicity Tests

Oral Toxicity:	LD50: 3500 mg/kg (Rat)
Dermal Toxicity:	LD50: > 3000 mg/kg (Rabbit)
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	BOD(28 Day): 10% of COD
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	TLM48: 402.5 mg/l (Daphnia magna)
Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Flammable Liquid, N.O.S., 3, UN1993, III, (33.3 C)
(Contains Methanol)
NAERG 128

Canadian TDG
Flammable Liquid, N.O.S.(Contains Methanol), 3, UN1993, III, (33.3 C)

ADR
UN1993,Flammable Liquid, N.O.S.(Contains Methanol), 3, III

Air Transportation

ICAO/IATA
UN1993,Flammable Liquid, N.O.S., 3, III
(Contains Methanol Solution)

Sea Transportation

IMDG
UN1993,Flammable Liquid, N.O.S.(Contains Methanol), 3, III, (33.3 C)
EmS F-E, S-E

Other Shipping Information

Labels: Flammable Liquid

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard Chronic Health Hazard Fire Hazard
EPA SARA (313) Chemicals	This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372: Methanol//67-56-1
EPA CERCLA/Superfund Reportable Spill Quantity For This Product	EPA Reportable Spill Quantity is 2380 Gallons based on Methanol (CAS: 67-56-1).
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of: Ignitability D001
California Proposition 65	The California Proposition 65 regulations apply to this product.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory.

WHMIS Hazard Class

B2 Flammable Liquids
D1A Very Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

Appendix J

As-Built Survey, As-Built Drawings, Certification of Class V Well Completion, and Certification of Surface Equipment Completion

SURVEY PLAT

PARCEL LYING IN
SECTION 4, TOWNSHIP 58 SOUTH, RANGE 40 EAST
MIAMI-DADE COUNTY, FLORIDA

THE COORDINATES SHOWN HEREON WERE BASED ON GPS REAL-TIME TIES TO "H 111" CONTROL STATION.

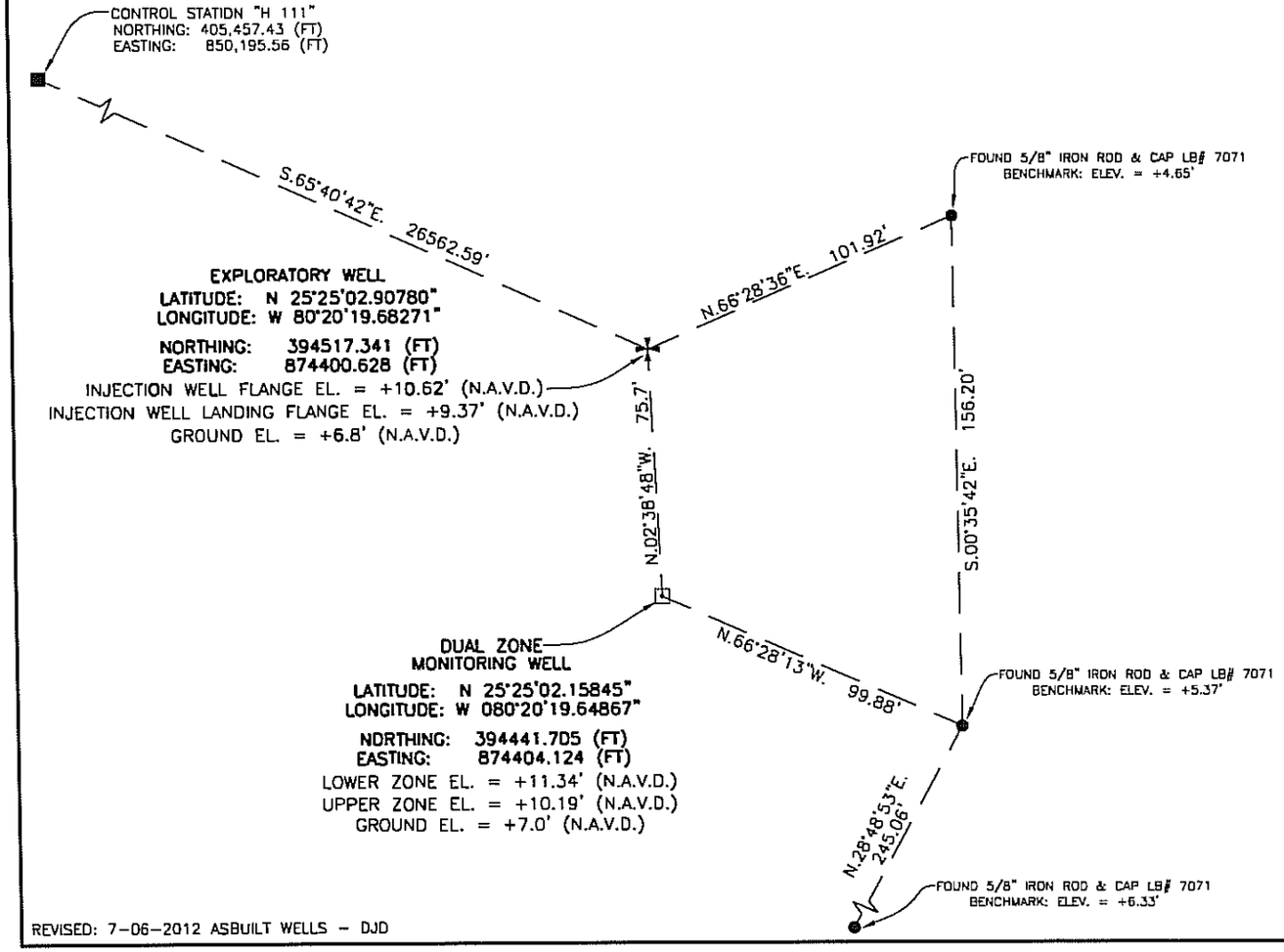
DESIGNATION - H 111
PID - AC4311
STATE/COUNTY - FL/MIAMI-DADE
USGS QUAD - HOMESTEAD (1984)
NAD 83/99 GEOGRAPHIC COORDINATE - N 25°26'52.39299" W 080°24'43.15420"
NAD 83/90 STATE PLANE COORDINATE - FLORIDA EAST ZONE
NORTHING: 405,457.43 (FT)
EASTING: 850,195.56 (FT)

N

LEGEND:

M.W.=MONITOR WELL
ELEV.= ELEVATION
FT.= FEET
MT.= METERS

= EXPLORATORY WELL
= DUAL ZONE MONITORING WELL
= FOUND 5/8" IRON ROD & CAP, LB 7071



REVISED: 7-06-2012 ASBUILT WELLS - DJD

NOTES:

THIS PLAT PREPARED AS A SPECIFIC PURPOSE SURVEY FOR THE PURPOSE OF LOCATING THE RECENTLY STAKED WELLS.

BEARINGS AND COORDINATES SHOWN HEREON ARE STATE PLANE FOR THE FLORIDA EAST ZONE NAD 83/1990 ADJUSTMENT AND BASED ON GPS REAL-TIME TIES TO CONTROL STATION "H 111".

ELEVATIONS SHOWN HEREON ARE BASED ON "LM 13 316 FLPCO" HAVING ELEVATION OF 5.58' IN THE NORTH AMERICAN VERTICAL DATUM 1988 (N.A.V.D. 88).

UNDERGROUND IMPROVEMENTS, UTILITIES AND/OR FOUNDATIONS WERE NOT LOCATED UNLESS OTHERWISE SHOWN OR NOTED.

DATE OF LAST FIELD WORK: 7-06-2012.

PREPARED FOR:

LAYNE CHRISTENSEN COMPANY

BY: _____
DENIS J. O'CONNELL, JR.
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. LS# 5430

DATE SIGNED: 7/11/12

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

THIS SPECIFIC PURPOSE SURVEY IS ONLY FOR THE LANDS AS DESCRIBED. IT IS NOT A CERTIFICATE OF TITLE, ZONING, EASEMENTS OR FREEDOM OF ENCUMBRANCES.

THIS SURVEY WAS PREPARED WITHOUT BENEFIT OF AN ABSTRACT OF TITLE AND ALL MATTERS OF TITLE SHOULD BE REFERRED TO AN ATTORNEY AT LAW.

FPL PLANT "TURKEY POINT"

TITLE: SPECIFIC PURPOSE SURVEY

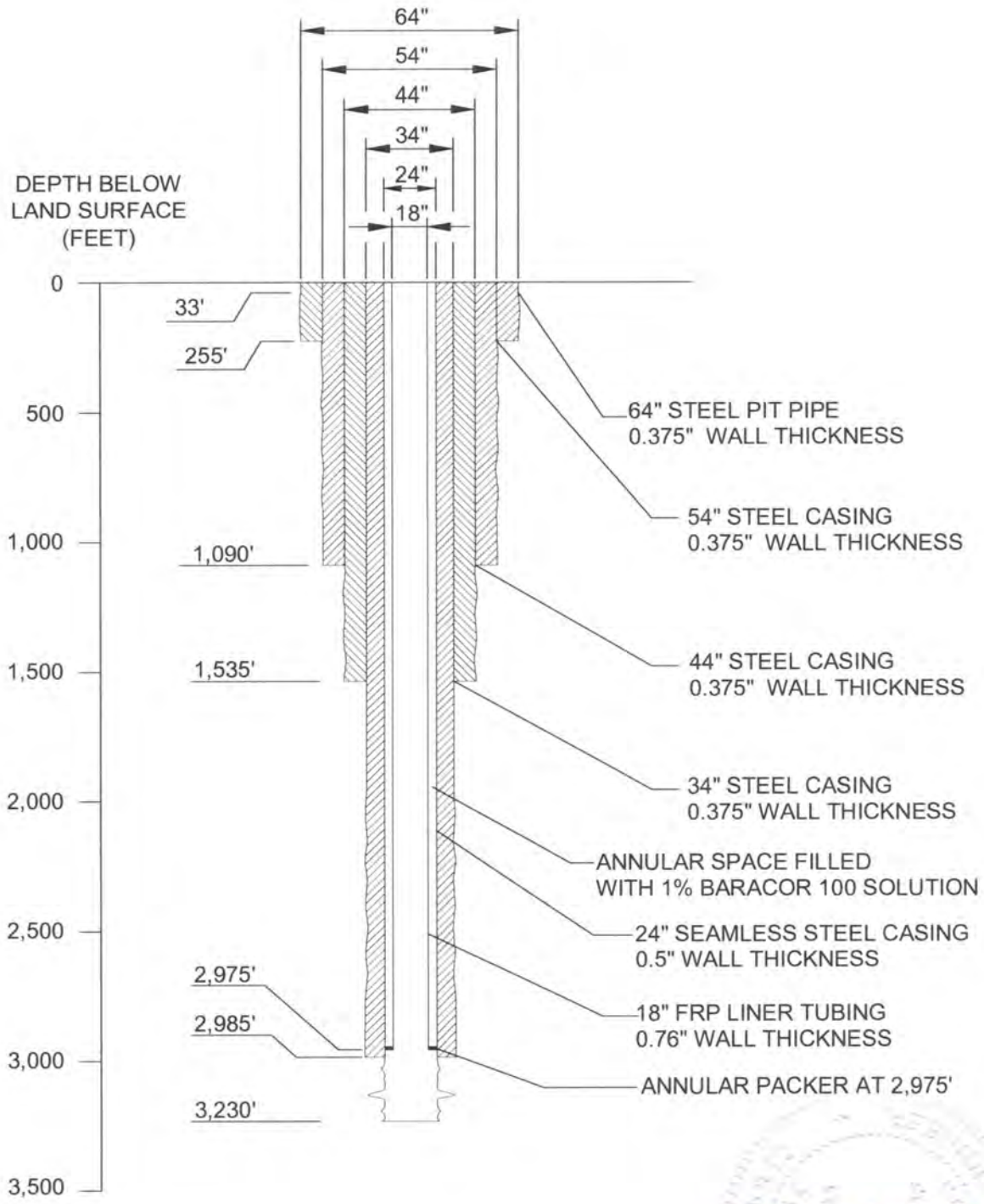
METRON
SURVEYING & MAPPING, LLC
LAND SURVEYORS·PLANNERS
LB# 7071

10970 SOUTH CLEVELAND AVENUE
SUITE #605
FORT MYERS, FLORIDA 33907
PHONE: (239) 275-8575
FAX: (239) 275-8457

www.metronfl.com

FILE NAME:	FIELD BOOK/PAGE:	PROJECT NO.:	SHEET:
11985SR.DWG	506/32	11985	1 OF 1

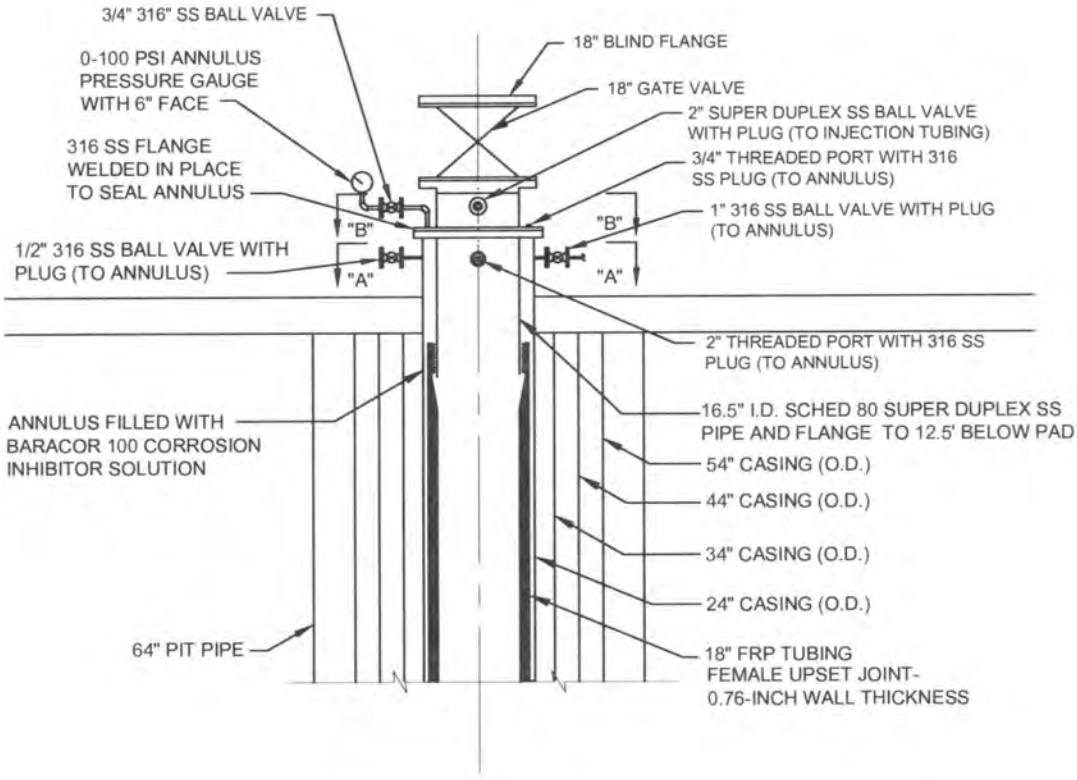
SURVEY DATE:	DRAWN BY:	SCALE:	CHECKED BY:	(S-T-R)
03-25-2011	DJO	1"= 50'	TLM	4-58-40

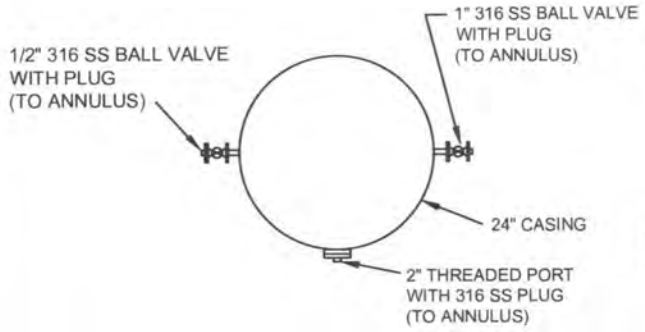


NOTE: THIS AS-BUILT DRAWING DEPICTS WELL CONSTRUCTION INFORMATION PROVIDED BY THE CONTRACTOR. TO THE BEST OF MY KNOWLEDGE THE INFORMATION DEPICTED IS ACCURATE.

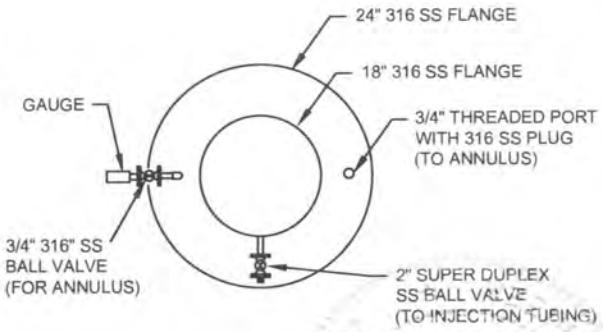
David Hurt
8-16-12 PE #72595

MHC McNabb Hydrogeologic Consulting, Inc. 601 HERITAGE DRIVE, SUITE 110 Jupiter, Florida 33458 Phone 561.891.0763 - Fax 561.623.5469	FLORIDA POWER & LIGHT COMPANY TURKEY POINT UNITS 6 & 7 EXPLORATORY WELL EW-1 PROJECT	EXPLORATORY WELL EW-1 AS-BUILT DIAGRAM	HOLTZ CONSULTING ENGINEERS, INC. HCE 50 SOUTH US HIGHWAY ONE, SUITE 200 JUPITER, FLORIDA 33477 PH: (561) 575-2005





SECTION "A"



SECTION "B"

NOTE: THIS AS-BUILT DRAWING DEPICTS WELL CONSTRUCTION INFORMATION PROVIDED BY THE CONTRACTOR. TO THE BEST OF MY KNOWLEDGE THE INFORMATION DEPICTED IS ACCURATE.

David Hultz
8-16-12 PE #42595

MHC McNabb Hydrogeologic Consulting, Inc.
601 HERITAGE DRIVE, SUITE 110
Jupiter, Florida 33458
Phone 561.891.0763 - Fax 561.623.5469

FLORIDA POWER & LIGHT COMPANY
TURKEY POINT UNITS 6 & 7
EXPLORATORY WELL EW-1
PROJECT

EXPLORATORY WELL EW-1
AS-BUILT WELLHEAD DIAGRAM

HOLTZ CONSULTING ENGINEERS, INC.
HCE
2151 SOUTH US HIGHWAY ONE, SUITE 206
JUPITER, FLORIDA 33477
PH. (561) 575-2005

Florida Department of Environmental Protection

Twin Towers Office Bldg., 2600 Blair Stone Road,
Tallahassee, Florida 32399-2400

DEP Form No:	62-528.900(4)
Form Title:	Certification of Class V Well construction Completion
Effective Date:	
DEP Application No.:	(Filled in by DEP)

CERTIFICATION OF CLASS V WELL CONSTRUCTION COMPLETION

INSTRUCTIONS: Submit this certification to the Department along with a signed copy of the Well Completion Report from the appropriate Water Managemant District.

DEP Construction Permit No. 0293962-001-UC, issued on 05/05/10 (Date). County Miami-Dade

Owner's Name Florida Power & Light Company

Owner's Address 700 Universe Blvd.

City Juno Beach State Florida Zip 33408-0000

Well Contractor's Name Ed McCullers

Title General Manager - Layne Christensen Company State License No. 11312

Well Contractor's Address 5061 Luckett Road

City Ft. Myers State Florida Zip 33905

Well Location 9760 SW 344th Street, Florida City, Florida 33035

Deviations from the application and plans approved by the Department:

EW-1 was drilling to a final depth of 3,230 feet rather than approximatley 3,500 feet. Borehole televiewer was not performed and pilot hole below intermediate casing was not backplugged due to large borehole diameter. Additional borehole reaming also took place.

Actual Dimensions:

Diameter	24	inches
Well depth	3,230	feet
Casing depth	2,985	feet

This is to certify that, with the exception of the deviations noted above, the construction of this well has been completed in accordance with the plans authorized by Construction Permit No. 0293962-001-UC, dated 7/31/12.

Date: 8-21-2012

(Contractor's Signature)

HOLTZ CONSULTING ENGINEERS, INC.
50 South U.S. Highway One, Suite 206, Jupiter, FL 33477

August 16, 2012

Mr. Joe May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave., Suite 200
West Palm Beach, FL 33401

Subject: **FPL Turkey Point Exploratory Well EW-1**
Certification of Completion of Exploratory Well EW-1
Wellhead and Surface Equipment
FDEP Permit No. 0293962-001-UC

Dear Mr. May,

The purpose of this letter is to certify that the construction of the surface equipment for Florida Power and Light (FPL) Turkey Point Exploratory Well EW-1 has been completed and was constructed in accordance with applicable rules and regulations and the requirements of FDEP Permit No. 0293962-001-UC.

If you have any questions regarding the surface equipment for FPL Turkey Point Exploratory Well EW-1, please contact me.

Sincerely,

HOLTZ CONSULTING ENGINEERS, INC.

David F. Holtz
8-16-12

David F. Holtz, P.E.
Vice President
Florida P.E. No. 42595

Cc: David McNabb, P.G., McNabb Hydrogeological Consulting, Inc.

Appendix K
EW-1 Lithologic Log

MHC

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Lithologic Description

	Depth (ft. bpl)		
Date	From	To	Observer's Description
4/14/2011	0	5	Limestone and Sand (fill material): yellowish gray (5Y 8/1), calcareous, silty, trace shell fragments. Note: Samples collected during pit casing installation via auger drilling.
4/14/2011	5	10	Limestone, Sand, and Muck: Limestone and Sand (fill material), 50%, yellowish gray (5Y 8/1), calcareous, silty, trace shell fragments; Muck, brownish black (5YR 2/1) to brownish gray (5YR 4/1). Note: Samples collected during pit casing installation via auger drilling. The top of the muck was encountered at approximately 7.5 feet below land surface.
4/14/2011	10	15	Limestone: 100%, yellowish gray (5Y 8/1), calcareous, trace very fine angular quartz sand. Note: Samples collected during pit casing installation via auger drilling. Limestone encountered at 12 feet below land surface.
4/14/2011	15	20	Limestone: 100%, yellowish gray (5Y 8/1), calcareous, trace very fine angular quartz sand. Note: Samples collected during pit casing installation via auger drilling.
4/14/2011	20	25	Limestone: 100%, yellowish gray (5Y 8/1), calcareous, trace very fine angular quartz, sand and shell. Note: Samples collected during pit casing installation via auger drilling.
4/14/2011	25	30	Limestone: 100%, yellowish gray (5Y 8/1), calcareous, trace very fine angular quartz, sand and shell. Note: Samples collected during pit casing installation via auger drilling.
5/12/2011	30	40	Limestone: 100%, yellowish gray (5Y 8/1), calcareous, fine grained, sand and shell.
5/12/2011	40	50	Limestone: 100%, poorly indurated yellowish gray (5Y 8/1), white (N9), and very light gray (N8) to light gray (N7), fine grained, sub-rounded quartz sand and abundant shell fragments. Soft, wet.
5/12/2011	50	60	Sandy Limestone: 100%, poorly indurated white (N9) coarse to fine shell fragments, fine quartz sand, some cemented fragments, some fine dark gray grains (N3), trace brownish gray coarse grains (5YR 4/1), sl. clayey, soft, wet.
5/12/2011	60	70	Sandy Limestone: 100%, moderately indurated, light gray (N8) to yellowish gray (5Y 8/1), with medium to coarse white (N9) shell fragments, fine quartz sand, some fine dark gray (N3) to black (N2) grains, few fossil molds, trace coral fragments.
5/12/2011	70	80	Sandy Limestone: 100%, light gray (N8) to yellowish gray (5Y 8/1), with medium to coarse white (N9) shell fragments, fine subrounded quartz sand, some fine dark gray (N3) to black (N2) grains, moderately hard.
5/12/2011	80	90	Sandy Limestone: Same as above.
5/13/2011	90	100	Sandy Limestone: 100%, white (N9) to yellowish gray (5Y 8/1), with medium to coarse white (N9) shell fragments, fine subrounded quartz sand, some fine dark gray (N3) to black (N2) grains, moderately hard to hard.
5/13/2011	100	110	Limestone: 100%, very light gray(N8) to light gray (N8), coarse to fine white (N9) shell, shell fragments, some rounded; some fine quartz sand, some to few fine dark gray (N3) to black (N2) grains, moderately indurated.
5/13/2011	110	120	Limestone: 100%, light gray (N8), coarse to fine white (N9) shell, shell fragments, some rounded; fine quartz sand, some to few fine dark gray (N3) to black (N2) grains, moderately indurated.
5/13/2011	120	130	Limestone, to 122 ft bpl, clay noted in cuttings at 122 ft bpl consisting of light olive gray (5Y 6/1), soft, sandy; 122-130 mix of white (N9), yellowish gray (5Y 8/1) and light olive gray (5Y 6/1) limestone with coarse to fine shells and shell fragments, some quartz sand, trace light olive gray (5Y 6/1) clay, (small cuttings).
5/13/2011	130	140	Limestone: 100%, light gray (N8) to yellowish gray (5Y 8/1), coarse to fine white (N9) shell, shell fragments, some rounded; fine quartz sand, some fine dark gray (N3) to black (N2) grains, moderately indurated.

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Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Lithologic Description

	Depth (ft. bpl)		
Date	From	To	Observer's Description
5/13/2011	140	150	Limestone to 145 ft; Clayey Silt: at 145 ft bpl, dark greenish gray (5GY 4/1) sandy, slightly clayey Silt, some calcareous grains and shell fragments, moderately hard, stiff.
5/14/2011	150	160	Clayey Silt: as above, (note: cuttings "mashed up" with drill mud obscuring natural texture).
5/14/2011	160	170	Clayey Silt: dark greenish gray (5GY 8/1), silty, sandy, slightly clayey, more calcareous grains and coarse to fine shell fragments than above, fine dark gray (N3) to black (N2) grains (phosphate). (note: cuttings "mashed up" with drill mud obscuring natural texture)
5/14/2011	170	180	Clayey Silt: as above, (note: cuttings "mashed up" with drill mud obscuring natural texture).
5/14/2011	180	190	Silt: dark greenish gray (5GY 8/1), sandy, clayey with fine calcareous grains and coarse to fine shell fragments, fine dark gray (N3) to black (N2) grains (phosphate). (note: cuttings "mashed up" with drill mud obscuring natural texture).
5/14/2011	190	200	Silt: same as above.
5/14/2011	200	210	Silt: same as above.
5/14/2011	210	220	Silt: same as above.
5/14/2011	220	230	Silt: same as above.
5/14/2011	230	240	Sand: light olive gray (5Y 5/2) fine grained, phosphatic, trace shell fragments.
5/14/2011	240	250	Sand: Same as above.
5/25/2011	250	260	Sand: light olive gray (5Y 5/2) fine grained, slightly clayey, phosphatic, trace shell fragments.
5/28/2011	260	270	Clayey sand: greenish gray (5GY 6/1) to dark greenish gray (5GY 4/1), fine grained, phosphatic, trace shell fragments.
5/28/2011	270	280	Clayey sand: greenish gray (5GY 6/1) to dark greenish gray (5GY 4/1), fine grained, slightly more clayey than above, phosphatic, trace shell fragments.
5/28/2011	280	290	Clayey sand: Same as above.
5/28/2011	290	300	Sand: medium gray (N5) to greenish gray (5GY 6/1), slightly clayey, fine grained, phosphatic, some shell fragments, rounded fine calcareous grains.
5/29/2011	300	310	Sand: same as above.
5/29/2011	310	320	Sand: same as above.
5/29/2011	320	330	Sand: medium light gray (N6), fine grained, shell fragments, some phosphate.
5/29/2011	330	340	Sand: same as above.
5/29/2011	340	350	Sand: medium gray (N5) to medium light gray (N6), slightly clayey, fine grained, shell fragments, some phosphate. Driller notes stiffer material at 345 feet.
5/29/2011	350	360	Sand: light olive gray (5Y 5/2), very fine grained, subrounded, well sorted, slightly phosphatic.
5/29/2011	360	370	Clayey Sand: grayish olive (10Y 4/2), very fine grained, slightly phosphatic, trace shell fragments <1mm.
5/29/2011	370	380	Clayey Sand: grayish olive green (5GY 3/2), very fine grained, slightly phosphatic, slightly plastic.
5/29/2011	380	390	Silty Clay: grayish olive green (5GY 3/2), soft, moderately plastic, trace phosphate grains.
5/29/2011	390	400	Silty Clay: same as above.
5/29/2011	400	410	Silty Clay: same as above.
5/29/2011	410	420	Clayey Sand: grayish olive (10Y 4/2), very fine grained, slightly phosphatic, trace phosphate grains.
5/29/2011	420	430	Clayey sand: Same as above.
5/29/2011	430	440	Sand: medium light gray (N6), fine grained, trace shell fragments, phosphatic.

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Turkey Point Units 6 & 7
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	Depth (ft. bpl)		
Date	From	To	Observer's Description
5/29/2011	440	450	Sand: same as above.
5/29/2011	450	460	Sand: same as above.
5/29/2011	460	470	Clayey Sand: dark greenish gray (5GY 4/1), very fine grained, trace shell fragments, phosphatic.
5/29/2011	470	480	Sand: medium light gray (N6), fine grained, trace shell fragments, phosphatic.
5/29/2011	480	490	Limestone: very light gray (N8), sandy, shell fragments and fine grained calcareous nodules, phosphate grains
5/29/2011	490	500	Clayey sand: medium gray (N5), fine grained, some lithified sand fragments, some phosphate.
5/30/2011	500	510	Calcareous clay: medium light gray (N5), soft, sandy, trace shells and shell fragments, trace phosphate
5/30/2011	510	520	Limestone: yellowish gray (5Y 7/2), sandy, shell fragments, some phosphate, moderately indurated, low porosity.
5/30/2011	520	530	Limestone: same as above.
5/30/2011	530	540	Limestone: same as above.
5/30/2011	540	550	Limestone: same as above.
5/30/2011	550	560	Limestone: same as above.
5/30/2011	560	570	Limestone: same as above.
5/30/2011	570	580	Limestone, Sand, and Clay: Limestone, 40%, yellowish gray (5Y 7/2), sandy, shell fragments, slightly phosphatic, moderately indurated, low porosity; Sand, 40%, light olive gray (5Y 5/2), very fine grained, loosely consolidated, calcareous; Clay, 20%, grayish olive (10YR 4/2), very soft, moderately plastic, phosphatic.
5/30/2011	580	590	Limestone and Clay: Limestone, 60%, yellowish gray (5Y 7/2), micritic, calcareous, very low porosity and permeability; Clay, 40%, yellowish gray (5Y 7/2), calcareous; trace shell fragments.
5/30/2011	590	600	Limestone and Clay: same as above.
5/30/2011	600	610	Limestone: yellowish gray (5Y 7/2), micritic, calcareous, few shell fragments, very low porosity and permeability; trace clay.
5/30/2011	610	620	Limestone: same as above.
5/30/2011	620	630	Clay and Limestone: Clay, 70%, grayish olive (10YR 4/2) and yellowish gray (5Y 7/2), very soft, moderate plasticity; Limestone, 30%, yellowish gray (5Y 7/2), micritic, calcareous, few shell fragments, slightly phosphatic, moderately indurated, low porosity.
5/30/2011	630	640	Limestone and Shell Fragments: Limestone, 60%, yellowish gray (5Y 7/2), very fine grained to silt, calcareous, very low porosity; Shell Fragments, 40%, 3-22mm.
5/30/2011	640	650	Clay and Limestone: Clay, 80%, yellowish gray (5Y 7/2), very soft, moderate plasticity; Limestone, 20%, yellowish gray (5Y 7/2), micritic, shell fragments, slightly phosphatic, moderately indurated, very low porosity.
5/30/2011	650	660	Clay and Limestone: Clay, 60%, yellowish gray (5Y 7/2), very soft, moderate plasticity; Limestone, 20%, yellowish gray (5Y 7/2), micritic, shell fragments, slightly phosphatic, moderately indurated.
5/30/2011	660	670	Clay and Limestone: Same as above.
5/30/2011	670	680	Limestone: yellowish gray (5Y 7/2), fine grained, some shell fragments, phosphatic, moderately indurated.
5/30/2011	680	690	Limestone and Clay: Limestone 80%, same as above; Clay, 20%, yellowish gray (5Y 7/2), calcareous; trace shell fragments.
5/30/2011	690	700	Limestone: yellowish gray (5Y 7/2), fine grained, some shell fragment, phosphatic, moderately indurated.
5/30/2011	700	710	Limestone: same as above.

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Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Lithologic Description

	Depth (ft. bpl)		
Date	From	To	**Observer's Description**
5/30/2011	710	720	Limestone: same as above.
5/31/2011	720	730	Clay and Limestone: Clay, 70%, yellowish gray (5Y 7/2), soft, calcareous, moderate plasticity; Limestone: 30%, yellowish gray (5Y 7/2), fine grained; trace phosphate grains.
5/31/2011	730	740	Clay and Limestone: same as above.
5/31/2011	740	750	Clay and Limestone: same as above.
5/31/2011	750	760	Clay and Limestone: same as above.
5/31/2011	760	770	Clay and Limestone: same as above, with trace fine moderate reddish brown (10R 4/6) grains.
5/31/2011	770	780	Clay: pale olive (10Y 6/2), moderately soft, plastic, slightly phosphatic; Trace limestone.
5/31/2011	780	790	Clay: same as above.
5/31/2011	790	800	Clay: same as above.
5/31/2011	800	810	Clay and Limestone: Clay, 50%, pale olive (10Y 6/2), soft, calcareous, medium plasticity; Limestone: 40%, yellowish gray (5Y 8/1), micritic, trace phosphate grains.
5/31/2011	810	820	Clay and Limestone: same as above.
5/31/2011	820	830	Limestone: yellowish gray (5Y 8/1), micritic, phosphatic, moderately indurated; Trace shell fragment.
5/31/2011	830	840	Limestone and Shell Fragments: Limestone, 80%, yellowish gray (5Y 8/1) and very light gray (N8), fine grained, vuggy, moderate vuggy porosity; Shell Fragments, 20%, white (N9) and yellowish gray (5Y 8/1), <5mm.
5/31/2011	840	850	Limestone and Shell Fragments: same as above.
5/31/2011	850	860	Shell Fragments and Limestone: Shell Fragments, 70%, white (N9) and yellowish gray (5Y 8/1), between 3mm to 10mm in size; Limestone, 30%, yellowish gray (5Y 8/1) and very light gray (N8), fine grained, vuggy, moderate vuggy porosity.
5/31/2011	860	870	Limestone and Clay: Limestone: 70%, yellowish gray (5Y 8/1), fine to medium grained, slightly phosphatic; Clay, 30%, yellowish gray (5Y 8/1), soft, calcareous, low plasticity.
5/31/2011	870	880	Limestone: very light gray (N8) to yellowish gray (5Y 8/1), fine grained, trace fine quart sand, some shell fragments, trace phosphate.
5/31/2011	880	890	Limestone and Clay: Limestone: 70%, yellowish gray (5Y 7/2), fine to medium grained, slightly phosphatic; Clay, 30%, yellowish gray (5Y 7/2), soft, calcareous, moderate plasticity;
5/31/2011	890	900	Clay: yellowish gray (5Y 7/2), soft, low plasticity, poorly indurated limestone fragments (30%),trace shells and shell fragments, trace phosphate.
5/31/2011	900	910	Clay: yellowish gray (5Y 8/1), soft, low plasticity, trace poorly indurated limestone fragments, trace shells and shell fragments, trace phosphate.
6/1/2011	910	920	Clay: same as above.
6/1/2011	920	930	Clay: same as above, some large shell fragments (10 to 20 mm).
6/1/2011	930	940	Clay: yellowish gray (5Y 8/1), soft, low plasticity, some poorly indurated limestone fragments, trace shells and shell fragments, trace phosphate.
6/1/2011	940	950	Clay: same as above.
6/1/2011	950	960	Clay: yellowish gray (5Y 8/1), soft, low plasticity, phosphatic, trace shells and shell fragments.
6/1/2011	960	970	Clay: light olive gray (5Y 5/2), soft, low plasticity, phosphatic, trace shells and shell fragments.

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Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Lithologic Description

Date	Depth (ft. bpl) From	To	Observer's Description
6/1/2011	970	980	Clay, Limestone, and Shell: Clay, 70%, yellowish gray (5Y 8/1), moderately stiff, moderate plasticity, phosphatic; Limestone, 20%, yellowish gray (5Y 8/1), fine to medium grained, poorly indurated, phosphatic; Shell Fragments: 10%, white (N9) and very light gray (N8), 1 to 5mm in size.
6/1/2011	980	990	Clay, Limestone, and Shell: Clay, 60%, yellowish gray (5Y 8/1), moderately stiff, moderate plasticity, phosphatic; Limestone, 30%, yellowish gray (5Y 8/1), fine to medium grained, poorly indurated, phosphatic; Shell Fragments: 10%, white (N9) and very light gray (N8), 1 to 5mm in size.
6/1/2011	990	1,000	Clay: yellowish gray (5Y 8/1), stiff, plastic; Trace limestone fragments.
6/1/2011	1,000	1,010	Clay: same as above.
6/1/2011	1,010	1,020	Clay: grayish olive green (5GY 3/2), soft, moderately low plasticity.
6/1/2011	1,020	1,030	Clay: yellowish gray (5Y 8/1), moderately stiff, moderate plasticity; Trace limestone fragments.
6/1/2011	1,030	1,040	Clay and Limestone: Clay,60%, yellowish gray (5Y 8/1), moderately soft, moderate plasticity, phosphatic; Limestone, 40%, yellowish gray (5Y 8/1), fine grained, shell intraclast, slightly phosphatic.
6/1/2011	1,040	1,050	Clay and Limestone: Clay, 50%, yellowish gray (5Y 8/1), moderately soft, moderate plasticity, phosphatic; Limestone, 50%, yellowish gray (5Y 8/1), fine grained, shell intraclast, moderately well cemented, phosphatic.
6/1/2011	1,050	1,060	Clay: light olive gray (5Y 5/2), soft, low plasticity, phosphatic.
6/1/2011	1,060	1,070	Limestone: yellowish gray (5Y 7/2), fine grained, poorly indurated, phosphatic.
6/1/2011	1,070	1,080	Limestone and Clay: Limestone 60%, predominantly pelecypod shell fragments, yellowish gray (5Y 8/1), up to 20 mm in size; Clay, 40%, yellowish gray (5Y 7/2), moderately plastic.
6/1/2011	1,080	1,090	Limestone: 90%, pelecypod shell fragments, yellowish gray (5Y8/1), up to 20 mm in size; 10%, light olive gray (5Y 5/2), fine grained limestone fragments.
6/30/2011	1,090	1,100	Limestone and Dolomitic Limestone: Limestone, 50%, pelecypod shell fragments, pale yellowish gray (5Y 8/1); Limestone 30%, yellowish gray (5Y 7/2), arenaceous, soft; Dolomitic Limestone, 20%, pale yellowish brown (10YR 6/2), well indurated with pelecypod shell fragments.
7/1/2011	1,100	1,110	Limestone and Dolomitic Limestone: Limestone, 80%, yellowish gray (5Y 7/2), arenaceous, fine grained, soft; Dolomitic Limestone, 20%, pale yellowish brown (10YR 6/2), well indurated with minor amount of pelecypod shell fragments, trace phosphate grains.
7/1/2011	1,110	1,120	Shell Fragments and Limestone: Shell Fragments, 90% pelecypod shell fragments, yellowish gray (5Y 8/1), well indurated, partially dolomitized; Limestone, 10%, yellowish gray (5Y 7/2, arenaceous, fine grained, slightly vuggy, soft.
7/1/2011	1,120	1,130	Limestone and Shell Fragments: Limestone, 80%, yellowish gray (5Y 7/2), arenaceous, fine grained, moderate to poorly indurated; Shell Fragments, 20% pelecypod shell fragments, yellowish gray (5Y 8/1), well indurated, partially dolomitized.
7/1/2011	1,130	1,140	Limestone and Dolomitic Limestone: Limestone, 60%, yellowish gray (5Y 7/2), very fine grained, moderately well indurated, slightly vuggy, very fossiliferous, low porosity, low permeability; Dolomitic Limestone, 40%, pale yellowish brown (10YR 6/2) and moderate yellowish brown (10YR 5/4), fine crystalline, slightly brittle; Trace Shell Fragments.
7/1/2011	1,140	1,150	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained, well indurated, slightly brittle, vuggy, low porosity, low permeability; Trace clay.
7/1/2011	1,150	1,160	Dolomitic Limestone: same as above.

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Florida Power & Light Company
Turkey Point Units 6 & 7
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Lithologic Description

Date	Depth (ft. bpl) From	To	Observer's Description
7/1/2011	1,160	1,170	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2) to moderate yellowish brown (10YR 5/4), fine grained, well indurated, slightly brittle, very fossiliferous, low porosity, low permeability; Trace clay.
7/1/2011	1,170	1,180	Limestone and Dolomite: Limestone, 70%, yellowish gray (5Y 7/2), very fine grained, well indurated, fossiliferous, vuggy; Dolomite, 30% light gray (N7), fine crystalline, well indurated, vuggy.
7/1/2011	1,180	1,190	Limestone: yellowish gray (5Y 7/2), very fine grained, well indurated, fossiliferous, vuggy; Dolomite trace.
7/1/2011	1,190	1,200	Limestone: same as above.
7/1/2011	1,200	1,210	Dolomite: 100%, pale yellowish brown (10YR 6/2), fine crystalline, well indurated vuggy.
7/1/2011	1,210	1,220	Limestone and Dolomite: Limestone, 60%, yellowish gray (5Y 7/2), very fine grained, moderately well indurated, slightly fossiliferous; Dolomite, 40%, pale yellowish brown (10YR 6/2), fine crystalline, well indurated, vuggy.
7/1/2011	1,220	1,230	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately well indurated, slightly fossiliferous.
7/1/2011	1,230	1,240	Limestone and Dolomite: Limestone, 50%, yellowish gray (5Y 7/2), very fine grained, moderately well indurated, slightly fossiliferous; Dolomite, 50%, pale yellowish brown (10YR 6/2), fine crystalline, well indurated, vuggy.
7/1/2011	1,240	1,250	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, well indurated, very well sorted, low porosity, low permeability; Dolomite trace, phosphate trace.
7/1/2011	1,250	1,260	Limestone: same as above.
7/1/2011	1,260	1,270	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, well indurated, slightly fossiliferous (pelecypods, gastropods), very well sorted, low porosity, low permeability; Dolomite trace, phosphate trace.
7/1/2011	1,270	1,280	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately to well indurated, fossiliferous (pelecypods, gastropods), well sorted, low porosity, low permeability; Dolomite trace.
7/1/2011	1,280	1,290	Limestone: same as above.
7/1/2011	1,290	1,300	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately to poorly indurated, slightly fossiliferous (pelecypods), well sorted, low porosity, low permeability.
7/1/2011	1,300	1,310	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately to well indurated, fossiliferous (pelecypods), well sorted, low porosity, low permeability; Dolomite trace.
7/1/2011	1,310	1,320	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately to poorly indurated, well sorted, low porosity, low permeability.
7/1/2011	1,320	1,330	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately to well indurated, fossiliferous (pelecypods), well sorted, slightly vuggy.
7/1/2011	1,330	1,340	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately to poorly indurated, fossiliferous (pelecypods), well sorted, low porosity, low permeability.
7/1/2011	1,340	1,350	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately indurated, fossiliferous (pelecypods, echinoids), well sorted, low porosity, low permeability.
7/1/2011	1,350	1,360	Limestone: same as above.
7/1/2011	1,360	1,370	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately indurated, slightly fossiliferous (pelecypods), well sorted, low porosity, low permeability, slightly vuggy; Dolomite trace.
7/2/2011	1,370	1,380	Limestone: same as above.

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Florida Power & Light Company
Turkey Point Units 6 & 7
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Lithologic Description

Date	Depth (ft. bpl) From	To	Observer's Description
7/2/2011	1,380	1,390	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, well indurated, more fossiliferous (pelecypod and gastropod casts and molds, echinoids), well sorted, low porosity, low permeability, slightly vuggy.
7/2/2011	1,390	1,400	Limestone: 100%, yellowish gray (5Y 7/2) and light gray (N7), very fine grained, well indurated, highly fossiliferous (pelecypod and gastropod casts and molds, echinoid spines), well sorted, low porosity, low permeability, slightly vuggy.
7/2/2011	1,400	1,410	Limestone: 100%, yellowish gray (5Y 7/2), very fine grained, moderately to well indurated, highly fossiliferous (pelecypods, abundant whole echinoids 5-10 mm in diameter), well sorted, low porosity, low permeability.
7/2/2011	1,410	1,420	Limestone: 100%, yellowish gray (5Y 7/2), fine grained, well indurated, highly fossiliferous (pelecypods, sparse echinoids), less well sorted, low to moderate porosity, low permeability.
7/2/2011	1,420	1,430	Limestone: 100%, very pale orange (5YR 8/2), fine grained, well indurated, highly fossiliferous (Dictyoconus, Lituonella, Fabiana, Echinoid spines), well sorted, low to moderate intergranular porosity, moderate permeability.
7/2/2011	1,430	1,440	Limestone: 100%, very pale orange (5YR 8/2) to light olive gray (5Y 6/1), fine grained, poorly indurated, friable, highly fossiliferous (Dictyoconus), well sorted, moderate intergranular porosity, moderate permeability.
7/2/2011	1,440	1,450	Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained, well indurated, fossiliferous (pelecypods, Dictyoconus), well sorted, low intergranular porosity, vugs, low permeability.
7/2/2011	1,450	1,460	Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained, well indurated, fossiliferous (Dictyoconus, Lituonella, gastropod molds), well sorted, low intergranular porosity, vugs, low permeability.
7/2/2011	1,460	1,470	Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained, well indurated, fossiliferous (Dictyoconus, Archaias), well sorted, low intergranular porosity, low permeability.
7/2/2011	1,470	1,480	Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained with calcite replacement, moderately indurated, fossiliferous (Dictyoconus, shell), well sorted, moderate intergranular porosity, vugs, moderate permeability.
7/2/2011	1,480	1,490	Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained, moderately indurated, fossiliferous (Dictyoconus), well sorted, moderate intergranular porosity, vugs, moderate permeability, black to dark gray trace mineral.
7/2/2011	1,490	1,500	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, well indurated, well sorted, low intergranular porosity, low permeability.
7/2/2011	1,500	1,510	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, well indurated, slightly fossiliferous (Dictyoconus, whole echinoid), well sorted, low intergranular porosity, low permeability.
7/2/2011	1,510	1,520	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, moderately to well indurated, slightly fossiliferous (Dictyoconus, echinoids), well sorted, low to moderate intergranular porosity, low permeability; Dolomite trace.
7/2/2011	1,520	1,530	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, moderately to poorly indurated, fossiliferous (Dictyoconus, abundant echinoids, sparse pelecypods), well sorted, low to moderate intergranular porosity, low permeability.
7/2/2011	1,530	1,540	Limestone: 100%, partially dolomitized, pale yellowish brown (10YR 6/2), very fine grained, well indurated, slightly fossiliferous (Dictyoconus, echinoid spines), well sorted, low intergranular porosity, low permeability.

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7/2/2011	1,540	1,550	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, moderately indurated, slightly fossiliferous (Dictyoconus and other foraminifera), moderately well sorted, moderate intergranular porosity, low permeability.
7/2/2011	1,550	1,560	Limestone: 80%, pale yellowish brown (10YR 6/2), very fine grained, moderately indurated, fossiliferous (Dictyoconus and other foraminifera abundant), well sorted, moderate to high intergranular porosity, low permeability, vuggy. Limestone: 20%, yellowish gray (5Y 8/1), very fine grained, moderately indurated, well sorted, low intergranular porosity, low permeability.
7/3/2011	1,560	1,570	Limestone: pale yellowish brown (10YR 6/2), very fine grained, well indurated, slightly fossiliferous (sparse Dictyoconus), well sorted, low intergranular porosity, low permeability.
7/3/2011	1,570	1,580	Limestone: yellowish gray (5Y 8/1), very fine grained, well indurated, well sorted, low intergranular porosity, low permeability.
7/3/2011	1,580	1,590	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, well indurated, highly fossiliferous (Dictyoconus, echinoids, and echinoid spines abundant), moderately well sorted, low intergranular porosity, low permeability.
7/3/2011	1,590	1,600	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, moderately indurated, generally devoid of large benthic foraminifera (Dictyoconus and Archaias observed), well sorted, low intergranular porosity, low permeability.
7/3/2011	1,600	1,610	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, moderate to low induration, fossiliferous (benthic foraminifera Dictyoconus and Valvulina observed), well sorted, low intergranular porosity, low permeability, dark gray accessory mineral.
7/3/2011	1,610	1,620	Limestone: 100%, pale yellowish brown (10YR 6/2) to pinkish gray (5YR 7/1), very fine grained, moderate to low induration, fossiliferous (benthic foraminifera Dictyoconus; echinoids), well sorted, moderate intergranular porosity, low permeability.
7/3/2011	1,620	1,630	Limestone: 100%, grayish orange (10YR 7/4), very fine grained, moderate to low induration, fossiliferous (benthic foraminifera Dictyoconus; echinoids), well sorted, moderate intergranular porosity, moderate permeability.
7/3/2011	1,630	1,640	Limestone: 100%, grayish orange (10YR 7/4), very fine grained, low induration, fossiliferous (mostly benthic foraminifera Dictyoconus), well sorted, moderate to high intergranular porosity, moderate permeability.
7/3/2011	1,640	1,650	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, moderate induration, fossiliferous (Dictyoconus, Borelis, casts of benthic foraminifera), sparry calcite cement, well sorted, moderate to high intergranular porosity, moderate permeability.
8/13/2011	1,650	1,660	Limestone: 100%, pale yellowish brown (10YR 6/2), very fine grained, moderate induration, fossiliferous (Dictyoconus, casts of benthic foraminifera, echinoids), well sorted, moderate to high intergranular porosity, slightly vuggy, moderate permeability.
8/13/2011	1,660	1,670	Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained to very fine grained, moderately well indurated, highly fossiliferous (benthic foraminifera primarily Dictyoconus, abundant echinoids), moderately to well sorted, moderate to high intergranular porosity, moderately to highly vuggy, moderate to high permeability.
8/13/2011	1,670	1,680	Limestone: 100%, yellowish gray (5Y 7/2) to light olive gray (5Y 5/2), fine grained, poorly indurated, fossiliferous (benthic foraminifera, Dictyoconus and others), well sorted, moderate intergranular porosity, moderate permeability.

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8/13/2011	1,680	1,690	Limestone: 100%, yellowish gray (5Y 7/2) to light olive gray (5Y 5/2), fine grained , poorly to moderately indurated, fossiliferous (benthic foraminifera, Dictyoconus and others), well sorted, moderate intergranular porosity, moderate permeability.
8/13/2011	1,690	1,700	Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained to very fine grained, low induration, highly fossiliferous (benthic foraminifera primarily Dictyoconus, echinoids spines), moderately to well sorted, moderate to high intergranular porosity, moderate to high permeability.
8/13/2011	1,700	1,710	Limestone: 90%, pale yellowish brown (10YR 6/2) to very pale orange (10 YR /2), fine grained, moderate induration, fossiliferous (molds), moderately to well sorted, low intergranular porosity, low permeability (micro), calcite replacement. Dolomitic Limestone: 10%, pale yellowish brown (10YR 6/2) to light olive gray (5Y 6/1), very fine grained, high induration, non-fossiliferous, well sorted, low intergranular porosity, low permeability (micro).
8/13/2011	1,710	1,720	Dolomitic Limestone: 50%, yellowish gray (5YR 8/1) to very pale orange (10 YR /2), very fine grained, high induration, non-fossiliferous, well sorted, low intergranular porosity, low permeability (micro). Dolomitic Limestone: 50%, pale yellowish brown (10YR 6/2), very fine grained, low to moderate induration, fossiliferous with high degree decalcification, well sorted, low intergranular porosity, low permeability (micro).
8/15/2011	1,720	1,730	Dolomitic Limestone: 80%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), fine grained, low to moderate induration, fossiliferous, few vugs, low to moderate intergranular porosity, low permeability; Dolomitic Limestone, 20%, pale yellowish brown (10YR 6/2), fine crystalline, highly indurated, few small vugs, low permeability.
8/15/2011	1,730	1,740	Dolomitic Limestone: 60%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), fine grained, low to moderate induration, fossiliferous, few vugs, low to moderate intergranular porosity, low permeability; Dolomitic Limestone, 40%, pale yellowish brown (10YR 6/2), fine crystalline, highly indurated, few small vugs, low permeability.
8/15/2011	1,740	1,750	Dolomitic Limestone: pale yellowish brown (10YR 6/2) to light olive gray (5Y 6/1), very fine grained to crystalline, well indurated, slightly vuggy, low permeability.
8/15/2011	1,750	1,760	Dolomitic Limestone and Mudstone: Dolomitic Limestone, 90%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4) and very pale orange ((10YR 8/2), fine grained, low to moderate induration, fossiliferous, few vugs, low to moderate intergranular porosity, low permeability; Mudstone, 10%, dusky yellowish brown (10YR 2/2), silty, cohesive.
8/15/2011	1,760	1,770	Dolomitic Limestone: pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), fine grained, low to moderate induration, fossiliferous, moderate intergranular porosity, low permeability; Mudstone, trace.
8/15/2011	1,770	1,780	Dolomite and Dolomitic Limestone: Dolomite, 80%, dark yellowish brown (10YR 4/2) and pale yellowish brown (10YR 6/2), microcrystalline, few vugs; Dolomitic Limestone, 20%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), fine grained, low to moderate induration, fossiliferous, moderate intergranular porosity, low permeability.

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8/15/2011	1,780	1,790	Dolomitic Limestone: 40 %, pale yellowish orange (10 YR8/2), fine crystalline, high induration, trace quartz very fine quartz sand, low permeability. Dolomitic Limestone: 40%, pale yellowish brown (10YR 6/2), fine grained to very fine grained, low induration, highly fossiliferous (benthic foraminifera primarily Dictyoconus, echinoids spines), moderately to well sorted, moderate to high intergranular porosity, moderate to high permeability. Dolomite: 10%, light olive gray (5Y 6/1), fine crystalline, high induration, sparsely fossiliferous, low permeability.
8/15/2011	1,790	1,800	Dolomitic Limestone: 95%, pale yellowish brown (10YR 6/2), fine grained to very fine grained, low induration, highly fossiliferous (benthic foraminifera primarily Dictyoconus americanus, Dictyoconus cookei, echinoids spines), moderately to well sorted, moderate to high intergranular porosity, moderate to high permeability. Mudstone: 5%, dark gray (N3) to brownish gray (5YR 4/1), carbonaceous, very fine grained, low induration, non-fossiliferous, low permeability.
8/15/2011	1,800	1,810	Dolomitic Limestone: 60%, pale yellowish brown (10YR 6/2), fine grained to very fine grained, low induration, highly fossiliferous (benthic foraminifera primarily Dictyoconus, echinoids spines, shell fragments), moderately to well sorted, moderate to high intergranular porosity, moderate to high permeability. Mudstone: 30%, dark gray (N3) to brownish gray (5YR 4/1), carbonaceous, very fine grained, low induration, non-fossiliferous, low permeability; Dolomite: 10%, light olive gray (5Y 6/1), fine crystalline, high induration, sparsely fossiliferous, low permeability.
8/16/2011	1,810	1,820	Dolomite: 100%, pale yellowish orange (10YR 8/2), fine crystalline, high induration, low permeability.
8/16/2011	1,820	1,830	Dolomite: 100%, yellowish gray (5Y 8/1) to pale yellowish orange (10YR 8/2) to brownish gray (5YR 4/1), fine crystalline, high induration, low permeability.
8/16/2011	1,830	1,840	Dolomite and Mudstone: 90%, yellowish gray (5Y 8/1), and light olive gray (5YR 5/2) to brownish gray (5YR 4/1), fine crystalline, high induration, slightly vuggy, low permeability; Mudstone, 10%, dusky yellowish brown (10YR 2/2) to Black (N1), cohesive.
8/16/2011	1,840	1,850	Dolomite: 100%, pale yellowish brown (10YR 6/2), grayish orange (10YR 7/4) and dark yellowish brown (10YR 4/2), fine crystalline, well indurated, few vugs, low permeability.
8/16/2011	1,850	1,860	Dolomite: same as above.
8/16/2011	1,860	1,870	Dolomite: 100%, moderate yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/2), fine crystalline, well indurated, some slightly brittle, low permeability; Mudstone, trace.
8/16/2011	1,870	1,880	Dolomite: 100%, pale yellowish brown (10YR 6/2) and moderate yellowish brown (10YR 5/4), fine crystalline, moderately well indurated, low permeability; Mudstone, trace; Limestone, trace.
8/16/2011	1,880	1,890	Limestone (marl): 90%, very pale orange (10YR 8/2), very fine grain, low induration, low porosity, low permeability; Dolomite: 10%, pale yellowish brown (10YR 6/2) and moderate yellowish brown (10YR 5/4), fine crystalline, moderately well indurated, low permeability; Mudstone: dusky yellowish brown (10YR 2/2), trace
8/16/2011	1,890	1,900	Limestone (marl): 70%, very pale orange (10YR 8/2), very fine grain, low induration, low porosity, low permeability; Dolomitic Limestone: 30%, pale yellowish brown (10YR 6/2), fine grain, low to moderate induration, low permeability.
8/16/2011	1,900	1,910	Limestone: 100%, very pale orange (10YR 8/2), fine grain, low induration, low porosity, low permeability, bedding planes noticeable by darker banding.

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Date	Depth (ft. bpl) From	To	Observer's Description
8/16/2011	1,910	1,920	Dolomitic Limestone: 90%, very pale orange (10YR 8/2), fine grain, low induration, low porosity, low permeability; Dolomite: 10%, dark gray (N3) to moderate yellowish brown (10YR 5/4), fine crystalline, well indurated, low permeability.
8/17/2011	1,920	1,930	Dolomitic Limestone: 50%, very pale orange (10YR 8/2), fine grain, low induration, low porosity, low permeability, bedding planes noticeable by darker banding. Dolomite: 50% dark gray (N3) to light olive gray (5Y 6/1), fine crystalline, well indurated, low permeability (micro).
8/17/2011	1,930	1,940	Dolomitic Limestone: 50%, very pale orange (10YR 8/2) to pale yellowish brown (10 YR 6/2), fine grain, low induration, low porosity, low permeability, bedding planes noticeable by darker banding. Dolomite: 50%, pale yellowish brown (10YR 6/2) to dark yellowish brown (10YR 4/2), fine crystalline, well indurated, low permeability (micro), bedding planes noticeable by darker banding.
8/17/2011	1,940	1,950	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2), fine grain, low induration, fossiliferous (benthic foraminifera primarily Dictyoconus, echinoids spines, shell fragments), well sorted, low intergranular porosity, low permeability, black accessory mineral.
8/17/2011	1,950	1,960	Dolomitic Limestone: same as above.
8/17/2011	1,960	1,970	Dolomitic Limestone: same as above.
8/17/2011	1,970	1,980	Dolomite and Dolomitic Limestone: Dolomite, 60%, dark yellowish brown (10YR 4/2), sucrosic, vuggy; Dolomitic Limestone, 40%, pale yellowish brown (10YR 6/2), fine grain, low induration, fossiliferous (benthic foraminifera primarily Dictyoconus, shell fragments), well sorted, low intergranular porosity, low permeability.
8/17/2011	1,980	1,990	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 80%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4),very fine grained, dark banding (lamination), low to moderate induration, low porosity, low permeability; Dolomite, 20%, dark yellowish brown (10YR 4/2) and grayish orange (10YR 7/4), crystalline, well indurated, some brittle.
8/17/2011	1,990	2,000	Dolomitic Limestone and Dolomite: Dolomite, 80%, dark yellowish brown (10YR 4/2) and grayish orange (10YR 7/4), crystalline, well indurated, some brittle. Dolomitic Limestone, 20%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4),very fine grained, dark banding (lamination), low to moderate induration, low porosity, low permeability.
8/17/2011	2,000	2,010	Dolomite, 100%, dark yellowish brown (10YR 4/2) and pale yellowish brown (10YR 6/2), fine crystalline, well indurated.
8/17/2011	2,010	2,020	Dolomite, 80%, dark yellowish brown (10YR 4/2) and pale yellowish brown (10YR 6/2), fine crystalline, well indurated; Dolomitic Limestone, 15%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4),very fine grained, dark banding (lamination), low to moderate induration, low porosity, low permeability; Clay: 5%, dark yellowish brown (10YR 2/2) to grayish black (N2), laminated, highly plastic, waxy, low permeability.
8/18/2011	2,020	2,030	Dolomitic Limestone; 40%, yellowish gray (5Y 8/1) to very pale orange (10yr 8/2), fine crystalline, moderate to well indurated, minor moldic porosity, low permeability, black accessory mineral; Dolomitic Limestone; 40%, pale yellowish brown (10YR 6/2), fine grained (fine crystalline cement), well sorted, moderate to high induration, low to moderate intergranular porosity, low permeability, benthic foraminifera generally absent, black accessory mineral; Limestone: 20%, Light olive gray (5Y 6/1), fine grained, well sorted, moderate induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus).

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8/19/2011	2,030	2,040	Dolomitic Limestone; 100%, pale yellowish brown (10YR 6/2), fine grained (fine crystalline cement), well sorted, moderate to high induration, low to moderate intergranular porosity, low permeability, benthic foraminifera generally absent, black accessory mineral.
8/19/2011	2,040	2,050	Dolomitic Limestone; 100%, grayish orange (10YR 7/4), fine grained, moderately well sorted, low to moderate induration, moderate intergranular porosity, low permeability.
8/19/2011	2,050	2,060	Dolomitic Limestone: same as above.
8/19/2011	2,060	2,070	Dolomitic Limestone: same as above.
8/19/2011	2,070	2,080	Dolomitic Limestone: same as above.
8/19/2011	2,080	2,090	Dolomitic Limestone: same as above.
8/19/2011	2,090	2,100	Dolomitic Limestone; 100%, grayish orange (10YR 7/4), fine grained, moderately well sorted, low induration, moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus).
8/19/2011	2,100	2,110	Dolomitic Limestone: same as above.
8/20/2011	2,110	2,120	Dolomitic Limestone; 100%, grayish orange (10YR 7/4), fine grained, well sorted, low induration, moderate intergranular porosity, low permeability, large benthic foraminifera generally absent.
8/20/2011	2,120	2,130	Dolomitic Limestone; 70%, grayish orange (10YR 7/4), fine grained, well sorted, low induration, moderate intergranular porosity, low permeability, large benthic foraminifera generally absent. Dolomitic Limestone; 20%, very pale orange (10YR 8/2), fine grained, well sorted, low induration, low intergranular porosity, low permeability; Dolomite; 10%, pale yellowish brown (10YR 6/2), fine crystalline, vugs and moldic porosity less than 10%, high induration, low permeability, few benthic foraminifera (Dictyoconus), high degree of calcite/dolomite recrystallization.
8/20/2011	2,130	2,140	Dolomitic Limestone; 50%, very pale orange (10YR 8/2), fine grained, well sorted, low induration, low intergranular porosity, low permeability; Dolomite; 50%, pale yellowish brown (10YR 6/2), fine crystalline, vugs and moldic porosity less than 10%, high induration, low permeability, few benthic foraminifera (Dictyoconus), high degree of calcite/dolomite recrystallization.
8/20/2011	2,140	2,150	Dolomitic Limestone: grayish orange (10YR 7/4), fine grained, moderately well to well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus).
8/20/2011	2,150	2,160	Dolomitic Limestone: 90% grayish orange (10YR 7/4), fine grained, moderately well to well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus); Dolomite:10%, grayish orange (10YR 7/4), fine crystalline, vugs and moldic porosity less than 10%, high induration, low permeability.
8/20/2011	2,160	2,170	Dolomitic Limestone: pale yellowish brown (10YR 6/2), fine grained, moderately well to well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus)
8/20/2011	2,170	2,180	Dolomitic Limestone: 80%, pale yellowish brown (10YR 6/2), fine grained, moderately well to well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus), laminated; Dolomitic Limestone: 20%, light olive gray (5Y 6/1), fine grained, moderately well to well sorted, moderate induration, moderate intergranular porosity, vugs and molds less than 30%, benthic foraminifer (Dictyoconus americanus).

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8/20/2011	2,180	2,190	Dolomitic Limestone: 50%, pale yellowish brown (10YR 6/2), fine grained, moderately well to well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus); Dolomitic Limestone: 50%, light olive gray (5Y 6/1), fine grained, well sorted, low induration, low intergranular porosity.
8/20/2011	2,190	2,200	Dolomitic Limestone; 100%, grayish orange (10YR 7/4), fine grained, moderately well sorted, low induration, moderate to high intergranular porosity, low to moderate permeability.
8/20/2011	2,200	2,210	Dolomitic Limestone as above.
8/20/2011	2,210	2,220	Dolomitic Limestone; 100%, grayish orange (10YR 7/4), fine grained, moderately well sorted, low induration, moderate to high intergranular porosity, low to moderate permeability, benthic foraminifera (Dictyoconus).
8/20/2011	2,220	2,230	Dolomitic Limestone; 100%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderately well sorted, low induration, moderate to high intergranular porosity, low to moderate permeability, benthic foraminifera (Dictyoconus).
8/20/2011	2,230	2,240	Dolomitic Limestone; 100%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderately well sorted, low induration, low intergranular porosity, low to moderate permeability, vugs (less than 5%), benthic foraminifera (Dictyoconus).
8/21/2011	2,240	2,250	Dolomitic Limestone; 100%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine to medium grained, some crystalline, moderately well sorted, low induration, low intergranular porosity, low to moderate permeability, benthic foraminifera (Dictyoconus).
8/21/2011	2,250	2,260	Dolomitic Limestone; 100%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), fine to medium grained, some crystalline, poorly sorted, low induration, low to moderate intergranular porosity, moderate permeability, benthic foraminifera (Dictyoconus).
8/21/2011	2,260	2,270	Dolomitic Limestone; 100%, moderate yellowish brown (10YR 5/4) and pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), fine to medium grained, some crystalline, poorly sorted, low induration, low to moderate intergranular porosity, moderate permeability, benthic foraminifera (Dictyoconus), black accessory mineral.
8/21/2011	2,270	2,280	Limestone and Dolomitic Limestone: Limestone, 60%, yellowish gray (5Y 7/2), very fine grained, moderately well indurated, slightly fossiliferous, low porosity, low permeability; Dolomitic Limestone, 40%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), fine to medium grained, some crystalline, poorly sorted, low induration, low to moderate intergranular porosity, moderate permeability, benthic foraminifera (Dictyoconus), black accessory mineral.
8/22/2011	2,280	2,290	Dolomitic Limestone:50%, pale yellowish brown (10YR 6/2), fine grained, moderately well to well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus); Dolomitic Limestone:50%, grayish orange (10YR 7/4), fine grained, moderately well to well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus), laminated.
8/22/2011	2,290	2,300	Dolomitic Limestone: grayish orange (10YR 7/4), fine grained, well sorted, low induration, low to moderate intergranular porosity, low permeability, sparse benthic foraminifera, calcite/dolomite replacement.
8/22/2011	2,300	2,310	Dolomitic Limestone: grayish orange (10YR 7/4), fine grained, well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus), calcite/dolomite replacement.

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8/22/2011	2,310	2,320	Dolomitic Limestone: 75%, grayish orange (10YR 7/4), fine grained, well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus); Dolomitic Limestone: 25%, moderate yellowish brown (10YR 5/4), fine grained, well sorted, low to moderate induration, moderate intergranular porosity, low permeability, sparse benthic foraminifera.
8/22/2011	2,320	2,330	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained, moderate sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus).
8/23/2011	2,330	2,340	Dolomitic Limestone: 100%, grayish orange (10YR 7/4) to dark yellowish orange (10 YR 6/6), fine grained, some fine crystalline, moderately well sorted, low induration, low to moderate intergranular porosity, some dark lamination, low permeability, benthic foraminifera (Dictyoconus).
8/23/2011	2,340	2,350	Dolomitic Limestone: 100%, grayish orange (10YR 7/4) to dark yellowish orange (10 YR 6/6), fine grained, moderately well sorted, low induration, low to moderate intergranular porosity, low permeability, benthic foraminifera (Dictyoconus).
8/23/2011	2,350	2,360	Dolomitic Limestone: 100%, yellowish gray (5Y 7/2) and Light olive gray (5Y 5/2), fine grained, moderately well sorted, low induration, low intergranular porosity, low permeability, benthic foraminifera (Dictyoconus).
8/23/2011	2,360	2,370	Dolomitic Limestone and Limestone: Dolomitic Limestone, 80%, yellowish gray (5Y 7/2) and Light olive gray (5Y 5/2), fine grained, moderately well sorted, low induration, low intergranular porosity, low permeability, benthic foraminifera (Dictyoconus); Limestone 20%, very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2), micritic, moderate induration, very few fossils, some lamination, low porosity, low permeability.
8/23/2011	2,370	2,380	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 90%, grayish orange (10YR 7/4), fine grained, poorly sorted, low induration, moderate intergranular porosity, moderate permeability, benthic foraminifera; Dolomite, 10%, pale yellowish brown (10YR 6/2), fine crystalline, slightly vuggy (<0.05 mm).
8/23/2011	2,380	2,390	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2), fine grained, moderate to well sorted, low induration, moderate intergranular porosity, moderate permeability, benthic foraminifera.
8/25/2011	2,390	2,400	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 90%, grayish orange (10YR 7/4), fine grained, moderate to well sorted, low induration, moderate intergranular porosity, some dolomite replacement, moderate permeability, benthic foraminifera; Dolomite, 10%, pale yellowish brown (10YR 6/2), grayish orange (10YR 7/4), and medium gray (N5), fine crystalline, dense.
8/25/2011	2,400	2,410	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 95%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderate to well sorted, low to moderate induration, moderate intergranular porosity, moderate permeability, benthic foraminifera; Dolomite, 5%, pale yellowish brown (10YR 6/2) and dark yellowish brown (10YR4/2), fine crystalline, well indurated, dense.
8/25/2011	2,410	2,420	Dolomitic Limestone: grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderate to well sorted, poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera.
8/25/2011	2,420	2,430	Dolomitic Limestone: grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderate to well sorted, poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera.

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8/25/2011	2,430	2,440	Dolomitic Limestone: grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderate to well sorted, poor to moderate induration, moderate intergranular porosity, moderate permeability, benthic foraminifera.
8/26/2011	2,440	2,450	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 80%, dark gray (N3) to very pale orange (10YR 8/2), fine grained, moderate to well sorted, poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera; Dolomite, 20%, pale yellowish brown (10YR 6/2) to very pale orange (10YR 8/2), fine crystalline, dense.
8/26/2011	2,450	2,460	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 95%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderate to well sorted, poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera; Dolomite, 5%, pale yellowish brown (10YR 6/2) to very pale orange (10YR 8/2), fine crystalline, dense.
8/26/2011	2,460	2,470	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 80%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2) to dark gray (N3), fine grained, moderate to well sorted, poor to moderately poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera (Dictyoconus); Dolomite, 20%, pale yellowish brown (10YR 6/2) to light olive gray (5Y 6/1), fine crystalline, well indurated, dense.
8/26/2011	2,470	2,480	Dolomitic Limestone and Dolomite as above.
8/26/2011	2,480	2,490	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 80%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2) to dark gray (N3), fine grained, moderate to well sorted, poor to moderately poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera, laminated. Dolomite, 20%, yellowish gray (5Y 8/1), fine crystalline, well indurated, dense.
8/26/2011	2,490	2,500	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 60%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2) to dark gray (N3), fine grained, moderate to well sorted, poor to moderately poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera, laminated; Dolomite, 40%, yellowish gray (5Y 8/1) to medium gray (N5), fine crystalline, well indurated, dense.
8/26/2011	2,500	2,510	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 60%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2)), fine grained, moderate to well sorted, poor to moderately poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera, laminated; Dolomite, 40%, yellowish gray (5Y 8/1) to medium gray (N5), fine crystalline, well indurated, dense.
8/26/2011	2,510	2,520	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 80%, grayish orange (10YR 7/4) to very pale orange (10YR 8/2), fine grained, moderate to well sorted, poor to moderately poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera; Dolomite, 20%, yellowish gray (5Y 8/1), fine crystalline, vuggy, well indurated.
8/26/2011	2,520	2,530	Dolomitic Limestone: 100%, grayish orange (10YR 7/4) to medium gray (N5), fine grained, moderate to well sorted, poor to moderately poor induration, moderate intergranular porosity, moderate permeability, benthic foraminifera.
8/26/2011	2,530	2,540	Dolomitic Limestone: 100%, yellowish gray (5Y 8/1) to grayish orange (10YR 8/2) to light gray (N7), fine grained, moderate to poorly sorted, poor to moderate induration, moderate intergranular porosity, moderate permeability, benthic foraminifera.

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Date	From	To	**Observer's Description**
8/26/2011	2,540	2,550	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 90%, pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, low induration, moderate intergranular porosity, low to moderate permeability, benthic foraminifera (Dictyoconus, Fabularia); Dolomite, 10%, yellowish gray (5Y 8/1), fine crystalline, vuggy, well indurated.
8/26/2011	2,550	2,560	Dolomitic Limestone: 100%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, low to moderate induration, moderate intergranular porosity, low to moderate permeability, vugs, microfossil casts and benthic foraminifera.
8/26/2011	2,560	2,570	Dolomitic Limestone and Limestone: Dolomitic Limestone, 80%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, low to moderate induration, moderate intergranular porosity, low to moderate permeability, vugs, benthic foraminifera; Limestone, 20%, argillaceous, yellowish gray (5Y 8/1), poor induration, low intergranular porosity, low permeability, nonfossiliferous.
8/26/2011	2,570	2,576	Dolomitic Limestone and Limestone: Dolomitic Limestone, 90%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2) to dark gray (N3), fine grained, moderately well sorted, moderate to moderately well induration, moderate to high intergranular porosity, moderate permeability, vugs, benthic foraminifera, microfossil casts and molds; Limestone, 10%, argillaceous, yellowish gray (5Y 8/1), poor induration, low intergranular porosity, low permeability, nonfossiliferous. Trace of lignite.
8/27/2011	2,576	2,578	Core interval No. 6. - Dolomitic Limestone: very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderately well sorted, moderate induration, moderate to high intergranular porosity, moderate permeability, vugs, sparse benthic foraminifera, echinoids spine, gastropod molds.
8/27/2011	2,578	2,580	Dolomitic Limestone: 100%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, moderate to induration, moderate to high intergranular porosity, moderate permeability, vugs, benthic foraminifera and echinoids, microfossil and molds.
8/28/2011	2,580	2,590	Core interval No. 7. - Dolomitic Limestone: grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, moderate induration, moderate to high intergranular porosity, moderate permeability, unevenly distributed vugs, benthic foraminifera (Dictyoconus, echinoids spine) near core top and becoming sparse, limestone fragments in matrix.
8/29/2011	2,590	2,600	Dolomitic Limestone and Limestone: Dolomitic Limestone, 70%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2) to dark gray (N3), fine grained, moderately well sorted, moderate to well induration, moderate intergranular porosity, moderate permeability, vugs, benthic foraminifera, some dark banding (lamination); Limestone, 30%, argillaceous, yellowish gray (5Y 8/1), poor induration, low porosity, low permeability, nonfossiliferous.
8/29/2011	2,600	2,610	Limestone and Dolomitic Limestone: Limestone, 60%, argillaceous, yellowish gray (5Y 8/1), poor induration, low porosity, low permeability, nonfossiliferous; Dolomitic Limestone, 40%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2) to dark gray (N3), fine grained, moderately well sorted, moderate to well induration, moderate intergranular porosity, moderate permeability, vugs, benthic foraminifera, some dark banding (lamination).

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8/29/2011	2,610	2,620	Dolomitic Limestone and Limestone: Dolomitic Limestone, 80%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2) to dark gray (N3), fine grained, moderately well sorted, moderate to well induration, moderate intergranular porosity, moderate permeability, few small vugs, benthic foraminifera, some dark banding (lamination); Limestone, 20%, yellowish gray (5Y 8/1), argillaceous, poor induration, low porosity, low permeability, nonfossiliferous.
8/29/2011	2,620	2,630	Dolomitic Limestone and Limestone: Dolomitic Limestone, 60%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), and medium light gray (N6), fine grained, moderately well sorted, moderate to well induration, moderate intergranular porosity, moderate permeability; Limestone, 40%, yellowish gray (5Y 8/1), argillaceous, chalky, moderate induration, low porosity, low permeability, nonfossiliferous.
8/31/2011	2,630	2,640	Dolomitic Limestone and Limestone: Dolomitic Limestone, 50%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, moderate to well induration, moderate intergranular porosity, moderate permeability; Limestone, 50%, yellowish gray (5Y 8/1), argillaceous, chalky, moderate induration, low porosity, low permeability, nonfossiliferous.
8/31/2011	2,640	2,650	Dolomitic Limestone and Limestone: Dolomitic Limestone, 80%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, moderate to well induration, some dark banding (laminated), moderate intergranular porosity, moderate permeability; Limestone, 20%, yellowish gray (5Y 8/1), argillaceous, chalky, low to moderate induration, few vugs, moderate porosity, low to moderate permeability, nonfossiliferous.
9/2/2011	2,650	2,660	Dolomitic Limestone and Limestone: Dolomitic Limestone, 90%, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, moderate to well induration, some dark banding (laminated), moderate intergranular porosity, moderate permeability; Limestone, 10%, yellowish gray (5Y 8/1), argillaceous, chalky, low to moderate induration, few vugs, moderate porosity, low to moderate permeability.
9/4/2011	2,660	2,670	Limestone: 90%, very pale orange (10 YR 8/2), fine grained, well indurated, abundant foraminifera, pelletal and fossil grains, moderate to good intergranular porosity, moderate permeability; Limestone, 5%, medium light gray (N6), micritic, low intergranular porosity, low permeability; Limestone 5%,yellowish gray (5Y 8/1), argillaceous, chalky, moderate induration, few vugs, low porosity, low permeability, nonfossiliferous.
9/4/2011	2,670	2,680	Limestone: 100%, very pale orange (10 YR 8/2), fine grained, moderately indurated, abundant foraminifera, pelletal and fossil grains, moderate to good intergranular porosity, moderate permeability.
9/4/2011	2,680	2,690	Limestone and Dolomite: Limestone 75%, yellowish gray (5Y 8/1), argillaceous, slightly chalky, few burrows and fossil molds, moderate induration, low intergranular porosity, low permeability; Dolomite, 20%, pale yellowish brown 10YR 6/2, fine grained, sucrosic, low intergranular porosity; Limestone, 5%, very pale orange (10 YR 8/2), fine grained, moderately indurated, abundant foraminifera, fossil grains, moderate to good intergranular porosity, moderate permeability.
9/4/2011	2,690	2,700	Limestone: 98%, very pale orange (10 YR 8/2), fine grained, poorly to moderately indurated, many foraminifera, pelletal and fossil grains, moderate to good intergranular porosity, moderate permeability; Limestone, 2%, medium light gray (N6), micritic, low intergranular porosity, low permeability.

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9/4/2011	2,700	2,710	Limestone: 98%, very pale orange (10 YR 8/2), fine grained, poorly to moderately indurated, many foraminifera, pelletal and fossil grains, moderate to good intergranular porosity, moderate permeability; Limestone, 2%, medium light gray (N6), micritic, low intergranular porosity, low permeability.
9/4/2011	2,710	2,720	Limestone: 98%, yellowish gray (5Y 8/1) to very pale orange (10 YR 8/2), fine grained, poorly to moderately indurated, many foraminifera, pelletal and fossil grains, moderate to good intergranular porosity, moderate permeability; Limestone, 2%, medium light gray (N6), micritic, low intergranular porosity, low permeability.
9/4/2011	2,720	2,730	Limestone: 100%, yellowish gray (5Y 8/1) to very pale orange (10 YR 8/2), fine grained, poorly to moderately indurated, many foraminifera, pelletal and fossil grains, moderate to good intergranular porosity, moderate permeability.
9/4/2011	2,730	2,740	Limestone: 98%, yellowish gray (5 Y 8/1), fine grained, moderately indurated, some foraminifera, pelletal and fossil grains, moderate intergranular porosity, moderate permeability; Limestone, 2%, medium light gray (N6), micritic, low intergranular porosity, low permeability.
9/4/2011	2,740	2,750	Limestone: 100%, yellowish gray (5Y 8/1), fine grained, few burrows and fossil molds, moderate induration, low intergranular porosity, low permeability.
9/4/2011	2,750	2,760	Limestone: same as above.
9/4/2011	2,760	2,770	Limestone: same as above.
9/4/2011	2,770	2,780	Limestone: same as above.
9/4/2011	2,780	2,790	Limestone: 100%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly sorted, moderate induration, benthic foraminifera (Borelis), low intergranular and interparticle porosity, low permeability.
9/4/2011	2,790	2,800	Limestone: same as above.
9/4/2011	2,800	2,805	Limestone and Dolomite: Limestone 80%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly sorted, moderate induration, benthic foraminifera (Borelis), low intergranular porosity, low permeability; Dolomite, 20%, light gray (N7), fine crystalline, well indurated.
9/4/2011	2,805	2,810	Limestone: 100%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly sorted, poor to moderate induration, benthic foraminifera, low intergranular and interparticle porosity, low permeability.
9/4/2011	2,810	2,815	Limestone and Dolomite: Limestone 90%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly sorted, moderate induration, benthic foraminifera (Borelis), low intergranular porosity, low permeability; Dolomite, 10%, light gray (N7) and medium gray (N6), fine crystalline, moderately well indurated, few small vugs.
9/4/2011	2,815	2,820	Limestone Sand: 100%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poor to moderate induration, benthic foraminifera (Borelis).
9/4/2011	2,820	2,825	Limestone: 100%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly sorted, moderate induration, benthic foraminifera (Borelis).
9/4/2011	2,825	2,830	Limestone and Dolomite: Limestone 70%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly sorted, moderate induration, benthic foraminifera (Borelis), low intergranular porosity, low permeability; Dolomite, 30%, light gray (N7) fine crystalline, well indurated, few small vugs.
9/4/2011	2,830	2,835	Limestone and Dolomite: Limestone 90%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly sorted, moderate induration, benthic foraminifera, low intergranular porosity, low permeability; Dolomite, 10%, light gray (N7) fine crystalline, well indurated, few small vugs.
9/4/2011	2,835	2,840	Limestone and Dolomite: same as above.

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9/4/2011	2,840	2,845	Limestone and Dolomite: Limestone 80%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, poorly, low to moderate induration, benthic foraminifera, low intergranular porosity, low permeability; Dolomite, 20%, light gray (N7) and medium gray (N6), fine crystalline, moderately well indurated, few small vugs.
9/4/2011	2,845	2,850	Limestone: 100%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine to medium grained, poorly sorted, moderate induration, benthic foraminifera, low intergranular porosity, low permeability.
9/4/2011	2,850	2,855	Limestone: same as above.
9/4/2011	2,855	2,860	Limestone: same as above.
9/4/2011	2,860	2,865	Limestone: same as above.
9/4/2011	2,865	2,870	Limestone: 100%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, well sorted, moderate induration, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/4/2011	2,870	2,875	Limestone: same as above.
9/5/2011	2,875	2,880	Limestone and Dolomite: Limestone, 90%, yellowish gray (5Y 8/1), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability; Dolomite 10%, medium dark gray (N4), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,880	2,885	Limestone and Dolomite: same as above.
9/5/2011	2,885	2,890	Limestone and Dolomite: Limestone: 90%, yellowish gray (5Y 8/1), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability; Dolomite, 10%, light gray (N7), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,890	2,895	Limestone and Dolomite: Limestone: 90%, yellowish gray (5Y 8/1), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability; Dolomite, 10%, light gray (N7) to medium gray (N4), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,895	2,900	Limestone and Dolomite: Limestone: 90%, yellowish gray (5Y 8/1), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability; Dolomite, 10%, light gray (N7) to grayish black (N2), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,900	2,905	Dolomitic Limestone and Dolomite: Dolomitic Limestone: 95%, grayish orange (10YR 7/4), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability; Dolomite, 5%, medium gray (N5), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,905	2,910	Dolomitic Limestone: 100%, grayish orange (10YR 7/4) and pale yellow brown (10YR 4/2), fine grained, moderate to well indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,910	2,915	Dolomitic Limestone, same as above.

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9/5/2011	2,915	2,920	Dolomitic Limestone and Dolomite: Dolomitic Limestone: 95%, grayish orange (10YR 7/4), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability; Dolomite, 5%, medium gray (N5), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,920	2,925	Dolomite: 100%, light gray (N7) to grayish black (N2), fine grained, moderately indurated, ooids, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,925	2,930	Dolomitic Limestone and Dolomite: Dolomitic Limestone: 95%, grayish orange (10YR 7/4), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability; Dolomite, 5%, medium gray (N5) to medium dark gray (N4), fine grained, moderately indurated, ooids and some benthic foraminifera, shell material, low to moderate intergranular porosity, low permeability.
9/5/2011	2,930	2,935	Dolomite and Limestone: same as above.
9/5/2011	2,935	2,940	Dolomitic Limestone: 100%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), and medium gray (N5), fine grained, moderate to well indurated, some benthic foraminifera, low to moderate intergranular porosity, low permeability.
9/5/2011	2,940	2,945	Dolomitic Limestone: same as above.
9/5/2011	2,945	2,950	Dolomitic Limestone: 100%, grayish orange (10YR 7/4), fine grained to crystalline, moderate induration, ooids and some benthic foraminifera, low to moderate intergranular porosity, low permeability; Dolomite, trace, grayish orange (10YR 7/4), crystalline, vuggy.
9/5/2011	2,950	2,955	Dolomitic Limestone: same as above.
9/5/2011	2,955	2,960	Dolomite:100%, pale yellowish brown (10YR 6/2), grayish orange (10YR 7/4) and light gray (N7), crystalline, vuggy.
9/5/2011	2,960	2,965	Dolomitic Limestone: 100%, yellowish gray (5Y 7/2), fine grained, moderately well sorted, moderate induration, benthic foraminifera, moderate intergranular porosity, low to moderate permeability.
9/5/2011	2,965	2,970	Dolomite and Limestone: Dolomite, 60%, pale yellowish brown (10YR 6/2) and light gray (N7), crystalline, vuggy; Limestone, 40%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, poorly indurated, poorly sorted, benthic foraminifera, low to moderate intergranular porosity, low permeability.
9/5/2011	2,970	2,975	Dolomite and Limestone: Dolomite, 50%, pale yellowish brown (10YR 6/2) and light gray (N7), crystalline, vuggy; Limestone, 50%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, poorly indurated, poorly sorted, benthic foraminifera, low to moderate intergranular porosity, low permeability.
9/5/2011	2,975	2,980	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 80%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderate induration, moderately well sorted, benthic foraminifera, low intergranular porosity, low permeability; Dolomite, 20%, pale yellowish brown (10YR 6/2) and light gray (N7), crystalline, vuggy.
9/5/2011	2,980	2,985	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 50%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderate induration, moderately well sorted, benthic foraminifera, low intergranular porosity, low permeability; Dolomite, 50%, pale yellowish brown (10YR 6/2) and light gray (N7), crystalline, vuggy.

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Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Lithologic Description

Date	Depth (ft. bpl) From	To	Observer's Description
9/5/2011	2,985	2,990	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 80%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderate induration, moderately well sorted, benthic foraminifera, low intergranular porosity, low permeability; Dolomite, 20%, pale yellowish brown (10YR 6/2) and light gray (N7), crystalline, vuggy.
9/5/2011	2,990	2,995	Limestone: 100%, very pale orange (10YR 8/2) to white (N9), very fine grained, moderate induration, moderately well sorted, benthic foraminifera, low intergranular porosity, low permeability.
9/5/2011	2,995	3,000	Limestone: same as above.
9/5/2011	3,000	3,005	Limestone: same as above.
9/5/2011	3,005	3,010	Limestone: same as above.
9/5/2011	3,010	3,015	Limestone: same as above.
9/5/2011	3,015	3,020	Dolomite and Limestone: Dolomite, 95%, medium light gray (N6), and pale yellowish brown (10YR 6/2) to dark yellowish brown (10YR 4/2), fine crystalline, some sucrosic, slightly vuggy; Limestone, 5%, very pale orange (10YR 8/2) to white (N9), very fine grained, moderate induration, moderately well sorted, benthic foraminifera, low intergranular porosity, low permeability.
9/6/2011	3,020	3,025	Dolomite: 100%, medium gray (N5) to grayish black (N2), fine crystalline, some sucrosic, low intergranular porosity, low permeability.
9/6/2011	3,025	3,030	Dolomite and Limestone: Limestone, 90%, yellowish gray 5Y 7/2, fine grained, ooids, well indurated, well sorted, low intergranular porosity, low permeability; Dolomite, 10%, dark gray (N3), fine crystalline, sucrosic, low intergranular porosity, low permeability.
9/6/2011	3,030	3,035	Dolomite: 100%, Light olive gray (5Y 6/1) to medium gray (N5), fine crystalline, sucrosic, low intergranular porosity, low permeability.
9/6/2011	3,035	3,040	Dolomite and Limestone: Dolomite, 90%, Light olive gray (5Y 6/1) to medium gray (N5), fine crystalline, some sucrosic, low intergranular porosity, low permeability; Limestone, 10%, yellowish gray 5Y 7/2, fine grained, ooids, well indurated, well sorted, low intergranular porosity, low permeability.
9/6/2011	3,040	3,045	Limestone and Dolomite: Limestone, 60%, yellowish gray 5Y 7/2, fine grained, ooids, few benthic foraminifera, moderately indurated, well sorted, low intergranular porosity, low permeability; Dolomite, 40%, Light olive gray (5Y 6/1) to medium gray (N5), fine crystalline, some sucrosic, low intergranular porosity, low permeability.
9/6/2011	3,045	3,050	Limestone: 100%, yellowish gray 5Y 7/2, fine grained, ooids, few benthic foraminifera, moderately indurated, well sorted, low intergranular porosity, low permeability; Trace dolomite, light olive gray (5Y 6/1) to medium gray (N5), fine crystalline, some sucrosic, low intergranular porosity, low permeability.
9/6/2011	3,050	3,055	Limestone: 100%, yellowish gray 5Y 7/2 to light olive gray 5Y 6/1, fine grained, few fossil grains, poorly to moderately indurated, low intergranular porosity, low permeability; Trace dolomite, medium gray (N5), fine crystalline, some sucrosic, low intergranular porosity, low permeability.
9/6/2011	3,055	3,060	Dolomite and Limestone: Dolomite, 70%, medium gray (N5) to medium dark gray (N4), fine crystalline, moderately to well indurated, some sucrosic, low intergranular porosity, low permeability; Limestone: 30%, yellowish gray 5Y 8/1, fine grained, few fossil grains, poorly to moderately indurated, low intergranular porosity, low permeability.
9/6/2011	3,060	3,065	Dolomite and Limestone: same as above.

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Date	Depth (ft. bpl) From	To	Observer's Description
9/6/2011	3,065	3,070	Dolomite and Limestone: Dolomite, 60%, medium light gray (N6) to medium dark gray (N4), fine crystalline, moderately indurated, some sucrosic, few phosphate grains, low intergranular porosity, low permeability; Limestone, 40%, yellowish gray (5Y 8/1), fine grained, few fossil grains, poorly to moderately indurated, low intergranular porosity, low permeability.
9/6/2011	3,070	3,075	Dolomite: 100%, light olive gray (5Y 6/1) to dark gray (N3), fine crystalline, moderately to well indurated, sucrosic, low intergranular porosity, low permeability.
9/6/2011	3,075	3,080	Dolomite: same as above.
9/6/2011	3,080	3,085	Dolomite: same as above.
9/6/2011	3,085	3,090	Dolomite: 100%, light olive gray (5Y 6/1), dark yellowish brown (10YR 4/2), and medium gray (N5), fine crystalline, poor to moderately well indurated, low porosity, low permeability.
9/6/2011	3,090	3,095	Dolomite: 100%, dark yellowish brown (10YR 4/2), and medium gray (N5), fine crystalline, moderately well indurated, slightly vuggy, low to moderate porosity, low permeability.
9/6/2011	3,095	3,100	Dolomite: same as above.
9/6/2011	3,100	3,105	Dolomite and Dolomitic Limestone: Dolomite, 80%, medium dark gray (N4), fine crystalline, moderately well indurated, slightly, low porosity, low permeability; Dolomitic Limestone, 20%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), very fine grained, slightly fossiliferous, poor to moderate induration, low porosity, low permeability.
9/6/2011	3,105	3,110	Dolomite and Dolomitic Limestone: Dolomite, 95%, medium dark gray (N4), fine crystalline, moderately well indurated, low porosity, low permeability; Dolomitic Limestone, 5%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), very fine grained, slightly fossiliferous, poor to moderate induration, low porosity, low permeability.
9/6/2011	3,110	3,115	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 90%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), very fine grained, slightly fossiliferous, poor to moderate induration, low porosity, low permeability; Dolomite, 10%, medium dark gray (N4), fine crystalline, moderately well indurated, low porosity, low permeability.
9/6/2011	3,115	3,120	Dolomitic Limestone, 100%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), very fine grained, slightly fossiliferous, poor to moderate induration, low porosity, low permeability.
9/6/2011	3,120	3,125	Dolomitic Limestone and Dolomite: Dolomitic Limestone, 50%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), very fine grained, slightly fossiliferous, poor to moderate induration, low porosity, low permeability; Dolomite, 50%, medium gray (N5), fine crystalline, some sucrosic, moderately well indurated, slightly vuggy, low porosity, low permeability.
9/6/2011	3,125	3,130	Dolomite and Dolomitic Limestone: Dolomite, 80%, medium dark gray (N4) medium light gray (N6), fine crystalline, moderately well indurated, low porosity, low permeability; Dolomitic Limestone, 20%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), very fine grained, slightly fossiliferous, poor to moderate induration, low porosity, low permeability.
9/6/2011	3,130	3,135	Dolomite and Dolomitic Limestone: Dolomite, 95%, medium dark gray (N4) medium light gray (N6), fine crystalline, moderately well indurated, low porosity, low permeability; Dolomitic Limestone, 5%, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4), very fine grained, slightly fossiliferous, poor to moderate induration, low porosity, low permeability.

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Florida Power & Light Company
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	Depth (ft. bpl)		
Date	From	To	**Observer's Description**
9/6/2011	3,135	3,140	Dolomite: 100%, light gray (N7), fine crystalline, well indurated, low porosity, low permeability.
9/6/2011	3,140	3,145	Limestone: 100%, yellowish gray (5Y 8/1) to white (N9), very fine grained, chalky, calcareous, moderately well indurated, some vuggy, low to moderate porosity, low to moderate permeability.
9/6/2011	3,145	3,150	Limestone: same as above.
9/6/2011	3,150	3,155	Limestone: same as above.
9/6/2011	3,155	3,160	Limestone: same as above.
9/6/2011	3,160	3,165	Limestone: same as above.
9/6/2011	3,165	3,170	Limestone: same as above.
9/6/2011	3,170	3,175	Limestone: same as above.
9/6/2011	3,175	3,180	Limestone: same as above.
9/6/2011	3,180	3,185	Dolomite and Limestone: Dolomite, 70%, medium dark gray (N4) medium light gray (N6), fine crystalline, moderately well indurated, slightly vuggy; Limestone, 30%, yellowish gray (5Y 8/1) to white (N9), very fine grained, chalky, calcareous, moderately well indurated, some vuggy, low to moderate porosity, low to moderate permeability.
9/6/2011	3,185	3,190	Limestone: 100%, yellowish gray (5Y 8/1) to white (N9), very fine grained, chalky, calcareous, moderately well indurated, some vuggy, low to moderate porosity, low to moderate permeability.
9/7/2011	3,190	3,195	Limestone: 100%, yellowish gray (5Y 8/1), fine grained, ooids, few burrows and fossil molds, moderately to well indurated, low to moderate intergranular porosity, low to moderate permeability; Trace Dolomite, medium light gray (N6) to medium gray (N5), fine crystalline, moderately well indurated.
9/7/2011	3,195	3,200	Limestone and Dolomite: Limestone, 90%, yellowish gray (5Y 8/1) to white (N9), very fine grained, poorly indurated, some vuggy, low to moderate porosity, low to moderate permeability; Dolomite, 10%, medium light gray (N6), fine crystalline, well indurated.
9/8/2011	3,200	3,205	Limestone: 100%, very pale orange (10YR 8/2) to white (N9), fine to medium grained, poorly indurated, low to moderate porosity, low to moderate permeability, mostly pellets with few benthic foraminifera, sparry calcite cement.
9/9/2011	3,205	3,210	Limestone: same as above.
9/10/2011	3,210	3,215	Limestone: same as above.
9/15/2011	3,215	3,220	Limestone: 90%, very pale orange (10YR 8/2) to white (N9), fine to medium grained, poorly to moderately indurated, low to moderate porosity, low to moderate permeability, mostly pellets with few benthic foraminifera, sparry calcite cement; Dolomite, 10%, light gray (N7) to medium gray (N4), fine crystalline, well indurated.
9/18/2011	3,220	3,225	Limestone: 100%, very pale orange (10YR 8/2) to white (N9), fine grained, well to moderately indurated, low to moderate porosity, low to moderate permeability, mostly pellets with few benthic foraminifera, sparry calcite cement.
10/2/2011	3,225	3,230	Limestone: same as above.
10/23/2011	3,230	3,235	Limestone and Dolomite: Limestone, 80%, dolomitic, very pale orange (10YR 8/2) to white (N9), fine to medium grained, moderately to moderately well indurated, low to moderate porosity, low to moderate permeability; Dolomite, 20%, medium gray (N5) to medium dark gray (N4) to pale yellowish brown (10YR6/2), fine crystalline, well indurated; Minor amount of sparry calcite cement.

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Florida Power & Light Company
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Lithologic Description

	Depth (ft. bpl)		
Date	From	To	**Observer's Description**
10/23/2011	3,235	3,240	Limestone and Dolomite: same as above.
10/23/2011	3,240	3,245	Limestone and Dolomite: 80%, dolomitic, very pale orange (10YR 8/2) to white (N9), fine to medium grained, moderately poor to moderately well indurated, low to moderate porosity, low to moderate permeability; Dolomite, 20%, medium gray (N5) to medium dark gray (N4) to pale yellowish brown (10YR6/2), fine crystalline, well indurated; Minor amount of sparry calcite cement.
10/26/2011	3,245	3,250	Limestone and Dolomite: Limestone, 95%, very pale orange (10YR 8/2) to white (N9), fine to medium grained, oolitic, some vugs, moderately poor to moderately well indurated, low to moderate porosity, low to moderate permeability; Dolomite, 5%, medium gray (N5), pale yellowish brown (10YR 6/2), and pale reddish brown (10R 5/4), fine crystalline, well indurated..
10/26/2011	3,250	3,255	Limestone: 100%, very pale orange (10YR 8/2) to white (N9), fine to medium grained, moderately poor to moderately well indurated, low to moderate porosity, low to moderate permeability; Dolomite, trace, medium gray (N5) to medium dark gray (N4), fine crystalline, well indurated..
10/26/2011	3,255	3,260	Limestone and Dolomite: 70%, dolomitic, very pale orange (10YR 8/2) to white (N9), fine grained, moderately well indurated, low to moderate porosity, low to moderate permeability; Dolomite, 30%, medium gray (N5) to medium dark gray (N4) to pale yellowish brown (10YR6/2), fine crystalline, well indurated.
10/26/2011	3,260	3,265	Limestone and Dolomite: same as above.

ft. bpl = feet below pad level

Appendix L
Geophysical Logs

Please see geophysical logs at the back of the report

Appendix M
Core Descriptions

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **1**

Date Recovered: August 14, 2011

Interval Cored: 1,721.5 to 1,734.5 feet bpl

Amount Recovered: **3.3**

Recovery Percentage: **25.0%**

Depth Interval (feet bpl) From	To	Observer's Description
1,721.5	1,722.3	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2) to grayish orange (10 YR 7/4), fine to medium grained, moderate induration, fossiliferous (Dictyoconus, echinoid spines, calcite replaced shell), moderately to well sorted, moderate intergranular porosity, low permeability (micro), calcite replacement.
1,722.3	1,722.7	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2), fine crystalline (waxy), high induration, conchoidal breaks, non-fossiliferous, moderate secondary porosity with vugs <1 mm to 1 cm, low permeability (micro).
1,722.7	1,723.0	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2) to grayish orange (10 YR 7/4), fine to medium grained, moderate induration, fossiliferous (Dictyoconus, echinoid spines), moderate to well sorted, moderate intergranular porosity, low permeability (micro), calcite replacement.
1,723.0	1,723.3	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2) to grayish orange (10 YR 7/4), fine to medium grained, moderate induration, fossiliferous (Dictyoconus, echinoid spines), moderate to well sorted, moderate intergranular porosity, vugs 1 mm to 3 cm, moderate to high permeability (micro).
1,723.3	1,723.6	Dolomitic Limestone (Rubble): 100%, very pale orange (10 YR /2), fine grained, moderate induration, fossiliferous (Dictyoconus, echinoid spines), well sorted, low intergranular porosity, low permeability (micro).
1,723.6	1,724.0	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2) to medium gray (N5), fine grained, moderate induration, fossiliferous (molds), moderately to well sorted, low intergranular porosity, low permeability (micro), calcite replacement.
1,724.0	1,724.3	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2) to grayish orange (10 YR 7/4), fine to medium grained, moderate induration, fossiliferous (Dictyoconus, echinoid spines), moderately to well sorted, moderate to high intergranular porosity, moderate permeability (micro), calcite replacement.
1,724.3	1,724.8	Dolomitic Limestone: 100%, pale yellowish brown (10YR 6/2) to grayish orange (10 YR 7/4), fine grained, moderate to high induration, fossiliferous (Dictyoconus, echinoid spines), moderately to well sorted, low to moderate intergranular porosity, vugs <1 mm to 3 mm, low permeability (micro), calcite replacement.
1,724.8	1,734.5	No core recovery.

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **2**

Date Recovered: August 18, 2011

Interval Cored: 2,026-2,040 feet bpl

Amount Recovered: **12.0 feet**

Recovery Percentage: **86%**

Depth Interval (feet bpl) From	To	Observer's Description
2,026.0	2,029.4	Dolomitic Limestone; 100%, yellowish gray (5Y 8/1) to very pale orange (10yr 8/2), fine grained, well sorted, moderate induration, low intergranular porosity, minor moldic porosity, low permeability, black accessory mineral.
2,029.4	2,031.3	Dolomitic Limestone; 100%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderate sorting, moderate to high induration, moderate intergranular porosity, low permeability, benthic foraminifera generally absent, black accessory mineral, laminated appearance.
2,031.3	2,033.6	Dolomitic Limestone; 100%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine grained, moderate sorting, moderate induration, moderate intergranular porosity, low permeability, black accessory mineral.
2,033.6	2,034.3	Dolomitic Limestone; 100%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderate to well sorted, moderate to high induration, moderate intergranular porosity, low permeability, benthic foraminifera generally absent, black accessory mineral, laminated appearance.
2,034.3	2,038.0	Dolomitic Limestone; 100%, very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained (fine crystalline cement), well sorted, moderate to high induration, moderate intergranular porosity, low permeability, benthic foraminifera generally absent, black accessory mineral.

feet bpl = feet below pad level

Florida Power & Light Company
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Rock Core Lithologic Description

Core #: **3**

Date Recovered: August 20, 2011

Interval Cored: 2,110-2,124 feet bpl

Amount Recovered: **2.0** feet

Recovery Percentage: **14%**

Depth Interval (feet bpl) From	To	Observer's Description
2,110.0	2,112.0	Dolomitic Limestone; grayish orange (10YR 7/4), fine grained, moderately well sorted, low induration, low to moderate intergranular porosity, low to moderate permeability, benthic foraminifera (dictyoconus, fabiana, echinoid test?), thin bands of black accessory mineral.

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
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Rock Core Lithologic Description

Core #: **4**

Date Recovered: August 21, 2011

Interval Cored: 2,288.3-2,302.3 feet bpl

Amount Recovered: **13.0** feet

Recovery Percentage: **93%**

Depth Interval (feet bpl) From	To	Observer's Description
2,288.3	2,299.9	Dolomitic Limestone: grayish orange (10YR 7/4), fine grained, well sorted, moderate induration, low intergranular porosity, low permeability, sparce benthic foraminifera, calcite/dolomite replacement, thin darker bands (laminated), black accessory mineral.
2,299.9	2,300.6	Dolomitic Limestone (chalky): very pale orange (10YR 8/2), fine grained, well sorted, low induration, low intergranular porosity, low permeability, benthic foraminifera generally absent, black accessory mineral.
2,300.6	2,301.3	Dolomitic Limestone: grayish orange (10YR 7/4), fine grained, well sorted, moderate induration, low intergranular porosity, low permeability, small localized pockets of honeycombed porosity, sparce benthic foraminifera, calcite/dolomite replacement, black accessory mineral.

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **5**

Date Recovered: August 24, 2011

Interval Cored: 2,396 feet to 2,410 feet bpl

Amount Recovered: **6.1** feet

Recovery Percentage: **44%**

Depth Interval (feet bpl) From	To	Observer's Description
2,396.0	2,396.9	Dolomitic Limestone: very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderately well sorted, moderate induration, moderate amount of foraminifera, some dolomite replacement, very few vugs, low interparticle porosity, low to moderate permeability.
2,396.9	2,397.6	Dolomitic Limestone (Rubble): grayish orange (10YR 7/4), fine grained, moderately well sorted, low induration, moderate porosity, moderate amount of foraminifera, low to moderate permeability.
2,397.6	2,399.4	Dolomite: pale yellowish brown (10YR 6/2), very fine grained to crystalline, poorly sorted, moderate induration, some lamination, some lamination, dolomite/calcite replacement mineral, low porosity, low permeability.
2,399.4	2,400.9	Dolomitic Limestone: grayish orange (10YR 7/4), fine grained, moderate to poorly sorted, low to moderate induration, benthic foraminifera, low to moderate intergranular and interparticle porosity, moderate permeability.
2,400.9	2,401.7	Dolomitic Limestone: grayish orange (10YR 7/4), fine grained, moderate to poorly sorted, low induration, benthic foraminifera, vuggy, moderate intergranular and interparticle porosity, moderate permeability.
2,401.7	2,402.1	Dolomitic Limestone Sand: grayish orange (10YR 7/4), very fine grained, chalky, benthic foraminifera.

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **6**

Date Recovered: August 27, 2011

Interval Cored: 2,576 feet to 2,578.1 feet bpl

Amount Recovered: **0.9** feet

Recovery Percentage: **43%**

Depth Interval (feet bpl) From	To	Observer's Description
2,576.0	2,576.9	Dolomitic Limestone: very pale orange (10YR 8/2) to grayish orange (10YR 7/4), fine grained, moderately well sorted, moderate induration, vugs, sparse benthic foraminifera, echinoids spine, gastropod molds, moderate to high intergranular porosity, moderate

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **7**

Date Recovered: August 28, 2011

Interval Cored: 2,580 feet to 2,590 feet bpl

Amount Recovered: **0.8** feet

Recovery Percentage: **8%**

Depth Interval (feet bpl) From	To	Observer's Description
2,580.0	2,580.8	Dolomitic Limestone: grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, moderately well sorted, moderate induration, moderate to high intergranular porosity, moderate permeability, unevenly distributed vugs, benthic foraminifera (Dictyoconus, echinoids spine) near core top and becoming sparse, limestone fragments.

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **8**

Date Recovered: August 31, 2011

Interval Cored: 2,638 feet to 2,652 feet bpl

Amount Recovered: **8.5** feet

Recovery Percentage: **61%**

Depth Interval (feet bpl) From	To	Observer's Description
2,638.0	2,639.7	Limestone (Rubble): yellowish gray (5Y 8/1), argillaceous, chalky, moderately well indurated, low porosity, low permeability, nonfossiliferous.
2,639.7	2,640.2	Limestone: yellowish gray (5Y 8/1), argillaceous, chalky, moderately well indurated, low porosity, low permeability, nonfossiliferous.
2,640.2	2,642.9	Dolomitic Limestone: Dolomitic Limestone, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, poorly sorted, moderate to well indurated, low to moderate intergranular porosity, few small vugs, benthic foraminifera. low to moderate permeability.
2,642.9	2,644.0	Dolomitic Limestone: pale yellowish brown (10YR 6/2) and grayish orange (10YR 7/4), fine grained, poorly sorted, moderate to well indurated, few benthic foraminifera, few small vugs, some calcite replacement, thin darker bands (laminated), low intergranular porosity, low permeability,.
2,644.0	2,645.5	Limestone: very pale orange (10YR 8/2), fine grained, poorly sorted, moderately well indurated, few benthic foraminifera, slightly vuggy, some thin darker bands (laminated), moderate intergranular and interparticle porosity, low to moderate permeability.
2,645.5	2,646.5	Dolomitic Limestone: Dolomitic Limestone, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), fine grained, poorly sorted, moderate to well indurated, low to moderate intergranular porosity, low to moderate permeability.

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **9**

Date Recovered: September 1, 2011

Interval Cored: 2,652 feet to 2,666 feet bpl

Amount Recovered: **5.2** feet

Recovery Percentage: **37%**

Depth Interval (feet bpl) From	To	Observer's Description
2,652.0	2,653.4	Dolomitic Limestone: very pale orange (10YR 8/2) to grayish orange (10 YR 7/4), fine grained, moderate to well indurated, few to some benthic foraminfiera, shell fragments and molds, low to moderate intergranualr porosity, low to moderate permeability.
2,653.4	2,654.8	Dolomitic Limestone: yellow gray (5Y 8/1), fine grained, poorly sorted, moderate to well indurated, few benthic foraminifera, few small vugs, thin darker bands (laminated), low intergranular porosity, low permeability,.
2,654.8	2,655.1	Limestone: yellow gray (5Y 8/1), fine grained, chalky, burrows and vugs, low intergranular porosity, low permeability.
2,655.1	2,656.5	Dolomitic Limestone: yellow gray (5Y 8/1), fine grained, poorly sorted, moderate to well indurated, few benthic foraminifera, few small vugs, thin darker bands (laminated), low intergranular porosity, low permeability,.
2,656.5	2,657.2	Dolomitic Limestone: very pale orange (10YR 8/2) to grayish orange (10 YR 7/4), fine grained, moderate to well indurated, some benthic foraminfiera, shell fragments and molds, low to moderate intergranualr porosity, low to moderate permeability.

feet bpl = feet below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Rock Core Lithologic Description

Core #: **10**

Date Recovered: September 3, 2011

Interval Cored: 2,666 feet to 2,679 feet bpl

Amount Recovered: **12.4** feet

Recovery Percentage: **95%**

Depth Interval (feet bpl) From	To	Observer's Description
2,666.0	2,671.3	Dolomitic Limestone: grayish orange (10 YR 7/4), fine grained, moderate to well indurated, some benthic foraminfiera, shell fragments and molds, slightly vuggy, low to moderate intergranualr porosity, low to moderate permeability.
2,671.3	2,677.6	Limestone: yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, moderate to well induration, slightly vuggy, benthic foraminifera, low to moderate intergranular porosity, low permeability.
2,677.6	2,678.0	Limestone (Rubble): yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, moderately poor induration, benthic foraminifera, low to moderate intergranular porosity, low permeability.
2,678.0	2,678.4	Limestone: yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), fine to medium grained, moderate to well induration, benthic foraminifera, low to moderate intergranular porosity, low permeability.

feet bpl = feet below pad level

Appendix N

Pad Monitor Wells Data Summary Sheets and Plug and Abandonment Permit

Project: Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1

EW-1 Pad Monitoring Well Water Quality Data
Northeast Pad Monitoring Well
(NE-EW PMW)

Date	Time (hours)	Depth to Water (ft. btoc)	Water Elevation (ft. NAVD 88)	Specific Conductance (umhos/cm)	Chloride (mg/L)	TDS (mg/L)	Temperature (degrees C)	Remarks
4/21/2011	1108	10.49	-1.61	78,700	32,200	57,000	29.8	Background Sampling
4/29/2011	1157	10.68	-1.80	80,400	29,900	53,800	30.4	
5/5/2011	1157	11.40	-2.52	81,400	27,500	52,350	31.2	
5/11/2011	1309	11.00	-2.12	76,800	31,600	51,200	29.7	
5/19/2011	0958	10.48	-1.60	72,600	35,600	51,200	29.5	
5/26/2011	1050	10.76	-1.88	71,360	29,500	52,900	29.7	
6/2/2011	1134	10.78	-1.90	71,700	29,000	55,700	29.6	
6/9/2011	1128	10.61	-1.73	69,700	32,300	50,650	29.3	
6/16/2011	0958	10.35	-1.47	69,300	33,000	53,450	29.5	
6/23/2011	1028	10.41	-1.53	69,400	30,600	55,600	29.5	
6/30/2011	0928	10.15	-1.27	70,300	27,600	51,950	29.2	
7/8/2011	1210	9.00	-0.12	72,570	30,100	54,150	29.9	
7/14/2011	1338	9.75	-0.87	76,400	27,200	54,550	29.9	
7/21/2011	1039	9.35	-0.47	72,200	32,600	49,760	29.7	
7/28/2011	1119	9.51	-0.63	71,600	30,200	54,250	29.7	
8/4/2011	1249	9.70	-0.82	64,400	31,500	53,850	27.5	
8/11/2011	1059	9.25	-0.37	73,900	29,500	57,150	29.6	
8/18/2011	1039	9.45	-0.57	71,900	29,400	54,850	30.0	
8/25/2011	1039	9.45	-0.57	69,800	31,300	55,550	29.7	
9/1/2011	1109	9.15	-0.27	71,700	29,500	56,300	29.9	
9/8/2011	1049	9.15	-0.27	70,700	31,400	49,800	30.3	
9/16/2011	1233	9.30	-0.42	5320*	1260*	2668*	27.8	
9/23/2011	1129	9.10	-0.22	72,900	31,200	52,750	30.1	
9/29/2011	1330	9.16	-0.28	11,500*	3,200*	7,010*	27.8	
10/6/2011	1119	9.30	-0.42	72,600	30,000	56,200	30.1	
10/13/2011	1058	10.15	-1.27	75,200	32,500	51,600	30.1	
10/20/2011	1049	8.40	0.48	68,400	29,100	57,450	29.9	
10/27/2011	1109	8.95	-0.07	80,200	27,700	54,950	30.0	
11/3/2011	1049	8.91	-0.03	80,200	31,100	55,700	29.9	
11/10/2011	0958	9.67	-0.79	75,500	28,700	59,600	30.0	
11/17/2011	1058	10.81	-1.93	68,400	34,900	57,500	30.1	
11/25/2011	0939	9.51	-0.63	69,300	26,500	52,750	30.0	
12/1/2011	1138	9.67	-0.79	66,000	29,800	55,200	29.8	
12/8/2011	1058	10.31	-1.43	63,800	30,100	57,050	27.5	
12/15/2011	1109	9.61	-0.73	75,400	28,300	53,700	30.0	
12/22/2011	1038	9.67	-0.79	69,300	29,500	51,800	30.7	
12/29/2011	0918	9.87	-0.99	76,900	30,800	51,300	29.7	
1/5/2012	1118	10.41	-1.53	70,400	28,100	52,200	29.5	
1/12/2012	1058	10.21	-1.33	75,200	28,200	50,900	29.9	
1/19/2012	0958	10.30	-1.42	75,200	27,700	49,300	29.8	
1/26/2012	1048	10.22	-1.34	72,300	29,400	55,300	30.0	
2/2/2012	1048	10.21	-1.33	71,300	28,400	50,700	29.9	
2/10/2012	1029	9.15	-0.27	71,400	30,400	52,400	30.0	
2/16/2012	1219	9.47	-0.59	72,300	27,000	53,300	29.9	
2/23/2012	1049	9.57	-0.69	72,300	29,600	55,100	30.1	
3/1/2012	1038	9.74	-0.86	72,300	31,500	50,100	30.0	
3/8/2012	1058	9.76	-0.88	72,200	31,600	53,100	29.3	
3/16/2012	1038	9.65	-0.77	72,100	34,900	53,100	29.9	
3/22/2012	1108	9.90	-1.02	72,400	30,800	48,700	29.8	
3/29/2012	0911	9.87	-0.99	72,500	29,100	48,600	29.2	
4/5/2012	1208	10.25	-1.37	71,600	29,200	50,800	30.0	
4/12/2012	1118	10.15	-1.27	71,500	32,000	52,700	30.1	
4/19/2012	1143	9.85	-0.97	72,000	34,000	54,500	30.3	
4/26/2012	1009	9.50	-0.62	72,100	36,000	54,200	29.7	
5/3/2012	1144	8.85	0.03	72,400	36,500	50,900	29.6	
5/10/2012	1109	9.42	-0.54	72,800	32,000	51,700	29.7	
5/17/2012	0959	9.05	-0.17	73,200	29,500	53,200	29.7	
5/24/2012	1229	8.65	0.23	72,200	28,900	51,900	29.6	
5/31/2012	1214	9.04	-0.16	72,800	30,900	51,200	29.9	
6/8/2012	1029	9.32	-0.44	72,800	30,700	50,900	29.9	
6/14/2012	1029	9.55	-0.67	72,000	30,700	53,500	30.2	
6/21/2012	1129	9.25	-0.37	72,800	30,600	51,300	29.7	
6/28/2012	1019	9.10	-0.22	72,900	29,800	52,000	30.1	
7/5/2012	1244	9.40	-0.52	72,000	27,800	52,500	29.3	

ft. btoc: feet below top of casing
TOC: Top of Casing
ft. NAVD 88: North American Vertical Datum of 1988
umhos/cm: micromhos per centimeter
mg/L: milligrams per liter
C: Celsius
*Results appear to be anomalous and are suspected to be related to a sampling error. Countermeasures to prevent reoccurance have been implemented.
Note: TOC elevation is: 8.88 feet NAVD 88

-2.52

Project: Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1

EW-1 Pad Monitoring Well Water Quality Data
Southeast Pad Monitoring Well
(SE-EW PMW)

Date	Time (hours)	Depth to Water (ft. btoc)	Water Elevation (ft. NAVD 88)	Specific Conductance (umhos/cm)	Chloride (mg/L)	TDS (mg/L)	Temperature (degrees C)	Remarks
4/21/2011	1311	10.10	-1.51	81,600	30,200	57,800	29.9	Background Sampling
4/29/2011	1349	10.40	-1.81	86,700	33,100	55,000	30.4	
5/5/2011	1008	11.10	-2.51	83,000	29,500	54,700	29.9	
5/11/2011	1228	10.65	-2.06	78,200	30,100	52,600	30.1	
5/19/2011	1039	10.12	-1.53	75,200	30,000	51,100	29.8	
5/26/2011	1235	10.47	-1.88	73,890	31,200	53,800	29.9	
6/2/2011	1056	10.50	-1.91	74,200	29,400	57,400	29.6	
6/9/2011	1210	10.32	-1.73	72,200	32,100	51,000	29.6	
6/16/2011	1035	10.00	-1.41	71,300	32,200	54,000	29.8	
6/23/2011	1109	10.10	-1.51	71,900	31,600	55,650	29.8	
6/30/2011	1009	9.85	-1.26	72,800	27,600	53,050	29.5	
7/8/2011	1138	9.12	-0.53	73,150	29,800	54,450	29.9	
7/14/2011	1414	9.48	-0.89	79,700	29,000	55,350	29.8	
7/21/2011	1119	9.36	-0.77	74,100	34,000	54,100	30.0	
7/28/2011	1229	9.55	-0.96	74,300	30,200	56,300	29.8	
8/4/2011	1224	9.50	-0.91	72,700	31,500	53,000	27.7	
8/11/2011	1209	9.37	-0.78	77,400	30,000	56,800	29.7	
8/18/2011	1149	9.45	-0.86	74,100	30,100	55,500	30.0	
8/25/2011	1149	9.38	-0.79	73,300	31,200	57,450	29.6	
9/1/2011	1224	9.10	-0.51	72,700	30,700	57,300	29.8	
9/8/2011	1159	9.21	-0.62	73,200	32,200	51,800	30.1	
9/16/2011	1303	9.40	-0.81	70,280	29,600	50,550	27.7	
9/23/2011	1239	9.20	-0.61	75,200	29,000	55,550	29.8	
9/29/2011	1300	9.10	-0.51	68,500	30,700	53,600	27.4	
10/6/2011	1229	9.25	-0.66	79,100	31,300	54,050	30.0	
10/13/2011	1209	9.95	-1.36	76,900	30,200	52,250	30.1	
10/20/2011	1200	8.60	-0.01	69,900	28,000	57,150	29.8	
10/27/2011	1218	8.81	-0.22	82,400	28,000	56,500	30.0	
11/3/2011	1159	9.56	-0.97	82,900	31,000	56,400	30.1	
11/10/2011	1109	9.96	-1.37	78,300	27,900	60,500	30.1	
11/17/2011	1208	10.90	-2.31	69,700	34,000	57,800	30.2	
11/25/2011	1049	9.36	-0.77	69,900	26,900	53,600	30.0	
12/1/2011	1248	10.85	-2.26	71,800	33,900	57,000	30.2	
12/8/2011	1209	9.87	-1.28	68,900	29,500	61,500	27.0	
12/15/2011	1219	9.53	-0.94	76,600	28,000	55,100	30.1	
12/22/2011	1149	9.65	-1.06	72,300	29,000	52,400	30.0	
12/29/2011	1029	9.96	-1.37	77,600	29,800	52,200	30.1	
1/5/2012	1229	10.31	-1.72	72,800	27,700	53,400	30.1	
1/12/2012	1204	10.10	-1.51	76,000	30,800	52,900	30.1	
1/19/2012	1139	10.38	-1.79	76,500	28,100	50,800	30.0	
1/26/2012	1229	10.18	-1.59	73,200	29,900	56,300	30.1	
2/2/2012	1229	10.23	-1.64	72,400	27,900	52,000	30.1	
2/10/2012	1209	9.21	-0.62	72,000	29,800	55,400	30.2	
2/16/2012	1359	9.45	-0.86	72,700	27,700	57,200	30.2	
2/23/2012	1229	9.48	-0.89	72,800	32,100	57,000	30.2	
3/1/2012	1219	9.61	-1.02	72,800	31,000	51,700	30.2	
3/8/2012	1244	9.81	-1.22	72,500	32,500	52,500	29.9	
3/16/2012	1219	9.61	-1.02	72,900	34,300	53,100	30.3	
3/22/2012	1249	9.87	-1.28	72,600	31,000	51,100	30.2	
3/29/2012	1054	9.97	-1.38	72,900	29,500	51,200	29.9	
4/5/2012	1341	10.05	-1.46	72,300	29,500	52,200	30.2	
4/12/2012	1259	9.98	-1.39	72,200	31,200	53,800	30.5	
4/19/2012	1244	9.90	-1.31	71,800	33,500	54,500	30.4	
4/26/2012	1144	9.61	-1.02	72,200	35,500	54,500	30.0	
5/3/2012	1249	8.97	-0.38	73,100	37,400	51,700	30.2	
5/10/2012	1242	9.32	-0.73	73,300	32,100	53,100	30.2	
5/17/2012	1134	9.10	-0.51	73,300	27,700	54,100	30.1	
5/24/2012	1404	8.75	-0.16	73,400	30,600	54,100	30.3	
5/31/2012	1343	9.10	-0.51	73,900	31,000	50,500	30.1	
6/8/2012	1202	9.30	-0.71	73,300	31,100	53,200	30.3	
6/14/2012	1209	9.38	-0.79	73,700	31,500	54,700	30.6	
6/21/2012	1316	9.03	-0.44	73,700	29,900	52,300	30.2	
6/28/2012	1159	9.20	-0.61	73,800	27,300	49,300	30.3	
7/5/2012	1424	9.30	-0.71	73,300	27,800	53,800	29.8	

ft. btoc: feet below top of casing
TOC: Top of Casing
ft. NAVD 88: North American Vertical Datum of 1988
umhos/cm: micromhos per centimeter
mg/L: milligrams per liter
C: Celsius
Note: TOC elevation is: 8.59 feet NAVD 88

Project: Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1

EW-1 Pad Monitoring Well Water Quality Data
Northwest Pad Monitoring Well
(NW-EW PMW)

Date	Time (hours)	Depth to Water (ft. btoc)	Water Elevation (ft. NAVD 88)	Specific Conductance (umhos/cm)	Chloride (mg/L)	TDS (mg/L)	Temperature (degrees C)	Remarks
4/21/2011	1221	10.50	-1.66	84,300	33,500	59,900	30.8	Background Sampling
4/29/2011	1120	10.65	-1.81	86,300	33,700	56,400	30.0	
5/5/2011	1051	11.40	-2.56	87,400	31,300	57,650	31.1	
5/11/2011	1034	12.40	-3.56	79,100	33,500	55,650	30.4	
5/19/2011	1113	13.90	-5.06	80,000	36,000	53,700	30.4	
5/26/2011	1125	10.73	-1.89	75,130	32,300	55,450	30.4	
6/2/2011	1215	10.75	-1.91	75,900	30,700	59,500	30.3	
6/9/2011	1248	10.60	-1.76	72,500	32,200	51,950	29.9	
6/16/2011	1118	10.25	-1.41	72,500	31,500	54,550	30.0	
6/23/2011	1143	10.37	-1.53	73,300	31,600	57,750	30.3	
6/30/2011	1049	10.10	-1.26	75,700	27,400	54,300	30.0	
7/8/2011	1112	9.38	-0.54	74,100	30,700	53,950	30.3	
7/14/2011	1524	9.75	-0.91	79,900	27,600	56,350	30.3	
7/21/2011	1226	9.60	-0.76	76,200	32,600	54,500	29.7	
7/28/2011	1154	9.80	-0.96	74,900	32,200	57,050	30.5	
8/4/2011	1317	9.85	-1.01	78,000	30,500	59,300	28.7	
8/11/2011	1134	9.61	-0.77	77,600	31,100	58,150	30.4	
8/18/2011	1114	9.68	-0.84	73,100	30,000	55,350	30.6	
8/25/2011	1114	9.61	-0.77	72,300	31,800	56,950	30.0	
9/1/2011	1149	9.33	-0.49	71,900	29,300	56,000	30.4	
9/8/2011	1124	9.45	-0.61	73,800	30,100	52,300	30.5	
9/16/2011	1203	9.60	-0.76	67,200	23,400	51,650	28.2	
9/23/2011	1204	9.43	-0.59	73,800	30,800	54,450	30.4	
9/29/2011	1205	9.35	-0.51	68,700	27,500	50,800	27.6	
10/6/2011	1154	9.50	-0.66	78,400	30,000	56,550	30.2	
10/13/2011	1133	10.21	-1.37	75,800	29,300	50,500	30.2	
10/20/2011	1124	8.81	0.03	70,200	27,500	56,850	30.1	
10/27/2011	1143	10.39	-1.55	81,500	28,800	54,600	30.2	
11/3/2011	1123	10.50	-1.66	80,500	30,400	55,900	30.1	
11/10/2011	1033	10.37	-1.53	77,800	27,800	58,700	30.1	
11/17/2011	1133	10.71	-1.87	67,900	30,500	57,000	30.3	
11/25/2011	1014	9.58	-0.74	71,700	27,400	53,300	30.2	
12/1/2011	1214	9.80	-0.96	68,500	33,500	53,650	30.1	
12/8/2011	1133	10.37	-1.53	68,700	27,600	57,850	27.7	
12/15/2011	1144	9.75	-0.91	75,500	28,200	52,000	30.0	
12/22/2011	1114	9.87	-1.03	70,600	27,700	52,100	29.9	
12/29/2011	0954	9.97	-1.13	77,700	29,500	51,600	29.9	
1/5/2012	1153	10.52	-1.68	71,800	28,000	52,800	29.6	
1/12/2012	1133	10.35	-1.51	75,400	30,400	51,900	30.0	
1/19/2012	1033	10.42	-1.58	75,600	29,800	50,200	29.9	
1/26/2012	1123	10.35	-1.51	73,200	29,500	56,000	29.9	
2/2/2012	1123	10.35	-1.51	71,100	27,400	51,200	29.9	
2/10/2012	1104	9.38	-0.54	70,300	28,800	54,900	29.8	
2/16/2012	1254	9.67	-0.83	71,100	27,800	55,200	29.8	
2/23/2012	1124	9.67	-0.83	72,100	30,700	56,200	29.8	
3/1/2012	1114	9.91	-1.07	71,500	31,000	51,200	29.7	
3/8/2012	1139	9.62	-0.78	71,600	30,500	52,800	29.4	
3/16/2012	1114	9.85	-1.01	71,500	34,100	52,400	29.7	
3/22/2012	1144	10.10	-1.26	71,400	30,200	48,700	29.6	
3/29/2012	0949	9.93	-1.09	71,500	28,400	51,200	29.6	
4/5/2012	1241	10.09	-1.25	71,300	28,900	51,100	29.7	
4/12/2012	1154	10.00	-1.16	71,300	29,300	52,600	29.9	
4/19/2012	1109	9.97	-1.13	71,400	31,500	53,300	30.2	
4/26/2012	1042	9.68	-0.84	71,700	31,300	53,000	29.6	
5/3/2012	1109	9.00	-0.16	72,200	34,200	49,500	29.5	
5/10/2012	1142	9.35	-0.51	72,500	31,400	52,000	29.5	
5/17/2012	1032	9.10	-0.26	72,700	30,200	52,300	29.6	
5/24/2012	1302	8.75	0.09	72,600	30,300	52,800	29.5	
5/31/2012	1247	9.07	-0.23	73,100	32,100	48,800	29.6	
6/8/2012	1102	9.35	-0.51	71,800	30,300	52,200	29.7	
6/14/2012	1104	9.37	-0.53	72,300	30,200	53,200	30.3	
6/21/2012	1214	8.76	0.08	72,600	28,500	51,100	29.7	
6/28/2012	1054	9.12	-0.28	72,500	30,700	51,900	29.8	
7/5/2012	1319	9.50	-0.66	72,600	27,700	51,900	29.8	

ft. btoc: feet below top of casing
TOC: Top of Casing
ft. NAVD 88: North American Vertical Datum of 1988
umhos/cm: micromhos per centimeter
mg/L: milligrams per liter
C: Celsius
Note: TOC elevation is: 8.84 feet NAVD 88

Project: Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1

EW-1 Pad Monitoring Well Water Quality Data
Southwest Pad Monitoring Well
(SW-EW PMW)

Date	Time (hours)	Depth to Water (ft. btoc)	Water Elevation (ft. NAVD 88)	Specific Conductance (umhos/cm)	Chloride (mg/L)	TDS (mg/L)	Temperature (degrees C)	Remarks
4/21/2011	1414	10.50	-1.62	72,500	26,400	51,500	30.6	Background Sampling
4/29/2011	1025	10.60	-1.72	77,400	28,300	51,600	29.8	
5/5/2011	0930	11.85	-2.97	75,200	29,000	49,400	28.7	
5/11/2011	1124	16.40	-7.52	78,100	28,300	51,050	31.6	
5/19/2011	1202	15.95	-7.07	73,100	29,700	48,450	32.6	
5/26/2011	1155	11.20	-2.32	66,630	27,800	48,350	29.4	
6/2/2011	1035	11.25	-2.37	68,500	26,000	52,600	29.4	
6/9/2011	1319	11.05	-2.17	65,400	26,300	44,150	29.5	
6/16/2011	1154	10.75	-1.87	64,900	27,000	48,450	29.5	
6/23/2011	1214	10.85	-1.97	65,500	30,400	50,800	29.6	
6/30/2011	1119	10.60	-1.72	68,500	24,300	46,650	29.4	
7/8/2011	1045	9.85	-0.97	64,950	25,600	47,650	29.6	
7/14/2011	1445	10.22	-1.34	69,900	24,800	48,300	29.6	
7/21/2011	1154	10.10	-1.22	67,800	27,400	47,900	29.6	
7/28/2011	1259	10.26	-1.38	67,000	26,600	48,650	27.7	
8/4/2011	1157	10.30	-1.42	68,420	25,600	51,350	27.5	
8/11/2011	1243	9.21	-0.33	67,800	26,400	51,150	29.7	
8/18/2011	1219	10.15	-1.27	66,300	25,400	47,500	29.8	
8/25/2011	1219	10.31	-1.43	66,000	26,900	50,150	29.4	
9/1/2011	1254	9.87	-0.99	65,400	25,700	49,450	29.8	
9/8/2011	1229	9.97	-1.09	66,800	26,300	46,500	29.9	
9/16/2011	1329	10.10	-1.22	64,000	25,700	46,800	28.0	
9/23/2011	1309	9.95	-1.07	66,200	25,800	47,500	29.6	
9/29/2011	1230	9.80	-0.92	64,100	25,400	46,150	27.7	
10/6/2011	1259	9.97	-1.09	76,200	25,800	45,800	29.7	
10/13/2011	1239	10.67	-1.79	69,100	26,100	46,700	29.8	
10/20/2011	1229	9.31	-0.43	64,700	23,800	51,100	29.6	
10/27/2011	1249	10.87	-1.99	75,600	26,500	50,000	29.7	
11/3/2011	1229	10.93	-2.05	75,600	27,700	49,750	29.7	
11/10/2011	1139	10.91	-2.03	73,500	25,500	53,300	29.7	
11/17/2011	1238	11.41	-2.53	63,800	26,900	50,400	29.7	
11/25/2011	1119	10.05	-1.17	65,800	24,900	48,950	29.7	
12/1/2011	1323	11.42	-2.54	65,900	29,600	51,100	29.6	
12/8/2011	1239	10.98	-2.10	64,900	24,800	52,450	27.3	
12/15/2011	1247	10.27	-1.39	70,100	24,800	49,700	29.4	
12/22/2011	1219	10.27	-1.39	66,800	24,900	45,600	29.7	
12/29/2011	1059	10.67	-1.79	71,100	26,400	46,300	29.5	
1/5/2012	1259	11.03	-2.15	64,800	24,900	47,600	29.3	
1/12/2012	1234	10.87	-1.99	69,000	25,700	47,000	29.6	
1/19/2012	1104	11.00	-2.12	69,100	24,900	44,200	29.4	
1/26/2012	1154	10.85	-1.97	67,500	25,900	50,100	29.4	
2/2/2012	1154	10.97	-2.09	65,300	25,200	46,200	29.5	
2/10/2012	1134	9.91	-1.03	65,300	25,400	48,900	29.6	
2/16/2012	1324	10.15	-1.27	64,600	24,100	50,500	29.4	
2/23/2012	1154	10.24	-1.36	65,300	24,100	50,500	29.5	
3/1/2012	1144	10.27	-1.39	65,300	26,900	45,900	29.4	
3/8/2012	1209	10.31	-1.43	65,300	27,400	47,700	30.0	
3/16/2012	1144	10.35	-1.47	65,300	29,800	47,200	29.3	
3/22/2012	1214	10.61	-1.73	65,500	27,100	44,600	29.3	
3/29/2012	1019	10.18	-1.30	65,500	26,100	45,900	29.5	
4/5/2012	1309	10.72	-1.84	65,300	25,600	48,200	29.4	
4/12/2012	1224	10.60	-1.72	65,000	27,000	49,700	30.5	
4/19/2012	1211	10.65	-1.77	65,400	28,200	50,800	30.6	
4/26/2012	1109	10.32	-1.44	66,000	30,900	49,800	29.2	
5/3/2012	1214	9.70	-0.82	67,200	30,800	47,700	29.2	
5/10/2012	1209	10.02	-1.14	68,700	30,200	49,600	29.2	
5/17/2012	1100	9.85	-0.97	68,700	27,800	49,200	28.9	
5/24/2012	1330	9.47	-0.59	68,700	28,000	49,600	29.2	
5/31/2012	1314	9.91	-1.03	68,400	28,900	49,400	29.3	
6/8/2012	1129	10.10	-1.22	68,300	29,700	49,600	29.4	
6/14/2012	1134	10.15	-1.27	67,300	28,500	50,100	29.5	
6/21/2012	1243	9.75	-0.87	68,800	27,200	48,500	29.3	
6/28/2012	1124	9.98	-1.10	68,900	29,400	53,000	29.7	
7/5/2012	1349	9.97	-1.09	68,900	26,700	49,500	29.8	

ft. btoc: feet below top of casing
TOC: Top of Casing
ft. NAVD 88: North American Vertical Datum of 1988
umhos/cm: micromhos per centimeter
mg/L: milligrams per liter
C: Celsius
Note: TOC elevation is: 8.88 feet NAVD 88

-7.52
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FAX (239)-275-1025

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. 13-59-8020 thru 8027
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. Florida Power & Light (*Owner, Legal Name if Corporation) PO Box 14000, Juno Beach, (*Address / *City) Fl. (*State) 33408 (*ZIP) 561-691-2451 (*Telephone Number)
2. 9700 SW 344 St. FPL Turkey Point Power Plant, Florida City (*Well Location - Address, Road Name or Number, City)
3. 30-7033-001.0010 (*Parcel ID No. (PIN) or Alternate Key (Circle One)) Lot ____ Block ____ Unit ____
4. 4 (*Section or Land Grant) 58 S (*Township) 40E (*Range) Dade (*County) Cell 239 3980795 (Subdivision) Check if 62-524: ___ Yes ___ No
5. Ed McCullers (*Water Well Contractor) 11312 (*License Number) 239-275-1029 (*Telephone Number) craig.brugger@layne.com (E-mail Address)
6. 5061 Luckett Rd. (*Water Well Contractor's Address) Ft. Myers (City) Fl. (State) 33905 (ZIP)

7. *Type of Work: ___ Construction ___ Repair ___ Modification X Abandonment — Monitoring Wells- Not needed- (*Reason for Repair, Modification, or Abandonment)
8. *Number of Proposed Wells 8
9. *Specify Intended Use(s) of Well(s):
___ Domestic ___ Bottled Water Supply ___ Landscape Irrigation ___ Recreation Area Irrigation ___ Agricultural Irrigation ___ Livestock ___ Nursery Irrigation ___ Commercial/Industrial ___ Golf Course Irrigation ___ Site Investigation X Monitoring ___ Test ___ Earth-Coupled Geothermal ___ HVAC Supply ___ HVAC Return
___ Public Water Supply (Limited Use/DOH)
___ Public Water Supply (Community or Non-Community/DEP)
___ Class I Injection
Class V Injection: ___ Recharge ___ Commercial/Industrial Disposal ___ Aquifer Storage and Recovery ___ Drainage
Remediation: ___ Recovery ___ Air Sparge ___ Other (Describe) ____
___ Other (Describe) ____ (Note: Not all types of wells are permitted by a given permitting authority)

Date Stamp
Official Use Only

10. *Distance from Septic System if ≤200 ft. N/A 11. Facility Description Power Plant 12. Estimated Start Date 7/25/12
13. *Estimated Well Depth 30 ft. *Estimated Casing Depth 20 ft. *Primary Casing Diameter 2 in. Open Hole: From 0 To 0 ft.
14. Estimated Screen Interval: From 20 To 30 ft.
15. *Primary Casing Material: ___ Black Steel ___ Galvanized X 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 X Other (Describe) Tremmie Cement
19. Proposed Grouting Interval for the Primary, Secondary, and Additional Casing:
From 0 To 30 Seal Material (___ Bentonite X 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 ____)

APPROVED
MIAMI-DADE COUNTY HEALTH DEPARTMENT
PERMIT #: 13-59-8020 TO 8027
DATE: 7/24/2012

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 X No If yes, complete the following: CUP/WUP No. ____ District Well ID No. ____
22. Latitude N 25 25'02.90780" Longitude W 80 20'19.68271"
23. Data Obtained From: ___ GPS ___ Map X Survey Datum: ___ NAD 27 X 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 artificial 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 this WMD or Delegated Authority access to the well site during the construction, repair, modification, or abandonment authorized by this permit.

[signature] *Signature of Contractor 11312 *License No. [signature] *Signature of Owner or Agent 7/20/12 *Date

BELOW THIS LINE - FOR OFFICIAL USE ONLY

Approval Granted By ____ Issue Date ____ Expiration Date ____ Hydrologist Approval ____ (Initials)
Fee Received $ ____ Receipt No. X2012129480 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.

1X100 - 100 - 210.00 / - 210.00 13-BID-1990985

Appendix O
Pilot Hole Water Quality Data Summary and Laboratory Reports

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Pilot Hole Water Quality

Sample Date	Depth (ft bpl)	Conductivity (umhos/cm)	Total Dissolved Solids (mg/L)	Chlorides (mg/L)	Ammonia (mg/L)	Total Kjeldahl Nitrogen (mg/L)
6/30/2011	1,100	1,228	610	61.3	0.04	0.55
7/1/2011	1,190	1,177	768	85.5	0.06	0.59
7/1/2011	1,255	1,167	776	97.3	0.03	0.56
7/1/2011	1,345	2,420	1,428	551	0.06	0.42
7/1/2011	1,435	2,900	1,736	640	0.08	0.44
7/2/2011	1,525	6,760	4,168	2,045	0.09	0.35
7/3/2011	1,615	5,660	3,548	1,670	0.08	0.45
8/13/2011	1,704	9,500	5,688	3,120	U	0.56
8/15/2011	1,794	14,670	9,260	5,010	U	0.57
8/16/2011	1,884	20,400	13,520	7,180	U	0.38
8/17/2011	1,974	25,190	16,910	9,160	U	0.22
8/19/2011	2,064	37,000	24,280	14,400	U	0.71(I)
8/21/2011	2,154	30,000	18,525	11,000	U	0.32
8/21/2011	2,244	32,100	16,967	11,500	U	0.17
8/23/2011	2,334	60,100	40,400	26,000	U	0.44
8/25/2011	2,424	38,200	23,200	14,200	U	0.17
8/26/2011	2,514	39,130	26,867	14,200	U	0.18
8/29/2011	2,604	48,400	32,767	17,400	U	0.13
9/4/2011	2,694	63,800	41,500	27,200	U	0.12
9/4/2011	2,784	59,600	40,400	25,800	U	0.12
9/5/2011	2,874	52,200	34,000	25,600	U	0.25
9/5/2011	2,964	47,240	31,200	17,900	U	0.28
9/6/2011	3,054	50,000	32,000	19,500	U	0.25
9/6/2011	3,144	49,900	33,100	19,500	U	0.47
10/23/2011	3,234	52,100	40,250	21,100	U	0.54

ft bpl = feet below pad level
umhos/cm - micromhos per centimeter
mg/L = milligrams per liter
I= Value is between MDL and PQL
U = undetected
Note: Pilot hole water quality may be influenced by salt used to control artesian head.

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/15/11 Rev. 1
Submission # 1107000027
Order # 71285

Project: Pilot Hole WQ EW-1 Analysis
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW1-PH-1100 Ft
Collected: 06/30/11 18:30
Received: 07/05/11 13:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (grab)	1228		uS/cm	0.1	0.3	120.1	07/06 08:54	07/06 08:54	DGK
Chloride	61.3		mg/L	1.10	3.30	300.0	07/05 16:48	07/05 16:48	DGK
Nitrogen (Ammonia) as N	0.04		mg/L	0.01	0.03	350.1	07/06 14:11	07/06 14:11	RPV
Nitrogen (Kjeldahl) as "N"	0.55		mg/L	0.070	0.210	351.2	07/12 06:00	07/12 09:03	MSG
Total Dissolved Solids (TDS)	610		mg/L	1.00	3.00	SM 2540C	07/06 13:02	07/07 14:42	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/15/11 Rev. 1
Submission # 1107000027
Order # 71286

Project: Pilot Hole WQ EW-1 Analysis
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW1-PH-1190 Ft
Collected: 07/01/11 10:30
Received: 07/05/11 13:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (grab)	1177		uS/cm	0.1	0.3	120.1	07/06 08:54	07/06 08:54	DGK
Chloride	85.5		mg/L	1.10	3.30	300.0	07/05 16:48	07/05 16:48	DGK
Nitrogen (Ammonia) as N	0.06		mg/L	0.01	0.03	350.1	07/06 14:12	07/06 14:12	RPV
Nitrogen (Kjeldahl) as "N"	0.59		mg/L	0.070	0.210	351.2	07/12 06:00	07/12 09:03	MSG
Total Dissolved Solids (TDS)	768		mg/L	1.00	3.00	SM 2540C	07/06 13:02	07/07 14:42	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

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U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/15/11 Rev. 1
Submission # 1107000027
Order # 71287

Project: Pilot Hole WQ EW-1 Analysis
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW1-PH-1255 Ft
Collected: 07/01/11 15:30
Received: 07/05/11 13:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (grab)	1167		uS/cm	0.1	0.3	120.1	07/06 08:54	07/06 08:54	DGK
Chloride	97.3		mg/L	1.10	3.30	300.0	07/05 16:48	07/05 16:48	DGK
Nitrogen (Ammonia) as N	0.03		mg/L	0.01	0.03	350.1	07/06 14:12	07/06 14:12	RPV
Nitrogen (Kjeldahl) as "N"	0.56		mg/L	0.070	0.210	351.2	07/12 06:00	07/12 09:03	MSG
Total Dissolved Solids (TDS)	776		mg/L	1.00	3.00	SM 2540C	07/06 13:03	07/07 14:43	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

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Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/15/11 Rev. 1
Submission # 1107000027
Order # 71288

Project: Pilot Hole WQ EW-1 Analysis
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW1-PH-1345 Ft
Collected: 07/01/11 21:40
Received: 07/05/11 13:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (grab)	2420		uS/cm	0.1	0.3	120.1	07/06 08:54	07/06 08:54	DGK
Chloride	551		mg/L	1.10	3.30	300.0	07/05 16:48	07/05 16:48	DGK
Nitrogen (Ammonia) as N	0.06		mg/L	0.01	0.03	350.1	07/06 14:12	07/06 14:12	RPV
Nitrogen (Kjeldahl) as "N"	0.42		mg/L	0.070	0.210	351.2	07/12 06:01	07/12 09:03	MSG
Total Dissolved Solids (TDS)	1428		mg/L	1.00	3.00	SM 2540C	07/06 13:03	07/07 14:43	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

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QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/15/11 Rev. 1
Submission # 1107000027
Order # 71289

Project: Pilot Hole WQ EW-1 Analysis
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW1-PH-1435 Ft
Collected: 07/02/11 06:10
Received: 07/05/11 13:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (grab)	2900		uS/cm	0.1	0.3	120.1	07/06 08:54	07/06 08:54	DGK
Chloride	640		mg/L	2.20	6.60	300.0	07/05 16:48	07/05 16:48	DGK
Nitrogen (Ammonia) as N	0.08		mg/L	0.01	0.03	350.1	07/06 14:13	07/06 14:13	RPV
Nitrogen (Kjeldahl) as "N"	0.44		mg/L	0.070	0.210	351.2	07/12 06:01	07/12 09:03	MSG
Total Dissolved Solids (TDS)	1736		mg/L	1.00	3.00	SM 2540C	07/06 13:03	07/07 14:43	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ^.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/15/11 Rev. 1
Submission # 1107000027
Order # 71290

Project: Pilot Hole WQ EW-1 Analysis
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW1-PH-1525 Ft
Collected: 07/02/11 19:30
Received: 07/05/11 13:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (grab)	6760		uS/cm	0.1	0.3	120.1	07/06 08:55	07/06 08:55	DGK
Chloride	2045		mg/L	5.50	16.50	300.0	07/05 16:48	07/05 16:48	DGK
Nitrogen (Ammonia) as N	0.09		mg/L	0.01	0.03	350.1	07/06 14:16	07/06 14:16	RPV
Nitrogen (Kjeldahl) as "N"	0.35		mg/L	0.070	0.210	351.2	07/12 06:00	07/12 09:03	MSG
Total Dissolved Solids (TDS)	4168		mg/L	1.00	3.00	SM 2540C	07/06 13:04	07/07 14:44	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services, Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/15/11 Rev. 1
Submission # 1107000027
Order # 71291

Project: Pilot Hole WQ EW-1 Analysis
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW1-PH-1615 Ft
Collected: 07/03/11 05:25
Received: 07/05/11 13:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (grab)	5660		uS/cm	0.1	0.3	120.1	07/06 08:55	07/06 08:55	DGK
Chloride	1670		mg/L	5.50	16.50	300.0	07/05 16:48	07/05 16:48	DGK
Nitrogen (Ammonia) as N	0.08		mg/L	0.01	0.03	350.1	07/06 14:17	07/06 14:17	RPV
Nitrogen (Kjeldahl) as "N"	0.45		mg/L	0.070	0.210	351.2	07/12 06:00	07/12 09:03	MSG
Total Dissolved Solids (TDS)	3548		mg/L	1.00	3.00	SM 2540C	07/06 13:00	07/07 14:44	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/24/11
Submission # 1108000565
Order # 77782

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH 1704 FT
Collected: 08/13/11 19:30
Received: 08/18/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	9500		uS/cm	1.0	3.0	120.1	08/13 19:30	08/13 19:30	Client
Specific Conductance (grab)	9860		uS/cm	1.0	3.0	120.1	08/19 14:48	08/19 14:48	DGK
Chloride	3120		mg/L	5.50	16.50	300.0	08/19 12:18	08/19 12:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/22 15:04	08/22 15:04	RPV
Nitrogen (Kjeldahl) as "N"	0.56		mg/L	0.070	0.210	351.2	08/23 10:00	08/23 14:57	MSG
Total Dissolved Solids (TDS)	5688		mg/L	1.00	3.00	SM 2540C	08/19 14:45	08/22 13:29	LYR

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J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/24/11
Submission # 1108000565
Order # 77783

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH 1794 FT
Collected: 08/15/11 19:30
Received: 08/18/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	14670		uS/cm	1.0	3.0	120.1	08/15 19:30	08/15 19:30	Client
Specific Conductance (grab)	14950		uS/cm	1.0	3.0	120.1	08/19 14:49	08/19 14:49	DGK
Chloride	5010		mg/L	11.00	33.00	300.0	08/19 12:18	08/19 12:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/22 15:04	08/22 15:04	RPV
Nitrogen (Kjeldahl) as "N"	0.57		mg/L	0.070	0.210	351.2	08/23 10:00	08/23 14:57	MSG
Total Dissolved Solids (TDS)	9260		mg/L	1.00	3.00	SM 2540C	08/19 14:45	08/22 13:29	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/24/11
Submission # 1108000565
Order # 77784

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH 1884 FT
Collected: 08/16/11 15:30
Received: 08/18/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	20400		uS/cm	1.0	3.0	120.1	08/16 15:30	08/16 15:30	Client
Specific Conductance (grab)	20900		uS/cm	1.0	3.0	120.1	08/19 14:49	08/19 14:49	DGK
Chloride	7180		mg/L	11.00	33.00	300.0	08/19 12:18	08/19 12:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/22 15:04	08/22 15:04	RPV
Nitrogen (Kjeldahl) as "N"	0.38		mg/L	0.070	0.210	351.2	08/23 10:00	08/23 14:57	MSG
Total Dissolved Solids (TDS)	13520		mg/L	1.00	3.00	SM 2540C	08/22 15:33	08/23 15:13	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/24/11
Submission # 110800O565
Order # 77785

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH 1974 FT
Collected: 08/17/11 08:04
Received: 08/18/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	25190		uS/cm	1.0	3.0	120.1	08/17 08:04	08/17 08:04	Client
Specific Conductance (grab)	26100		uS/cm	1.0	3.0	120.1	08/19 14:49	08/19 14:49	DGK
Chloride	9160		mg/L	11.00	33.00	300.0	08/19 12:18	08/19 12:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/22 15:04	08/22 15:04	RPV
Nitrogen (Kjeldahl) as "N"	0.22		mg/L	0.070	0.210	351.2	08/23 10:00	08/23 14:57	MSG
Total Dissolved Solids (TDS)	16910		mg/L	1.00	3.00	SM 2540C	08/22 15:33	08/23 15:13	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

SUBMISSION # 1108-565

Logged in LIMS by _____

CSM assigned _____

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309	Tel: (954) 978-6400	Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401	Tel: (912) 238-5050	Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841	Tel: (863) 285-8145	Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972	Tel: (863) 763-3336	Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY

Report to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN COMPANY | Purchase Order #

Invoice to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905

Project Name and/or Number FPL TURKEY POINT (EXPLORATORY WELL)

Site Location: TURKEY POINT, HOMESTEAD, FL 33035

Project Contact: BROOKE ALLEN / CRAIG BRUGGER | Phone: 239.275.1029 / 239.275.1025 | Fax: — | Email: CJBRUGGER@LAYNECHRISTENSEN.COM BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name: (printed) MILLER | Affiliation: LAYNE CHRISTENSEN COMPANY | Sampler Signature

	ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride, TDS, Sp. Conduct	Analysis Required: TKN, NH3	Field Tests: TEMP °C	PH	COND	CHLOR
1	77782	EW-1-PH 1704 FT	8/13/11	1930	GW	S U	2	1	1	33.7	10.9	9500	
2	77783	EW-1-PH 1794 FT	8/15/11	1930	GW	S U	2	1	1	28.2	9.29	14,672	
3	77784	EW-1-PH 1884 FT	8/16/11	1530	GW	S U	2	1	1	25.5	857	20,400	
4	77785	EW-1-PH 1974 FT	8/17/11	0804	GW	S U	2	1	1	24.3	8.22	25,180	
5													
6													
7													
8													
9													
10													

Special Comments:

"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by: M. Rey	Layne	8/18/2011 12:20
1	Received by: Angelo Pifferer		8-18-11 12:20
2	Relinquished by: Angelo Pifferer		8-18-11 15:00
2	Received by: Akashi	FSES	8/18/11 1500
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4 C

Custody seals? Y N

FIELD TIME:

Sampling _____ hrs

Pick-Up _____ hrs

Misc. Charges _____

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/31/11
Submission # 1108000745
Order # 78642

Project: FPL Turkey Point, Pilot Hole
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2064 FT
Collected: 08/19/11 10:45
Received: 08/25/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	35850		uS/cm	1.0	3.0	120.1	08/19 10:45	08/19 10:45	Client
Specific Conductance (grab)	37000		uS/cm	1.0	3.0	120.1	08/26 10:02	08/26 10:02	DGK
Chloride	14400		mg/L	22.00	66.00	300.0	08/25 15:18	08/25 15:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/29 14:33	08/29 14:33	RPV
Nitrogen (Kjeldahl) as "N"	0.071	I	mg/L	0.070	0.210	351.2	08/30 09:00	08/30 12:42	MSG
Total Dissolved Solids (TDS)	24280		mg/L	1.00	3.00	SM 2540C	08/26 12:13	08/29 14:13	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/31/11
Submission # 1108000745
Order # 78643

Project: FPL Turkey Point, Pilot Hole
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2154 FT
Collected: 08/21/11 00:30
Received: 08/25/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	27777		uS/cm	1.0	3.0	120.1	08/21 00:30	08/21 00:30	Client
Specific Conductance (grab)	30000		uS/cm	1.0	3.0	120.1	08/26 10:02	08/26 10:02	DGK
Chloride	11000		mg/L	22.00	66.00	300.0	08/25 15:18	08/25 15:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/29 14:33	08/29 14:33	RPV
Nitrogen (Kjeldahl) as "N"	0.32		mg/L	0.070	0.210	351.2	08/30 09:00	08/30 12:42	MSG
Total Dissolved Solids (TDS)	18525		mg/L	1.00	3.00	SM 2540C	08/26 12:14	08/29 14:14	LYR

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Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/31/11
Submission # 1108000745
Order # 78645

Project: FPL Turkey Point, Pilot Hole
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2244 FT
Collected: 08/21/11 05:30
Received: 08/25/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	29550		uS/cm	1.0	3.0	120.1	08/21 05:30	08/21 05:30	Client
Specific Conductance (grab)	32100		uS/cm	1.0	3.0	120.1	08/26 10:02	08/26 10:02	DGK
Chloride	11500		mg/L	22.00	66.00	300.0	08/25 15:18	08/25 15:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/29 14:33	08/29 14:33	RPV
Nitrogen (Kjeldahl) as "N"	0.17	I	mg/L	0.070	0.210	351.2	08/30 09:00	08/30 12:42	MSG
Total Dissolved Solids (TDS)	16967		mg/L	1.00	3.00	SM 2540C	08/26 12:14	08/29 14:14	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 08/31/11
Submission # 1108000745
Order # 78646

Project: FPL Turkey Point, Pilot Hole
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2334 FT
Collected: 08/23/11 06:30
Received: 08/25/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	56200		uS/cm	1.0	3.0	120.1	08/23 06:30	08/23 06:30	Client
Specific Conductance (grab)	60100		uS/cm	1.0	3.0	120.1	08/26 10:02	08/26 10:02	DGK
Chloride	26000		mg/L	22.00	66.00	300.0	08/25 15:18	08/25 15:18	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	08/29 14:33	08/29 14:33	RPV
Nitrogen (Kjeldahl) as "N"	0.44		mg/L	0.070	0.210	351.2	08/30 09:00	08/30 12:42	MSG
Total Dissolved Solids (TDS)	40400		mg/L	1.00	3.00	SM 2540C	08/26 12:14	08/29 14:14	LYR

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Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services, Inc.
Certification # E86006

SUBMISSION # 1108-145

Logged in LIMS by _____

CSM assigned _____

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309	Tel: (954) 978-6400	Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401	Tel: (912) 238-5050	Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841	Tel: (863) 285-8145	Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972	Tel: (863) 763-3336	Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY

Report to Address: 5061 LUCKETT RD, FT. MYERS, FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN COMPANY

Purchase Order #

Invoice to Address: 5061 LUCKETT RD, FT. MYERS, FL 33905

Project Name and/or Number FPL TURKEY POINT (PILOT HOLE SAMPLES)

Site Location: TURKEY POINT, HOMESTEAD FL 33035

Project Contact: BROOKE ALLEN / CRAIG BRUGGER

Phone: 239.275.1029 / 239.275.1025

Fax:

Email: CJBRUGGER@LAYNECHRISTENSEN.COM / BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name: (printed) DRILLER

Affiliation: LAYNE CHRISTENSEN

Sampler Signature

ORDER # Lab Control Number / Shaded Areas For Laboratory Use Only	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride, TDS, Sp. Cond	Analysis Required: TKN, NH3	Field Tests: TEMP °C	Field Tests: PH	Field Tests: COND	Field Tests: CHLOR
1	78642	EW-1-PH-2064FT	8/19/11	10:45	GW	SU	2	1	1	27.6	8.02	35850	X
2	78643	EW-1-PH-2154FT	8/21/11	0030	GW	SU	2	1	1	25.0	7.9	37777	X
3	78645	EW-1-PH-2244FT	8/21/11	0530	GW	SU	2	1	1	23.9	7.91	29550	X
4	78646	EW-1-PH-2334FT	8/23/11	0630	GW	SU	2	1	1	22.4	8.01	36200	X
5													
6													
7													
8													
9													
10													

Special Comments: PLEASE RETURN ALL SAMPLES TO JOB SITE (TURKEY POINT) AFTER ANALYSIS HAS BEEN PAN.

"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by:		8/25/2011 12:10
1	Received by: Angelo Pifferer		8-25-11 12:20
2	Relinquished by: Angelo Pifferer		8-25-11 15:00
2	Received by:	PSFS	8/25/11 1500
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4 C

Custody seals? Y N

FIELD TIME:

Sampling _____ hrs

Pick-Up _____ hrs

Misc. Charges _____

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid	P-H3PO4
C-HCL	S-H2SO4
Cu-CuSO4	T-Na2S2O3
H-HNO3	U-Unpreserved
M-MCAB	N-NaOH
Z-zinc acetate	NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

www.flenviro.com COC Page _____ of _____

Florida Spectrum Environmental Services, Inc.

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/08/11
Submission # 1109000044
Order # 79491

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL 33035
Matrix: Water

Sample I.D.: EW-1-PH-2514 Ft (79491)
Collected: 08/26/11 07:30
Received: 09/01/11 15:25
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	39130		uS/cm	1.0	3.0	120.1	08/26 07:30	08/26 07:30	Client
Specific Conductance (grab)	42500		uS/cm	1.0	3.0	120.1	09/01 17:35	09/01 17:35	CEB
Chloride	14200		mg/L	55.00	165.00	300.0	09/01 17:08	09/01 17:08	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/06 10:44	09/06 10:44	MSG
Nitrogen (Kjeldahl) as "N"	0.18	I	mg/L	0.070	0.210	351.2	09/06 09:30	09/06 14:01	MSG
Total Dissolved Solids (TDS)	26867		mg/L	1.00	3.00	SM 2540C	09/02 11:45	09/06 11:35	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/08/11
Submission # 1109000044
Order # 79492

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL 33035
Matrix: Water

Sample I.D.: EW-1-PH-2604 Ft (79492)
Collected: 08/29/11 21:40
Received: 09/01/11 15:25
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	48400		uS/cm	1.0	3.0	120.1	08/29 21:40	08/29 21:40	Client
Specific Conductance (grab)	52200		uS/cm	1.0	3.0	120.1	09/01 17:35	09/01 17:35	CEB
Chloride	17400		mg/L	55.00	165.00	300.0	09/01 17:08	09/01 17:08	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/06 10:44	09/06 10:44	MSG
Nitrogen (Kjeldahl) as "N"	0.13	I	mg/L	0.070	0.210	351.2	09/06 09:30	09/06 14:01	MSG
Total Dissolved Solids (TDS)	32767		mg/L	1.00	3.00	SM 2540C	09/02 11:46	09/06 11:36	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

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Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services, Inc.
Certification # E86006

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/08/11
Submission # 1109000044
Order # 79683

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL 33035
Matrix: Water

Sample I.D.: EW-1-PH-2424ft (79683)
Collected: 08/25/11 19:20
Received: 09/02/11 15:45
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	38200		uS/cm	1.0	3.0	120.1	08/25 19:20	08/25 19:20	Client
Specific Conductance (grab)	40400		uS/cm	1.0	3.0	120.1	09/03 10:36	09/03 10:36	DGK
Chloride	14200		mg/L	55.00	165.00	300.0	09/02 17:05	09/02 17:05	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/06 10:44	09/06 10:44	MSG
Nitrogen (Kjeldahl) as "N"	0.17	I	mg/L	0.070	0.210	351.2	09/06 09:30	09/06 14:01	MSG
Total Dissolved Solids (TDS)	23200	Q	mg/L	1.00	3.00	SM 2540C	09/06 14:43	09/07 14:43	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

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Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services, Inc.
Certification # E86006

SUBMISSION # 1109-044

Logged in LIMS by _____
CSM assigned _____

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

Report to: (company name) LAYNE CHRISTENSEN COMPANY
Invoice to: (company name) LAYNE CHRISTENSEN COMPANY | Purchase Order #
Project Name and/or Number FPL TURKEY POINT (EXPLORATORY WELL)
Project Contact: BROOKE ALLEN | CRAIG BRUGGER | Phone: 239.275.1029 / 239.275.1025
Sampler Name: (printed) MILLER | Affiliation: LAYNE CHRISTENSEN COMPANY

Report to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905
Invoice to Address: 5061 LUCKETT RD, FT. MYERS, FL 33905
Site Location: TURKEY POINT, HOMESTEAD, FL 33035
Fax: | Email: CJBRUGGER@LAYNECHRISTENSEN.COM, BSALLEN@LAYNECHRISTENSEN.COM
Sampler Signature

	ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride, TDS, Sp. Cond.	Analysis Required: TKN, NH3	Field Tests: TEMP °C	PH	COND	CHLOR
1	79683	EW-1-PH-2424FT	8/25/11	1920	GW	S U	2	1	1	26.1	7.78	33.2	X
2	79491	EW-1-PH-2514 FT	8/26/11	0730	GW	S U	2	1	1	23.8	7.93	51.30	X
3	79492	EW-1 PH-2604FT	8/29/11	21:40	GW	S U	2	1	1	27.3	7.99	48.404	X
4													
5													
6													
7													
8													
9													
10	Received 24/24' 9/2/11												

Special Comments:

"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No (additional charge)

Sample Custody & Field Comments

Temp as received 4 C
Custody seals? Y N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

	Signature	Affiliation	Date/Time
1	Relinquished by:	MHC	9/1/11 1130
1	Received by: Angelo Pfeffer		9-1-11 11:30
2	Relinquished by: Angelo Pfeffer		9-1-11 15:25
2	Received by: Mokashi	PSES	9/1/11 1525
3	Relinquished by:		
3	Received by:	FSO	9/2/11 1545

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Florida Spectrum
Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/15/11
Submission # 1109000174
Order # 80205

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2694
Collected: 09/04/11 10:00
Received: 09/08/11 15:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	63800		uS/cm	1.0	3.0	120.1	09/04 10:00	09/04 10:00	Client
Specific Conductance (grab)	67100		uS/cm	1.0	3.0	120.1	09/13 14:11	09/13 14:11	DGK
Chloride	27200		mg/L	55.00	165.00	300.0	09/08 18:32	09/08 18:32	RPV
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/15 14:49	09/15 14:49	MSG
Nitrogen (Kjeldahl) as "N"	0.118	I	mg/L	0.07	0.21	351.2	09/09 17:37	09/09 17:37	RPV
Total Dissolved Solids (TDS)	41500		mg/L	1.00	3.00	SM 2540C	09/10 12:40	09/12 14:14	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/15/11
Submission # 1109000174
Order # 80206

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2784
Collected: 09/04/11 20:30
Received: 09/08/11 15:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	59600		uS/cm	1.0	3.0	120.1	09/04 20:30	09/04 20:30	Client
Specific Conductance (grab)	63800		uS/cm	1.0	3.0	120.1	09/13 14:11	09/13 14:11	DGK
Chloride	25800		mg/L	55.00	165.00	300.0	09/08 18:32	09/08 18:32	RPV
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/15 14:49	09/15 14:49	MSG
Nitrogen (Kjeldahl) as "N"	0.119	I	mg/L	0.070	0.210	351.2	09/09 17:38	09/09 17:38	RPV
Total Dissolved Solids (TDS)	40400		mg/L	1.00	3.00	SM 2540C	09/10 12:40	09/12 14:14	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

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Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/15/11
Submission # 1109000174
Order # 80207

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2874
Collected: 09/05/11 06:45
Received: 09/08/11 15:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	52200		uS/cm	1.0	3.0	120.1	09/05 06:45	09/05 06:45	Client
Specific Conductance (grab)	55100		uS/cm	1.0	3.0	120.1	09/13 14:11	09/13 14:11	DGK
Chloride	25600		mg/L	55.00	165.00	300.0	09/08 18:32	09/08 18:32	RPV
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/15 14:49	09/15 14:49	MSG
Nitrogen (Kjeldahl) as "N"	0.247		mg/L	0.070	0.210	351.2	09/09 17:38	09/09 17:38	RPV
Total Dissolved Solids (TDS)	34000		mg/L	1.00	3.00	SM 2540C	09/10 12:40	09/12 14:14	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

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Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/15/11
Submission # 1109000174
Order # 80208

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-2964
Collected: 09/05/11 20:35
Received: 09/08/11 15:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	47240		uS/cm	1.0	3.0	120.1	09/05 20:35	09/05 20:35	Client
Specific Conductance (grab)	51400		uS/cm	1.0	3.0	120.1	09/13 14:11	09/13 14:11	DGK
Chloride	17900		mg/L	55.00	165.00	300.0	09/08 18:32	09/08 18:32	RPV
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/15 14:49	09/15 14:49	MSG
Nitrogen (Kjeldahl) as "N"	0.279		mg/L	0.070	0.210	351.2	09/09 17:38	09/09 17:38	RPV
Total Dissolved Solids (TDS)	31200		mg/L	1.00	3.00	SM 2540C	09/10 12:40	09/12 14:14	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

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Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/15/11
Submission # 1109000174
Order # 80209

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-3054
Collected: 09/06/11 12:15
Received: 09/08/11 15:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	50000		uS/cm	1.0	3.0	120.1	09/06 12:15	09/06 12:15	Client
Specific Conductance (grab)	52300		uS/cm	1.0	3.0	120.1	09/13 14:11	09/13 14:11	DGK
Chloride	19500		mg/L	55.00	165.00	300.0	09/08 18:32	09/08 18:32	RPV
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/15 14:49	09/15 14:49	MSG
Nitrogen (Kjeldahl) as "N"	0.245		mg/L	0.070	0.210	351.2	09/09 17:38	09/09 17:38	RPV
Total Dissolved Solids (TDS)	32000		mg/L	1.00	3.00	SM 2540C	09/10 12:40	09/12 14:14	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 09/15/11
Submission # 1109000174
Order # 80210

Project: FPL Turkey Point (Exploratory)
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PH-3144
Collected: 09/06/11 22:45
Received: 09/08/11 15:10
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	49900		uS/cm	1.0	3.0	120.1	09/06 22:45	09/06 22:45	Drille
Specific Conductance (grab)	53100		uS/cm	1.0	3.0	120.1	09/13 14:12	09/13 14:12	DGK
Chloride	19500		mg/L	55.00	165.00	300.0	09/08 18:32	09/08 18:32	RPV
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	09/15 14:49	09/15 14:49	MSG
Nitrogen (Kjeldahl) as "N"	0.469		mg/L	0.070	0.210	351.2	09/09 17:39	09/09 17:39	RPV
Total Dissolved Solids (TDS)	33100		mg/L	1.00	3.00	SM 2540C	09/10 12:40	09/12 14:15	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services, Inc.
Certification # E86006

SUBMISSION # 1109-174

Logged in LIMS by _____

CSM assigned _____

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: *(company name)* LAYNE CHRISTENSEN COMPANY
Report to Address: 5061 LUCKETT RD, FT MYERS, FL 33905

Invoice to: *(company name)* LAYNE CHRISTENSEN COMPANY | Purchase Order #
Invoice to Address: 5061 LUCKETT RD, FT MYERS, FL 33905

Project Name and/or Number: FPL TURKEY POINT (EXPLORATORY WELL)
Site Location: TURKEY POINT, HOMESTEAD FL 33035

Project Contact: CRAIG BRUGGER | Phone: | Fax: | Email: CJ.BRUGGER@LAYNECHRISTENSEN.COM

Sampler Name: (printed) DRILLER | Affiliation: | Sampler Signature

	ORDER # *Lab Control Number* *Shaded Areas For Laboratory Use Only*	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes		Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride / TDS / SP Cond	Analysis Required: TKN / NH3	Field Tests: TEMP °C	PH	COND	CHLOR
1	80205	EW-1-PH-2694	9/4/11	1000	GW	S	U	2	1	1	25.0	6.54	63,900	X
2	80206	EW-1-PH-2784	9/4/11	2030	GW	S	U	2	1	1	24.4	7.91	59,600	X
3	80207	EW-1-PH-2874	9/5/11	0645	GW	S	U	2	1	1	25.1	7.95	52,200	X
4	80208	EW-1-PH_2964	9/5/11	2035	GW	S	U	2	1	1	23.9	7.99	47,240	X
5	80209	EW-1-PH-3054	9/6/11	1215	GW	S	U	2	1	1	26.8	7.82	50,700	X
6	80210	EW-1-PH-3144	9/6/11	22:45	GW	S	U	2	1	1	26.6	7.82	49,900	X
7														
8														
9														
10														

Special Comments:

"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No *(additional charge)*

	Signature	Affiliation	Date/Time
1	Relinquished by: EW Meyer	MHC	9/8/11 @ 1300
1	Received by: Angelo Pifferer		9-8-11 13:00
2	Relinquished by: Angelo Pifferer		9-8-11 15:10
2	Received by: Atokashi	PSES	9/8/11 1510
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4 C
Custody seals? Y N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

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Florida Spectrum Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 11/07/11
Submission # 1110000798
Order # 87302

Project: FPL Turkey Point(Pilot Hole)
Site Location: Turkey Point, Fl.
Matrix: Water

Sample I.D.: EW1-PH-3234
Collected: 10/23/11 16:00
Received: 10/29/11 12:11
Collected by: Driller

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	52700		uS/cm	1.0	3.0	120.1	10/23 16:00	10/23 16:00	Client
Specific Conductance (grab)	52100		uS/cm	1.0	3.0	120.1	10/29 14:13	10/29 14:13	DGK
Chloride	21100		mg/L	55.00	165.00	300.0	10/29 13:45	10/29 13:45	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	10/31 15:41	10/31 15:41	CEB
Nitrogen (Kjeldahl) as "N"	0.54		mg/L	0.070	0.210	351.2	11/01 09:00	11/01 12:57	MSG
Total Dissolved Solids (TDS)	40250		mg/L	1.00	3.00	SM 2540C	10/29 13:15	10/31 14:38	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

SUBMISSION # 1110-798

Logged in LIMS by MJC
CSM assigned MEC

CHAIN OF CUSTODY RECORD

Florida Spectrum Environmental Services, Inc.

☐ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

Report to: (company name) Layne Christensen Company
Report to Address: 5061 Luckett Rd, Ft Myers, FL 33905

Invoice to: (company name) Layne Christensen Company
Purchase Order #
Invoice to Address: 5061 Luckett Rd, Ft Myers, FL 33905

Project Name and/or Number FPL Turkey Point (Pilot hole samples)
Site Location:

Project Contact: Brooke Allen / Craig Brugger
Phone: 239-275-1029 / 239-275-1025
Fax:
Email: CJBrugger@laynechristensen.com

Sampler Name: (printed) Driver
Affiliation: Layne Christensen
Sampler Signature

ORDER # Lab Control Number — Shaded Areas For Laboratory Use Only	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride TDS Sp Cond.	Analysis Required: TKN NH3	Field Tests: TEMP °C	Field Tests: PH	Field Tests: COND	Field Tests: CHLOR
1	87302	EWL-PH-3234	10/28/11	1600	GW		1	1	23.3	7.76	52.70	X
2												
3												
4												
5												
6												
7												
8												
9												
10												

Special Comments: Please return all samples to Job Site (Turkey Point) after analysis has been performed
"I waive TNI protocol" (sign here) >
Deliverables: QA/QC Report Needed? Yes No (additional charge)

Total: 2

	Signature	Affiliation	Date/Time
1	Relinquished by: [signature]	MCC	10/29/11/1010
1	Received by: Arcadio Pittenger		10-29-11 10:10
2	Relinquished by: Arcadio Pittenger		10-29-11 12:11
2	Received by: [signature] Douglas St. Knapp		10/29/11 12:11
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4°C
Custody seals? Y N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
H-Plastic Amber Liter
L-liter bottle
S2-2 oz soil jar
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives
A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
DI-DI water U-Unpreserved
H-HNO3 N-NaOH
M-MCAB NH4-NH4CL
MeOH-Methanol
Z-zinc acetate

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

www.flenviro.com COC Page _____ of _____

Appendix P
Core Samples Laboratory Report

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

December 21, 2011
File Number 11-13-0163

Layne Christensen Company
5061 Luckett Road
Ft. Myers, FL 33905

Attention: Craig Brugger
Project Manager

Subject: Rock Core Testing, Florida Power & Light Company, Turkey Point Exploratory Well EW-1, P.O. # 106777

Gentlemen:

As requested, vertical and horizontal permeability, unconfined compression and specific gravity tests have been completed on sixteen rock cores provided for testing by your firm. The cores were received on September 20 and 22, 2011 and were designated as follows:

Core Number	Depth (feet)
1	2652.80-2653.50
2	2296.00-2296.75
3	2296.75-2297.50
4	2295.20-2296.00
5	2639.30-2639.70
5a	2639.70-2640.20
6	2029.40-2030.40
7	2030.40-2031.30
8	2036.20-2036.70
8a	2036.70-2637.90
9	2652.00-2652.80
10	2675.10-2675.60
10a	2675.60-2676.10
11	2676.10-2677.00
12	2645.10-2645.50
12a	2645.50-2646.50
13	2576.00-2577.00
14	2399.90-2400.90
15	2026.40-2027.00
16	2027.00-2027.50

Photographs of the cores are attached.

Permeability Tests

Permeability tests were performed in general accordance with ASTM Standard D5084 "Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter" using either the constant head (Method A) or the falling head/rising tailwater

(Method C) test method. The permeability test results are presented on the attached hydraulic conductivity test reports. A total of 32 permeability tests were performed.

Unconfined Compression Tests

Unconfined compression tests were performed in general accordance with ASTM Standard D7012 "Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperatures" using the unconfined test method (Method C). The unconfined compression test results are presented on the attached test reports. Unconfined compression tests were performed on 15 samples.

Specific Gravity

The measured mineral specific gravities are presented on the attached test reports. The specific gravity tests were performed in general accordance with ASTM Standard D854 "Specific Gravity of Soil Solids by Water Pycnometer" using 68 to 80 gram specimens ground to pass the U.S. Standard No. 40 sieve. A total of 16 specific gravity tests were performed.

The test samples were reported to be from the client-specified designations herein. The test results are indicative of only the specimens that were actually tested. The test results presented are based upon accepted industry practice as well as test method(s) listed. Ardaman & Associates, Inc. neither accepts responsibility for, nor makes claims to the final use and purpose of the test results.

Please contact us if you have any questions about the test results or require additional information.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

Thomas S. Ingra, P.E.
Laboratory Director
Florida License No. 31987

C:\Documents and Settings\jan.wildman\Documents\Projects\10\10-13-0223\report01.wpd

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 1, 2652.80-2653.50'**

LABORATORY IDENTIFICATION NO.: 11163/1-2652V

SAMPLE DESCRIPTION: Light brown and brown layered limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 90 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 8, 13, 18

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 8.0/7.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
8.16	9.85	621.77	16.6	112.9	0.332	91	30	160	31	1.0	1	1124.8	17.2	94	**2.3E-06**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/05/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 1, 2652.80-2653.50'**

LABORATORY IDENTIFICATION NO.: 11163/1-2652H

SAMPLE DESCRIPTION: Light brown and brown layered limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 70 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4, 8

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 8.0/7.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
6.83	5.06	137.51	15.6	114.0	0.326	87	30	160	11	1.9	1	251.23	17.2	96	**2.5E-05**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: DM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 2, 2296.00-2296.75'**

LABORATORY IDENTIFICATION NO.: 11163/2-2296V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 94(stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 5, 11, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 8.0/7.25* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.08	9.76	529.73	22.4	105.4	0.379	100	30	160	25	10.9	1	894.85	22.4	100	**8.4E-05**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: DM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/11/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 2, 2296.00-2296.75'**

LABORATORY IDENTIFICATION NO.: 11163/2-2296H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 59 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 6, 11, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 8.0/7.25* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.10	5.06	142.86	22.1	105.2	0.380	98	30	70	2.6	6.0	1	240.79	22.4	99	**2.5E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 3, 2296.75-2297.50'**

LABORATORY IDENTIFICATION NO.: 11163/3-2296V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 95 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 5, 11, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 8.0/7.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.81	9.86	596.34	22.5	104.4	0.385	98	30	160	23	45.5	1	998.02	22.5	98	**1.0E-04**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/11/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 3, 2296.75-2297.50'**

LABORATORY IDENTIFICATION NO.: 11163/3-2296H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 90 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 6, 12, 17

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 8.0/7.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.51	5.06	150.67	22.2	104.4	0.385	97	30	160	25	14.3	1	252.14	22.5	98	**1.0E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/30/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 4, 2295.20-2296.00'**

LABORATORY IDENTIFICATION NO.: 11163/4-2295V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 95 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 7, 13, 18

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 10.25/9.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.74 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
11.51	9.77	862.22	22.8	103.5	0.395	96	30	160	12	5.9	1	1429.6	22.9	96	**1.9E-04**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c

*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/05/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 4, 2295.20-2296.00'**

LABORATORY IDENTIFICATION NO.: 11163/4-2295H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 61 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3, 6

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 10.25/9.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.74 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.65	5.06	153.78	22.9	103.0	0.397	95	30	70	2.5	4.6	1	253.91	22.9	95	**5.9E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 5, 2639.30-2639.70'**

LABORATORY IDENTIFICATION NO.: 11163/5-2639V

SAMPLE DESCRIPTION: Light brown and brown layered limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 94 (stable) %

- ☒ Beginning of Test;
- ☐ End of Test

$\Delta\sigma_c$ (psi): 5, 11, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 6.25/5.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.69

- ☐ Assumed
- ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
9.88	9.89	759.10	18.9	111.3	0.337	100	30	160	36	1.2	1	1353.7	18.9	100	**1.6E-06**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/10/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 5, 2639.30-2639.70'**

LABORATORY IDENTIFICATION NO.: 11163/5-2639H

SAMPLE DESCRIPTION: Light brown and brown layered limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 63 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 6, 11, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 6.25/5.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.69 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.25	5.06	146.03	18.8	110.4	0.342	97	30	70	21	10.1	1	258.45	18.9	98	**8.4E-05**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/30/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 6, 2029.40-2030.40'**

LABORATORY IDENTIFICATION NO.: 11163/6-2029V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 94 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 6, 9, 15

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 11.8/11.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.71	9.72	571.57	17.9	112.3	0.336	96	30	160	38	0.85	1	1029.0	18.0	97	**1.0E-05**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c

*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/05/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 6, 2029.40-2030.40'**

LABORATORY IDENTIFICATION NO.: 11163/6-2029H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 92 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 6, 9

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 11.8/11.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.36	5.07	148.49	18.0	112.5	0.335	97	30	160	35	4.4	1	267.65	18.0	97	**2.8E-05**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

The test data and all associated project information presented hereon shall be held in confidence and disclosed to other parties only with the authorization of the Client. Physical and electronic records of each project are kept for a minimum of 7 years. Test samples are kept in storage for at least 10 working days after mailing of the test report, prior to being discarded, unless a longer storage period is requested in writing and accepted by Ardaman & Associates, Inc.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

Form SR-2B: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 7, 2030.40-2031.30'**

LABORATORY IDENTIFICATION NO.: 11163/7-2030V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 87 (stable) %

- ☒ Beginning of Test;
- ☐ End of Test

$\Delta\sigma_c$ (psi): 6, 9, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 11.0/10.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.71

- ☐ Assumed
- ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
13.27	9.93	1027.27	21.2	107.3	0.366	100	30	160	17	1.2	1	1766.2	21.3	100	**3.0E-05**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/04/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 7, 2030.40-2031.30'**

LABORATORY IDENTIFICATION NO.: 11163/7-2030H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 56 (stable) %

- ☐ Beginning of Test;
- ☒ End of Test

$\Delta\sigma_c$ (psi): 5, 10, 14

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 11.0/10.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.71

- ☐ Assumed
- ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.11	5.07	143.32	21.1	106.1	0.373	96	30	70	3.0	4.6	3	243.67	21.3	97	**1.3E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/28/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 8, 2036.20-2036.70'**

LABORATORY IDENTIFICATION NO.: 11163/8-2036V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 89 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 6, 13, 17

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 6.25/5.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
13.77	10.02	1084.97	19.0	109.5	0.355	94	30	160	9.5	2.9	1	1854.7	19.0	94	**7.6E-05**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c

*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/10/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 8, 2036.20-2036.70'**

LABORATORY IDENTIFICATION NO.: 11163/8-2036H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 95 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4, 9, 15

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 6.25/5.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.16	5.06	143.71	18.8	110.7	0.348	95	30	70	12	6.8	2	254.74	19.0	97	**1.1E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: DM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/27/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 9, 2652.00-2652.80'**

LABORATORY IDENTIFICATION NO.: 11163/9-2652V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 94 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 5, 14, 20

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 10.25/8.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
10.64	9.84	809.84	18.7	110.8	0.345	96	30	160	22	0.68	1	1437.6	18.7	96	**2.8E-06**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/04/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 9, 2652.00-2652.80'**

LABORATORY IDENTIFICATION NO.: 11163/9-2652H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 89 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3, 7

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 10.25/8.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.25	5.06	145.88	18.7	110.5	0.346	95	30	160	34	1.2	2	258.36	18.7	95	**4.6E-06**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 10, 2675.10-2675.60'**

LABORATORY IDENTIFICATION NO.: 11163/10-2675V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 94 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 7, 13, 18

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 6.0/5.25* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
12.85	9.72	954.36	23.2	102.3	0.395	96	30	160	12	9.5	1	1565.3	23.2	96	**2.7E-04**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c

*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/04/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 10, 2675.10-2675.60'**

LABORATORY IDENTIFICATION NO.: 11163/10-2675H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 72 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3, 6

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 6.0/5.25* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.14	5.07	144.06	22.8	102.9	0.392	96	30	70	2.9	4.2	2	237.46	23.2	98	**2.9E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/28/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 11, 2676.10-2677.00'**

LABORATORY IDENTIFICATION NO.: 11163/11-2676V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 95 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 5, 11, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 12.0/11.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
6.75	9.64	492.33	27.0	96.1	0.434	96	30	160	42	3.4	1	757.92	27.0	96	**1.1E-06**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c. (3) The specimen appears to be homogenous, yet the horizontal hydraulic conductivity is about 500 times faster. After comparison with the other cores, the vertical hydraulic conductivity is suspect.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/10/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 11, 2676.10-2677.00'**

LABORATORY IDENTIFICATION NO.: 11163/11-2676H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 57 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 6, 11, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 12.0/11.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.72 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.31	5.07	147.26	26.9	96.5	0.431	96	30	70	2.6	6.3	1	227.73	27.0	97	**5.3E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 12, 2645.10-2645.50'**

LABORATORY IDENTIFICATION NO.: 11163/12-2645V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 98 % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 6, 9, 15

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 5.25/3.75* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.70 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
11.24	9.80	847.88	20.2	106.4	0.369	94	30	160	18	1.2	1	1445.6	20.4	94	**1.4E-05**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/04/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 12, 2645.10-2645.50'**

LABORATORY IDENTIFICATION NO.: 11163/12-2645H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 85 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3, 8

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 5.25/3.75* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.70 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.41	5.06	149.19	20.4	107.7	0.361	97	30	160	32.4	1.0	2	257.38	20.4	97	**6.2E-06**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/27/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 13, 2576.00-2577.00'**

LABORATORY IDENTIFICATION NO.: 11163/13-2576V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 83 (stable) %

- ☐ Beginning of Test;
- ☒ End of Test

$\Delta\sigma_c$ (psi): 9, 14, 19

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 11.0/6.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.71

- ☐ Assumed
- ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
6.26	9.72	464.98	23.4	99.1	0.414	90	30	160	32	12.2	1	738.51	24.9	96	**1.9E-04**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/04/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 13, 2576.00-2577.00'**

LABORATORY IDENTIFICATION NO.: 11163/13-2576H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 70 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 5, 10

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 11.0/6.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.39	5.06	148.49	21.8	99.0	0.415	83	30	70	2.6	6.9	3	235.51	24.9	95	**2.5E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/29/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 14, 2399.90-2400.90'**

LABORATORY IDENTIFICATION NO.: 11163/14-2399V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 97 (stable) % ☒ Beginning of Test; ☐ End of Test

$\Delta\sigma_c$ (psi): 6, 9, 16

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 12.0/8.25* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.70 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
11.30	9.84	859.03	22.5	103.3	0.387	96	30	160	12.5	92.0	1	1422.6	22.5	96	**5.5E-04**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c

*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/04/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 14, 2399.90-2400.90'**

LABORATORY IDENTIFICATION NO.: 11163/14-2399H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 61 (stable) %

- ☐ Beginning of Test;
- ☒ End of Test

$\Delta\sigma_c$ (psi): 3, 9

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 12.0/8.25* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.70

- ☐ Assumed
- ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.66	5.07	154.55	22.2	102.7	0.390	94	30	70	2.6	5.1	2	254.47	22.5	95	**5.4E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/27/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 15, 2026.40-2027.00'**

LABORATORY IDENTIFICATION NO.: 11163/15-2026V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 98 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 9, 14

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 9.0/7.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
8.57	9.96	667.91	13.2	122.8	0.274	95	30	160	24	1.2	1	1314.4	13.2	95	**3.3E-06**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/10/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 15, 2026.40-2027.00'**

LABORATORY IDENTIFICATION NO.: 11163/15-2026H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 84 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 6, 12, 17

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 9.0/7.5* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.71 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.10	5.06	142.54	13.1	123.6	0.269	97	30	160	33	1.6	1	282.32	13.2	97	**3.2E-06**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 09/27/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 16, 2027.00-2027.50'**

LABORATORY IDENTIFICATION NO.: 11163/16-2027V

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☐ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 96 (stable) % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 5, 14, 20

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☐ Yes ☒ No

As-Received Length (inch): 7.5/6.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☒ Vertical ☐ Horizontal

SPECIFIC GRAVITY, G_s: 2.70 ☐ Assumed ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
12.88	10.01	1013.17	19.5	109.5	0.350	98	30	160	7.5	10.6	1	1778.7	19.6	99	**3.7E-04**

COMMENTS: (1) Core sample was cut to length, air-dried, deaired under vacuum for a minimum of 24 hours, and then saturated with deaired tap water from the bottom up while maintaining the vacuum. (2) Final w_c from horizontal permeability test specimen. WDS calculated from measured wet mass and final w_c
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: PM Date: 12/21/11

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
ROCK CORE HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Layne Christensen Company

PROJECT: FP&L - Turkey Point Exploratory Well EW-1

FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11 SET UP: 10/04/11

DATE REPORTED: 12/21/11

INCOMING LABORATORY SAMPLE NO.: **Core 16, 2027.00-2027.50'**

LABORATORY IDENTIFICATION NO.: 11163/16-2027H

SAMPLE DESCRIPTION: Light brown limestone

ASTM D5084 TEST METHOD:

- ☐ A - Constant Head
- ☐ B - Falling Head; Constant Tailwater
- ☒ C - Falling Head; Rising Tailwater
- ☐ F - Constant Volume; Falling Head - Rising Tailwater

B-FACTOR: 54 (stable) %

- ☐ Beginning of Test;
- ☒ End of Test

$\Delta\sigma_c$ (psi): 4, 9

SPECIMEN DATA:

As-Received Diameter (inch): 4 Diameter Trimmed: ☒ Yes ☐ No

As-Received Length (inch): 7.5/6.0* Length Trimmed: ☒ Yes ☐ No

TEST SPECIMEN ORIENTATION: ☐ Vertical ☒ Horizontal

SPECIFIC GRAVITY, G_s: 2.70

- ☐ Assumed
- ☒ Measured (ASTM D854)

PERMEANT: ☒ Deaired Tap Water ☐ Other _____

Initial Conditions							Test Conditions					Final Conditions			Hydraulic Conductivity
H (cm)	D (cm)	V (cm^3)	w_c (%)	γ_d (pcf)	n	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	WDS (g)	w_c (%)	S (%)	k_{20} (cm/sec)
7.10	5.07	143.05	19.1	108.7	0.355	94	30	70	2.8	5.3	1	249.14	19.6	96	**7.8E-04**

COMMENTS: (1) Horizontal permeability test specimen was cross-cored from the corresponding vertical test specimen.
*First length is total sample length. Second length is useable length at full core diameter.

Where: H = Specimen height; D = Specimen diameter; V = Volume; WDS = Dry mass; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; k_{20} = Saturated hydraulic conductivity at 20°C; n = Total porosity; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

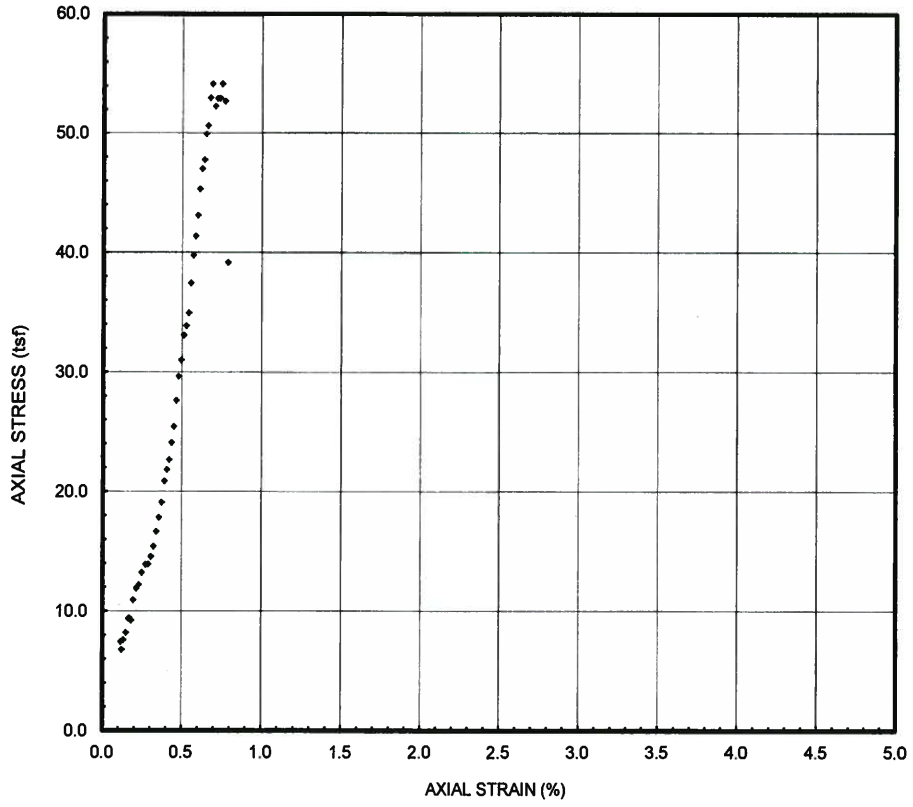
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 1**
BORING - SAMPLE -
DEPTH 2652.80-2653.50 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/1-2652
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.67	5.05	2.1	11.1	113.2	61	0.047	0.44	1.7	752	1.6×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 213

Comments: Time to failure slightly below D7012 specified range of 2 to 15 minutes

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.71 ☐ Assumed ☒ Measured

FAILURE SKETCH

The test data and all associated project information presented hereon shall be held in confidence and disclosed to other parties only with the authorization of the Client. Physical and electronic records of each project are kept for a minimum of 7 years. Test samples are kept in storage for at least 10 working days after mailing of the test report, prior to being discarded, unless a longer storage period is requested in writing and accepted by Ardaman & Associates, Inc.

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

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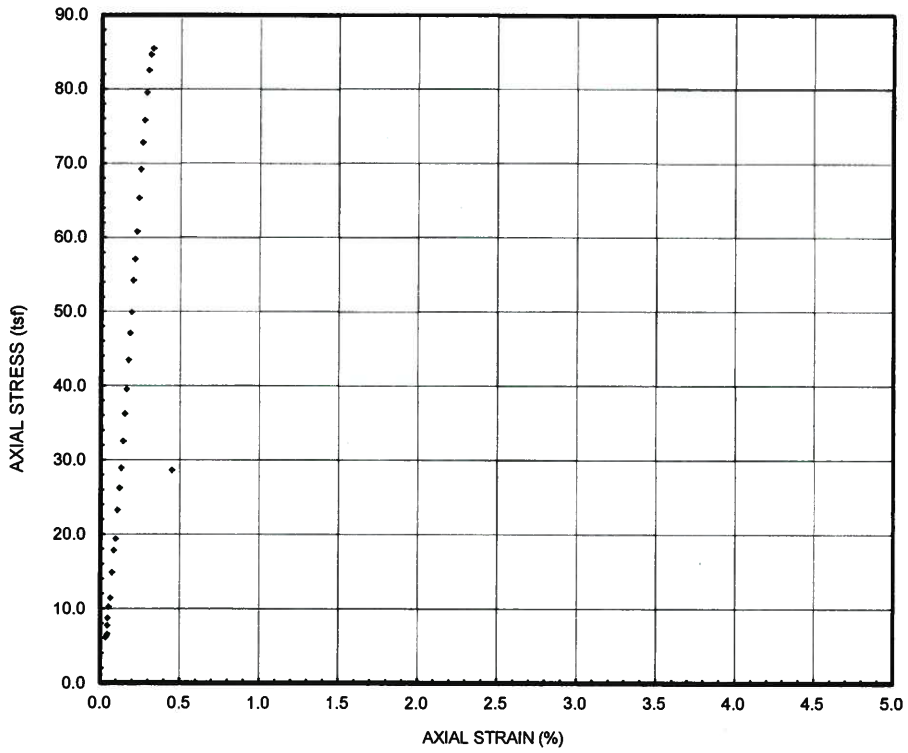
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 2**
BORING - SAMPLE -
DEPTH 2296.00-2296.75 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/2-2296
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.60	5.06	2.1	17.8	103.6	76	0.030	0.28	1.2	1187	4.6×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 388

Comments: Time to failure below D7012 specified range of 2 to 15 minutes

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.72 ☐ Assumed ☒ Measured

FAILURE SKETCH

The test data and all associated project information presented hereon shall be held in confidence and disclosed to other parties only with the authorization of the Client. Physical and electronic records of each project are kept for a minimum of 7 years. Test samples are kept in storage for at least 10 working days after mailing of the test report, prior to being discarded, unless a longer storage period is requested in writing and accepted by Ardaman & Associates, Inc.

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

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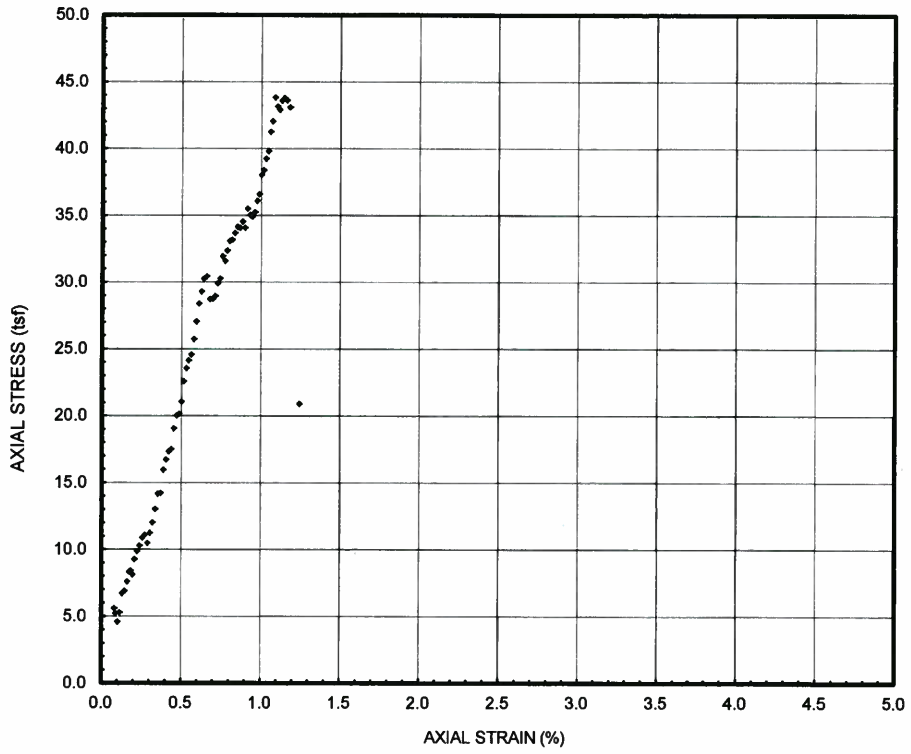
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 3**
BORING - SAMPLE -
DEPTH 2296.75-2297.50 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/3-2296
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.47	5.05	2.1	17.2	104.4	75	0.048	0.46	2.5	608	7.2×10^4



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$ 118

Comments:

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.72 ☐ Assumed ☒ Measured

FAILURE SKETCH

The test data and all associated project information presented hereon shall be held in confidence and disclosed to other parties only with the authorization of the Client. Physical and electronic records of each project are kept for a minimum of 7 years. Test samples are kept in storage for at least 10 working days after mailing of the test report, prior to being discarded, unless a longer storage period is requested in writing and accepted by Ardaman & Associates, Inc.

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11 G:\Lab\Soils - Geotechnical-QC Manual\Appendix D1\Form SR-5 Rev. 1.docx

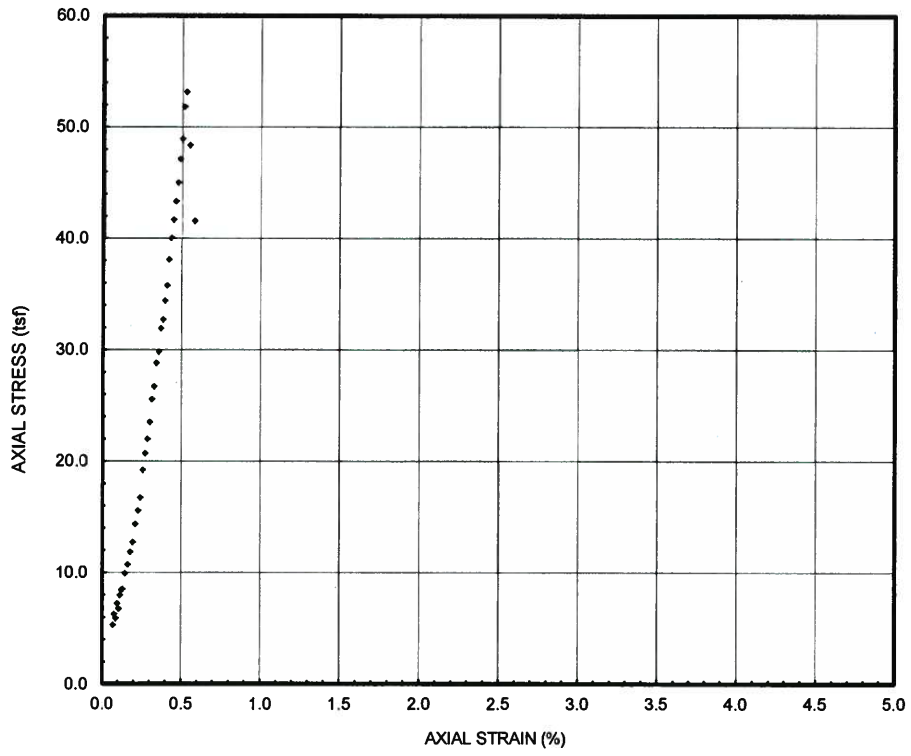
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 4**
BORING - SAMPLE -
DEPTH 2295.20-2296.00 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/4-2295
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.45	5.06	2.1	16.1	108.2	76	0.039	0.37	1.4	738	1.6×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 217

Comments: Time to failure below D7012 specified range of 2 to 15 minutes

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.74 ☐ Assumed ☒ Measured

FAILURE SKETCH

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Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

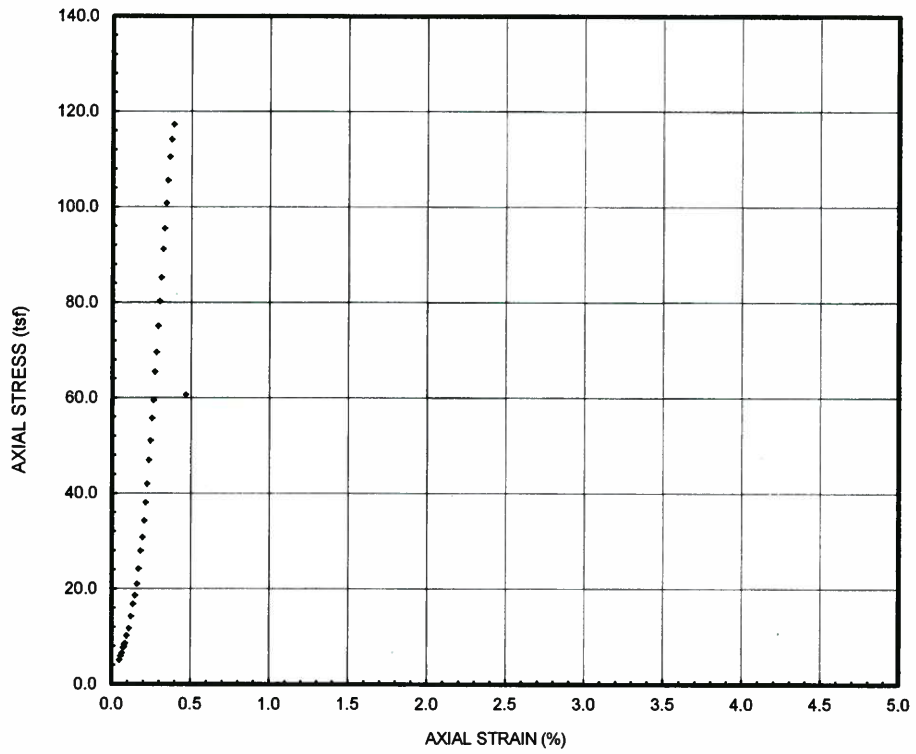
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/22/11
DATE TEST SET-UP: 09/28/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 5a**
BORING - SAMPLE -
DEPTH 2639.70-2640.20 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/5a-2639
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.55	5.06	2.1	11.8	112.8	65	0.030	0.28	1.4	1629	6.9×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 426

Comments: Time to failure below D7012 specified range of 2 to 15 minutes

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.69 ☐ Assumed ☒ Measured

FAILURE SKETCH

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

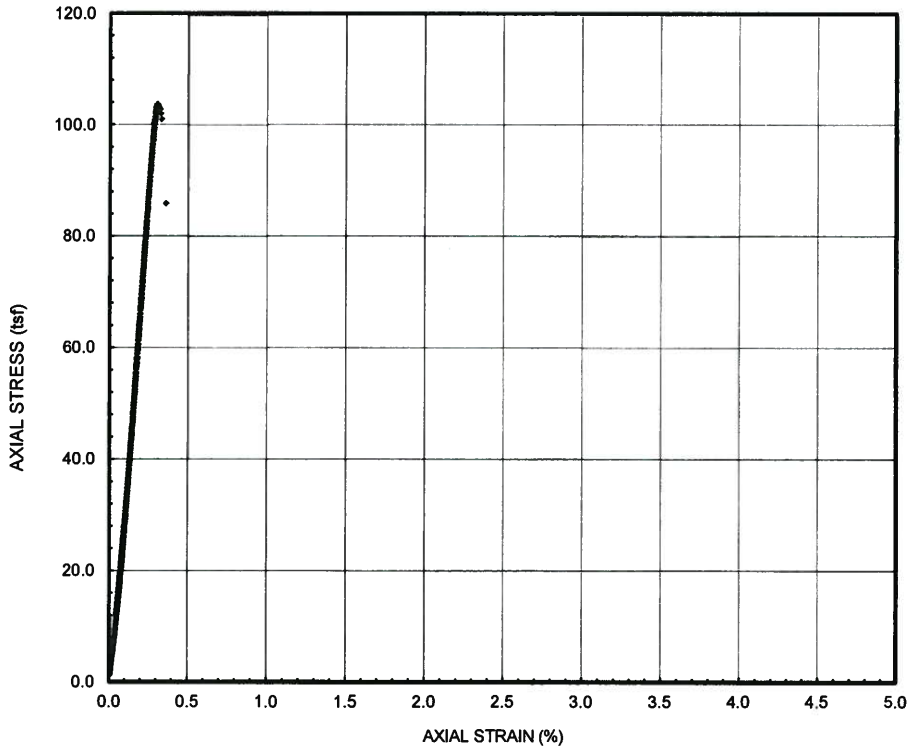
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/28/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 6**
BORING - SAMPLE -
DEPTH 2029.40-2030.40 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/6-2029
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
20.82	9.95	2.1	11.4	109.4	57	0.0048	0.023	13.1	1440	5.5×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 382

Comments:

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☐ Yes ☒ No

G_s: 2.71 ☐ Assumed ☒ Measured

FAILURE SKETCH

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Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: JM Date: 12/21/11

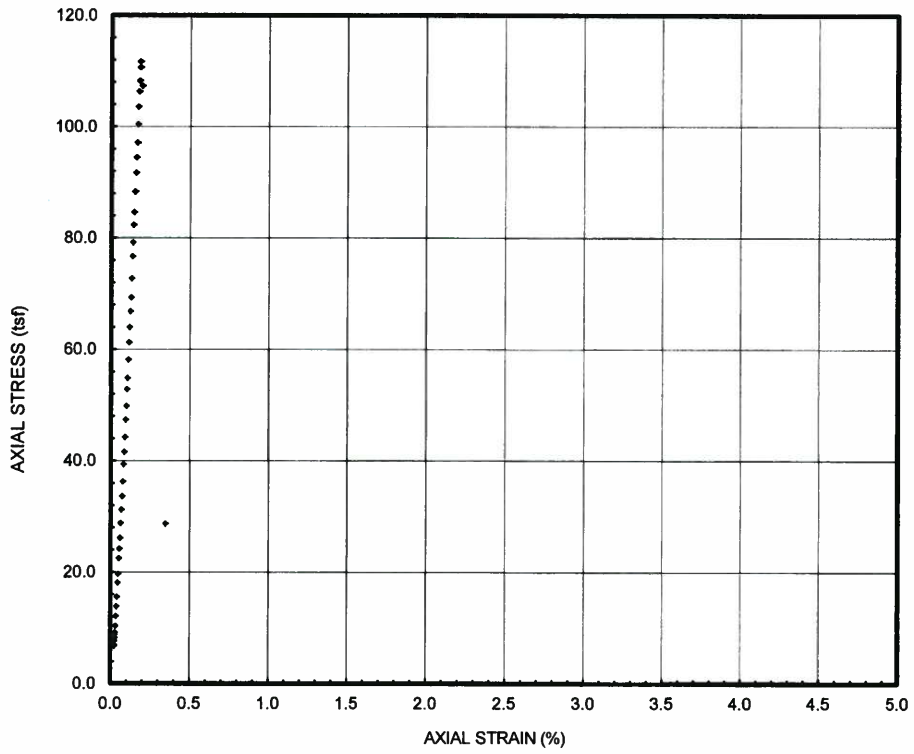
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 7**
BORING - SAMPLE -
DEPTH 2030.40-2031.30 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/7-2030
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.68	5.07	2.1	12.9	111.6	68	0.010	0.10	1.9	1551	9.8×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 632

Comments: Time to failure slightly below D7012 specified range of 2 to 15 minutes

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.71 ☐ Assumed ☒ Measured

FAILURE SKETCH

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Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11

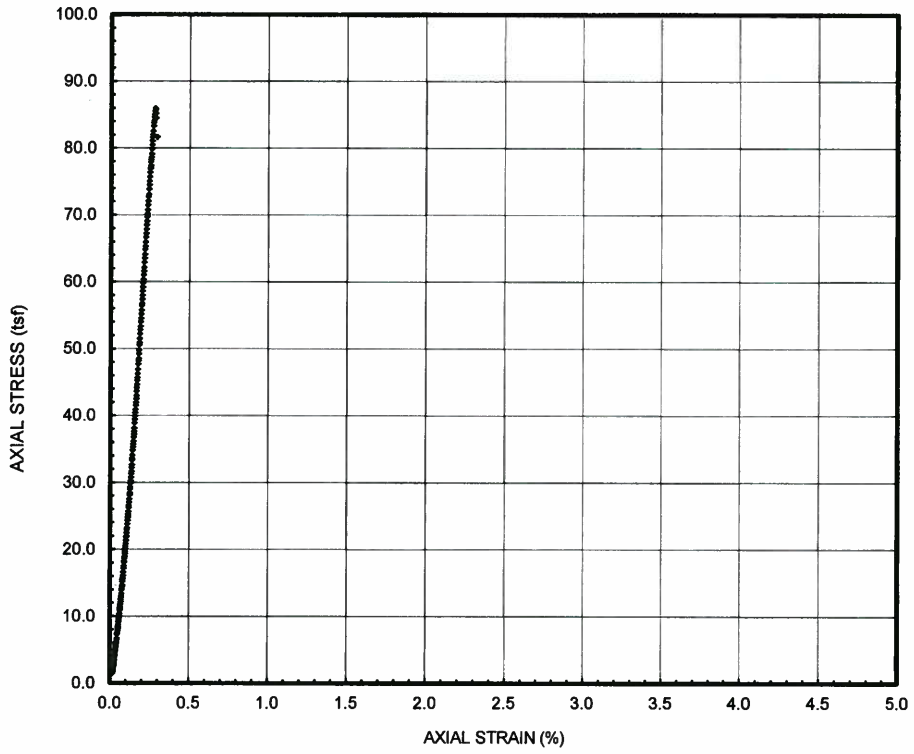
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/22/11
DATE TEST SET-UP: 09/28/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 8a**
BORING - SAMPLE -
DEPTH 2036.70-2637.90 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/8a-2036
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
20.75	9.97	2.1	8.7	109.0	42	0.0080	0.038	7.4	1193	$5.3x10^5$



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 444

Comments:

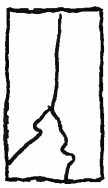
SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☐ Yes ☒ No

G_s: 2.72 ☐ Assumed ☒ Measured

FAILURE SKETCH



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Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

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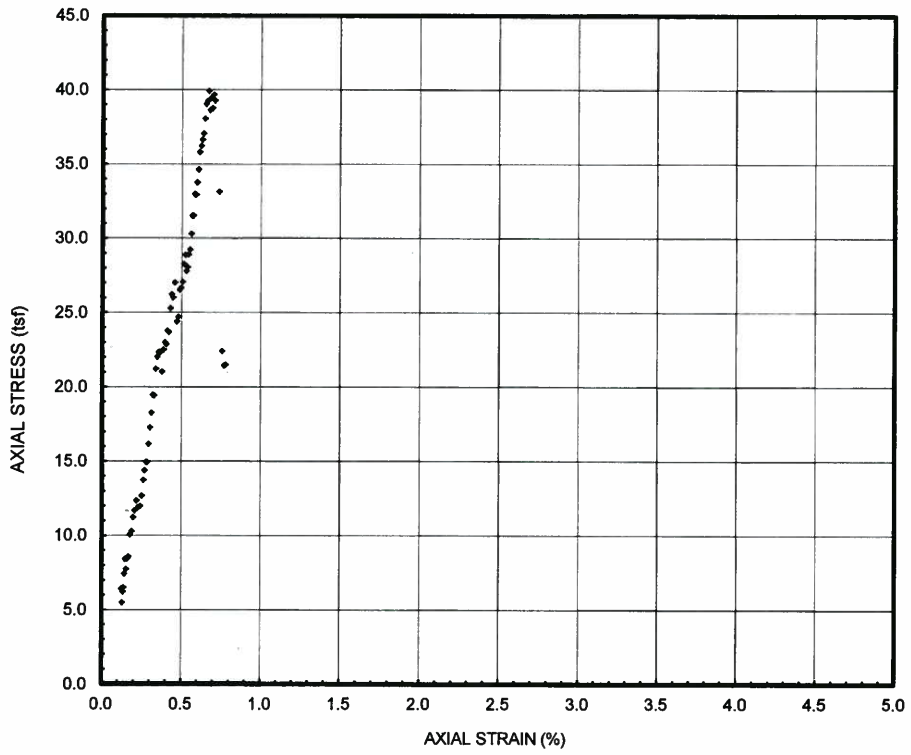
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 9**
BORING - SAMPLE -
DEPTH 2652.00-2652.80 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/9-2652
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.64	5.06	2.1	15.8	105.2	70	0.027	0.25	2.7	554	8.2×10^4



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 148

Comments:

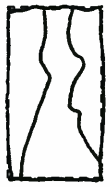
SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.71 ☐ Assumed ☒ Measured

FAILURE SKETCH



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Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

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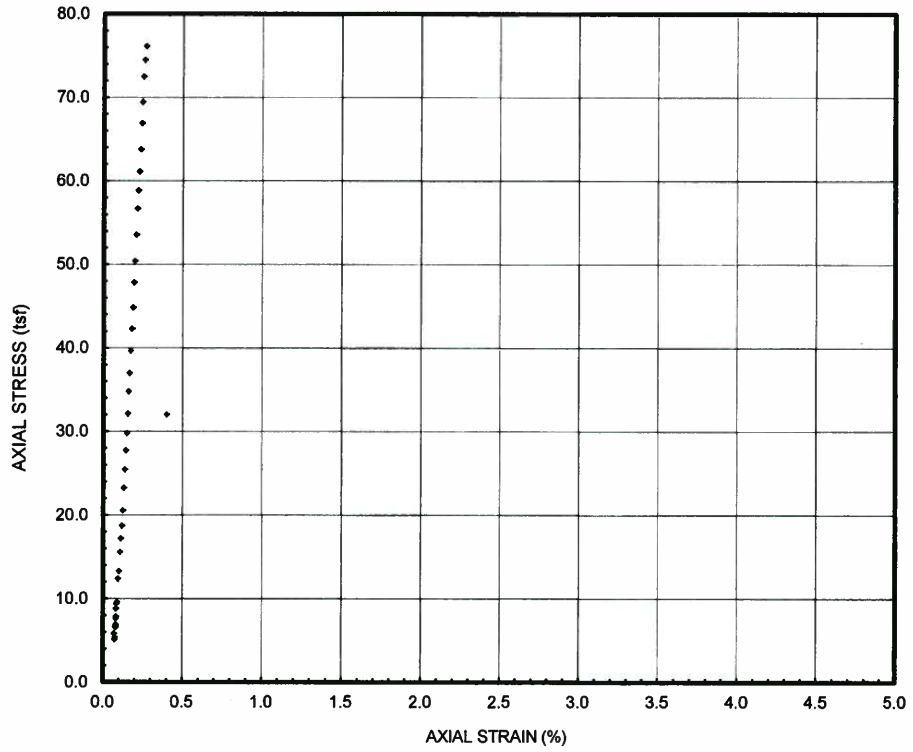
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/22/11
DATE TEST SET-UP: 09/28/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 10a**
BORING - SAMPLE -
DEPTH 2675.60-2676.10 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/10a-2675
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.87	5.07	2.1	15.9	103.9	69	0.015	0.14	1.9	1057	5.8×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 549

Comments: Time to failure slightly below D7012 specified range of 2 to 15 minutes

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.71 ☐ Assumed ☒ Measured

FAILURE SKETCH

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Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

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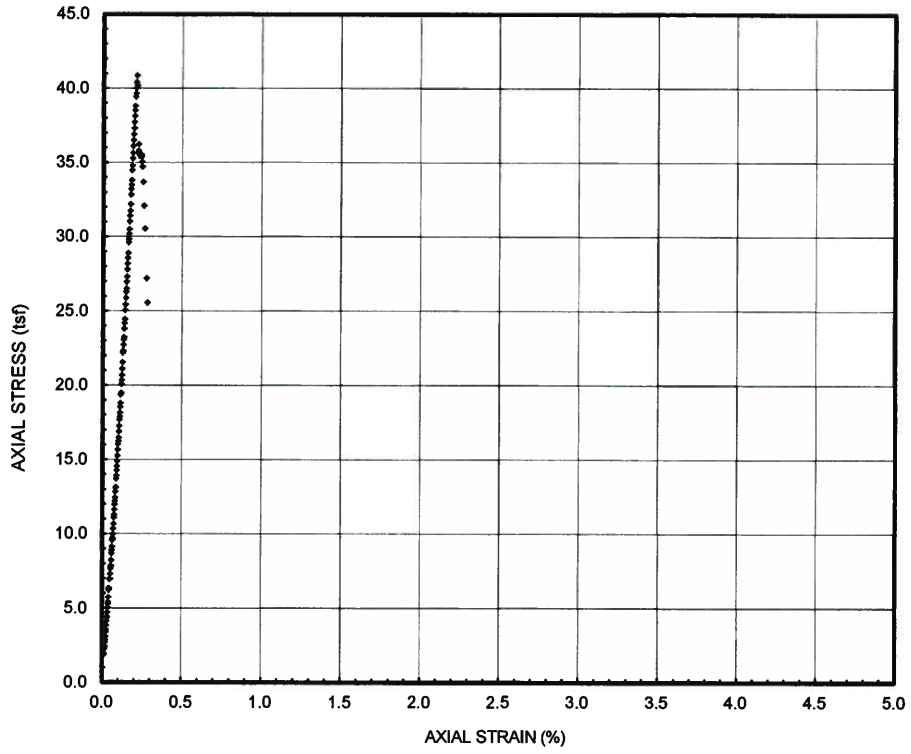
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/28/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 11**
BORING - SAMPLE -
DEPTH 2676.10-2677.00 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/11-2676
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
21.03	9.65	2.2	19.8	95.4	70	0.011	0.051	4.2	567	$3.0x10^5$



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 529

Comments:

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☐ Yes ☒ No

G_s: 2.72 ☐ Assumed ☒ Measured

FAILURE SKETCH

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Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11 G:\Lab\Soils - Geotechnical-QC Manual\Appendix D1\Form SR-5 Rev. 1.docx

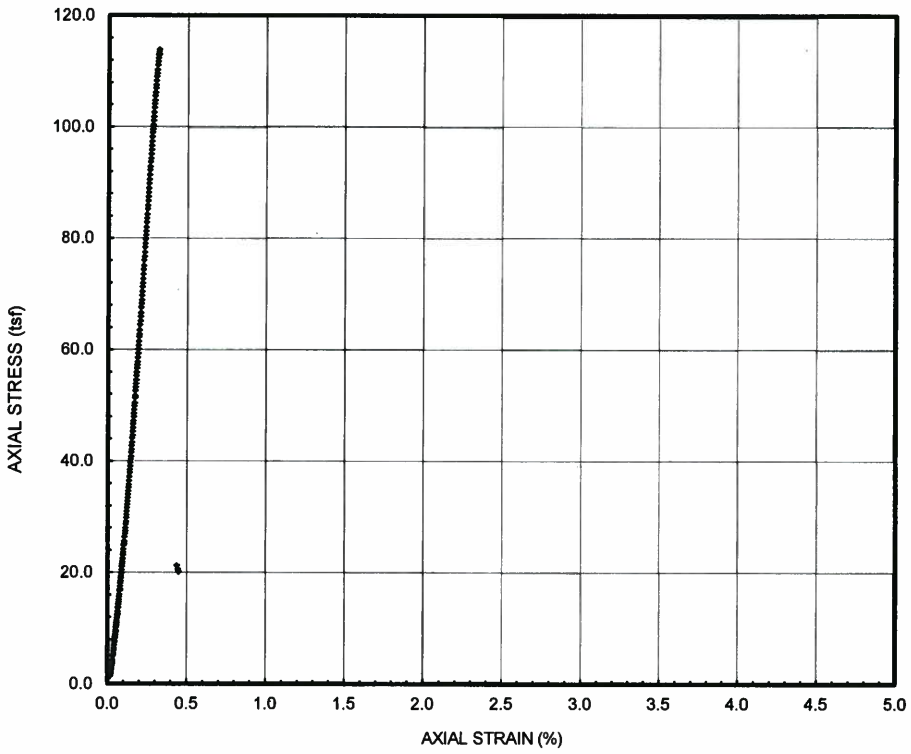
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/22/11
DATE TEST SET-UP: 09/28/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 12a**
BORING - SAMPLE -
DEPTH 2645.50-2646.50 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/12a-2645
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
20.75	9.96	2.1	9.6	112.1	51	0.0087	0.042	7.5	1581	$6.0x10^5$



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 380

Comments:

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☐ Yes ☒ No

G_s: 2.70 ☐ Assumed ☒ Measured

FAILURE SKETCH

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

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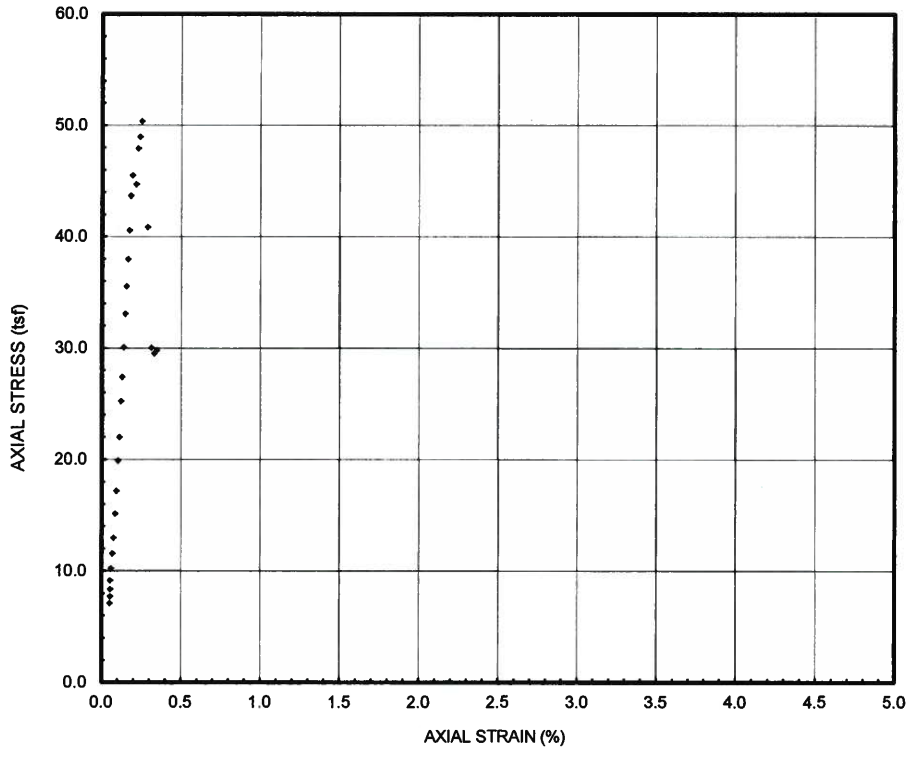
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 13**
BORING - SAMPLE -
DEPTH 2576.00-2577.00 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/13-2576
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.47	5.05	2.1	14.9	102.2	62	0.025	0.24	1.1	699	3.9×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 558

Comments: Time to failure below D7012 specified range of 2 to 15 minutes

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.71 ☐ Assumed ☒ Measured

FAILURE SKETCH

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

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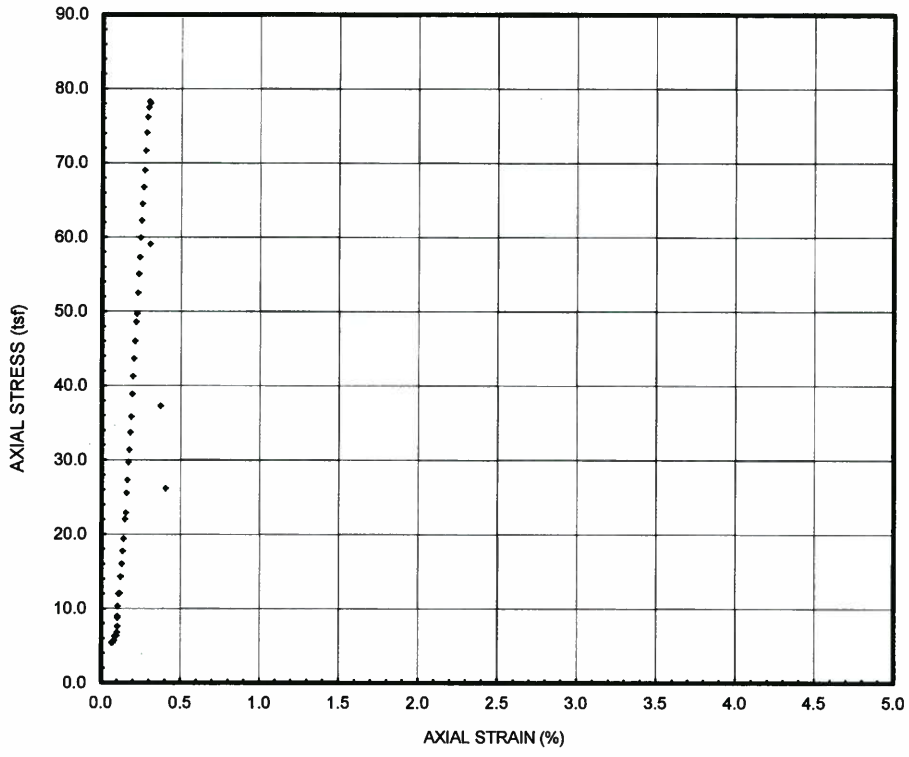
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 14**
BORING - SAMPLE -
DEPTH 2399.90-2400.90 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/14-2399
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.53	5.05	2.1	15.6	103.7	67	0.016	0.15	2.0	1087	6.1×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$ 561

Comments:

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.70 ☐ Assumed ☒ Measured

FAILURE SKETCH

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: TM Date: 12/21/11 G:\Lab\Soils - Geotechnical-QC Manual\Appendix D1\Form SR-5 Rev. 1.docx

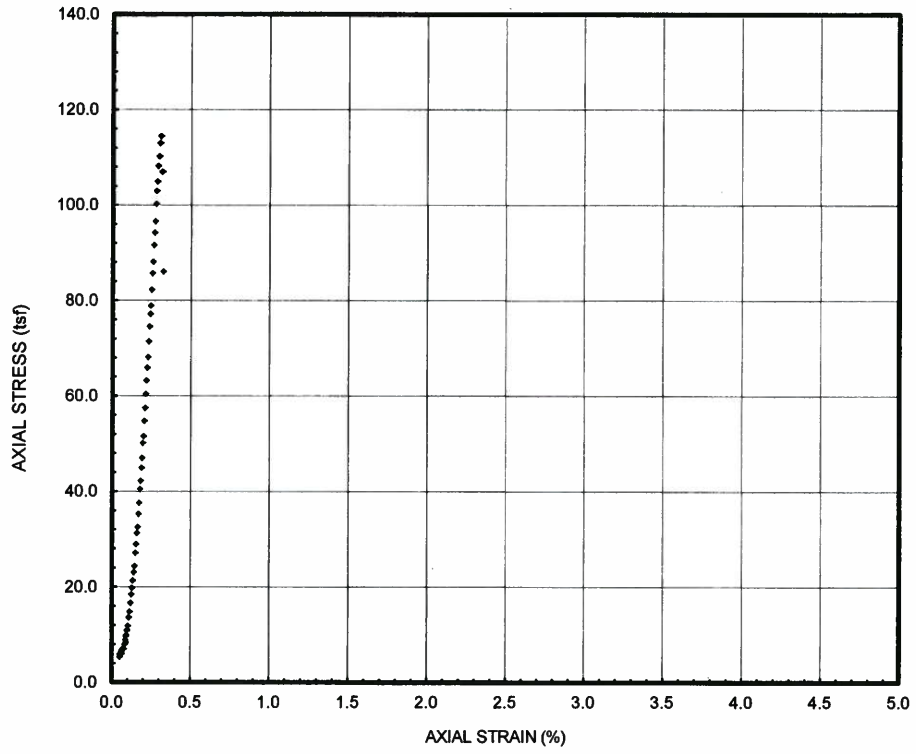
ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
INTACT ROCK CORE UNCONFINED COMPRESSION TEST REPORT

CLIENT: Layne Christensen Company
PROJECT: FP&L – Turkey Point EW-1
FILE NO.: 11-13-0163

DATE SAMPLE RECEIVED: 09/20/11
DATE TEST SET-UP: 09/29/11
DATE REPORTED: 12/21/11

INCOMING SAMPLE NO.: **Core 15**
BORING - SAMPLE -
DEPTH 2026.40-2027.00 ☒ ft; ☐ m
LABORATORY IDENTIFICATION NO.: 11163/15-2026
SAMPLE DESCRIPTION: Light brown limestone

Specimen Dimensions			Initial Conditions			Rate of Loading		Time to Failure (minutes)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)	Young's Modulus, E at 50% σ_a(ult) (lb/in^2)
H (cm)	D (cm)	H/D	w_c (%)	γ_d (lb/ft^3)	S (%)	$\dot{\varepsilon}$ (cm/minute)	$\dot{\varepsilon}$ (%/minute)			
10.31	5.05	2.0	9.4	126.2	75	0.013	0.12	2.5	1588	8.2×10^5



TEST PROCEDURES

ASTM Standard D7012
[Method A]

Air Temperature (°C): 21

Capping Material: ☐ None ☒ Lab-Stone ☐ Sulfur

$E_{50}/(\sigma_a(ult))$] 516

Comments:

SPECIMEN PREPARATION

Original Core Diameter (inch): 4

Specimen Sub-Cored for Testing: ☒ Yes ☐ No

G_s: 2.71 ☐ Assumed ☒ Measured

FAILURE SKETCH

Where: H = Specimen height; D = Specimen diameter; w_c = Water content (ASTM D2216); γ_d = Dry density; S = Saturation; $\dot{\varepsilon}$ = Vertical displacement rate; and G_s = Specific gravity.

Checked By: FM Date: 12/21/11 G:\Lab\Soils - Geotechnical-QC Manual\Appendix D1\Form SR-5 Rev. 1.docx

Appendix Q
Packer Test Water Quality Samples Summary and Laboratory Reports

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Packer Test Water Quality Data Summary Table

Test #	Test Interval (ft. bpl)	Specific Conductance (umhos/cm)	Chloride (mg/L)	TDS (mg/L)	TKN (mg/L)	Ammonia (mg/L)	Temperature (Celsius)	pH (standard units)
1	1,505 – 1,535	22,420	7,990	13,890	0.22	0.18	25.8	7.55
2	1,400 – 1,430	9,850	3,230	5,780	0.13	0.11	24.4	7.55
3	1,225 – 1,285	5,340	1,500	3,120	0.16	0.08	26.8	7.80
4	1,102 – 1,162	4,980	1,270	2,984	0.34	0.32	24.9	7.86
5	1,930 - 1,952	45,300	16,800	32,167	0.26	0.092	24.2	7.48
6	2,989 - 3,011	(Moved packers up 5 feet due to test interval productivity during conditioning)						
	2,984 - 3,006	(Terminated due to test interval productivity during conditioning)						
7	3,020 - 3,232	50,100	19,100	39,900	U	U	24.1	8.04
8	1,970 - 1,992	41,480	15,200	26,400	0.15	0.038	26.7	6.7
9	2,058 - 2,080	54,800	19,500	35,800	0.18	0.134*	21.7	7.53
10	2,183 - 2,205	(Terminated due to packers not isolating the test interval or too productive)						
11	2,552 - 2,574	(Terminated due to packers not isolating the test interval or too productive)						
12	2,634 - 2,656	(Terminated due to packers not isolating the test interval or too productive)						
13	2,844 - 2,866	(Terminated due to packers not isolating the test interval or too productive)						
14	2,480 - 2,502	(Terminated due to packers not isolating the test interval or too productive)						
15	2,552 - 2,574	(Terminated due to packers not isolating the test interval or too productive)						
16	2,694 - 2,716	(Terminated due to packers not isolating the test interval or too productive)						
17	2,220 - 2,242	54,500	18,700	38,800	0.11	U	24.9	7.62
18	2,400 - 2,422	(Terminated due to packers not isolating the test interval or too productive)						
19	2478 - 2500	52,400	18,200	37,100	U	U	24.8	7.22

ft. bpl = feet below pad level
gpm = gallons per minutes
umhos/cm - micromhos per centimeter
mg/L = milligrams per liter
TDS = total dissolved solids
TKN = total Kjeldahl nitrogen
U = analyzed for but not detected
* = Matrix spikes outside recovery limit

Florida Spectrum
Environmental Services, Inc.

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/19/11
Submission # 1107000345
Order # 72920

Project: Packer Test WQ Samples PT-1
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-1(1505-1535)
Collected: 07/14/11 14:45
Received: 07/14/11 17:45
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	22420		uS/cm	0.2	0.6	120.1	07/14 14:45	07/14 14:45	Client
Chloride	7990		mg/L	11.00	33.00	300.0	07/15 16:35	07/15 16:35	DGK
Nitrogen (Ammonia) as N	0.18		mg/L	0.01	0.03	350.1	07/18 14:05	07/18 14:05	RPV
Nitrogen (Kjeldahl) as "N"	0.22		mg/L	0.070	0.210	351.2	07/19 09:00	07/19 11:47	MSG
Total Dissolved Solids (TDS)	13890		mg/L	1.0	3.0	SM 2540C	07/15 16:34	07/15 16:34	DGK

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

CHAIN OF CUSTODY RECORD

SUBMISSION # 1107-345

Logged in LIMS by R

CSM assigned

Florida Spectrum Environmental Services, Inc.

☐ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

Original-Return w/report **Yellow-Lab File Copy** **Pink - Sampler Copy**

DUE DATE Requested 7/15/11

RUSH RESERVATION # LC 7/15

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY
Report to Address: 5061 LUCKETT RD, FT. MYERS FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN
Purchase Order #
Invoice to Address: 5061 LUCKETT RD, FT. MYERS, FL 33905

Project Name and/or Number PACKER TEST WQ SAMPLES PT-2 ANALYSIS
Site Location: TURKEY POINT, HOMESTEAD, FL 33035

Project Contact: BROOK ALLEN / CRAIG BRUGGER
Phone: 239.275.1029 / 239.275.1025
Fax:
Email: CJBRUGGER@LAYNECHRISTENSEN.COM; BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name: (printed)
Affiliation:
Sampler Signature [signature]

ORDER # Lab Control Number — Shaded Areas For Laboratory Use Only	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Chloride, TDS, Sp. Cond.	TKN, NH_3						TEMP °C	PH	COND	CHLOR
1 72920	EW-1-PT-1 (1505-1535)	7/14/11	14:45	GW	S U	2	1	1						25.8	7.55	~~2380~~ 2420	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

EWM 7/20/11

RUSH

Special Comments: Reported field Conductivity as per client's request LAC 7/19/11

"I waive NELAC protocol" (sign here) >

Deliverables: QA/QC Report Needed? Yes No (additional charge)

Total

	Signature	Affiliation	Date/Time
1	Relinquished by: DANNY KEELES		7/14/11
1	Received by: Angelio Pikfener		7-14-11 15:35
2	Relinquished by: Angelio Pifferrer		7-14-11 17:45
2	Received by: [signature] FSES		7/14/11 1745
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4 C
Custody seals? Y / N
FIELD TIME:
Sampling ______ hrs
Pick-Up ______ hrs
Misc. Charges ______

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

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Florida Spectrum
Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/19/11
Submission # 1107000378
Order # 73057

Project: Packer Test WQ Samples PT-2
Site Location: Turkey Point,Homestead,Fl.
Matrix: Water

Sample I.D.: EW-1-PT-2 1400'-1430'
Collected: 07/15/11 22:10
Received: 07/16/11 09:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	9850		uS/cm	0.2	0.6	120.1	07/15 22:10	07/15 22:10	Client
Chloride	3230		mg/L	5.50	16.50	300.0	07/16 15:08	07/16 15:08	DGK
Nitrogen (Ammonia) as N	0.11		mg/L	0.01	0.03	350.1	07/18 14:07	07/18 14:07	RPV
Nitrogen (Kjeldahl) as "N"	0.13	I	mg/L	0.070	0.210	351.2	07/19 09:00	07/19 11:47	MSG
Total Dissolved Solids (TDS)	5780		mg/L	1.00	3.00	SM 2540C	07/16 16:32	07/18 16:29	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

CHAIN OF CUSTODY RECORD

SUBMISSION # 1107-378

Logged in LIMS by NBK

CSM assigned ______

Florida Spectrum Environmental Services, Inc.

- ☐ 1460 W. McNab Road Ft Laud. FL 33309 — Tel: (954) 978-6400 — Fax: (954) 978-2233
- ☐ 630 Indian Street Savannah, GA 31401 — Tel: (912) 238-5050 — Fax: (912) 234-4815
- ☐ 528 Gooch Road Fort Meade, FL 33841 — Tel: (863) 285-8145 — Fax: (863) 285-7030
- ☐ 610 Parrot Ave. N, Okeechobee, FL 34972 — Tel: (863) 763-3336 — Fax: (863) 763-1544

Original-Return w/report — Yellow-Lab File Copy — Pink - Sampler Copy

DUE DATE Requested 7/18/11

RUSH RESERVATION # LCCOPT2

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY

Report to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN CO.

Purchase Order #

Invoice to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905

Project Name and/or Number: PACKER TEST WQ SAMPLES PT-2 ANALYSIS

Site Location: TURKEY POINT, HOMESTEAD FL 33035

Project Contact: BROOK ALLEN / CRAIG BRUGGER

Phone: 239-275-1029/239-275-1025

Fax:

Email: CJBRUGGER@LAYNECHRISTENSEN.COM, BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name (printed): Kevin Greg~~ ~~

Affiliation: LAYNE, C

Sampler Signature: [signature]

	ORDER # Lab Control Number *Shaded Areas For Laboratory Use Only*	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes			Number of Containers Received & NELAC Letter Suffixes #	A-?	CHLORIDE TDS SP. COND.	TKN NH3								TEMP °C	PH	COND	CHLOR
1	93057	EW-1-PT-2 (1400-1430)	7/15/11	22:10	GW	B	O				1	1							24.4	7.55	9850	
2						1	F	U	1													
3						1	T	S	1													
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Special Comments: "RUSH 24 Hour"

Reported Field Conductivity as per client's request 7/19/11 [initials] 2

"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by: [signature]		7-16-11 9:00
1	Received by: Douglas W. Knapp		7/16/11 0900
2	Relinquished by:		
2	Received by:		
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4°C

Custody seals? Y N

FIELD TIME:

Sampling ______ hrs

Pick-Up ______ hrs

Misc. Charges ______

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types

B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives

Hex-Hex Cr Buffer
EDA-Ethylene Diamine

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Florida Spectrum
Environmental Services, Inc.

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/19/11
Submission # 1107000383
Order # 73097

Project: Packer Test WQ Samples PT-3
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-3 (1225-1285)
Collected: 07/17/11 17:30
Received: 07/18/11 10:15
Collected by: Eric Meyer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	5340		uS/cm	0.2	0.6	120.1	07/17 17:30	07/17 17:30	Client
Chloride	1500		mg/L	2.20	6.60	300.0	07/19 14:00	07/19 14:00	DGK
Nitrogen (Ammonia) as N	0.08		mg/L	0.01	0.03	350.1	07/18 14:08	07/18 14:08	RPV
Nitrogen (Kjeldahl) as "N"	0.16	I	mg/L	0.070	0.210	351.2	07/19 09:00	07/19 11:47	MSG
Total Dissolved Solids (TDS)	3120		mg/L	1.00	3.00	SM 2540C	07/18 16:32	07/18 16:31	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

SUBMISSION # 1107-383

Logged in LIMS by K

CSM assigned

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309	Tel: (954) 978-6400	Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401	Tel: (912) 238-5050	Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841	Tel: (863) 285-8145	Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972	Tel: (863) 763-3336	Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested 7/19/11

RUSH RESERVATION # MEC4228

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY

Report to Address: 5061 LUCKETT Rd, FT. MYERS, FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN COMPANY

Purchase Order #

Invoice to Address: 5061 LUCKETT Rd, FT. MYERS, FL 33905

Project Name and/or Number PACKER TEST WQ SAMPLES PT-3 ANALYSIS

Site Location: TURKEY POINT, HOMESTEAD, FL 33035

Project Contact: BROOK ALLEN/CRAIG BRUGGER

Phone: 239-275-1029/239-275-1025

Fax:

Email: CJBRUGGER@LAYNECHRISTENSEN.COM BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name: (printed) ERIC MEYER

Affiliation: MHC

Sampler Signature Eric D Meyer

	ORDER # (Lab Control Number — Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride / TDS / Sp. Cond	Analysis Required: TKN / NH3	Field Tests: TEMP °C	Field Tests: PH	Field Tests: COND	Field Tests: CHLOR
1	73097	EW-1-PT-3 (1225	7/17/11	17:30	GW	SU	2	1	1	26.8	7.80	5340	
2		-1285)											
3													
4													
5													
6													
7													
8													
9													
10													

Rush 7/17/11

RUSH

Special Comments: (24 Hour Rush)

"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by: E D Meyer	MHC	7/17/11@1755
1	Received by: M. Rein		7/18/2011 8:45am
2	Relinquished by: M. Rein		7/18/11 10:15
2	Received by:		7/18/11 1015
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 2 C

Custody seals? Y / N

FIELD TIME:

Sampling _____ hrs

Pick-Up _____ hrs

Misc. Charges _____

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

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Florida Spectrum
Environmental Services, Inc.

Report To:
Brooke Allen
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 07/21/11
Submission # 1107000417
Order # 73259

Project: Packer Test WQ Samples PT-4
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-4(1102-1162)
Collected: 07/19/11 01:00
Received: 07/19/11 08:30
Collected by: Eric Meyer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	4980		uS/cm	0.2	0.6	120.1	07/19 01:00	07/19 01:00	Client
Chloride	1130		mg/L	2.20	6.60	300.0	07/19 12:25	07/19 12:25	DGK
Nitrogen (Ammonia) as N	0.32		mg/L	0.01	0.03	350.1	07/21 15:09	07/21 15:09	MSG
Nitrogen (Kjeldahl) as "N"	0.34		mg/L	0.070	0.210	351.2	07/19 09:00	07/19 11:47	MSG
Total Dissolved Solids (TDS)	2984		mg/L	1.00	3.00	SM 2540C	07/20 14:40	07/20 14:40	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

SUBMISSION # 1107-417

Logged in LIMS by _____
CSM assigned _____

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309	Tel: (954) 978-6400	Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401	Tel: (912) 238-5050	Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841	Tel: (863) 285-8145	Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972	Tel: (863) 763-3336	Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested 7/20/11
RUSH RESERVATION # MEC4235
Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY
Report to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN COMPANY
Purchase Order #
Invoice to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905

Project Name and/or Number PACKER TEST WQ SAMPLES PT-4 ANALYSIS
Site Location: TURKEY POINT, HOMESTEAD, FL 33035

Project Contact: BROOK ALLEN/CRAIG BRUGGER
Phone: 239-275-1029/239-275-1025
Fax:
Email: CJBRUGGER@LAYNECHRISTENSEN.COM BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name: (printed) ERIC MEYER
Affiliation: MHC
Sampler Signature

ORDER # (Lab Control Number / Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride, TDS, Sp. Cond.	Analysis Required: TKN, NH3	Field Tests: TEMP °C	Field Tests: PH	Field Tests: COND	Field Tests: CHLOR
1 73259	EW-1-PT-4 (1102-1162)	7/19/11	01:00	GW	T 9 E 0	2	1	1	24.9	7.86	4980	
2												
3												
4												
5												
6												
7												
8												
9												
10												

24 Hour Rush

RUSH

Special Comments: (24 Hour Rush)
"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by:	MHC	7/19/11 @ 0115
1	Received by:		7/19/11 @ 7:30 AM
2	Relinquished by:		7/19/11 8:30
2	Received by:	BSES	7/19/11 830
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments
Temp as received 4 C
Custody seals? Y N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives
A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

Florida Spectrum
Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 12/12/11
Submission # 1112000092
Order # 92095

Project: Packer Test WQ Samples PT-5
Site Location: FPL Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-5 (1930-1952)
Collected: 12/03/11 19:28
Received: 12/04/11 13:30
Collected by: Eric W. Meyer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	44230		uS/cm	1.0	3.0	120.1	12/03 19:28	12/03 19:28	Client
pH (field)	7.48		units	0.1	0.3	150.1	12/03 19:28	12/03 19:28	Client
Temperature (Field)	24.2		Degree C	1	3	170.1	12/03 19:28	12/03 19:28	Client
Specific Conductance (grab)	45300		uS/cm	1.000	3.000	120.1	12/08 09:36	12/08 09:36	DGK
Chloride	16800		mg/L	22.000	66.000	300.0	12/06 11:45	12/06 11:45	DGK
Sulfate	585		mg/L	2.14	6.42	300.0	12/06 11:45	12/06 11:45	DGK
Nitrogen (Ammonia) as N	0.092		mg/L	0.01	0.03	350.1	12/06 11:53	12/06 11:53	RPV
Nitrogen (Kjeldahl) as "N"	0.26		mg/L	0.070	0.210	351.2	12/07 08:30	12/07 12:16	MSG
Total Dissolved Solids (TDS)	32167		mg/L	1.000	3.000	SM 2540C	12/07 11:15	12/08 14:26	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

MUST CHANGE FOR SUNDAY P/U

SUBMISSION # 1112-092

Logged in LIMS by _____

CSM assigned _____

CHAIN OF CUSTODY RECORD

Florida Spectrum Environmental Services, Inc.

☐ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

Report to: (company name) LAYNE CHRISTENSEN COMPANY
Report to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN CO.
Purchase Order #
Invoice to Address: 5061 LUCKETT RD. FT. MYERS, FL 33905

Project Name and/or Number PACKER TEST W/ SAMPLES PT-5 ANALYSIS
Site Location: FPL TURKEY POINT, HOMESTEAD, FL 33035

Project Contact: BROOK ALLEN / CRAIG BRUGGER
Phone: 239-275-1029 239-275-1025
Fax:
Email: CJBRUGGER@LAYNECHRISTENSEN.C BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name: (printed) ERIC W. MEYER
Affiliation: MHC
Sampler Signature: Eric W Meyer

ORDER # Lab Control Number / Shaded Areas For Laboratory Use Only	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride / TDS / Sp.Cond	Analysis Required: TKN / NH3	Analysis Required: Sulfate	Field Tests: Temp °C	Field Tests: pH	Field Tests: Cond	Field Tests: Chlor
1 9205	EW-1-PT-5 (1930-1952)	12/3/11	19:28	GW	SU	2	1	1	1	24.2	7.48	44230	X
2													
3													
4													
5													
6													
7													
8													
9													
10													

Special Comments: Sulfate added as per client

"I waive TNI protocol" (sign here) > KAC 12/9/11

Deliverables: QA/QC Report Needed? Yes No (additional charge)

Total 2

	Signature	Affiliation	Date/Time
1	Relinquished by: Eric W Meyer		12/3/11 @ 1935
1	Received by:		12/3/11 @ 1935
2	Relinquished by: Marcia J. Allen		12/4/11 @ 11:54
2	Received by: Angelo Pifferer	12-4-11	12:00
3	Relinquished by: Angelo Pifferer	12-4-11	13:30
3	Received by:	12/4/11	1330

Sample Custody & Field Comments

Temp as received 4 C
Custody seals? Y / N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
H-Plastic Amber Liter
L-liter bottle
S2-2 oz soil jar
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
DI-DI water U-Unpreserved
H-HNO3 N-NaOH
M-MCAB NH4-NH4CL
MeOH-Methanol
Z-zinc acetate

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 12/14/11
Submission # 1112000193
Order # 92720

Project: Turkey Point EN-1
Site Location: FPL Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-7 (3020-3232 ft)
Collected: 12/05/11 19:00
Received: 12/07/11 14:55
Collected by: Deborah Dalole

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	50100		uS/cm	1.0	3.0	120.1	12/05 19:00	12/05 19:00	Client
pH (field)	8.04		units	0.1	0.3	150.1	12/05 19:00	12/05 19:00	Client
Temperature (Field)	24.1		Degree C	1	3	170.1	12/05 19:00	12/05 19:00	Client
Specific Conductance (grab)	51600		uS/cm	1.0	3.0	120.1	12/08 09:38	12/08 09:38	DGK
Chloride	19100		mg/L	55.00	165.00	300.0	12/07 17:55	12/07 17:55	DGK
Sulfate	2910		mg/L	53.50	160.50	300.0	12/07 17:55	12/07 17:55	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	12/08 15:38	12/08 15:38	RPV
Nitrogen (Kjeldahl) as "N"	U	U	mg/L	0.070	0.210	351.2	12/13 10:30	12/13 14:44	MSG
Total Dissolved Solids (TDS)	39900		mg/L	1.00	3.00	SM 2540C	12/09 15:15	12/12 15:03	LYR

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

CHAIN OF CUSTODY RECORD

SUBMISSION # 1112-193

Logged in LIMS by NB

CSM assigned ______

Florida Spectrum Environmental Services, Inc.

- ☐ 1460 W. McNab Road Ft Laud. FL 33309 — Tel: (954) 978-6400 — Fax: (954) 978-2233
- ☐ 630 Indian Street Savannah, GA 31401 — Tel: (912) 238-5050 — Fax: (912) 234-4815
- ☐ 528 Gooch Road Fort Meade, FL 33841 — Tel: (863) 285-8145 — Fax: (863) 285-7030
- ☐ 610 Parrot Ave. N, Okeechobee, FL 34972 — Tel: (863) 763-3336 — Fax: (863) 763-1544

Original-Return w/report — Yellow-Lab File Copy — Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY

Report to Address: 5061 LUCKETT RD, FT. MYERS, FL 33905

Invoice to: (company name) LAYNE CHRISTENSEN CO.

Purchase Order #

Invoice to Address: 5061 LUCKETT RD, FT. MYERS, FL 33905

Project Name and/or Number: TURKEY POINT EW-1

Site Location: FPL TURKEY POINT, HOMESTEAD, FL 33035

Project Contact: BROOK ALLEN / CRAIG BRUGGER

Phone: 239-275-1029 / 239-275-1025

Fax:

Email: JBRUGGER@LAYNECHRISTENSEN.COM / BSALLEN@LAYNECHRISTENSEN.COM

Sampler Name: (printed) DEBORAH DAIGLE

Affiliation: MHC

Sampler Signature

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	CHLORIDE TDS SP.COND	TKN NH3	Sulfate	TEMP °C	PH	COND	CHLOR
1 92720	EW-1-PT-7 (3020-3232 ft)	12/15/2011	1900	GW	S U	2	1	1	1	24.1	8.04	50,100	X
2													
3													
4													
5													
6													
7													
8													
9													
10													

Total

Special Comments: ALL SAMPLES MUST BE RETURNED TO THE JOB SITE AFTER ANALYSIS IS COMPLETED.

"I waive NELAC protocol" (sign here) > Sulfate added as per client 12/9/11

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by: [signature]		12/7/2011 1120
1	Received by: Arcelio Pifferrer		12-7-11 11:20
2	Relinquished by: Arcelio Pifferrer		12-7-11 14:55
2	Received by: [signature]		12-7-11 14:55
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4 C

Custody seals? Y /N

FIELD TIME:

Sampling ______ hrs

Pick-Up ______ hrs

Misc. Charges ______

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types

B-brown liter plastic

Preservatives

A-ascorbic acid — P-H3PO4
C-HCL — S-H2SO4
Cu-CuSO4 — T-Na2S2O3
H-HNO3 — U-Unpreserved
M-MCAB — N-NaOH
Z-zinc acetate — NH4-NH4CL

Additional Preservatives

Hex-Hex Cr Buffer
EDA-Ethylene Diamine

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COC Page ____ of ____

Florida Spectrum Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 01/05/12
Submission # 1112000708
Order # 95032

Project: Packer Test WQ Samples PT-8
Site Location: FPL Turkey Point, Homestead, FL.
Matrix: Water

Sample I.D.: EW-1-PT-8 (1970-1992)
Collected: 12/27/11 14:00
Received: 12/28/11 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	41480		uS/cm	1.0	3.0	120.1	12/27 14:00	12/27 14:00	Client
pH (field)	6.7		units	0.1	0.3	150.1	12/27 14:00	12/27 14:00	Client
Temperature (Field)	26.7		Degree C	1	3	170.1	12/27 14:00	12/27 14:00	Client
Specific Conductance (grab)	40900		uS/cm	1.0	3.0	120.1	12/29 10:07	12/29 10:07	DGK
Chloride	20400		mg/L	22.00	66.00	300.0	12/28 15:58	12/28 15:58	DGK
Sulfate	1980		mg/L	21.40	64.20	300.0	12/28 15:58	12/28 15:58	DGK
Nitrogen (Ammonia) as N	0.038		mg/L	0.01	0.03	350.1	12/29 15:47	12/29 15:47	RPV
Nitrogen (Kjeldahl) as "N"	0.15	I	mg/L	0.070	0.210	351.2	01/04 09:00	01/04 12:47	MSG
Total Dissolved Solids (TDS)	26400		mg/L	1.00	3.00	SM 2540C	01/03 09:35	01/04 10:45	CEB

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

SUBMISSION # 1112-708

Logged in LIMS by M
CSM assigned

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

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☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN COMPANY
Report to Address: 5061 LUCKETT RD., FT. MYERS, FL 33905
Invoice to: (company name) LAYNE CHRISTENSEN COMPANY
Purchase Order #
Invoice to Address: " " " " "
Project Name and/or Number: PACKER TEST WQ SAMPLES PT-8 ANALYSIS
Site Location: FPL TURKEY POINT, HOMESTEAD, FL 33035
Project Contact: BROOK ALLEN / CRAIG BRUGGER
Phone: 239-275-1029 / 239-275-1025
Fax:
Email: CJBRUGGER@LAYNECHRISTENSEN.com BSALLEN@LAYNECHRISTENSEN.com
Sampler Name: (printed)
Affiliation:
Sampler Signature

ORDER # Lab Control Number / Shaded Areas For Laboratory Use Only	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chloride	Sulfate	Sp Cond TD	TKN NH3	Field Tests: TEMP °C	PH	COND	CHLOR
1	95032	EW-1-PT-8 (1970-1992	12/27/11	2:00PM	GW	SU	2	1	1	1	26.7	6.70	46 480	
2														
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7														
8														
9														
10														

Total: 2

Special Comments:

"I waive TNI protocol" (sign here) >

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by: Marten J. Clasen		12/28/11 11:05
1	Received by: Angelo Piffero	12-28-11	11:10
2	Relinquished by: Angelo Piffero	12-28-11	1320
2	Received by:	12/28/11	1320
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 2.1 C
Custody seals? Y N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
H-Plastic Amber Liter
L-liter bottle
S2-2 oz soil jar
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives
A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
DI-DI water U-Unpreserved
H-HNO3 N-NaOH
M-MCAB NH4-NH4CL
MeOH-Methanol
Z-zinc acetate

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

www.flenviro.com COC Page 1 of 1

Florida Spectrum
Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 01/16/12
Submission # 1201000193
Order # 868

Project: Turkey Point Exploratory PT-9
Site Location: FPL Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-9 (2058-2080)
Collected: 01/08/12 22:00
Received: 01/09/12 14:50
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Specific Conductance (Field)(grab)	54800		uS/cm	1.0	3.0	120.1	01/08 22:00	01/08 22:00	Client
pH (field)	7.53		units	0.1	0.3	150.1	01/08 22:00	01/08 22:00	Client
Temperature (Field)	21.7		Degree C	1	3	170.1	01/08 22:00	01/08 22:00	Client
Specific Conductance (grab)	52800		uS/cm	1.0	3.0	120.1	01/11 10:55	01/11 10:55	DGK
Chloride	19500		mg/L	55.00	165.00	300.0	01/10 14:50	01/10 14:50	DGK
Sulfate	2820		mg/L	53.50	160.50	300.0	01/10 14:50	01/10 14:50	DGK
Nitrogen (Ammonia) as N	0.134*		mg/L	0.01	0.03	350.1	01/09 17:31	01/09 17:31	CEB
Nitrogen (Kjeldahl) as "N"	0.18	I	mg/L	0.070	0.210	351.2	01/10 10:00	01/10 13:43	MSG
Total Dissolved Solids (TDS)	35800		mg/L	1.00	3.00	SM 2540C	01/10 11:00	01/11 14:11	TBL

* * Matrix spikes outside recovery limits
Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

SUBMISSION # 1201-193

Logged in LIMS by NB

CSM assigned _____

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: (company name) LAYNE CHRISTENSEN CO.	Report to Address: 5061 LUCKET RD, FT MYERS, FL 33905
Invoice to: (company name) LAYNE CHRISTENSEN CO	Purchase Order # / Invoice to Address: " " " " "
Project Name and/or Number TURKEY POINT EVALUATORY WELL EW-1 - PackerTest PT-9	Site Location: FPL TURKEY POINT, HOMESTEAD, FL
Project Contact: CRAIG BRUGGER	Phone: 239-275-1029 / 239-275-1025 — Fax: — Email: CJBRUGGER@LAYNECHRISTENSEN.COM
Sampler Name: (printed)	Affiliation: — Sampler Signature

ORDER # (Lab Control Number / Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: CHLORIDE	SULFATE	TDS	TKN	NH3	Field Tests: TEMP °C	PH	COND	CHLOR
1 9688	EW-1-PT-9 (2058-2,080)	1/8/12	2260	GW	S U		1			1		21.7	7.53	54,000	
2															
3															
4															
5															
6															
7															
8															
9															
10															

Special Comments:

"I waive NELAC protocol" (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No *(additional charge)*

	Signature	Affiliation	Date/Time
1	Relinquished by: Sean H Rudd		1/9/2012 11:00
1	Received by: Angelo Pifferer		1-9-2012 11:05
2	Relinquished by: Angelo Pifferer		1-9-12 14:50
2	Received by: [signature]		1-9-12 14:50
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received 4 C

Custody seals? Y / N

FIELD TIME:

Sampling _____ hrs

Pick-Up _____ hrs

Misc. Charges _____

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag

Additional Bottle Types
B-brown liter plastic

Preservatives

A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

Florida Spectrum Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 02/09/12
Submission # 1202000207
Order # 4974

17 DM

Project: Turkey Point EW-1
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-16 (2220-2242 ft)
Collected: 01/28/12 14:20
Received: 01/30/12 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Chloride	19800		mg/L	55.00	165.00	300.0	02/08 18:16	02/08 18:16	DGK
Total Dissolved Solids (TDS)	39300	Q	mg/L	1.00	3.00	SM 2540C	02/08 16:20	02/09 12:27	TBL

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services, Inc.
Certification # E86006

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 02/09/12
Submission # 1202000207
Order # 4975

Project: Turkey Point EW-1
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: EW-1-PT-18 (2478-2500 ft) 19 DM
Collected: 01/30/12 05:30
Received: 01/30/12 15:00
Collected by: Client

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Chloride	19000		mg/L	55.00	165.00	300.0	02/08 18:16	02/08 18:16	DGK
Total Dissolved Solids (TDS)	36800	Q	mg/L	1.00	3.00	SM 2540C	02/08 16:20	02/09 12:28	TBL

Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

Relog!

Rush: MEC4633
Due: 2/9/12

1202-207

SUBMISSION # 1201-791

Logged in LIMS by: LJB
CSM assigned

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: (company name) Lanne Christenson Company
Report to Address: 5061 Luckett Road, Fort Myers, FL 33905
Invoice to: (company name) Lanne Christenson Company
Purchase Order #
Invoice to Address: 5061 Luckett Road, Fort Myers, FL 33905
Project Name and/or Number: Turkey Point EW-1
Site Location: Turkey Point, Homestead, FL 33035
Project Contact: Brooke Ailey / Clancy Brugger
Phone: 239.275.1829 / 239.275.1025
Fax:
Email: [illegible] / bsailey@lannechristenson.com
Sampler Name: (printed)
Affiliation:
Sampler Signature:

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL A AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Chlorides, Pb, Cond, TDS, [illegible]	TKN, NH3		TDS Chloride				TEMP °C	PH	COND	CHLOR
1 3919	EW-1-PT-16 (2,220-2,242 FT)	1-28-12	14:20	GW	SU	2	1	1		✓	4974			24.9	7.42	[illegible]	X
2 3919	EW-1-PT-18 (2,478-2,500 FT)	1-30-12	05:30	GW	SU		1	1		✓	4975			24.8	7.22	[illegible]	X
3	17 [illegible] / 19 [illegible]																
4																	
5																	
6																	
7																	
8																	
9																	
10																	

RUSH

Special Comments: Re-test for TDS, Cl as per Client [illegible] 2/8/12

"I waive NELAC protocol" (sign here)>
Deliverables: QA/QC Report Needed? Yes No (additional charge)
Total

	Signature	Affiliation	Date/Time
1	Relinquished by: [signature]		1/30/12 11:50
1	Received by: Angelo Pirrera		1-30-12 11:50
2	Relinquished by: Angelo Pirrera		1-30-12 15:03
2	Received by: [signature]		1-30-12 15:00
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments
Temp as received 4 °C
Custody seals? Y N
FIELD TIME:
Sampling ____ hrs
Pick-Up ____ hrs
Misc. Charges

Bottle Type:
A-liter amber
B-Bacteria bag/bottle
E-500 ml O-125 ml
L-liter bottle
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives:
A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
H-HNO3 U-Unpreserved
M-MCAB N-NaOH
Z-zinc acetate NH4-NH4CL
Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

www.flenviro.com
COC Page ____ of ____

Appendix R
34-Inch and 24-Inch Casing Seat Recommendations (text only)

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

July 20, 2011 MHCDEP-11-0302

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Intermediate Casing Setting Depth Recommendation

Dear Mr. May:

The purpose of this letter is to provide you with a recommendation for the 34-inch diameter intermediate casing setting depth for exploratory well EW-1 at the Florida Power & Light Company (FPL) Turkey Point Units 6 & 7 exploratory well project. The interpreted data presented below is provided to justify our recommendation for the intermediate casing setting depth of 1,535 feet below pad level (bpl). This recommendation, hereby submitted on behalf of FPL, is provided for your review and Technical Advisory Committee (TAC) approval.

Background

Construction of exploratory well EW-1 began on May 11, 2011. A 54-inch diameter casing was installed to a depth of 255 feet bpl to isolate the Biscayne Aquifer and unconsolidated sediments from subsequent drilling activities. A 44-inch casing was installed to a depth of 1,090 feet bpl and cemented to surface to isolate the swelling clays of the Hawthorn Group from subsequent drilling activities. A 12-1/4 inch pilot hole was then drilled below the base of the 44-inch diameter casing to a depth of 1,655 feet bpl.

EW-1 Testing and Data Summary

Drill cutting samples were collected at 10-foot intervals during pilot hole drilling. Each cutting sample was described in detail to develop a lithologic log of EW-1. Pilot hole water samples were collected at approximately 90-foot intervals during reverse-air drilling pilot hole. Pilot hole water samples were analyzed for specific conductance, chlorides, total dissolved solids (TDS), ammonia, and total kjeldahl nitrogen (TKN). Deviation surveys were performed at approximately 90-foot intervals while pilot hole drilling. Geophysical logs conducted on the pilot hole below the base of the 44-inch diameter casing include caliper, gamma ray, spontaneous potential, dual-induction, borehole compensated sonic, flowmeter, fluid specific conductance, and temperature. Flowmeter, fluid conductivity and temperature logs were performed under static and dynamic conditions. The remaining logs

were performed under static conditions. Geophysical log data was used to develop an estimate of the depth of the base of the Underground Source of Drinking Water (USDW). Packer testing was performed on the intervals from 1,505 to 1,535 feet bpl, 1,400 to 1,430 feet bpl, 1,225 to 1,285 feet bpl and 1,102 to 1,162 feet bpl to confirm the location of the base of the USDW. A water sample was collected at the end of each packer test and analyzed for specific conductance, chlorides, TDS, ammonia, and TKN.

Drill Cutting Samples

The drill cuttings from the pilot hole below the 44-inch casing consist primarily of limestone, dolomitic limestone and dolomite. Table 1 provides a summary of the drill cuttings description. In general, the interval from 1,090 feet (base of the 44-inch diameter casing) to the base of the pilot hole (1,655 feet bpl) can be divided into two intervals. A detailed lithologic log of the drill cuttings below the 44-inch diameter casing is provided in Attachment A. The drill cutting samples are typical of the Floridan Aquifer.

Table 1. Generalized Lithologic Description of Drill Cuttings

Interval (feet bpl)	Generalized Description
1,090 – 1,270	Well indurated, interbedded, fine grained limestone, dolomitic limestone and dolomite
1,270 – 1,650	Poorly to well indurated, fine grained limestone

Deviation Survey Data

Deviation surveys were performed at approximately 90-foot intervals on the pilot hole below the base of the 44-inch diameter casing to measure the plumbness of the hole. The deviation survey data is summarized in Table 2, below.

Table 2. Deviation Survey Summary Table

Depth (feet bpl)	Inclination (degrees from vertical)
974	0.5
1,064	0.5
1,154	0.6
1,244	0.3
1,334	0.4
1,424	0.4
1,514	0.5
1,604	0.5

Review of the deviation survey data indicates that the drilled borehole is very near vertical in each measurement with the range of measurements from 0.3 to 0.6 degrees out of vertical.

Pilot Hole Water Quality Data

Pilot hole water samples were collected at approximately 90-foot intervals during reverse-air drilling. Each sample underwent specific conductance, chlorides, TDS, ammonia, and TKN analyses. The pilot hole specific conductance, chlorides, and TDS data was evaluated to identify increases in salinity and to assist in the identification of the base of the USDW. Even though the pilot hole water quality samples represent water which is a combination of native water and water from the drilling process as described below, the sample results can be used to assist in the identification of the base of the USDW. The drilling process for EW-1 uses a closed circulation system in which drilling water is present in the pilot hole at all times. In addition a large volume of fresh water was introduced to the closed circulation system at the beginning of pilot hole reverse-air drilling. Adding fresh water at the beginning of reverse-air drilling is a typical process in the drilling of deep underground injection control wells.

Table 3 provides a summary of the pilot hole water quality data. A copy of the water quality sample analytical report is provided in Attachment B. Figure 1 provides a graph of pilot hole water sample chloride, TDS, and specific conductance relative to sample depth. The pilot hole water quality was relatively fresh between the depths of 1,100 and 1,255 feet bpl due to the high percentage of fresh water added to the closed circulation system. A gradual trend of increasing chloride and TDS concentration and specific conductance is apparent from a depth of 1,255 feet bpl to 1,435 feet bpl. This trend is an indication of groundwater with relatively higher chloride, TDS, and specific conductance mixing with closed circulation drilling fluids. A significant increase in chloride concentration, TDS concentration and specific conductance was observed between 1,435 and 1,525 feet bpl. This suggests that a productive interval containing relatively saline water is present between 1,435 and 1,525 feet bpl and that at least some of the sample collected at a depth of 1,525 feet bpl consists of this relatively saline water. The trend of elevated TDS, chloride and specific conductance remains consistent from the shallowest to the deepest sample collected, however, there is some variation in the actual results as expected due to the addition of fresh water at the initiation of reverse-air drilling.

Table 3. Pilot Hole Water Quality Summary

Sample Date	Sample Depth (feet bpl)	Specific conductance (umhos/cm)	TDS (mg/L)	Chloride (mg/L)	Ammonia (mg/L)	TKN (mg/L)
6/30/2011	1,100	1,228	610	61.3	0.04	0.55
7/1/2011	1,190	1,177	768	85.5	0.06	0.59
7/1/2011	1,255	1,167	776	97.3	0.03	0.56
7/1/2011	1,345	2,420	1,428	551	0.06	0.42
7/1/2011	1,435	2,900	1,736	640	0.08	0.44
7/2/2011	1,525	6,760	4,168	2,045	0.09	0.35
7/3/2011	1,615	5,660	3,548	1,670	0.08	0.45

Figure 2 provides a graph of ammonia and TKN data relative to depth. Review of the data indicates the pilot hole water samples have low concentrations typical of the Floridan Aquifer mixed with added fresh water at the beginning reverse-air drilling.

In summary, the pilot hole water quality data suggests the presence of intervals producing brackish water between the depths of 1,100 and 1,255 feet bpl. The data also suggests that there is a significant increase in salinity between the depths of 1,435 and 1,525 feet bpl and that the base of the USDW may be located within this interval.

Geophysical Logging Data

Geophysical logging of the interval from 1,090 to 1,655 feet bpl was conducted to provide geologic and hydrogeologic data for the EW-1 site. Logs conducted include caliper, gamma ray, spontaneous potential, dual induction, borehole compensated sonic, flowmeter, fluid conductivity, and temperature. All logs were performed under static conditions. The flowmeter, fluid conductivity and temperature logs were also performed under dynamic conditions. The dynamic flowmeter, fluid conductivity and temperature logs were performed in two phases due to the presence of kill material (a mix of barite and bentonite) over the interval from 1,560 to 1,655 feet bpl. The barite/bentonite mixture impacted the geophysical log data over the interval from 1,560 to 1,655 feet bpl. Therefore, the drilling contractor installed an open-ended drill pipe to the base of the borehole and pumped the barite/bentonite mixture from the well. The drill pipe was then pulled up to a depth of 1,525 feet bpl and the interval from 1,525 to 1,655 feet bpl underwent flowmeter, fluid conductivity and temperature logging. Copies of the logs are provided in Attachment C.

The interval from 1,090 to 1,655 feet bpl can generally be divided into two intervals. The interval from 1,090 to 1,300 feet bpl is characterized by a generally small diameter borehole that ranges between 12.25 and 14 inches, moderately high gamma ray activity ranging from approximately 15 to 65 American Petroleum Institute (API) units, moderately high and variable resistivity, and a highly variable and moderately long acoustic travel time. Fluid conductivity and temperature are fairly stable through this interval. The flowmeter log, in combination with the fluid conductivity and temperature logs suggests that most of the water production is occurring at the very base of this interval and below this interval. These data are interpreted to indicate the interval from 1,090 to 1,300 feet bpl has a varying lithology and porosity. The small diameter borehole suggests the rocks making up this interval are well indurated. The moderately high resistivity as indicated by the dual induction log indicates this interval contains water with less than 10,000 mg/L TDS. A log-derived TDS curve was generated from the data and is included in Attachment C. The log-derived TDS curve also suggests this interval contains water with less than 10,000 mg/L TDS.

The interval from 1,300 to 1,655 feet bpl is characterized by a larger diameter borehole that ranges from approximately 14 to 18 inches, low to occasionally moderate gamma ray activity, a moderate resistivity that decreases to a low resistivity with depth, and a less variable and shorter sonic travel time when compared to the interval above. The log-derived TDS curve indicates the base of the USDW is located within this interval at a depth of approximately 1,450 feet bpl. Review of the flowmeter, fluid conductivity and temperature logs suggests there are productive intervals at depths of approximately 1,380, 1,470, and 1,525 feet bpl. These data are interpreted to represent an interval that contains relatively soft material that is susceptible to washing out compared to the interval above. The relatively stable sonic travel time suggests the lithology of this interval is less variable than that of the interval above. The decreasing resistivity shown on the dual-induction log suggests increasing salinity with depth.

Packer Testing Data

Packer testing was conducted on the intervals from 1,505 to 1,535 feet bpl, 1,400 to 1,430 feet bpl, 1,225 to 1,285 feet bpl and 1,102 to 1,162 feet bpl to determine water quality and hydraulic characteristics of the tested intervals. Water samples were collected at the end of each packer test and analyzed for specific conductance, chlorides, TDS, ammonia, and TKN.

Water level of the test interval was measured and recorded during packer testing. Table 4 provides a summary of packer test pumping rate and water level drawdown data. Figures 3 through 6 provide an interpreted graph of water level drawdown data for each packer test.

Please note, the information listed in Tables 4 and 5 is listed in the order in which the packer tests were performed (deepest to shallowest).

Table 4. Straddle Packer Test Performance Data Summary

Test #	Test Interval (ft. bpl)	Pumping Rate (gpm)	Drawdown (feet)	Specific Capacity (gpm/foot)
1	1,505 – 1,535	76	31.3	2.43
2	1,400 – 1,430	77	40.6	1.90
3	1,225 – 1,285	78	33.2	2.35
4	1,102 – 1,162	16	161	0.10

The packer test water level data indicates that the packer test #1 through #3 test intervals are productive and are not confining in nature. The test interval for packer test #4 is much less productive than the previous three test intervals.

Water quality data for water samples collected at the end of each packer test are summarized in Table 5. Analytical results for the water sample collected at the end of packer test #4 are not yet available and will be provided to the Department when they become available. A copy of the water quality analytical reports for packer tests #1 through #3 is provided in Attachment D.

Table 5. Straddle Packer Test Water Quality Data Summary

Test #	Test Interval (ft. bpl)	Specific Conductance (umhos/cm)	Chloride (mg/L)	TDS (mg/L)	TKN (mg/L)	Ammonia (mg/L)	Temperature (Celsius)	pH (standard units)
1	1,505 – 1,535	22,420	7,990	13,890	0.22	0.18	25.8	7.55
2	1,400 – 1,430	9,850	3,230	5,780	0.13	0.11	24.4	7.55
3	1,225 – 1,285	5,340	1,500	3,120	0.16	0.08	26.8	7.80

Based on the packer tests water sample analytical data, the base of the USDW is located between the depths of 1,430 and 1,505 feet bpl. This is consistent with the log-derived TDS curve, which showed the base of the USDW at a depth of 1,450 feet bpl.

Summary

Based on interpretation of the data collected and presented herein, it is recommended to set the 34-inch intermediate casing of EW-1 to a depth of 1,535 feet bpl. The proposed casing seat will result in the intermediate casing being set to a depth below the base of the USDW in accordance with the requirements of Rule 62-528, F.A.C. Interpreted packer test data presented above indicates the base of the USDW is located between 1,430 and 1,505 feet bpl. Interpretation of geophysical log data provides a more precise estimate of the location of the base of the USDW at 1,450 feet bpl. Analysis of the sonic log indicates the formation at 1,535 feet bpl is mechanically sound and will serve to allow a good seal at the base of the casing string.

Should you have any questions regarding the application, please contact me at (561) 891-0763 or Matthew Raffenberg (FPL) at (561) 691-2808.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

7/20/11

David McNabb, P.G.

Attachments: Figures
A - EW-1 Lithologic Log
B - Pilot Hole Water Quality Analytical Report
C - EW-1 Geophysical Logs
D - Packer Tests #1 Through #3 Water Quality Analytical Reports

Cc: George Heuler/FDEP-Tallahassee
Steve Anderson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

McNabb Hydrogeologic Consulting, Inc.
601 Heritage Drive, Suite 110
Jupiter, Florida 33458
Phone: 561-891-0763
Fax: 561-623-5469

February 21, 2012 MHCDEP-12-0065

Mr. Joseph May, P.G.
Florida Department of Environmental Protection
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401

RE: Florida Power & Light Company Turkey Point Units 6 & 7 Exploratory Well Project; Permit #0293962-001-UC
Final Casing Setting Depth Recommendation

Dear Mr. May:

The purpose of this letter is to provide the Florida Department of Environmental Protection (FDEP) with a recommendation for the 24-inch diameter final casing setting depth for exploratory well EW-1 at the Florida Power & Light Company (FPL) Turkey Point Units 6 & 7 exploratory well project. The data and analysis presented below are provided to justify our recommendation for the final casing setting depth of 2,980 feet below pad level (bpl). This recommendation, hereby submitted on behalf of FPL, is provided for your review and Technical Advisory Committee (TAC) approval.

Background

Construction of exploratory well EW-1 began on May 11, 2011. A 54-inch diameter casing was installed to a depth of 255 feet bpl to isolate the Biscayne Aquifer and unconsolidated sediments from subsequent drilling activities. A 44-inch casing was installed to a depth of 1,090 feet bpl and cemented to surface to isolate the swelling clays of the Hawthorn Group from subsequent drilling activities. A 34-inch intermediate casing was then installed to a depth of 1,535 feet bpl to isolate the Underground Source of Drinking Water (USDW) from subsequent drilling activities. Testing performed prior to installation of the 34-inch diameter intermediate casing demonstrated that the base of the USDW is located at a depth of approximately 1,450 feet bpl at the EW-1 location.

EW-1 Testing and Data Below the Intermediate Casing Summary

The following is a summary of the drilling and testing activities below the 34-inch diameter intermediate casing. It should be noted that the pilot hole was originally planned to be extended to a depth of 3,500 feet bpl, however, this depth was re-evaluated as a result of field conditions.

Drill cutting samples were collected at 10-foot intervals during pilot hole drilling. Each drill cutting sample was described in detail to develop a lithologic log of EW-1.

Pilot hole water samples were collected at approximately 90-foot intervals during reverse-air drilling the pilot hole. Pilot hole water samples were analyzed for ammonia, chlorides, specific conductance, total dissolved solids (TDS), and total kjeldahl nitrogen (TKN).

Deviation surveys were performed at approximately 60-foot intervals while pilot hole drilling below the intermediate casing. Deviation surveys were performed to measure the plumbness of the borehole.

Geophysical logs performed on the pilot hole include borehole compensated sonic, caliper, dual-induction, gamma ray, flowmeter, fluid specific conductance, spontaneous potential, temperature and video logs. Flowmeter, fluid specific conductivity and temperature logs were performed under static and dynamic conditions. The remaining logs were performed under static conditions. The pilot hole had filled into a depth of 3,232 feet bpl when geophysical logs were performed on the pilot hole.

Ten core samples were collected during the pilot hole drilling process and described to provide information on the confining characteristics of the cored intervals. Each core was described to obtain information regarding the confining characteristics of the cored interval.

Two straddle packer tests and a single, open-ended packer test were performed on the pilot hole before reaming the pilot hole in phases. A 28-inch diameter and 32-inch diameter reaming bit were used to ream the pilot hole to allow straddle packer testing in the large diameter portions of the borehole. Geophysical log data indicated that most of the pilot hole was too large in diameter to perform straddle packer testing with 11-inch diameter packers. A total of three additional straddle packer tests with sleeved packers were successfully performed after a portion of the borehole was reamed. The base of the deepest interval successfully straddle packer tested was 2,500 feet bpl. Test intervals below a depth of 2,500 feet bpl were not successfully isolated with the straddle packers or too much productivity from the test interval occurred.

Following completion of a total of five packer tests and the open-ended packer test, reaming of the borehole with a 32-inch diameter reaming bit was completed to a depth of 2,978 feet bpl. A 12¼-inch diameter bit was then used to clean out the borehole from 2,978 to 3,230 feet bpl in preparation for performing a formation test to verify the presence of the Boulder Zone within this interval. Caliper, gamma ray, and video logging of the borehole were performed just prior to performing the formation test to determine borehole conditions.

A formation test was performed to confirm the presence of the Boulder Zone below a depth of 3,010 feet bpl. Formation testing consisted of installation of a single, open-ended packer at a depth of 3,010 feet bpl and pumping formation water through the packer to gain information on the hydraulic characteristics of the interval from 3,010 to 3,230 feet bpl.

Drill Cutting Samples

The drill cuttings from the pilot hole below the 34-inch casing consist primarily of limestone, dolomitic limestone and dolomite. Table 1 provides a summary of the drill cuttings description. In general, the interval from 1,535 feet (base of the 34-inch diameter casing) to the base of the pilot hole (3,232 feet bpl) can be divided into three intervals. A detailed lithologic log of the drill cuttings below the 34-inch diameter casing is provided in Attachment A. The drill cutting samples are typical of the Floridan Aquifer.

Table 1. Generalized Lithologic Description of Drill Cuttings

Interval (feet bpl)	Generalized Description
1,530 – 2,020	Interbedded limestone, dolomitic limestone and dolomite
2,020 – 2,800	Primarily soft, fine grained dolomitic limestone with only minor amounts of limestone and dolomite
2,800 – 3,265	Dolomitic limestone interbedded with limestone and dolomite

Pilot Hole Water Quality Data

Pilot hole water samples were collected at approximately 90-foot intervals during reverse-air drilling. Each sample underwent analysis for ammonia, chlorides, specific conductance, TDS, and TKN. The pilot hole specific conductance, chlorides, and TDS data was evaluated to verify that the sample depths are located below the base of the USDW. It should be noted that the drilling process for EW-1 uses a closed circulation system in which drilling water is present in the pilot hole at all times. In addition a large volume of fresh water was introduced to the closed circulation system at the beginning of pilot hole reverse-air drilling. Adding fresh water at the beginning of reverse-air drilling is a standard process in the drilling of deep underground injection control wells. This may result in lower chloride, specific conductance and TDS results than expected for native Floridan Aquifer groundwater.

Table 2 provides a summary of the pilot hole water quality data below the base of the 34-inch diameter intermediate casing. A copy of the water quality sample analytical reports is provided in Attachment B. Figure 1 provides a graph of pilot hole water sample chloride, specific conductance and TDS results relative to sample depth. With the exception of three peaks, a general trend of increasing chloride, specific conductance and TDS results with depth is apparent. This trend is due to the relatively high percentage of fresh water added to the closed circulation system at the beginning of reverse-air drilling. As the pilot hole drilling progressed, the pilot hole water consisted of a greater percentage of native groundwater than it did at shallower depths. Occasional peaks in chloride, specific conductance and TDS results can be attributed to the closed circulation reverse-air drilling method.

Table 2. Pilot Hole Water Quality Summary

Sample Date	Sample Depth (feet bpl)	Specific conductance (umhos/cm)	TDS (mg/L)	Chloride (mg/L)	Ammonia (mg/L)	TKN (mg/L)
8/13/2011	1,704	9,500	5,688	3,120	U	0.56
8/15/2011	1,794	14,670	9,260	5,010	U	0.57
8/16/2011	1,884	20,400	13,520	7,180	U	0.38
8/17/2011	1,974	25,190	16,910	9,160	U	0.22
8/19/2011	2,064	37,000	24,280	14,400	U	0.71
8/21/2011	2,154	30,000	18,525	11,000	U	0.32
8/21/2011	2,244	32,100	16,967	11,500	U	0.17

Sample Date	Sample Depth (feet bpl)	Specific conductance (umhos/cm)	TDS (mg/L)	Chloride (mg/L)	Ammonia (mg/L)	TKN (mg/L)
8/23/2011	2,334	60,100	40,400	26,000	U	0.44
8/25/2011	2,424	38,200	23,200	14,200	U	0.17
8/26/2011	2,514	39,130	26,867	14,200	U	0.18
8/29/2011	2,604	48,400	32,767	17,400	U	0.13
9/4/2011	2,694	63,800	41,500	27,200	U	0.12
9/4/2011	2,784	59,600	40,400	25,800	U	0.12
9/5/2011	2,874	52,200	34,000	25,600	U	0.25
9/5/2011	2,964	47,240	31,200	17,900	U	0.28
9/6/2011	3,054	50,000	32,000	19,500	U	0.25
9/6/2011	3,144	49,900	33,100	19,500	U	0.47
10/23/2011	3,234	52,700	40,250	21,100	U	0.54

U = undetected

Figure 2 provides a graph of ammonia and TKN results data relative to depth. Review of the data indicates the pilot hole water samples have low concentrations of ammonia and TKN and that is typical of the Floridan Aquifer water quality.

In summary, the pilot hole water quality data indicates that the native groundwater below the base of the 34-inch diameter intermediate casing is brackish to saline and is located below the base of the USDW.

Deviation Survey Data

Deviation surveys were performed at approximately 60-foot intervals on the pilot hole and reamed hole below the base of the 34-inch diameter casing to measure the plumbness of the hole. A table summarizing the deviation survey data from below the 34-inch diameter casing is provided in Attachment C.

Review of the deviation survey data indicates that the drilled borehole is straight and very near vertical in each measurement with the range of measurements from 0.0 to 0.5 degrees out of vertical.

Geophysical Logging Data

Geophysical logging of the pilot hole interval from 1,535 to 3,232 feet bpl was conducted to provide geologic and hydrogeologic data for the EW-1 site. Logs conducted include caliper, gamma ray, spontaneous potential, dual induction, borehole compensated sonic, video, flowmeter, fluid conductivity, and temperature. All logs were performed under static conditions. The flowmeter, fluid conductivity and temperature logs were also performed under dynamic conditions. Copies of the pilot hole geophysical logs were provided in weekly construction summary #31. An electronic copy of the pilot hole geophysical logs (with the exception of the video log) is provided in Attachment D. A copy of the caliper log and hard copies both the caliper log and the video log performed just prior to formation test is also provided in Attachment D.

The interval from 1,535 to 3,232 feet bpl can be divided into three intervals. The interval from 1,535 to 1,980 feet bpl is characterized by a variable diameter borehole that ranges between approximately 34 and 47 inches, low to moderate, but variable gamma ray activity

ranging from approximately 3 to 30 American Petroleum Institute (API) units, moderately low and variable resistivity, and a highly variable acoustic travel time. Fluid conductivity and temperature are fairly consistent through this interval. The flowmeter log, in combination with the fluid conductivity and temperature logs suggests that most of the water production is occurring at the base of this interval and below this interval. Review of the geophysical logs indicates the interval from 1,535 to 1,980 feet bpl has a varying lithology and porosity. The variable diameter borehole suggests the rocks making up this interval vary from soft to well indurated. The moderately low resistivity as indicated by the dual induction log indicates this interval contains water with greater than 10,000 mg/L TDS. This interval has both confining and productive characteristics and does not make up the primary confinement at the site.

The interval from 1,980 to 3,020 feet bpl is characterized by borehole diameter that ranges from 12¼ to 46 inches, low gamma ray activity, a moderately low resistivity, and a less variable and short acoustic travel time (when compared to the interval above). A number of zones with high acoustic travel time between 2,915 and 3,010 feet bpl indicates there are likely porous zones within the interval from 2,915 to 3,010 feet bpl. Review of the flowmeter, fluid conductivity and temperature logs suggests there are no significant water producing zones between 1,980 and 2,980 feet bpl. These data represent that almost all the interval between 1,980 and 2,980 feet bpl consists of relatively soft material that is susceptible to washing out compared to the interval above. The relatively stable and short acoustic travel time suggests the lithology of this interval is less variable than that of the interval above and has a low porosity. The interval from 1,980 to 2,915 feet bpl is confining in nature and makes up the primary confinement at the site. The interval from 2,915 to 3,020 feet bpl contains zones that are porous and the 2,915 feet bpl defines the top of the injection zone.

The interval from 3,020 to 3,232 feet bpl is characterized by a very large hole diameter, low gamma ray activity, a moderately low resistivity that decreases to a very low resistivity with depth, and highly variable and short acoustic travel time. The sonic travel time data below a depth of 3,120 feet bpl is artificially high due to the large hole diameter and does not reflect the true acoustic travel time for the formation. Review of the flowmeter, fluid conductivity and temperature logs suggests there is fluid production from the top of this interval. This interval represents the Boulder Zone at the site and is not confining in nature.

Core Data

Ten core samples were collected during the pilot hole drilling process to assist in the evaluation of the confining nature of the strata between the base of the USDW and the top of the injection zone. Table 3 provides a summary of the cored intervals and core recovery.

Table 3. Core Summary

Core Number	Cored Interval (feet bpl)	Length Cored (feet)	Length of Core Recovered (feet)	Percentage of Recovery	Date Collected
1	1,721.5 – 1,734.5	13.0	3.3	25.4%	8/14/2011
2	2,026.0 – 2,040.0	14.0	12.0	85.7%	8/18/2011
3	2,110.0 – 2,124.0	14.0	2.0	14.3%	8/20/2011
4	2,288.3 – 2,302.3	14.0	13.0	92.9%	8/21/2011

Core Number	Cored Interval (feet bpl)	Length Cored (feet)	Length of Core Recovered (feet)	Percentage of Recovery	Date Collected
5	2,396.0 – 2,410.0	14.0	6.1	43.6%	8/25/2011
6	2,576.0 – 2,578.0	2.0	0.9	45.8%	8/27/2011
7	2,580.0 – 2,590.0	10.0	0.8	8.0%	8/28/2011
8	2,638.0 – 2,652.0	14.0	8.5	60.7%	8/31/2011
9	2,652.0 – 2,666.0	14.0	5.2	37.1%	9/1/2011
10	2,666.0 – 2,679.0	13.0	12.4	95.4%	9/3/2011

Core recovery ranged from 8% to 95.4%. All cores consisted of dolomitic limestone and/or limestone. Each of the cores collected below a depth of 2,026 have low porosity and permeability and show good confining characteristics. The core collected at a depth of 1,721.5 to 1,734.5 feet bpl have moderate permeability and less confining characteristics than the cores collected at greater depths. A detailed description of the core samples is provided in Attachment E.

Packer Testing Data

Straddle packer testing was successfully conducted on five intervals between 1,930 and 2,500 feet bpl to determine water quality and hydraulic characteristics of the tested intervals. Water level of the test interval was measured and recorded during packer testing. Water samples were collected at the end of each packer test and analyzed for ammonia, chlorides, pH, specific conductance, sulfate, TDS, temperature, and TKN. A single, open-ended packer test was performed on the interval from 3,020 to 3,230 feet bpl to gain information on the hydraulic characteristics of the interval below 3,020 feet bpl.

Additional straddle packer tests were attempted, however, were terminated due to the straddle packers not isolating the test interval or too much productivity from the test interval. It should be noted that after several terminated straddle packer tests, the straddle packers were inflated inside the 34-inch diameter casing and water was pumped from between the packers. This resulted in a water level decrease inside the 34-inch diameter casing above the packers. The only way for the water level above the upper packer to have decreased when pumping from between the straddle packers is if the upper packer did not seal against the casing wall, allowing water to flow past the upper packer, proving that the straddle packers were indeed not isolating the test interval in at least some of the straddle packer tests that were terminated.

Table 4 provides a summary of packer test data. Figures 3 through 8 provide an interpreted graph of water level drawdown data for each successfully performed packer tests.

The packer test water level data indicates that the packer test #5, #8, #9, #17 and #19 test intervals are confining in nature. The specific capacity of these confining straddle packer tests ranged from 0.003 gpm/foot to 0.24 gpm/foot. The test interval for packer test #7 is very productive and was performed to assist in determining if the test interval is located within the Boulder Zone. The results of packer test #7 suggest the test interval is located within the Boulder Zone.

Water quality data for water samples collected at the end of each packer test are summarized in Table 4. As shown in Table 4, the TDS of the water sample collected at the end of each of the packer tests is greater than 10,000 mg/L, demonstrating that each test interval is not located within the USDW. A copy of the water quality analytical reports for each of the performed packer tests is provided in Attachment F.

Formation Test Data

A formation test was performed to confirm the presence of the Boulder Zone below a depth of 3,010 feet bpl. The formation test consisted of the installation of a single, open-ended packer installed to a depth of 3,010 feet bpl, collection of background and recovery pressure data, and collection of pumping rate and pumping pressure data. A volume of approximately 160,000 gallons of formation water pumped from EW-1 was stored in frac tanks at the site and provided the water source for the test. Pumping rates averaged 1,625 gpm and ranged from approximately 1,200 gpm to 1,625 gpm during the pumping portion of the formation test. A transducer was used to collect pressure data at surface and a memory gauge installed to a depth of 3,000 feet bpl was used to collect pressure near the top of the test interval. An electronic copy of the formation test pressure and pumping rate data is provided in Attachment G.

Figure 9 presents downhole pressure and pumping rate data for the entire formation test period. Figure 10 presents the surface pressure and pumping data for the entire formation test period. Figures 11 and 12 present downhole and surface pressure data and pumping rate data for the pumping portion of the formation test. An increase of approximately 205 to 220 psi was observed at the surface while pumping at a rate of approximately 1,625 gpm. The large increase in pressure when pumping into the test interval was due to friction related to pumping at this high rate through 3,010 feet of six-inch diameter drill pipe. Review of the formation test data indicates the downhole pressure increased by approximately three to five psi above the static pressure when pumping into the test interval at a rate of approximately 1,625 gpm. The very low downhole pressure increase while pumping at this rate confirms the test interval is located within the Boulder Zone.

Summary

Based on analysis of the data collected and presented herein, it is recommended that the 24-inch final casing of EW-1 be set to a depth of 2,980 feet bpl. The proposed casing seat will result in the final casing being set to a depth that is just above the top of the Boulder Zone. Analysis of geophysical log and straddle packer data suggests the confining interval for EW-1 is present between 1,980 and the top of the injection zone at 2,915 feet bpl. The injection zone present between the depth of 2,915 feet bpl and the base of the borehole at a depth of 3,232 feet bpl. Analysis of the sonic log indicates the formation at a depth of 2,980 feet bpl is mechanically sound and will serve to provide a good seal at the base of the casing string. Analysis of geophysical data collected prior to installation of the intermediate casing indicated the base of the USDW is located at a depth of 1,450 feet bpl.

Should you have any questions regarding the application, please contact me at (561) 891-0763 or Matthew Raffenberg (FPL) at (561) 691-2808.

Sincerely,

McNabb Hydrogeologic Consulting, Inc.

2/21/12

David McNabb, P.G.

Attachments: Figures
A – EW-1 Lithologic Log
B – Pilot Hole Water Quality Analytical Reports
C – Deviation Survey Summary Table
D – EW-1 Geophysical Logs
E – Core Descriptions
F – Packer Tests Water Quality Analytical Reports
G – Formation Test Data

Cc: George Heuler/FDEP-Tallahassee
Emily Richardson/SFWMD
Matthew Raffenberg/FPL
David Holtz/HCE
Joe Haberfeld/FDEP-Tallahassee
Ron Reese/USGS
David Paul/FGS

Appendix S

Injection Zone Background Water Quality Laboratory Report

Florida Spectrum Environmental Services, Inc.

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
Submission # 1204000308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
SM5210B BOD	6.78		mg/L	2.0	6.0	SM5210B	04/11 16:00	04/16 16:00	AMM
Coliform, Total	U	U	CFU100ml	1.0	3.0	9222B	04/11 15:00	04/12 13:45	AMM
Specific Conductance (Field)(grab)	55270		uS/cm	1.0	3.0	120.1	04/11 09:20	04/11 09:20	AP
pH (field)	7.28		units	0.1	0.3	150.1	04/11 09:20	04/11 09:20	AP
Glyphosate	U	U	ug/L	3.55	10.65	547	04/11 14:09	04/11 14:09	RPV
Endothall	U*	U	ug/L	2.72	8.16	548.1	04/18 09:00	04/18 16:33	CEB
549.2 Diquat: 62-550.310(4)(b)				**Dilution Factor =1**					
Diquat	U*	U	ug/L	0.4	1.2	549.2	04/16 15:00	04/16 17:22	RPV
Chloride	24000		mg/L	22.00	66.00	300.0	04/11 17:36	04/11 17:36	DGK
Fluoride	U	U	mg/L	8.400	25.200	300.0	04/11 17:36	04/11 17:36	DGK
Nitrate (as N)	U	U	mg/L	7.600	22.800	300.0	04/11 17:36	04/11 17:36	DGK
Nitrate+Nitrite (as N)	U	U	mg/L	7.600	22.800	300.0	04/11 17:36	04/11 17:36	DGK
Nitrite (as N)	U	U	mg/L	4.200	12.600	300.0	04/11 17:36	04/11 17:36	DGK
Ortho-Phosphate (as P)	U	U	mg/L	5.000	15.000	300.0	04/11 17:36	04/11 17:36	DGK
Sulfate	2540		mg/L	21.40	64.20	300.0	04/11 17:36	04/11 17:36	DGK
Nitrogen (Ammonia) as N	U	U	mg/L	0.01	0.03	350.1	04/12 14:54	04/12 14:54	MSG
Nitrogen (Kjeldahl) as "N"	0.11	I	mg/L	0.070	0.210	351.2	04/17 10:00	04/17 13:33	MSG
Nitrogen (Total Organic)	0.11	I	mg/L	0.045	0.135	351/350	04/17 15:30	04/17 15:30	MSG

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PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Phosphorus, Total as "P"	U	U	mg/L	0.064	0.192	365.4	04/17 10:00	04/17 13:33	MSG
Chemical Oxygen Demand	779		mg/L	70.29	210.87	410.4	04/18 16:46	04/18 16:46	CEB
Total Dissolved Solids (TDS)	36200		mg/L	1.00	3.00	SM 2540C	04/12 08:30	04/13 12:08	RPV
Cyanide, Total	0.004*	I	mg/L	0.002	0.006	SM4500CN-E	04/19 11:00	04/19 15:51	RPV
MBAS Surfactants	U	U	mg/L	0.060	0.180	SM5540C	04/12 14:00	04/12 14:00	DGK
Aluminum	U	U	mg/L	0.00070	0.00210	200.7	04/11	04/11 15:55	IMN
Antimony	U	U	mg/L	0.0028	0.0084	200.7	04/11	04/11 15:55	IMN
Arsenic	U	U	mg/L	0.0012	0.0036	200.7	04/11	04/11 15:55	IMN
Barium	0.025		mg/L	0.00003	0.00009	200.7	04/11	04/11 15:55	IMN
Beryllium	U	U	mg/L	0.00003	0.00009	200.7	04/11	04/11 15:55	IMN
Cadmium	U	U	mg/L	0.00004	0.00012	200.7	04/11	04/11 15:55	IMN
Chromium	0.002	I	mg/L	0.0008	0.0024	200.7	04/11	04/11 15:55	IMN
Copper	U	U	mg/L	0.0002	0.0006	200.7	04/11	04/11 15:55	IMN
Iron	2.813		mg/L	0.0008	0.0024	200.7	04/11	04/11 15:55	IMN
Lead	U	U	mg/L	0.0011	0.0033	200.7	04/11	04/11 15:55	IMN
Manganese	0.104		mg/L	0.00009	0.00027	200.7	04/11	04/11 15:55	IMN
Nickel	0.005		mg/L	0.0002	0.0006	200.7	04/11	04/11 15:55	IMN
Selenium	U	U	mg/L	0.0022	0.0066	200.7	04/11	04/11 15:55	IMN

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Silver	U	U	mg/L	0.0001	0.0003	200.7	04/11	04/11 15:55	IMN
Sodium	11558		mg/L	0.280	0.840	200.7	04/11	04/11 19:49	IMN
Thallium, Total	U	U	mg/L	0.0009	0.0027	200.7	04/11	04/11 15:55	IMN
Zinc	0.010		mg/L	0.00050	0.00150	200.7	04/11	04/11 15:55	IMN
Mercury	U	U	mg/L	0.00007	0.00021	245.1	04/12	04/12 16:48	EN
8011 EDB, DBCP in Surface Waters/GroundWaters				**Dilution Factor =1**					
1,2-Dibromo-3-Chloropropane (DBCP)	U	U	ug/L	0.006	0.018	8011	04/13 16:00	04/14 13:46	MD
Ethylene Dibromide (EDB)	U	U	ug/L	0.006	0.018	8011	04/13 16:00	04/14 13:46	MD
8081A Chlorinated Pesticides in Water				**Dilution Factor =1**					
4,4-DDD	U	U	ug/L	0.002	0.006	EPA 8081A	04/13 15:55	04/14 15:55	AC
4,4-DDE	U	U	ug/L	0.005	0.015	EPA 8081A	04/13 15:55	04/14 15:55	AC
4,4-DDT	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
a-BHC	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
Aldrin	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
b-BHC	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
Chlordane	U	U	ug/L	0.020	0.060	EPA 8081A	04/13 15:55	04/14 15:55	AC
d-BHC	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
Dieldrin	U	U	ug/L	0.005	0.015	EPA 8081A	04/13 15:55	04/14 15:55	AC

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PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Endosulfan I	U	U	ug/L	0.005	0.015	EPA 8081A	04/13 15:55	04/14 15:55	AC
Endosulfan II	U	U	ug/L	0.006	0.018	EPA 8081A	04/13 15:55	04/14 15:55	AC
Endosulfan Sulfate	U	U	ug/L	0.003	0.009	EPA 8081A	04/13 15:55	04/14 15:55	AC
Endrin	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
Endrin Aldehyde	U	U	ug/L	0.003	0.009	EPA 8081A	04/13 15:55	04/14 15:55	AC
g-BHC (lindane)	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
Heptachlor	U	U	ug/L	0.006	0.018	EPA 8081A	04/13 15:55	04/14 15:55	AC
Heptachlor Epoxide	U	U	ug/L	0.004	0.012	EPA 8081A	04/13 15:55	04/14 15:55	AC
Methoxychlor	U	U	ug/L	0.005	0.015	EPA 8081A	04/13 15:55	04/14 15:55	AC
Toxaphene	U	U	ug/L	0.08	0.24	EPA 8081A	04/13 15:55	04/14 15:55	AC
8082 PCBs Only (Aroclors) in Waters				**Dilution Factor =1**					
Aroclor 1016	U	U	ug/L	0.05	0.15	8082	04/13 15:56	04/14 15:56	AC
Aroclor 1221	U	U	ug/L	0.11	0.33	8082	04/13 15:56	04/14 15:56	AC
Aroclor 1232	U	U	ug/L	0.04	0.12	8082	04/13 15:56	04/14 15:56	AC
Aroclor 1242	U	U	ug/L	0.05	0.15	8082	04/13 15:56	04/14 15:56	AC
Aroclor 1248	U	U	ug/L	0.03	0.09	8082	04/13 15:56	04/14 15:56	AC
Aroclor 1254	U	U	ug/L	0.04	0.12	8082	04/13 15:56	04/14 15:56	AC
Aroclor 1260	U	U	ug/L	0.14	0.42	8082	04/13 15:56	04/14 15:56	AC

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LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Total PCB's	U		ug/L			8082	04/13 15:56	04/14 15:56	AC
8151 Chlorinated Herbicides in water				**Dilution Factor =1**					
2,4,5-T	U	U	ug/L	0.005	0.015	8151	04/13 10:10	04/14 16:10	AC
2,4,5-TP (silvex)	U	U	ug/L	0.005	0.015	8151	04/13 10:10	04/14 16:10	AC
2,4-D	U	U	ug/L	0.011	0.033	8151	04/13 10:10	04/14 16:10	AC
2,4-DB	U	U	ug/L	0.138	0.414	8151	04/13 10:10	04/14 16:10	AC
3,5 DCBA	U	U	ug/L	0.014	0.042	8151	04/13 10:10	04/14 16:10	AC
4-Nitrophenol	U	U	ug/L	0.058	0.174	8151	04/13 10:10	04/14 16:10	AC
Acifluorfen	U	U	ug/L	0.009	0.027	8151	04/13 10:10	04/14 16:10	AC
Bentazon	U	U	ug/L	0.189	0.567	8151	04/13 10:10	04/14 16:10	AC
Chloramben	U	U	ug/L	0.009	0.027	8151	04/13 10:10	04/14 16:10	AC
Dalapon	U	U	ug/L	0.016	0.048	8151	04/13 10:10	04/14 16:10	AC
DCPA	U	U	ug/L	0.007	0.021	8151	04/13 10:10	04/14 16:10	AC
Dicamba	U	U	ug/L	0.016	0.048	8151	04/13 10:10	04/14 16:10	AC
Dichloroprop	U	U	ug/L	0.026	0.078	8151	04/13 10:10	04/14 16:10	AC
Dinoseb	U	U	ug/L	0.011	0.033	8151	04/13 10:10	04/14 16:10	AC
MCPA	U	U	ug/L	2.73	8.19	8151	04/13 10:10	04/14 16:10	AC
MCPP	U	U	ug/L	2.26	6.78	8151	04/13 10:10	04/14 16:10	AC

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Submission # 120400O308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Pentachlorophenol	U	U	ug/L	0.006	0.018	8151	04/13 10:10	04/14 16:10	AC
Picloram	U	U	ug/L	0.017	0.051	8151	04/13 10:10	04/14 16:10	AC
8270D (8141 Group) in Water				**Dilution Factor =1**					
Aspon	U	U	ug/L	0.058	0.174	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Atrazine	U	U	ug/L	0.063	0.189	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Azinphos-ethyl	U	U	ug/L	0.068	0.204	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Azinphos-methyl (Guthion)	U	U	ug/L	0.06	0.18	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Bolstar (Sulprofos)	U	U	ug/L	0.105	0.315	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Carbophenothion	U	U	ug/L	0.04	0.12	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Chlorfenvinphos	U	U	ug/L	0.063	0.189	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Chlorpyrifos	U	U	ug/L	0.081	0.243	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Chlorpyrifos methyl	U	U	ug/L	0.057	0.171	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Coumaphos	U	U	ug/L	0.080	0.240	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Crotoxyphos	U	U	ug/L	0.158	0.474	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Demeton-O	U	U	ug/L	0.122	0.366	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Demeton-S	U	U	ug/L	0.058	0.174	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Diazinon	U	U	ug/L	0.059	0.177	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Dichlorofenthion	U	U	ug/L	0.07	0.21	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
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LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Dichlorvos (DDVP)	U	U	ug/L	0.048	0.144	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Dicrotophos	U	U	ug/L	0.072	0.216	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Dimethoate	U	U	ug/L	0.043	0.129	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Dioxathion	U	U	ug/L	0.081	0.243	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Disulfoton	U	U	ug/L	0.059	0.177	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
EPN	U	U	ug/L	0.025	0.075	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
EPTC	U	U	ug/L	0.074	0.222	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Ethion	U	U	ug/L	0.144	0.432	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Ethoprop	U	U	ug/L	0.099	0.297	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Famphur	U	U	ug/L	0.060	0.180	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Fenithrothion	U	U	ug/L	0.072	0.216	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Fensulfothion	U	U	ug/L	0.144	0.432	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Fenthion	U	U	ug/L	0.034	0.102	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Fonophos	U	U	ug/L	0.08	0.24	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Hexamethylphosphoramide (HMPA)	U	U	ug/L	0.069	0.207	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Leptophos	U	U	ug/L	0.063	0.189	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Malathion	U	U	ug/L	0.053	0.159	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Merphos	U	U	ug/L	0.136	0.408	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC

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Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
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LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Mevinphos	U	U	ug/L	0.052	0.156	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Molinate	U	U	ug/L	0.059	0.177	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Monocrotophos	U	U	ug/L	0.143	0.429	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Naled	U	U	ug/L	0.079	0.237	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Parathion,ethyl	U	U	ug/L	0.113	0.339	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Parathion,methyl	U	U	ug/L	0.05	0.15	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Pebulate	U	U	ug/L	0.059	0.177	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Phorate	U	U	ug/L	0.070	0.210	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Phosmet	U	U	ug/L	0.038	0.114	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Phosphamidon	U	U	ug/L	0.079	0.237	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Ronnel	U	U	ug/L	0.075	0.225	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Simazine	U	U	ug/L	0.086	0.258	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Stirophos (Tetrachlorovinphos)	U	U	ug/L	0.080	0.240	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Sulfotepp	U	U	ug/L	0.062	0.186	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Terbufos	U	U	ug/L	0.066	0.198	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Thionazin	U	U	ug/L	0.112	0.336	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Tokuthion (Zinophos)	U	U	ug/L	0.092	0.276	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
Tri-o-cresylphosphate (TOCP)	U	U	ug/L	0.091	0.273	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC

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Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
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LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Trichloronate	U	U	ug/L	0.054	0.162	FSE-OPP/MS	04/13 14:35	04/14 14:35	AC
8270D Semivolatile Organics in Water by GC/MS				**Dilution Factor =1**					
1,2,3-Trichlorobenzene	U	U	ug/L	2.00	6.00	3510/8270D	04/13 10:12	04/13 22:17	AC
1,2,4-Trichlorobenzene	U	U	ug/L	1.27	3.81	3510/8270D	04/13 10:12	04/13 22:17	AC
1,2-Dichlorobenzene	U	U	ug/L	1.02	3.06	3510/8270D	04/13 10:12	04/13 22:17	AC
1,3-Dichlorobenzene	U	U	ug/L	1.24	3.72	3510/8270D	04/13 10:12	04/13 22:17	AC
1,4-Dichlorobenzene	U	U	ug/L	1.18	3.54	3510/8270D	04/13 10:12	04/13 22:17	AC
1-Methylnaphthalene	U	U	ug/L	0.36	1.08	3510/8270D	04/13 10:12	04/13 22:17	AC
2,3,4,6-Tetrachlorophenol	U	U	ug/L	0.53	1.59	3510/8270D	04/13 10:12	04/13 22:17	AC
2,3,5,6-Tetrachlorophenol	U	U	ug/L	0.53	1.59	3510/8270D	04/13 10:12	04/13 22:17	AC
2,3,6-Trichlorophenol	U	U	ug/L	1.2	3.6	3510/8270D	04/13 10:12	04/13 22:17	AC
2,4,5-Trichlorophenol	U	U	ug/L	0.68	2.04	3510/8270D	04/13 10:12	04/13 22:17	AC
2,4,6-Trichlorophenol	U	U	ug/L	0.56	1.68	3510/8270D	04/13 10:12	04/13 22:17	AC
2,4-Dichlorophenol	U	U	ug/L	0.63	1.89	3510/8270D	04/13 10:12	04/13 22:17	AC
2,4-Dimethylphenol	U	U	ug/L	0.49	1.47	3510/8270D	04/13 10:12	04/13 22:17	AC
2,4-Dinitrophenol	U	U	ug/L	0.2	0.6	3510/8270D	04/13 10:12	04/13 22:17	AC
2,4-Dinitrotoluene	U	U	ug/L	0.30	0.90	3510/8270D	04/13 10:12	04/13 22:17	AC
2,6-Dichlorophenol	U	U	ug/L	0.52	1.56	3510/8270D	04/13 10:12	04/13 22:17	AC

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Collected: 04/11/12 09:20
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LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
2,6-Dinitrotoluene	U	U	ug/L	0.52	1.56	3510/8270D	04/13 10:12	04/13 22:17	AC
2-Chloronaphthalene	U	U	ug/L	0.55	1.65	3510/8270D	04/13 10:12	04/13 22:17	AC
2-Chlorophenol	U	U	ug/L	0.89	2.67	3510/8270D	04/13 10:12	04/13 22:17	AC
2-Methylnaphthalene	U	U	ug/L	0.024	0.072	3510/8270D	04/13 10:12	04/13 22:17	AC
2-Methylphenol (o-cresol)	U	U	ug/L	0.8	2.4	3510/8270D	04/13 10:12	04/13 22:17	AC
2-Nitroaniline	U	U	ug/L	0.41	1.23	3510/8270D	04/13 10:12	04/13 22:17	AC
2-Nitrophenol	U	U	ug/L	0.88	2.64	3510/8270D	04/13 10:12	04/13 22:17	AC
3,3-Dichlorobenzidine	U	U	ug/L	0.3	0.9	3510/8270D	04/13 10:12	04/13 22:17	AC
3-MethylPhenol (m-cresol)	U	U	ug/L	0.84	2.52	3510/8270D	04/13 10:12	04/13 22:17	AC
3-Nitroaniline	U	U	ug/L	0.89	2.67	3510/8270D	04/13 10:12	04/13 22:17	AC
4,4'-DDD ~	U	U	ug/L	0.23	0.69	3510/8270D	04/13 10:12	04/13 22:17	AC
4,4'-DDE ~	U	U	ug/L	0.42	1.26	3510/8270D	04/13 10:12	04/13 22:17	AC
4,4'-DDT ~	U	U	ug/L	0.23	0.69	3510/8270D	04/13 10:12	04/13 22:17	AC
4,6-Dinitro-2-Methylphenol	U	U	ug/L	0.3	0.9	3510/8270D	04/13 10:12	04/13 22:17	AC
4-Bromophenyl Phenyl Ether	U	U	ug/L	0.53	1.59	3510/8270D	04/13 10:12	04/13 22:17	AC
4-Chloro-3-Methylphenol	U	U	ug/L	0.93	2.79	3510/8270D	04/13 10:12	04/13 22:17	AC
4-Chloroaniline	U	U	ug/L	1.16	3.48	3510/8270D	04/13 10:12	04/13 22:17	AC
4-Chlorophenyl Phenyl Ether	U	U	ug/L	0.58	1.74	3510/8270D	04/13 10:12	04/13 22:17	AC

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Site Location: Turkey Point, Homestead, FL
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LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
4-Methylphenol (p-cresol)	U	U	ug/L	0.78	2.34	3510/8270D	04/13 10:12	04/13 22:17	AC
4-Nitroaniline	U	U	ug/L	0.80	2.40	3510/8270D	04/13 10:12	04/13 22:17	AC
4-Nitrophenol	U	U	ug/L	0.5	1.5	3510/8270D	04/13 10:12	04/13 22:17	AC
Acenaphthene	U	U	ug/L	0.017	0.051	3510/8270D	04/13 10:12	04/13 22:17	AC
Acenaphthylene	U	U	ug/L	0.015	0.045	3510/8270D	04/13 10:12	04/13 22:17	AC
Aldrin ~	U	U	ug/L	0.440	1.320	3510/8270D	04/13 10:12	04/13 22:17	AC
alpha-BHC ~	U	U	ug/L	0.640	1.920	3510/8270D	04/13 10:12	04/13 22:17	AC
Aniline	U	U	ug/L	0.89	2.67	3510/8270D	04/13 10:12	04/13 22:17	AC
Anthracene	U	U	ug/L	0.049	0.147	3510/8270D	04/13 10:12	04/13 22:17	AC
Azobenzene (1,2-Diphenylhydrazine)	U	U	ug/L	0.66	1.98	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzidine	U	U	ug/L	0.3	0.9	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzo(A)Anthracene	U	U	ug/L	0.017	0.051	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzo(A)Pyrene	U	U	ug/L	0.017	0.051	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzo(B)Fluoranthene	U	U	ug/L	0.029	0.087	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzo(G,H,I)Perylene	U	U	ug/L	0.017	0.051	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzo(K)Fluoranthene	U	U	ug/L	0.025	0.075	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzoic Acid	41.3		ug/L	1.16	3.48	3510/8270D	04/13 10:12	04/13 22:17	AC
Benzyl Alcohol	U	U	ug/L	1.15	3.45	3510/8270D	04/13 10:12	04/13 22:17	AC

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LABORATORY ANALYSIS REPORT

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beta-BHC *	U	U	ug/L	0.520	1.560	3510/8270D	04/13 10:12	04/13 22:17	AC
Bis (2 Ethylhexyl) Phthalate	U	U	ug/L	1.32	3.96	3510/8270D	04/13 10:12	04/13 22:17	AC
Bis (2-Chloroethoxy)methane	U	U	ug/L	0.58	1.74	3510/8270D	04/13 10:12	04/13 22:17	AC
Bis (2-Chloroethyl) Ether	U	U	ug/L	0.82	2.46	3510/8270D	04/13 10:12	04/13 22:17	AC
Bis (2-Chloroisopropyl) Ether	U	U	ug/L	1.34	4.02	3510/8270D	04/13 10:12	04/13 22:17	AC
Bis-2-ethylhexyl Adipate	U	U	ug/L	0.36	1.08	3510/8270D	04/13 10:12	04/13 22:17	AC
Butyl Benzyl Phthalate	U	U	ug/L	0.19	0.57	3510/8270D	04/13 10:12	04/13 22:17	AC
Carbazole	U	U	ug/L	0.45	1.35	3510/8270D	04/13 10:12	04/13 22:17	AC
Chlordane (Screen) *	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
Chrysene	U	U	ug/L	0.30	0.90	3510/8270D	04/13 10:12	04/13 22:17	AC
delta-BHC *	U	U	ug/L	0.790	2.370	3510/8270D	04/13 10:12	04/13 22:17	AC
Di-N-Butyl Phthalate	U	U	ug/L	0.3	0.9	3510/8270D	04/13 10:12	04/13 22:17	AC
Di-N-Octyl Phthalate	U	U	ug/L	0.2	0.6	3510/8270D	04/13 10:12	04/13 22:17	AC
Dibenzo(A,H,)Anthracene	U	U	ug/L	0.029	0.087	3510/8270D	04/13 10:12	04/13 22:17	AC
Dibenzofuran	U	U	ug/L	0.48	1.44	3510/8270D	04/13 10:12	04/13 22:17	AC
Dieldrin *	U	U	ug/L	0.190	0.570	3510/8270D	04/13 10:12	04/13 22:17	AC
Diethyl Phthalate	U	U	ug/L	0.2	0.6	3510/8270D	04/13 10:12	04/13 22:17	AC
Dimethyl Phthalate	U	U	ug/L	0.3	0.9	3510/8270D	04/13 10:12	04/13 22:17	AC

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LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Dioxin (screen)	U	U	ug/L	0.03	0.09	3510/8270D	04/13 10:12	04/13 22:17	AC
Endosulfan I ~	U	U	ug/L	1.330	3.990	3510/8270D	04/13 10:12	04/13 22:17	AC
Endosulfan II ~	U	U	ug/L	0.300	0.900	3510/8270D	04/13 10:12	04/13 22:17	AC
Endosulfan Sulfate ~	U	U	ug/L	1.130	3.390	3510/8270D	04/13 10:12	04/13 22:17	AC
Endrin Aldehyde ~	U	U	ug/L	0.450	1.350	3510/8270D	04/13 10:12	04/13 22:17	AC
Endrin ~	U	U	ug/L	0.500	1.500	3510/8270D	04/13 10:12	04/13 22:17	AC
Fluoranthene	U	U	ug/L	0.025	0.075	3510/8270D	04/13 10:12	04/13 22:17	AC
Fluorene	U	U	ug/L	0.012	0.036	3510/8270D	04/13 10:12	04/13 22:17	AC
gamma-BHC (Lindane) ~	U	U	ug/L	0.790	2.370	3510/8270D	04/13 10:12	04/13 22:17	AC
Heptachlor Epoxide ~	U	U	ug/L	0.920	2.760	3510/8270D	04/13 10:12	04/13 22:17	AC
Heptachlor ~	U	U	ug/L	0.530	1.590	3510/8270D	04/13 10:12	04/13 22:17	AC
Hexachlorobenzene	U	U	ug/L	0.52	1.56	3510/8270D	04/13 10:12	04/13 22:17	AC
Hexachlorobutadiene	U	U	ug/L	0.53	1.59	3510/8270D	04/13 10:12	04/13 22:17	AC
Hexachlorocyclopentadiene	U	U	ug/L	0.54	1.62	3510/8270D	04/13 10:12	04/13 22:17	AC
Hexachloroethane	U	U	ug/L	0.81	2.43	3510/8270D	04/13 10:12	04/13 22:17	AC
Indeno(1,2,3-CD)Pyrene	U	U	ug/L	0.15	0.45	3510/8270D	04/13 10:12	04/13 22:17	AC
Isophorone	U	U	ug/L	0.68	2.04	3510/8270D	04/13 10:12	04/13 22:17	AC
Methoxychlor ~	U	U	ug/L	0.370	1.110	3510/8270D	04/13 10:12	04/13 22:17	AC

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
Submission # 1204000308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
N-Nitrosodi-N-Propylamine	U	U	ug/L	1.10	3.30	3510/8270D	04/13 10:12	04/13 22:17	AC
N-Nitrosodimethylamine	U	U	ug/L	1.11	3.33	3510/8270D	04/13 10:12	04/13 22:17	AC
N-Nitrosodiphenylamine	U	U	ug/L	0.38	1.14	3510/8270D	04/13 10:12	04/13 22:17	AC
Naphthalene	U	U	ug/L	0.015	0.045	3510/8270D	04/13 10:12	04/13 22:17	AC
Nitrobenzene	U	U	ug/L	0.77	2.31	3510/8270D	04/13 10:12	04/13 22:17	AC
PCB-1016 ~	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
PCB-1221 ~	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
PCB-1232 ~	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
PCB-1242 ~	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
PCB-1248 ~	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
PCB-1254 ~	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
PCB-1260 ~	U	U	ug/L	0.10	0.30	3510/8270D	04/13 10:12	04/13 22:17	AC
Pentachlorophenol	U	U	ug/L	0.32	0.96	3510/8270D	04/13 10:12	04/13 22:17	AC
Phenanthrene	U	U	ug/L	0.028	0.084	3510/8270D	04/13 10:12	04/13 22:17	AC
Phenol	U	U	ug/L	0.58	1.74	3510/8270D	04/13 10:12	04/13 22:17	AC
Pyrene	U	U	ug/L	0.017	0.051	3510/8270D	04/13 10:12	04/13 22:17	AC
Pyridine	U	U	ug/L	0.96	2.88	3510/8270D	04/13 10:12	04/13 22:17	AC
Toxaphene ~	U	U	ug/L	0.40	1.20	3510/8270D	04/13 10:12	04/13 22:17	AC

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
Submission # 1204000308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
8260B Volatile Organics in Water by GC/MS				**Dilution Factor =1**					
1,1,1,2-Tetrachloroethane	U	U	ug/L	0.15	0.45	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,1,1-Trichloroethane	U	U	ug/L	0.67	2.01	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,1,2,2-Tetrachloroethane	U	U	ug/L	0.14	0.42	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,1,2-Trichloroethane	U	U	ug/L	0.46	1.38	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,1-Dichloroethane	U	U	ug/L	0.19	0.57	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,1-Dichloroethene	U	U	ug/L	0.42	1.26	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,1-Dichloropropene	U	U	ug/L	0.65	1.95	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2,3-Trichlorobenzene	U	U	ug/L	0.28	0.84	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2,3-Trichloropropane	U	U	ug/L	0.22	0.66	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2,4-Trichlorobenzene	U	U	ug/L	0.23	0.69	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2,4-Trimethylbenzene	U	U	ug/L	0.38	1.14	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2-Dibromo-3-Chloropropane (DBCP)	U	U	ug/L	0.17	0.51	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2-Dibromoethane (EDB)	U	U	ug/L	0.25	0.75	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2-Dichlorobenzene	U	U	ug/L	0.30	0.90	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2-Dichloroethane	U	U	ug/L	0.31	0.93	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,2-Dichloropropane	U	U	ug/L	0.46	1.38	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,3,5-Trimethylbenzene	U	U	ug/L	0.38	1.14	5030/8260B	04/14 20:37	04/14 20:37	MAZ

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
Submission # 120400O308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
1,3-Dichlorobenzene	U	U	ug/L	0.40	1.20	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,3-Dichloropropane	U	U	ug/L	0.46	1.38	5030/8260B	04/14 20:37	04/14 20:37	MAZ
1,4-Dichlorobenzene	U	U	ug/L	0.39	1.17	5030/8260B	04/14 20:37	04/14 20:37	MAZ
2,2-Dichloropropane	U	U	ug/L	0.76	2.28	5030/8260B	04/14 20:37	04/14 20:37	MAZ
2-Chloroethylvinyl Ether	U	U	ug/L	0.76	2.28	5030/8260B	04/14 20:37	04/14 20:37	MAZ
2-Chlorotoluene	U	U	ug/L	0.38	1.14	5030/8260B	04/14 20:37	04/14 20:37	MAZ
4-Chlorotoluene	U	U	ug/L	0.33	0.99	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Acetone	6.99		ug/L	1.42	4.26	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Acrolein	U	U	ug/L	6.99	20.97	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Acrylonitrile	U	U	ug/L	0.52	1.56	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Benzene	U	U	ug/L	0.14	0.42	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Bromobenzene	U	U	ug/L	0.40	1.20	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Bromochloromethane	U	U	ug/L	0.21	0.63	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Bromodichloromethane	U	U	ug/L	0.52	1.56	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Bromoform	U	U	ug/L	0.16	0.48	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Bromomethane	U	U	ug/L	0.60	1.80	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Carbon Tetrachloride	U	U	ug/L	0.81	2.43	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Chlorobenzene	U	U	ug/L	0.34	1.02	5030/8260B	04/14 20:37	04/14 20:37	MAZ

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
Submission # 1204000308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Chloroethane	U	U	ug/L	0.47	1.41	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Chloroform	U	U	ug/L	0.27	0.81	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Chloromethane	U	U	ug/L	0.88	2.64	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Cis-1,2-Dichloroethene	U	U	ug/L	0.17	0.51	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Cis-1,3-Dichloropropene	U	U	ug/L	0.41	1.23	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Dibromochloromethane	U	U	ug/L	0.30	0.90	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Dibromomethane	U	U	ug/L	0.37	1.11	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Dichlorodifluoromethane	U	U	ug/L	1.06	3.18	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Ethylbenzene	4.49		ug/L	0.42	1.26	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Hexachlorobutadiene	U	U	ug/L	0.47	1.41	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Isopropylbenzene	U	U	ug/L	0.38	1.14	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Methyl Ethyl Ketone	U	U	ug/L	0.56	1.68	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Methyl-Tert-Butyl Ether	U	U	ug/L	0.55	1.65	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Methylene Chloride	U	U	ug/L	0.99	2.97	5030/8260B	04/14 20:37	04/14 20:37	MAZ
n-Butylbenzene	U	U	ug/L	0.34	1.02	5030/8260B	04/14 20:37	04/14 20:37	MAZ
n-PropylBenzene	U	U	ug/L	0.39	1.17	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Naphthalene	U	U	ug/L	0.24	0.72	5030/8260B	04/14 20:37	04/14 20:37	MAZ
P-Isopropyltoluene	U	U	ug/L	0.41	1.23	5030/8260B	04/14 20:37	04/14 20:37	MAZ

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
Submission # 1204000308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
Sec-Butylbenzene	U	U	ug/L	0.45	1.35	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Styrene	U	U	ug/L	0.31	0.93	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Tert-Butylbenzene	U	U	ug/L	0.40	1.20	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Tetrachloroethene	U	U	ug/L	0.42	1.26	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Toluene	U	U	ug/L	0.31	0.93	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Trans-1,2-Dichloroethene	U	U	ug/L	0.21	0.63	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Trans-1,3-Dichloropropene	U	U	ug/L	0.28	0.84	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Trichloroethene	U	U	ug/L	0.34	1.02	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Trichlorofluoromethane	U	U	ug/L	0.48	1.44	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Vinyl Chloride	U	U	ug/L	0.79	2.37	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Xylene, m & p	21.9		ug/L	0.80	2.40	5030/8260B	04/14 20:37	04/14 20:37	MAZ
Xylene, o	6.29		ug/L	0.32	0.96	5030/8260B	04/14 20:37	04/14 20:37	MAZ
See Attach Report	See attch		-				04/12 10:08	04/12 10:08	E86546
See Attach Report	See attch		-				04/18 14:15	04/18 14:15	E84809

Report To:
Craig Brugger
Layne Christensen Co-FL
5061 Luckett Road
Fort Myers, FL 33905

Report Printed: 05/17/12
Submission # 120400O308
Order # 13235

Project: Injection Well Pri/Sec DW
Site Location: Turkey Point, Homestead, FL
Matrix: Water

Sample I.D.: E-W-1
Collected: 04/11/12 09:20
Received: 04/11/12 13:00
Collected by: Argelio Pifferrer

LABORATORY ANALYSIS REPORT

PARAMETER	RESULT	QC	UNITS	MDL	PQL	METHOD	DATE EXT.	DATE ANALY.	ANALYST
See Attach Report	See attch		-				05/08	05/08 18:21	E87156

* (*) Matrix spikes outside recovery limits
Unless indicated, soil results are reported based on actual (wet) weight basis.

Analytes not currently NELAC certified denoted by ~.
Work performed by outside (subcontract) labs denoted by Cert.ID in Analyst Field.
Results relate only to this sample.
QC=Qualifier Codes as defined by DEP 62-160
U=Analyzed for but not detected.
Q=Sample held beyond accepted holding time.
I=Value is between MDL and PQL.
J=Estimated value.

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification # E86006

GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178

www.gel.com

May 09, 2012

Ms. Katharine A. Kutil
Florida-Spectrum Environmental Services, Inc
1460 W. McNab Road
Fort Lauderdale, Florida 33309

Re: Radon
Work Order: 302678

Dear Ms. Kutil:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 13, 2012. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4300.

Sincerely,

LaToya D. Hughes

LaToya Hughes for
Client Services Team
Project Manager

Enclosures

Florida-Spectrum Environmental Services, Inc
Radon
SDG: 302678

Certificates of Analysis and QC Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

FSES001 Florida-Spectrum Environmental Services, Inc

Client SDG: 302678 GEL Work Order: 302678

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Client Services Team.

Reviewed by LaToya D. Hughes

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 9, 2012

Company : Florida-Spectrum Environmental Services, Inc
Address : 1460 W. McNab Road

Fort Lauderdale, Florida 33309
Contact: Ms. Katharine A. Kutil
Project: Radon

Client Sample ID:	13235	Project:	FSES00112
Sample ID:	302678001	Client ID:	FSES001
Matrix:	Waste Water		
Collect Date:	11-APR-12 09:20		
Receive Date:	13-APR-12		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross Alpha Liquid "As Received"											
Alpha	U	ND	106	5.00	pCi/L		BXF1	05/08/12	1821	1207733	1
Radium-228 in Drinking Water EPA 904.0 "As Received"											
Radium-228		0.851	0.430	1.00	pCi/L		KDF1	04/21/12	1156	1204533	2
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		10.2	0.416	1.00	pCi/L		KSD1	05/01/12	1355	1206539	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310	
2	EPA 904.0/ EPA 9320	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium Carrier	Radium-228 in Drinking Water EPA 904.0 "As Received"			105	(25%-125%)
Yttrium Carrier	Radium-228 in Drinking Water EPA 904.0 "As Received"			82.4	(25%-125%)

QC Summary

Report Date: May 9, 2012

Florida-Spectrum Environmental Services, Inc
1460 W. McNab Road
Fort Lauderdale, Florida

Contact: Ms. Katharine A. Kutil

Workorder: 302678

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1204533										
QC1202637499 302546001 DUP										
Radium-228	U	0.352	U	0.266	pCi/L	0.00		N/A	KDF1	04/21/12 12:13
QC1202637501 LCS										
Radium-228	7.55			6.61	pCi/L		87.6	(80%-120%)		04/21/12 12:13
QC1202637498 MB										
Radium-228			U	0.342	pCi/L					04/21/12 12:12
QC1202637500 302546001 MS										
Radium-228	30.3 U	0.352		26.2	pCi/L		86.6	(70%-130%)		04/21/12 12:13
Batch 1207733										
QC1202645684 302678001 DUP										
Alpha	U	73.6	U	-21.7	pCi/L	0.00		N/A	BXF1	05/08/12 18:22
QC1202645687 LCS										
Alpha	120			105	pCi/L		87.5	(75%-125%)		05/08/12 18:21
QC1202645683 MB										
Alpha			U	-0.283	pCi/L					05/08/12 18:01
QC1202645685 302678001 MS										
Alpha	12000 U	73.6		14800	pCi/L		123	(75%-125%)		05/08/12 18:01
QC1202645686 302678001 MSD										
Alpha	12000 U	73.6		10600	pCi/L	33.8*	87.7	(0%-20%)		05/08/12 18:21
Rad Ra-226										
Batch 1206539										
QC1202642789 303062001 DUP										
Radium-226		1.34		2.46	pCi/L	59.0*		(0% - 20%)	KSD1	05/01/12 13:55
QC1202642791 LCS										
Radium-226	24.7			24.1	pCi/L		97.4	(75%-125%)		05/01/12 14:30
QC1202642788 MB										
Radium-226			U	0.186	pCi/L					05/01/12 13:55
QC1202642790 303062001 MS										
Radium-226	124	1.34		110	pCi/L		88.2	(75%-125%)		05/01/12 14:30

Notes:
The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample

QC Summary

Workorder: 302678

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time

F	Estimated Value
H	Analytical holding time was exceeded
J	Value is estimated
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	Matrix Related Failure
N/A	RPD or %Recovery limits do not apply.
NI	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Chain of Custody and Supporting Documentation

20120440206 302618%

SUBMISSION # To: Gel

Logged in LIMS by ______
CSM assigned ______

Florida Spectrum Environmental Services, Inc.

CHAIN OF CUSTODY RECORD

☒ 1460 W. McNab Road Ft Laud. FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

Report to: (company name) FSES
Report to Address: 1460 W McNab Rd Ft. Laud, FL
Invoice to: (company name)
Purchase Order #
Invoice to Address:
Project Name and/or Number: 1204-308
Site Location: Turkey Point, Homestead
Project Contact: Marc Castellanos
Phone: 954-978-6400
Fax:
Email: m.castellanos@flenviro.com
Sampler Name: (printed)
Affiliation:
Sampler Signature

ORDER # Lab Control Number Shaded Areas For Laboratory Use Only	Sample ID	Date Sampled	Time Sampled	Matrix DW SW GW WW S SED HW BIO SEA OIL X/AIR	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Gross Alpha	Ra-226	Ra-228							Field Tests: TEMP °C	PH	COND	CHLOR
1	13235	4/11/12	0920	Non Potable Water			/	/	/									55070	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Special Comments: Total

"I waive TNI protocol" (emergency) (sign here) >

Deliverables: QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by: [signature]	FSES	4/11/12
1	Received by: Sarah Edwards		4.13.12 / 1045
2	Relinquished by:		
2	Received by:		
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received ______ C
Custody seals? Y N
FIELD TIME:
Sampling ______ hrs
Pick-Up ______ hrs
Misc. Charges ______

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
H-Plastic Amber Liter
L-liter bottle
S2-2 oz soil jar
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives
A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
DI-DI water U-Unpreserved
H-HNO3 N-NaOH
M-MCAB NH4-NH4CL
MeOH-Methanol
Z-zinc acetate
Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

www.flenviro.com   COC Page ____ of ____

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: Florida Spectrum	SDG/AR/COC/Work Order: 302478
Received By: BE	Date Received: 4.13.12 @ 1045

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Ice bags Blue Ice Dry Ice None Other (describe) 18° *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 41502209 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?			✓	Sample ID's affected: no date/time on bottle
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: 1 container rec'd
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other (9612019) 1012 4177 1520 6491

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials MMC Date 04/17/12

List of current GEL Certifications as of 09 May 2012

State	Certification
Arizona	AZ0766
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-09-00191
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA120008
Maryland	270
Massachusetts	M-SC012
Mississippi	SC00012
Nevada	SC000122011-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-12-7
Utah NELAP	SC00012
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
Wisconsin	999887790

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118
www.jupiterlabs.com
clientservices@jupiterlabs.com

April 20, 2012

Maria Castellanos
Florida Spectrum Environmental
1460 W. McNab Rd
Fort Lauderdale, FL 33309

RE: LOG# 1229787
Project ID: 1204-308
COC# 229787

Dear Maria Castellanos:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, April 11, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless indicated by * in the body of the report. The enclosed Chain of Custody is a component of this package and should be retained with the package and incorporated therein.

Results for all solid matrices are reported in dry weight unless otherwise noted. Results for all liquid matrices are reported as received in the laboratory unless otherwise noted. Results relate only to the samples received. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

Samples are disposed of after 30 days of their receipt by the laboratory unless extended storage is requested in writing. The laboratory maintains the right to charge storage fees for archived samples. This report will be archived for 5 years after which time it will be destroyed without further notice, unless prior arrangements have been made.

Certain analyses are subcontracted to outside NELAC certified laboratories, please see the Project Summary section of this report for NELAC certification numbers of laboratories used. A Statement of Qualifiers is available upon request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ann McKewin

Ann McKewin for
Kacia Baldwin VP of Operations

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

SAMPLE ANALYTE COUNT

Workorder 1229787

Project ID: 1204-308

Lab ID	Sample ID	Method	Analytes Reported
1229787001	13235	EPA 140.1	1

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

SAMPLE SUMMARY

Workorder 1229787

Project ID: 1204-308

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1229787001	13235	Aqueous Liquid	4/11/2012 09:20	4/11/2012 17:00

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

ANALYTICAL RESULTS

Workorder 1229787
Project ID: 1204-308

Lab ID: **1229787001** Date Received: 4/11/2012 17:00 Matrix: Aqueous Liquid
Sample ID: **13235** Date Collected: 4/11/2012 09:20

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: Odor by EPA 140.1 [REF] (W)					Analytical Method: EPA 140.1					
Odor	1.0	T.O.N			1			4/12/2012 10:08	BFM	

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

ANALYTICAL RESULTS QUALIFIERS

Workorder 1229787

Project ID: 1204-308

PARAMETER QUALIFIERS

PROJECT COMMENTS

1229787	A reported value of U indicates that the compound was analyzed for but not detected above the MDL. A value flagged with an "i" flag indicates that the reported value is between the laboratory method detection limit and the practical quantitation limit.

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder 1229787
Project ID: 1204-308

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1229787001	**13235**	EPA 140.1	REF/	EPA 140.1	REF/

FDOH# E86546

CERTIFICATE OF ANALYSIS

Login Checklist

Cooler Unpacked/Checked by: JC Date: 4/11/12

Project ID: 1229787

Cooler Check

Cooler ID	Cooler Temp (C)	# of Samples in Cooler	*Tracking #	Evidence Tape			
				Present?		Intact?	
				Yes	No	Yes	No
	5	1			✓		

Note: if the temperature of a cooler is above 6C or an evidence seal is damaged then identify the bottles in the affected cooler(s) on the sample discrepancy form.
*Write tracking number only if waybill copy cannot be placed in the folder

Condition of Containers:

Loose Caps: Yes_____ No ✓
If yes, fill out sample discrepancy form.

Broken Containers: Yes_____ No ✓
If yes, fill out sample discrepancy form.

Acid Preserved Samples: Are their pHs </=2 ?Yes_____ No_____ N/A ✓
If no, fill out sample discrepancy form and check unpreserved containers with same Field ID.

Base Preserved Samples: Are their pHs >/=12 or 9 ?Yes_____ No_____ N/A ✓
(Cyanide >/= 12; Sulfide >/=9)
If no, fill out sample discrepancy form and check unpreserved containers with same Field ID.

Are all samples in cooler on COC?: Yes ✓ No_____
If no, fill out sample discrepancy form.

Are all samples on COC in cooler?: Yes ✓ No_____
If no, fill out sample discrepancy form.

N/A = not Applicable

1229787

SUBMISSION # To Jupiter

Florida Spectrum Environmental Services, Inc.

Logged in LIMS by
CSM assigned

CHAIN OF CUSTODY RECORD

☑ 1460 W. McNab Road Ft Laud. FL 33309	Tel: (954) 978-6400	Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401	Tel: (912) 238-5050	Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841	Tel: (863) 285-8145	Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972	Tel: (863) 763-3336	Fax: (863) 763-1544

Original-Return w/report | Yellow-Lab File Copy | Pink - Sampler Copy

DUE DATE Requested +2 day

RUSH RESERVATION #

Rush Surcharges apply

Report to: *(company name)* FSE		**Report to Address:**	
Invoice to: *(company name)*	**Purchase Order #**	**Invoice to Address:**	
Project Name and/or Number 1204-308		**Site Location:** Turkey Point Homestead	
Project Contact: Yane Castellano	**Phone:**	**Fax:**	**Email:**
Sampler Name: (printed)	**Affiliation:**	**Sampler Signature**	

ORDER # *Lab Control Number* / *Shaded Areas For Laboratory Use Only*	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Odor	Field Tests: TEMP °C	PH	COND	CHLOR
1	13235	4/11/12	0900	X Non Potable Water			✓				
2											
3											
4											
5											
6											
7											
8											
9											
10											

Special Comments:

"I waive TNI protocol" (emergency) (sign here) >

Total

Deliverables: QA/QC Report Needed? Yes No *(additional charge)*

	Signature	Affiliation	Date/Time
1	Relinquished by:		4/11/12 1605
1	Received by:		4/11/12 1615
2	Relinquished by:		4/11/12 1620
2	Received by:		4/11/12 16:20
3	Relinquished by:		4/11/12 17:00
3	Received by:		4/11/12 17:00

Sample Custody & Field Comments

Temp as received 5 C
Custody seals? Y N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
H-Plastic Amber Liter
L-liter bottle
S2-2 oz soil jar
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives
A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
DI-DI water U-Unpreserved
H-HNO3 N-NaOH
M-MCAB NH4-NH4CL
MeOH-Methanol
Z-zinc acetate

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

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COC Page _____ of _____

229787

April 30, 2012

Maria Castellanos
Florida-Spectrum Environmental Services
1460 W. McNab Road
Ft. Lauderdale, FL 33309

Re: SunLabs Project Number: **120412.04**
Client Project Description: **1204-308**

Dear Ms. Castellanos:

Enclosed is the report of laboratory analysis for the following samples:

Sample Number	Sample Description	Date Collected	Date Received
141756	13235	04/11/12 9:20	04/12/12

Narrative:

Unless otherwise noted below or in the report and where applicable:
- Samples were received at the proper temperature and analyzed as received.
- Sample condition upon receipt is recorded on the chain-of-custody attached to this report.
- Results for all solid matrices are reported on a dry weight basis.
- Appropriate calibration and QC criteria were satisfactorily met.
- All applicable holding times for analytes have been met.
- Copies of the chains-of-custody, if received, are attached to this report.

If you have any questions or comments concerning this report, please do not hesitate to contact us.

Sincerely,

Michael W. Palmer
Vice President, Laboratory Operations

Enclosures

Report of Laboratory Analysis

SunLabs Project Number	Florida-Spectrum Environmental Services
120412.04	Project Description: 1204-308

April 30, 2012

SunLabs Sample Number **141756**
Sample Designation **13235**

Matrix: Water
Date Collected: 04/11/12 09:20
Date Received: 04/12/12 10:15

Parameters	Method	Units	Results	Dil Factor	MDL	PQL	CAS Number	Date/Time Analyzed	Date/Time Prep
Organochlorine Pesticides by EPA Method 8081									
Date Analyzed			04/23/12	1				04/23/12 19:48	04/16/12 18:48
2,4,5,6-Tetrachloro-m-xylene (10-139)	8081	%	56	1		1.0	DEP-SURR-	04/23/12 19:48	04/16/12 18:48
Alachlor	8081	ug/L	0.0029 U	1	0.0029	0.0096	53-19-0	04/23/12 19:48	04/16/12 18:48
N-Methylcarbamates by EPA 8318									
Date Analyzed	8318		04/18/12	1				04/18/12 16:16	04/18/12 14:15
Aldicarb	8318	ug/L	1.5 U	1	1.5	6.1	116-06-3	04/18/12 16:16	04/18/12 14:15
Aldicarb Sulfone	8318	ug/L	0.58 U	1	0.58	2.3	1646-88-4	04/18/12 16:16	04/18/12 14:15
Aldicarb Sulfoxide	8318SLI	ug/L	0.74 U	1	0.74	2.9	1646-87-3	04/18/12 16:16	04/18/12 14:15
Carbaryl	8318	ug/L	0.93 U	1	0.93	3.7	63-25-2	04/18/12 16:16	04/18/12 14:15
Carbofuran	8318	ug/L	1.0 U	1	1.0	4.1	1563-66-2	04/18/12 16:16	04/18/12 14:15
Dioxacarb	8318	ug/L	1.6 U	1	1.6	6.3	6988-21-2	04/18/12 16:16	04/18/12 14:15
3-Hydroxycarbofuran	8318	ug/L	2.6 U	1	2.6	10	16655-82-6	04/18/12 16:16	04/18/12 14:15
Methiocarb	8318	ug/L	2.9 U	1	2.9	11	2032-65-7	04/18/12 16:16	04/18/12 14:15
Methomyl	8318	ug/L	0.62 U	1	0.62	2.5	16752-77-5	04/18/12 16:16	04/18/12 14:15
Oxamyl	8318SLI	ug/L	0.57 U	1	0.57	2.3	23135-22-0	04/18/12 16:16	04/18/12 14:15
Promecarb	8318	ug/L	0.59 U	1	0.59	2.3	2631-37-0	04/18/12 16:16	04/18/12 14:15
Propoxur	8318	ug/L	1.1 U	1	1.1	4.3	114-26-1	04/18/12 16:16	04/18/12 14:15
True Color by SM2120 B									
Date Analyzed			04/12/12	1				04/12/12 13:56	04/12/12 12:32
Color	SM2120 B	PtCo	370	25	125	125		04/12/12 13:56	04/12/12 12:32
pH	9040	SU	7.2	1				04/12/12 13:56	04/12/12 12:32

SunLabs, Inc.
5460 Beaumont Center Blvd., Suite 520
Tampa, FL 33634

Laboratory ID Number - E84809

Phone: (813) 881-9401
Email: Info@SunLabsInc.com
Website: www.SunLabsInc.com

Report of Laboratory Analysis

SunLabs Project Number	Florida-Spectrum Environmental Services
120412.04	Project Description: 1204-308

April 30, 2012

Footnotes	
**	Not NELAC certified for this analyte
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J	The reported value failed to meet the established quality control criteria for either precision or accuracy(see cover letter for explanation)
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MB	Method Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Sample not analyzed at client's request.
p	SunLabs is not currently NELAC certified for this analyte.
Q	Sample held beyond the accepted holding time.
RPD	Relative Percent Difference
U	Compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.

SunLabs, Inc.
5460 Beaumont Center Blvd., Suite 520
Tampa, FL 33634

Laboratory ID Number - E84809

Phone: (813) 881-9401
Email: Info@SunLabsInc.com
Website: www.SunLabsInc.com

Quality Control Data

Project Number	Florida-Spectrum Environmental
120412.04	Project Description: 1204-308

April 30, 2012

Batch No: E4980

Test: True Color by SM2120 B

TestCode: Color

Associated Samples: 141756

Compound	Blank	LCS Spike	LCS %Rec	LCSD %Rec	RPD %	--QC Limits-- RPD	LCS	MS Spike	MS %Rec	MSD %Rec	RPD %	--QC Limits-- RPD	MS	Dup RPD	Qualifiers
Parent Sample Number														*141756*	
Date Analyzed	04/12/12													04/12/1	
Color	5.0 U PtCo													5	
pH														7.2	

Batch No: E5044

Test: Organochlorine Pesticides by EPA Method 8081

TestCode: 8081-w-cgm42

Associated Samples: 141756

Compound	Blank	LCS Spike	LCS %Rec	LCSD %Rec	RPD %	--QC Limits-- RPD	LCS	MS Spike	MS %Rec	MSD %Rec	RPD %	--QC Limits-- RPD	MS	Dup RPD	Qualifiers
Parent Sample Number															
Alachlor	0.0030 U ug/L	0.200	66	48	32	34	25-105								

Batch No: E5077

Test: N-Methylcarbamates by EPA 8318

TestCode: 8318-w

Associated Samples: 141756

Compound	Blank	LCS Spike	LCS %Rec	LCSD %Rec	RPD %	--QC Limits-- RPD	LCS	MS Spike	MS %Rec	MSD %Rec	RPD %	--QC Limits-- RPD	MS	Dup RPD	Qualifiers
Parent Sample Number									*141756*	*141756*					
Date Extracted	04/18/12														
Date Analyzed	04/18/12														
Aldicarb	1.5 U ug/L	200	98	99	1	5	78-126	200	93	91	2	3	83-122		
Aldicarb Sulfone	0.58 U ug/L	200	95	94	1	9	74-127	200	94	94	0	6	62-133		
Aldicarb Sulfoxide	0.74 U ug/L	200	93	92	1	8	63-142	200	91	91	0	3	58-144		
Carbaryl	0.93 U ug/L	200	100	100	0	9	72-127	200	100	99	1	33	7-167		
Carbofuran	1.0 U ug/L	200	99	98	1	9	79-119	200	97	98	1	9	62-128		
Dioxacarb	1.6 U ug/L	400	89	91	2	10	66-127	400	117	115	2	26	26-149		
3-Hydroxycarbofuran	2.6 U ug/L	200	93	93	0	12	81-117	200	94	93	1	23	23-152		
Methiocarb	2.9 U ug/L	200	96	94	2	14	72-123	200	96	94	2	38	3-166		
Methomyl	0.62 U ug/L	200	99	100	1	9	77-124	200	99	100	1	4	78-122		
Oxamyl	0.57 U ug/L	200	94	93	1	18	67-131	200	93	93	0	51	0-172		
Promecarb	0.59 U ug/L	200	118	119	1	10	62-145	200	122	118	3	9	65-134		
Propoxur	1.1 U ug/L	200	94	94	0	8	86-111	200	95	94	1	8	73-117		

* indicates value is outside control limits for %Recovery or greater than acceptance criteria for RPD

Footnotes

U — *Compound was analyzed for but not detected.*

SunLabs, Inc.
5460 Beaumont Center Blvd., Suite 520
Tampa, FL 33634

Laboratory ID Number - E84809

Phone: (813) 881-9401
Email: Info@SunLabsInc.com
Website: www.SunLabsInc.com

SUBMISSION # To: SunLab

Logged in LIMS by _____
CSM assigned _____

CHAIN OF CUSTODY RECORD

☑ 1460 W. McNab Road Ft Laud. FL 33309	Tel: (954) 978-6400	Fax: (954) 978-2233
☐ 630 Indian Street Savannah, GA 31401	Tel: (912) 238-5050	Fax: (912) 234-4815
☐ 528 Gooch Road Fort Meade, FL 33841	Tel: (863) 285-8145	Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972	Tel: (863) 763-3336	Fax: (863) 763-1544

Original-Return w/report Yellow-Lab File Copy Pink - Sampler Copy

DUE DATE Requested

RUSH RESERVATION # 120412.04
Rush Surcharges apply

Report to: (company name) FSEC
Report to Address:

Invoice to: (company name)
Purchase Order #
Invoice to Address:

Project Name and/or Number 1204308
Site Location: Turkey Point, Homestead

Project Contact: Mario Castellanos
Phone: 954-978-6400
Fax:
Email:

Sampler Name: (printed)
Affiliation:
Sampler Signature

ORDER # *Lab Control Number* *Shaded Areas For Laboratory Use Only*	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL A AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: Color	Alkalinity (SM21)	2318	Field Tests: TEMP °C	PH	COND	CHLOR
1	141756	13235	4/11/12	0920	Non-Potable Water		1	1	1				
2													
3													
4													
5													
6													
7													
8													
9													
10													

Special Comments:
"I waive TNI protocol" (emergency) (sign here) >
1.0°C ice

Total

Deliverables:
QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by:	FSEC	4/11/12
1	Received by:		
2	Relinquished by:		
2	Received by:		4/12/12 10:15
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Temp as received _____ C
Custody seals? Y N
FIELD TIME:
Sampling _____ hrs
Pick-Up _____ hrs
Misc. Charges _____

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml O-125 ml
H-Plastic Amber Liter
L-liter bottle
S2-2 oz soil jar
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other TED-Tedlar Air Bag
Additional Bottle Types
B-brown liter plastic

Preservatives
A-ascorbic acid P-H3PO4
C-HCL S-H2SO4
Cu-CuSO4 T-Na2S2O3
DI-DI water U-Unpreserved
H-HNO3 N-NaOH
M-MCAB NH4-NH4CL
MeOH-Methanol
Z-zinc acetate

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

www.flenviro.com COC Page _____ of _____

SUBMISSION # 1204-368

Logged into LIMS by:

CHAIN OF CUSTODY RECORD

Florida Spectrum Environmental Services, Inc.

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
940 Alt. 27 South Babson Park, FL 33827 Tel: (863) 638-3255 Fax: (863) 638-3637
630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax (912) 234-4815
528 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax (863) 285-7030

Original-Return w/report | Yellow- Lab File Copy | Pink- Sampler Copy

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Layne Christensen Company

Report to Address: 5061 Luckett Road, Fort Myers, FL 33905

Invoice to: Layne Christensen Company

Purchase Order #

Invoice to Address: 5061 Luckett Road, Fort Myers, FL 33905

Project Name and/or Number : Injection Well Primary's Secondary Drinking Water Testing

Site Location: Turkey Point , Homestead, Florida 33035

Project Mgr: Brooke Allen/Craig Brugger

Phone: 239.275.1029/239.275.1025

Fax:

Email: cjbrugger@laynechristensen.com
bsallen@laynechristensen.com

Sampler Name: (printed) Arcelio Pifferer

Sampler Signature

ORDER # Lab Control Number / Shaded Areas For Laboratory Use Only	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW BIO SA OIL X)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Analysis Required: * Primary Secondary DW Standards	Field Tests: PH	TEMP -C	COND	DO	TURB
1 13235	E-W-1	04-11-12	9:20	~~DW~~ NPW		33	X	7.28	28.03	3.52	1.45	19
2												
3												
4												

Special Comments: * PLEASE SEE ATTACHED LIST FOR ANALYSIS!!!

"I waive NELAC protocol" (sign here) >

As=1.50 Ts=1.50 TN=12.50

CONTROL PH IN THE BOTTLES TH=1.50

Deliverables: QA/QC Report Needed? Yes No *(additional charge)*

Total

SAMPLE CUSTODY AND TRANSFER SIGNATURES — DATE / TIME

1 Relinquished by: Arcelio Pifferer 04-11-12 11:25

1 Received by: FG 4/11/12 11:25

2 Relinquished by: FG 4/11/12 1300

2 Received by: FED EX 4/11/12 1300

3 Relinquished by:

3 Received by:

www.flenviro.com COC Page of

Sample Custody & Field Comments

Temp as received 4 C

Custody Seals? Y N

Billable Field Time 1 hrs

Misc. Charges

Bottle Type

A-liter amber O-125ml
B-Bacteria bag/bottle H- Amber
F-500 ml Plastic
L-liter bottle Liter
S-soil jar G-Gallon
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservatives

A-ascorbic acid P-H_3PO_4
C-HCL S-H_2SO_4
Cu-$CuSO_4$ T-$Na_2S_2O_3$-H_2O
H-HNO_3 U-Unpreserved
M-MCAB P-H_3PO_4
N-NaOH Z-zinc acetate
NH_4-NH_4CL

Layne Christensen

TABLE 2
LIST OF WATER QUALITY PARAMETERS NEEDED FOR BACKGROUND ANALYSIS

PRIMARY DRINKING WATER STANDARDS

PARAMETER

Alachlor (Polychlorinated Biphenyl or PCB)
Aldicarb
Aldicarb sulfoxide
Aldicarb sulfone
Aroclors (Polychlorinated Biphenyls or PCBs)
Alpha, Gross
Antimony
Arsenic
Atrazine
Barium
Benzene
Benzo(a)pyrene
Beryllium
Bis(2-ethylhexyl) adipate (Di(2-ethylhexyl) adipate)
Bis(2-ethylhexyl) phthalate (Di(2-ethylhexyl) phthalate)
Cadmium
Carbofuran
Carbon Tetrachloride (Tetrachloromethane)
Chlordane
Chlorobenzene (Monochlorobenzene)
Chloroethylene (Vinyl Chloride)
Chromium
Coliforms, Total
Cyanide
2,4-D (2,4-Dichlorophenoxyacetic acid)
Dalapon (2,2-Dichloropropionic acid)
Dibromochloropropane (DBCP)
1,2-Dibromoethane (EDB, Ethylene Dibromide)
1,2-Dichlorobenzene (o-Dichlorobenzene)
1,4-Dichlorobenzene (p-Dichlorobenzene or Para Dichlorobenzene)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (Vinylidene chloride)
1,2-Dichlorethylene (cis-1,2-Dichloroethylene or trans-1,2-Dichloroethylene)
cis-1,2-Dichloroethylene (1,2-Dichlorethylene)
trans-1,2-Dichloroethylene (1,2-Dichlorethylene)
Dichloromethane (Methylene chloride)
1,2-Dichloropropane
Di(2-ethylhexyl) adipate (Bis(2-ethylhexyl) adipate)
Di(2-ethylhexyl) phthalate (Bis(2-ethylhexyl) phthalate)
Dinoseb
Diquat
EDB (Ethylene dibromide, 1,2-Dibromoethane)
Endothall
Endrin
Ethylbenzene
Ethylene dichloride (1,2-Dichloroethane)
Fluoride
Glyphosate (Roundup)
Gross Alpha
Heptachlor
Heptachlor Epoxide
Hexachlorobenzene (HCB)
gamma-Hexachlorocyclohexane (Lindane)
Hexachlorocyclopentadiene
Lead

PRIMARY DRINKING WATER STANDARDS, CONT'D

PARAMETER

Lindane (gamma-Hexachlorocyclohexane)
Mercury
Methoxychlor
Methylene chloride (Dichloromethane)
Monochlorobenzene (Chlorobenzene)
Nickel
Nitrate (as N)
Nitrite (as N)
Total Nitrate + Nitrite (as N)
Oxamyl
p-Dichlorobenzene or Para Dichlorobenzene (1,4-Dichlorobenzene)
Pentachlorophenol
Perchloroethylene (Tetrachloroethylene)
Picloram
Polychlorinated biphenyl (PCB or Aroclors)
Radium
Roundup (Glyphosate)
Selenium
Silver
Silvex (2,4,5-TP)
Simazine
Sodium
Styrene (Vinyl benzene)
Tetrachloroethylene (Perchloroethylene)
Tetrachloromethane (Carbon Tetrachloride)
Thallium
Toluene
Toxaphene
2,4,5-TP (Silvex)
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene, TCE)
Trihalomethanes, Total
Vinyl Chloride (Chloroethylene)
Xylenes (total)

SECONDARY DRINKING WATER STANDARDS

PARAMETER

Aluminum
Chloride
Color
Copper
Ethylbenzene
Fluoride
Foaming Agents (MBAS)
Iron
Manganese
Odor
pH
Silver
Sulfate
Toluene
Total Dissolved Solids (TDS)
Xylenes
Zinc

MUNICIPAL WASTEWATER MINIMUM CRITERIA
GROUND WATER MONITORING PARAMETERS

INORGANICS

Ammonia
Nitrogen (organic)
Total Kjeldahl Nitrogen
Total Phosphorus (phosphate)

VOLATILE ORGANICS

Chloroethane
Chloroform
para-Dichlorobenzene (1,4 Dichlorobenzene)
1,2-Dichloroethylene (cis-1,2-Dichloroethylene or trans-1,2-Dichloroethylene)

BASE/NEUTRAL ORGANICS

Anthracene
Butylbenzylphthalate
Dimethylphthalate
Naphalene
Phenanthrene

PESTICIDES AND PCBs

Aldrin
Dieldrin

ACID EXTRACTABLES

2-chlorophenol
Phenol
2,4,6-trichlorophenol

OTHER

Conductivity
Biological Oxygen Demand
Chemical Oxygen Demand
Temperature

END OF SECTION

Appendix T
Pressure Tests Summary Sheets and Pressure Gauge Calibration Sheet

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
24-inch Diameter Final Casing Pressure Test

Client: Florida Power & Light

Well Name: EW-1

Date: 12-Mar-12

Observer: Deborah Daigle (MHC)

Base of Casing: 2,985

Packer Depth: 2,963.00

Time	Lapse Time (minutes)	Casing Pressure (psi)	Comments
0920	0	155.0	Start Test
0925	5	155.0	
0930	10	155.0	
0935	15	155.0	
0940	20	155.0	
0945	25	155.0	
0950	30	155.0	
0955	35	155.0	
1000	40	155.0	
1005	45	156.0	
1010	50	156.0	
1015	55	156.0	
1020	60	156.0	End Test

Note: 50 gallons of water were released during pressure bleed-off.
feet bpl = feet below pad level

Certificate of Calibration

Valworx

Certificate Number: 97679-1
Calibration Date: 2/2/2012

Customer: LAYNE CHRISTENSEN COMPANY

Instrument

Part Number: 9746922
Description: Pressure Gauge
Manufacturer: Wika
Range: 0-300 PSIG
Accuracy: +/- 0.25%

Performed by: M. WATTS

Calibration Results

Step Number	Target Pressure PSIG	Actual Pressure PSIG	Deviation PSIG	% F.S. Error Actual	% F.S. Error Allowed (+/-)
1	0	0	0	0%	0.25%
2	80	80.390	-0.390	-0.13%	0.25%
3	160	160.110	-0.110	-0.04%	0.25%
4	240	239.380	0.620	0.21%	0.25%
5	300	300.010	-0.010	0.00%	0.25%

Calibration Reference

Base Unit: ST-2H
Manufacturer: Heise
Serial Number: 50868
Last Cert Date: 8/12/2011

Module: HQS-2
Manufacturer: Heise
Serial Number: HQS-21718
Range: 0-300 PSIG
Accuracy: 0.025%
Last Cert Date: 8/12/2011

Ambient Temperature: 72 +/-3 °F
Pressure Source: 160-5000 PSIG WATER

Valworx Inc certifies that the above named instrument has been calibrated
by comparison to laboratory standards traceable to the National Institute of Standards & Technology (NIST)
in accordance with IAC A.2301, ANSI/NCSL Z540-1-1994, and ISO 10012-1.

Authorized Signature: Matt C. Watts

Valworx Inc • 18636 Northline Drive • Cornelius, NC 28031
Call 800 511-0100 • 704 987-9803 • Fax 704 987-9685
Order Online: www.gaugestore.com

Florida Power & Light Company

Turkey Point Units 6 & 7

Exploratory Well EW-1

Annular Pressure Test

Client: Florida Power & Light

Well Name: EW-1

Date: 21-Jun-12

Observer: Sally Durall (MHC)
Len Fishkin (FDEP)

Base of FRP Tubing: 2,975 feet bpl

Time	Lapse Time (minutes)	Annular Pressure (psi)	Comments
1025	0	160.5	Start Test
1030	5	160.5	
1035	10	160.5	
1040	15	160.5	
1045	20	160.5	
1050	25	160.0	
1055	30	160.0	
1100	35	159.5	
1105	40	159.0	
1110	45	159.0	
1115	50	158.5	
1120	55	158.5	
1125	60	158.5	End Test

Note: Approximately 63 gallons of fluid were released from the annulus during pressure bleed-off.
feet bpl = feet below pad level

PHONE (985) 758-2782 Boutte
(504) 467-1333 New Orleans
FAX (985) 758-1688
WEB www.mcdanielcontrols.com

McDaniel Controls, Inc.

P. O. BOX 187 • LULING, LOUISIANA 70070 U.S.A.

Certificate of Calibration

Report number FASTCAL-C01416

Manufacturer	Model	Customer Code	Serial Number	Calibration Date	Expiration Date
McDaniel Controls	FG	BDS	111	6/13/2012	

Model Uncertainty
+/- ASME 3A of span (0.25%)

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification. Your particular quality assurance requirements may supersede this recommendation.

As Received Condition: In tolerance **As Left Condition:** In tolerance

Laboratory ambient conditions throughout this calibration were:

Temperature	77°F / 25° C
Humidity	50 to 70% RH
Pressure	29.8 in.

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	1KPSIXP2I	72633	118872	29-Sep-12	0-20% of FS: ±(0.02% of FS); 20%-100% of FS: ±(0.1% of Rdg)

Lito Azusa

Quality Representative

Test Results

Report number FASTCAL-C01416

As Received Test Results — 300 PSI

Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Difference (% of FS)	Condition
0.0	0	0.7	0.0	0.00%	Pass
49.7	50	0.7	0.3	0.10%	Pass
99.7	100	0.7	0.3	0.10%	Pass
149.5	150	0.7	0.5	0.17%	Pass
200.1	200	0.7	-0.1	-0.03%	Pass
250.2	250	0.7	-0.2	-0.07%	Pass
300.0	300	0.7	0.0	0.00%	Pass
249.9	250	0.7	0.1	0.03%	Pass
199.4	200	0.7	0.6	0.20%	Pass
149.3	150	0.7	0.7	0.23%	Pass
99.5	100	0.7	0.5	0.17%	Pass
49.4	50	0.7	0.6	0.20%	Pass
0.0	0	0.7	0.0	0.00%	Pass

As Left Test Results — 300 PSI

Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Difference (% of FS)	Condition
0.0	0	0.7	0.0	0.00%	Pass
49.7	50	0.7	0.3	0.10%	Pass
99.7	100	0.7	0.3	0.10%	Pass
149.5	150	0.7	0.5	0.17%	Pass
200.1	200	0.7	-0.1	-0.03%	Pass
250.2	250	0.7	-0.2	-0.07%	Pass
300.0	300	0.7	0.0	0.00%	Pass
249.9	250	0.7	0.1	0.03%	Pass
199.4	200	0.7	0.6	0.20%	Pass
149.3	150	0.7	0.7	0.23%	Pass
99.5	100	0.7	0.5	0.17%	Pass
49.4	50	0.7	0.6	0.20%	Pass
0.0	0	0.7	0.0	0.00%	Pass

Appendix U
Video Survey Summary Sheets

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Completed Well Video Survey Summary

Date: 10-Mar-12
Observer: Eric Meyer

Depth in feet below pad level		Observations
From	To	
0	100	Casing joints at 20, 54, and 89 feet bpl.
100	200	Casing joints at 123, 158, and 193 feet bpl.
200	300	Casing joints at 227, 262, and 296 feet bpl.
300	400	Casing joints at 331, 360, and 400 feet bpl.
400	500	Casing joints at 435 and 469 feet bpl.
500	600	Casing joints at 504, 538, and 573 feet bpl.
600	700	Casing joints at 607, 642, and 677 feet bpl.
700	800	Casing joints at 710, 746, and 780 feet bpl.
800	900	Casing joints at 815, 849, and 885 feet bpl.
900	1,000	Casing joints at 919, 954, and 988 feet bpl.
1,000	1,100	Casing joints at 1,023, 1,057, and 1,092 feet bpl.
1,100	1,200	Casing joints at 1,126, 1,161, and 1,195 feet bpl.
1,200	1,300	Casing joints at 1,230, 1,264, and 1,299 feet bpl
1,300	1,400	Casing joints at 1,333 and 1,369 feet bpl.
1,400	1,500	Casing joints at 1,403, 1,438, and 1,472 feet bpl.
1,500	1,600	Casing joints at 1,507, 1,541, and 1,576 feet bpl.
1,600	1,700	Casing joints at 1,611, 1,645, and 1,680 feet bpl.
1,700	1,800	Casing joints at 1,715, 1,749 and 1,784 feet bpl.
1,800	1,900	Casing joints at 1,818, 1852, and 1,887 feet bpl.
1,900	2,000	Casing joints at 1,908, 1,930, 1,950, and 1,971 feet bpl.
2,000	2,100	Casing joints at 2,006, 2,041, and 2,075 feet bpl.
2,100	2,200	Casing joints at 2,110, 2,144, and 2,179 feet bpl.
2,200	2,300	Casing joints at 2,214, 2,248, and 2,283 feet bpl.
2,300	2,400	Casing joints at 2,318, 2,352, and 2,387 feet bpl.
2,400	2,500	Casing joints at 2,421, 2,456, and 2,490 feet bpl.
2,500	2,600	Casing joints at 2,525, 2,553, and 2,589 feet bpl.
2,600	2,700	Casing joints at 2,618, 2,654, and 2,689 feet bpl.
2,700	2,800	Casing joints at 2,830, 2,865, and 2,900 feet bpl.
2,800	2,900	Casing joints at 2,934 and 2,955 feet bpl. Top of the positive seal packer at 2,975 feet bpl.

bpl = below pad level

Florida Power & Light Company
Turkey Point Units 6 & 7
Exploratory Well EW-1
Completed Well Video Survey Summary

Date: 11-Apr-12
Observer: Maty Clasen

Depth in feet below pad level		Observations
From	To	
0	100	feet bpl.
100	200	FRP joints at 129, 158, and 185 feet bpl
200	300	FRP joints at 214, 243, 272, and 300 feet bpl
300	400	FRP joints at 329, 358, and 387 feet bpl.
400	500	FRP joints at 416, 445, 474 feet bpl.
500	600	FRP joints at 503, 532, 561, and 589 feet bpl.
600	700	FRP joints at 618, 647, 676 feet bpl.
700	800	FRP joints at 706, 734, 763, and 792 feet bpl.
800	900	FRP joints at 821, 850, and 879 feet bpl.
900	1,000	FRP joints at 908, 937, 966, and 995 feet bpl.
1,000	1,100	FRP joints at 1,024, 1,053, and 1,083 feet bpl.
1,100	1,200	FRP joints at 1,112, 1,141, 1,171, and 1,200 feet bpl.
1,200	1,300	FRP joints at 1,230, 1,259, and 1,288 feet bpl.
1,300	1,400	FRP joints at 1,318, 1,346, and 1,376 feet bpl.
1,400	1,500	FRP joints at 1,405, 1,439, 1,463, and 1,492 feet bpl.
1,500	1,600	FRP joints at 1,522, 1,550, and 1,579 feet bpl.
1,600	1,700	FRP joints at 1,609, 1,638, 1,668, and 1,697 feet bpl.
1,700	1,800	FRP joints at 1,725, 1,754, 1,783 feet bpl.
1,800	1,900	FRP joints at 1,811, 1,841, 1,869, and 1,898 feet bpl.
1,900	2,000	FRP joints at 1,928, 1,957, and 1,986 feet bpl.
2,000	2,100	FRP joints at 2,015, 2,044, and 2,073 feet bpl.
2,100	2,200	FRP joints at 2,102, 2,131, 2,160, and 2,189 feet bpl.
2,200	2,300	FRP joints at 2,218, 2,247, and 2,276 feet bpl.
2,300	2,400	FRP joints at 2,305, 2,335, 2,364, and 2,392 feet bpl.
2,400	2,500	FRP joints at 2,421, 2,450, and 2,479 feet bpl.
2,500	2,600	FRP joints at 2,508, 2,537, 2,566, and 2,594 feet bpl.
2,600	2,700	FRP joints at 2,624, 2,652, and 2,681 feet bpl.
2,700	2,800	FRP joints at 2,709, 2,738, 2,768, and 2,797 feet bpl.
2,800	2,900	FRP joints at 2,826, 2,856, and 2,885 feet bpl.
2,900	3,000	FRP joints at 2,915 and 2,944 feet bpl. The FRP-packer connetion at 2,974 feet bpl. The base of the final casing at 2,984 feet bpl.
3,000	3,100	Near guage borehole to 3,050 feet bpl. Below 3,050 the borehole is oblong and diameter increases with depth.
3,100	3,200	Large diameter borehole
3,200	3,232	Large diameter borehole. The base of the borehole at 3,232 feet bpl.

bpl = below pad level

FPL

MHC McNabb Hydrogeologic Consulting, Inc.

ASR US, LLC